Davenport IN MOTION



BUILDING A 21ST CENTURY TRANSPORTATION SYSTEM

VOLUME 3: APPENDICES

Nelson Nygaard consulting associates
in association with
AECOM and Speck and Associates

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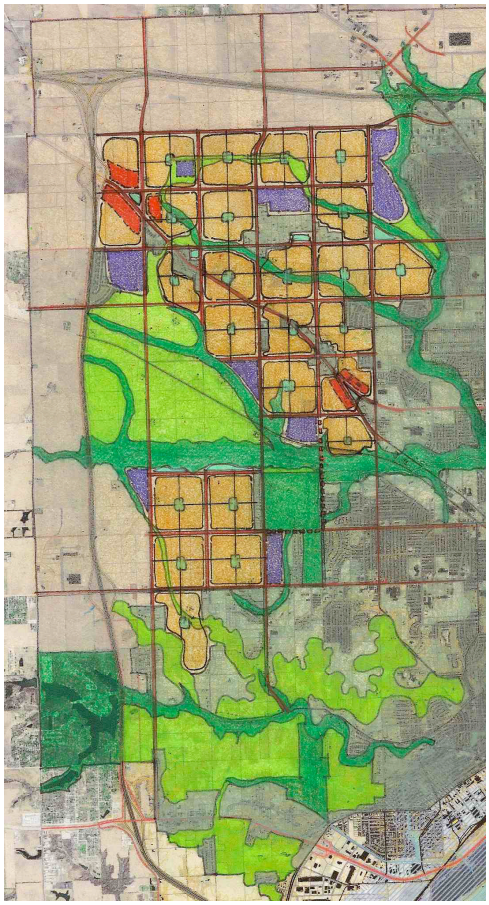
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Appendix A **Northwest Area Plan**

The pages that follow describe a process and a plan for developing the Northwest sector of Davenport, Iowa, according to smart growth criteria. This document can be read as a stand-alone report, but it is also included as a portion of the Davenport in Motion citywide transportation plan.



This effort is described as a demonstration plan because it was the outcome of a largely top-down process directed by city staff, with little interaction with landowners, citizens, or other constituents who should be expected to participate in an effort of such potential impact. Given the need for a planning public process, it is understood that the proposals contained herein are at best preliminary, and need to be modified through a fully public process before they become more than a demonstration exercise.

The entirety of this plan is based on the expectation, far from certain, that the City of Davenport will eventually grow by as many as 50,000 people. If no such growth occurs, than the areas designated for future mixed-use neighborhoods should remain un-built. That said, it must be stressed that, without a plan such as this one in place, even the smallest increments of growth within Davenport are likely to have a detrimental effect on the City's infrastructure and economic well being. To avoid making plans like this one until growth is well underway is a recipe for the sort of unhealthy growth that exacerbates traffic and fails to pay its own way. For that reason, it is highly recommended that a plan such as this one be put in place to absorb future growth, whatever pace that growth might take.

Additionally, we must stress that plans for urban expansion should not allowed to displace resources from the center city, and that a Northwest Regional Plan should only be pursued in conjunction with a robust set of policies and programs designed to refocus growth on downtown Davenport. While additional land must be developed if 50,000 more people are to be housed, a significant portion of that number should be able to find homes in the heart of the city. Even more important than planning this northwest sector will be efforts to make the downtown urban lifestyle attainable to a larger number of residents.

A regional plan should be understood as just one of a group of documents/policies that will be needed if the vision present in its drawings are to be accomplished. Equally important to the healthy growth of Davenport will be the following items:

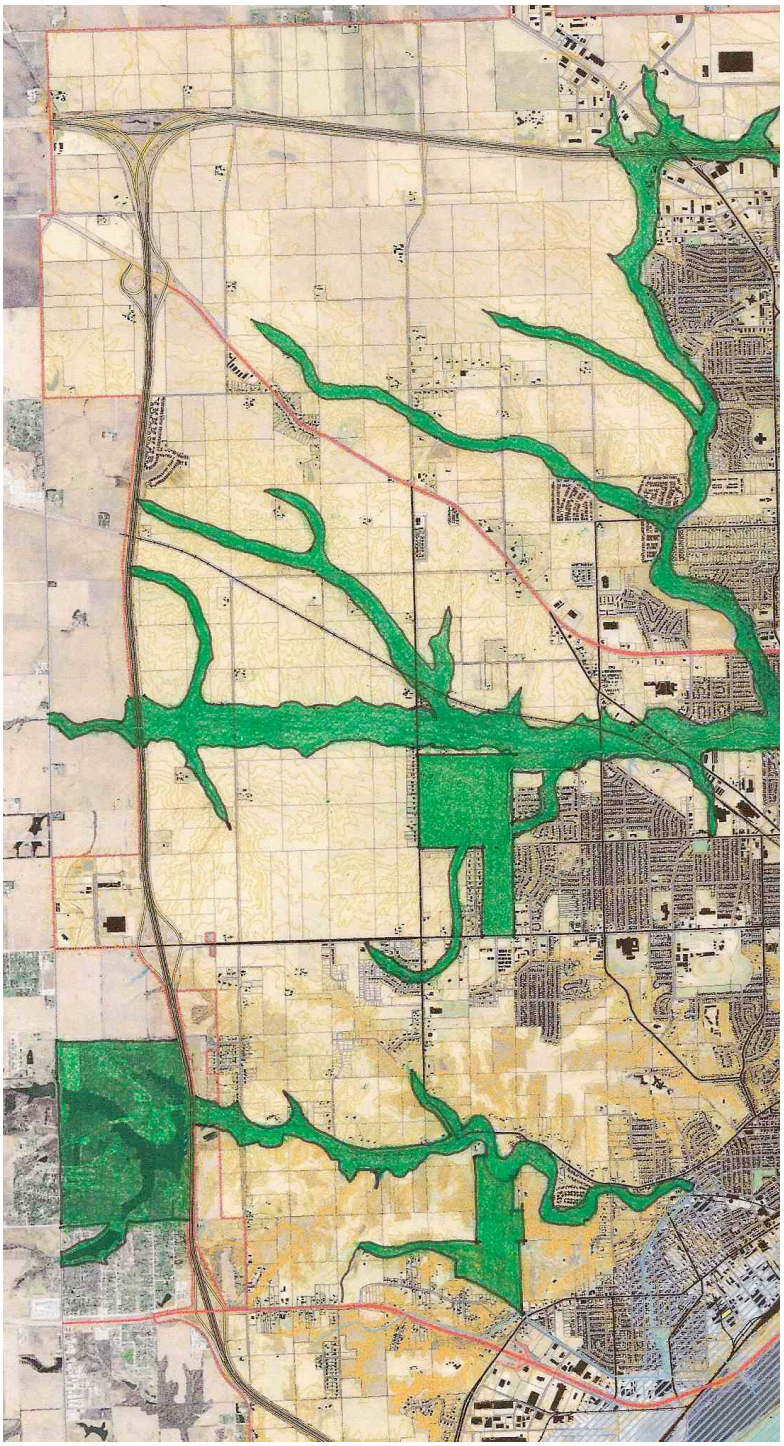
- A new land-use code / subdivision ordinance to further control growth. This document should be based on the *SmartCode* or another model ordinance now being used nationwide for such a purpose. Simply locating neighborhoods, streets, and land uses (as this plan has done) will not in any way guarantee the neighborhood structure, street design, and place-making techniques necessary to create a successful outcome.
- A Transferred Development Rights program, or another means of distributing development benefits fairly among impacted landowners. Like all good regional plans, the proposal here designates certain areas for intense development and others for rural preservation. These designations are based on sound planning logic but result in dramatic shifts in property value that demand compensation. TDR programs, now operating successfully in many jurisdictions nationwide, are one means by which all impacted owners can benefit fairly from the otherwise unfair redistribution of development potential.
- A commitment from the City to not up-zone properties outside of this plan. Planning and zoning regimes are of no value if they can be routinely circumvented by those with the wherewithal to ask. No further investment should be made in this effort unless the practice of granting zoning variances is strictly limited.

What follows is a narrative that lays out the plan while briefly explaining the reasoning behind each step of the process. This explanation is far from complete, and should be supplemented by the text of *The Smart Growth Manual* (Duany & Speck), principally chapters 2 through 7, which was written with the express purpose of allowing narratives like this one to be short. Almost every page of those chapters can be applied to this exercise, and should be read in conjunction with these pages.

As we describe the plan, please note that each of the sectors indicated is located atop land that is currently serving a certain purpose, and that often we are recommending a new land-use designation that would turn that activity into a nonconforming use. Clearly, any land use that is redesignated, for example, from Residential to Rural Reserve, will not result in removing any existing uses or structures. Such activities and buildings would be grandfathered in. Only additional structures of that use would be prohibited. The only instances of the plan calling for the removal of existing buildings or uses are: 1. when a street must be brought through a site for network connectivity (such construction would of course bring with it compensation for the landowner); and 2. when a property is up-zoned to a more intense use, in which case the landowner would benefit financially from the change.

The Rural Preserve

The first step of the plan, shown on the opposite page, is to indicate the Rural Preserve, those areas that are genuinely protected from development because they are parks or they are located within the floodplain. Under current zoning, every other property in the plan is theoretically developable.



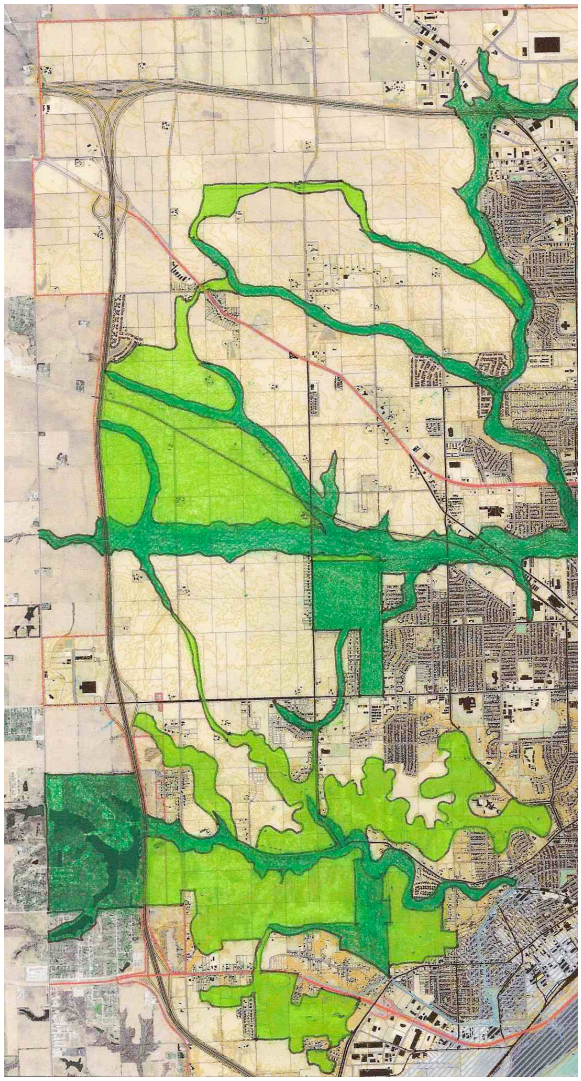
The Rural Preserve, marked in green.

The Rural Reserve

The second step is to supplement this permanently green area with the Rural Reserve, consisting of those areas that:

- Have natural features worthy of preservation, like significant tree stands;
- Provide key scenic or culturally valued viewsheds;
- Play a connective role in the open space framework;
- Are poorly suited to development due to steep slopes or other criteria;
- Follow a newly identified regional planning intention, such as creating a large open space or continuous trail system.

The Rural Reserve is shown on the map below. It includes areas of all of the above types. These are the properties within the plan that should be protected from future development, but currently are not. Under the proposed Transferred Development Rights program, the development potential of these sites would be purchased from these landowners and sold to other areas of the plan where up-zoning is recommended.



The Rural Reserve, marked in lighter green.

Three areas within the Rural Reserve require further explanation. First, surrounding 46th Street to the northwest is an area of exceptional beauty that merits preservation. Given that the railroad track presents a barrier to its south, the reserved area is extended south to that line. To the west, it also reaches further south to connect to the green finger already preserved. Finally, with the goal of creating a permanent large open space within the northwest sector, this greenbelt and the one to its south are connected into a continuous rural wedge. While this area could hold several full mixed-use neighborhoods, they would be somewhat isolated from the others, and thus this land seems best kept rural, or perhaps dedicated to a future institutional use, such as a self-contained college campus.

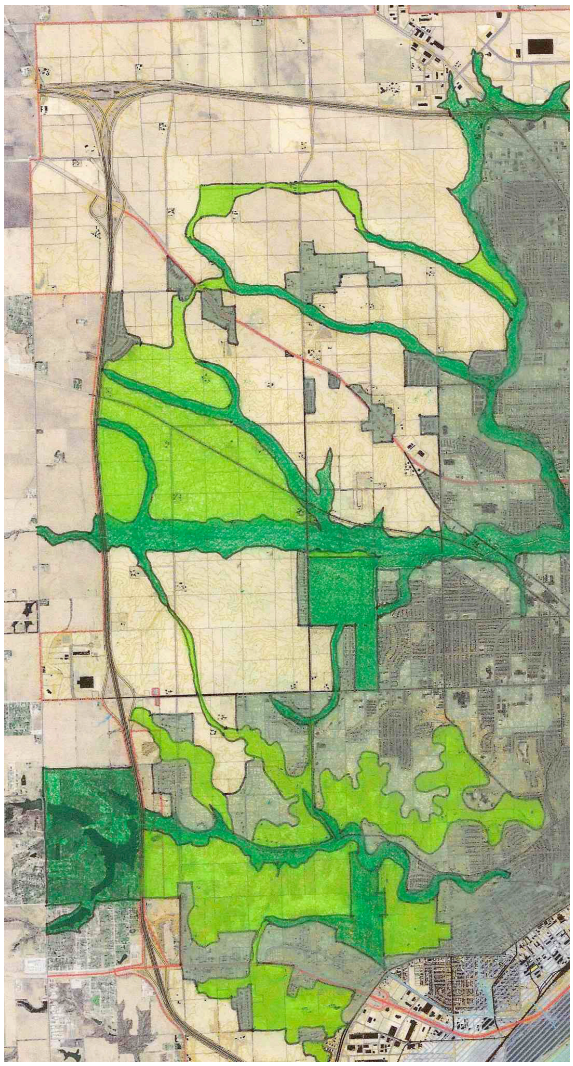
Second, the large green area to the south consists of areas that are quite steep, wooded or both, or zones between those areas that are too small to comfortably accommodate well-shaped neighborhoods. These have been supplemented slightly to create a continuous non-development zone where the existing conditions would be preserved. The boundaries and designation of these areas is perhaps the most sensitive and arguable part of the plan, but it can be stated with confidence that the majority of growth should be located where that growth can be contiguous and well-shaped.

Finally, the wet fingers extending towards the northwest of the plan have been connected together into a single network, so that they create a trail circuit to serve as an amenity for the region.

The Static Zone

The third step of the plan is to designate the Static Zone, shown below in gray-green, which is the remaining area not recommended for new development. Properties find their way into this zone principally because they have already been developed in a way that does not allow for them to blossom into full mixed-use neighborhoods of the kind that support walking and transit.

Some properties in this zone, such as the large-lot houses located near West 60th and Wisconsin, would ideally be redeveloped as parts of complete neighborhoods, but it is presumed that these owners would rather keep their lots intact. Areas like these within the plan would be reconsidered if a group of adjacent owners collectively wished to develop their land more intensively.

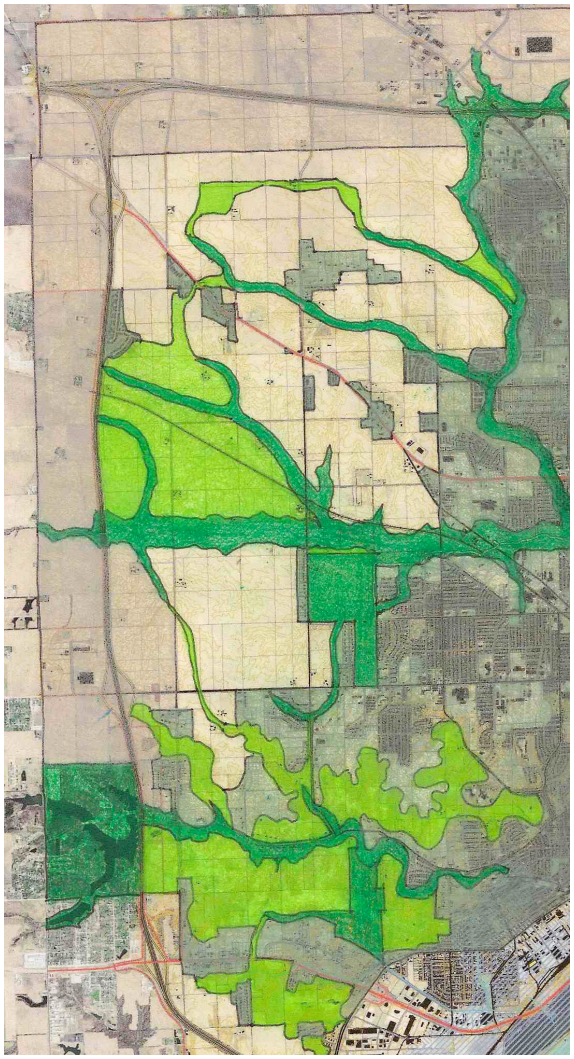


The Static Zone, marked in gray-green.

The Industrial/Agricultural Zone

The next area to be designated is the Industrial/Agricultural zone, which is located principally beyond the two highways, where these barriers make it difficult to create continuous urban fabric, and where a significant amount of industrial use has already begun to accumulate. This area is supplemented to include other properties within a half mile of the highway, since the highway lowers their potential for mixed-use development and increases the visibility of businesses.

The only exception to this approach occurs surrounding the Kimberly/I-280 exit, where it makes sense to locate a new mixed-use commercial town center, to take advantage of the easy highway access and great visibility for retail.



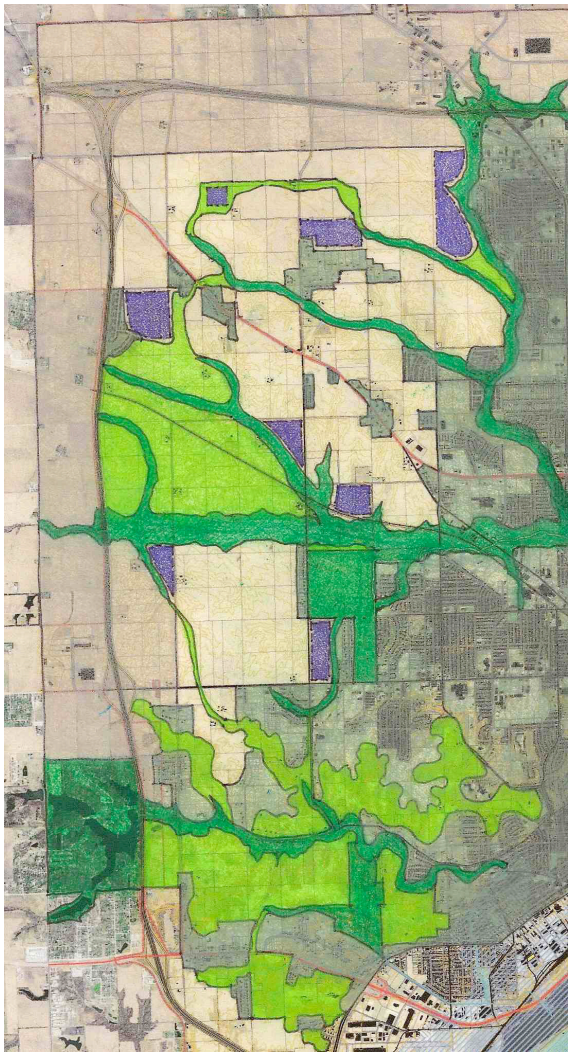
The Industrial/Agricultural Zone, marked in gray.

School Sites

In order to offer walking and biking access to school for all of the children in this new sector, it is important to designate school sites at this point in the process. Current Davenport school sizing suggests that this area should accommodate approximately five elementary schools and two each of high schools and middle schools. These latter two types can often share a single campus. But, since smaller schools produce better students – as has been demonstrated in Iowa – and because walking to school is key to health and development, it is better to designate too many school sites than too few. For that reason, fully nine quite sizeable school sites are planned here.

The school sites shown in the map above have been selected based on the balancing of the following criteria:

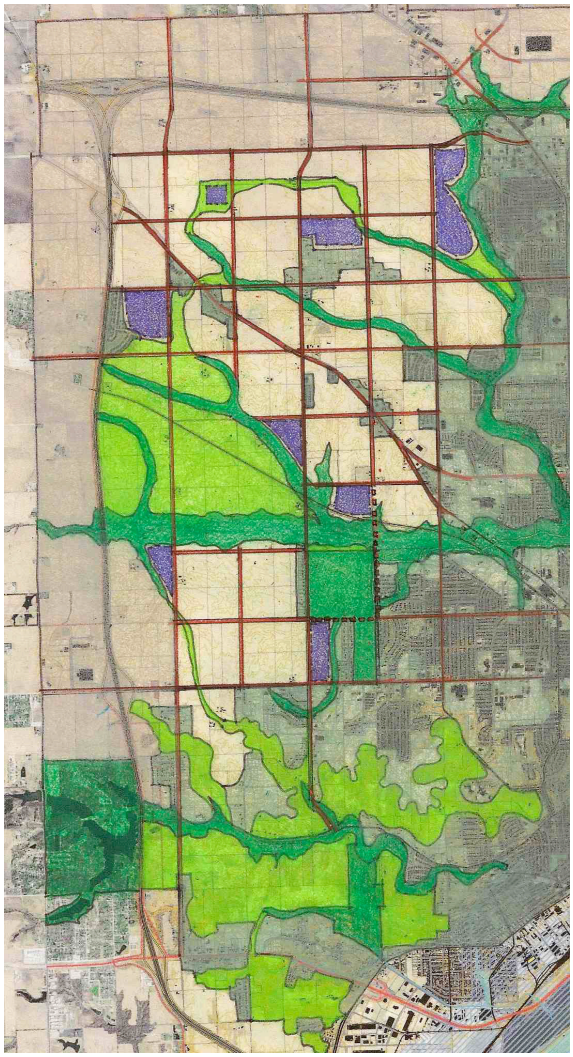
- Preference of properties owned by the school board;
- Even geographical distribution so that no future home is more than a mile from a school site, and most are considerably closer;
- Adjacency to the greenway system, so that Rural Reserve areas can be used for playing fields, and so that many children can take trails to school;
- Identification of properties that are too small to form full mixed-use neighborhoods, and are thus best used for other purposes.



School sites, marked in purple.

The Principal Thoroughfares

As important as the proper location of the region's parts is the establishment of a complete thoroughfare network to serve it. Simply placing boulevards on every square mile line is not enough to ensure a healthy region, as thousands of acres of sunbelt sprawl will demonstrate. The more through-streets established, the less traffic each street must carry, and the smaller each street can be. This approach is essential for a walkable/bikeable region, as 3-lane roads can comfortably accommodate bike lanes, while 5-lane roads often cannot, due to the higher driving speeds they invite.



The principal thoroughfares, with bike-only streets dashed.

Due to the relatively moderate planned density for this region, it can be said with some comfort that a network of 3-lane streets every half mile, *if supplemented by additional street networks within each new neighborhood,* will be adequate to support projected traffic loads. (A 3-lane road contains two travel lanes and a central left-hand turn lane, which becomes a green median between intersections.) Conveniently, since the typical traditional neighborhood has always been a half mile across, placing these boulevards every half mile creates a natural framework for the insertion of neighborhoods in between them.

The drawing above shows the principal corridors that are needed for roadway continuity. These are Utah, Wisconsin, and Fairmount heading north-south, with two additional thoroughfares added, interrupted only where urbanization stops. A similar armature can be established east west, taking advantage of 76th, 60th, 53rd, 39th, and Locust Streets, all of which can be continued into the study area, supplemented as necessary to maintain half-mile spacing between them.

Kimberly Road continues its northwest trajectory through this newly established grid, providing the most direct path to downtown. If any street within this network were to grow to a 5-lane section, it would be Kimberly.

The Neighborhoods

The final step takes the remaining developable area and inserts traditional-sized neighborhoods into the framework created by the major thoroughfares. As currently organized, the plan contains 25 such neighborhoods, some of which are a bit smaller due to the space available, but most of which are the typical 160 acres in size.

To truly comprehend this plan it is important to understand the full meaning of the term *neighborhood,* as explained in detail in chapters 4 – 6 of *The Smart Growth Manual.* Each neighborhood contains not just a full range of housing types and tenures, but also a small kernel of convenience retail at its center, which is often adjacent to a post office, daycare center, and other valued amenities. This center is marked by an open space of significant size, and is within a five-minute walk of all houses, so it is an ideal location for a transit stop. The neighborhood is typically organized into four quadrants by avenues that connect to the neighborhood center (doubling the porosity of the regional network), and each quadrant contains additional open space that is within a 2-minute walk of all residences. These open spaces, in addition to the one at the town center, are ideal locations for religious facilities and other institutional buildings.

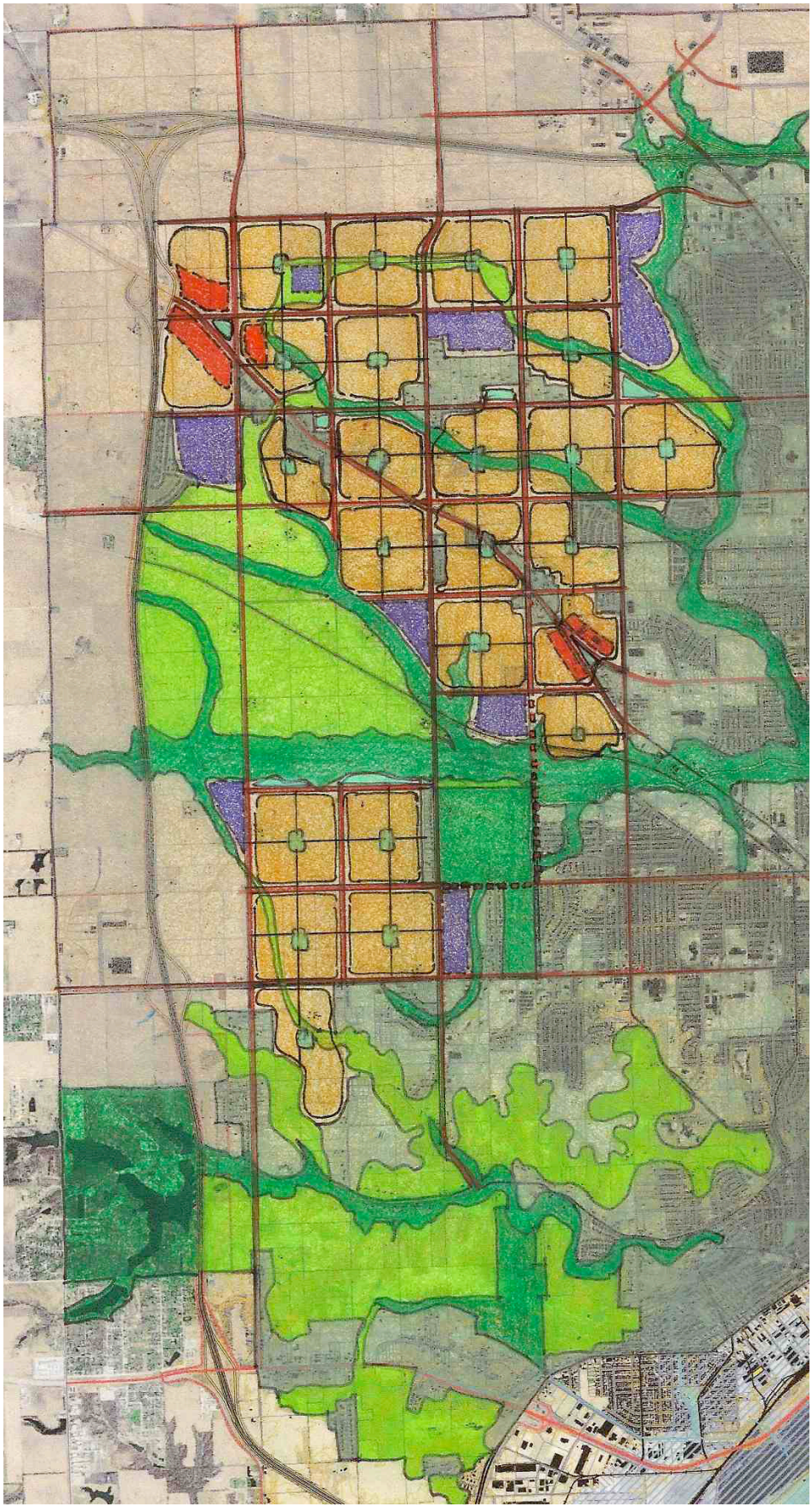
The complete plan, with neighborhoods inserted, is shown on the following page.

Two unique areas within the plan interrupt the repetitious neighborhood structure. These are the current and future locations of regional-scale retail activity located at the Kimberly Curve and at the Kimberly/I-280 exit. The first of these sites already abuts a Super Wal-Mart and is likely to attract additional redevelopment that should be designed into the form of a real town center, through the insertion of a network of urban blocks.

The second site is the aforementioned town center by the highway, where the intersection of three major thoroughfares provides the opportunity for a major retail center. This center can take advantage of its highway visibility to link big box stores to a collection of main-street shops that line a significant public space. This large mixed-use center serves as the heart to the flanking neighborhoods north and south; all other neighborhoods in the plan have independent centers of their own.

Key to the success of this planning regime is the limitation of each typical neighborhood's center to a very small kernel of "corner store" retail and, more importantly, the prohibition of retail uses everywhere else in the entire plan. None of the major north-south or east-west boulevards, nor Kimberly Road, shall be zoned for retail use. In addition improving the viability of the two town centers and the twenty-odd corner stores in neighborhood centers, this prohibition will also ensure the viability of the transportation network, which will never be choked by vehicles entering and exiting businesses, and will remain free of commercial signage blight. This is one of the plan's key advantages.

In terms of capacity, the resulting neighborhood plan, if settled at a conventional American suburban density of 5 units/gross acre, would hold about 800 households per 160-acre neighborhood. This translates into about 20,000 households over 25 such neighborhoods. Since some of the neighborhoods are somewhat smaller than 160 acres, we can estimate perhaps 18,000 households, or a population of 40,000 at 2.2 people per household. With an anticipated growth of 50,000, this number would locate 10,000 additional people in a rejuvenated downtown Davenport, a number which seems appropriate given its current underutilization.

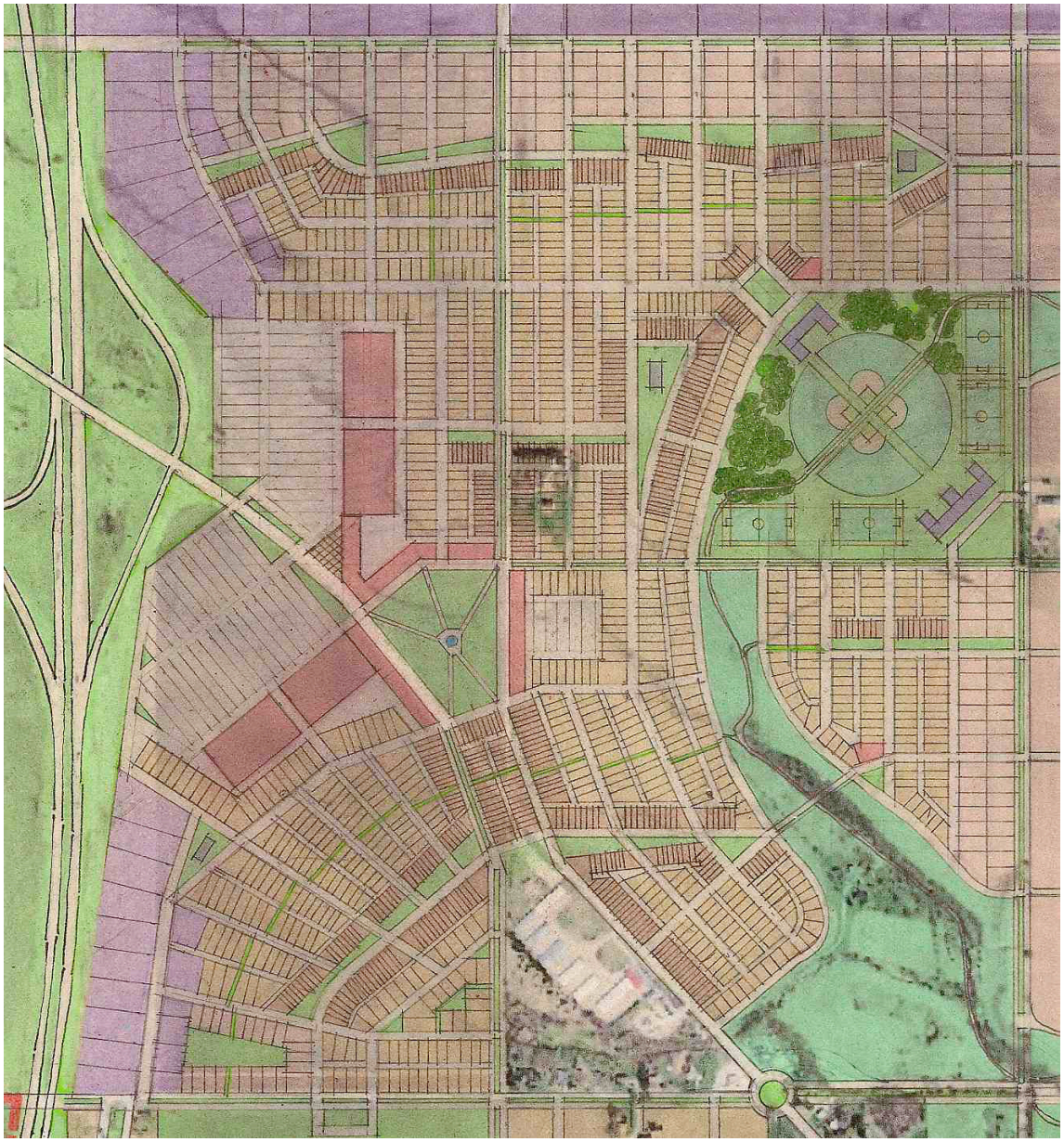


The complete plan, with neighborhoods included.

Looking More Closely

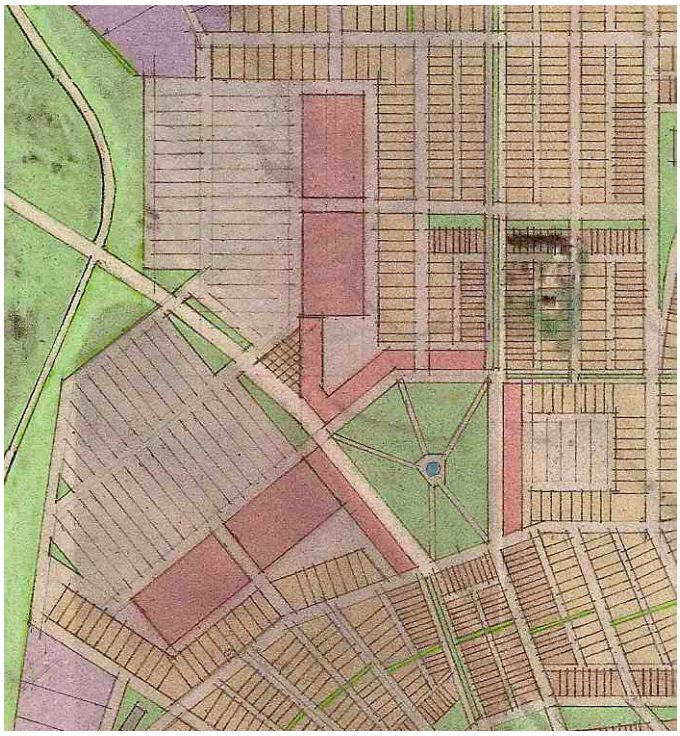
To better understand the neighborhood model as well as some of the more idiosyncratic areas of the plan, we have zoomed into the northwest corner of the diagram to show the potential detailed design of the square mile surrounding the Kimberly/I-280 exit. The drawing on the next page shows more clearly the following features of the regional plan:

- Independent half-mile-across neighborhoods are separated by boulevards with medians, as can be seen running north-south and east-west through the plan. This drawing shows four neighborhoods, but the two western neighborhoods have become a single larger entity surrounding the new town center. Nowhere else in the plan does this two-neighborhoods-as-one condition occur; here it is a result of the grand scale of that town center.
- The greenbelt can be seen entering from the east, expanding into the southeast corner of the northeast neighborhood, exiting to the south, and then looping back to the east. As the underlying photograph makes clear, this greenbelt has been located based upon existing drainage and tree patterns.



A zoom-in to the northwest square mile of the plan.

- Where the greenbelt expands, it has been used as a location for schools and playing fields, as well as the trail that traces its length.
- The southeast neighborhood is split by the path of the greenbelt, and also loses developable land to existing activities along the south side of Kimberly. If the owner of that property so selects, it could instead be urbanized in a similar way to the rest of the neighborhood.
- The path of Kimberly Road diverts temporarily to resolve an intersection among multiple major thoroughfares. Due to the extremely porous network of multiple through-streets, such a diversion is immaterial to the proper functioning of the traffic network. The key to effective traffic management is distribution, not funneling. To the south, a similarly problematic intersection of thoroughfares is resolved with a roundabout.
- In a nod to the reality of the retail market, the I-280 exit is designated as a site for big-box stores, which face the highway with vast parking lots in the normative way. Rather than being allowed to stand alone, these outlets are used to anchor a large collection of in-line main-street stores surrounding a large town-center green
- A thin edge of industrial use, met by similar use across the street, provides a barrier to I-280 from the neighborhoods to its east. But with these barriers in place, residential use nearby the highway does not present a conflict.

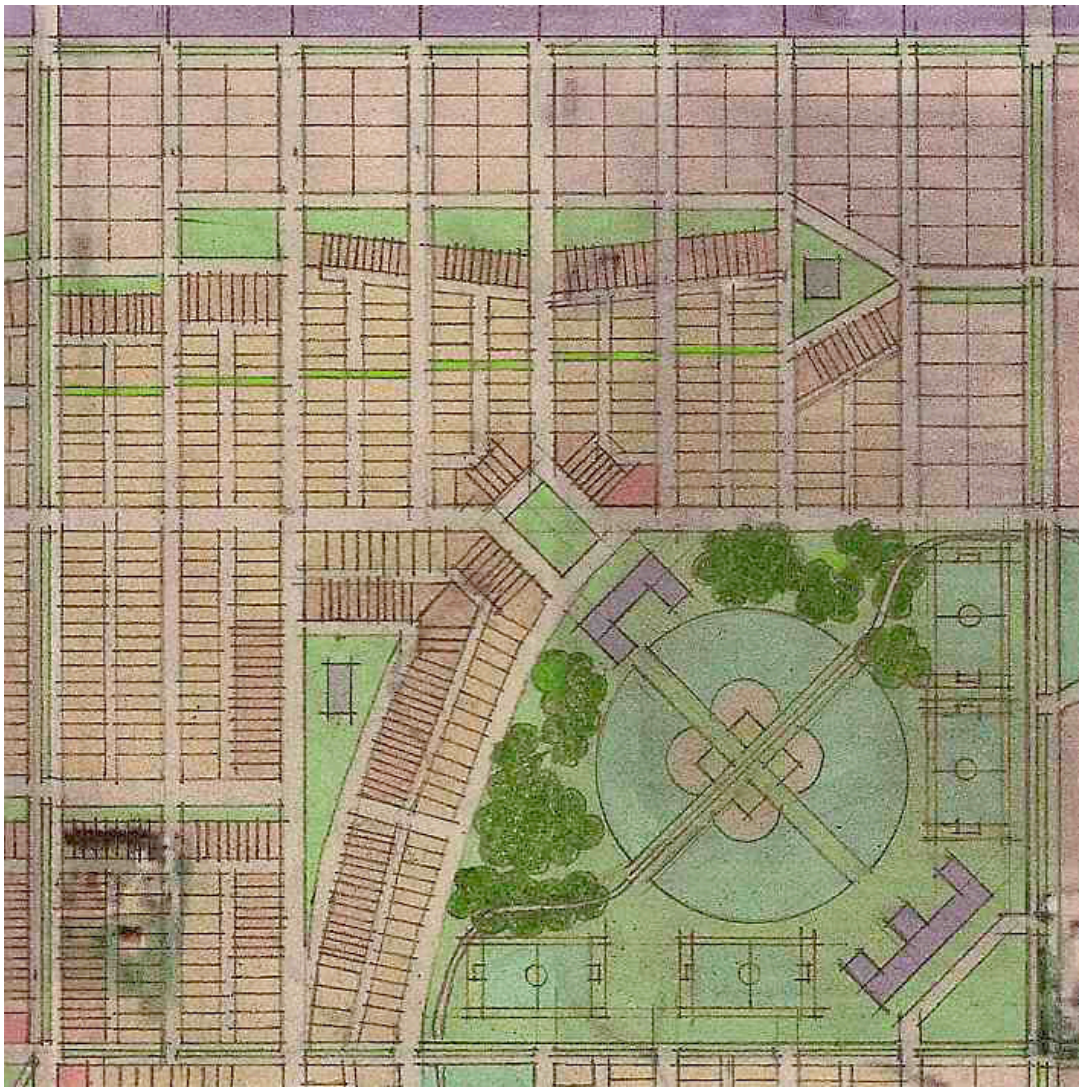


Existing big-box sites would anchor smaller retail stores in the town center.

A Single Neighborhood

Zooming in further to a single half-mile-across section, we can better come to understand the organizational methodology that applies to every neighborhood within the plan. The neighborhood selected is slightly unusual in that one quarter of its land area had been absorbed into the continuous greenbelt, but it otherwise holds to all of the criteria that characterize the design of smart growth neighborhoods. These include the following:

- Main streets converge at a green center. At this center is a large public space and a single site designated for retail use, shaded red.
- The urbanized area is subdivided into blocks of standard size, typically about 250' x 600' in dimension. Such small blocks are key to walkability; where blocks extend beyond 600' in length, they are split by a pedestrian path near the middle of the block.
- Each quadrant of the neighborhood is centered upon its own community green. In some cases, these are the sites for civic buildings like religious institutions.



A single neighborhood demonstrates many of the plan's principles.

- In addition, a network of green space continues throughout the neighborhood, linking these community open spaces together. These spaces, while providing an amenity that increases property value, are also a key aspect of Light Imprint neighborhood design, in which surface drainage and infiltration replace the conventional methodology of handling stormwater through expensive pits and pipes. Additionally, these green areas, and the nearby greenbelt, can serve as constructed wetlands for locally treating residential wastewater, freeing these neighborhoods from dependence upon a central wastewater treatment facility.
- A wide variety of housing lot types are provided. A gross density of 5 units per acre implies a net density (on private property alone) close to 10 units per acre, resulting in an average residential lot size of 4400 square feet, or 40' wide by 110' deep. The typical lot is of this size, but wider lots are placed in certain areas, such as 50' lots facing the greenbelt and 60'-70' lots at the neighborhood edge.
- To serve those desiring a smaller yard, 25'-wide rowhouses are placed at key locations within the neighborhood, principally facing green spaces that they help shape with their continuous facades. This is a practice that has added value to both historic and New Urban communities throughout the U.S.
- A rough tally of the lots in the neighborhood produces this outcome:
  - 190 rowhouses on 25'-wide lots
  - 200 houses on 40'-wide lots
  - 70 houses on 50'-wide lots
  - 90 houses on 70'-wide lots.

The resulting total of 550 lots makes sense for a neighborhood which includes a park more than 40 acres in size.

- All freestanding houses served by alleys are allowed to have granny-flat apartments above their garages, which integrate rental housing into neighborhoods of homeownership. Rental housing is also imagined above the main-street stores in the Town Center.
- The largest lots are not served by rear lanes, since they are wide enough to properly absorb a front-loaded garage. But all other homes access their rear garages via lanes that cut through the block. These lanes are typically where the dry utilities run, and they are surfaced to driveway standards to limit their cost.
- The design of streets and alleys is controlled by the SmartCode or other document, but the streets vary in width based on their carrying capacity, as described in chapter 8 of The Smart Growth Manual. The typical low-volume residential street corresponds to yield flow dimensions, with 20' or 26' of pavement holding one or two sides of parallel parking, respectively. Alleys contain 10' of pavement in a 25' right-of-way.

The above notes summarize this Demonstration Plan. Commissioning this design was an important first step in the process of planning a successful physical and economic future for northwest Davenport. It is hopeful that, while many details of this plan may change, the techniques that guided its creation will remain intact, so that the ultimate development of this large sector proves beneficial to the current and future residents of the City.

Appendix B Northwest Area Nodal Evaluation

Introduction

When the City of Davenport completes a major sewer interceptor in the City's Northwest (NW) Quadrant, over 25 square miles of land will be available for development and new roadway infrastructure will be needed to provide access to homes and businesses. The city will face a series of important decisions over how to develop the land and the transportation system in the NW Quadrant that will impact not only travel patterns in the NW quadrant and the city overall, but the area's health, economy and environment.

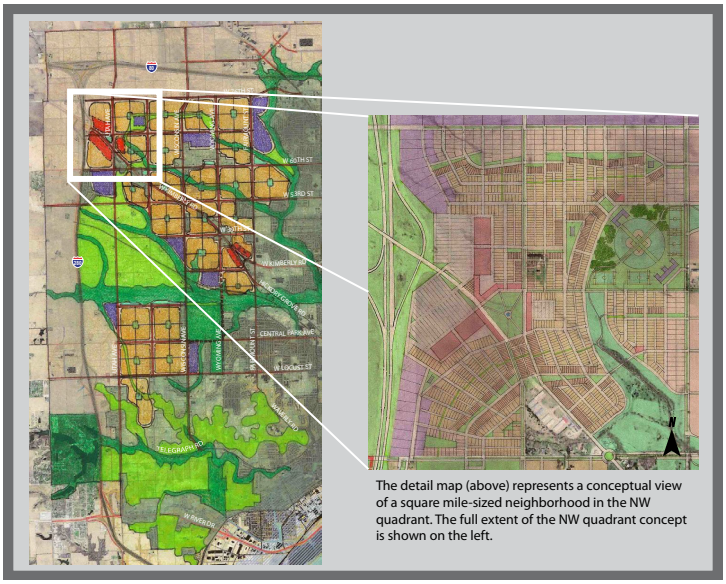
This element of Davenport in Motion evaluates the impacts of two potential development scenarios for the NW Quadrant:

- **Unmanaged conventional development within the NW quadrant resembling typical suburban street networks and single uses.** Beyond the City's zoning regulations, there is currently no master development plan for the NW quadrant, which includes many landowners. Growth in Davenport over the last several decades has followed a typical suburban pattern, particularly in the area north of Kimberly Road, and this is the pattern that growth is likely to follow in the NW Quadrant without a structured land use plan and policy.
- **Nodal development within strategic portions of the NW quadrant with simultaneous infill growth on existing developable land.** This could be considered a "Smart Growth" approach to neighborhood design, based on a traditional grid system.

The nodal development pattern is exemplified in a conceptual plan for the NW quadrant developed by Jeff Speck & Associates as an element of Davenport in Motion (Appendix A). Figure B-1 shows the plan's framework of arterial roadways, none more than three-lanes in width, and minor streets that provide connectivity between numerous neighborhood centers, within the NW Quadrant, and to the existing Davenport street network, which will offer local retail and jobs. Shown in dark green, stream tributaries would form a continuous greenbelt comprised of open space or trails. The light green areas are the lowest priority for development, due to environmental and other constraints. The remaining purple areas indicate potential neighborhood school sites. The detail area in Figure B-1 covers a single square-mile neighborhood.

- This analysis compares these two approaches – *conventional suburban* as illustrated by existing development patterns and *nodal* as illustrated in the Speck plan – first examining direct financial costs and benefits, and then indirect costs related to neighborhood walkability, safety, human health and overall livability.

Figure B-1 NW Quadrant Concept Plan with Neighborhood Detail



Dense nodes are served by human-scaled streets and surrounded by greenspace, while compact neighborhoods are supported by a walkable gridded street network.

Source: Speck & Associates

DEVELOPMENT SCENARIOS DEFINED

Figure B-2 on the following page illustrates the two development scenarios – conventional suburban and nodal – and key attributes of each scenario for the NW quadrant. The illustration of each scenario shows a square mile of developable land; however, in the detailed cost analysis this model is applied to the entire NW quadrant. For purposes of this analysis, the conventional suburban pattern has a low density of about 2 dwelling units per acre and the street grid is not well developed. (This development density mirrors recent development patterns in north Davenport between I-80 and W 53rd Street to the north and south and Northwest Boulevard and U.S. 61 to the east and west). The nodal grid scenario is drawn from a sample neighborhood found in the NW Quadrant Concept Plan. The quadrant's development density would be roughly five dwelling units per acre, with greater densities at neighborhood centers.

The conventional network pattern consists of 30% more lane miles, yet accommodates half the net residential density and an equal amount of vehicle through capacity as the nodal scenario. The nodal scenario is characterized by 70% greater greenspace coverage, shorter block lengths and a greater density of pedestrian connections.

Figure B-2 Neighborhood Development Scenarios



Nodal Development Scenario

Network typology: Traditional grid
Total lane miles: 47.4
Lanes by class: Arterial = 4 lanes, Collector = 2 lanes, Local = 2 lanes
Net residential density: 4.8 du/acre on 1,616 lots (assuming that 25% of eligible lots build granny units and the town center is surrounded by two stories of apartments over ground floor retail)
Greenspace coverage: 22.7%
Connectivity Index (Intersections per square mile): 88 4-way intersections (including alley intersections); 132 3-way intersections (including alley intersections)
Block length: 250 - 600 feet
Through capacity: 7,200 vehicles per hour

Conventional Development Scenario

Network typology: Discontinuous suburban grid loosely based on street networks in northern Davenport
Total lane miles: 68.1
Lanes by class: Arterial = 4 lanes, Collector = 4 lanes, Local = 2/3 lanes
Net residential density: 2.2 du/acre on 1,293 lots (assuming single family detached housing only and 20% less residential capacity than the nodal scenario due to road configuration and large lot sizes)
Greenspace coverage: 6.3%
Connectivity Index (Intersections per square mile): 26 4-way intersections; 76 3-way intersections (not including intersections connecting cul-de-sacs)
Block length: 250 - 1,200 feet
Through capacity: 7,200 vehicles per hour

Nelson Nygaard consulting associates

Note: Both scenarios are conceptual in nature and reflect typical nodal and conventional development patterns
Source: Speck & Associates

Direct Cost Analysis

When considering different development scenarios, it is important to assess the direct costs that the city will absorb. Direct financial costs are the public expenditures of building new surface streets, including land acquisition, construction, maintenance and operations. The full costs of transportation infrastructure are rarely considered in the development review process at least not in a manner that considers impacts of alternative models for urban form. The long term costs of capital construction, operations and maintenance of new roadway facilities and operation of transit service are directly related to development patterns and parcelization of land, street network layout, and connectivity.

This section estimates the potential cost of constructing a new street network in the NW quadrant, considering both the conventional suburban and nodal development scenarios. The analysis is introduced by empirical research conducted on development scenario costs. Using a cost estimation methodology that broadly incorporates roadway cost elements sensitive to Davenport's context, we calculated a cost estimate for each cost area and annualized the results over a 30-year period. Several case studies from other communities are offered to illustrate examples of where similar cost comparisons have been conducted.

Below is a snapshot of potential fiscal costs related to roadway expansion in the NW quadrant for both development patterns. The key cost areas being analyzed, and the resulting cost estimates for both development scenarios, are provided in the table below:

Figure B-3 Cost Summary

Cost area	Conventional cost	Nodal cost
30-year capital and maintenance for new construction	$404,464,000	$230,158,500
Annual roadway maintenance and pavement preservation	$5,564,000	$2,692,300
Annual transit operations and capital needs	$11,975,500	$5,239,800
30-year annualized capital, operation, and maintenance cost estimates	$44,569,800	$23,787,400

EFFECT OF DEVELOPMENT PATTERN ON PUBLIC INFRASTRUCTURE COSTS

Any addition to the city's transportation system will place a burden on developers and taxpayers alike, as the current economic downturn has vastly affected the local budget for capital improvements. While any type of roadway expansion will require investment by the City of Davenport, research shows that development pattern and street network types create vast differences in infrastructure capital cost. In general, the fiscal cost of providing public infrastructure and services like roads and transit decreases when growth is concentrated in strategic areas, roadway systems are connected to form functional networks, and safe options are provided for bicycles and pedestrians. Cost savings from compact development occur due to economies of scale (i.e. greater efficiency of higher density development), decreasing marginal (incremental) cost of providing infrastructure as people locate around existing infrastructure, and increasing the efficiency with which each pavement mile is utilized.[1]

- **Per lane mile cost for new local roads** will be 25% less in areas that manage growth
- **Nodal development patterns** observe between 50 and 75% less road length than in conventional development
- **25-year road building costs** in compact development patterns can amount to 11% in municipal cost savings* **

* Burchell, Robert and Sahan Mukherji (2003). "Conventional Development versus Managed Growth: The Costs of Sprawl". American Journal of Public Health, Vol. 93, No. 9, pp. 1534-1540.
** Burchell, Robert et al. (1997). Cost of Sprawl—Revisited, Transit Cooperative Research Program, Federal Transit Administration.

NW QUADRANT COST ANALYSIS

Under both development scenarios, the following analyses identify costs for both a single neighborhood unit (depicted in Figure B-2 above) as well as for the whole NW Quadrant. The total quadrant cost assumes that the nodal pattern will consume roughly six and a half neighborhood units (according to the Speck & Associates concept plan), while the conventional pattern will consume eight neighborhood units. All cost estimations are backed by industry standards, national trends, scholarly literature, and case studies.

Lane miles are used as the unit of analysis because it is a measure that relates equally across streets of different widths or a different number of lanes, unlike a centerline mile calculation. For the purposes of this analysis, a lane mile accounts for a 12-foot lane section on a roadway including all auxiliary costs such as curbs, gutter pans, grading, and materials. All costs are generated from per lane mile costing.

Capital Construction Costs

The analysis uses a new roadway construction cost factor estimated to be $690,000 per lane mile. This draws from averages from actual project costs from local budgets, service development charge calculations, and national cost of development research, but costs are highly volatile and could change significantly over time and from project to project. This is a curb-to-curb estimate including design and engineering services (5.5% of project cost), right-of-way acquisition, and all construction related expenses (including materials and labor). This figure does not include many other cost factors related to local street construction such as water and sewer infrastructure, and street trees and landscaping.

1 Muro, Mark and Robert Puentes (2004). Investing in a Better Future: A Review of the Fiscal and Competitive Advantages of Smarter Growth Development Patterns. Brookings Institution Center on Urban and Metropolitan Policy.

Figure B-4 Capital Construction Cost Summary

Scenario	Lane mile cost	Lane miles of construction	Neighborhood cost	Total cost for NW Quadrant
Conventional	$690,000	68.1	$46,989,000	$375,912,000
Nodal	$690,000	47.4	$32,706,000	$212,589,000

Maintenance Costs

Maintaining city streets is a vital exercise to ensure long-term functioning of infrastructure. Many factors affect pavement deterioration, including:

- Aging
- Potholes
- Traffic speeds, volumes, and freight movement
- Weather (High heat in summer and freeze thaw cycles in the winter)
- Condition of existing subgrade
- Pavement cuts made by public and private utilities

Because streets accrue deterioration differently from heavy volumes and speed, this analysis breaks down maintenance costs by classification. Using averaged cost factors from several state and local DOTs, the average lane mile cost of maintaining an arterial street is $13,000 per year. Similarly, the average per lane mile cost to maintain local and collector streets is $7,300 per year. These costs account preventative measures such as crack and chip sealing, pavement overlays and street reconstruction, which accrue over pavement 75 year lifetime. The cost estimates below are general costs representing the typical annual spending on roadway maintenance and pavement preservation.

Not every segment of every street will be maintained during a year. In order to realistically estimate roadway deterioration cycles, arterial costs are applied to only 40% of lane miles annually, while collector and local street costs are only applied to 20% of lane miles annually. All costs are adjusted for inflation.

Figure B-5 Roadway Maintenance Cost Summary

Scenario	Lane mile cost	Lane miles of maintenance	Annual cost	30-year cost
Conventional (Arterial only)	$13,000	4.6	$23,920	$732,000
Nodal (Arterial only)	$13,000	4.8	$24,960	$764,000
Conventional (Collector and Local only)	$7,300	63.5	$92,710	$2,837,000
Nodal (Collector and Local only)	$7,300	43.4	$63,320	$1,939,000
Conventional Neighborhood Total	----------	----------	----------	$3,569,000
Nodal Neighborhood Total	----------	----------	----------	$2,703,000
NW Quadrant Conventional Total	----------	----------	----------	$28,552,000
NW Quadrant Nodal Total	----------	----------	----------	$17,569,500

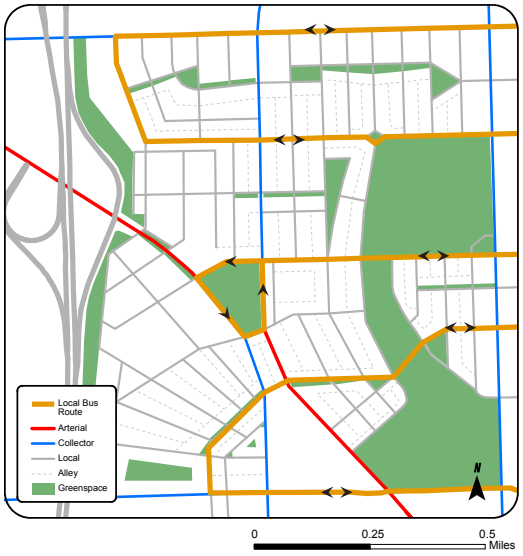
Transit Service Costs

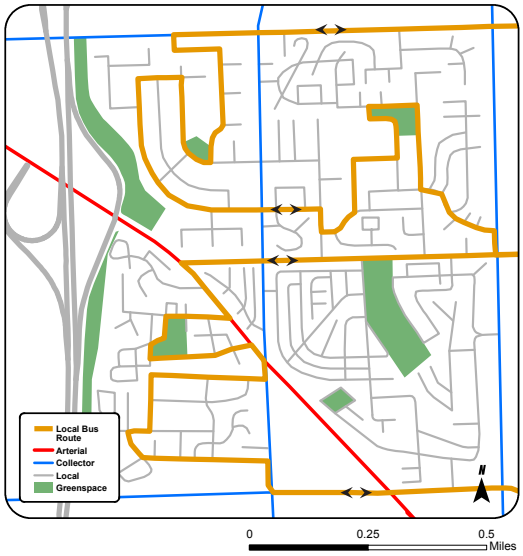
Transit operating costs and vehicle requirements are highly sensitive to development patterns and, in particular, roadway alignment and connectivity. The analysis below indicates the annual cost to meet minimum transit service criteria of 30 minute headways, 15-hour weekday service span, and a maximum ¼-mile walk for all residents in each model. (While this is a very good level of service, the focus of the analysis is really on the ratio of cost between the two scenarios. This would not change at lower service levels). Results are extrapolated throughout the NW Quadrant and represent the marginal cost increase of transit service at this level to provide this quality of service throughout the area. While this level of service is much better than service in most parts

of Davenport today, it is an aspirational target intended to equalize service level and resident access under both scenarios. In this type of analysis, it is the ratio of cost between the two scenarios that matters most. All figures are in 2010 dollars and adjusted with a 2% inflation rate.

According to Figure B-6, indirect routing in the conventional model is responsible for 35% longer route mileage and 55% higher revenue hours and annual operating costs than the nodal model. Because of circuitous routing, the conventional model more than doubles the vehicle requirement to maintain the service parameters detailed above, which yields almost 60% greater annualized capital costs. In the end, the conventional pattern's annualized operating and capital costs are more than double those of the nodal model.

Figure B-6 Transit Service Cost Scenarios





Nodal Transit Service Costs[1]

Total route mileage[2]	32.8
Average speed (mph)	15
Annual revenue hours	55,434
Annual operating cost	$4,500,000
Total vehicle requirement	10
30-year annualized capital cost[3]	$739,800
Total annual cost	$5,239,800

[1] Assumes 30 minute service frequency; 1/4-mile pedestrian accessibility from all residences; average operating speed is 15 mph considering route directness and number of turn movements..

[2] Routing shown above is multiplied over the entire quadrant. Operating cost covers 6.5 neighborhood areas as depicted in Speck & Associates conceptual plan for the NW Quadrant.

[3] Assumes CitiBus uses 40' vehicles at $300,000 per unit with a 10-year life span. Interest rate is 7% and inflation is assumed to be 2%.

Source: 2008 National Transit Database, Speck & Associates

Conventional Transit Service Costs[1]

Total route mileage[2]	51.1
Average speed (mph)	10
Annual revenue hours	125,928
Annual operating cost	$10,200,000
Total vehicle requirement	24
30-year annualized capital cost[3]	$1,775,500
Total annual cost	$11,975,500

[1] Assumes 30 minute service frequency; 1/4-mile pedestrian accessibility from all residences; average operating speed is 10 mph considering route directness and number of turn movements.

[2] Routing shown above is multiplied over the entire quadrant. Operating cost covers 8 neighborhood areas indicating higher development coverage.

[3] Assumes CitiBus uses 40' vehicles at $300,000 per unit with a 10-year life span. Interset rate is 7% and inflations is assumed to be 2%.

Source: 2008 National Transit Database

These route designs are conceptual in nature.

30-YEAR LIFE CYCLE COST ANALYSIS

An effective way to consider the full cost of a development scenario is through infrastructure life cycle analysis. Life cycle analysis estimates fully allocated costs of development scenarios over a designated amount of time. Here, the summed costs of annualized capital construction, maintenance, and transit service are projected over a 30-year period. Where appropriate, costs are adjusted for interest and inflation. An interest rate of 7%, commonly used for capital infrastructure projects, is factored into the cost,[2] while a conservative 2% inflation factor is assumed to account for rising material, fuel and labor costs. Figure B-7 details the cost of each development scenario in 2010 dollars.

In all, the conventional development scenario is estimated to cost Davenport $44 million per year, when accounting for annualized construction, maintenance and transit service costs over the next 30 years (See Figure B-7). The nodal pattern cost estimate is just over half of this. This is a powerful conclusion that clearly equates a discontinuous street network to higher costs incurred by the city.

Figure B-7 NW Quadrant 30-year Life Cycle Costs by Development Pattern

Conventional

30-year Conventional Capital & Maintenance Cost	$ 404,464,000
Annualized Conventional Capital & Maintenance Cost	32,594,300
Annual Conventional Transit Operating Cost	10,200,000
Annualized Conventional Transit Capital Cost	1,775,500
Total Annualized Conventional Cost	**$ 44,569,800**

Nodal

30-year Nodal Capital & Maintenance Cost	$ 230,158,5000
Annualized Nodal Capital & Maintenance Cost	18,547,600
Annual Nodal Transit Operating Cost	4,500,000
Annualized Nodal Transit Capital Cost	739,800
Total Annualized Nodal Cost	**$ 23,787,400**

KEY CONSIDERATIONS

Davenport, like most cities under the current economic climate, is fiscally constrained. If the city decides to expand urban development to the NW quadrant, it will be forced to bankroll additional public infrastructure and services such as roads, transit service, libraries, schools, and public safety.

This analysis identifies how potential development scenarios might directly influence the fiscal impact on Davenport. In all three cost areas analyzed, the conventional development pattern costs nearly double the annual cost than the nodal option. From a transportation perspective, the nodal pattern clearly provides a more cost-effective approach to land development in the NW Quadrant.

These development scenarios may also generate supplementary impacts—both positive and negative. The following considerations offer insight regarding other potential cost influences and strategies for multi-modal transportation in the NW Quadrant:

- **Road development standards.** Higher vehicle speeds and traffic volumes drive up the cost of roadway construction in order to accommodate these conditions. Likewise, higher levels of vehicle miles traveled will drive up maintenance costs. Assuming that surface streets in the conventional pattern are engineered to accommodate faster and greater traffic, this may be cost-prohibitive over such a large area such as the NW Quadrant.
- **Escalating costs of materials for construction.** Material inputs and labor are increasingly becoming more expensive. This is difficult to estimate when analyzing life cycle costs, which could cause potential under-estimating. Cost increases may pose challenges to developing in a conventional pattern.
- **Greater emphasis on pedestrian environment.** Cost savings from the nodal approach creates the opportunity to concentrate streetscape enhancements in more densely populated

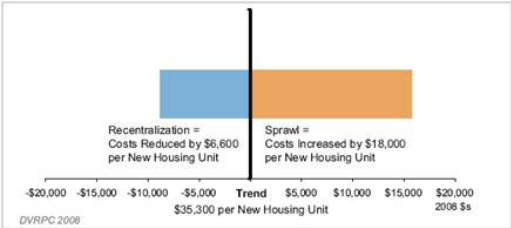
2 Todd Litman (2007). Parking Cost, Pricing and Revenue Calculator, Victoria Transport Policy Institute.

areas. Strategic allocation of public funding into compact neighborhoods will activate the NW Quadrant's retail centers and help develop pedestrian-oriented environments.

- **Capitalize on cost effective transit service through direct routing.** Operating costs and vehicle requirements for local bus service will escalate if local bus service meanders through conventional suburban street networks. Conventional street patterns also provide inadequate pedestrian access to transit which will affect potential ridership and in turn farebox revenue.

Case Studies

Delaware Valley Regional Planning Commission Regional What If Scenario



The Delaware Valley RPC underwent scenario planning to assess the impacts of future regional growth. The exercise found that compact growth would reduce costs by $3 billion over 25 years as opposed to continued outward development. Even more impressive, road building would cost $20 billion less in the compact scenario compared to the status quo development.

Internet Link: http://www.dvrpc.org/reports/08059.pdf

2009 Metro Chief Operating Officer Report (Portland, OR)



Metro, Portland's regional governmental entity, recently published its 2009 COO Report. Great emphasis is placed on prioritizing investments on existing infrastructure, cost effective transportation options, and limiting roadway expansion. The report recognizes that local governments are increasingly fiscally constrained, and continued outward growth will spread local budgets too thin.

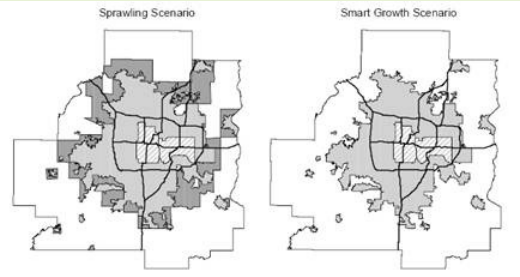
Internet Link: http://library.oregonmetro.gov/files/coo_overview_and_recommendations.pdf

Colorado Springs Infrastructure Efficiency Study

A recent University of Colorado, Colorado Springs study found that between 1980 and 2000, per capita spending on road building dropped significantly in the city of Colorado Springs. Total city expenditures for infrastructure dropped 7% adjusting for inflation. A key finding is that density efficiencies were a prime factor in arriving at cost savings as the city saw a 27% increase in density between 1980 and 2000.

Internet Link: http://www.uccs.edu/~ccps/payingforgrowth.colospgs.ccps.pdf

Twin Cities' Growth Scenarios (MN)



Minnesotans for an Energy Efficient Economy (ME^3) and the Center for Energy and Environment developed infrastructure cost scenarios for the Twin Cities region in 1999. With almost identical density benchmarks as Davenport's NW Quadrant (2.1 and 5.5 units per acre for sprawl and smart growth, respectively) this study found that costs for local roads in the sprawl scenario would cost nearly $5,000 more per housing unit than road costs in the smart growth scenario.

In fact, total infrastructure would cost $3 billion more if the region were to choose the unmanaged growth option.

Internet Link: http://www.mncee.org/pdf/tech_pubs/finalreport.pdf

Indirect Cost Analysis



Source: EPA Smart Growth, Creative Commons License 3.0



Source: dsearls, Creative Commons

As demonstrated in the *Direct Cost Analysis*, different development patterns have potential to create a variety of positive and negative impacts for the city. In addition to fiscal costs, development can affect a broad set of issues important to Davenport including congestion, public health, economic development, and the environment. This section studies the impacts of nodal and conventional development patterns particularly against the goals of developing a multimodal transportation system described in *Davenport 2025*. The sidebar on this page describes some of the key areas of benefit and cost reviewed in this report.

Figure 8 details each indirect impact area discussed in this section and some major underlying features that make up each factor. This section of the report provides an introduction to some of the common factors that might benefit or damage a community like Davenport.

The impact factors listed in Figure 8 are intertwined and often depend on each other. For example, it is impossible to view transportation-related health impacts without considering street connectivity, amount of recreational greenspace or transportation impacts on air pollution. Viewing impacts within the framework of an ecosystem, where one development pattern can impact a variety of subjects, offers additional insight when calculating the relative impacts of different types of development.

General Costs and Benefits of Different Development Patterns

Conventional Development

Benefits

- Greater privacy
- Larger lots
- Larger home sizes
- Lower mortgages
- Increased sense of safety

Costs

- Loss of greenspace
- Long commutes
- Low access to services
- High infrastructure cost
- Greater real estate cost pressure on private markets
- Higher air/water pollution
- Increased heath risk

Nodal Development

Benefits

- Range of transportation options
- Promotes active lifestyles
- Pedestrian connections to essential services
- Lively public spaces
- Lowered greenhouse gas emissions
- Diverse range of housing choices
- Preservation of greenspaces

Costs

- High initial housing costs
- Smaller lot and home sizes
- Potentially higher developer impacts
- Lower level of privacy
- Constrained parking

Source: Burchell et al., 2000; Burchell and Mukherji 2003; Litman 2009

Figure B-8 Indirect Impact Factors Related to Development Patterns

Indirect Impact	Common Factor
Traffic Generation	Induced Demand
	Trip Reduction Variables
	Non-Motorized Transportation
Transportation System Efficiency	Transportation Diversity
	Street Connectivity/ Accessibility
Transit Efficiency	Ridership/Access
	Service Quality
	Operating Costs
Equity and Social Cohesion	Housing Affordability
	Community Cohesion
Economic Development	Development Incentives
	Property Value/ Tax Revenue
	Employment/ Retail/Service Access
Health Impacts	Environmental Health Risks (Obesity, Asthma, Heart Disease, etc.)
	Traffic Injury/Death
Environmental Impacts	Climate Change/Greenhouse Gas Emissions
	Air Pollution
	Stormwater Runoff/Water Pollution
	Greenspace, farmland, wildlife preservation

The proceeding sections examine potential positive and negative impacts of the two development scenarios – conventional and nodal – as models for Davenport's NW quadrant.

References

Burchell, Robert, George Lowenstein, William Dolphin, Catherine C. Galley, Anthony Downs, Terry Moore, Samuel Seskin, and Katherine Gray Still (2000). *Costs of Sprawl—2000*. Transportation Research Board, TCRP Report 74.

Burchell, Robert and Sahan Mukherji (2003). "Conventional Development versus Managed Growth: The Costs of Sprawl". *American Journal of Public Health*, Vol. 93, No. 9, pp. 1534-1540.

Litman, Todd (2009). *Evaluating Transportation Land Use Impacts: Considering the Impacts, Benefits, and Costs of Different Land Use Development Patterns*. Victoria Transport Policy Institute, http://www.vtpi.org/landuse.pdf.

TRAFFIC GENERATION

Low density, single use development (conventional pattern) has been shown to generate higher levels of vehicle travel than nodal development patterns.

Key Findings

- A 10% increase in roadway capacity induces a 2% to 6% increase in VMT, system-wide
- Compact development can reduce per capita VMT between 20% to 40% relative to conventional development
- Those living in diverse and walkable neighborhoods drive 26% less miles per day
- Communities that promote walking and biking potentially save 5% to 15% in daily VMT

Induced Travel

New development in the NW quadrant, whether shaped by a nodal or conventional pattern, will generate new traffic demand. However, traffic generation in the nodal scenario is likely to be less pronounced because of internal trip capture from mixed use development, heightened connectivity, and greater through capacity. That is, these variables will induce trips occurring entirely within the NW quadrant, likely consisting of non-single occupant vehicle trips. Research clearly indicates that, with development held equal, increasing a transportation system's roadway capacity, stimulates further vehicle travel. A study looking at several Mid-Atlantic cities[1] found that a 10% increase in roadway lane miles would amount to between a 2% and 6% increase in daily vehicle miles traveled (VMT).

Because Davenport has only two major employment clusters any additional residential neighborhoods with poor internal connectivity will force every new trip to mix and compete with existing traffic. So, existing neighborhoods will become increasingly congested and less safe. As portrayed in the *Direct Cost Analysis* section, increases in vehicle travel could also require more frequent maintenance—a cost directly borne by the city.

Increases in VMT from conventional development in the NW quadrant would not only occur due to added system capacity and population increase, but the lack of employment and retail options in the area would force longer trips into Davenport's major activity centers. On the other hand, nodal development in the NW quadrant would minimize increases in VMT by increasing access to employment and services internally. It would also make walking, biking and transit more convenient, potentially eliminating vehicle trips.



This demonstration in Muenster, Germany conveys the space requirements for different modes

Source: City of Muenster, Germany

Trip Reduction and Infill Development

Contrary to induced travel from roadway expansion and outward development, a development scenario that connects land use and transportation would offer net *reductions* in vehicle trips. Many recent studies validate the trip reduction potential from infill development and transit-oriented development, indicating that:

- Compact development can reduce per capita VMT between 20% to 40% relative to conventional development[2]
- Denser and more compact growth scenarios generate roughly 8% less VMT than conventional growth scenarios typified by single use districts[3]
- Residents of the most walkable and diverse neighborhoods (in terms of land use mixing) drive 26% fewer miles per day than those living in sprawling areas with low accessibility[4]
- Households in single use neighborhoods drive 1,200 more miles and consume 65 more gallons of fuel per year compared to similar households in dense neighborhoods[5]

Moreover, variables of the built environment such as density, land use diversity, pedestrian-oriented urban design and access to regional destinations tend to adjust travel demand's elasticity (that is, the percent change in behavior observed from the marginal change in a variable).[6] Figure B-9 displays typical elasticities representing the percent decrease in trips and VMT for every percent increase in a variable. For example, a 1% increase in density (residential and employment) would result in a 5% decrease in both daily vehicle trips and VMT (as illustrated by the -.05 elasticity). This shows a clear correlation between community design and travel behavior.

Figure B-9 Typical Elasticities for Variables of the Built Environment

	Vehicle Trips (VT)	Vehicle Miles Traveled (VMT)
Density	-.05	-.05
Diversity (Mix)	-.03	-.05
Design	-.05	-.03
Regional Accessibility	--	-.20

Source: Ewing and Cervero (2001). Travel and the Built Environment—Synthesis

Living and working near transit stops is also proven to reduce vehicle trips.[7] The nodal pattern's potential for modest increases in density and land use mixing will provide higher quality transit service compared to the conventional development pattern. The enhanced level of transit orientation will in turn reduce trip generation rates.

How does Non-Motorized Transportation Impact Traffic Generation?

Many communities around the nation are actively using non-motorized transportation (NMT) as a strategy to ease congestion, reduce traffic generation, and improve neighborhood livability. Not only can NMT replace commute trips made by automobiles, but it would also serve as an effective mode choice for shorter errand trips (~1-2 miles), especially to nodal neighborhood centers in the NW quadrant. Surprisingly, only 5% of walking and biking trips are dedicated to commuting. In fact, 38% of bicycle and pedestrian trips are made for utilitarian reasons such as running errands and visiting friends.[8]

The nodal concept plan developed by Speck & Associates is set up to have walkable neighborhood centers at the block level that would ideally support a small grocery or convenience store. Larger, walkable retail centers would be included ensuring that a mix of basic services would be accessible by foot or bike from all parts of the newly developed area. This design offers a land use and roadway environment that taps into non-commute NMT trip demand—potentially reducing VMT by 5% to 15%.[9]

Portland, Oregon

Portland, OR has quantified the trip reduction benefits of walking and biking using the Connecting Green model developed by Metro and Portland State University's Center for Transportation Studies. Using this model and assuming that areas with pedestrian-oriented land use environment and greater capital investment in bicycle and pedestrian facilities will see larger shifts in NMT mode share, the Portland region is estimated to observe a 4% increase in bicycling mode share and 0.5% shift in pedestrian mode share by 2035. With these assumptions in mind, there will be 454,000 less VMT per day and 246,000 fewer automobile trips. Dedicating more road space to NMT and pedestrian accessibility are central factors in these VMT and trip reduction benefits.

Source: Metro Blue Ribbon Committee for Trails (2008)



Source: Nelson\Nygaard

References

1 Fulton, Lewis M., Robert Noland, Daniel Meszler, and John Thomas (2000). "A Statistical Analysis of Induced Travel Effects in the U.S. Mid-Atlantic Region". Journal of Transportation and Statistics. April 2000, pp. 1-14.

2 Ewing, Reid, Keith Bartholomew, Steve Winkelman, Jerry Walters, and Don Chen (2008). *Growing Cooler: Evidence on Urban Development and Climate Change.* Urban Land Institute.

3 Frank (2006), cited in *Growing Cooler* (2008)

4 Frank, Lawrence, Brian Stone Jr., and William Bachman. "Linking Land Use with Household Vehicle Emissions in the Central Puget Sound: Methodological Framework and Findings." Transportation Research Part D 5, 3: 173-96.

5 Golob, Thomas F. and David Brownstone (2005). "The Impact of Residential Density on Vehicle Usage and Energy Consumption", University of California Energy Institute Energy Policy and Economics Working Paper Series, http://escholarship.org/uc/item/8zk9d9sb.

6 Ewing, Reid and Cervero, Robert (2001), "Travel and the Built Environment: A Synthesis," Transportation Research Record 1780, Washington, DC: Transportation Research Board, pp 87-114.

7 Cervero, Robert and GB Arrington (2008), *Effects of TOD on Housing, Parking, and Travel. Transportation Research Board,* TCRP Report 128.

8 Gallup (2008). National Survey of Bicyclist and Pedestrian Attitudes and Behavior, U.S. Department of Transportation's National Highway Traffic Safety Administration and the Bureau of Transportation Statistics, found at: www.nhtsa.dot.gov/staticfiles/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/810971.pdf.

9 Litman, Todd (2009). *Win-Win Emission Reduction Strategies.* Victoria Transport Policy Institute, http://www.vtpi.org/wwclimate.pdf.

TRANSPORTATION SYSTEM EFFICIENCY

When combined costs of personal operations and public infrastructure and operations are calculated, non-motorized transportation modes prove tremendously cost effective. Developing transportation systems that allow growth in these modes of travel benefits the City (reduced roadway expansion, decreased maintenance costs, etc.) as well as the private individual (reduced household spending on transportation) and the local economy (personal household savings on fuel can be reinvested in the community). Development of a diverse and well connected transportation system can pay dividends over time.

Key Findings

- Suburban street networks observe far less pedestrian activity than well-connected neighborhood street networks
- Mode diversity helps to relieve congestion and offers choices to consumers
- The estimated annual cost of a parking space ranges from $800 to $4,000

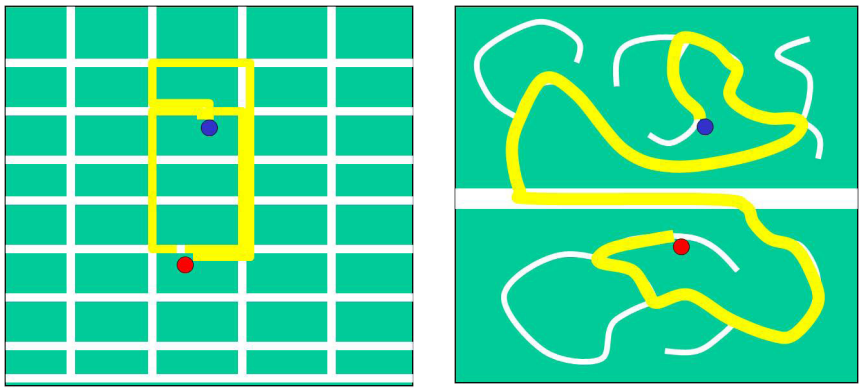
Street Connectivity

An efficient transportation system offers a high degree of access to all roadway users, including pedestrians, cyclists, transit users and automobiles. A key component that defines access is the degree of street connectivity found on a roadway network. Conventional street networks are typically characterized by "loops and lollipops", while nodal development patterns often demonstrate the classic grid pattern (See Figure 10). Because a gridded street pattern offers a greater density of intersections, *all* modes are offered paths of least resistance and a variety of routes to destinations. This is particularly important for emergency vehicle access. Suburban road networks consist of a large number of street ends (i.e. cul-de-sacs), which increase driving distances and greatly reduce of convenience to walking and bicycling to destinations.

Research clearly links high street connectivity and greater access to neighborhood centers to higher levels of walking and biking. A study covering several Puget Sound neighborhoods found that well-connected neighborhoods with a direct and continuous pedestrian network averaged 67% higher pedestrian trips than neighborhoods with low connectivity indicators.[1] Another study found that higher intersection density (a key indicator of street connectivity) can increase non-work pedestrian trips by 2.8% for every 10% increase in intersection density.[2] A grid pattern in the NW quadrant will allow for greater intersection density in relation to suburban street networks, affording residents greater accessibility and directness to neighborhood centers. In turn, additional bikes and pedestrians would place little wear on street facilities.

Grid patterned subdivision does take away the more isolated suburban style property that some residents value.

Figure B-10 Street Network Typologies



A traditional grid network (left) offers a variety of direct routes to destinations, whereas a conventional roadway network (right) creates indirect routes that extend travel time.

Source: Nelson\Nygaard

Transportation Diversity

Transportation diversity refers to the variety of modes (e.g. walk, bike, bus, automobile), transportation costs, services (i.e. transit, paratransit, carsharing), and connectivity (e.g. convenient and safe pedestrian access to a local grocery store or transportation hub) that is provided in a community. A community that provides few options outside of the automobile is said to have low transportation diversity. Transportation diversity increases system efficiency because the greater the level of options, the better each mode functions, which creates more efficient travel patterns.[3] This leads to reduced congestion, facility maintenance costs, and transportation costs borne on the user.



Bus, bike, walk—an efficient transportation system is a diverse system

Source: Nelson\Nygaard

In addition, transportation diversity affords consumers a range of choices and preferences. Even though some households prefer car travel to any other mode, it is important to provide options for those people that enjoy walking and biking for economic and health reasons. Similarly, some commuters prefer taking transit as a way to decompress after long work day or even to read a book.

Parking Strategies

On-street parking located along a grid network is the most efficient way to provide both residential and commercial parking supply for the NW quadrant. It promotes more efficient development of land and increase the pedestrian nature of the area. On-street parking separates pedestrians from vehicle traffic and helps calm traffic. In contrast, off-street parking is expensive—each off-street parking space has an estimated annualized cost of $800 to $4,000 (depending on type and location), when accounting for land, construction, and operating/ maintenance costs. The cost of off-street parking is reflected in housing costs. It is also a less efficient and beneficial use of land, such as compared to open space.[4]



Excessive parking is often underutilized and an inefficient use of land

Source: Nelson\Nygaard

Parking policies that could further support more efficient parking provision for mixed use or multifamily housing development in the NW quadrant include allowing the on-street parking supply to partially satisfy parking requirements for new development or requiring that the cost of parking be shown as an optional, separate line item in rental leases or unit sales.

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TRANSIT EFFICIENCY

Development in the NW quadrant will impact CitiBus' service efficiency if the development scenario chosen focuses on unmanaged growth and a discontinuous street grid. In cities that have succeeded in growing while limiting the growth of vehicle trips, a fundamental component of their success has been improved transit services. Transit's efficiency can be improved in several ways, including:

- Increasing frequency of service
- Improving reliability and on-time performance
- Reducing travel time and travel time variability

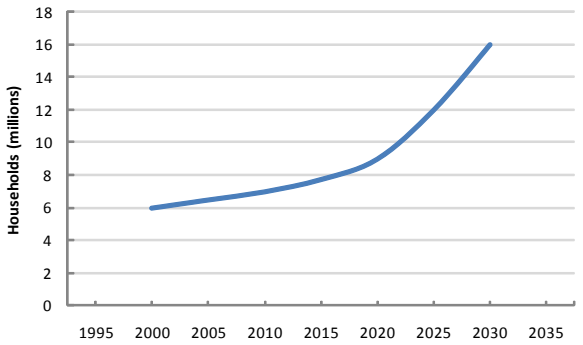
Key Findings

- Expanded coverage for both development scenarios will likely decrease service frequency
- Circuitous street networks affect ridership and on-time service
- Suburban development disperses potential riders

These measures of effectiveness would best be met if a transit-supportive land use environment is created in the NW quadrant. Providing transit service to sprawling developments in the NW quadrant would disperse coverage causing lower service frequencies and increased travel time. In addition, ridership would be affected if the street network does not provide easy access to transit stops. A recent TCRP report[1] found the following relationships between bus service quality and land development:

- Suburban development makes service uneconomical as the ridership base is too far dispersed
- Circuitous street networks are a deterrent to walking to bus stops and obstruct schedule adherence

Figure B-11 Projected Demand for Housing in Transit Zones (United States)



Source: Center for Transit Oriented Development (2006)

Travel time is a key indicator for increasing ridership. In the Puget Sound area, increasing the in-vehicle travel times for non-work transit trips correlated with a 2.3% decrease in ridership.[2] This is relevant to the NW quadrant as relative travel times will increase due to indirect routing if the area is developed in a conventional pattern.

The nodal concept better connects land use and transportation, which will increase transit's performance and cost effectiveness. In general, research indicates transit's productivity and ridership is positively influenced by compact development, especially along transit lines.[3] By centering transit along key dense transit corridors, transit can operate at consistent speeds and generate higher ridership potential. In return, transit produces greater farebox revenue recovery and lower subsidies per passenger.

Demand for living in areas within walking distance of transit is projected to increase, as depicted in Figure B-11. Estimated demand nationwide will grow from 6 million households to 16 million households between 2000 and 2030—nearly a threefold increase.[4] Davenport has the opportunity to capitalize on this burgeoning trend by pursuing nodal development patterns in the NW quadrant, allowing CitiBus to deliver efficient transit service.

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This section examines a few ways that development patterns and transportation orientation impact the quality and affordability of neighborhood life.

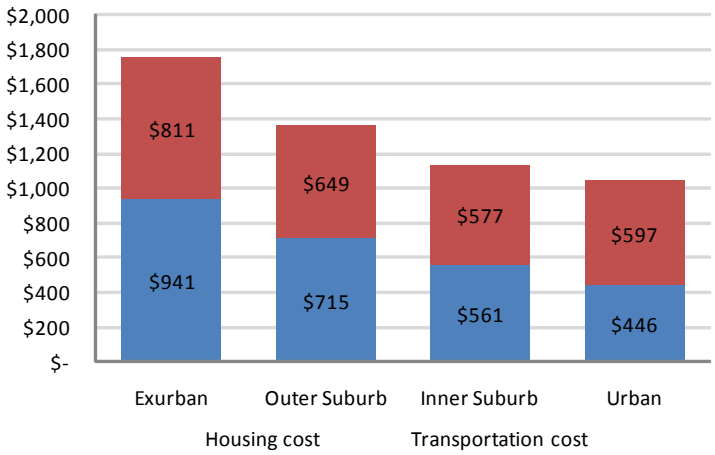
Key Findings

- Affordability increases as development patterns become more dense and transportation options increase.
- The average American family spends $8,220 annually to operate a car.[1,2] It only costs $308 annually to maintain a commuter bicycle. [3]
- The combined cost of housing and transportation significantly burdens low-income families living far from urban centers.
- High levels of cohesion are found in both automobile-oriented communities and compact neighborhoods.

Housing Affordability

Housing affordability and transportation costs have a direct impact on residents' disposable income and, for lower income households, the ability to afford healthy food and other basic life needs. Housing costs, defined by the ability to pay for a mortgage or lease payments, have typically formed the benchmark for neighborhood affordability. However, lower housing costs at more distance locations correspond to higher transportation costs. This relationship is magnified by different development patterns. A recent study conducted in the Minneapolis-St. Paul area found significant variation in affordability as density and access to transportation options increase (see Figure B-12).[4] Affordability clearly increases as development patterns become denser. This approach to assessing affordability exposes the positive effects density and multimodal transportation has on a family's disposable income.

Figure B-12 Housing and Transportation Costs in Four Minneapolis/St. Paul Neighborhoods



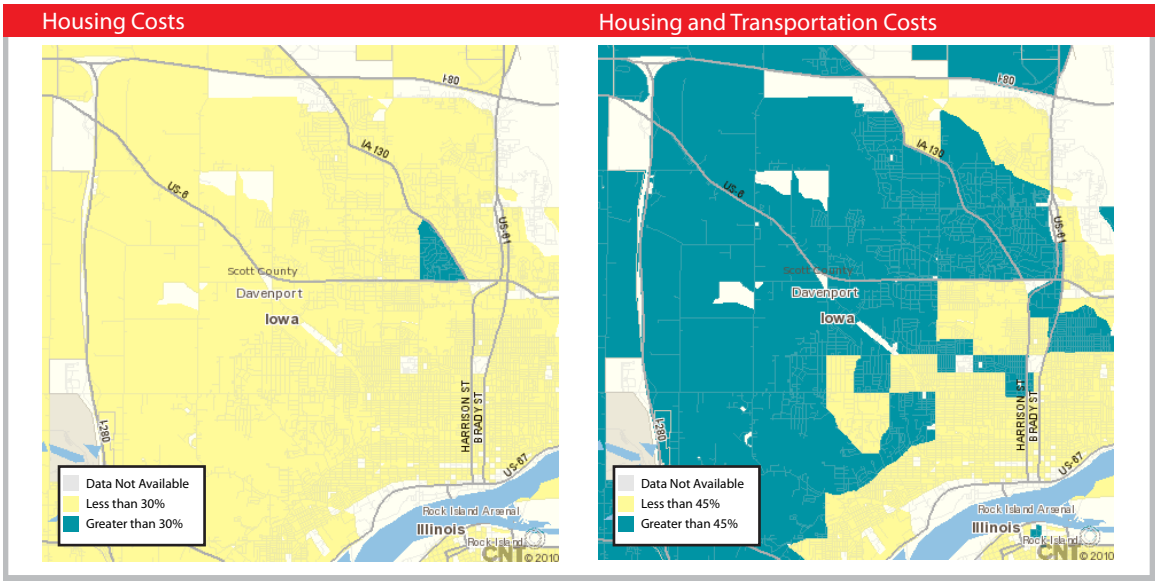
Note: Housing costs only include mortgage payments. No rental payments were factored in.

Source: Center for Transit Oriented Development; Center for neighborhood Technology (2006)

Newly published testimony by the U.S. Department of Housing and Urban Development validates that buying "affordable" homes far removed from jobs and services is an unsustainable practice.[5] Figure 13 indicates Davenport's level of affordability for 1) housing costs alone and 2) the combined cost of housing and transportation. Yellow signifies areas where housing is affordable, while blue represents areas where housing is unaffordable.

Similarly, parking requirements play a significant role in affordability. Where cities are able to lower trip generation, parking impact fees can be reduced, thereby reducing the costs to future residents to whom development impacts fees are passed on. In the same way, the added costs of building parking in suburban areas with high parking ratios reduce developer profit margins and the chance that they will construct affordable housing.[6]

Figure B-13 Housing and Transportation Costs as a Percentage of Income



Note: While housing alone is traditionally deemed affordable when consuming no more than 30% of income, CNT has defined an affordable range for housing and transportation as the combined costs consuming no more than 45% of income.

Source: Center for Neighborhood Technology (2010, See more at http://www.htaindex.cnt.org)

Opportunities to Strengthen Community Cohesion

Dense, urban settings regularly provide the backdrop for pedestrian interactions. In many suburban communities, social connections are increasingly being lost due to "geographic segregation".[7] Roadway design also affects community cohesion. A study in several Boston neighborhoods found that people limit social interaction by staying home if they live close to streets with heavy traffic, high vehicle speeds or high truck volumes.[8] Human-scaled streets that calm traffic, provide pedestrian amenities such as benches and street trees, and offer high levels of connectivity are essential building blocks for community cohesion.[9],[10] Some studies have found higher levels of cohesion in automobile-oriented communities; however, these findings relate to how people tend to locate in areas next to households with common interests and backgrounds, rather than a result of the physical environment.[11]



Lively public spaces help produce social interaction.

Source: Nelson\Nygaard

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ECONOMIC DEVELOPMENT

Key Findings

- Increasing trend of younger generations and Baby Boomers preferring compact, walkable communities
- Pedestrian-friendly, nodal development helps to increase property value
- Traffic calmed neighborhood streets can increase property values up to 20%
- Employers and young professionals tend to locate in dense, walkable communities

Homebuilder surveys from 2007 show that 65% of homebuyers prefer inner and outlying suburbs.[1] However, this trend of buying homes in suburban neighborhoods far removed from retail centers and schools is waning and these markets have been slow to return following the recent housing crisis. Even in traditionally suburban areas, people are now looking for urban living and amenities. While nobody full understands what the suburban development market will look like in 10 years, many experts agree that:

- Younger generations will remain renters in urban areas farther into their income earning years, while baby boomers prefer mixed use walkable environments that maximize accessibility[2]
- Adults 45 years and older are shifting housing location preference towards denser residential areas[3]
- Demand for rental and multi-family housing will swell as homeowner rates drop[4]
- Real estate development will tend to gear towards dense, mixed-use "suburban town centers", rather than neighborhoods in suburban subdivisions[5]

Research indicates that both single-family residential subdivisions and walkable neighborhoods pay economic dividends. Suburban development can increase local income and tax revenues as well as create jobs.[6] Likewise, compact, accessible, mixed use districts throughout the U.S. foster employment, economic productivity, and tax revenues, as well.[7] Property values begin to rise as neighborhoods become more pedestrian-friendly and increase access to goods and services.[8] For example, traffic calming and other speed management strategies can increase residential property values by up to 20%.[9]

Pedestrian-friendly design also strengthens the retail market. Studies have shown increases in sales tax revenue in commercial areas transformed into pedestrian-oriented districts. A notable case is Lodi, CA where "Main Street" sales tax revenues increased 30% after pedestrian improvements were made.[10]

Lowering parking requirements and impact fees create an incentive for development. Parking represents 10% of building costs paid by developers.[11] Minimizing this burden will make development more attractive in the NW quadrant.

Furthermore, companies are reevaluating where they locate offices. Knowledge-driven and service-oriented firms are attracted to thriving centers where land use patterns support locally serving retail and walkable streets.[12] The Urban Land Institute stresses that employers are moving away from the drive to work model by preferring alternative modes and integrating everyday life into the workday (See Figure B-14).[13]

Figure B-14 Shifting Employment Location Trends

OUT	IN
Suburban/exurban campus locations	Locations close to home
Corporate campuses	Mixed-use developments
Kiss-and-ride	Live, work, play, and ride
Location near chief executive's home	Location convenient for workers
Free Parking	Free transit passes
Driving to lunch	Walking to lunch
Errands on the way home	Errands at lunchtime
Commuting car	Fuel-efficient station car
Quality of the workplace	Quality of life

Source: Urban Land Institute (2003)

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HEALTH IMPACTS

The built environment is strongly correlated with a variety of health related impacts ranging from obesity, diabetes, heart disease, cancer and other respiratory issues. Similarly, roadway design that promotes high vehicle speeds presents significant risks for injury and death. This next section describes how health impacts are magnified in conventional development patterns and how nodal development negatively correlates with these risks.

Key Findings

- Sprawl is associated with high levels of physical inactivity and chronic disease
- Community development patterns and traffic speeds are linked with levels of pedestrian injuries and death
- Focusing on alternative transportation is proven to decrease health risk and health care costs

Community Form

Community form is a likely predictor of health risk. Studies nationwide find that development patterns with poor connectivity are significantly correlated with physical inactivity, obesity, hypertension and other diseases.[1] Key influential studies have found:

- Obesity is linked to low land use mix, greater daily time spent in cars, and lower distance walked per day[2]
- If you spend an hour per day in an automobile, you are 6% more likely to be clinically obese[3]
- A 1% decrease in automobile use can reduce obesity by 0.4%[4]

These results highlight the importance of walkable and accessible neighborhoods to mitigating serious health risk.

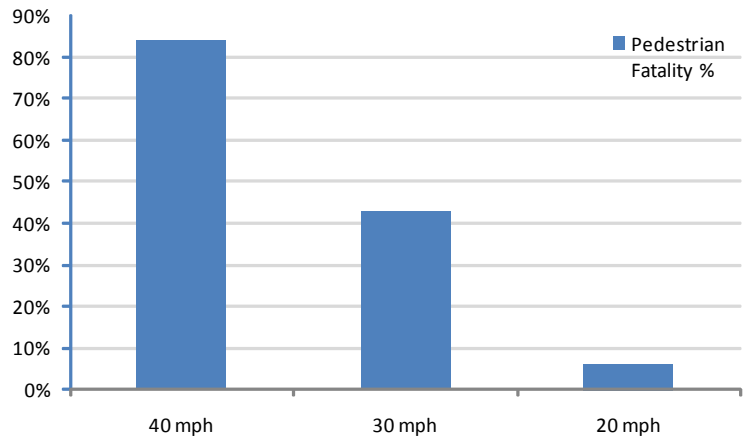
Arterial Streets

Proximity to arterials that carry large volumes of traffic is a significant deterrent to physical activity. Moreover, sprawling development patterns are directly related to higher rates of automobile related accidents and pedestrian deaths (Figure 15), while compact development decreases the rate of accidents. Research indicates that:

- Living near high levels of auto traffic can create a 5% increase in body mass index (BMI) over time[5]
- For every 1% increase in the sprawl index (denoting an *increase* in compactness), all mode traffic fatality rates decreased by 1.49%, while pedestrian fatalities decreased by 1.47%[6]

The likelihood for pedestrian and driver injury and death would decrease if the NW quadrant's street network is designed for slower speeds.

Figure 15 Traffic Speed and Probability for Fatality[7]



Increasing speeds increase the likelihood of pedestrian fatality.

Alternative Transportation

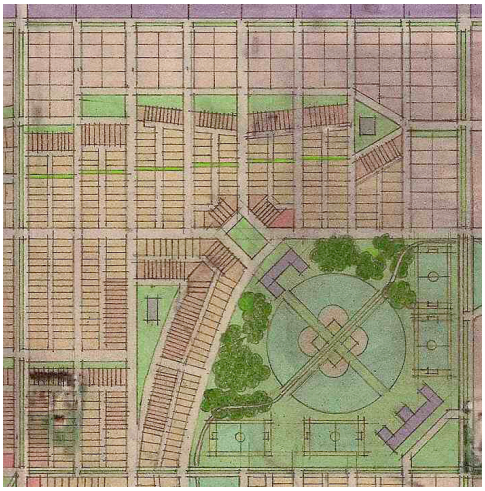
A well developed and safe street network that includes pedestrian and bicycle facilities can contribute to healthier residents, including school aged children. People living in compact neighborhoods walk, bike, and use transit more than their suburban counterparts, and they have lower rates of obesity. People that walk to transit stops are more likely to meet their daily requirements for physical activity.[8] Active transportation also decreases the likelihood of obesity, diabetes, and high blood pressure,[9] and is associated with an 11% reduction in cardiovascular risk.[10] The decreased health risks can also equate to real health care savings in Davenport. For example, a study estimates that residents of Portland, Oregon will save $64 million in health care costs by 2017 because of their increase in bicycle mode share stemming from bicycle infrastructure investments.[11] That is $544 per capita annually for those that ride at least 15 minutes per day.

The nodal concept plan for the NW quadrant offers a prime opportunity for active transportation and enhanced recreational activity. By developing a greenway loop that connects neighborhood amenities, residents will be more inclined to walk and bicycle to destinations. By locating several smaller scale schools throughout the area and connecting them along the greenway loop, school children are provided with safe routes to and from home. Clustering development into neighborhood nodes offers families the opportunity to live active and healthy lives.



Nodal development and neighborhood-scaled streets positively influence active lifestyles.

Source: Nelson\Nygaard



A highly connected grid and human-scaled blocks will greatly influence the way residents in the NW Quadrant access amenities and remain active.

Source: Speck & Associates

Health Impact Analysis in Oregon

In 2009, Oregon Health & Sciences University and Upstream Public Health conducted a health impact assessment (HIA) on a potential statewide VMT reduction strategy. The HIA was designed to show how future policies would impact the health of Oregonians. The study targeted five strategies that would significantly improve air quality, increase levels of physical activity and reduce car collision injuries and fatalities for all roadway users. The five strategies include:



Source: Flickr Creative Commons

- Increasing densities in neighborhoods
- Requiring highly connected, mixed use environments in new developments
- Improving pedestrian infrastructure in neighborhoods
- Expanding the coverage of public transportation
- Enforcing employee parking fees and a VMT tax based on vehicle use

The HIA found "pathways" connecting each health risk mitigation strategy with a change in health. For example, by increasing transit access, transit use would increase along with the physical activity exerted to arrive at a bus stop. In return, diabetes, stroke, heart disease, various cancers and mortality would decrease. HIAs are an effective method to test how potential policies and development might exacerbate or alleviate health risk.

Source: Upstream Public Health and Oregon Health & Sciences University, 2009

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ENVIRONMENTAL IMPACTS

Arguably the most apparent impact incurred by conventional development pattern is environmental degradation. Below is a brief discussion communicating how development patterns impact environmental issues such as climate change, air quality, water pollution, and greenspace loss.

Key Findings

- A household that moves from a conventionally built neighborhood to a compact neighborhood reduces their greenhouse gas emissions by 43%
- Increases in walkability and density decrease emissions from a variety of pollutants.
- Devoting less land to development and surface streets improves water quality.

Climate Change and GhG emissions

The transportation sector, often influenced by land use inefficiencies, contributes to roughly 25% of greenhouse gas (GhG) emissions in Iowa.[1] That being said, different development patterns contribute varying levels of GhG emissions:

- A household that moves from a poorly connected neighborhood to a walkable neighborhood well-served by transit and accessible to jobs and amenities can decrease their GhG emissions by 43%.[2]

Varying densities in suburban areas can also play an influential role in GhG emissions. A recent study focused on the Chicago region found that suburban transit-oriented development yielded 10% less transportation-related GhG emissions than typical suburban subdivisions.[3] Davenport's NW quadrant could see similar differences in emissions depending on the development pattern.



Nodal development and neighborhood-scaled streets positively influence active lifestyles.

Source: Nelson\Nygaard

Air Pollution

The evidence regarding the relationship between community development pattern and air quality is compelling. Air pollution has serious implications for health risks such as asthma, respiratory disease, and even cancer, as discussed in the health impact section.

Conventional development patterns exhibit higher levels of transportation-related pollution than nodal development patterns, demonstrated by the following research findings:

- A 5% increase in walkability—attributable to good urban design and community pattern—results in 6.5% fewer miles driven, 5.6% fewer grams of NO_x emitted, and 5.5% fewer grams of volatile organic compounds (VOCs) emitted[4]
- Pedestrian-friendly, compact communities well served by transit produced far less vehicle emissions than sprawling suburban areas[5]



Inefficient land use exacerbates the effects of climate change.

Source: Dan Burden, www.pedbikeimages.org

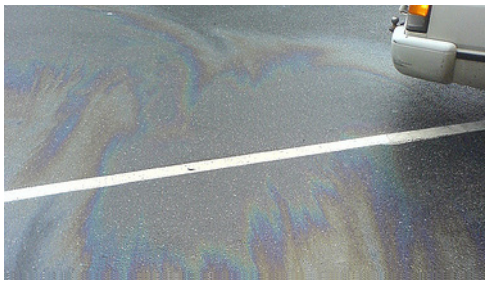


Source: Ugly Hugo, Flickr Creative Commons

ENVIRONMENTAL IMPACTS

Water Pollution

Sprawling development patterns increase water runoff carrying motor oil, anti-freeze, brake fluid and other vehicle-related discharge on impervious pavement surfaces. They also decrease the ability for ground water to recharge aggravating the impact of a sustained serious drought.[6] Conversely, efficient development that preserves greenspace allows for natural cleansing and recharging of stormwater in underground aquifers, thus reducing the impact of drought. Nodal development patterns decrease the amount of impermeable roadway and parking surfaces—common contributors to water pollution—and help preserve absorptive greenspace.



Impermeable surfaces like roads and parking lots facilitate polluting local rivers.

Source: Craig Anderson, Creative Commons Attribution License 2.0

Greenspace and Land Conversion

Urban and rural greenspaces provide measurable benefits to communities such as providing aesthetic enhancements, recreational amenities, wildlife habitats, and sources of community pride. However, these benefits are being endangered by conventional outward development—resulting in loss of open space and natural habitat.[8] Compact development is a key strategy for managing habitat loss and preserving greenspace. Nodal development would allocate land conversion strategically in parts of the NW quadrant, while maintaining the community and environmental benefits of greenspace. The rolling hills in Davenport's NW Quadrant provide ample opportunity for large track and continuous greenspace serving as a valuable future community amenity.

In Colorado, benefits derived from greenspaces provide a 6:1 return to investment ratio accounting for agricultural crop production, flood control, storm water filtration, recreation, wildlife habitat, and scenic views[7]



Impermeable surfaces like roads and parking lots facilitate polluting local rivers.

Source: Nelson\Nygaard

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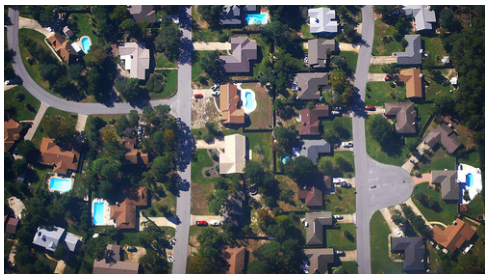
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8 Ewing, Reid and John Kostyack (2005). *Endangered by Sprawl: How Runaway Development Threatens America's Wildlife*. Funded by the National Wildlife Foundation, Smart Growth America, and Nature Serve. http://smartgrowthamerica.org/ebsreport/EndangeredBySprawl.pdf.

KEY CONSIDERATIONS

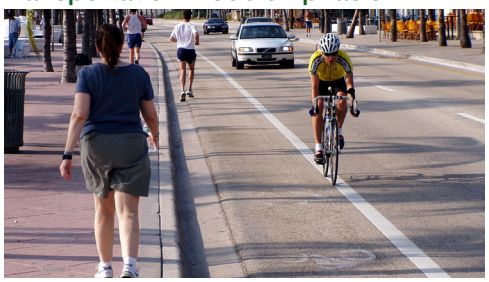
Davenport is faced with a unique challenge as the NW quadrant of the city opens up for development. The evidence shown above identifies how different development scenarios will impact the city's transportation system, economy, health, environment, and overall quality of life. Some of the key considerations that need to be made in order to strike a balance between development costs and benefits include:

The form of the future roadway network



Source: Miguel Contreras, Flickr Creative Commons

Transportation mode emphasis



Source: Dan Burden, www.pedbikeimages.org

Investment in the pedestrian environment



Source: Nelson\Nygaard

Levels of land use mixing and density



Source: EPA Smart Growth, Creative Commons License 3.0

Amount of greenspace and agricultural land preserved



Source: meaduva, Creative Commons License 2.0

Figure B-16 on the following page summarizes some of the indirect impacts that Davenport could sustain according to the type of community design it chooses to develop.

Figure B-16 Summary of Impacts for Nodal and Conventional Development

Indirect Impact	Common Factor	Conventional	Nodal
Traffic Generation	Induced Travel	Creates initial congestion relief; induces vehicle trips and vehicle miles traveled (VMT); increases transportation related costs (i.e. parking, maintenance)	Induced travel is far less pronounced; VMT decreased by increasing access to employment and services as well as making walking, biking and transit more convenient
	Trip Reduction Variables	Automobile trips increase as density and land use mixing decrease	Density, mixed uses and pedestrian-friendly design reduce vehicle miles traveled by automobiles and often total trips generated
	Non-Motorized Transportation (NMT)	Less likely to walk or bike as a form of transportation due to lack of connections and required travel on major arterial streets	Connectivity and complete street designs facilitate NMT
Transportation System Efficiency	Transportation Diversity	Land uses and transportation system rely on automobile travel	Land use mixing and intensity promote use of several transportation modes (walk, bike, transit, car)
	Street Connectivity/ Accessibility	Disconnected street network increases travel time for all modes; promotes single occupant vehicle use	Highly connected street network decreases travel time and increases access for all modes
Transit Efficiency	Ridership/Access	Dispersed population diminishes ridership pool	Higher residential/job densities positively influence ridership
	Service Quality	Decreases service frequency and increases travel times due to need for circuitous routing; often forces one-way loop routes which are unattractive to riders	Compact development increases transit's productivity by allowing buses to serve most residents without diverting from major arterials
Equity and Social Cohesion	Housing + Transportation Affordability	Housing distant from services increases transportation costs; on average owning and maintaining one vehicles costs a household $9,000 per year	Denser development increases affordability by locating closer to jobs and services and by lowering transportation costs
	Community Cohesion	Greater emphasis on the private realm can decrease social interactions	Increases the chances for social interaction; greater emphasis on the public realm
Economic Development	Development Incentives	Emphasizing automobile travel will increase parking requirements for developers, potentially making development less attractive	Decreased parking requirements due to presence of transportation options can reduce development costs and increase the viability of small local businesses
	Property Value/ Tax Revenue	Increases in property value and tax revenue highly dependent on local housing and retail markets	Property values and sales tax revenues increase in walkable and accessible neighborhoods
	Employment/ Retail/Service Access	Initial increase in job creation; lack of access to services and employment does not attract employers, young professionals, or older populations	More likely to attract employers, young professionals, and older populations because of dense, walkable and transit-served nature
Health Impacts	Environmental Health Risks (Obesity, Asthma, Heart Disease, etc.)	Built environment increases the likelihood of physical inactivity, obesity and various diseases	Nodal development promotes active lifestyles and walking to destinations, thereby decreasing levels of obesity and other diseases
	Traffic Injury/Death	Severity of traffic incidents increase due to speeds and roadway design	Number of traffic incidents increases, but injuries and deaths decrease due to lower vehicle speeds

Indirect Impact	Common Factor	Conventional	Nodal
Environmental Impacts	Climate Change/GhG Emissions	Increased VMT leads to higher levels of GhG emissions	Associated with most cost-effective emissions reductions
	Air Pollution	Low-density land use environment encourages driving, which increases transportation-related air pollution	Less reliance on vehicles and lower VMT, decreases the amount of air polluting emissions
	Stormwater Runoff/Water Pollution	Higher levels of impervious surfaces lead to increased stormwater runoff and polluted water	Less roadway and more greenspace creates less stormwater runoff
	Induced Travel	Creates initial congestion relief; induces vehicle trips and vehicle miles traveled (VMT); increases transportation related costs (i.e. parking, maintenance)	Induced travel is far less pronounced; VMT decreased by increasing access to employment and services as well as making walking, biking and transit more convenient

Appendix C **Traffic Analysis**

This appendix provides detailed results of traffic analysis performed using the Synchro micro-simulation software to develop scenarios for the one-way to two-way conversion projects recommended by Davenport in Motion, and intersection and safety improvements along West Kimberly Road. A summary of the traffic analysis is provided in the descriptions and illustrations of each project in Chapter 8.

Traffic analyses are provided for the following projects:

- **Harrison and Brady Streets, Phase 1 (S-1):** Conversion from one-way to two-way configuration from River Drive to Central Park Avenue. Two options were analyzed:
  - Balanced, one travel lane in each direction, with a center turn-lane
  - Imbalanced, two travel lanes in the current direction and one travel lane in the opposing direction, with a center turn-lane
- **3rd and 4th Streets (DS-17):** Conversion from one-way to two-way configuration from Telegraph Road to River Drive[1]
- **West Kimberly Road (S-4a):** Intersection upgrades and safety improvements at Division and Marquette Streets

For each project, the existing and proposed roadway configuration was analyzed using both current year (2009) traffic counts and projected future year (2030) traffic volumes for both AM and PM peak periods, including intersection capacity analysis. The results are organized as follows for each project:

- 2009 (Current Year) Traffic Volumes
  - Existing, AM and PM Peak Hour
  - Proposed, AM and PM Peak Hour
- 2030 (Projected Future Year) Traffic Volume
  - Existing, AM and PM Peak Hour[2]
  - Proposed, AM and PM Peak Hour

Note: The bookmarks in the electronic (PDF) version of this appendix can be used to navigate betweeen each analysis section. The PDF can be downloaded from the City of Davenport website at http://www.cityofdavenportiowa.com/egov/docs/1253538803287.htm

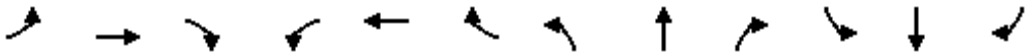
1 For the recommended one- to two-way conversion of 3rd and 4th Streets, traffic counts for intersections along 3rd and 4th Streets were only available at Brady and Harrison Streets and at 3rd Street and River Drive. Traffic volumes were not available for the intersection of 4th Street and River Drive, so the performance of this intersection was assumed to be similar to the performance of 3rd Street and River Drive.

Brady-Harrison Phase 1

Two-Way Conversion
Synchro Analysis Reports

Brady-Harrison Phase 1

Existing One-Way Streets
2009 AM Peak Hour Traffic

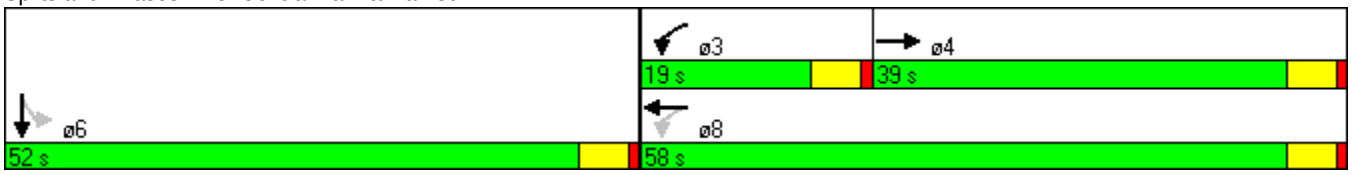


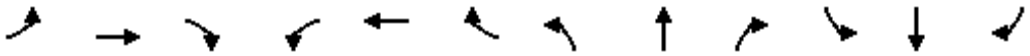
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	289	54	50	148	0	0	0	0	87	975	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86
Frt		0.976									0.989	
Flt Protected				0.950							0.996	
Satd. Flow (prot)	0	3454	0	1770	1863	0	0	0	0	0	6312	0
Flt Permitted				0.251							0.996	
Satd. Flow (perm)	0	3454	0	468	1863	0	0	0	0	0	6312	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20									19	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2320			1712			1008			640	
Travel Time (s)		52.7			38.9			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	314	59	54	161	0	0	0	0	95	1060	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	373	0	54	161	0	0	0	0	0	1247	0
Number of Detectors		1		2	1					1	1	
Detector Template												
Leading Detector (ft)		5		75	5					50	50	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		5		50	5					50	50	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)				69								
Detector 2 Size(ft)				6								
Detector 2 Type				Cl+Ex								
Detector 2 Channel												
Detector 2 Extend (s)				0.0								
Turn Type				pm+pt						Perm		
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Detector Phase		4		3	8					6	6	
Switch Phase												
Minimum Initial (s)		4.0		4.0	4.0					4.0	4.0	
Minimum Split (s)		21.0		9.0	21.0					21.0	21.0	
Total Split (s)	0.0	39.0	0.0	19.0	58.0	0.0	0.0	0.0	0.0	52.0	52.0	0.0
Total Split (%)	0.0%	35.5%	0.0%	17.3%	52.7%	0.0%	0.0%	0.0%	0.0%	47.3%	47.3%	0.0%
Maximum Green (s)		34.0		14.0	53.0					47.0	47.0	
Yellow Time (s)		4.0		4.0	4.0					4.0	4.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0
Lead/Lag		Lag		Lead								

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Recall Mode		None		None	None					C-Max	C-Max	
Walk Time (s)		5.0			5.0					5.0	5.0	
Flash Dont Walk (s)		11.0			11.0					11.0	11.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)		16.7		27.6	27.6						72.4	
Actuated g/C Ratio		0.15		0.25	0.25						0.66	
v/c Ratio		0.69		0.25	0.34						0.30	
Control Delay		48.4		48.4	50.1						9.0	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		48.4		48.4	50.1						9.0	
LOS		D		D	D						A	
Approach Delay		48.4			49.7						9.0	
Approach LOS		D			D						A	
Queue Length 50th (ft)		125		32	98						104	
Queue Length 95th (ft)		169		68	156						148	
Internal Link Dist (ft)		2240			1632			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)		1081		285	898						4160	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.35		0.19	0.18						0.30	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 21.8		Intersection LOS: C	
Intersection Capacity Utilization 44.7%		ICU Level of Service A	
Analysis Period (min) 15			

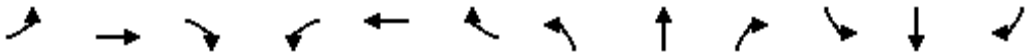
Splits and Phases: 5: Central Park & Harrison





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	289	54	50	148	0	0	0	0	87	975	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.95		1.00	1.00						0.86	
Frt		0.98		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		3455		1770	1863						6313	
Flt Permitted		1.00		0.25	1.00						1.00	
Satd. Flow (perm)		3455		468	1863						6313	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	314	59	54	161	0	0	0	0	95	1060	92
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	356	0	54	161	0	0	0	0	0	1240	0
Turn Type				pm+pt						Perm		
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		16.7		28.6	28.6						71.4	
Effective Green, g (s)		16.7		28.6	28.6						71.4	
Actuated g/C Ratio		0.15		0.26	0.26						0.65	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		525		203	484						4098	
v/s Ratio Prot		c0.10		0.02	c0.09							
v/s Ratio Perm				0.05							0.20	
v/c Ratio		0.68		0.27	0.33						0.30	
Uniform Delay, d1		44.1		31.7	33.0						8.4	
Progression Factor		1.00		1.62	1.52						1.00	
Incremental Delay, d2		3.5		0.7	0.4						0.2	
Delay (s)		47.6		52.0	50.4						8.6	
Level of Service		D		D	D						A	
Approach Delay (s)		47.6			50.8			0.0			8.6	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

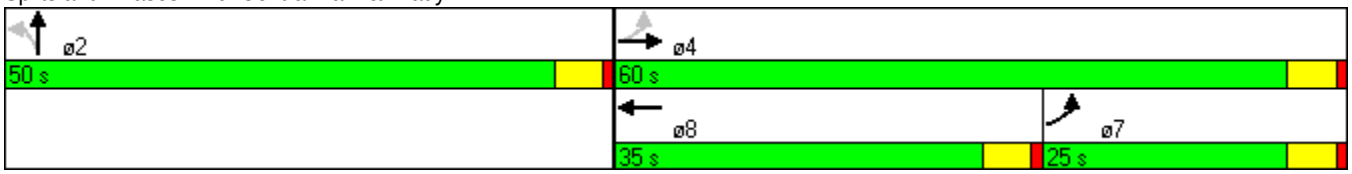


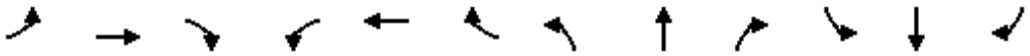
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	219	239	0	0	175	76	64	796	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.86	0.86	0.86	1.00	1.00	1.00
Frt					0.954			0.997				
Flt Protected	0.950							0.996				
Satd. Flow (prot)	1770	1863	0	0	3376	0	0	6363	0	0	0	0
Flt Permitted	0.551							0.996				
Satd. Flow (perm)	1026	1863	0	0	3376	0	0	6363	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					61			5				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			1008			640	
Travel Time (s)		38.9			54.5			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	238	260	0	0	190	83	70	865	21	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	238	260	0	0	273	0	0	956	0	0	0	0
Turn Type	pm+pt						Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	9.0	21.0			21.0		21.0	21.0				
Total Split (s)	25.0	60.0	0.0	0.0	35.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0
Total Split (%)	22.7%	54.5%	0.0%	0.0%	31.8%	0.0%	45.5%	45.5%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	20.0	55.0			30.0		45.0	45.0				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Walk Time (s)		5.0			5.0		5.0	5.0				
Flash Dont Walk (s)		11.0			11.0		11.0	11.0				
Pedestrian Calls (#/hr)		0			0		0	0				
Act Effct Green (s)	55.0	55.0			30.0			45.0				
Actuated g/C Ratio	0.50	0.50			0.27			0.41				
v/c Ratio	0.37	0.28			0.28			0.37				
Control Delay	41.6	36.3			25.1			12.4				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	41.6	36.3			25.1			12.4				
LOS	D	D			C			B				
Approach Delay		38.8			25.1			12.4				
Approach LOS		D			C			B				
Queue Length 50th (ft)	146	159			61			65				
Queue Length 95th (ft)	233	250			97			82				
Internal Link Dist (ft)		1632			2320			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)	648	932			965			2606				
Starvation Cap Reductn	0	0			0			0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0			0			0				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.37	0.28			0.28			0.37				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 22.0		Intersection LOS: C	
Intersection Capacity Utilization 44.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Central Park & Brady

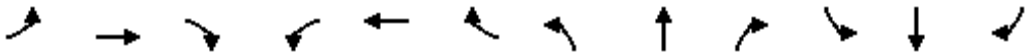




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	219	239	0	0	175	76	64	796	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0				
Lane Util. Factor	1.00	1.00			0.95			0.86				
Frt	1.00	1.00			0.95			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			3378			6363				
Flt Permitted	0.55	1.00			1.00			1.00				
Satd. Flow (perm)	1027	1863			3378			6363				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	238	260	0	0	190	83	70	865	21	0	0	0
RTOR Reduction (vph)	0	0	0	0	44	0	0	3	0	0	0	0
Lane Group Flow (vph)	238	260	0	0	229	0	0	953	0	0	0	0
Turn Type	pm+pt						Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)	55.0	55.0			30.0			45.0				
Effective Green, g (s)	55.0	55.0			30.0			45.0				
Actuated g/C Ratio	0.50	0.50			0.27			0.41				
Clearance Time (s)	5.0	5.0			5.0			5.0				
Lane Grp Cap (vph)	649	932			921			2603				
v/s Ratio Prot	c0.07	0.14			0.07							
v/s Ratio Perm	c0.12							0.15				
v/c Ratio	0.37	0.28			0.25			0.37				
Uniform Delay, d1	18.9	16.0			31.2			22.6				
Progression Factor	2.15	2.19			1.00			0.53				
Incremental Delay, d2	1.6	0.7			0.6			0.4				
Delay (s)	42.1	35.6			31.8			12.4				
Level of Service	D	D			C			B				
Approach Delay (s)		38.7			31.8			12.4			0.0	
Approach LOS		D			C			B			A	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

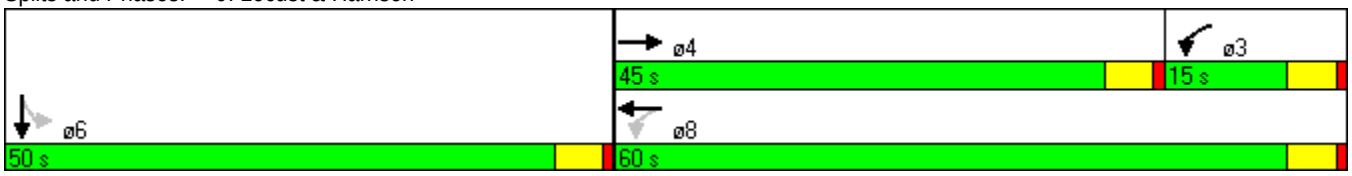


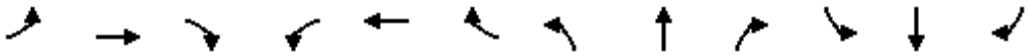
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	586	48	117	373	0	0	0	0	127	826	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.86	0.86	0.86
Frt		0.989									0.993	
Flt Protected				0.950							0.994	
Satd. Flow (prot)	0	3500	0	1770	3539	0	0	0	0	0	6325	0
Flt Permitted				0.203							0.994	
Satd. Flow (perm)	0	3500	0	378	3539	0	0	0	0	0	6325	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9									10	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2240			1712			2656			1008	
Travel Time (s)		50.9			38.9			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	637	52	127	405	0	0	0	0	138	898	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	689	0	127	405	0	0	0	0	0	1085	0
Number of Detectors		1		1	1					1	1	
Detector Template												
Leading Detector (ft)		50		50	50					50	50	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		50		50	50					50	50	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Turn Type				pm+pt						Perm		
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Detector Phase		4		3	8					6	6	
Switch Phase												
Minimum Initial (s)		4.0		4.0	4.0					4.0	4.0	
Minimum Split (s)		21.0		9.0	21.0					21.0	21.0	
Total Split (s)	0.0	45.0	0.0	15.0	60.0	0.0	0.0	0.0	0.0	50.0	50.0	0.0
Total Split (%)	0.0%	40.9%	0.0%	13.6%	54.5%	0.0%	0.0%	0.0%	0.0%	45.5%	45.5%	0.0%
Maximum Green (s)		40.0		10.0	55.0					45.0	45.0	
Yellow Time (s)		4.0		4.0	4.0					4.0	4.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Recall Mode		None		None	None					C-Max	C-Max	
Walk Time (s)		5.0			5.0					5.0	5.0	
Flash Dont Walk (s)		11.0			11.0					11.0	11.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)		27.8		38.5	38.5						61.5	
Actuated g/C Ratio		0.25		0.35	0.35						0.56	
v/c Ratio		0.77		0.62	0.33						0.31	
Control Delay		43.7		58.0	42.1						8.8	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		43.7		58.0	42.1						8.8	
LOS		D		E	D						A	
Approach Delay		43.7			45.9						8.8	
Approach LOS		D			D						A	
Queue Length 50th (ft)		235		73	124						61	
Queue Length 95th (ft)		278		m90	124						74	
Internal Link Dist (ft)		2160			1632			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)		1278		273	1770						3539	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.54		0.47	0.23						0.31	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 27.8		Intersection LOS: C	
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

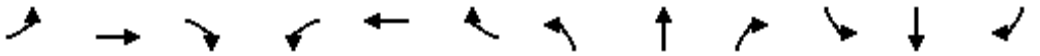
Splits and Phases: 9: Locust & Harrison





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	586	48	117	373	0	0	0	0	127	826	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.95		1.00	0.95						0.86	
Frt		0.99		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3499		1770	3539						6324	
Flt Permitted		1.00		0.20	1.00						0.99	
Satd. Flow (perm)		3499		378	3539						6324	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	637	52	127	405	0	0	0	0	138	898	49
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	682	0	127	405	0	0	0	0	0	1081	0
Turn Type				pm+pt						Perm		
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		27.8		38.5	38.5						61.5	
Effective Green, g (s)		27.8		38.5	38.5						61.5	
Actuated g/C Ratio		0.25		0.35	0.35						0.56	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		884		204	1239						3536	
v/s Ratio Prot		c0.19		c0.03	0.11							
v/s Ratio Perm				0.19							0.17	
v/c Ratio		0.77		0.62	0.33						0.31	
Uniform Delay, d1		38.2		41.5	26.2						12.9	
Progression Factor		1.00		1.33	1.62						0.64	
Incremental Delay, d2		4.2		4.8	0.1						0.2	
Delay (s)		42.4		59.8	42.7						8.5	
Level of Service		D		E	D						A	
Approach Delay (s)		42.4			46.8			0.0			8.5	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

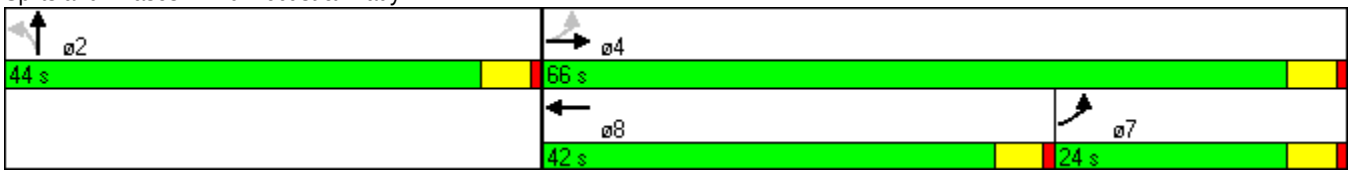


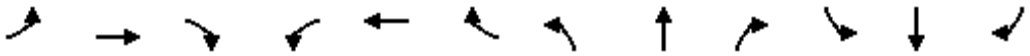
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	419	0	0	500	158	75	549	104	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.86	0.86	0.86	1.00	1.00	1.00
Frt					0.964			0.979				
Flt Protected	0.950							0.995				
Satd. Flow (prot)	1770	3539	0	0	3412	0	0	6242	0	0	0	0
Flt Permitted	0.251							0.995				
Satd. Flow (perm)	468	3539	0	0	3412	0	0	6242	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					42			42				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			2656			1008	
Travel Time (s)		38.9			54.5			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	455	0	0	543	172	82	597	113	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	455	0	0	715	0	0	792	0	0	0	0
Turn Type	pm+pt						Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	9.0	21.0			21.0		21.0	21.0				
Total Split (s)	24.0	66.0	0.0	0.0	42.0	0.0	44.0	44.0	0.0	0.0	0.0	0.0
Total Split (%)	21.8%	60.0%	0.0%	0.0%	38.2%	0.0%	40.0%	40.0%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	19.0	61.0			37.0		39.0	39.0				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Walk Time (s)		5.0			5.0		5.0	5.0				
Flash Dont Walk (s)		11.0			11.0		11.0	11.0				
Pedestrian Calls (#/hr)		0			0		0	0				
Act Effct Green (s)	61.0	61.0			37.0			39.0				
Actuated g/C Ratio	0.55	0.55			0.34			0.35				
v/c Ratio	0.26	0.23			0.61			0.35				
Control Delay	15.7	12.0			31.2			39.7				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	15.7	12.0			31.2			39.7				
LOS	B	B			C			D				
Approach Delay		12.8			31.2			39.7				
Approach LOS		B			C			D				
Queue Length 50th (ft)	28	56			207			149				
Queue Length 95th (ft)	63	97			271			182				
Internal Link Dist (ft)		1632			2320			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	484	1963			1176			2240				
Starvation Cap Reductn	0	0			0			0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0			0			0				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.26	0.23			0.61			0.35				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 29.3		Intersection LOS: C	
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 10: Locust & Brady

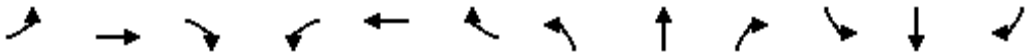




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	419	0	0	500	158	75	549	104	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0				
Lane Util. Factor	1.00	0.95			0.95			0.86				
Frt	1.00	1.00			0.96			0.98				
Flt Protected	0.95	1.00			1.00			0.99				
Satd. Flow (prot)	1770	3539			3412			6238				
Flt Permitted	0.25	1.00			1.00			0.99				
Satd. Flow (perm)	467	3539			3412			6238				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	455	0	0	543	172	82	597	113	0	0	0
RTOR Reduction (vph)	0	0	0	0	28	0	0	27	0	0	0	0
Lane Group Flow (vph)	126	455	0	0	687	0	0	765	0	0	0	0
Turn Type	pm+pt						Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)	61.0	61.0			37.0			39.0				
Effective Green, g (s)	61.0	61.0			37.0			39.0				
Actuated g/C Ratio	0.55	0.55			0.34			0.35				
Clearance Time (s)	5.0	5.0			5.0			5.0				
Lane Grp Cap (vph)	484	1963			1148			2212				
v/s Ratio Prot	c0.04	0.13			c0.20							
v/s Ratio Perm	0.10							0.12				
v/c Ratio	0.26	0.23			0.60			0.35				
Uniform Delay, d1	22.2	12.5			30.3			26.1				
Progression Factor	0.88	0.93			1.00			1.58				
Incremental Delay, d2	1.1	0.2			2.3			0.4				
Delay (s)	20.6	11.9			32.6			41.8				
Level of Service	C	B			C			D				
Approach Delay (s)		13.8			32.6			41.8			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

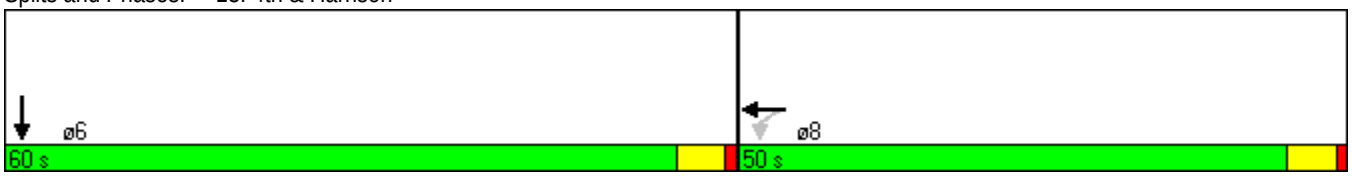


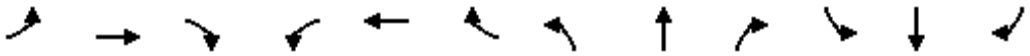
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	107	330	0	0	0	0	0	522	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.86	0.86
Frt											0.947	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1770	3539	0	0	0	0	0	6068	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	1770	3539	0	0	0	0	0	6068	0
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)				116							180	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			898			2656	
Travel Time (s)		48.0			38.9			17.5			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	116	359	0	0	0	0	0	567	310
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	116	359	0	0	0	0	0	877	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Minimum Split (s)				21.0	21.0						21.0	
Total Split (s)	0.0	0.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	45.5%	45.5%	0.0%	0.0%	0.0%	0.0%	0.0%	54.5%	0.0%
Maximum Green (s)				45.0	45.0						55.0	
Yellow Time (s)				4.0	4.0						4.0	
All-Red Time (s)				1.0	1.0						1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	5.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0						5.0	
Flash Dont Walk (s)				11.0	11.0						11.0	
Pedestrian Calls (#/hr)				0	0						0	
Act Effct Green (s)				45.0	45.0						55.0	
Actuated g/C Ratio				0.41	0.41						0.50	
v/c Ratio				0.15	0.25						0.28	
Control Delay				2.1	17.0						15.7	
Queue Delay				0.0	0.0						0.0	
Total Delay				2.1	17.0						15.7	
LOS				A	B						B	
Approach Delay					13.3						15.7	
Approach LOS					B						B	
Queue Length 50th (ft)				0	53						54	
Queue Length 95th (ft)				16	72						130	
Internal Link Dist (ft)		2032			1632			818			2576	
Turn Bay Length (ft)												
Base Capacity (vph)				793	1448						3124	
Starvation Cap Reductn				0	0						0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn				0	0						0	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.15	0.25						0.28	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBT, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 14.9		Intersection LOS: B	
Intersection Capacity Utilization 31.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 13: 4th & Harrison

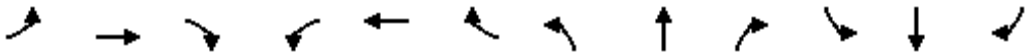




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	107	330	0	0	0	0	0	522	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	
Lane Util. Factor				1.00	0.95						0.86	
Frt				1.00	1.00						0.95	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1770	3539						6068	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1770	3539						6068	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	116	359	0	0	0	0	0	567	310
RTOR Reduction (vph)	0	0	0	69	0	0	0	0	0	0	90	0
Lane Group Flow (vph)	0	0	0	47	359	0	0	0	0	0	787	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)				45.0	45.0						55.0	
Effective Green, g (s)				45.0	45.0						55.0	
Actuated g/C Ratio				0.41	0.41						0.50	
Clearance Time (s)				5.0	5.0						5.0	
Lane Grp Cap (vph)				724	1448						3034	
v/s Ratio Prot					c0.10						c0.13	
v/s Ratio Perm				0.03								
v/c Ratio				0.07	0.25						0.26	
Uniform Delay, d1				19.7	21.4						15.8	
Progression Factor				0.46	0.77						1.24	
Incremental Delay, d2				0.2	0.4						0.2	
Delay (s)				9.3	16.8						19.8	
Level of Service				A	B						B	
Approach Delay (s)		0.0			15.0			0.0			19.8	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

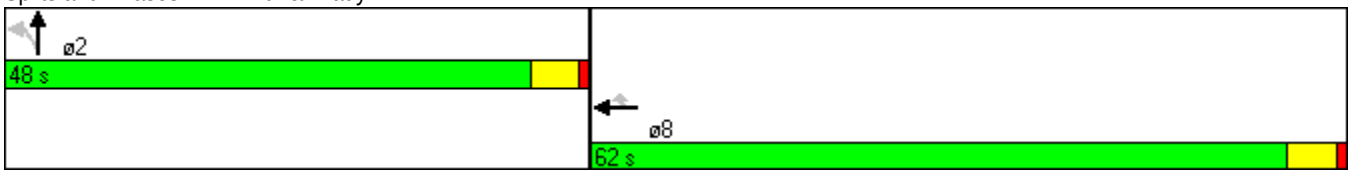


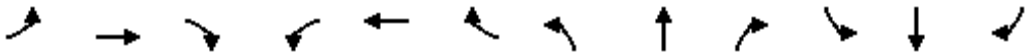
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	492	107	32	457	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frt						0.850						
Flt Protected								0.997				
Satd. Flow (prot)	0	0	0	0	3539	1583	0	5070	0	0	0	0
Flt Permitted								0.997				
Satd. Flow (perm)	0	0	0	0	3539	1583	0	5070	0	0	0	0
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						116		12				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			898			2656	
Travel Time (s)		38.9			53.1			17.5			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	535	116	35	497	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	535	116	0	532	0	0	0	0
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Minimum Split (s)					21.0	21.0	21.0	21.0				
Total Split (s)	0.0	0.0	0.0	0.0	62.0	62.0	48.0	48.0	0.0	0.0	0.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	56.4%	56.4%	43.6%	43.6%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)					57.0	57.0	43.0	43.0				
Yellow Time (s)					4.0	4.0	4.0	4.0				
All-Red Time (s)					1.0	1.0	1.0	1.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					5.0	5.0	5.0	5.0				
Flash Dont Walk (s)					11.0	11.0	11.0	11.0				
Pedestrian Calls (#/hr)					0	0	0	0				
Act Effct Green (s)					57.0	57.0		43.0				
Actuated g/C Ratio					0.52	0.52		0.39				
v/c Ratio					0.29	0.13		0.27				
Control Delay					15.6	2.9		16.5				
Queue Delay					0.0	0.0		0.0				
Total Delay					15.6	2.9		16.5				
LOS					B	A		B				
Approach Delay					13.3			16.5				
Approach LOS					B			B				
Queue Length 50th (ft)					108	0		52				
Queue Length 95th (ft)					144	27		71				
Internal Link Dist (ft)		1632			2256			818			2576	
Turn Bay Length (ft)												
Base Capacity (vph)					1834	876		1989				
Starvation Cap Reductn					0	0		0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn					0	0		0				
Storage Cap Reductn					0	0		0				
Reduced v/c Ratio					0.29	0.13		0.27				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.29			
Intersection Signal Delay: 14.7		Intersection LOS: B	
Intersection Capacity Utilization 31.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 14: 4th & Brady

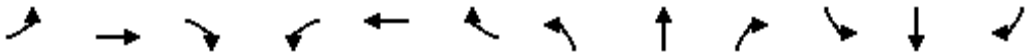




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	492	107	32	457	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0		5.0				
Lane Util. Factor					0.95	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					3539	1583		5069				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					3539	1583		5069				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	535	116	35	497	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	56	0	7	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	535	60	0	525	0	0	0	0
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Actuated Green, G (s)					57.0	57.0		43.0				
Effective Green, g (s)					57.0	57.0		43.0				
Actuated g/C Ratio					0.52	0.52		0.39				
Clearance Time (s)					5.0	5.0		5.0				
Lane Grp Cap (vph)					1834	820		1982				
v/s Ratio Prot					c0.15							
v/s Ratio Perm						0.04		0.10				
v/c Ratio					0.29	0.07		0.26				
Uniform Delay, d1					15.0	13.3		22.8				
Progression Factor					1.00	1.00		0.72				
Incremental Delay, d2					0.4	0.2		0.3				
Delay (s)					15.4	13.4		16.8				
Level of Service					B	B		B				
Approach Delay (s)		0.0			15.1			16.8			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

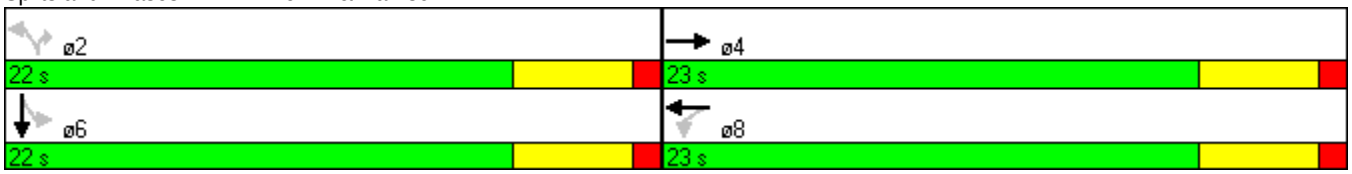


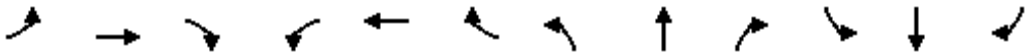
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	543	14	12	527	0	9	0	5	42	19	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	0.95	0.95
Frt		0.996							0.850		0.888	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3525	0	1770	3539	0	1770	0	1583	3433	3143	0
Flt Permitted				0.404			0.700			0.950		
Satd. Flow (perm)	0	3525	0	753	3539	0	1304	0	1583	3433	3143	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7							5		63	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2016			1720			288			2560	
Travel Time (s)		45.8			39.1			5.6			49.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	590	15	13	573	0	10	0	5	46	21	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	605	0	13	573	0	10	0	5	46	84	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Minimum Split (s)		21.0		21.0	21.0		21.0		21.0	21.0	21.0	
Total Split (s)	0.0	23.0	0.0	23.0	23.0	0.0	22.0	0.0	22.0	22.0	22.0	0.0
Total Split (%)	0.0%	51.1%	0.0%	51.1%	51.1%	0.0%	48.9%	0.0%	48.9%	48.9%	48.9%	0.0%
Maximum Green (s)		18.0		18.0	18.0		17.0		17.0	17.0	17.0	
Yellow Time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
All-Red Time (s)		1.0		1.0	1.0		1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	5.0	5.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0		0	0	0	
Act Effct Green (s)		18.0		18.0	18.0		17.0		17.0	17.0	17.0	
Actuated g/C Ratio		0.40		0.40	0.40		0.38		0.38	0.38	0.38	
v/c Ratio		0.43		0.04	0.40		0.02		0.01	0.04	0.07	
Control Delay		10.8		2.4	5.4		9.0		6.2	9.0	4.4	
Queue Delay		0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay		10.8		2.4	5.4		9.0		6.2	9.0	4.4	
LOS		B		A	A		A		A	A	A	
Approach Delay		10.8			5.3						6.0	
Approach LOS		B			A						A	
Queue Length 50th (ft)		55		0	8		2		0	3	1	
Queue Length 95th (ft)		87		m0	8		8		5	10	11	
Internal Link Dist (ft)		1936			1640			208			2480	
Turn Bay Length (ft)												
Base Capacity (vph)		1414		301	1416		493		601	1297	1227	
Starvation Cap Reductn		0		0	0		0		0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0		0		0	0	0	
Storage Cap Reductn		0		0	0		0		0	0	0	
Reduced v/c Ratio		0.43		0.04	0.40		0.02		0.01	0.04	0.07	

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 0 (0%), Referenced to phase 2:NBL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 7.9		Intersection LOS: A	
Intersection Capacity Utilization 34.6%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 17: River Dr & Harrison

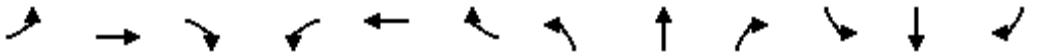




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	543	14	12	527	0	9	0	5	42	19	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	0.97	0.95	
Frt		1.00		1.00	1.00		1.00		0.85	1.00	0.89	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3526		1770	3539		1770		1583	3433	3141	
Flt Permitted		1.00		0.40	1.00		0.70		1.00	0.95	1.00	
Satd. Flow (perm)		3526		753	3539		1303		1583	3433	3141	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	590	15	13	573	0	10	0	5	46	21	63
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	3	0	39	0
Lane Group Flow (vph)	0	601	0	13	573	0	10	0	2	46	45	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Actuated Green, G (s)		18.0		18.0	18.0		17.0		17.0	17.0	17.0	
Effective Green, g (s)		18.0		18.0	18.0		17.0		17.0	17.0	17.0	
Actuated g/C Ratio		0.40		0.40	0.40		0.38		0.38	0.38	0.38	
Clearance Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Lane Grp Cap (vph)		1410		301	1416		492		598	1297	1187	
v/s Ratio Prot		c0.17			0.16						c0.01	
v/s Ratio Perm				0.02			0.01		0.00	0.01		
v/c Ratio		0.43		0.04	0.40		0.02		0.00	0.04	0.04	
Uniform Delay, d1		9.8		8.2	9.7		8.8		8.7	8.8	8.8	
Progression Factor		1.00		0.25	0.47		1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.9		0.2	0.8		0.1		0.0	0.1	0.1	
Delay (s)		10.7		2.3	5.3		8.9		8.7	8.9	8.9	
Level of Service		B		A	A		A		A	A	A	
Approach Delay (s)		10.7			5.2			8.8			8.9	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	34.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

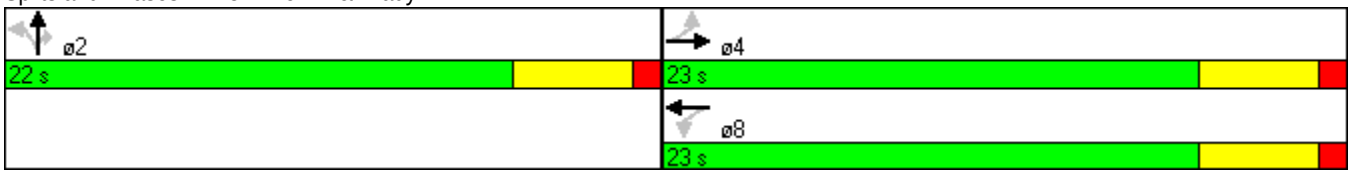


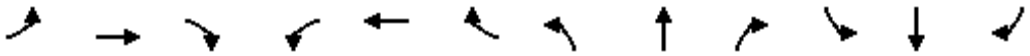
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	467	12	8	574	53	3	6	4	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.987				0.850			
Flt Protected	0.950			0.950				0.985				
Satd. Flow (prot)	1770	3525	0	1770	3493	0	0	1835	1583	0	0	0
Flt Permitted	0.355			0.459				0.985				
Satd. Flow (perm)	661	3525	0	855	3493	0	0	1835	1583	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			26				4			
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1720			7927			272			2560	
Travel Time (s)		39.1			180.2			5.3			49.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	508	13	9	624	58	3	7	4	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	521	0	9	682	0	0	10	4	0	0	0
Turn Type	Perm			Perm			Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4			8			2		2			
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0	21.0			
Total Split (s)	23.0	23.0	0.0	23.0	23.0	0.0	22.0	22.0	22.0	0.0	0.0	0.0
Total Split (%)	51.1%	51.1%	0.0%	51.1%	51.1%	0.0%	48.9%	48.9%	48.9%	0.0%	0.0%	0.0%
Maximum Green (s)	18.0	18.0		18.0	18.0		17.0	17.0	17.0			
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0			
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0			
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0			
Act Effct Green (s)	18.0	18.0		18.0	18.0			17.0	17.0			
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.38	0.38			
v/c Ratio	0.31	0.37		0.03	0.48			0.01	0.01			
Control Delay	8.0	5.3		8.5	11.1			8.9	6.5			
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			
Total Delay	8.0	5.3		8.5	11.1			8.9	6.5			
LOS	A	A		A	B			A	A			
Approach Delay		5.7			11.0			8.2				
Approach LOS		A			B			A				
Queue Length 50th (ft)	2	11		1	62			2	0			
Queue Length 95th (ft)	m33	20		8	98			8	4			
Internal Link Dist (ft)		1640			7847			192			2480	
Turn Bay Length (ft)												
Base Capacity (vph)	264	1414		342	1413			693	601			
Starvation Cap Reductn	0	0		0	0			0	0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0			0	0			
Storage Cap Reductn	0	0		0	0			0	0			
Reduced v/c Ratio	0.31	0.37		0.03	0.48			0.01	0.01			

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 8.5		Intersection LOS: A	
Intersection Capacity Utilization 37.5%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 18: River Dr & Brady

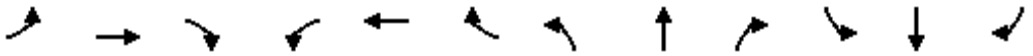




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	467	12	8	574	53	3	6	4	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0			
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00			
Frt	1.00	1.00		1.00	0.99			1.00	0.85			
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00			
Satd. Flow (prot)	1770	3526		1770	3494			1835	1583			
Flt Permitted	0.35	1.00		0.46	1.00			0.99	1.00			
Satd. Flow (perm)	661	3526		855	3494			1835	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	508	13	9	624	58	3	7	4	0	0	0
RTOR Reduction (vph)	0	4	0	0	16	0	0	0	2	0	0	0
Lane Group Flow (vph)	82	517	0	9	666	0	0	10	2	0	0	0
Turn Type	Perm			Perm			Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4			8			2		2			
Actuated Green, G (s)	18.0	18.0		18.0	18.0			17.0	17.0			
Effective Green, g (s)	18.0	18.0		18.0	18.0			17.0	17.0			
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.38	0.38			
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0			
Lane Grp Cap (vph)	264	1410		342	1398			693	598			
v/s Ratio Prot		0.15			c0.19							
v/s Ratio Perm	0.12			0.01				0.01	0.00			
v/c Ratio	0.31	0.37		0.03	0.48			0.01	0.00			
Uniform Delay, d1	9.2	9.5		8.2	10.0			8.8	8.7			
Progression Factor	0.51	0.48		1.00	1.00			1.00	1.00			
Incremental Delay, d2	2.8	0.7		0.1	1.2			0.0	0.0			
Delay (s)	7.5	5.2		8.3	11.2			8.8	8.7			
Level of Service	A	A		A	B			A	A			
Approach Delay (s)		5.6			11.1			8.8			0.0	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



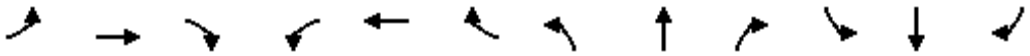
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	310	101	0	0	0	0	0	0	152	370	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	1.00
Frt		0.963										
Flt Protected										0.950	0.997	
Satd. Flow (prot)	0	6171	0	0	0	0	0	0	0	1522	4791	0
Flt Permitted										0.950	0.997	
Satd. Flow (perm)	0	6171	0	0	0	0	0	0	0	1522	4791	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)		87								137	14	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2033			1714			2560			898	
Travel Time (s)		46.2			39.0			49.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	337	110	0	0	0	0	0	0	165	402	0
Shared Lane Traffic (%)										17%		
Lane Group Flow (vph)	0	447	0	0	0	0	0	0	0	137	430	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Minimum Split (s)		21.0								21.0	21.0	
Total Split (s)	0.0	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.0	63.0	0.0
Total Split (%)	0.0%	42.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	57.3%	57.3%	0.0%
Maximum Green (s)		42.0								58.0	58.0	
Yellow Time (s)		4.0								4.0	4.0	
All-Red Time (s)		1.0								1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0								5.0	5.0	
Flash Dont Walk (s)		11.0								11.0	11.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effct Green (s)		42.0								58.0	58.0	
Actuated g/C Ratio		0.38								0.53	0.53	
v/c Ratio		0.19								0.16	0.17	
Control Delay		18.2								2.6	10.5	
Queue Delay		0.0								0.0	0.0	
Total Delay		18.2								2.6	10.5	
LOS		B								A	B	
Approach Delay		18.2									8.6	
Approach LOS		B									A	
Queue Length 50th (ft)		47								2	34	
Queue Length 95th (ft)		67								2	44	
Internal Link Dist (ft)		1953			1634			2480			818	
Turn Bay Length (ft)												
Base Capacity (vph)		2410								867	2533	
Starvation Cap Reductn		0								0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0								0	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.19								0.16	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.19			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 29.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 21: 3rd & Harrison

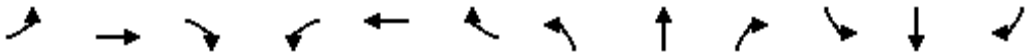




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	310	101	0	0	0	0	0	0	152	370	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.0	5.0	
Lane Util. Factor		0.86								0.86	0.86	
Frt		0.96								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		6171								1522	4790	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		6171								1522	4790	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	337	110	0	0	0	0	0	0	165	402	0
RTOR Reduction (vph)	0	54	0	0	0	0	0	0	0	65	7	0
Lane Group Flow (vph)	0	393	0	0	0	0	0	0	0	72	423	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		42.0								58.0	58.0	
Effective Green, g (s)		42.0								58.0	58.0	
Actuated g/C Ratio		0.38								0.53	0.53	
Clearance Time (s)		5.0								5.0	5.0	
Lane Grp Cap (vph)		2356								803	2526	
v/s Ratio Prot		c0.06										
v/s Ratio Perm										0.05	0.09	
v/c Ratio		0.17								0.09	0.17	
Uniform Delay, d1		22.4								12.9	13.5	
Progression Factor		1.00								0.99	0.79	
Incremental Delay, d2		0.2								0.2	0.1	
Delay (s)		22.6								13.0	10.8	
Level of Service		C								B	B	
Approach Delay (s)		22.6			0.0			0.0			11.3	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

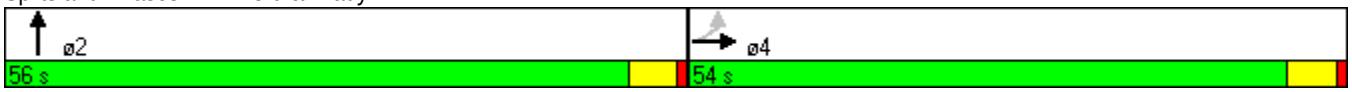


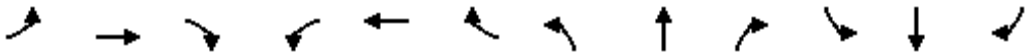
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	462	0	0	0	0	0	356	146	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00
Frt								0.956				
Flt Protected	0.950	0.999										
Satd. Flow (prot)	1522	4801	0	0	0	0	0	4862	0	0	0	0
Flt Permitted	0.950	0.999										
Satd. Flow (perm)	1522	4801	0	0	0	0	0	4862	0	0	0	0
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	99	3						126				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1714			7509			2560			898	
Travel Time (s)		39.0			170.7			49.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	502	0	0	0	0	0	387	159	0	0	0
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	99	513	0	0	0	0	0	546	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	21.0	21.0						21.0				
Total Split (s)	54.0	54.0	0.0	0.0	0.0	0.0	0.0	56.0	0.0	0.0	0.0	0.0
Total Split (%)	49.1%	49.1%	0.0%	0.0%	0.0%	0.0%	0.0%	50.9%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	49.0	49.0						51.0				
Yellow Time (s)	4.0	4.0						4.0				
All-Red Time (s)	1.0	1.0						1.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0				
Flash Dont Walk (s)	11.0	11.0						11.0				
Pedestrian Calls (#/hr)	0	0						0				
Act Effct Green (s)	49.0	49.0						51.0				
Actuated g/C Ratio	0.45	0.45						0.46				
v/c Ratio	0.14	0.24						0.24				
Control Delay	7.7	21.7						13.7				
Queue Delay	0.0	0.0						0.0				
Total Delay	7.7	21.7						13.7				
LOS	A	C						B				
Approach Delay		19.5						13.7				
Approach LOS		B						B				
Queue Length 50th (ft)	0	75						61				
Queue Length 95th (ft)	39	113						86				
Internal Link Dist (ft)		1634			7429			2480			818	
Turn Bay Length (ft)												
Base Capacity (vph)	733	2140						2322				
Starvation Cap Reductn	0	0						0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0						0				
Storage Cap Reductn	0	0						0				
Reduced v/c Ratio	0.14	0.24						0.24				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.24			
Intersection Signal Delay: 16.7		Intersection LOS: B	
Intersection Capacity Utilization 54.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: 3rd & Brady





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	462	0	0	0	0	0	356	146	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0						5.0				
Lane Util. Factor	0.86	0.86						0.91				
Frt	1.00	1.00						0.96				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1522	4801						4863				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1522	4801						4863				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	502	0	0	0	0	0	387	159	0	0	0
RTOR Reduction (vph)	55	2	0	0	0	0	0	68	0	0	0	0
Lane Group Flow (vph)	44	511	0	0	0	0	0	478	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)	49.0	49.0						51.0				
Effective Green, g (s)	49.0	49.0						51.0				
Actuated g/C Ratio	0.45	0.45						0.46				
Clearance Time (s)	5.0	5.0						5.0				
Lane Grp Cap (vph)	678	2139						2255				
v/s Ratio Prot								c0.10				
v/s Ratio Perm	0.03	0.11										
v/c Ratio	0.07	0.24						0.21				
Uniform Delay, d1	17.4	18.9						17.5				
Progression Factor	2.01	1.13						1.00				
Incremental Delay, d2	0.2	0.3						0.2				
Delay (s)	35.2	21.7						17.8				
Level of Service	D	C						B				
Approach Delay (s)		23.9			0.0			17.8			0.0	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Brady-Harrison Phase 1

Existing One-Way Streets
2009 PM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		[redacted]		[redacted]	[redacted]						[redacted]	
Volume (vph)	0	412	54	72	259	0	0	0	0	160	1271	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86
Frt		0.983									0.986	
Flt Protected				0.950							0.995	
Satd. Flow (prot)	0	3479	0	1770	1863	0	0	0	0	0	6287	0
Flt Permitted				0.190							0.995	
Satd. Flow (perm)	0	3479	0	354	1863	0	0	0	0	0	6287	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13									27	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2320			1712			1008			640	
Travel Time (s)		52.7			38.9			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	448	59	78	282	0	0	0	0	174	1382	158
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	507	0	78	282	0	0	0	0	0	1714	0
Number of Detectors		1		2	1					1	1	
Detector Template												
Leading Detector (ft)		5		75	5					50	5	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		5		50	5					50	5	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)				69								
Detector 2 Size(ft)				6								
Detector 2 Type				Cl+Ex								
Detector 2 Channel												
Detector 2 Extend (s)				0.0								
Turn Type				pm+pt						Perm		
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Detector Phase		4		3	8					6	6	
Switch Phase												
Minimum Initial (s)		4.0		1.0	4.0					4.0	4.0	
Minimum Split (s)		21.0		6.0	21.0					21.0	21.0	
Total Split (s)	0.0	39.0	0.0	19.0	58.0	0.0	0.0	0.0	0.0	52.0	52.0	0.0
Total Split (%)	0.0%	35.5%	0.0%	17.3%	52.7%	0.0%	0.0%	0.0%	0.0%	47.3%	47.3%	0.0%
Maximum Green (s)		34.0		14.0	53.0					47.0	47.0	
Yellow Time (s)		4.0		4.0	4.0					4.0	4.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0
Lead/Lag		Lag		Lead								

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Recall Mode		None		None	None					C-Max	C-Max	
Walk Time (s)		5.0			5.0					5.0	5.0	
Flash Dont Walk (s)		11.0			11.0					11.0	11.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)		21.1		32.8	32.8						67.2	
Actuated g/C Ratio		0.19		0.30	0.30						0.61	
v/c Ratio		0.75		0.35	0.51						0.45	
Control Delay		47.9		39.4	41.6						12.9	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		47.9		39.4	41.6						12.9	
LOS		D		D	D						B	
Approach Delay		47.9			41.1						12.9	
Approach LOS		D			D						B	
Queue Length 50th (ft)		174		42	165						183	
Queue Length 95th (ft)		221		m54	m163						253	
Internal Link Dist (ft)		2240			1632			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)		1084		286	898						3849	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.47		0.27	0.31						0.45	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 23.7		Intersection LOS: C	
Intersection Capacity Utilization 66.5%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Central Park & Harrison

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		[redacted]		[redacted]	[redacted]						[redacted]	
Volume (vph)	0	412	54	72	259	0	0	0	0	160	1271	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.95		1.00	1.00						0.86	
Frt		0.98		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3477		1770	1863						6287	
Flt Permitted		1.00		0.19	1.00						0.99	
Satd. Flow (perm)		3477		353	1863						6287	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	448	59	78	282	0	0	0	0	174	1382	158
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	496	0	78	282	0	0	0	0	0	1703	0
Turn Type				pm+pt						Perm		
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		21.1		33.9	33.9						66.1	
Effective Green, g (s)		21.1		33.9	33.9						66.1	
Actuated g/C Ratio		0.19		0.31	0.31						0.60	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		667		209	574						3778	
v/s Ratio Prot		c0.14		0.03	c0.15							
v/s Ratio Perm				0.09							0.27	
v/c Ratio		0.74		0.37	0.49						0.45	
Uniform Delay, d1		41.9		28.7	31.0						12.0	
Progression Factor		1.00		1.42	1.28						1.00	
Incremental Delay, d2		4.5		0.9	0.6						0.4	
Delay (s)		46.4		41.7	40.2						12.4	
Level of Service		D		D	D						B	
Approach Delay (s)		46.4			40.6			0.0			12.4	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	274	347	0	0	257	108	153	1728	54	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.86	0.86	0.86	1.00	1.00	1.00
Frt					0.956			0.996				
Flt Protected	0.950							0.996				
Satd. Flow (prot)	1770	1863	0	0	3383	0	0	6357	0	0	0	0
Flt Permitted	0.437							0.996				
Satd. Flow (perm)	814	1863	0	0	3383	0	0	6357	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					58			6				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			1008			640	
Travel Time (s)		38.9			54.5			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	298	377	0	0	279	117	166	1878	59	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	298	377	0	0	396	0	0	2103	0	0	0	0
Turn Type	pm+pt						Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	9.0	21.0			21.0		21.0	21.0				
Total Split (s)	25.0	60.0	0.0	0.0	35.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0
Total Split (%)	22.7%	54.5%	0.0%	0.0%	31.8%	0.0%	45.5%	45.5%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	20.0	55.0			30.0		45.0	45.0				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Walk Time (s)		5.0			5.0		5.0	5.0				
Flash Dont Walk (s)		11.0			11.0		11.0	11.0				
Pedestrian Calls (#/hr)		0			0		0	0				
Act Effct Green (s)	55.0	55.0			30.0			45.0				
Actuated g/C Ratio	0.50	0.50			0.27			0.41				
v/c Ratio	0.51	0.40			0.41			0.81				
Control Delay	49.7	39.6			29.2			18.1				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	49.7	39.6			29.2			18.1				
LOS	D	D			C			B				
Approach Delay		44.0			29.2			18.1				
Approach LOS		D			C			B				
Queue Length 50th (ft)	205	263			102			170				
Queue Length 95th (ft)	293	362			147			m249				
Internal Link Dist (ft)		1632			2320			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)	581	932			965			2604				
Starvation Cap Reductn	0	0			0			0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0			0			0				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.51	0.40			0.41			0.81				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 25.0		Intersection LOS: C	
Intersection Capacity Utilization 66.5%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 6: Central Park & Brady

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	274	347	0	0	257	108	153	1728	54	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0				
Lane Util. Factor	1.00	1.00			0.95			0.86				
Frt	1.00	1.00			0.96			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			3382			6356				
Flt Permitted	0.44	1.00			1.00			1.00				
Satd. Flow (perm)	815	1863			3382			6356				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	298	377	0	0	279	117	166	1878	59	0	0	0
RTOR Reduction (vph)	0	0	0	0	42	0	0	4	0	0	0	0
Lane Group Flow (vph)	298	377	0	0	354	0	0	2099	0	0	0	0
Turn Type	pm+pt						Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)	55.0	55.0			30.0			45.0				
Effective Green, g (s)	55.0	55.0			30.0			45.0				
Actuated g/C Ratio	0.50	0.50			0.27			0.41				
Clearance Time (s)	5.0	5.0			5.0			5.0				
Lane Grp Cap (vph)	581	932			922			2600				
v/s Ratio Prot	c0.09	0.20			0.10							
v/s Ratio Perm	c0.16							0.33				
v/c Ratio	0.51	0.40			0.38			0.81				
Uniform Delay, d1	24.0	17.2			32.5			28.7				
Progression Factor	2.04	2.18			1.00			0.56				
Incremental Delay, d2	3.0	1.2			1.2			1.9				
Delay (s)	52.1	38.8			33.7			18.0				
Level of Service	D	D			C			B				
Approach Delay (s)		44.7			33.7			18.0			0.0	
Approach LOS		D			C			B			A	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		[redacted]		[redacted]	[redacted]						[redacted]	
Volume (vph)	0	641	64	127	564	0	0	0	0	186	826	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.86	0.86	0.86
Frt		0.986									0.991	
Flt Protected				0.950							0.991	
Satd. Flow (prot)	0	3490	0	1770	3539	0	0	0	0	0	6293	0
Flt Permitted				0.239							0.991	
Satd. Flow (perm)	0	3490	0	445	3539	0	0	0	0	0	6293	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11									14	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2240			1712			2656			1008	
Travel Time (s)		50.9			38.9			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	697	70	138	613	0	0	0	0	202	898	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	767	0	138	613	0	0	0	0	0	1170	0
Turn Type				pm+pt						Perm		
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Minimum Split (s)		21.0		9.0	21.0					21.0	21.0	
Total Split (s)	0.0	45.0	0.0	15.0	60.0	0.0	0.0	0.0	0.0	50.0	50.0	0.0
Total Split (%)	0.0%	40.9%	0.0%	13.6%	54.5%	0.0%	0.0%	0.0%	0.0%	45.5%	45.5%	0.0%
Maximum Green (s)		40.0		10.0	55.0					45.0	45.0	
Yellow Time (s)		4.0		4.0	4.0					4.0	4.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Walk Time (s)		5.0			5.0					5.0	5.0	
Flash Dont Walk (s)		11.0			11.0					11.0	11.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)		40.0		55.0	55.0						45.0	
Actuated g/C Ratio		0.36		0.50	0.50						0.41	
v/c Ratio		0.60		0.40	0.35						0.45	
Control Delay		30.5		28.9	22.7						14.7	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		30.5		28.9	22.7						14.7	
LOS		C		C	C						B	
Approach Delay		30.5			23.8						14.7	
Approach LOS		C			C						B	
Queue Length 50th (ft)		226		50	124						69	
Queue Length 95th (ft)		291		m72	m174						77	
Internal Link Dist (ft)		2160			1632			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)		1276		343	1770						2583	
Starvation Cap Reductn		0		0	0						0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.60		0.40	0.35						0.45	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 21.7		Intersection LOS: C	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 9: Locust & Harrison

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		[redacted]		[redacted]	[redacted]						[redacted]	
Volume (vph)	0	641	64	127	564	0	0	0	0	186	826	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.95		1.00	0.95						0.86	
Frt		0.99		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3491		1770	3539						6296	
Flt Permitted		1.00		0.24	1.00						0.99	
Satd. Flow (perm)		3491		445	3539						6296	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	697	70	138	613	0	0	0	0	202	898	70
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	760	0	138	613	0	0	0	0	0	1162	0
Turn Type				pm+pt						Perm		
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		40.0		55.0	55.0						45.0	
Effective Green, g (s)		40.0		55.0	55.0						45.0	
Actuated g/C Ratio		0.36		0.50	0.50						0.41	
Clearance Time (s)		5.0		5.0	5.0						5.0	
Lane Grp Cap (vph)		1269		343	1770						2576	
v/s Ratio Prot		c0.22		0.04	c0.17							
v/s Ratio Perm				0.16							0.18	
v/c Ratio		0.60		0.40	0.35						0.45	
Uniform Delay, d1		28.5		28.2	16.6						23.5	
Progression Factor		1.00		1.21	1.33						0.61	
Incremental Delay, d2		2.1		2.0	0.3						0.5	
Delay (s)		30.6		36.0	22.5						14.8	
Level of Service		C		D	C						B	
Approach Delay (s)		30.6			24.9			0.0			14.8	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	244	869	0	0	703	248	130	1370	190	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.86	0.86	0.86	1.00	1.00	1.00
Frt					0.961			0.983				
Flt Protected	0.950							0.996				
Satd. Flow (prot)	1770	3539	0	0	3401	0	0	6274	0	0	0	0
Flt Permitted	0.121							0.996				
Satd. Flow (perm)	225	3539	0	0	3401	0	0	6274	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					23			35				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			2656			1008	
Travel Time (s)		38.9			54.5			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	265	945	0	0	764	270	141	1489	207	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	265	945	0	0	1034	0	0	1837	0	0	0	0
Turn Type	pm+pt						Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	9.0	21.0			21.0		21.0	21.0				
Total Split (s)	15.0	60.0	0.0	0.0	45.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0
Total Split (%)	13.6%	54.5%	0.0%	0.0%	40.9%	0.0%	45.5%	45.5%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	10.0	55.0			40.0		45.0	45.0				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Walk Time (s)		5.0			5.0		5.0	5.0				
Flash Dont Walk (s)		11.0			11.0		11.0	11.0				
Pedestrian Calls (#/hr)		0			0		0	0				
Act Effct Green (s)	55.0	55.0			40.0			45.0				
Actuated g/C Ratio	0.50	0.50			0.36			0.41				
v/c Ratio	1.05	0.53			0.83			0.71				
Control Delay	100.0	17.5			37.9			40.0				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	100.0	17.5			37.9			40.0				
LOS	F	B			D			D				
Approach Delay		35.6			37.9			40.0				
Approach LOS		D			D			D				
Queue Length 50th (ft)	~100	177			338			363				
Queue Length 95th (ft)	#247	238			426			405				
Internal Link Dist (ft)		1632			2320			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	253	1770			1251			2587				
Starvation Cap Reductn	0	0			0			0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0			0			0				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	1.05	0.53			0.83			0.71				

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green	
Natural Cycle: 65	
Control Type: Pretimed	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 38.1	Intersection LOS: D
Intersection Capacity Utilization 78.4%	ICU Level of Service D
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Locust & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	244	869	0	0	703	248	130	1370	190	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0				
Lane Util. Factor	1.00	0.95			0.95			0.86				
Frt	1.00	1.00			0.96			0.98				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	3539			3401			6275				
Flt Permitted	0.12	1.00			1.00			1.00				
Satd. Flow (perm)	226	3539			3401			6275				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	265	945	0	0	764	270	141	1489	207	0	0	0
RTOR Reduction (vph)	0	0	0	0	15	0	0	21	0	0	0	0
Lane Group Flow (vph)	265	945	0	0	1019	0	0	1816	0	0	0	0
Turn Type	pm+pt						Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)	55.0	55.0			40.0			45.0				
Effective Green, g (s)	55.0	55.0			40.0			45.0				
Actuated g/C Ratio	0.50	0.50			0.36			0.41				
Clearance Time (s)	5.0	5.0			5.0			5.0				
Lane Grp Cap (vph)	253	1770			1237			2567				
v/s Ratio Prot	c0.10	0.27			0.30							
v/s Ratio Perm	c0.43							0.29				
v/c Ratio	1.05	0.53			0.82			0.71				
Uniform Delay, d1	39.3	18.8			31.8			27.0				
Progression Factor	0.77	0.87			1.00			1.44				
Incremental Delay, d2	67.3	1.1			6.3			1.6				
Delay (s)	97.5	17.3			38.1			40.4				
Level of Service	F	B			D			D				
Approach Delay (s)		34.9			38.1			40.4			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM Average Control Delay	38.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

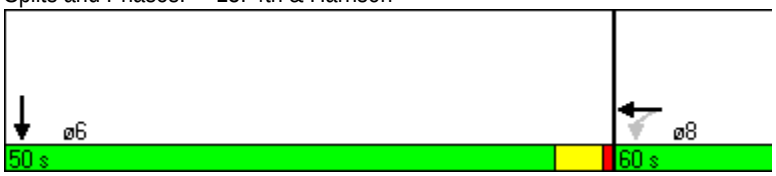
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	66	554	0	0	0	0	0	461	344
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.86	0.86
Frt											0.936	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1770	3539	0	0	0	0	0	5998	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	1770	3539	0	0	0	0	0	5998	0
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)				72							207	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			869			2656	
Travel Time (s)		48.0			38.9			16.9			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	72	602	0	0	0	0	0	501	374
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	72	602	0	0	0	0	0	875	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Minimum Split (s)				21.0	21.0						21.0	
Total Split (s)	0.0	0.0	0.0	60.0	60.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	54.5%	54.5%	0.0%	0.0%	0.0%	0.0%	0.0%	45.5%	0.0%
Maximum Green (s)				55.0	55.0						45.0	
Yellow Time (s)				4.0	4.0						4.0	
All-Red Time (s)				1.0	1.0						1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	5.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0						5.0	
Flash Dont Walk (s)				11.0	11.0						11.0	
Pedestrian Calls (#/hr)				0	0						0	
Act Effct Green (s)				55.0	55.0						45.0	
Actuated g/C Ratio				0.50	0.50						0.41	
v/c Ratio				0.08	0.34						0.34	
Control Delay				13.4	26.9						36.9	
Queue Delay				0.0	0.0						0.0	
Total Delay				13.4	26.9						36.9	
LOS				B	C						D	
Approach Delay					25.5						36.9	
Approach LOS					C						D	
Queue Length 50th (ft)				0	141						150	
Queue Length 95th (ft)				43	203						170	
Internal Link Dist (ft)		2032			1632			789			2576	
Turn Bay Length (ft)												
Base Capacity (vph)				921	1770						2576	
Starvation Cap Reductn				0	0						0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn				0	0						0	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.08	0.34						0.34	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBT, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 32.0		Intersection LOS: C	
Intersection Capacity Utilization 40.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 13: 4th & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	66	554	0	0	0	0	0	461	344
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	
Lane Util. Factor				1.00	0.95						0.86	
Frt				1.00	1.00						0.94	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1770	3539						5997	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1770	3539						5997	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	72	602	0	0	0	0	0	501	374
RTOR Reduction (vph)	0	0	0	36	0	0	0	0	0	0	122	0
Lane Group Flow (vph)	0	0	0	36	602	0	0	0	0	0	753	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)				55.0	55.0						45.0	
Effective Green, g (s)				55.0	55.0						45.0	
Actuated g/C Ratio				0.50	0.50						0.41	
Clearance Time (s)				5.0	5.0						5.0	
Lane Grp Cap (vph)				885	1770						2453	
v/s Ratio Prot					c0.17						c0.13	
v/s Ratio Perm				0.02								
v/c Ratio				0.04	0.34						0.31	
Uniform Delay, d1				14.0	16.6						22.0	
Progression Factor				3.88	1.58						2.20	
Incremental Delay, d2				0.1	0.5						0.3	
Delay (s)				54.5	26.7						48.5	
Level of Service				D	C						D	
Approach Delay (s)		0.0			29.7			0.0			48.5	
Approach LOS		A			C			A			D	

Intersection Summary					
HCM Average Control Delay	40.3	HCM Level of Service		D	
HCM Volume to Capacity ratio	0.33				
Actuated Cycle Length (s)	110.0	Sum of lost time (s)		10.0	
Intersection Capacity Utilization	40.7%	ICU Level of Service		A	
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					[redacted]	[redacted]		[redacted]				
Volume (vph)	0	0	0	0	494	207	77	885	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frt						0.850						
Flt Protected								0.996				
Satd. Flow (prot)	0	0	0	0	3539	1583	0	5065	0	0	0	0
Flt Permitted								0.996				
Satd. Flow (perm)	0	0	0	0	3539	1583	0	5065	0	0	0	0
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						84		18				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			869			2656	
Travel Time (s)		38.9			53.1			16.9			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	537	225	84	962	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	537	225	0	1046	0	0	0	0
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Minimum Split (s)					21.0	21.0	21.0	21.0				
Total Split (s)	0.0	0.0	0.0	0.0	50.0	50.0	60.0	60.0	0.0	0.0	0.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	45.5%	45.5%	54.5%	54.5%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)					45.0	45.0	55.0	55.0				
Yellow Time (s)					4.0	4.0	4.0	4.0				
All-Red Time (s)					1.0	1.0	1.0	1.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					5.0	5.0	5.0	5.0				
Flash Dont Walk (s)					11.0	11.0	11.0	11.0				
Pedestrian Calls (#/hr)					0	0	0	0				
Act Effct Green (s)					45.0	45.0		55.0				
Actuated g/C Ratio					0.41	0.41		0.50				
v/c Ratio					0.37	0.32		0.41				
Control Delay					23.6	14.9		7.8				
Queue Delay					0.0	0.0		0.0				
Total Delay					23.6	14.9		7.8				
LOS					C	B		A				
Approach Delay					21.0			7.8				
Approach LOS					C			A				
Queue Length 50th (ft)					136	63		48				
Queue Length 95th (ft)					181	122		63				
Internal Link Dist (ft)		1632			2256			789			2576	
Turn Bay Length (ft)												
Base Capacity (vph)					1448	697		2542				
Starvation Cap Reductn					0	0		0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn					0	0		0				
Storage Cap Reductn					0	0		0				
Reduced v/c Ratio					0.37	0.32		0.41				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 13.4		Intersection LOS: B	
Intersection Capacity Utilization 40.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 14: 4th & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					[redacted]	[redacted]		[redacted]				
Volume (vph)	0	0	0	0	494	207	77	885	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0		5.0				
Lane Util. Factor					0.95	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					3539	1583		5065				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					3539	1583		5065				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	537	225	84	962	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	50	0	9	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	537	175	0	1037	0	0	0	0
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Actuated Green, G (s)					45.0	45.0		55.0				
Effective Green, g (s)					45.0	45.0		55.0				
Actuated g/C Ratio					0.41	0.41		0.50				
Clearance Time (s)					5.0	5.0		5.0				
Lane Grp Cap (vph)					1448	648		2533				
v/s Ratio Prot					c0.15							
v/s Ratio Perm						0.11		0.20				
v/c Ratio					0.37	0.27		0.41				
Uniform Delay, d1					22.6	21.6		17.3				
Progression Factor					1.00	1.00		0.43				
Incremental Delay, d2					0.7	1.0		0.5				
Delay (s)					23.4	22.6		7.9				
Level of Service					C	C		A				
Approach Delay (s)		0.0			23.1			7.9			0.0	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

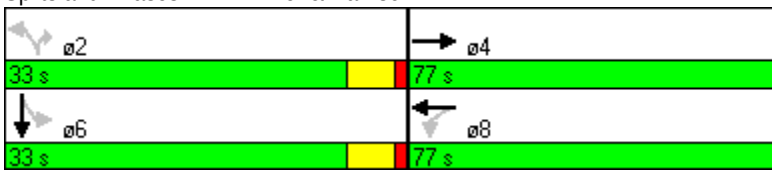
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		[redacted]		[redacted]	[redacted]		[redacted]		[redacted]	[redacted]	[redacted]	
Volume (vph)	0	726	17	14	595	0	29	0	33	135	43	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	0.95	0.95
Frt		0.997							0.850		0.894	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3529	0	1770	3539	0	1770	0	1583	3433	3164	0
Flt Permitted				0.314			0.651			0.950		
Satd. Flow (perm)	0	3529	0	585	3539	0	1213	0	1583	3433	3164	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4							36		112	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2016			1720			288			1550	
Travel Time (s)		45.8			39.1			5.6			30.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	789	18	15	647	0	32	0	36	147	47	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	807	0	15	647	0	32	0	36	147	159	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Minimum Split (s)		21.0		21.0	21.0		21.0		21.0	21.0	21.0	
Total Split (s)	0.0	77.0	0.0	77.0	77.0	0.0	33.0	0.0	33.0	33.0	33.0	0.0
Total Split (%)	0.0%	70.0%	0.0%	70.0%	70.0%	0.0%	30.0%	0.0%	30.0%	30.0%	30.0%	0.0%
Maximum Green (s)		72.0		72.0	72.0		28.0		28.0	28.0	28.0	
Yellow Time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
All-Red Time (s)		1.0		1.0	1.0		1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	5.0	5.0	4.0	5.0	4.0	5.0	5.0	5.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0		0	0	0	
Act Effct Green (s)		72.0		72.0	72.0		28.0		28.0	28.0	28.0	
Actuated g/C Ratio		0.65		0.65	0.65		0.25		0.25	0.25	0.25	
v/c Ratio		0.35		0.04	0.28		0.10		0.08	0.17	0.18	
Control Delay		9.0		6.9	8.0		32.6		10.7	55.8	34.2	
Queue Delay		0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay		9.0		6.9	8.0		32.6		10.7	55.8	34.2	
LOS		A		A	A		C		B	E	C	
Approach Delay		9.0			8.0						44.6	
Approach LOS		A			A						D	
Queue Length 50th (ft)		121		3	90		17		0	55	28	
Queue Length 95th (ft)		155		11	111		43		26	89	68	
Internal Link Dist (ft)		1936			1640			208			1470	
Turn Bay Length (ft)												
Base Capacity (vph)		2311		383	2316		309		430	874	889	
Starvation Cap Reductn		0		0	0		0		0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0		0		0	0	0	
Storage Cap Reductn		0		0	0		0		0	0	0	
Reduced v/c Ratio		0.35		0.04	0.28		0.10		0.08	0.17	0.18	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 40.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 17: River & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		[redacted]		[redacted]	[redacted]		[redacted]		[redacted]	[redacted]	[redacted]	
Volume (vph)	0	726	17	14	595	0	29	0	33	135	43	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	0.97	0.95	
Frt		1.00		1.00	1.00		1.00		0.85	1.00	0.89	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3527		1770	3539		1770		1583	3433	3165	
Flt Permitted		1.00		0.31	1.00		0.65		1.00	0.95	1.00	
Satd. Flow (perm)		3527		586	3539		1213		1583	3433	3165	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	789	18	15	647	0	32	0	36	147	47	112
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	27	0	83	0
Lane Group Flow (vph)	0	806	0	15	647	0	32	0	9	147	76	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Actuated Green, G (s)		72.0		72.0	72.0		28.0		28.0	28.0	28.0	
Effective Green, g (s)		72.0		72.0	72.0		28.0		28.0	28.0	28.0	
Actuated g/C Ratio		0.65		0.65	0.65		0.25		0.25	0.25	0.25	
Clearance Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Lane Grp Cap (vph)		2309		384	2316		309		403	874	806	
v/s Ratio Prot		c0.23			0.18						0.02	
v/s Ratio Perm				0.03			0.03		0.01	c0.04		
v/c Ratio		0.35		0.04	0.28		0.10		0.02	0.17	0.09	
Uniform Delay, d1		8.5		6.7	8.0		31.4		30.7	31.9	31.3	
Progression Factor		1.00		0.97	0.95		1.00		1.00	1.72	3.03	
Incremental Delay, d2		0.4		0.2	0.3		0.7		0.1	0.4	0.2	
Delay (s)		8.9		6.7	7.9		32.1		30.8	55.4	95.1	
Level of Service		A		A	A		C		C	E	F	
Approach Delay (s)		8.9			7.9			31.4			76.0	
Approach LOS		A			A			C			E	

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		

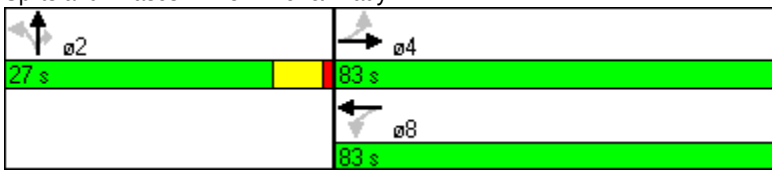
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	711	23	23	579	46	16	18	24	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.989				0.850			
Flt Protected	0.950			0.950				0.978				
Satd. Flow (prot)	1770	3522	0	1770	3500	0	0	1822	1583	0	0	0
Flt Permitted	0.379			0.329				0.978				
Satd. Flow (perm)	706	3522	0	613	3500	0	0	1822	1583	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			18				26			
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1720			6688			272			1540	
Travel Time (s)		39.1			152.0			5.3			30.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	139	773	25	25	629	50	17	20	26	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	798	0	25	679	0	0	37	26	0	0	0
Turn Type	Perm			Perm			Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4			8			2		2			
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0	21.0			
Total Split (s)	83.0	83.0	0.0	83.0	83.0	0.0	27.0	27.0	27.0	0.0	0.0	0.0
Total Split (%)	75.5%	75.5%	0.0%	75.5%	75.5%	0.0%	24.5%	24.5%	24.5%	0.0%	0.0%	0.0%
Maximum Green (s)	78.0	78.0		78.0	78.0		22.0	22.0	22.0			
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0			
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0			
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0			
Act Effct Green (s)	78.0	78.0		78.0	78.0			22.0	22.0			
Actuated g/C Ratio	0.71	0.71		0.71	0.71			0.20	0.20			
v/c Ratio	0.28	0.32		0.06	0.27			0.10	0.08			
Control Delay	6.2	5.2		5.3	5.9			36.9	13.7			
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			
Total Delay	6.2	5.2		5.3	5.9			36.9	13.7			
LOS	A	A		A	A			D	B			
Approach Delay		5.3			5.9			27.3				
Approach LOS		A			A			C				
Queue Length 50th (ft)	26	78		5	77			22	0			
Queue Length 95th (ft)	46	96		13	101			51	24			
Internal Link Dist (ft)		1640			6608			192			1460	
Turn Bay Length (ft)												
Base Capacity (vph)	501	2499		435	2487			364	337			
Starvation Cap Reductn	0	0		0	0			0	0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0			0	0			
Storage Cap Reductn	0	0		0	0			0	0			
Reduced v/c Ratio	0.28	0.32		0.06	0.27			0.10	0.08			

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 6.4		Intersection LOS: A	
Intersection Capacity Utilization 40.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 18: River & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	711	23	23	579	46	16	18	24	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0			
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00			
Frt	1.00	1.00		1.00	0.99			1.00	0.85			
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00			
Satd. Flow (prot)	1770	3523		1770	3500			1821	1583			
Flt Permitted	0.38	1.00		0.33	1.00			0.98	1.00			
Satd. Flow (perm)	705	3523		612	3500			1821	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	139	773	25	25	629	50	17	20	26	0	0	0
RTOR Reduction (vph)	0	2	0	0	5	0	0	0	21	0	0	0
Lane Group Flow (vph)	139	796	0	25	674	0	0	37	5	0	0	0
Turn Type	Perm			Perm			Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4			8			2		2			
Actuated Green, G (s)	78.0	78.0		78.0	78.0			22.0	22.0			
Effective Green, g (s)	78.0	78.0		78.0	78.0			22.0	22.0			
Actuated g/C Ratio	0.71	0.71		0.71	0.71			0.20	0.20			
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0			
Lane Grp Cap (vph)	500	2498		434	2482			364	317			
v/s Ratio Prot		c0.23			0.19							
v/s Ratio Perm	0.20			0.04				0.02	0.00			
v/c Ratio	0.28	0.32		0.06	0.27			0.10	0.02			
Uniform Delay, d1	5.8	6.0		4.9	5.8			35.9	35.3			
Progression Factor	0.80	0.80		1.00	1.00			1.00	1.00			
Incremental Delay, d2	1.3	0.3		0.3	0.3			0.6	0.1			
Delay (s)	6.0	5.1		5.1	6.0			36.5	35.4			
Level of Service	A	A		A	A			D	D			
Approach Delay (s)		5.3			6.0			36.0			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM Average Control Delay	6.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	520	62	0	0	0	0	0	0	105	356	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	1.00
Frt		0.984										
Flt Protected										0.950	0.999	
Satd. Flow (prot)	0	6305	0	0	0	0	0	0	0	1522	4801	0
Flt Permitted										0.950	0.999	
Satd. Flow (perm)	0	6305	0	0	0	0	0	0	0	1522	4801	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)		34								103	5	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2103			1714			1550			869	
Travel Time (s)		47.8			39.0			30.2			16.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	565	67	0	0	0	0	0	0	114	387	0
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	632	0	0	0	0	0	0	0	103	398	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Minimum Split (s)		21.0								21.0	21.0	
Total Split (s)	0.0	55.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.0	55.0	0.0
Total Split (%)	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)		50.0								50.0	50.0	
Yellow Time (s)		4.0								4.0	4.0	
All-Red Time (s)		1.0								1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0								5.0	5.0	
Flash Dont Walk (s)		11.0								11.0	11.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effct Green (s)		50.0								50.0	50.0	
Actuated g/C Ratio		0.45								0.45	0.45	
v/c Ratio		0.22								0.14	0.18	
Control Delay		17.4								0.5	5.6	
Queue Delay		0.0								0.0	0.0	
Total Delay		17.4								0.5	5.6	
LOS		B								A	A	
Approach Delay		17.4									4.6	
Approach LOS		B									A	
Queue Length 50th (ft)		72								0	17	
Queue Length 95th (ft)		92								0	24	
Internal Link Dist (ft)		2023			1634			1470			789	
Turn Bay Length (ft)												
Base Capacity (vph)		2884								748	2185	
Starvation Cap Reductn		0								0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0								0	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.22								0.14	0.18	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.22			
Intersection Signal Delay: 11.7		Intersection LOS: B	
Intersection Capacity Utilization 36.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 21: 3rd & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	520	62	0	0	0	0	0	0	105	356	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.0	5.0	
Lane Util. Factor		0.86								0.86	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		6306								1522	4799	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		6306								1522	4799	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	565	67	0	0	0	0	0	0	114	387	0
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	56	3	0
Lane Group Flow (vph)	0	613	0	0	0	0	0	0	0	47	395	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		50.0								50.0	50.0	
Effective Green, g (s)		50.0								50.0	50.0	
Actuated g/C Ratio		0.45								0.45	0.45	
Clearance Time (s)		5.0								5.0	5.0	
Lane Grp Cap (vph)		2866								692	2181	
v/s Ratio Prot		c0.10										
v/s Ratio Perm										0.03	0.08	
v/c Ratio		0.21								0.07	0.18	
Uniform Delay, d1		18.1								16.9	17.8	
Progression Factor		1.00								0.03	0.31	
Incremental Delay, d2		0.2								0.2	0.2	
Delay (s)		18.3								0.6	5.7	
Level of Service		B								A	A	
Approach Delay (s)		18.3			0.0			0.0			4.6	
Approach LOS		B			A			A			A	

Intersection Summary				
HCM Average Control Delay	12.3	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.20			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0	
Intersection Capacity Utilization	36.1%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	464	0	0	0	0	0	743	107	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00
Frt								0.981				
Flt Protected	0.950	0.997										
Satd. Flow (prot)	1522	4791	0	0	0	0	0	4989	0	0	0	0
Flt Permitted	0.950	0.997										
Satd. Flow (perm)	1522	4791	0	0	0	0	0	4989	0	0	0	0
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	140	12						35				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1714			6511			1540			869	
Travel Time (s)		39.0			148.0			30.0			16.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	504	0	0	0	0	0	808	116	0	0	0
Shared Lane Traffic (%)	18%											
Lane Group Flow (vph)	173	542	0	0	0	0	0	924	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	21.0	21.0						21.0				
Total Split (s)	48.0	48.0	0.0	0.0	0.0	0.0	0.0	62.0	0.0	0.0	0.0	0.0
Total Split (%)	43.6%	43.6%	0.0%	0.0%	0.0%	0.0%	0.0%	56.4%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	43.0	43.0						57.0				
Yellow Time (s)	4.0	4.0						4.0				
All-Red Time (s)	1.0	1.0						1.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0				
Flash Dont Walk (s)	11.0	11.0						11.0				
Pedestrian Calls (#/hr)	0	0						0				
Act Effct Green (s)	43.0	43.0						57.0				
Actuated g/C Ratio	0.39	0.39						0.52				
v/c Ratio	0.25	0.29						0.36				
Control Delay	3.4	16.9						18.0				
Queue Delay	0.0	0.0						0.0				
Total Delay	3.4	16.9						18.0				
LOS	A	B						B				
Approach Delay		13.6						18.0				
Approach LOS		B						B				
Queue Length 50th (ft)	3	60						145				
Queue Length 95th (ft)	27	76						180				
Internal Link Dist (ft)		1634			6431			1460			789	
Turn Bay Length (ft)												
Base Capacity (vph)	680	1880						2602				
Starvation Cap Reductn	0	0						0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0						0				
Storage Cap Reductn	0	0						0				
Reduced v/c Ratio	0.25	0.29						0.36				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 16.1		Intersection LOS: B	
Intersection Capacity Utilization 61.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 22: 3rd & Brady



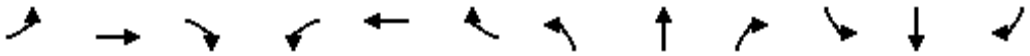
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	464	0	0	0	0	0	743	107	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0						5.0				
Lane Util. Factor	0.86	0.86						0.91				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1522	4789						4990				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1522	4789						4990				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	504	0	0	0	0	0	808	116	0	0	0
RTOR Reduction (vph)	85	7	0	0	0	0	0	17	0	0	0	0
Lane Group Flow (vph)	88	535	0	0	0	0	0	907	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)	43.0	43.0						57.0				
Effective Green, g (s)	43.0	43.0						57.0				
Actuated g/C Ratio	0.39	0.39						0.52				
Clearance Time (s)	5.0	5.0						5.0				
Lane Grp Cap (vph)	595	1872						2586				
v/s Ratio Prot								c0.18				
v/s Ratio Perm	0.06	0.11										
v/c Ratio	0.15	0.29						0.35				
Uniform Delay, d1	21.7	23.0						15.6				
Progression Factor	0.41	0.73						1.17				
Incremental Delay, d2	0.5	0.4						0.4				
Delay (s)	9.5	17.1						18.6				
Level of Service	A	B						B				
Approach Delay (s)		15.3			0.0			18.6			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Brady-Harrison Phase 1

Converted Two-Way Streets
2009 AM Peak Hour Traffic

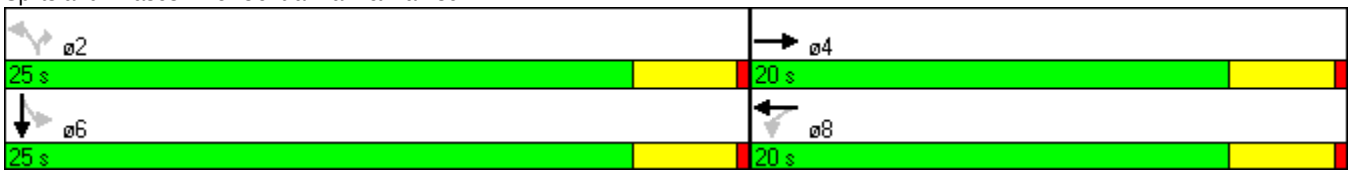


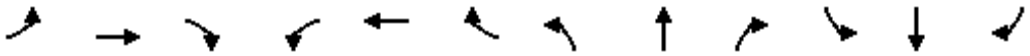
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	289	49	5	144	0	32	0	109	87	975	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.978							0.850		0.988	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3461	0	1770	1863	0	1770	0	1583	1770	3497	0
Flt Permitted				0.533			0.190			0.950		
Satd. Flow (perm)	0	3461	0	993	1863	0	354	0	1583	1770	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47							118		27	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2320			1712			1008			640	
Travel Time (s)		52.7			38.9			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	314	53	5	157	0	35	0	118	95	1060	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	367	0	5	157	0	35	0	118	95	1152	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Minimum Split (s)		20.0		20.0	20.0		20.0		20.0	20.0	20.0	
Total Split (s)	0.0	20.0	0.0	20.0	20.0	0.0	25.0	0.0	25.0	25.0	25.0	0.0
Total Split (%)	0.0%	44.4%	0.0%	44.4%	44.4%	0.0%	55.6%	0.0%	55.6%	55.6%	55.6%	0.0%
Maximum Green (s)		16.0		16.0	16.0		21.0		21.0	21.0	21.0	
Yellow Time (s)		3.5		3.5	3.5		3.5		3.5	3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0		0	0	0	
Act Effct Green (s)		16.0		16.0	16.0		21.0		21.0	21.0	21.0	
Actuated g/C Ratio		0.36		0.36	0.36		0.47		0.47	0.47	0.47	
v/c Ratio		0.29		0.01	0.24		0.21		0.15	0.12	0.70	
Control Delay		9.8		10.0	12.4		9.9		2.6	7.3	12.1	
Queue Delay		0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay		9.8		10.0	12.4		9.9		2.6	7.3	12.1	
LOS		A		A	B		A		A	A	B	
Approach Delay		9.8			12.3						11.7	
Approach LOS		A			B						B	
Queue Length 50th (ft)		29		1	34		4		0	13	110	
Queue Length 95th (ft)		53		m4	74		m9		8	31	166	
Internal Link Dist (ft)		2240			1632			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)		1261		353	662		165		802	826	1646	
Starvation Cap Reductn		0		0	0		0		0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0		0		0	0	0	
Storage Cap Reductn		0		0	0		0		0	0	0	
Reduced v/c Ratio		0.29		0.01	0.24		0.21		0.15	0.12	0.70	

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 16 (36%), Referenced to phase 2:NBL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 10.8		Intersection LOS: B	
Intersection Capacity Utilization 45.9%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Central Park & Harrison





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	289	49	5	144	0	32	0	109	87	975	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	1.00		1.00		1.00	1.00	0.95	
Frt		0.98		1.00	1.00		1.00		0.85	1.00	0.99	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3463		1770	1863		1770		1583	1770	3497	
Flt Permitted		1.00		0.53	1.00		0.19		1.00	0.95	1.00	
Satd. Flow (perm)		3463		993	1863		355		1583	1770	3497	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	314	53	5	157	0	35	0	118	95	1060	92
RTOR Reduction (vph)	0	30	0	0	0	0	0	0	63	0	14	0
Lane Group Flow (vph)	0	337	0	5	157	0	35	0	55	95	1138	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Actuated Green, G (s)		16.0		16.0	16.0		21.0		21.0	21.0	21.0	
Effective Green, g (s)		16.0		16.0	16.0		21.0		21.0	21.0	21.0	
Actuated g/C Ratio		0.36		0.36	0.36		0.47		0.47	0.47	0.47	
Clearance Time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)		1231		353	662		166		739	826	1632	
v/s Ratio Prot		c0.10			0.08						c0.33	
v/s Ratio Perm				0.01			0.10		0.03	0.05		
v/c Ratio		0.27		0.01	0.24		0.21		0.07	0.12	0.70	
Uniform Delay, d1		10.4		9.4	10.2		7.1		6.6	6.8	9.5	
Progression Factor		1.00		1.05	1.09		0.87		1.10	1.00	1.00	
Incremental Delay, d2		0.5		0.1	0.8		2.7		0.2	0.3	2.5	
Delay (s)		10.9		9.9	12.0		8.9		7.5	7.0	12.0	
Level of Service		B		A	B		A		A	A	B	
Approach Delay (s)		10.9			11.9			7.8			11.6	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

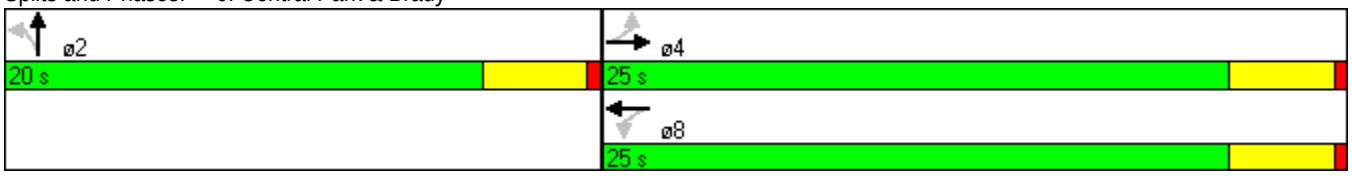
c Critical Lane Group

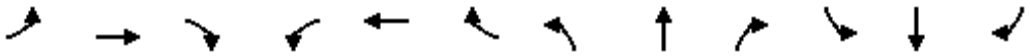
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	328	239	5	45	175	76	32	637	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.997			0.954			0.996				
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	1857	0	1770	1777	0	1770	3525	0	0	0	0
Flt Permitted	0.583			0.592			0.950					
Satd. Flow (perm)	1086	1857	0	1103	1777	0	1770	3525	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			66			7				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			1008			640	
Travel Time (s)		38.9			54.5			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	357	260	5	49	190	83	35	692	21	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	357	265	0	49	273	0	35	713	0	0	0	0
Turn Type	Perm			Perm			Perm					
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0				
Total Split (s)	25.0	25.0	0.0	25.0	25.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
Total Split (%)	55.6%	55.6%	0.0%	55.6%	55.6%	0.0%	44.4%	44.4%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		16.0	16.0				
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5				
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)	0	0		0	0		0	0				
Act Effct Green (s)	21.0	21.0		21.0	21.0		16.0	16.0				
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.36	0.36				
v/c Ratio	0.70	0.31		0.10	0.32		0.06	0.57				
Control Delay	18.0	6.7		7.4	6.8		10.3	14.3				
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				
Total Delay	18.0	6.7		7.4	6.8		10.3	14.3				
LOS	B	A		A	A		B	B				
Approach Delay		13.2			6.9			14.1				
Approach LOS		B			A			B				
Queue Length 50th (ft)	44	28		6	29		7	82				
Queue Length 95th (ft)	#187	55		20	64		m15	103				
Internal Link Dist (ft)		1632			2320			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)	507	868		515	864		629	1258				
Starvation Cap Reductn	0	0		0	0		0	0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0				
Storage Cap Reductn	0	0		0	0		0	0				
Reduced v/c Ratio	0.70	0.31		0.10	0.32		0.06	0.57				

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 10 (22%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 12.4		Intersection LOS: B	
Intersection Capacity Utilization 60.2%		ICU Level of Service B	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 6: Central Park & Brady





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	328	239	5	45	175	76	32	637	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95				
Frt	1.00	1.00		1.00	0.95		1.00	1.00				
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00				
Satd. Flow (prot)	1770	1857		1770	1778		1770	3524				
Flt Permitted	0.58	1.00		0.59	1.00		0.95	1.00				
Satd. Flow (perm)	1086	1857		1102	1778		1770	3524				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	357	260	5	49	190	83	35	692	21	0	0	0
RTOR Reduction (vph)	0	2	0	0	35	0	0	5	0	0	0	0
Lane Group Flow (vph)	357	263	0	49	238	0	35	708	0	0	0	0
Turn Type	Perm			Perm			Perm					
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Actuated Green, G (s)	21.0	21.0		21.0	21.0		16.0	16.0				
Effective Green, g (s)	21.0	21.0		21.0	21.0		16.0	16.0				
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.36	0.36				
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0				
Lane Grp Cap (vph)	507	867		514	830		629	1253				
v/s Ratio Prot		0.14			0.13			c0.20				
v/s Ratio Perm	c0.33			0.04			0.02					
v/c Ratio	0.70	0.30		0.10	0.29		0.06	0.57				
Uniform Delay, d1	9.5	7.5		6.7	7.4		9.5	11.7				
Progression Factor	0.80	0.75		1.00	1.00		1.05	1.07				
Incremental Delay, d2	7.9	0.9		0.4	0.9		0.2	1.8				
Delay (s)	15.5	6.5		7.1	8.3		10.1	14.3				
Level of Service	B	A		A	A		B	B				
Approach Delay (s)		11.7			8.1			14.1			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

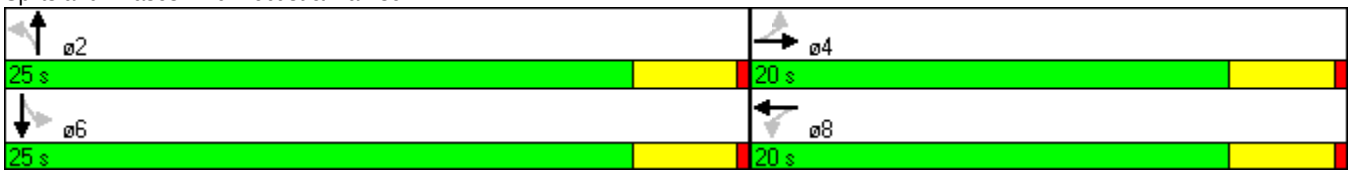
c Critical Lane Group

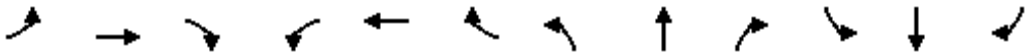
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	586	24	59	373	79	37	274	52	64	413	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.974			0.976			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3447	0	1770	1818	0	1770	1848	0
Flt Permitted	0.447			0.325			0.385			0.499		
Satd. Flow (perm)	833	3518	0	605	3447	0	717	1818	0	930	1848	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			62			29			8	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2240			1712			2656			1008	
Travel Time (s)		50.9			38.9			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	637	26	64	405	86	40	298	57	70	449	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	663	0	64	491	0	40	355	0	70	474	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	25.0	25.0	0.0	25.0	25.0	0.0
Total Split (%)	44.4%	44.4%	0.0%	44.4%	44.4%	0.0%	55.6%	55.6%	0.0%	55.6%	55.6%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		21.0	21.0		21.0	21.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.0	16.0		16.0	16.0		21.0	21.0		21.0	21.0	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.47	0.47		0.47	0.47	
v/c Ratio	0.21	0.53		0.30	0.39		0.12	0.41		0.16	0.55	
Control Delay	12.4	13.2		6.1	2.6		5.3	5.8		2.4	5.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.4	13.2		6.1	2.6		5.3	5.8		2.4	5.5	
LOS	B	B		A	A		A	A		A	A	
Approach Delay		13.1			3.0			5.8			5.1	
Approach LOS		B			A			A			A	
Queue Length 50th (ft)	11	67		3	5		4	32		1	7	
Queue Length 95th (ft)	32	106		m5	6		9	46		m2	m10	
Internal Link Dist (ft)		2160			1632			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	296	1257		215	1266		335	864		434	867	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.53		0.30	0.39		0.12	0.41		0.16	0.55	

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 40 (89%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 7.3		Intersection LOS: A	
Intersection Capacity Utilization 60.1%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 9: Locust & Harrison

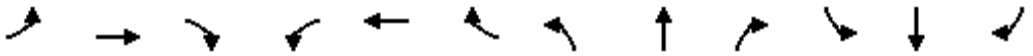




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	586	24	59	373	79	37	274	52	64	413	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3518		1770	3446		1770	1818		1770	1848	
Flt Permitted	0.45	1.00		0.33	1.00		0.38	1.00		0.50	1.00	
Satd. Flow (perm)	833	3518		606	3446		716	1818		930	1848	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	637	26	64	405	86	40	298	57	70	449	25
RTOR Reduction (vph)	0	6	0	0	40	0	0	15	0	0	4	0
Lane Group Flow (vph)	63	657	0	64	451	0	40	340	0	70	470	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		21.0	21.0		21.0	21.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		21.0	21.0		21.0	21.0	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.47	0.47		0.47	0.47	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	296	1251		215	1225		334	848		434	862	
v/s Ratio Prot		c0.19			0.13			0.19			c0.25	
v/s Ratio Perm	0.08			0.11			0.06			0.08		
v/c Ratio	0.21	0.52		0.30	0.37		0.12	0.40		0.16	0.54	
Uniform Delay, d1	10.1	11.5		10.5	10.8		6.8	7.9		6.9	8.6	
Progression Factor	1.00	1.00		0.27	0.19		0.65	0.60		0.25	0.41	
Incremental Delay, d2	1.6	1.6		3.1	0.8		0.7	1.4		0.6	1.8	
Delay (s)	11.7	13.1		5.9	2.8		5.1	6.1		2.3	5.3	
Level of Service	B	B		A	A		A	A		A	A	
Approach Delay (s)		13.0			3.1			6.0			4.9	
Approach LOS		B			A			A			A	

Intersection Summary					
HCM Average Control Delay	7.3	HCM Level of Service		A	
HCM Volume to Capacity ratio	0.54				
Actuated Cycle Length (s)	45.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	60.1%	ICU Level of Service		B	
Analysis Period (min)	15				

c Critical Lane Group

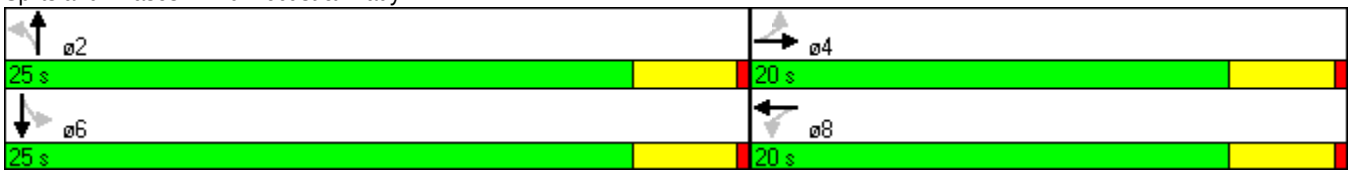


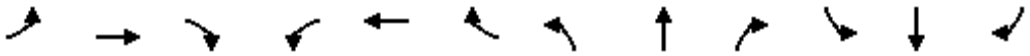
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	419	24	58	500	79	38	275	52	63	413	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.979			0.976			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3511	0	1770	3465	0	1770	1818	0	1770	1848	0
Flt Permitted	0.348			0.455			0.386			0.498		
Satd. Flow (perm)	648	3511	0	848	3465	0	719	1818	0	928	1848	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			44			29			8	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			2656			1008	
Travel Time (s)		38.9			54.5			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	455	26	63	543	86	41	299	57	68	449	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	481	0	63	629	0	41	356	0	68	473	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	25.0	25.0	0.0	25.0	25.0	0.0
Total Split (%)	44.4%	44.4%	0.0%	44.4%	44.4%	0.0%	55.6%	55.6%	0.0%	55.6%	55.6%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		21.0	21.0		21.0	21.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.0	16.0		16.0	16.0		21.0	21.0		21.0	21.0	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.47	0.47		0.47	0.47	
v/c Ratio	0.27	0.38		0.21	0.50		0.12	0.41		0.16	0.55	
Control Delay	12.1	9.8		12.3	12.2		5.6	6.1		7.6	10.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.1	9.8		12.3	12.2		5.6	6.1		7.6	10.8	
LOS	B	A		B	B		A	A		A	B	
Approach Delay		10.1			12.2			6.0			10.4	
Approach LOS		B			B			A			B	
Queue Length 50th (ft)	15	60		11	58		4	33		9	70	
Queue Length 95th (ft)	m33	100		32	95		11	54		24	126	
Internal Link Dist (ft)		1632			2320			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	230	1257		302	1260		336	864		433	867	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.27	0.38		0.21	0.50		0.12	0.41		0.16	0.55	

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 59.4%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 10: Locust & Brady

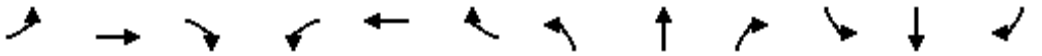




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	419	24	58	500	79	38	275	52	63	413	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3511		1770	3467		1770	1818		1770	1849	
Flt Permitted	0.35	1.00		0.46	1.00		0.39	1.00		0.50	1.00	
Satd. Flow (perm)	648	3511		848	3467		718	1818		928	1849	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	455	26	63	543	86	41	299	57	68	449	24
RTOR Reduction (vph)	0	9	0	0	28	0	0	15	0	0	4	0
Lane Group Flow (vph)	63	472	0	63	601	0	41	341	0	68	469	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		21.0	21.0		21.0	21.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		21.0	21.0		21.0	21.0	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.47	0.47		0.47	0.47	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	230	1248		302	1233		335	848		433	863	
v/s Ratio Prot		0.13			c0.17			0.19			c0.25	
v/s Ratio Perm	0.10			0.07			0.06			0.07		
v/c Ratio	0.27	0.38		0.21	0.49		0.12	0.40		0.16	0.54	
Uniform Delay, d1	10.4	10.8		10.1	11.3		6.8	7.9		6.9	8.6	
Progression Factor	0.83	0.84		1.00	1.00		0.69	0.63		0.93	0.94	
Incremental Delay, d2	2.6	0.8		1.6	1.4		0.7	1.4		0.8	2.5	
Delay (s)	11.2	9.9		11.7	12.7		5.4	6.3		7.2	10.5	
Level of Service	B	A		B	B		A	A		A	B	
Approach Delay (s)		10.0			12.6			6.2			10.1	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

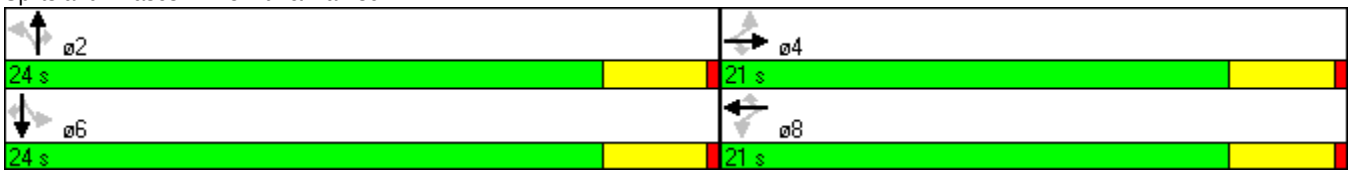


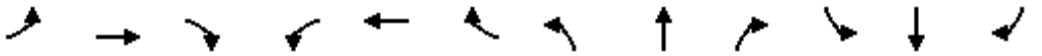
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	155	26	27	165	26	8	228	36	38	261	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.644			0.651			0.566			0.605		
Satd. Flow (perm)	1200	1863	1583	1213	1863	1583	1054	1863	1583	1127	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			28			28			39			78
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			1163			2656	
Travel Time (s)		48.0			38.9			22.7			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	168	28	29	179	28	9	248	39	41	284	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	168	28	29	179	28	9	248	39	41	284	78
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%	53.3%	53.3%
Maximum Green (s)	17.0	17.0	17.0	17.0	17.0	17.0	20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	17.0	17.0	17.0	17.0	17.0	17.0	20.0	20.0	20.0	20.0	20.0	20.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.44	0.44	0.44	0.44	0.44	0.44
v/c Ratio	0.06	0.24	0.05	0.06	0.25	0.05	0.02	0.30	0.05	0.08	0.34	0.10
Control Delay	9.4	10.7	4.6	4.5	5.6	1.0	4.9	5.8	1.3	2.7	3.5	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	10.7	4.6	4.5	5.6	1.0	4.9	5.8	1.3	2.7	3.5	0.5
LOS	A	B	A	A	A	A	A	A	A	A	A	A
Approach Delay		9.8			4.9			5.2			2.8	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	4	28	0	2	13	1	1	22	1	2	15	1
Queue Length 95th (ft)	15	60	11	m6	22	m2	3	35	1	m4	26	m1
Internal Link Dist (ft)		2032			1632			1083			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	453	704	615	458	704	615	468	828	725	501	828	747
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.24	0.05	0.06	0.25	0.05	0.02	0.30	0.05	0.08	0.34	0.10

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 5.2		Intersection LOS: A	
Intersection Capacity Utilization 42.4%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 13: 4th & Harrison

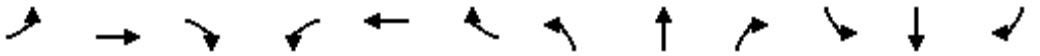




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	155	26	27	165	26	8	228	36	38	261	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.64	1.00	1.00	0.65	1.00	1.00	0.57	1.00	1.00	0.61	1.00	1.00
Satd. Flow (perm)	1200	1863	1583	1212	1863	1583	1053	1863	1583	1127	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	168	28	29	179	28	9	248	39	41	284	78
RTOR Reduction (vph)	0	0	17	0	0	17	0	0	22	0	0	43
Lane Group Flow (vph)	27	168	11	29	179	11	9	248	17	41	284	35
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	17.0	17.0	17.0	17.0	17.0	17.0	20.0	20.0	20.0	20.0	20.0	20.0
Effective Green, g (s)	17.0	17.0	17.0	17.0	17.0	17.0	20.0	20.0	20.0	20.0	20.0	20.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.44	0.44	0.44	0.44	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	453	704	598	458	704	598	468	828	704	501	828	704
v/s Ratio Prot		0.09			c0.10			0.13			c0.15	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.01		0.01	0.04		0.02
v/c Ratio	0.06	0.24	0.02	0.06	0.25	0.02	0.02	0.30	0.02	0.08	0.34	0.05
Uniform Delay, d1	8.9	9.6	8.8	8.9	9.6	8.8	7.0	8.0	7.0	7.2	8.2	7.1
Progression Factor	1.00	1.00	1.00	0.47	0.48	0.24	0.68	0.60	0.46	0.32	0.29	0.11
Incremental Delay, d2	0.3	0.8	0.1	0.3	0.8	0.1	0.1	0.9	0.1	0.3	1.0	0.1
Delay (s)	9.2	10.4	8.8	4.4	5.5	2.2	4.8	5.7	3.3	2.6	3.4	0.9
Level of Service	A	B	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		10.0			5.0			5.4			2.8	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

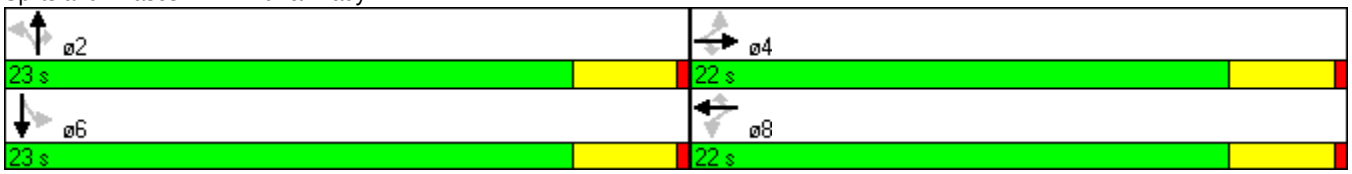


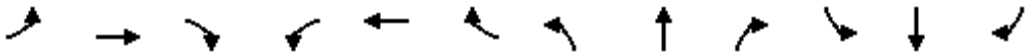
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	231	25	27	246	27	8	229	36	38	261	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1803	0
Flt Permitted	0.571			0.591			0.473			0.599		
Satd. Flow (perm)	1064	1863	1583	1101	1863	1583	881	1863	1583	1116	1803	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			39		38	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			1163			2656	
Travel Time (s)		38.9			53.1			22.7			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	251	27	29	267	29	9	249	39	41	284	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	251	27	29	267	29	9	249	39	41	361	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	23.0	0.0
Total Split (%)	48.9%	48.9%	48.9%	48.9%	48.9%	48.9%	51.1%	51.1%	51.1%	51.1%	51.1%	0.0%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0	19.0	19.0	19.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0	19.0	19.0	19.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.42	0.42	0.42	0.42	0.42	
v/c Ratio	0.07	0.34	0.04	0.07	0.36	0.04	0.02	0.32	0.06	0.09	0.46	
Control Delay	8.2	10.6	3.7	8.9	11.2	4.2	4.9	6.6	1.2	4.2	5.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.2	10.6	3.7	8.9	11.2	4.2	4.9	6.6	1.2	4.2	5.0	
LOS	A	B	A	A	B	A	A	A	A	A	A	
Approach Delay		9.8			10.4			5.8			4.9	
Approach LOS		A			B			A			A	
Queue Length 50th (ft)	5	52	0	4	46	0	1	19	1	3	18	
Queue Length 95th (ft)	15	83	10	16	88	10	3	33	0	m6	33	
Internal Link Dist (ft)		1632			2256			1083			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	426	745	649	440	745	651	372	787	691	471	783	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.07	0.34	0.04	0.07	0.36	0.04	0.02	0.32	0.06	0.09	0.46	

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 6 (13%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 7.6		Intersection LOS: A	
Intersection Capacity Utilization 51.0%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 14: 4th & Brady

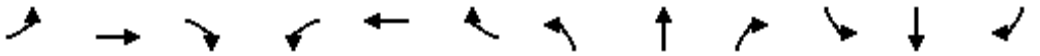




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	231	25	27	246	27	8	229	36	38	261	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1803	
Flt Permitted	0.57	1.00	1.00	0.59	1.00	1.00	0.47	1.00	1.00	0.60	1.00	
Satd. Flow (perm)	1065	1863	1583	1101	1863	1583	882	1863	1583	1116	1803	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	251	27	29	267	29	9	249	39	41	284	77
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	23	0	22	0
Lane Group Flow (vph)	28	251	11	29	267	12	9	249	16	41	339	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0	19.0	19.0	19.0	
Effective Green, g (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0	19.0	19.0	19.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.42	0.42	0.42	0.42	0.42	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	426	745	633	440	745	633	372	787	668	471	761	
v/s Ratio Prot		0.13			c0.14			0.13			c0.19	
v/s Ratio Perm	0.03		0.01	0.03		0.01	0.01		0.01	0.04		
v/c Ratio	0.07	0.34	0.02	0.07	0.36	0.02	0.02	0.32	0.02	0.09	0.45	
Uniform Delay, d1	8.3	9.4	8.2	8.3	9.5	8.2	7.6	8.7	7.6	7.8	9.3	
Progression Factor	0.93	0.98	1.11	1.00	1.00	1.00	0.61	0.62	0.38	0.47	0.37	
Incremental Delay, d2	0.3	1.2	0.0	0.3	1.3	0.1	0.1	1.1	0.1	0.3	1.7	
Delay (s)	8.0	10.4	9.1	8.6	10.8	8.2	4.7	6.5	3.0	4.0	5.1	
Level of Service	A	B	A	A	B	A	A	A	A	A	A	
Approach Delay (s)		10.1			10.4			5.9			5.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

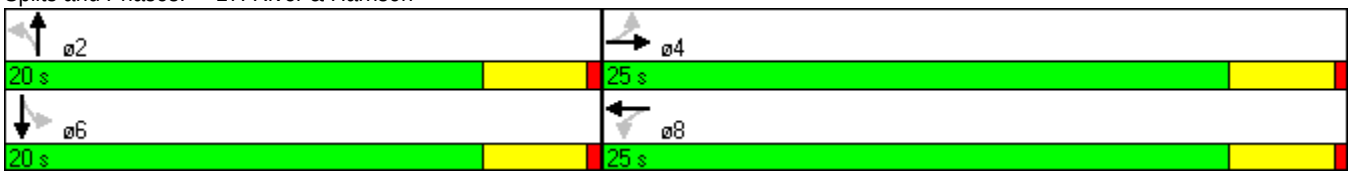


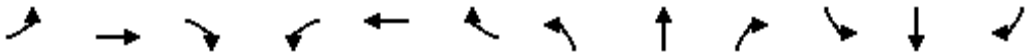
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	543	14	12	527	26	9	3	5	21	10	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.993			0.906			0.888	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1855	0	1770	1850	0	1770	1688	0	1770	1654	0
Flt Permitted	0.270			0.267			0.729			0.752		
Satd. Flow (perm)	503	1855	0	497	1850	0	1358	1688	0	1401	1654	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			7			5			32	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2016			1710			288			1848	
Travel Time (s)		45.8			38.9			5.6			36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	590	15	13	573	28	10	3	5	23	11	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	605	0	13	601	0	10	8	0	23	43	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	25.0	25.0	0.0	25.0	25.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	55.6%	55.6%	0.0%	55.6%	55.6%	0.0%	44.4%	44.4%	0.0%	44.4%	44.4%	0.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	21.0	21.0		21.0	21.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.36	0.36		0.36	0.36	
v/c Ratio	0.17	0.70		0.06	0.69		0.02	0.01		0.05	0.07	
Control Delay	9.2	15.0		4.0	10.1		9.7	7.4		17.2	11.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.2	15.0		4.0	10.1		9.7	7.4		17.2	11.7	
LOS	A	B		A	B		A	A		B	B	
Approach Delay		14.6			10.0			8.7			13.6	
Approach LOS		B			B			A			B	
Queue Length 50th (ft)	5	111		2	108		2	1		5	3	
Queue Length 95th (ft)	20	#205		m3	155		9	7		17	20	
Internal Link Dist (ft)		1936			1630			208			1768	
Turn Bay Length (ft)												
Base Capacity (vph)	235	868		232	867		483	603		498	609	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.70		0.06	0.69		0.02	0.01		0.05	0.07	

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 12.4		Intersection LOS: B	
Intersection Capacity Utilization 45.2%		ICU Level of Service A	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 17: River & Harrison

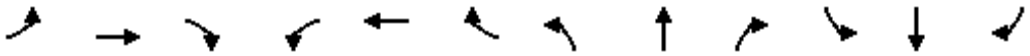




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	543	14	12	527	26	9	3	5	21	10	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.91		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1856		1770	1850		1770	1688		1770	1655	
Flt Permitted	0.27	1.00		0.27	1.00		0.73	1.00		0.75	1.00	
Satd. Flow (perm)	503	1856		497	1850		1358	1688		1402	1655	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	590	15	13	573	28	10	3	5	23	11	32
RTOR Reduction (vph)	0	2	0	0	4	0	0	3	0	0	21	0
Lane Group Flow (vph)	40	603	0	13	597	0	10	5	0	23	22	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	21.0	21.0		21.0	21.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	21.0	21.0		21.0	21.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.36	0.36		0.36	0.36	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	235	866		232	863		483	600		498	588	
v/s Ratio Prot		c0.32			0.32			0.00			0.01	
v/s Ratio Perm	0.08			0.03			0.01			c0.02		
v/c Ratio	0.17	0.70		0.06	0.69		0.02	0.01		0.05	0.04	
Uniform Delay, d1	7.0	9.5		6.6	9.5		9.4	9.4		9.5	9.5	
Progression Factor	1.00	1.00		0.52	0.63		1.00	1.00		1.77	2.49	
Incremental Delay, d2	1.6	4.6		0.4	4.0		0.1	0.0		0.2	0.1	
Delay (s)	8.5	14.1		3.8	10.0		9.5	9.4		16.9	23.7	
Level of Service	A	B		A	B		A	A		B	C	
Approach Delay (s)		13.7			9.9			9.4			21.4	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



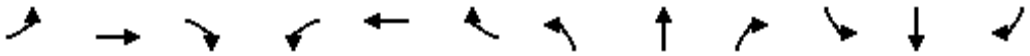
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	467	12	8	574	27	3	3	4	21	9	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.993				0.850		0.886	
Flt Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1770	1855	0	1770	1850	0	0	1818	1583	1770	1650	0
Flt Permitted	0.336			0.415				0.936		0.754		
Satd. Flow (perm)	626	1855	0	773	1850	0	0	1744	1583	1405	1650	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			6				4		32	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1710			6778			272			1848	
Travel Time (s)		38.9			154.0			5.3			36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	508	13	9	624	29	3	3	4	23	10	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	521	0	9	653	0	0	6	4	23	42	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	
Total Split (s)	66.0	66.0	0.0	66.0	66.0	0.0	24.0	24.0	24.0	24.0	24.0	0.0
Total Split (%)	73.3%	73.3%	0.0%	73.3%	73.3%	0.0%	26.7%	26.7%	26.7%	26.7%	26.7%	0.0%
Maximum Green (s)	62.0	62.0		62.0	62.0		20.0	20.0	20.0	20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	62.0	62.0		62.0	62.0			20.0	20.0	20.0	20.0	
Actuated g/C Ratio	0.69	0.69		0.69	0.69			0.22	0.22	0.22	0.22	
v/c Ratio	0.10	0.41		0.02	0.51			0.02	0.01	0.07	0.11	
Control Delay	2.1	4.4		4.6	8.4			27.7	18.0	39.1	23.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	2.1	4.4		4.6	8.4			27.7	18.0	39.1	23.8	
LOS	A	A		A	A			C	B	D	C	
Approach Delay		4.2			8.3			23.8			29.2	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	3	130		1	153			3	0	13	7	
Queue Length 95th (ft)	m4	143		6	227			13	9	37	40	
Internal Link Dist (ft)		1630			6698			192			1768	
Turn Bay Length (ft)												
Base Capacity (vph)	431	1279		533	1276			388	355	312	392	
Starvation Cap Reductn	0	0		0	0			0	0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.10	0.41		0.02	0.51			0.02	0.01	0.07	0.11	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 44 (49%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Pretimed			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 7.7		Intersection LOS: A	
Intersection Capacity Utilization 46.3%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 18: River & Brady

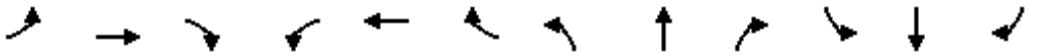




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	467	12	8	574	27	3	3	4	21	9	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99			1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1856		1770	1850			1817	1583	1770	1650	
Flt Permitted	0.34	1.00		0.41	1.00			0.94	1.00	0.75	1.00	
Satd. Flow (perm)	627	1856		772	1850			1744	1583	1404	1650	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	508	13	9	624	29	3	3	4	23	10	32
RTOR Reduction (vph)	0	1	0	0	2	0	0	0	3	0	25	0
Lane Group Flow (vph)	41	520	0	9	651	0	0	6	1	23	17	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	62.0	62.0		62.0	62.0			20.0	20.0	20.0	20.0	
Effective Green, g (s)	62.0	62.0		62.0	62.0			20.0	20.0	20.0	20.0	
Actuated g/C Ratio	0.69	0.69		0.69	0.69			0.22	0.22	0.22	0.22	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	432	1279		532	1274			388	352	312	367	
v/s Ratio Prot		0.28			c0.35						0.01	
v/s Ratio Perm	0.07			0.01				0.00	0.00	c0.02		
v/c Ratio	0.09	0.41		0.02	0.51			0.02	0.00	0.07	0.05	
Uniform Delay, d1	4.7	6.1		4.4	6.7			27.3	27.2	27.7	27.5	
Progression Factor	0.36	0.59		1.00	1.00			1.00	1.00	1.38	1.74	
Incremental Delay, d2	0.3	0.7		0.1	1.5			0.1	0.0	0.5	0.2	
Delay (s)	2.0	4.3		4.5	8.2			27.4	27.3	38.6	48.2	
Level of Service	A	A		A	A			C	C	D	D	
Approach Delay (s)		4.1			8.1			27.3			44.8	
Approach LOS		A			A			C			D	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

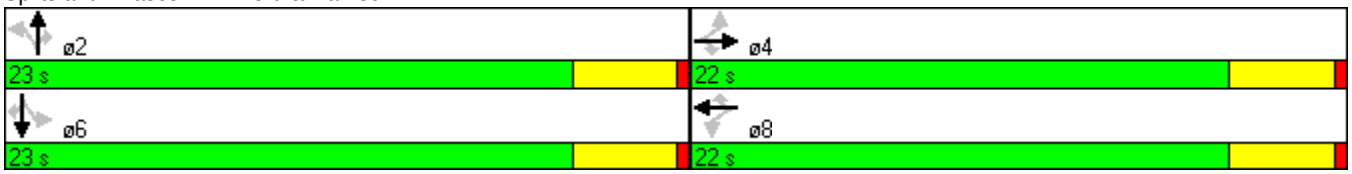


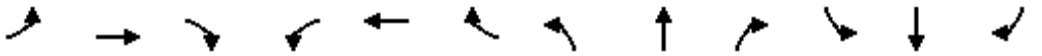
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	155	25	27	165	27	8	152	37	38	185	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.644			0.651			0.632			0.653		
Satd. Flow (perm)	1200	1863	1583	1213	1863	1583	1177	1863	1583	1216	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			40			77
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2089			1711			1848			1163	
Travel Time (s)		47.5			38.9			36.0			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	168	27	29	179	29	9	165	40	41	201	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	168	27	29	179	29	9	165	40	41	201	77
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	48.9%	48.9%	48.9%	48.9%	48.9%	48.9%	51.1%	51.1%	51.1%	51.1%	51.1%	51.1%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0	19.0	19.0	19.0	19.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0	19.0	19.0	19.0	19.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.42	0.42	0.42	0.42	0.42	0.42
v/c Ratio	0.06	0.23	0.04	0.06	0.24	0.04	0.02	0.21	0.06	0.08	0.26	0.11
Control Delay	8.8	9.9	4.3	4.3	5.3	0.7	7.4	8.9	2.8	3.1	3.6	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	9.9	4.3	4.3	5.3	0.7	7.4	8.9	2.8	3.1	3.6	0.6
LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay		9.1			4.6			7.7			2.8	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	4	27	0	2	12	0	1	29	2	2	8	1
Queue Length 95th (ft)	15	57	10	5	18	1	m5	m47	m8	5	15	0
Internal Link Dist (ft)		2009			1631			1768			1083	
Turn Bay Length (ft)												
Base Capacity (vph)	480	745	649	485	745	651	497	787	691	513	787	713
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.23	0.04	0.06	0.24	0.04	0.02	0.21	0.06	0.08	0.26	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 24 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.26			
Intersection Signal Delay: 5.7		Intersection LOS: A	
Intersection Capacity Utilization 38.4%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 21: 3rd & Harrison

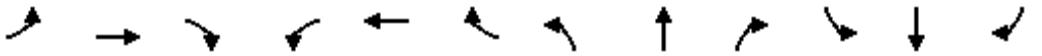




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	155	25	27	165	27	8	152	37	38	185	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.64	1.00	1.00	0.65	1.00	1.00	0.63	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	1200	1863	1583	1212	1863	1583	1177	1863	1583	1216	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	168	27	29	179	29	9	165	40	41	201	77
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	23	0	0	44
Lane Group Flow (vph)	27	168	11	29	179	12	9	165	17	41	201	33
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0	19.0	19.0	19.0	19.0
Effective Green, g (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0	19.0	19.0	19.0	19.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.42	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	480	745	633	485	745	633	497	787	668	513	787	668
v/s Ratio Prot		0.09			c0.10			0.09			c0.11	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.01		0.01	0.03		0.02
v/c Ratio	0.06	0.23	0.02	0.06	0.24	0.02	0.02	0.21	0.03	0.08	0.26	0.05
Uniform Delay, d1	8.3	8.9	8.2	8.3	9.0	8.2	7.6	8.2	7.6	7.8	8.4	7.7
Progression Factor	1.00	1.00	1.00	0.48	0.50	0.18	0.95	0.99	1.01	0.35	0.33	0.15
Incremental Delay, d2	0.2	0.7	0.0	0.2	0.7	0.1	0.1	0.6	0.1	0.3	0.8	0.1
Delay (s)	8.5	9.6	8.2	4.2	5.2	1.5	7.3	8.8	7.7	3.0	3.5	1.3
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		9.3			4.7			8.5			2.9	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

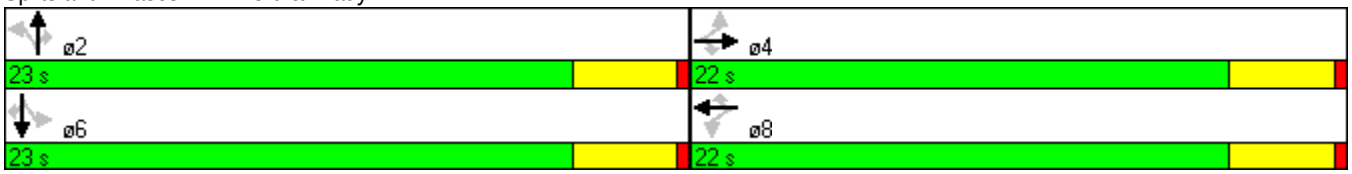


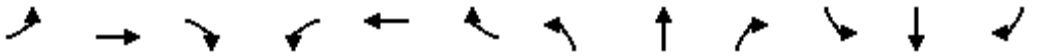
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	231	25	26	246	27	8	161	37	38	185	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.571			0.591			0.632			0.647		
Satd. Flow (perm)	1064	1863	1583	1101	1863	1583	1177	1863	1583	1205	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			40			77
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1711			6523			1848			1163	
Travel Time (s)		38.9			148.3			36.0			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	251	27	28	267	29	9	175	40	41	201	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	251	27	28	267	29	9	175	40	41	201	77
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	48.9%	48.9%	48.9%	48.9%	48.9%	48.9%	51.1%	51.1%	51.1%	51.1%	51.1%	51.1%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0	19.0	19.0	19.0	19.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0	19.0	19.0	19.0	19.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.42	0.42	0.42	0.42	0.42	0.42
v/c Ratio	0.06	0.34	0.04	0.06	0.36	0.04	0.02	0.22	0.06	0.08	0.26	0.11
Control Delay	7.7	10.0	3.2	8.9	11.2	4.2	8.2	9.8	3.4	3.6	4.1	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	10.0	3.2	8.9	11.2	4.2	8.2	9.8	3.4	3.6	4.1	0.7
LOS	A	A	A	A	B	A	A	A	A	A	A	A
Approach Delay		9.2			10.4			8.6			3.2	
Approach LOS		A			B			A			A	
Queue Length 50th (ft)	5	52	0	4	46	0	1	31	2	2	12	0
Queue Length 95th (ft)	14	79	8	15	88	10	m5	55	m9	m5	21	m0
Internal Link Dist (ft)		1631			6443			1768			1083	
Turn Bay Length (ft)												
Base Capacity (vph)	426	745	649	440	745	651	497	787	691	509	787	713
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.34	0.04	0.06	0.36	0.04	0.02	0.22	0.06	0.08	0.26	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 28 (62%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 7.8		Intersection LOS: A	
Intersection Capacity Utilization 42.7%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 22: 3rd & Brady





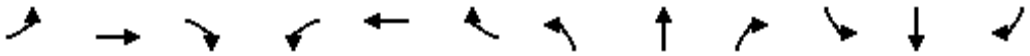
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	231	25	26	246	27	8	161	37	38	185	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.57	1.00	1.00	0.59	1.00	1.00	0.63	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	1065	1863	1583	1101	1863	1583	1177	1863	1583	1205	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	251	27	28	267	29	9	175	40	41	201	77
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	23	0	0	44
Lane Group Flow (vph)	27	251	11	28	267	12	9	175	17	41	201	33
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0	19.0	19.0	19.0	19.0
Effective Green, g (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0	19.0	19.0	19.0	19.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.42	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	426	745	633	440	745	633	497	787	668	509	787	668
v/s Ratio Prot		0.13			c0.14			0.09			c0.11	
v/s Ratio Perm	0.03		0.01	0.03		0.01	0.01		0.01	0.03		0.02
v/c Ratio	0.06	0.34	0.02	0.06	0.36	0.02	0.02	0.22	0.03	0.08	0.26	0.05
Uniform Delay, d1	8.3	9.4	8.2	8.3	9.5	8.2	7.6	8.3	7.6	7.8	8.4	7.7
Progression Factor	0.87	0.91	0.96	1.00	1.00	1.00	1.06	1.08	1.22	0.42	0.39	0.15
Incremental Delay, d2	0.3	1.2	0.0	0.3	1.3	0.1	0.1	0.7	0.1	0.3	0.7	0.1
Delay (s)	7.5	9.8	7.9	8.6	10.8	8.2	8.1	9.6	9.3	3.5	4.0	1.3
Level of Service	A	A	A	A	B	A	A	A	A	A	A	A
Approach Delay (s)		9.4			10.4			9.5			3.3	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Brady-Harrison Phase 1

Converted Two-Way Streets
2009 PM Peak Hour Traffic



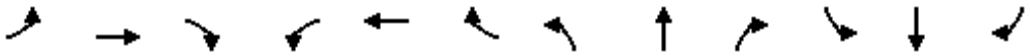
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	412	49	65	259	0	32	0	0	145	1271	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.984									0.983	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3483	0	1770	1863	0	1770	0	1863	1770	3479	0
Flt Permitted				0.328			0.097			0.950		
Satd. Flow (perm)	0	3483	0	611	1863	0	181	0	1863	1770	3479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13									27	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2320			1712			1008			640	
Travel Time (s)		52.7			38.9			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	448	53	71	282	0	35	0	0	158	1382	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	501	0	71	282	0	35	0	0	158	1556	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Minimum Split (s)		20.0		20.0	20.0		20.0		20.0	20.0	20.0	
Total Split (s)	0.0	32.0	0.0	32.0	32.0	0.0	68.0	0.0	68.0	68.0	68.0	0.0
Total Split (%)	0.0%	32.0%	0.0%	32.0%	32.0%	0.0%	68.0%	0.0%	68.0%	68.0%	68.0%	0.0%
Maximum Green (s)		28.0		28.0	28.0		64.0		64.0	64.0	64.0	
Yellow Time (s)		3.5		3.5	3.5		3.5		3.5	3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0		0	0	0	
Act Effct Green (s)		28.0		28.0	28.0		64.0			64.0	64.0	
Actuated g/C Ratio		0.28		0.28	0.28		0.64			0.64	0.64	
v/c Ratio		0.51		0.42	0.54		0.30			0.14	0.70	
Control Delay		31.6		14.5	11.8		12.8			7.5	13.5	
Queue Delay		0.0		0.0	0.0		0.0			0.0	0.0	
Total Delay		31.6		14.5	11.8		12.8			7.5	13.5	
LOS		C		B	B		B			A	B	
Approach Delay		31.6			12.4						13.0	
Approach LOS		C			B						B	
Queue Length 50th (ft)		137		9	35		8			36	302	
Queue Length 95th (ft)		188		m14	50		m10			62	380	
Internal Link Dist (ft)		2240			1632			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)		985		171	522		116			1133	2236	
Starvation Cap Reductn		0		0	0		0			0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0		0			0	0	
Storage Cap Reductn		0		0	0		0			0	0	
Reduced v/c Ratio		0.51		0.42	0.54		0.30			0.14	0.70	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 66 (66%), Referenced to phase 2:NBL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 16.5		Intersection LOS: B	
Intersection Capacity Utilization 66.8%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Central Park & Harrison





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	412	49	65	259	0	32	0	0	145	1271	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0			4.0	4.0	
Lane Util. Factor		0.95		1.00	1.00		1.00			1.00	0.95	
Frt		0.98		1.00	1.00		1.00			1.00	0.98	
Flt Protected		1.00		0.95	1.00		0.95			0.95	1.00	
Satd. Flow (prot)		3483		1770	1863		1770			1770	3480	
Flt Permitted		1.00		0.33	1.00		0.10			0.95	1.00	
Satd. Flow (perm)		3483		612	1863		181			1770	3480	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	448	53	71	282	0	35	0	0	158	1382	174
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	10	0
Lane Group Flow (vph)	0	492	0	71	282	0	35	0	0	158	1546	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Actuated Green, G (s)		28.0		28.0	28.0		64.0			64.0	64.0	
Effective Green, g (s)		28.0		28.0	28.0		64.0			64.0	64.0	
Actuated g/C Ratio		0.28		0.28	0.28		0.64			0.64	0.64	
Clearance Time (s)		4.0		4.0	4.0		4.0			4.0	4.0	
Lane Grp Cap (vph)		975		171	522		116			1133	2227	
v/s Ratio Prot		0.14			c0.15						c0.44	
v/s Ratio Perm				0.12			0.19			0.09		
v/c Ratio		0.50		0.42	0.54		0.30			0.14	0.69	
Uniform Delay, d1		30.2		29.3	30.5		8.0			7.1	11.7	
Progression Factor		1.00		0.26	0.27		1.00			1.00	1.00	
Incremental Delay, d2		1.9		6.3	3.4		2.9			0.3	1.8	
Delay (s)		32.0		14.1	11.7		10.9			7.4	13.5	
Level of Service		C		B	B		B			A	B	
Approach Delay (s)		32.0			12.2			10.9			12.9	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

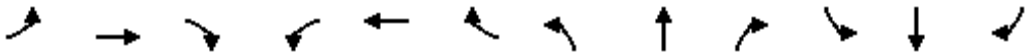
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	274	347	5	7	257	108	77	1728	54	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.998			0.956			0.995				
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	1859	0	1770	3383	0	1770	3522	0	0	0	0
Flt Permitted	0.250			0.535			0.950					
Satd. Flow (perm)	466	1859	0	997	3383	0	1770	3522	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			32			5				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			520			640	
Travel Time (s)		38.9			54.5			10.1			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	298	377	5	8	279	117	84	1878	59	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	298	382	0	8	396	0	84	1937	0	0	0	0
Turn Type	pm+pt			Perm			Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4			8			2					
Minimum Split (s)	9.0	21.0		21.0	21.0		21.0	21.0				
Total Split (s)	16.0	37.0	0.0	21.0	21.0	0.0	63.0	63.0	0.0	0.0	0.0	0.0
Total Split (%)	16.0%	37.0%	0.0%	21.0%	21.0%	0.0%	63.0%	63.0%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	12.5	33.5		17.5	17.5		59.5	59.5				
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0				
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5				
Lost Time Adjust (s)	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Walk Time (s)		5.0		5.0	5.0		5.0	5.0				
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)		0		0	0		0	0				
Act Effct Green (s)	33.0	33.0		17.0	17.0		59.0	59.0				
Actuated g/C Ratio	0.33	0.33		0.17	0.17		0.59	0.59				
v/c Ratio	0.96	0.62		0.05	0.66		0.08	0.93				
Control Delay	61.2	21.5		35.7	41.5		9.2	27.9				
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				
Total Delay	61.2	21.5		35.7	41.5		9.2	27.9				
LOS	E	C		D	D		A	C				
Approach Delay		38.9			41.3			27.1				
Approach LOS		D			D			C				
Queue Length 50th (ft)	163	217		4	115		20	557				
Queue Length 95th (ft)	#292	313		18	166		m31	m#680				
Internal Link Dist (ft)		1632			2320			440			560	
Turn Bay Length (ft)												
Base Capacity (vph)	310	614		169	602		1044	2080				
Starvation Cap Reductn	0	0		0	0		0	0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0				
Storage Cap Reductn	0	0		0	0		0	0				
Reduced v/c Ratio	0.96	0.62		0.05	0.66		0.08	0.93				

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 20 (20%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 31.5		Intersection LOS: C	
Intersection Capacity Utilization 85.2%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 6: Central Park & Brady

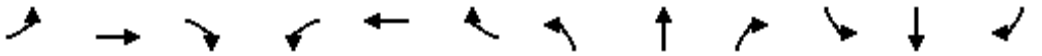




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	274	347	5	7	257	108	77	1728	54	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	0.95				
Frt	1.00	1.00		1.00	0.96		1.00	1.00				
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00				
Satd. Flow (prot)	1770	1859		1770	3382		1770	3523				
Flt Permitted	0.25	1.00		0.54	1.00		0.95	1.00				
Satd. Flow (perm)	466	1859		997	3382		1770	3523				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	298	377	5	8	279	117	84	1878	59	0	0	0
RTOR Reduction (vph)	0	1	0	0	27	0	0	2	0	0	0	0
Lane Group Flow (vph)	298	381	0	8	369	0	84	1935	0	0	0	0
Turn Type	pm+pt			Perm			Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4			8			2					
Actuated Green, G (s)	33.5	33.5		17.5	17.5		59.5	59.5				
Effective Green, g (s)	33.0	33.0		17.0	17.0		59.0	59.0				
Actuated g/C Ratio	0.33	0.33		0.17	0.17		0.59	0.59				
Clearance Time (s)	3.5	3.5		3.5	3.5		3.5	3.5				
Lane Grp Cap (vph)	310	613		169	575		1044	2079				
v/s Ratio Prot	c0.12	0.21			0.11			c0.55				
v/s Ratio Perm	c0.20			0.01			0.05					
v/c Ratio	0.96	0.62		0.05	0.64		0.08	0.93				
Uniform Delay, d1	29.1	28.2		34.7	38.7		8.8	18.6				
Progression Factor	0.57	0.59		1.00	1.00		1.01	1.00				
Incremental Delay, d2	40.8	4.5		0.5	5.4		0.1	8.4				
Delay (s)	57.5	21.2		35.3	44.1		9.0	27.1				
Level of Service	E	C		D	D		A	C				
Approach Delay (s)		37.1			43.9			26.3			0.0	
Approach LOS		D			D			C			A	

Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

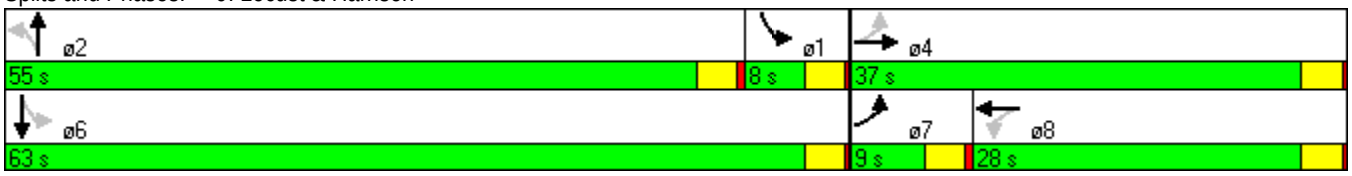


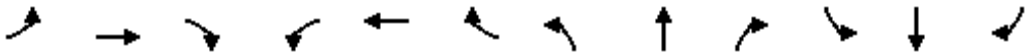
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	641	32	64	564	124	65	685	95	93	413	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.973			0.982			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3444	0	1770	1829	0	1770	1842	0
Flt Permitted	0.143			0.292			0.381			0.097		
Satd. Flow (perm)	266	3514	0	544	3444	0	710	1829	0	181	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			25			10			7	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2240			1712			2656			1008	
Travel Time (s)		50.9			38.9			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	697	35	70	613	135	71	745	103	101	449	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	732	0	70	748	0	71	848	0	101	484	0
Turn Type	pm+pt			Perm			Perm			pm+pt		
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	8.0	20.0		20.0	20.0		20.0	20.0		8.0	20.0	
Total Split (s)	9.0	37.0	0.0	28.0	28.0	0.0	55.0	55.0	0.0	8.0	63.0	0.0
Total Split (%)	9.0%	37.0%	0.0%	28.0%	28.0%	0.0%	55.0%	55.0%	0.0%	8.0%	63.0%	0.0%
Maximum Green (s)	5.5	33.5		24.5	24.5		51.5	51.5		4.5	59.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.5	0.5	0.5	0.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.0	4.5
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lag		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Walk Time (s)		5.0		5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0			0	
Act Effct Green (s)	33.0	33.0		24.0	24.0		51.0	51.0		59.0	59.0	
Actuated g/C Ratio	0.33	0.33		0.24	0.24		0.51	0.51		0.59	0.59	
v/c Ratio	0.82	0.63		0.53	0.88		0.20	0.90		0.59	0.44	
Control Delay	63.5	31.1		41.5	39.3		13.0	33.2		26.0	6.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	63.5	31.1		41.5	39.3		13.0	33.2		26.0	6.2	
LOS	E	C		D	D		B	C		C	A	
Approach Delay		36.0			39.5			31.6			9.6	
Approach LOS		D			D			C			A	
Queue Length 50th (ft)	61	204		31	171		23	399		13	58	
Queue Length 95th (ft)	#136	267		m50	#320		m52	#716		m29	77	
Internal Link Dist (ft)		2160			1632			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	163	1163		131	846		362	938		170	1090	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.82	0.63		0.53	0.88		0.20	0.90		0.59	0.44	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 80 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 30.8		Intersection LOS: C	
Intersection Capacity Utilization 86.6%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 9: Locust & Harrison

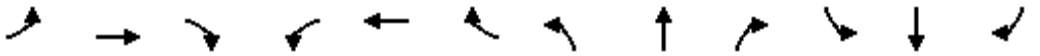




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	641	32	64	564	124	65	685	95	93	413	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3514		1770	3443		1770	1829		1770	1843	
Flt Permitted	0.14	1.00		0.29	1.00		0.38	1.00		0.10	1.00	
Satd. Flow (perm)	266	3514		544	3443		711	1829		181	1843	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	697	35	70	613	135	71	745	103	101	449	35
RTOR Reduction (vph)	0	3	0	0	19	0	0	5	0	0	3	0
Lane Group Flow (vph)	133	729	0	70	729	0	71	843	0	101	481	0
Turn Type	pm+pt			Perm			Perm			pm+pt		
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	33.5	33.5		24.5	24.5		51.5	51.5		59.5	59.5	
Effective Green, g (s)	33.0	33.0		24.0	24.0		51.0	51.0		59.0	59.0	
Actuated g/C Ratio	0.33	0.33		0.24	0.24		0.51	0.51		0.59	0.59	
Clearance Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	163	1160		131	826		363	933		170	1087	
v/s Ratio Prot	c0.04	0.21			0.21			c0.46		0.02	c0.26	
v/s Ratio Perm	c0.23			0.13			0.10			0.33		
v/c Ratio	0.82	0.63		0.53	0.88		0.20	0.90		0.59	0.44	
Uniform Delay, d1	28.2	28.3		33.1	36.6		13.3	22.3		38.5	11.4	
Progression Factor	1.00	1.00		0.87	0.81		0.85	0.84		0.62	0.46	
Incremental Delay, d2	34.5	2.6		10.7	9.8		1.2	13.4		10.7	1.0	
Delay (s)	62.7	30.9		39.4	39.5		12.5	32.0		34.5	6.2	
Level of Service	E	C		D	D		B	C		C	A	
Approach Delay (s)		35.8			39.5			30.5			11.0	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

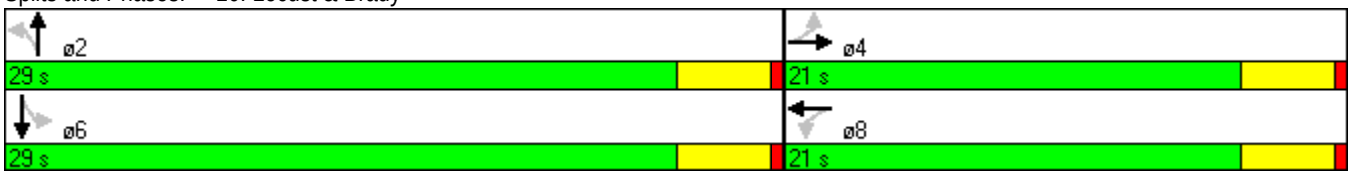


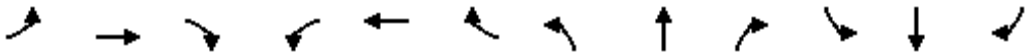
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	869	32	63	703	124	65	685	95	93	413	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.977			0.982			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3522	0	1770	3458	0	1770	1829	0	1770	1842	0
Flt Permitted	0.235			0.235			0.386			0.160		
Satd. Flow (perm)	438	3522	0	438	3458	0	719	1829	0	298	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			44			20			11	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			2656			488	
Travel Time (s)		38.9			54.5			51.7			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	945	35	68	764	135	71	745	103	101	449	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	980	0	68	899	0	71	848	0	101	484	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	21.0	21.0	0.0	21.0	21.0	0.0	29.0	29.0	0.0	29.0	29.0	0.0
Total Split (%)	42.0%	42.0%	0.0%	42.0%	42.0%	0.0%	58.0%	58.0%	0.0%	58.0%	58.0%	0.0%
Maximum Green (s)	17.0	17.0		17.0	17.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	17.0	17.0		17.0	17.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.50	0.50		0.50	0.50	
v/c Ratio	0.89	0.81		0.46	0.75		0.20	0.92		0.68	0.52	
Control Delay	65.4	18.5		25.6	18.6		6.9	24.3		35.5	10.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	65.4	18.5		25.6	18.6		6.9	24.3		35.5	10.5	
LOS	E	B		C	B		A	C		D	B	
Approach Delay		24.1			19.1			22.9			14.8	
Approach LOS		C			B			C			B	
Queue Length 50th (ft)	35	134		15	112		8	115		20	83	
Queue Length 95th (ft)	m#176	m196		#58	170		m17	#467		#114	123	
Internal Link Dist (ft)		1632			2320			2576			408	
Turn Bay Length (ft)												
Base Capacity (vph)	149	1203		149	1205		360	925		149	927	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.89	0.81		0.46	0.75		0.20	0.92		0.68	0.52	

Intersection Summary			
Area Type:	Other		
Cycle Length: 50			
Actuated Cycle Length: 50			
Offset: 48 (96%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Pretimed			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 20.9		Intersection LOS: C	
Intersection Capacity Utilization 90.4%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 10: Locust & Brady

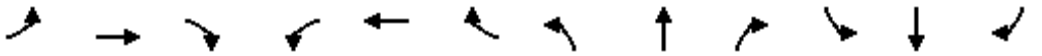




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	869	32	63	703	124	65	685	95	93	413	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3520		1770	3459		1770	1829		1770	1843	
Flt Permitted	0.24	1.00		0.24	1.00		0.39	1.00		0.16	1.00	
Satd. Flow (perm)	438	3520		438	3459		719	1829		298	1843	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	945	35	68	764	135	71	745	103	101	449	35
RTOR Reduction (vph)	0	5	0	0	29	0	0	10	0	0	6	0
Lane Group Flow (vph)	133	975	0	68	870	0	71	838	0	101	479	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.0	17.0		17.0	17.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	17.0	17.0		17.0	17.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.50	0.50		0.50	0.50	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	149	1197		149	1176		360	915		149	922	
v/s Ratio Prot		0.28			0.25			c0.46			0.26	
v/s Ratio Perm	c0.30			0.16			0.10			0.34		
v/c Ratio	0.89	0.81		0.46	0.74		0.20	0.92		0.68	0.52	
Uniform Delay, d1	15.6	15.1		12.9	14.5		6.9	11.5		9.5	8.4	
Progression Factor	0.92	0.86		1.00	1.00		0.78	0.68		0.99	0.99	
Incremental Delay, d2	44.7	5.3		9.8	4.2		1.2	14.7		22.1	2.1	
Delay (s)	59.1	18.3		22.6	18.7		6.6	22.5		31.4	10.4	
Level of Service	E	B		C	B		A	C		C	B	
Approach Delay (s)		23.2			19.0			21.3			14.1	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

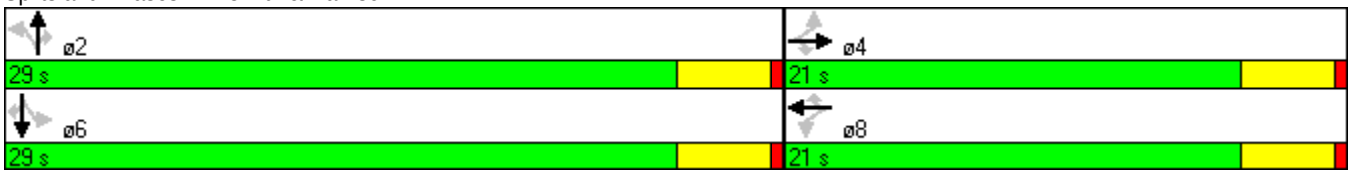


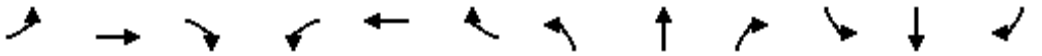
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	260	15	17	277	52	19	442	81	19	231	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.487			0.512			0.602			0.390		
Satd. Flow (perm)	907	1863	1583	954	1863	1583	1121	1863	1583	726	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			16			57			88			93
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			965			2656	
Travel Time (s)		48.0			38.9			18.8			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	283	16	18	301	57	21	480	88	21	251	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	283	16	18	301	57	21	480	88	21	251	93
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	58.0%	58.0%	58.0%	58.0%	58.0%	58.0%
Maximum Green (s)	17.0	17.0	17.0	17.0	17.0	17.0	25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	17.0	17.0	17.0	17.0	17.0	17.0	25.0	25.0	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34	0.34	0.50	0.50	0.50	0.50	0.50	0.50
v/c Ratio	0.17	0.45	0.03	0.06	0.48	0.10	0.04	0.52	0.11	0.06	0.27	0.11
Control Delay	13.4	15.6	6.4	11.6	16.7	7.0	3.5	7.7	0.7	6.6	8.5	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	15.6	6.4	11.6	16.7	7.0	3.5	7.7	0.7	6.6	8.5	2.7
LOS	B	B	A	B	B	A	A	A	A	A	A	A
Approach Delay		14.9			15.0			6.5			6.9	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	10	63	0	5	78	1	1	27	0	5	71	9
Queue Length 95th (ft)	31	117	10	m10	118	m17	m4	126	0	m9	93	m21
Internal Link Dist (ft)		2032			1632			885			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	308	633	549	324	633	576	561	932	836	363	932	838
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.45	0.03	0.06	0.48	0.10	0.04	0.52	0.11	0.06	0.27	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 50			
Actuated Cycle Length: 50			
Offset: 14 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 10.3		Intersection LOS: B	
Intersection Capacity Utilization 51.2%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 13: 4th & Harrison

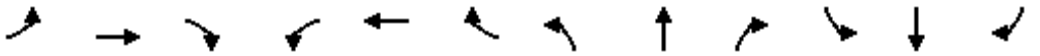




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	260	15	17	277	52	19	442	81	19	231	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.49	1.00	1.00	0.51	1.00	1.00	0.60	1.00	1.00	0.39	1.00	1.00
Satd. Flow (perm)	908	1863	1583	953	1863	1583	1122	1863	1583	726	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	283	16	18	301	57	21	480	88	21	251	93
RTOR Reduction (vph)	0	0	11	0	0	38	0	0	44	0	0	47
Lane Group Flow (vph)	52	283	5	18	301	19	21	480	44	21	251	47
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	17.0	17.0	17.0	17.0	17.0	17.0	25.0	25.0	25.0	25.0	25.0	25.0
Effective Green, g (s)	17.0	17.0	17.0	17.0	17.0	17.0	25.0	25.0	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34	0.34	0.50	0.50	0.50	0.50	0.50	0.50
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	309	633	538	324	633	538	561	932	792	363	932	792
v/s Ratio Prot		0.15			c0.16			c0.26			0.13	
v/s Ratio Perm	0.06		0.00	0.02		0.01	0.02		0.03	0.03		0.03
v/c Ratio	0.17	0.45	0.01	0.06	0.48	0.04	0.04	0.52	0.06	0.06	0.27	0.06
Uniform Delay, d1	11.6	12.8	10.9	11.1	13.0	11.0	6.4	8.4	6.4	6.4	7.2	6.4
Progression Factor	1.00	1.00	1.00	1.00	1.09	2.08	0.51	0.65	0.19	0.96	1.08	1.67
Incremental Delay, d2	1.2	2.3	0.0	0.3	2.3	0.1	0.1	2.0	0.1	0.3	0.6	0.1
Delay (s)	12.7	15.1	11.0	11.4	16.4	23.1	3.4	7.4	1.4	6.5	8.4	10.9
Level of Service	B	B	B	B	B	C	A	A	A	A	A	B
Approach Delay (s)		14.6			17.2			6.4			8.9	
Approach LOS		B			B			A			A	

Intersection Summary					
HCM Average Control Delay	11.1	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.50				
Actuated Cycle Length (s)	50.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	51.2%	ICU Level of Service		A	
Analysis Period (min)	15				

c Critical Lane Group

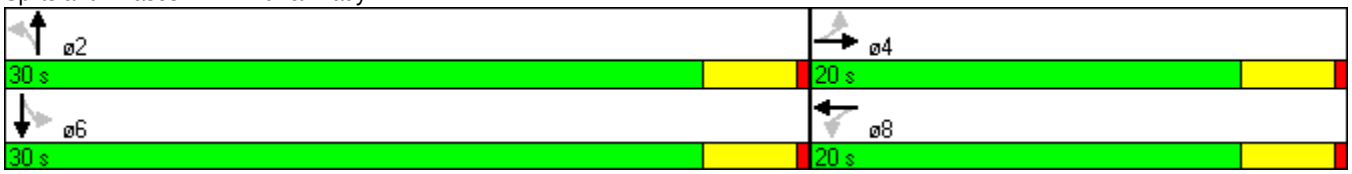


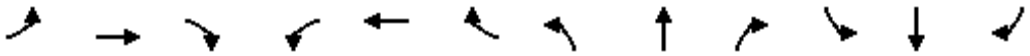
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	232	15	17	247	52	20	443	81	20	230	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.974			0.977			0.959	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1846	0	1770	1814	0	1770	1820	0	1770	1786	0
Flt Permitted	0.441			0.522			0.520			0.327		
Satd. Flow (perm)	821	1846	0	972	1814	0	969	1820	0	609	1786	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			23			27			56	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			965			2656	
Travel Time (s)		38.9			53.1			18.8			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	252	16	18	268	57	22	482	88	22	250	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	268	0	18	325	0	22	570	0	22	343	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	30.0	30.0	0.0	30.0	30.0	0.0
Total Split (%)	40.0%	40.0%	0.0%	40.0%	40.0%	0.0%	60.0%	60.0%	0.0%	60.0%	60.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.0	16.0		16.0	16.0		26.0	26.0		26.0	26.0	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.52	0.52		0.52	0.52	
v/c Ratio	0.20	0.45		0.06	0.55		0.04	0.59		0.07	0.36	
Control Delay	7.8	9.1		12.5	17.1		4.2	7.6		4.0	4.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.8	9.1		12.5	17.1		4.2	7.6		4.0	4.6	
LOS	A	A		B	B		A	A		A	A	
Approach Delay		8.9			16.9			7.5			4.5	
Approach LOS		A			B			A			A	
Queue Length 50th (ft)	5	22		4	70		2	55		1	13	
Queue Length 95th (ft)	10	32		14	134		m4	71		m3	m16	
Internal Link Dist (ft)		1632			2256			885			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	263	595		311	596		504	959		317	956	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.20	0.45		0.06	0.55		0.04	0.59		0.07	0.36	

Intersection Summary			
Area Type:	Other		
Cycle Length: 50			
Actuated Cycle Length: 50			
Offset: 4 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 57.7%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 14: 4th & Brady

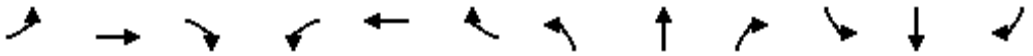




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	232	15	17	247	52	20	443	81	20	230	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1846		1770	1814		1770	1820		1770	1787	
Flt Permitted	0.44	1.00		0.52	1.00		0.52	1.00		0.33	1.00	
Satd. Flow (perm)	821	1846		972	1814		968	1820		609	1787	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	252	16	18	268	57	22	482	88	22	250	93
RTOR Reduction (vph)	0	5	0	0	16	0	0	13	0	0	27	0
Lane Group Flow (vph)	52	263	0	18	309	0	22	557	0	22	316	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		26.0	26.0		26.0	26.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		26.0	26.0		26.0	26.0	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.52	0.52		0.52	0.52	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	263	591		311	580		503	946		317	929	
v/s Ratio Prot		0.14			c0.17			c0.31			0.18	
v/s Ratio Perm	0.06			0.02			0.02			0.04		
v/c Ratio	0.20	0.45		0.06	0.53		0.04	0.59		0.07	0.34	
Uniform Delay, d1	12.3	13.5		11.8	13.9		5.9	8.3		6.0	7.0	
Progression Factor	0.48	0.50		1.00	1.00		0.68	0.63		0.60	0.62	
Incremental Delay, d2	1.6	2.3		0.4	3.5		0.2	2.5		0.4	0.9	
Delay (s)	7.6	9.1		12.1	17.4		4.2	7.7		3.9	5.2	
Level of Service	A	A		B	B		A	A		A	A	
Approach Delay (s)		8.8			17.2			7.6			5.1	
Approach LOS		A			B			A			A	

Intersection Summary					
HCM Average Control Delay	9.3	HCM Level of Service		A	
HCM Volume to Capacity ratio	0.57				
Actuated Cycle Length (s)	50.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	57.7%	ICU Level of Service		B	
Analysis Period (min)	15				

c Critical Lane Group



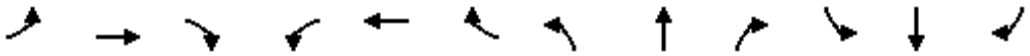
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	726	17	14	595	23	29	9	33	68	22	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.994			0.883			0.894	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1857	0	1770	1852	0	1770	1645	0	1770	1665	0
Flt Permitted	0.292			0.206			0.704			0.727		
Satd. Flow (perm)	544	1857	0	384	1852	0	1311	1645	0	1354	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			6			36			57	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2016			1700			288			1800	
Travel Time (s)		45.8			38.6			5.6			35.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	789	18	15	647	25	32	10	36	74	24	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	807	0	15	672	0	32	46	0	74	81	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	40.0	40.0	0.0	40.0	40.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	66.7%	66.7%	0.0%	66.7%	66.7%	0.0%	33.3%	33.3%	0.0%	33.3%	33.3%	0.0%
Maximum Green (s)	36.0	36.0		36.0	36.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	36.0	36.0		36.0	36.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.27	0.27		0.27	0.27	
v/c Ratio	0.21	0.72		0.07	0.60		0.09	0.10		0.20	0.17	
Control Delay	7.6	13.2		5.1	7.3		17.5	8.8		18.9	8.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.6	13.2		5.1	7.3		17.5	8.8		18.9	8.9	
LOS	A	B		A	A		B	A		B	A	
Approach Delay		12.8			7.2			12.3			13.7	
Approach LOS		B			A			B			B	
Queue Length 50th (ft)	10	178		2	78		9	3		21	6	
Queue Length 95th (ft)	28	303		m3	120		27	23		50	34	
Internal Link Dist (ft)		1936			1620			208			1720	
Turn Bay Length (ft)												
Base Capacity (vph)	326	1115		230	1114		350	465		361	486	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.72		0.07	0.60		0.09	0.10		0.20	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 24 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 10.7		Intersection LOS: B	
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 17: River & Harrison

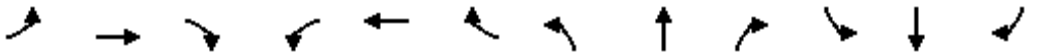




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	726	17	14	595	23	29	9	33	68	22	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.88		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1857		1770	1852		1770	1644		1770	1666	
Flt Permitted	0.29	1.00		0.21	1.00		0.70	1.00		0.73	1.00	
Satd. Flow (perm)	545	1857		383	1852		1312	1644		1354	1666	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	789	18	15	647	25	32	10	36	74	24	57
RTOR Reduction (vph)	0	1	0	0	2	0	0	26	0	0	42	0
Lane Group Flow (vph)	70	806	0	15	670	0	32	20	0	74	39	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.0	36.0		36.0	36.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	36.0	36.0		36.0	36.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.27	0.27		0.27	0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	327	1114		230	1111		350	438		361	444	
v/s Ratio Prot		c0.43			0.36			0.01			0.02	
v/s Ratio Perm	0.13			0.04			0.02			c0.05		
v/c Ratio	0.21	0.72		0.07	0.60		0.09	0.04		0.20	0.09	
Uniform Delay, d1	5.5	8.5		5.0	7.5		16.5	16.3		17.1	16.5	
Progression Factor	1.00	1.00		0.87	0.66		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	4.1		0.5	2.1		0.5	0.2		1.3	0.4	
Delay (s)	7.0	12.6		4.8	7.0		17.1	16.5		18.3	16.9	
Level of Service	A	B		A	A		B	B		B	B	
Approach Delay (s)		12.1			7.0			16.7			17.6	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



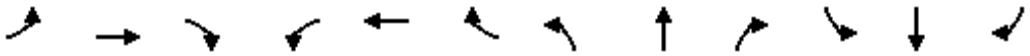
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	711	23	23	579	23	16	9	24	67	21	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.994				0.850		0.894	
Flt Protected	0.950			0.950				0.969		0.950		
Satd. Flow (prot)	1770	1853	0	1770	1852	0	0	1805	1583	1770	1665	0
Flt Permitted	0.304			0.211				0.864		0.740		
Satd. Flow (perm)	566	1853	0	393	1852	0	0	1609	1583	1378	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			6				26		55	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1700			6636			272			1800	
Travel Time (s)		38.6			150.8			5.3			35.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	773	25	25	629	25	17	10	26	73	23	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	798	0	25	654	0	0	27	26	73	78	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	
Total Split (s)	40.0	40.0	0.0	40.0	40.0	0.0	20.0	20.0	20.0	20.0	20.0	0.0
Total Split (%)	66.7%	66.7%	0.0%	66.7%	66.7%	0.0%	33.3%	33.3%	33.3%	33.3%	33.3%	0.0%
Maximum Green (s)	36.0	36.0		36.0	36.0		16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	36.0	36.0		36.0	36.0			16.0	16.0	16.0	16.0	
Actuated g/C Ratio	0.60	0.60		0.60	0.60			0.27	0.27	0.27	0.27	
v/c Ratio	0.21	0.72		0.11	0.59			0.06	0.06	0.20	0.16	
Control Delay	3.6	5.9		6.5	10.0			17.0	8.0	18.8	8.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	3.6	5.9		6.5	10.0			17.0	8.0	18.8	8.9	
LOS	A	A		A	B			B	A	B	A	
Approach Delay		5.7			9.9			12.6			13.7	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	4	45		3	125			7	0	20	6	
Queue Length 95th (ft)	m7	68		13	209			23	15	49	33	
Internal Link Dist (ft)		1620			6556			192			1720	
Turn Bay Length (ft)												
Base Capacity (vph)	340	1114		236	1114			429	441	367	484	
Starvation Cap Reductn	0	0		0	0			0	0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.21	0.72		0.11	0.59			0.06	0.06	0.20	0.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 8.2		Intersection LOS: A	
Intersection Capacity Utilization 62.5%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 18: River & Brady

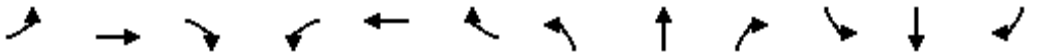




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	711	23	23	579	23	16	9	24	67	21	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99			1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1854		1770	1852			1806	1583	1770	1666	
Flt Permitted	0.30	1.00		0.21	1.00			0.86	1.00	0.74	1.00	
Satd. Flow (perm)	567	1854		393	1852			1610	1583	1378	1666	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	773	25	25	629	25	17	10	26	73	23	55
RTOR Reduction (vph)	0	2	0	0	2	0	0	0	19	0	40	0
Lane Group Flow (vph)	70	796	0	25	652	0	0	27	7	73	38	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	36.0	36.0		36.0	36.0			16.0	16.0	16.0	16.0	
Effective Green, g (s)	36.0	36.0		36.0	36.0			16.0	16.0	16.0	16.0	
Actuated g/C Ratio	0.60	0.60		0.60	0.60			0.27	0.27	0.27	0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	340	1112		236	1111			429	422	367	444	
v/s Ratio Prot		c0.43			0.35						0.02	
v/s Ratio Perm	0.12			0.06				0.02	0.00	c0.05		
v/c Ratio	0.21	0.72		0.11	0.59			0.06	0.02	0.20	0.08	
Uniform Delay, d1	5.5	8.4		5.1	7.4			16.4	16.2	17.0	16.5	
Progression Factor	0.42	0.32		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	3.0		0.9	2.3			0.3	0.1	1.2	0.4	
Delay (s)	3.3	5.7		6.0	9.7			16.7	16.3	18.3	16.9	
Level of Service	A	A		A	A			B	B	B	B	
Approach Delay (s)		5.5			9.5			16.5			17.5	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

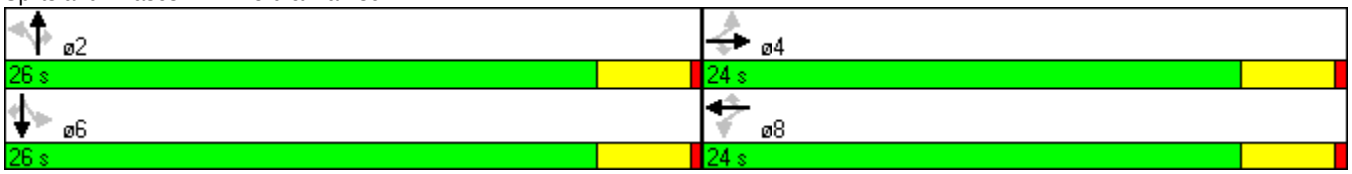


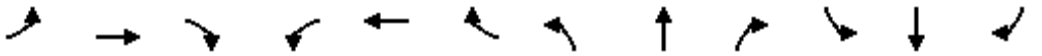
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	260	16	16	277	51	19	310	81	19	142	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.518			0.539			0.659			0.496		
Satd. Flow (perm)	965	1863	1583	1004	1863	1583	1228	1863	1583	924	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			17			55			88			93
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2072			1708			1800			965	
Travel Time (s)		47.1			38.8			35.1			18.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	283	17	17	301	55	21	337	88	21	154	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	283	17	17	301	55	21	337	88	21	154	93
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	48.0%	48.0%	48.0%	48.0%	48.0%	48.0%	52.0%	52.0%	52.0%	52.0%	52.0%	52.0%
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	22.0	22.0	22.0	22.0	22.0	22.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	22.0	22.0	22.0	22.0	22.0	22.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.44	0.44	0.44	0.44	0.44	0.44
v/c Ratio	0.14	0.38	0.03	0.04	0.40	0.08	0.04	0.41	0.12	0.05	0.19	0.12
Control Delay	10.7	12.5	5.2	6.8	10.6	4.1	8.3	11.5	3.0	4.7	6.0	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.7	12.5	5.2	6.8	10.6	4.1	8.3	11.5	3.0	4.7	6.0	3.5
LOS	B	B	A	A	B	A	A	B	A	A	A	A
Approach Delay		11.9			9.5			9.7			5.0	
Approach LOS		B			A			A			A	
Queue Length 50th (ft)	9	56	0	4	71	1	3	63	0	4	49	3
Queue Length 95th (ft)	27	104	9	m7	105	m13	13	114	18	8	52	20
Internal Link Dist (ft)		1992			1628			1720			885	
Turn Bay Length (ft)												
Base Capacity (vph)	386	745	643	402	745	666	540	820	746	407	820	749
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.38	0.03	0.04	0.40	0.08	0.04	0.41	0.12	0.05	0.19	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 50			
Actuated Cycle Length: 50			
Offset: 42 (84%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 44.2%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 21: 3rd & Harrison

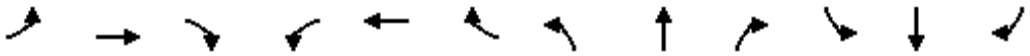




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	260	16	16	277	51	19	310	81	19	142	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.52	1.00	1.00	0.54	1.00	1.00	0.66	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	965	1863	1583	1005	1863	1583	1228	1863	1583	923	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	283	17	17	301	55	21	337	88	21	154	93
RTOR Reduction (vph)	0	0	10	0	0	33	0	0	49	0	0	52
Lane Group Flow (vph)	53	283	7	17	301	22	21	337	39	21	154	41
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	20.0	20.0	20.0	20.0	20.0	20.0	22.0	22.0	22.0	22.0	22.0	22.0
Effective Green, g (s)	20.0	20.0	20.0	20.0	20.0	20.0	22.0	22.0	22.0	22.0	22.0	22.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.44	0.44	0.44	0.44	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	386	745	633	402	745	633	540	820	697	406	820	697
v/s Ratio Prot		0.15			c0.16			c0.18			0.08	
v/s Ratio Perm	0.05		0.00	0.02		0.01	0.02		0.02	0.02		0.03
v/c Ratio	0.14	0.38	0.01	0.04	0.40	0.03	0.04	0.41	0.06	0.05	0.19	0.06
Uniform Delay, d1	9.5	10.6	9.0	9.2	10.7	9.1	8.0	9.6	8.0	8.0	8.5	8.0
Progression Factor	1.00	1.00	1.00	0.71	0.83	1.44	1.00	1.00	1.00	0.54	0.64	1.72
Incremental Delay, d2	0.7	1.5	0.0	0.2	1.5	0.1	0.1	1.5	0.2	0.2	0.5	0.2
Delay (s)	10.3	12.1	9.1	6.7	10.4	13.2	8.1	11.1	8.2	4.6	6.0	14.0
Level of Service	B	B	A	A	B	B	A	B	A	A	A	B
Approach Delay (s)		11.7			10.7			10.4			8.6	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

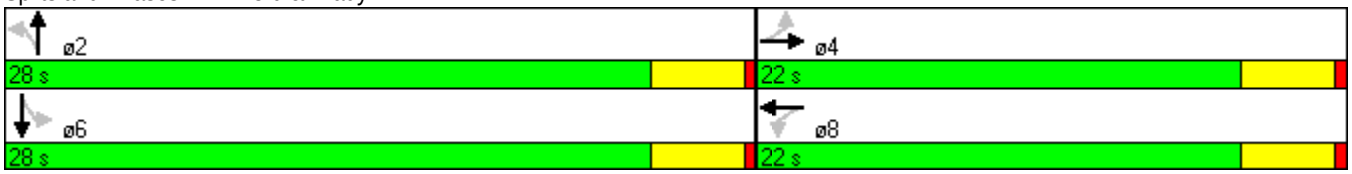


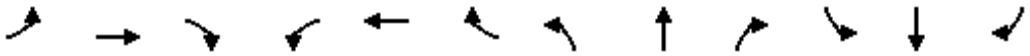
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	232	16	16	247	52	19	337	81	19	142	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.974			0.971			0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1846	0	1770	1814	0	1770	1809	0	1770	1758	0
Flt Permitted	0.468			0.540			0.602			0.401		
Satd. Flow (perm)	872	1846	0	1006	1814	0	1121	1809	0	747	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			24			33			84	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1708			6387			1800			965	
Travel Time (s)		38.8			145.2			35.1			18.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	252	17	17	268	57	21	366	88	21	154	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	269	0	17	325	0	21	454	0	21	247	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	22.0	22.0	0.0	22.0	22.0	0.0	28.0	28.0	0.0	28.0	28.0	0.0
Total Split (%)	44.0%	44.0%	0.0%	44.0%	44.0%	0.0%	56.0%	56.0%	0.0%	56.0%	56.0%	0.0%
Maximum Green (s)	18.0	18.0		18.0	18.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	18.0	18.0		18.0	18.0		24.0	24.0		24.0	24.0	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.48	0.48		0.48	0.48	
v/c Ratio	0.17	0.40		0.05	0.49		0.04	0.51		0.06	0.28	
Control Delay	7.9	9.5		11.0	14.5		7.2	10.8		9.0	8.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.9	9.5		11.0	14.5		7.2	10.8		9.0	8.9	
LOS	A	A		B	B		A	B		A	A	
Approach Delay		9.3			14.3			10.7			8.9	
Approach LOS		A			B			B			A	
Queue Length 50th (ft)	12	64		3	65		3	76		5	50	
Queue Length 95th (ft)	20	96		13	124		12	141		m15	86	
Internal Link Dist (ft)		1628			6307			1720			885	
Turn Bay Length (ft)												
Base Capacity (vph)	314	670		362	668		538	885		359	888	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.40		0.05	0.49		0.04	0.51		0.06	0.28	

Intersection Summary			
Area Type:	Other		
Cycle Length: 50			
Actuated Cycle Length: 50			
Offset: 38 (76%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 10.9		Intersection LOS: B	
Intersection Capacity Utilization 52.2%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 22: 3rd & Brady





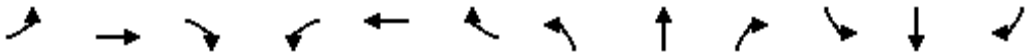
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	232	16	16	247	52	19	337	81	19	142	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1845		1770	1814		1770	1809		1770	1758	
Flt Permitted	0.47	1.00		0.54	1.00		0.60	1.00		0.40	1.00	
Satd. Flow (perm)	872	1845		1006	1814		1122	1809		748	1758	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	252	17	17	268	57	21	366	88	21	154	93
RTOR Reduction (vph)	0	5	0	0	15	0	0	17	0	0	44	0
Lane Group Flow (vph)	53	264	0	17	310	0	21	437	0	21	203	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	18.0	18.0		18.0	18.0		24.0	24.0		24.0	24.0	
Effective Green, g (s)	18.0	18.0		18.0	18.0		24.0	24.0		24.0	24.0	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.48	0.48		0.48	0.48	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	314	664		362	653		539	868		359	844	
v/s Ratio Prot		0.14			c0.17			c0.24			0.12	
v/s Ratio Perm	0.06			0.02			0.02			0.03		
v/c Ratio	0.17	0.40		0.05	0.47		0.04	0.50		0.06	0.24	
Uniform Delay, d1	10.9	11.9		10.4	12.3		6.9	8.9		7.0	7.6	
Progression Factor	0.60	0.66		1.00	1.00		1.00	1.00		1.21	1.59	
Incremental Delay, d2	1.1	1.7		0.2	2.5		0.1	2.1		0.3	0.6	
Delay (s)	7.7	9.6		10.7	14.8		7.0	11.0		8.7	12.8	
Level of Service	A	A		B	B		A	B		A	B	
Approach Delay (s)		9.3			14.6			10.8			12.5	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Brady-Harrison Phase 1

Converted Two-Way Streets
Imbalanced Cross-Sections
2009 AM Peak Hour Traffic



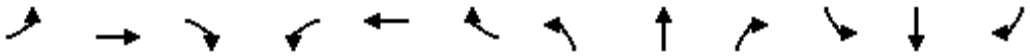
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	289	49	50	144	0	6	0	82	185	878	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.978							0.850		0.987	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3461	0	1770	1863	0	1770	0	1583	1770	3493	0
Flt Permitted				0.480			0.219			0.950		
Satd. Flow (perm)	0	3461	0	894	1863	0	408	0	1583	1770	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27							89		26	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2320			1712			1008			640	
Travel Time (s)		52.7			38.9			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	314	53	54	157	0	7	0	89	201	954	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	367	0	54	157	0	7	0	89	201	1046	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Minimum Split (s)		20.0		20.0	20.0		20.0		20.0	20.0	20.0	
Total Split (s)	0.0	24.0	0.0	24.0	24.0	0.0	46.0	0.0	46.0	46.0	46.0	0.0
Total Split (%)	0.0%	34.3%	0.0%	34.3%	34.3%	0.0%	65.7%	0.0%	65.7%	65.7%	65.7%	0.0%
Maximum Green (s)		20.0		20.0	20.0		42.0		42.0	42.0	42.0	
Yellow Time (s)		3.5		3.5	3.5		3.5		3.5	3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0		0	0	0	
Act Effct Green (s)		20.0		20.0	20.0		42.0		42.0	42.0	42.0	
Actuated g/C Ratio		0.29		0.29	0.29		0.60		0.60	0.60	0.60	
v/c Ratio		0.36		0.21	0.30		0.03		0.09	0.19	0.50	
Control Delay		19.6		16.4	16.2		5.7		1.7	6.9	8.7	
Queue Delay		0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay		19.6		16.4	16.2		5.7		1.7	6.9	8.7	
LOS		B		B	B		A		A	A	A	
Approach Delay		19.6			16.3						8.4	
Approach LOS		B			B						A	
Queue Length 50th (ft)		60		14	40		1		0	35	116	
Queue Length 95th (ft)		95		m30	70		m3		13	62	159	
Internal Link Dist (ft)		2240			1632			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)		1008		255	532		245		985	1062	2106	
Starvation Cap Reductn		0		0	0		0		0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0		0		0	0	0	
Storage Cap Reductn		0		0	0		0		0	0	0	
Reduced v/c Ratio		0.36		0.21	0.30		0.03		0.09	0.19	0.50	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 40 (57%), Referenced to phase 2:NBL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 11.1		Intersection LOS: B	
Intersection Capacity Utilization 49.9%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Central Park & Harrison

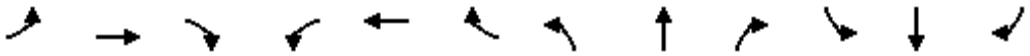




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	289	49	50	144	0	6	0	82	185	878	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	1.00		1.00		1.00	1.00	0.95	
Frt		0.98		1.00	1.00		1.00		0.85	1.00	0.99	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3463		1770	1863		1770		1583	1770	3493	
Flt Permitted		1.00		0.48	1.00		0.22		1.00	0.95	1.00	
Satd. Flow (perm)		3463		893	1863		409		1583	1770	3493	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	314	53	54	157	0	7	0	89	201	954	92
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	36	0	10	0
Lane Group Flow (vph)	0	348	0	54	157	0	7	0	53	201	1036	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Actuated Green, G (s)		20.0		20.0	20.0		42.0		42.0	42.0	42.0	
Effective Green, g (s)		20.0		20.0	20.0		42.0		42.0	42.0	42.0	
Actuated g/C Ratio		0.29		0.29	0.29		0.60		0.60	0.60	0.60	
Clearance Time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)		989		255	532		245		950	1062	2096	
v/s Ratio Prot		c0.10			0.08						c0.30	
v/s Ratio Perm				0.06			0.02		0.03	0.11		
v/c Ratio		0.35		0.21	0.30		0.03		0.06	0.19	0.49	
Uniform Delay, d1		19.9		19.0	19.5		5.7		5.8	6.3	8.0	
Progression Factor		1.00		0.74	0.74		0.92		0.96	1.00	1.00	
Incremental Delay, d2		1.0		1.8	1.4		0.2		0.1	0.4	0.8	
Delay (s)		20.8		15.8	15.8		5.4		5.6	6.7	8.8	
Level of Service		C		B	B		A		A	A	A	
Approach Delay (s)		20.8			15.8			5.6			8.5	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



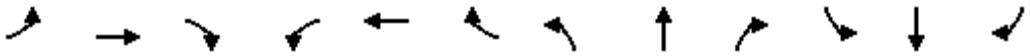
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	299	239	98	45	175	76	58	716	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	1.00	1.00	1.00
Frt		0.956			0.954			0.997				
Flt Protected	0.950			0.950				0.996				
Satd. Flow (prot)	1770	1781	0	1770	1777	0	0	5050	0	0	0	0
Flt Permitted	0.571			0.493				0.996				
Satd. Flow (perm)	1064	1781	0	918	1777	0	0	5050	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49			39			5				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			1008			640	
Travel Time (s)		38.9			54.5			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	325	260	107	49	190	83	63	778	18	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	325	367	0	49	273	0	0	859	0	0	0	0
Turn Type	Perm			Perm			Perm					
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0				
Total Split (s)	44.0	44.0	0.0	44.0	44.0	0.0	26.0	26.0	0.0	0.0	0.0	0.0
Total Split (%)	62.9%	62.9%	0.0%	62.9%	62.9%	0.0%	37.1%	37.1%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	40.0	40.0		40.0	40.0		22.0	22.0				
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5				
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)	0	0		0	0		0	0				
Act Effct Green (s)	40.0	40.0		40.0	40.0			22.0				
Actuated g/C Ratio	0.57	0.57		0.57	0.57			0.31				
v/c Ratio	0.53	0.35		0.09	0.26			0.54				
Control Delay	8.8	3.8		7.4	7.2			16.7				
Queue Delay	0.0	0.0		0.0	0.0			0.0				
Total Delay	8.8	3.8		7.4	7.2			16.7				
LOS	A	A		A	A			B				
Approach Delay		6.1			7.2			16.7				
Approach LOS		A			A			B				
Queue Length 50th (ft)	38	28		9	45			87				
Queue Length 95th (ft)	156	46		23	82			111				
Internal Link Dist (ft)		1632			2320			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)	608	1039		525	1032			1591				
Starvation Cap Reductn	0	0		0	0			0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0			0				
Storage Cap Reductn	0	0		0	0			0				
Reduced v/c Ratio	0.53	0.35		0.09	0.26			0.54				

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 24 (34%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 11.2		Intersection LOS: B	
Intersection Capacity Utilization 55.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: Central Park & Brady

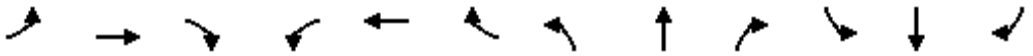




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	299	239	98	45	175	76	58	716	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0				
Lane Util. Factor	1.00	1.00		1.00	1.00			0.91				
Frt	1.00	0.96		1.00	0.95			1.00				
Flt Protected	0.95	1.00		0.95	1.00			1.00				
Satd. Flow (prot)	1770	1781		1770	1778			5051				
Flt Permitted	0.57	1.00		0.49	1.00			1.00				
Satd. Flow (perm)	1064	1781		918	1778			5051				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	325	260	107	49	190	83	63	778	18	0	0	0
RTOR Reduction (vph)	0	21	0	0	17	0	0	3	0	0	0	0
Lane Group Flow (vph)	325	346	0	49	256	0	0	856	0	0	0	0
Turn Type	Perm			Perm			Perm					
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Actuated Green, G (s)	40.0	40.0		40.0	40.0			22.0				
Effective Green, g (s)	40.0	40.0		40.0	40.0			22.0				
Actuated g/C Ratio	0.57	0.57		0.57	0.57			0.31				
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0				
Lane Grp Cap (vph)	608	1018		525	1016			1587				
v/s Ratio Prot		0.19			0.14							
v/s Ratio Perm	c0.31			0.05				0.17				
v/c Ratio	0.53	0.34		0.09	0.25			0.54				
Uniform Delay, d1	9.3	8.0		6.8	7.5			19.8				
Progression Factor	0.55	0.40		1.00	1.00			0.78				
Incremental Delay, d2	3.3	0.9		0.4	0.6			1.2				
Delay (s)	8.4	4.1		7.1	8.1			16.6				
Level of Service	A	A		A	A			B				
Approach Delay (s)		6.1			8.0			16.6			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

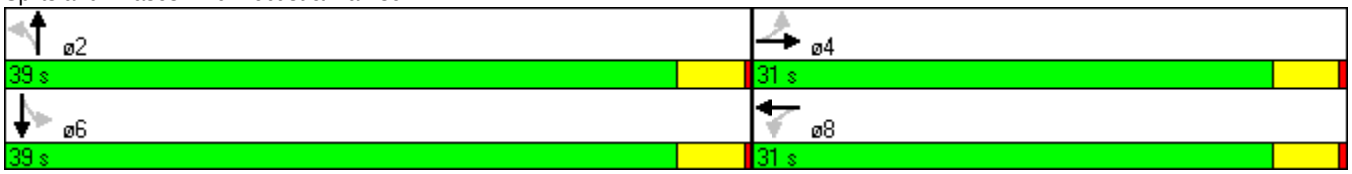


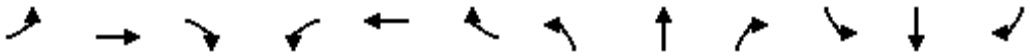
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	586	48	117	373	79	23	219	114	260	583	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.989			0.974			0.949			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3500	0	1770	3447	0	1770	1768	0	1770	3504	0
Flt Permitted	0.417			0.291			0.341			0.470		
Satd. Flow (perm)	777	3500	0	542	3447	0	635	1768	0	875	3504	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			42			54			15	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2240			1712			2656			1008	
Travel Time (s)		50.9			38.9			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	637	52	127	405	86	25	238	124	283	634	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	689	0	127	491	0	25	362	0	283	679	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	31.0	31.0	0.0	31.0	31.0	0.0	39.0	39.0	0.0	39.0	39.0	0.0
Total Split (%)	44.3%	44.3%	0.0%	44.3%	44.3%	0.0%	55.7%	55.7%	0.0%	55.7%	55.7%	0.0%
Maximum Green (s)	27.0	27.0		27.0	27.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	27.0	27.0		27.0	27.0		35.0	35.0		35.0	35.0	
Actuated g/C Ratio	0.39	0.39		0.39	0.39		0.50	0.50		0.50	0.50	
v/c Ratio	0.21	0.51		0.61	0.36		0.08	0.40		0.65	0.39	
Control Delay	16.8	17.7		32.3	14.4		10.0	10.7		14.9	6.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.8	17.7		32.3	14.4		10.0	10.7		14.9	6.9	
LOS	B	B		C	B		B	B		B	A	
Approach Delay		17.6			18.1			10.7			9.2	
Approach LOS		B			B			B			A	
Queue Length 50th (ft)	18	113		46	78		5	75		37	43	
Queue Length 95th (ft)	44	160		#120	116		17	133		180	57	
Internal Link Dist (ft)		2160			1632			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	300	1359		209	1355		318	911		438	1760	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.51		0.61	0.36		0.08	0.40		0.65	0.39	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 54 (77%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 13.8		Intersection LOS: B	
Intersection Capacity Utilization 70.4%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 9: Locust & Harrison

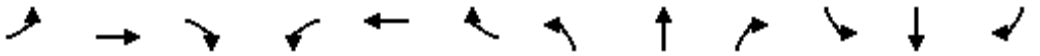




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	586	48	117	373	79	23	219	114	260	583	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	0.95	
Frt	1.00	0.99		1.00	0.97		1.00	0.95		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3499		1770	3446		1770	1767		1770	3504	
Flt Permitted	0.42	1.00		0.29	1.00		0.34	1.00		0.47	1.00	
Satd. Flow (perm)	776	3499		542	3446		635	1767		876	3504	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	637	52	127	405	86	25	238	124	283	634	45
RTOR Reduction (vph)	0	9	0	0	26	0	0	27	0	0	8	0
Lane Group Flow (vph)	63	680	0	127	465	0	25	335	0	283	672	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	27.0	27.0		27.0	27.0		35.0	35.0		35.0	35.0	
Effective Green, g (s)	27.0	27.0		27.0	27.0		35.0	35.0		35.0	35.0	
Actuated g/C Ratio	0.39	0.39		0.39	0.39		0.50	0.50		0.50	0.50	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	299	1350		209	1329		318	884		438	1752	
v/s Ratio Prot		0.19			0.13			0.19			0.19	
v/s Ratio Perm	0.08			c0.23			0.04			c0.32		
v/c Ratio	0.21	0.50		0.61	0.35		0.08	0.38		0.65	0.38	
Uniform Delay, d1	14.4	16.4		17.3	15.3		9.1	10.8		12.9	10.8	
Progression Factor	1.00	1.00		1.00	0.97		1.00	1.00		0.59	0.59	
Incremental Delay, d2	1.6	1.3		12.1	0.7		0.5	1.2		6.4	0.6	
Delay (s)	16.0	17.7		29.2	15.5		9.6	12.0		14.1	6.9	
Level of Service	B	B		C	B		A	B		B	A	
Approach Delay (s)		17.6			18.3			11.9			9.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



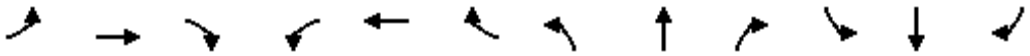
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	198	419	146	0	456	223	53	330	73	13	98	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.961			0.951			0.973			0.956	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1770	3401	0	1863	3366	0	1770	3444	0	1770	1781	0
Flt Permitted	0.345						0.631			0.397		
Satd. Flow (perm)	643	3401	0	1863	3366	0	1175	3444	0	740	1781	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		134			175			36			29	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			2656			1008	
Travel Time (s)		38.9			54.5			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	455	159	0	496	242	58	359	79	14	107	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	614	0	0	738	0	58	438	0	14	152	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	48.0	48.0	0.0	48.0	48.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	68.6%	68.6%	0.0%	68.6%	68.6%	0.0%	31.4%	31.4%	0.0%	31.4%	31.4%	0.0%
Maximum Green (s)	44.0	44.0		44.0	44.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	44.0	44.0			44.0		18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.63	0.63			0.63		0.26	0.26		0.26	0.26	
v/c Ratio	0.53	0.28			0.34		0.19	0.48		0.07	0.32	
Control Delay	10.0	3.0			5.0		22.4	22.2		13.5	11.7	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	10.0	3.0			5.0		22.4	22.2		13.5	11.7	
LOS	B	A			A		C	C		B	B	
Approach Delay		4.8			5.0			22.2			11.9	
Approach LOS		A			A			C			B	
Queue Length 50th (ft)	37	32			49		20	76		5	42	
Queue Length 95th (ft)	m56	34			74		48	117		m15	88	
Internal Link Dist (ft)		1632			2320			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	404	2188			2181		302	912		190	480	
Starvation Cap Reductn	0	0			0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.53	0.28			0.34		0.19	0.48		0.07	0.32	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 16 (23%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 58.8%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 10: Locust & Brady

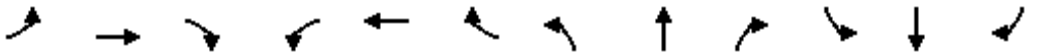




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	198	419	146	0	456	223	53	330	73	13	98	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	0.95		1.00	1.00	
Frt	1.00	0.96			0.95		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3402			3365		1770	3443		1770	1780	
Flt Permitted	0.34	1.00			1.00		0.63	1.00		0.40	1.00	
Satd. Flow (perm)	642	3402			3365		1176	3443		740	1780	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	455	159	0	496	242	58	359	79	14	107	45
RTOR Reduction (vph)	0	50	0	0	65	0	0	27	0	0	22	0
Lane Group Flow (vph)	215	564	0	0	673	0	58	411	0	14	130	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	44.0	44.0			44.0		18.0	18.0		18.0	18.0	
Effective Green, g (s)	44.0	44.0			44.0		18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.63	0.63			0.63		0.26	0.26		0.26	0.26	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	404	2138			2115		302	885		190	458	
v/s Ratio Prot		0.17			0.20			c0.12			0.07	
v/s Ratio Perm	c0.33						0.05			0.02		
v/c Ratio	0.53	0.26			0.32		0.19	0.46		0.07	0.28	
Uniform Delay, d1	7.3	5.8			6.0		20.3	21.9		19.7	20.8	
Progression Factor	0.69	0.61			1.00		1.00	1.00		0.63	0.58	
Incremental Delay, d2	4.3	0.3			0.4		1.4	1.8		0.7	1.5	
Delay (s)	9.3	3.8			6.4		21.7	23.7		13.1	13.6	
Level of Service	A	A			A		C	C		B	B	
Approach Delay (s)		5.2			6.4			23.5			13.5	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

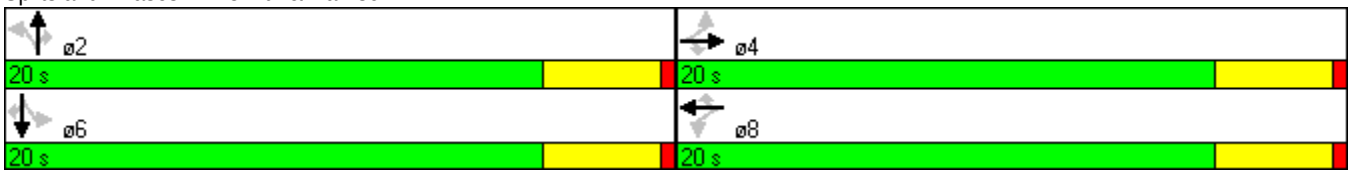


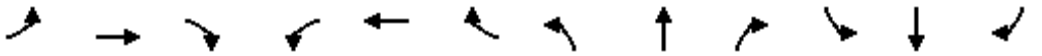
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	155	26	27	165	27	5	137	22	52	365	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.644			0.651			0.436			0.662		
Satd. Flow (perm)	1200	1863	1583	1213	1863	1583	812	1863	1583	1233	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			28			29			24			108
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			1163			2656	
Travel Time (s)		48.0			38.9			22.7			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	168	28	29	179	29	5	149	24	57	397	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	168	28	29	179	29	5	149	24	57	397	108
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.06	0.23	0.04	0.06	0.24	0.04	0.02	0.20	0.04	0.12	0.53	0.15
Control Delay	7.8	9.0	3.9	5.0	5.6	1.9	7.0	8.1	4.0	8.4	12.4	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	9.0	3.9	5.0	5.6	1.9	7.0	8.1	4.0	8.4	12.4	2.9
LOS	A	A	A	A	A	A	A	A	A	A	B	A
Approach Delay		8.2			5.0			7.6			10.2	
Approach LOS		A			A			A			B	
Queue Length 50th (ft)	3	23	0	2	14	1	1	19	1	8	63	0
Queue Length 95th (ft)	13	51	9	m7	31	m1	5	44	9	23	121	19
Internal Link Dist (ft)		2032			1632			1083			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	480	745	650	485	745	651	325	745	648	493	745	698
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.23	0.04	0.06	0.24	0.04	0.02	0.20	0.04	0.12	0.53	0.15

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 10 (25%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 8.4		Intersection LOS: A	
Intersection Capacity Utilization 47.9%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 13: 4th & Harrison

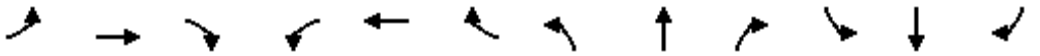




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	155	26	27	165	27	5	137	22	52	365	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.64	1.00	1.00	0.65	1.00	1.00	0.44	1.00	1.00	0.66	1.00	1.00
Satd. Flow (perm)	1200	1863	1583	1212	1863	1583	812	1863	1583	1234	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	168	28	29	179	29	5	149	24	57	397	108
RTOR Reduction (vph)	0	0	17	0	0	17	0	0	14	0	0	65
Lane Group Flow (vph)	27	168	11	29	179	12	5	149	10	57	397	43
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	480	745	633	485	745	633	325	745	633	494	745	633
v/s Ratio Prot		0.09			c0.10			0.08			c0.21	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.01		0.01	0.05		0.03
v/c Ratio	0.06	0.23	0.02	0.06	0.24	0.02	0.02	0.20	0.02	0.12	0.53	0.07
Uniform Delay, d1	7.4	7.9	7.3	7.4	8.0	7.3	7.2	7.8	7.2	7.5	9.2	7.4
Progression Factor	1.00	1.00	1.00	0.62	0.58	0.46	0.94	0.93	0.97	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.7	0.1	0.2	0.7	0.1	0.1	0.6	0.0	0.5	2.7	0.2
Delay (s)	7.6	8.6	7.3	4.8	5.4	3.4	6.9	7.8	7.1	8.0	11.9	7.6
Level of Service	A	A	A	A	A	A	A	A	A	A	B	A
Approach Delay (s)		8.3			5.0			7.7			10.7	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

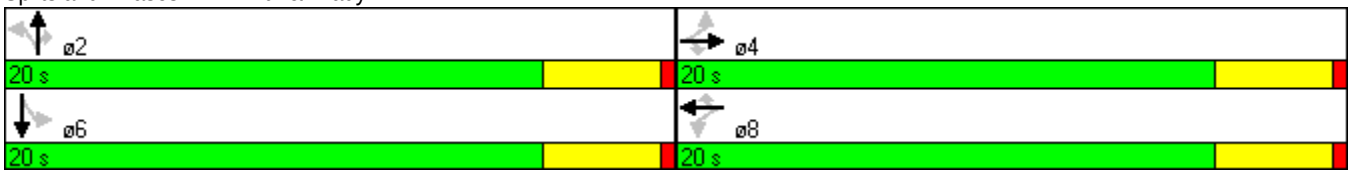


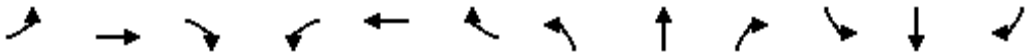
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	231	25	27	246	27	11	320	50	22	157	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.942	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1755	0
Flt Permitted	0.588			0.603			0.573			0.492		
Satd. Flow (perm)	1095	1863	1583	1123	1863	1583	1067	1863	1583	916	1755	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			54		95	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			1163			2656	
Travel Time (s)		38.9			53.1			22.7			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	251	27	29	267	29	12	348	54	24	171	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	251	27	29	267	29	12	348	54	24	279	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	
v/c Ratio	0.06	0.34	0.04	0.06	0.36	0.04	0.03	0.47	0.08	0.07	0.37	
Control Delay	6.4	8.4	3.0	7.9	10.2	3.9	6.3	10.0	2.3	8.1	7.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.4	8.4	3.0	7.9	10.2	3.9	6.3	10.0	2.3	8.1	7.2	
LOS	A	A	A	A	B	A	A	B	A	A	A	
Approach Delay		7.7			9.4			8.9			7.3	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	1	28	0	4	39	0	1	40	1	3	26	
Queue Length 95th (ft)	8	88	3	14	79	10	6	75	10	13	63	
Internal Link Dist (ft)		1632			2256			1083			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	438	745	649	449	745	651	427	745	666	366	759	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.34	0.04	0.06	0.36	0.04	0.03	0.47	0.08	0.07	0.37	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 14 (35%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 8.4		Intersection LOS: A	
Intersection Capacity Utilization 44.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 14: 4th & Brady

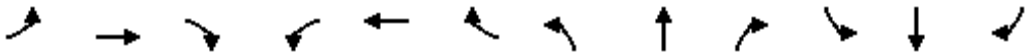




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	231	25	27	246	27	11	320	50	22	157	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1755	
Flt Permitted	0.59	1.00	1.00	0.60	1.00	1.00	0.57	1.00	1.00	0.49	1.00	
Satd. Flow (perm)	1095	1863	1583	1124	1863	1583	1068	1863	1583	916	1755	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	251	27	29	267	29	12	348	54	24	171	108
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	32	0	57	0
Lane Group Flow (vph)	28	251	11	29	267	12	12	348	22	24	222	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	438	745	633	450	745	633	427	745	633	366	702	
v/s Ratio Prot		0.13			c0.14			c0.19			0.13	
v/s Ratio Perm	0.03		0.01	0.03		0.01	0.01		0.01	0.03		
v/c Ratio	0.06	0.34	0.02	0.06	0.36	0.02	0.03	0.47	0.03	0.07	0.32	
Uniform Delay, d1	7.4	8.3	7.2	7.4	8.4	7.3	7.3	8.9	7.3	7.4	8.2	
Progression Factor	0.80	0.82	0.76	1.00	1.00	1.00	0.82	0.85	0.68	1.00	1.00	
Incremental Delay, d2	0.3	1.2	0.0	0.3	1.3	0.1	0.1	2.1	0.1	0.3	1.2	
Delay (s)	6.2	8.1	5.5	7.7	9.7	7.3	6.1	9.6	5.0	7.7	9.4	
Level of Service	A	A	A	A	A	A	A	A	A	A	A	
Approach Delay (s)		7.7			9.3			8.9			9.3	
Approach LOS		A			A			A			A	

Intersection Summary				
HCM Average Control Delay	8.8	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.41			
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	44.6%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group



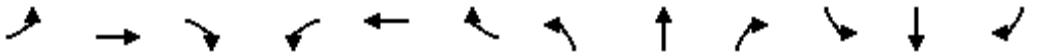
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	543	14	12	527	26	9	3	5	21	10	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.993			0.906			0.888	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1855	0	1770	1850	0	1770	1688	0	1770	1654	0
Flt Permitted	0.340			0.338			0.729			0.752		
Satd. Flow (perm)	633	1855	0	630	1850	0	1358	1688	0	1401	1654	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			7			5			32	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2016			1710			288			1848	
Travel Time (s)		45.8			38.9			5.6			36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	590	15	13	573	28	10	3	5	23	11	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	605	0	13	601	0	10	8	0	23	43	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	47.0	47.0	0.0	47.0	47.0	0.0	23.0	23.0	0.0	23.0	23.0	0.0
Total Split (%)	67.1%	67.1%	0.0%	67.1%	67.1%	0.0%	32.9%	32.9%	0.0%	32.9%	32.9%	0.0%
Maximum Green (s)	43.0	43.0		43.0	43.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	43.0	43.0		43.0	43.0		19.0	19.0		19.0	19.0	
Actuated g/C Ratio	0.61	0.61		0.61	0.61		0.27	0.27		0.27	0.27	
v/c Ratio	0.10	0.53		0.03	0.53		0.03	0.02		0.06	0.09	
Control Delay	6.4	9.8		1.8	3.0		19.1	14.3		19.5	10.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.4	9.8		1.8	3.0		19.1	14.3		19.5	10.2	
LOS	A	A		A	A		B	B		B	B	
Approach Delay		9.6			3.0			17.0			13.4	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	6	130		0	18		3	1		7	3	
Queue Length 95th (ft)	18	207		m1	30		14	10		24	25	
Internal Link Dist (ft)		1936			1630			208			1768	
Turn Bay Length (ft)												
Base Capacity (vph)	389	1141		387	1139		369	462		380	472	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.10	0.53		0.03	0.53		0.03	0.02		0.06	0.09	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 30 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 6.9		Intersection LOS: A	
Intersection Capacity Utilization 45.2%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 17: River & Harrison

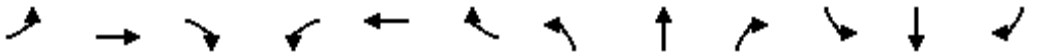




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	543	14	12	527	26	9	3	5	21	10	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.91		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1856		1770	1850		1770	1688		1770	1655	
Flt Permitted	0.34	1.00		0.34	1.00		0.73	1.00		0.75	1.00	
Satd. Flow (perm)	634	1856		629	1850		1358	1688		1402	1655	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	590	15	13	573	28	10	3	5	23	11	32
RTOR Reduction (vph)	0	1	0	0	3	0	0	4	0	0	23	0
Lane Group Flow (vph)	40	604	0	13	598	0	10	4	0	23	20	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	43.0	43.0		43.0	43.0		19.0	19.0		19.0	19.0	
Effective Green, g (s)	43.0	43.0		43.0	43.0		19.0	19.0		19.0	19.0	
Actuated g/C Ratio	0.61	0.61		0.61	0.61		0.27	0.27		0.27	0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	389	1140		386	1136		369	458		381	449	
v/s Ratio Prot		c0.33			0.32			0.00			0.01	
v/s Ratio Perm	0.06			0.02			0.01			c0.02		
v/c Ratio	0.10	0.53		0.03	0.53		0.03	0.01		0.06	0.04	
Uniform Delay, d1	5.6	7.7		5.3	7.7		18.7	18.6		18.9	18.8	
Progression Factor	1.00	1.00		0.29	0.19		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	1.8		0.1	1.5		0.1	0.0		0.3	0.2	
Delay (s)	6.1	9.5		1.7	3.0		18.9	18.7		19.2	19.0	
Level of Service	A	A		A	A		B	B		B	B	
Approach Delay (s)		9.3			3.0			18.8			19.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



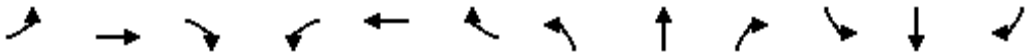
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	467	12	8	574	27	3	3	4	21	9	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.993				0.850		0.886	
Flt Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1770	1855	0	1770	1850	0	0	1818	1583	1770	1650	0
Flt Permitted	0.314			0.400				0.936		0.754		
Satd. Flow (perm)	585	1855	0	745	1850	0	0	1744	1583	1405	1650	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			6				4		32	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1710			6778			272			1848	
Travel Time (s)		38.9			154.0			5.3			36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	508	13	9	624	29	3	3	4	23	10	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	521	0	9	653	0	0	6	4	23	42	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	
Total Split (s)	48.0	48.0	0.0	48.0	48.0	0.0	22.0	22.0	22.0	22.0	22.0	0.0
Total Split (%)	68.6%	68.6%	0.0%	68.6%	68.6%	0.0%	31.4%	31.4%	31.4%	31.4%	31.4%	0.0%
Maximum Green (s)	44.0	44.0		44.0	44.0		18.0	18.0	18.0	18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	44.0	44.0		44.0	44.0			18.0	18.0	18.0	18.0	
Actuated g/C Ratio	0.63	0.63		0.63	0.63			0.26	0.26	0.26	0.26	
v/c Ratio	0.11	0.45		0.02	0.56			0.01	0.01	0.06	0.09	
Control Delay	2.7	3.3		5.1	9.7			19.7	13.2	20.3	10.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	2.7	3.3		5.1	9.7			19.7	13.2	20.3	10.4	
LOS	A	A		A	A			B	B	C	B	
Approach Delay		3.2			9.6			17.1			13.9	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	2	26		1	139			2	0	8	3	
Queue Length 95th (ft)	m4	36		6	221			10	7	24	25	
Internal Link Dist (ft)		1630			6698			192			1768	
Turn Bay Length (ft)												
Base Capacity (vph)	368	1167		468	1165			448	410	361	448	
Starvation Cap Reductn	0	0		0	0			0	0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.11	0.45		0.02	0.56			0.01	0.01	0.06	0.09	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 64 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Pretimed			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 7.1		Intersection LOS: A	
Intersection Capacity Utilization 46.3%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 18: River & Brady

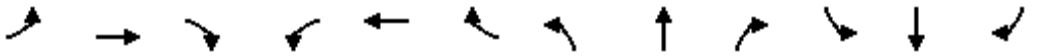




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	467	12	8	574	27	3	3	4	21	9	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99			1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1856		1770	1850			1817	1583	1770	1650	
Flt Permitted	0.31	1.00		0.40	1.00			0.94	1.00	0.75	1.00	
Satd. Flow (perm)	586	1856		746	1850			1743	1583	1404	1650	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	508	13	9	624	29	3	3	4	23	10	32
RTOR Reduction (vph)	0	1	0	0	2	0	0	0	3	0	24	0
Lane Group Flow (vph)	41	520	0	9	651	0	0	6	1	23	18	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	44.0	44.0		44.0	44.0			18.0	18.0	18.0	18.0	
Effective Green, g (s)	44.0	44.0		44.0	44.0			18.0	18.0	18.0	18.0	
Actuated g/C Ratio	0.63	0.63		0.63	0.63			0.26	0.26	0.26	0.26	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	368	1167		469	1163			448	407	361	424	
v/s Ratio Prot		0.28			c0.35						0.01	
v/s Ratio Perm	0.07			0.01				0.00	0.00	c0.02		
v/c Ratio	0.11	0.45		0.02	0.56			0.01	0.00	0.06	0.04	
Uniform Delay, d1	5.2	6.7		4.9	7.4			19.4	19.3	19.6	19.5	
Progression Factor	0.40	0.32		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	1.1		0.1	1.9			0.1	0.0	0.3	0.2	
Delay (s)	2.6	3.2		5.0	9.4			19.4	19.3	20.0	19.7	
Level of Service	A	A		A	A			B	B	B	B	
Approach Delay (s)		3.2			9.3			19.4			19.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

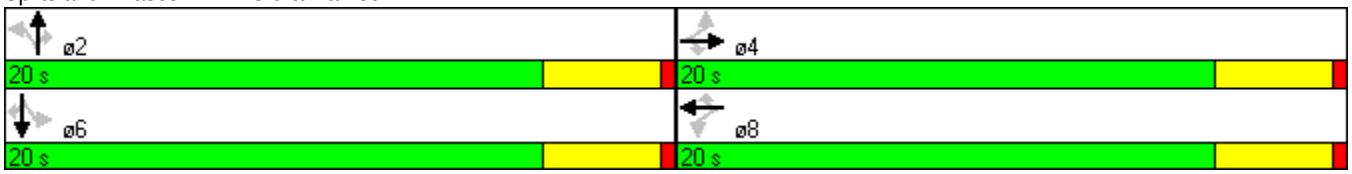


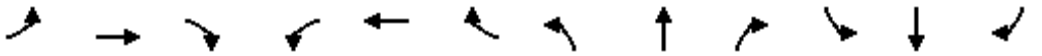
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	155	26	27	165	27	5	48	22	52	130	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.644			0.651			0.667			0.723		
Satd. Flow (perm)	1200	1863	1583	1213	1863	1583	1242	1863	1583	1347	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			28			29			24			109
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2089			1711			1848			1163	
Travel Time (s)		47.5			38.9			36.0			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	168	28	29	179	29	5	52	24	57	141	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	168	28	29	179	29	5	52	24	57	141	109
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.06	0.23	0.04	0.06	0.24	0.04	0.01	0.07	0.04	0.11	0.19	0.16
Control Delay	7.8	9.0	3.9	3.8	4.6	1.2	7.4	7.8	4.1	2.3	2.5	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	9.0	3.9	3.8	4.6	1.2	7.4	7.8	4.1	2.3	2.5	0.5
LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay		8.2			4.1			6.7			1.7	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	4	23	0	2	10	0	1	7	0	2	4	0
Queue Length 95th (ft)	14	51	9	m6	24	m1	5	20	9	m4	m9	m0
Internal Link Dist (ft)		2009			1631			1768			1083	
Turn Bay Length (ft)												
Base Capacity (vph)	480	745	650	485	745	651	497	745	648	539	745	699
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.23	0.04	0.06	0.24	0.04	0.01	0.07	0.04	0.11	0.19	0.16

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 32 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.24			
Intersection Signal Delay: 4.6		Intersection LOS: A	
Intersection Capacity Utilization 31.6%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 21: 3rd & Harrison

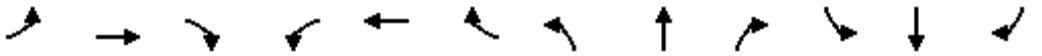




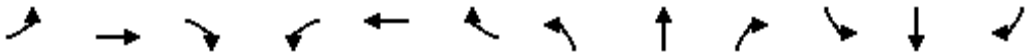
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	155	26	27	165	27	5	48	22	52	130	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.64	1.00	1.00	0.65	1.00	1.00	0.67	1.00	1.00	0.72	1.00	1.00
Satd. Flow (perm)	1200	1863	1583	1212	1863	1583	1243	1863	1583	1347	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	168	28	29	179	29	5	52	24	57	141	109
RTOR Reduction (vph)	0	0	17	0	0	17	0	0	14	0	0	65
Lane Group Flow (vph)	28	168	11	29	179	12	5	52	10	57	141	44
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	480	745	633	485	745	633	497	745	633	539	745	633
v/s Ratio Prot		0.09			c0.10			0.03			c0.08	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.00		0.01	0.04		0.03
v/c Ratio	0.06	0.23	0.02	0.06	0.24	0.02	0.01	0.07	0.02	0.11	0.19	0.07
Uniform Delay, d1	7.4	7.9	7.3	7.4	8.0	7.3	7.2	7.4	7.2	7.5	7.8	7.4
Progression Factor	1.00	1.00	1.00	0.47	0.47	0.29	1.00	1.00	1.00	0.25	0.24	0.02
Incremental Delay, d2	0.2	0.7	0.1	0.2	0.7	0.1	0.0	0.2	0.0	0.4	0.5	0.2
Delay (s)	7.6	8.6	7.3	3.7	4.5	2.1	7.3	7.6	7.3	2.3	2.4	0.4
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		8.3			4.1			7.5			1.7	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	4.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



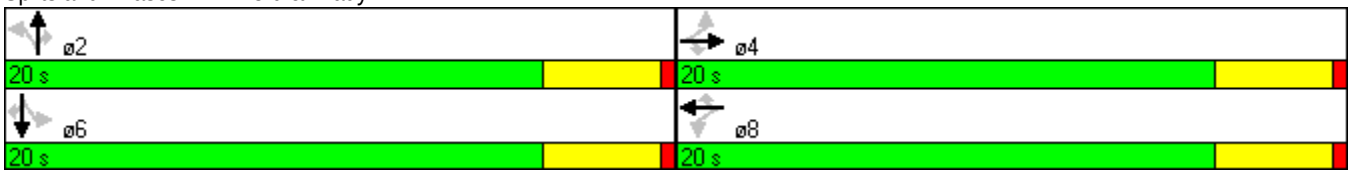
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	231	25	26	246	27	11	113	52	22	56	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.588			0.603			0.717			0.678		
Satd. Flow (perm)	1095	1863	1583	1123	1863	1583	1336	1863	1583	1263	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			57			109
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1711			6523			1848			1163	
Travel Time (s)		38.9			148.3			36.0			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	251	27	28	267	29	12	123	57	24	61	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	251	27	28	267	29	12	123	57	24	61	109
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.06	0.34	0.04	0.06	0.36	0.04	0.02	0.17	0.09	0.05	0.08	0.16
Control Delay	5.8	8.0	2.5	6.4	8.2	2.8	7.5	8.5	3.3	5.8	5.9	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.8	8.0	2.5	6.4	8.2	2.8	7.5	8.5	3.3	5.8	5.9	1.7
LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay		7.3			7.5			6.9			3.6	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	2	22	0	3	29	0	2	16	0	2	6	0
Queue Length 95th (ft)	9	44	5	10	55	7	8	39	14	m7	16	0
Internal Link Dist (ft)		1631			6443			1768			1083	
Turn Bay Length (ft)												
Base Capacity (vph)	438	745	649	449	745	651	534	745	667	505	745	699
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

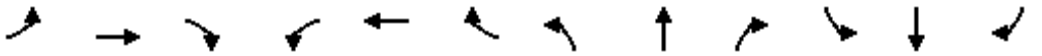


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.34	0.04	0.06	0.36	0.04	0.02	0.17	0.09	0.05	0.08	0.16

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 32 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 6.6		Intersection LOS: A	
Intersection Capacity Utilization 34.2%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 22: 3rd & Brady





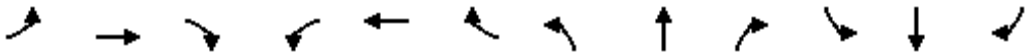
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	231	25	26	246	27	11	113	52	22	56	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.59	1.00	1.00	0.60	1.00	1.00	0.72	1.00	1.00	0.68	1.00	1.00
Satd. Flow (perm)	1095	1863	1583	1124	1863	1583	1336	1863	1583	1263	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	251	27	28	267	29	12	123	57	24	61	109
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	34	0	0	65
Lane Group Flow (vph)	27	251	11	28	267	12	12	123	23	24	61	44
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	438	745	633	450	745	633	534	745	633	505	745	633
v/s Ratio Prot		0.13			c0.14			c0.07			0.03	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.01		0.01	0.02		0.03
v/c Ratio	0.06	0.34	0.02	0.06	0.36	0.02	0.02	0.17	0.04	0.05	0.08	0.07
Uniform Delay, d1	7.4	8.3	7.2	7.4	8.4	7.3	7.3	7.7	7.3	7.3	7.4	7.4
Progression Factor	0.72	0.78	0.62	0.80	0.77	0.70	1.00	1.00	1.00	0.75	0.75	0.52
Incremental Delay, d2	0.3	1.2	0.0	0.3	1.3	0.1	0.1	0.5	0.1	0.2	0.2	0.2
Delay (s)	5.6	7.7	4.5	6.2	7.8	5.1	7.3	8.2	7.4	5.6	5.8	4.0
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		7.2			7.4			7.9			4.8	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Brady-Harrison Phase 1

Converted Two-Way Streets
Imbalanced Cross-Sections
2009 PM Peak Hour Traffic



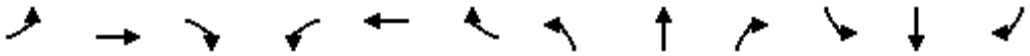
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	412	54	72	259	0	15	0	178	145	1144	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.983							0.850		0.970	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3479	0	1770	1863	0	1770	0	1583	1770	3433	0
Flt Permitted				0.365			0.098			0.950		
Satd. Flow (perm)	0	3479	0	680	1863	0	183	0	1583	1770	3433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21							153		77	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2320			1712			1008			640	
Travel Time (s)		52.7			38.9			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	448	59	78	282	0	16	0	193	158	1243	312
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	507	0	78	282	0	16	0	193	158	1555	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Minimum Split (s)		20.0		20.0	20.0		20.0		20.0	20.0	20.0	
Total Split (s)	0.0	25.0	0.0	25.0	25.0	0.0	45.0	0.0	45.0	45.0	45.0	0.0
Total Split (%)	0.0%	35.7%	0.0%	35.7%	35.7%	0.0%	64.3%	0.0%	64.3%	64.3%	64.3%	0.0%
Maximum Green (s)		21.0		21.0	21.0		41.0		41.0	41.0	41.0	
Yellow Time (s)		3.5		3.5	3.5		3.5		3.5	3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0		0	0	0	
Act Effct Green (s)		21.0		21.0	21.0		41.0		41.0	41.0	41.0	
Actuated g/C Ratio		0.30		0.30	0.30		0.59		0.59	0.59	0.59	
v/c Ratio		0.48		0.38	0.50		0.15		0.19	0.15	0.76	
Control Delay		21.0		12.0	10.6		15.3		6.9	7.1	13.4	
Queue Delay		0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay		21.0		12.0	10.6		15.3		6.9	7.1	13.4	
LOS		C		B	B		B		A	A	B	
Approach Delay		21.0			10.9						12.8	
Approach LOS		C			B						B	
Queue Length 50th (ft)		88		14	51		0		31	28	224	
Queue Length 95th (ft)		132		m23	m66		m0		m38	52	308	
Internal Link Dist (ft)		2240			1632			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)		1058		204	559		107		991	1037	2043	
Starvation Cap Reductn		0		0	0		0		0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0		0		0	0	0	
Storage Cap Reductn		0		0	0		0		0	0	0	
Reduced v/c Ratio		0.48		0.38	0.50		0.15		0.19	0.15	0.76	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 26 (37%), Referenced to phase 2:NBL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 13.6		Intersection LOS: B	
Intersection Capacity Utilization 67.9%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Central Park & Harrison

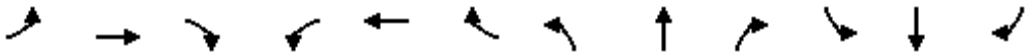




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	412	54	72	259	0	15	0	178	145	1144	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	1.00		1.00		1.00	1.00	0.95	
Frt		0.98		1.00	1.00		1.00		0.85	1.00	0.97	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3477		1770	1863		1770		1583	1770	3433	
Flt Permitted		1.00		0.37	1.00		0.10		1.00	0.95	1.00	
Satd. Flow (perm)		3477		680	1863		182		1583	1770	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	448	59	78	282	0	16	0	193	158	1243	312
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	63	0	32	0
Lane Group Flow (vph)	0	492	0	78	282	0	16	0	130	158	1523	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Actuated Green, G (s)		21.0		21.0	21.0		41.0		41.0	41.0	41.0	
Effective Green, g (s)		21.0		21.0	21.0		41.0		41.0	41.0	41.0	
Actuated g/C Ratio		0.30		0.30	0.30		0.59		0.59	0.59	0.59	
Clearance Time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)		1043		204	559		107		927	1037	2011	
v/s Ratio Prot		0.14			c0.15						c0.44	
v/s Ratio Perm				0.11			0.09		0.08	0.09		
v/c Ratio		0.47		0.38	0.50		0.15		0.14	0.15	0.76	
Uniform Delay, d1		20.0		19.4	20.2		6.6		6.5	6.6	10.8	
Progression Factor		1.00		0.38	0.39		1.84		3.29	1.00	1.00	
Incremental Delay, d2		1.5		4.2	2.6		1.0		0.1	0.3	2.7	
Delay (s)		21.5		11.5	10.4		13.2		21.7	6.9	13.5	
Level of Service		C		B	B		B		C	A	B	
Approach Delay (s)		21.5			10.6			21.0			12.9	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

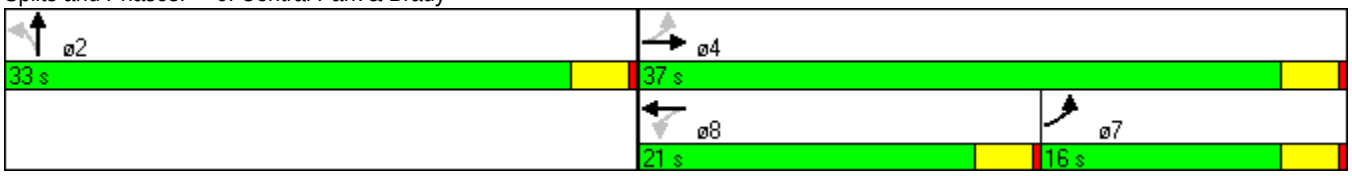


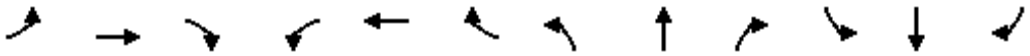
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	447	347	127	7	257	108	138	1555	49	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.91	0.91	0.91	1.00	1.00	1.00
Frt		0.960			0.956			0.996				
Flt Protected	0.950			0.950				0.996				
Satd. Flow (prot)	1770	1788	0	1770	3383	0	0	5045	0	0	0	0
Flt Permitted	0.446			0.235				0.996				
Satd. Flow (perm)	831	1788	0	438	3383	0	0	5045	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			44			7				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			520			640	
Travel Time (s)		38.9			54.5			10.1			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	486	377	138	8	279	117	150	1690	53	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	486	515	0	8	396	0	0	1893	0	0	0	0
Turn Type	pm+pt			Perm			Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4			8			2					
Minimum Split (s)	9.0	21.0		21.0	21.0		21.0	21.0				
Total Split (s)	16.0	37.0	0.0	21.0	21.0	0.0	33.0	33.0	0.0	0.0	0.0	0.0
Total Split (%)	22.9%	52.9%	0.0%	30.0%	30.0%	0.0%	47.1%	47.1%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	12.5	33.5		17.5	17.5		29.5	29.5				
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0				
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5				
Lost Time Adjust (s)	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag			Lead	Lead							
Lead-Lag Optimize?	Yes			Yes	Yes							
Walk Time (s)		5.0		5.0	5.0		5.0	5.0				
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)		0		0	0		0	0				
Act Effct Green (s)	33.0	33.0		17.0	17.0			29.0				
Actuated g/C Ratio	0.47	0.47		0.24	0.24			0.41				
v/c Ratio	0.88	0.60		0.08	0.46			0.90				
Control Delay	34.3	10.4		22.7	22.1			19.1				
Queue Delay	0.0	0.0		0.0	0.0			0.0				
Total Delay	34.3	10.4		22.7	22.1			19.1				
LOS	C	B		C	C			B				
Approach Delay		22.0			22.1			19.1				
Approach LOS		C			C			B				
Queue Length 50th (ft)	125	143		3	67			175				
Queue Length 95th (ft)	#316	221		13	106			m221				
Internal Link Dist (ft)		1632			2320			440			560	
Turn Bay Length (ft)												
Base Capacity (vph)	553	862		106	855			2094				
Starvation Cap Reductn	0	0		0	0			0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0			0				
Storage Cap Reductn	0	0		0	0			0				
Reduced v/c Ratio	0.88	0.60		0.08	0.46			0.90				

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 10 (14%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 20.3		Intersection LOS: C	
Intersection Capacity Utilization 79.3%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 6: Central Park & Brady

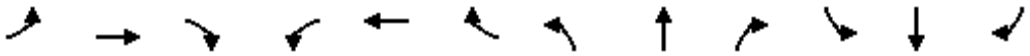




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	447	347	127	7	257	108	138	1555	49	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0				
Lane Util. Factor	1.00	1.00		1.00	0.95			0.91				
Frt	1.00	0.96		1.00	0.96			1.00				
Flt Protected	0.95	1.00		0.95	1.00			1.00				
Satd. Flow (prot)	1770	1788		1770	3382			5044				
Flt Permitted	0.45	1.00		0.24	1.00			1.00				
Satd. Flow (perm)	830	1788		438	3382			5044				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	486	377	138	8	279	117	150	1690	53	0	0	0
RTOR Reduction (vph)	0	19	0	0	33	0	0	4	0	0	0	0
Lane Group Flow (vph)	486	496	0	8	363	0	0	1889	0	0	0	0
Turn Type	pm+pt			Perm			Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4			8			2					
Actuated Green, G (s)	33.5	33.5		17.5	17.5			29.5				
Effective Green, g (s)	33.0	33.0		17.0	17.0			29.0				
Actuated g/C Ratio	0.47	0.47		0.24	0.24			0.41				
Clearance Time (s)	3.5	3.5		3.5	3.5			3.5				
Lane Grp Cap (vph)	552	843		106	821			2090				
v/s Ratio Prot	c0.15	0.28			0.11							
v/s Ratio Perm	c0.26			0.02				0.37				
v/c Ratio	0.88	0.59		0.08	0.44			0.90				
Uniform Delay, d1	18.0	13.5		20.4	22.5			19.2				
Progression Factor	0.71	0.56		1.00	1.00			0.75				
Incremental Delay, d2	17.6	2.9		1.4	1.7			3.8				
Delay (s)	30.4	10.6		21.8	24.2			18.2				
Level of Service	C	B		C	C			B				
Approach Delay (s)		20.2			24.2			18.2			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

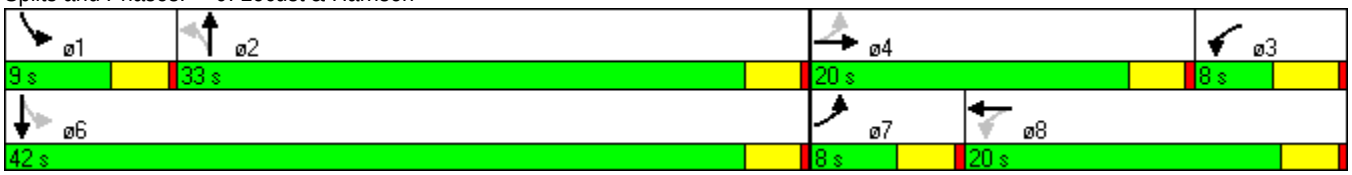


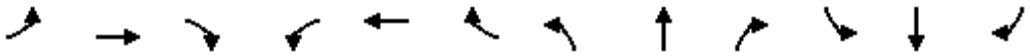
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	641	64	127	564	60	39	486	228	207	659	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.986			0.986			0.952			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3490	0	1770	3490	0	1770	1773	0	1770	3497	0
Flt Permitted	0.333			0.320			0.357			0.121		
Satd. Flow (perm)	620	3490	0	596	3490	0	665	1773	0	225	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			15			41			20	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2240			1712			2656			1008	
Travel Time (s)		50.9			38.9			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	697	70	138	613	65	42	528	248	225	716	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	767	0	138	678	0	42	776	0	225	779	0
Turn Type	pm+pt			pm+pt			Perm			pm+pt		
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	8.0	20.0		8.0	20.0		20.0	20.0		8.0	20.0	
Total Split (s)	8.0	20.0	0.0	8.0	20.0	0.0	33.0	33.0	0.0	9.0	42.0	0.0
Total Split (%)	11.4%	28.6%	0.0%	11.4%	28.6%	0.0%	47.1%	47.1%	0.0%	12.9%	60.0%	0.0%
Maximum Green (s)	4.5	16.5		4.0	16.5		29.5	29.5		5.5	38.5	
Yellow Time (s)	3.0	3.0		3.5	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.5	0.5	0.5	0.5
Total Lost Time (s)	4.0	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.5	4.0	4.0	4.5
Lead/Lag	Lead	Lead		Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Walk Time (s)		5.0			5.0		5.0	5.0			5.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0			0		0	0			0	
Act Effct Green (s)	16.0	16.0		15.5	16.0		29.0	29.0		38.0	38.0	
Actuated g/C Ratio	0.23	0.23		0.22	0.23		0.41	0.41		0.54	0.54	
v/c Ratio	0.64	0.95		0.72	0.84		0.15	1.02		0.97	0.41	
Control Delay	39.7	49.5		26.4	16.5		12.6	59.4		65.8	5.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	39.7	49.5		26.4	16.5		12.6	59.4		65.8	5.6	
LOS	D	D		C	B		B	E		E	A	
Approach Delay		48.0			18.1			57.0			19.1	
Approach LOS		D			B			E			B	
Queue Length 50th (ft)	48	168		15	42		10	~329		59	42	
Queue Length 95th (ft)	#111	#280		m17	m46		27	#563		m#127	63	
Internal Link Dist (ft)		2160			1632			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	207	809		191	809		276	759		233	1908	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.64	0.95		0.72	0.84		0.15	1.02		0.97	0.41	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 48 (69%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 35.0		Intersection LOS: C	
Intersection Capacity Utilization 91.5%		ICU Level of Service F	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 9: Locust & Harrison

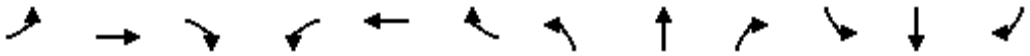




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	641	64	127	564	60	39	486	228	207	659	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.5	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	0.95	
Frt	1.00	0.99		1.00	0.99		1.00	0.95		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3491		1770	3488		1770	1773		1770	3496	
Flt Permitted	0.33	1.00		0.32	1.00		0.36	1.00		0.12	1.00	
Satd. Flow (perm)	621	3491		596	3488		664	1773		226	3496	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	697	70	138	613	65	42	528	248	225	716	63
RTOR Reduction (vph)	0	11	0	0	12	0	0	24	0	0	9	0
Lane Group Flow (vph)	133	756	0	138	666	0	42	752	0	225	770	0
Turn Type	pm+pt			pm+pt			Perm			pm+pt		
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.5	16.5		16.5	16.5		29.5	29.5		38.5	38.5	
Effective Green, g (s)	16.0	16.0		16.0	16.0		29.0	29.0		38.0	38.0	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.41	0.41		0.54	0.54	
Clearance Time (s)	3.5	3.5		4.0	3.5		3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	208	798		195	797		275	735		233	1898	
v/s Ratio Prot	0.04	c0.22		0.04	c0.19			0.42		c0.07	0.22	
v/s Ratio Perm	0.11			0.13			0.06			c0.46		
v/c Ratio	0.64	0.95		0.71	0.84		0.15	1.02		0.97	0.41	
Uniform Delay, d1	23.6	26.6		27.5	25.8		12.8	20.5		15.2	9.4	
Progression Factor	1.00	1.00		0.47	0.41		0.85	0.91		2.19	0.55	
Incremental Delay, d2	14.1	21.4		8.9	4.6		1.2	39.1		40.3	0.4	
Delay (s)	37.7	48.0		21.8	15.1		12.0	57.9		73.6	5.6	
Level of Service	D	D		C	B		B	E		E	A	
Approach Delay (s)		46.5			16.2			55.5			20.8	
Approach LOS		D			B			E			C	

Intersection Summary			
HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

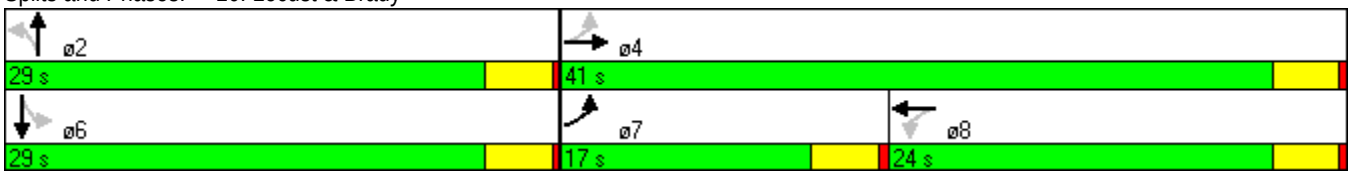


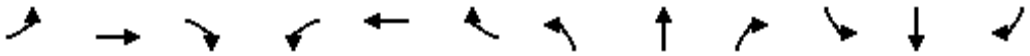
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	415	869	140	0	703	248	91	884	133	19	127	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.979			0.961			0.980			0.953	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1770	3465	0	1863	3401	0	1770	3468	0	1770	1775	0
Flt Permitted	0.167						0.590			0.160		
Satd. Flow (perm)	311	3465	0	1863	3401	0	1099	3468	0	298	1775	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			52			27			37	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			2656			488	
Travel Time (s)		38.9			54.5			51.7			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	451	945	152	0	764	270	99	961	145	21	138	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	451	1097	0	0	1034	0	99	1106	0	21	201	0
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	8.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	17.0	41.0	0.0	24.0	24.0	0.0	29.0	29.0	0.0	29.0	29.0	0.0
Total Split (%)	24.3%	58.6%	0.0%	34.3%	34.3%	0.0%	41.4%	41.4%	0.0%	41.4%	41.4%	0.0%
Maximum Green (s)	13.0	37.0		20.0	20.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Walk Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	37.0	37.0			20.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.53	0.53			0.29		0.36	0.36		0.36	0.36	
v/c Ratio	1.04	0.59			1.02		0.25	0.88		0.20	0.31	
Control Delay	70.9	6.0			60.7		13.7	25.7		12.1	6.2	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	70.9	6.0			60.7		13.7	25.7		12.1	6.2	
LOS	E	A			E		B	C		B	A	
Approach Delay		24.9			60.7			24.7			6.7	
Approach LOS		C			E			C			A	
Queue Length 50th (ft)	~165	78			~234		25	220		4	25	
Queue Length 95th (ft)	m#219	m88			#364		m42	#340		m9	50	
Internal Link Dist (ft)		1632			2320			2576			408	
Turn Bay Length (ft)												
Base Capacity (vph)	435	1850			1009		393	1256		106	658	
Starvation Cap Reductn	0	0			0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	1.04	0.59			1.02		0.25	0.88		0.20	0.31	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay: 33.1		Intersection LOS: C	
Intersection Capacity Utilization 95.7%		ICU Level of Service F	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 10: Locust & Brady

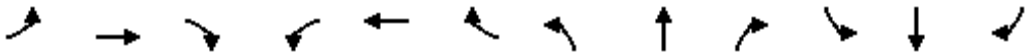




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	415	869	140	0	703	248	91	884	133	19	127	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	0.95		1.00	1.00	
Frt	1.00	0.98			0.96		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3466			3401		1770	3470		1770	1775	
Flt Permitted	0.17	1.00			1.00		0.59	1.00		0.16	1.00	
Satd. Flow (perm)	310	3466			3401		1099	3470		298	1775	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	451	945	152	0	764	270	99	961	145	21	138	63
RTOR Reduction (vph)	0	18	0	0	37	0	0	17	0	0	24	0
Lane Group Flow (vph)	451	1079	0	0	997	0	99	1089	0	21	177	0
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	37.0	37.0			20.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	37.0	37.0			20.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.53	0.53			0.29		0.36	0.36		0.36	0.36	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	435	1832			972		393	1239		106	634	
v/s Ratio Prot	c0.19	0.31			0.29			c0.31			0.10	
v/s Ratio Perm	c0.35						0.09			0.07		
v/c Ratio	1.04	0.59			1.03		0.25	0.88		0.20	0.28	
Uniform Delay, d1	18.3	11.3			25.0		15.9	21.1		15.6	16.1	
Progression Factor	1.48	0.45			1.00		0.74	0.78		0.47	0.37	
Incremental Delay, d2	45.0	0.9			35.5		1.4	8.3		3.9	1.0	
Delay (s)	72.1	6.0			60.5		13.2	24.8		11.3	7.0	
Level of Service	E	A			E		B	C		B	A	
Approach Delay (s)		25.3			60.5			23.9			7.4	
Approach LOS		C			E			C			A	

Intersection Summary			
HCM Average Control Delay	33.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

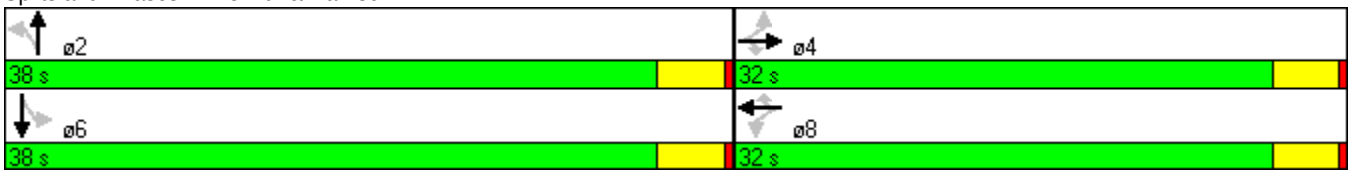


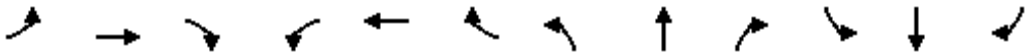
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	260	15	17	277	52	12	266	49	27	323	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850		0.977			0.959	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1820	0	1770	3394	0
Flt Permitted	0.485			0.506			0.451			0.483		
Satd. Flow (perm)	903	1863	1583	943	1863	1583	840	1820	0	900	3394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			16			57		18			106	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			965			2656	
Travel Time (s)		48.0			38.9			18.8			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	283	16	18	301	57	13	289	53	29	351	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	283	16	18	301	57	13	342	0	29	481	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0		20.0	20.0	
Total Split (s)	32.0	32.0	32.0	32.0	32.0	32.0	38.0	38.0	0.0	38.0	38.0	0.0
Total Split (%)	45.7%	45.7%	45.7%	45.7%	45.7%	45.7%	54.3%	54.3%	0.0%	54.3%	54.3%	0.0%
Maximum Green (s)	28.0	28.0	28.0	28.0	28.0	28.0	34.0	34.0		34.0	34.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	28.0	28.0	28.0	28.0	28.0	28.0	34.0	34.0		34.0	34.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.49	0.49		0.49	0.49	
v/c Ratio	0.14	0.38	0.02	0.05	0.40	0.09	0.03	0.38		0.07	0.28	
Control Delay	14.8	16.8	6.7	6.9	8.2	0.8	6.7	8.1		12.5	11.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	14.8	16.8	6.7	6.9	8.2	0.8	6.7	8.1		12.5	11.6	
LOS	B	B	A	A	A	A	A	A		B	B	
Approach Delay		16.0			7.0			8.0			11.7	
Approach LOS		B			A			A			B	
Queue Length 50th (ft)	14	83	0	2	35	1	2	54		8	68	
Queue Length 95th (ft)	36	141	11	m5	60	m0	m6	84		m18	m102	
Internal Link Dist (ft)		2032			1632			885			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	361	745	643	377	745	667	408	893		437	1703	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.14	0.38	0.02	0.05	0.40	0.09	0.03	0.38		0.07	0.28	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 48 (69%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 10.7		Intersection LOS: B	
Intersection Capacity Utilization 50.3%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 13: 4th & Harrison

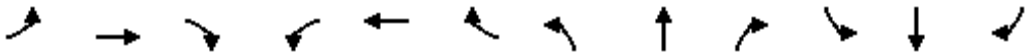




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	260	15	17	277	52	12	266	49	27	323	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1819		1770	3396	
Flt Permitted	0.49	1.00	1.00	0.51	1.00	1.00	0.45	1.00		0.48	1.00	
Satd. Flow (perm)	904	1863	1583	942	1863	1583	840	1819		899	3396	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	283	16	18	301	57	13	289	53	29	351	130
RTOR Reduction (vph)	0	0	10	0	0	34	0	9	0	0	55	0
Lane Group Flow (vph)	52	283	6	18	301	23	13	333	0	29	426	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	28.0	28.0	28.0	28.0	28.0	28.0	34.0	34.0		34.0	34.0	
Effective Green, g (s)	28.0	28.0	28.0	28.0	28.0	28.0	34.0	34.0		34.0	34.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.49	0.49		0.49	0.49	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	362	745	633	377	745	633	408	884		437	1649	
v/s Ratio Prot		0.15			c0.16			c0.18			0.13	
v/s Ratio Perm	0.06		0.00	0.02		0.01	0.02			0.03		
v/c Ratio	0.14	0.38	0.01	0.05	0.40	0.04	0.03	0.38		0.07	0.26	
Uniform Delay, d1	13.4	14.9	12.7	12.8	15.0	12.8	9.4	11.3		9.6	10.6	
Progression Factor	1.00	1.00	1.00	0.51	0.43	0.13	0.67	0.62		1.24	1.36	
Incremental Delay, d2	0.8	1.5	0.0	0.2	1.5	0.1	0.1	1.2		0.3	0.3	
Delay (s)	14.2	16.3	12.7	6.8	8.0	1.8	6.5	8.2		12.1	14.7	
Level of Service	B	B	B	A	A	A	A	A		B	B	
Approach Delay (s)		15.8			7.0			8.1			14.6	
Approach LOS		B			A			A			B	

Intersection Summary				
HCM Average Control Delay	11.6	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.39			
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	50.3%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group



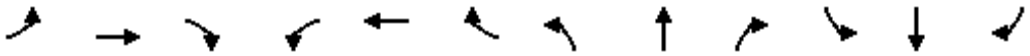
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	232	15	17	247	52	27	620	113	12	138	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.974			0.977			0.943	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1846	0	1770	1814	0	1770	1820	0	1770	1757	0
Flt Permitted	0.366			0.453			0.603			0.206		
Satd. Flow (perm)	682	1846	0	844	1814	0	1123	1820	0	384	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			15			23			80	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			965			2656	
Travel Time (s)		38.9			53.1			18.8			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	252	16	18	268	57	29	674	123	13	150	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	268	0	18	325	0	29	797	0	13	243	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	24.0	24.0	0.0	24.0	24.0	0.0	46.0	46.0	0.0	46.0	46.0	0.0
Total Split (%)	34.3%	34.3%	0.0%	34.3%	34.3%	0.0%	65.7%	65.7%	0.0%	65.7%	65.7%	0.0%
Maximum Green (s)	20.0	20.0		20.0	20.0		42.0	42.0		42.0	42.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	20.0	20.0		20.0	20.0		42.0	42.0		42.0	42.0	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.60	0.60		0.60	0.60	
v/c Ratio	0.27	0.50		0.07	0.61		0.04	0.72		0.06	0.22	
Control Delay	14.7	14.6		19.4	26.5		4.4	9.4		8.3	6.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.7	14.6		19.4	26.5		4.4	9.4		8.3	6.6	
LOS	B	B		B	C		A	A		A	A	
Approach Delay		14.6			26.2			9.2			6.7	
Approach LOS		B			C			A			A	
Queue Length 50th (ft)	9	45		6	115		3	119		2	36	
Queue Length 95th (ft)	22	72		20	195		m6	166		m6	71	
Internal Link Dist (ft)		1632			2256			885			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	195	531		241	529		674	1101		230	1086	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.27	0.50		0.07	0.61		0.04	0.72		0.06	0.22	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 4 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 13.2		Intersection LOS: B	
Intersection Capacity Utilization 69.0%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 14: 4th & Brady

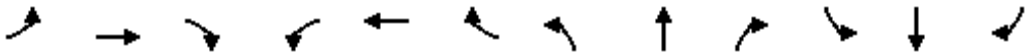




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	232	15	17	247	52	27	620	113	12	138	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.98		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1846		1770	1814		1770	1820		1770	1756	
Flt Permitted	0.37	1.00		0.45	1.00		0.60	1.00		0.21	1.00	
Satd. Flow (perm)	682	1846		844	1814		1122	1820		384	1756	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	252	16	18	268	57	29	674	123	13	150	93
RTOR Reduction (vph)	0	4	0	0	11	0	0	9	0	0	32	0
Lane Group Flow (vph)	52	264	0	18	314	0	29	788	0	13	211	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	20.0	20.0		20.0	20.0		42.0	42.0		42.0	42.0	
Effective Green, g (s)	20.0	20.0		20.0	20.0		42.0	42.0		42.0	42.0	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.60	0.60		0.60	0.60	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	195	527		241	518		673	1092		230	1054	
v/s Ratio Prot		0.14			c0.17			c0.43			0.12	
v/s Ratio Perm	0.08			0.02			0.03			0.03		
v/c Ratio	0.27	0.50		0.07	0.61		0.04	0.72		0.06	0.20	
Uniform Delay, d1	19.3	20.8		18.2	21.6		5.7	9.9		5.8	6.4	
Progression Factor	0.56	0.54		1.00	1.00		0.74	0.56		1.29	1.42	
Incremental Delay, d2	3.2	3.2		0.6	5.2		0.1	3.7		0.4	0.4	
Delay (s)	14.1	14.5		18.8	26.8		4.3	9.2		7.9	9.4	
Level of Service	B	B		B	C		A	A		A	A	
Approach Delay (s)		14.4			26.4			9.0			9.4	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



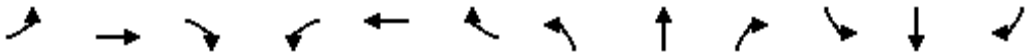
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	726	17	14	595	23	29	9	33	68	22	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.994			0.883			0.894	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1857	0	1770	1852	0	1770	1645	0	1770	1665	0
Flt Permitted	0.303			0.220			0.704			0.727		
Satd. Flow (perm)	564	1857	0	410	1852	0	1311	1645	0	1354	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			36			57	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2016			1700			288			1800	
Travel Time (s)		45.8			38.6			5.6			35.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	789	18	15	647	25	32	10	36	74	24	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	807	0	15	672	0	32	46	0	74	81	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	48.0	48.0	0.0	48.0	48.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	68.6%	68.6%	0.0%	68.6%	68.6%	0.0%	31.4%	31.4%	0.0%	31.4%	31.4%	0.0%
Maximum Green (s)	44.0	44.0		44.0	44.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	44.0	44.0		44.0	44.0		18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.26	0.26		0.26	0.26	
v/c Ratio	0.20	0.69		0.06	0.58		0.09	0.10		0.21	0.17	
Control Delay	7.2	12.4		2.9	4.4		20.8	10.0		11.3	2.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.2	12.4		2.9	4.4		20.8	10.0		11.3	2.6	
LOS	A	B		A	A		C	B		B	A	
Approach Delay		12.0			4.4			14.5			6.7	
Approach LOS		B			A			B			A	
Queue Length 50th (ft)	11	198		1	40		11	3		13	0	
Queue Length 95th (ft)	29	320		m2	61		31	26		27	1	
Internal Link Dist (ft)		1936			1620			208			1720	
Turn Bay Length (ft)												
Base Capacity (vph)	355	1168		258	1166		337	450		348	470	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.20	0.69		0.06	0.58		0.09	0.10		0.21	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 30 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 8.7		Intersection LOS: A	
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 17: River & Harrison

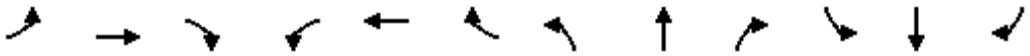




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	726	17	14	595	23	29	9	33	68	22	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.88		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1857		1770	1852		1770	1644		1770	1666	
Flt Permitted	0.30	1.00		0.22	1.00		0.70	1.00		0.73	1.00	
Satd. Flow (perm)	564	1857		411	1852		1312	1644		1354	1666	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	789	18	15	647	25	32	10	36	74	24	57
RTOR Reduction (vph)	0	1	0	0	2	0	0	27	0	0	42	0
Lane Group Flow (vph)	70	806	0	15	670	0	32	19	0	74	39	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	44.0	44.0		44.0	44.0		18.0	18.0		18.0	18.0	
Effective Green, g (s)	44.0	44.0		44.0	44.0		18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.26	0.26		0.26	0.26	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	355	1167		258	1164		337	423		348	428	
v/s Ratio Prot		c0.43			0.36			0.01			0.02	
v/s Ratio Perm	0.12			0.04			0.02			c0.05		
v/c Ratio	0.20	0.69		0.06	0.58		0.09	0.05		0.21	0.09	
Uniform Delay, d1	5.5	8.5		5.0	7.6		19.8	19.5		20.4	19.8	
Progression Factor	1.00	1.00		0.48	0.33		1.00	1.00		0.47	0.19	
Incremental Delay, d2	1.2	3.4		0.4	1.8		0.6	0.2		1.4	0.4	
Delay (s)	6.8	11.9		2.8	4.3		20.4	19.7		11.0	4.1	
Level of Service	A	B		A	A		C	B		B	A	
Approach Delay (s)		11.5			4.3			20.0			7.4	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



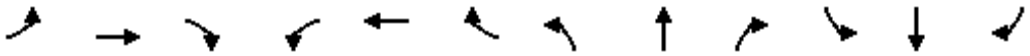
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	711	23	23	579	23	16	9	24	67	21	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.994				0.850		0.894	
Flt Protected	0.950			0.950				0.969		0.950		
Satd. Flow (prot)	1770	1853	0	1770	1852	0	0	1805	1583	1770	1665	0
Flt Permitted	0.314			0.226				0.864		0.740		
Satd. Flow (perm)	585	1853	0	421	1852	0	0	1609	1583	1378	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			6				26		55	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1700			6636			272			1800	
Travel Time (s)		38.6			150.8			5.3			35.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	773	25	25	629	25	17	10	26	73	23	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	798	0	25	654	0	0	27	26	73	78	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	
Total Split (s)	48.0	48.0	0.0	48.0	48.0	0.0	22.0	22.0	22.0	22.0	22.0	0.0
Total Split (%)	68.6%	68.6%	0.0%	68.6%	68.6%	0.0%	31.4%	31.4%	31.4%	31.4%	31.4%	0.0%
Maximum Green (s)	44.0	44.0		44.0	44.0		18.0	18.0	18.0	18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	44.0	44.0		44.0	44.0			18.0	18.0	18.0	18.0	
Actuated g/C Ratio	0.63	0.63		0.63	0.63			0.26	0.26	0.26	0.26	
v/c Ratio	0.19	0.68		0.09	0.56			0.07	0.06	0.21	0.17	
Control Delay	3.4	5.5		6.2	9.7			20.3	8.9	20.6	8.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	3.4	5.5		6.2	9.7			20.3	8.9	20.6	8.8	
LOS	A	A		A	A			C	A	C	A	
Approach Delay		5.4			9.6			14.7			14.5	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	4	51		4	139			9	0	24	0	
Queue Length 95th (ft)	m7	72		13	221			27	17	m56	m24	
Internal Link Dist (ft)		1620			6556			192			1720	
Turn Bay Length (ft)												
Base Capacity (vph)	368	1166		265	1166			414	426	354	469	
Starvation Cap Reductn	0	0		0	0			0	0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.19	0.68		0.09	0.56			0.07	0.06	0.21	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 66 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 8.1		Intersection LOS: A	
Intersection Capacity Utilization 62.5%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 18: River & Brady

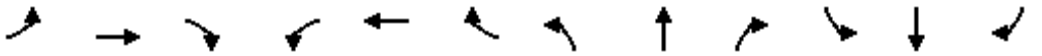




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	711	23	23	579	23	16	9	24	67	21	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99			1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1854		1770	1852			1806	1583	1770	1666	
Flt Permitted	0.31	1.00		0.23	1.00			0.86	1.00	0.74	1.00	
Satd. Flow (perm)	585	1854		421	1852			1610	1583	1378	1666	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	773	25	25	629	25	17	10	26	73	23	55
RTOR Reduction (vph)	0	1	0	0	2	0	0	0	19	0	41	0
Lane Group Flow (vph)	70	797	0	25	652	0	0	27	7	73	37	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	44.0	44.0		44.0	44.0			18.0	18.0	18.0	18.0	
Effective Green, g (s)	44.0	44.0		44.0	44.0			18.0	18.0	18.0	18.0	
Actuated g/C Ratio	0.63	0.63		0.63	0.63			0.26	0.26	0.26	0.26	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	368	1165		265	1164			414	407	354	428	
v/s Ratio Prot		c0.43			0.35						0.02	
v/s Ratio Perm	0.12			0.06				0.02	0.00	c0.05		
v/c Ratio	0.19	0.68		0.09	0.56			0.07	0.02	0.21	0.09	
Uniform Delay, d1	5.5	8.5		5.1	7.5			19.6	19.4	20.4	19.8	
Progression Factor	0.43	0.33		1.00	1.00			1.00	1.00	0.92	0.85	
Incremental Delay, d2	0.9	2.5		0.7	1.9			0.3	0.1	1.3	0.4	
Delay (s)	3.2	5.4		5.8	9.4			19.9	19.5	20.0	17.1	
Level of Service	A	A		A	A			B	B	C	B	
Approach Delay (s)		5.2			9.3			19.7			18.5	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

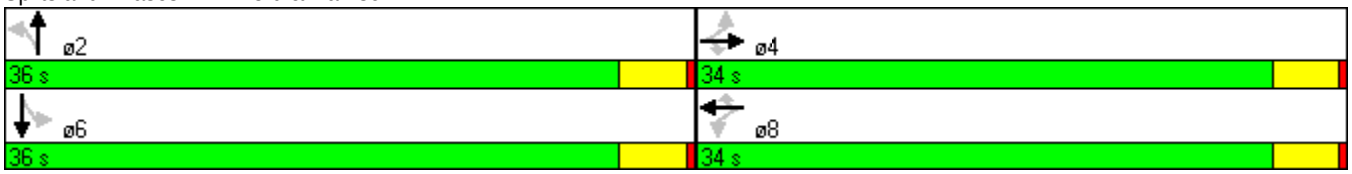


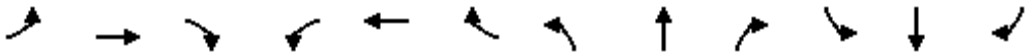
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	260	16	16	277	51	12	223	49	27	249	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850		0.973			0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1812	0	1770	3366	0
Flt Permitted	0.499			0.518			0.499			0.517		
Satd. Flow (perm)	930	1863	1583	965	1863	1583	930	1812	0	963	3366	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			17			55		21			130	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2072			1708			1800			965	
Travel Time (s)		47.1			38.8			35.1			18.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	283	17	17	301	55	13	242	53	29	271	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	283	17	17	301	55	13	295	0	29	401	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0		20.0	20.0	
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	36.0	36.0	0.0	36.0	36.0	0.0
Total Split (%)	48.6%	48.6%	48.6%	48.6%	48.6%	48.6%	51.4%	51.4%	0.0%	51.4%	51.4%	0.0%
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	30.0	32.0	32.0		32.0	32.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	30.0	30.0	30.0	30.0	30.0	30.0	32.0	32.0		32.0	32.0	
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43	0.43	0.46	0.46		0.46	0.46	
v/c Ratio	0.13	0.35	0.02	0.04	0.38	0.08	0.03	0.35		0.07	0.25	
Control Delay	13.3	15.1	6.0	4.8	6.8	0.6	12.1	14.6		5.5	2.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	13.3	15.1	6.0	4.8	6.8	0.6	12.1	14.6		5.5	2.9	
LOS	B	B	A	A	A	A	B	B		A	A	
Approach Delay		14.4			5.8			14.5			3.0	
Approach LOS		B			A			B			A	
Queue Length 50th (ft)	13	79	0	2	33	1	3	84		4	13	
Queue Length 95th (ft)	34	133	10	m4	50	m0	m13	143		10	19	
Internal Link Dist (ft)		1992			1628			1720			885	
Turn Bay Length (ft)												
Base Capacity (vph)	399	798	688	414	798	710	425	840		440	1609	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.13	0.35	0.02	0.04	0.38	0.08	0.03	0.35		0.07	0.25	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 46 (66%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 8.9		Intersection LOS: A	
Intersection Capacity Utilization 49.3%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 21: 3rd & Harrison

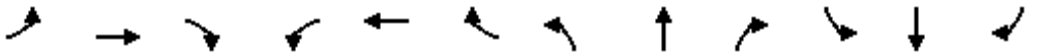




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	260	16	16	277	51	12	223	49	27	249	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1813		1770	3367	
Flt Permitted	0.50	1.00	1.00	0.52	1.00	1.00	0.50	1.00		0.52	1.00	
Satd. Flow (perm)	930	1863	1583	966	1863	1583	930	1813		963	3367	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	283	17	17	301	55	13	242	53	29	271	130
RTOR Reduction (vph)	0	0	10	0	0	31	0	11	0	0	71	0
Lane Group Flow (vph)	53	283	7	17	301	24	13	284	0	29	330	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	30.0	30.0	30.0	30.0	30.0	30.0	32.0	32.0		32.0	32.0	
Effective Green, g (s)	30.0	30.0	30.0	30.0	30.0	30.0	32.0	32.0		32.0	32.0	
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43	0.43	0.46	0.46		0.46	0.46	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	399	798	678	414	798	678	425	829		440	1539	
v/s Ratio Prot		0.15			c0.16			c0.16			0.10	
v/s Ratio Perm	0.06		0.00	0.02		0.01	0.01			0.03		
v/c Ratio	0.13	0.35	0.01	0.04	0.38	0.03	0.03	0.34		0.07	0.21	
Uniform Delay, d1	12.1	13.5	11.5	11.6	13.6	11.6	10.5	12.2		10.6	11.4	
Progression Factor	1.00	1.00	1.00	0.38	0.40	0.09	1.12	1.15		0.47	0.32	
Incremental Delay, d2	0.7	1.2	0.0	0.2	1.2	0.1	0.1	1.1		0.3	0.3	
Delay (s)	12.8	14.7	11.5	4.6	6.6	1.2	11.8	15.2		5.3	4.0	
Level of Service	B	B	B	A	A	A	B	B		A	A	
Approach Delay (s)		14.3			5.7			15.1			4.1	
Approach LOS		B			A			B			A	

Intersection Summary				
HCM Average Control Delay	9.3	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.36			
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	49.3%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group



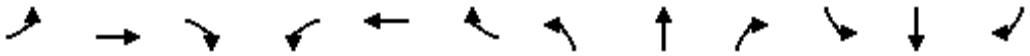
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	232	16	16	247	52	27	520	113	12	107	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.974			0.973			0.921	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1846	0	1770	1814	0	1770	1812	0	1770	1716	0
Flt Permitted	0.381			0.463			0.597			0.266		
Satd. Flow (perm)	710	1846	0	862	1814	0	1112	1812	0	495	1716	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			16			27			130	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1708			6387			1800			965	
Travel Time (s)		38.8			145.2			35.1			18.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	252	17	17	268	57	29	565	123	13	116	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	269	0	17	325	0	29	688	0	13	246	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	25.0	25.0	0.0	25.0	25.0	0.0	45.0	45.0	0.0	45.0	45.0	0.0
Total Split (%)	35.7%	35.7%	0.0%	35.7%	35.7%	0.0%	64.3%	64.3%	0.0%	64.3%	64.3%	0.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		41.0	41.0		41.0	41.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	21.0	21.0		21.0	21.0		41.0	41.0		41.0	41.0	
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.59	0.59		0.59	0.59	
v/c Ratio	0.25	0.48		0.07	0.59		0.04	0.64		0.04	0.23	
Control Delay	14.7	14.9		18.5	24.8		6.1	12.7		4.9	2.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.7	14.9		18.5	24.8		6.1	12.7		4.9	2.2	
LOS	B	B		B	C		A	B		A	A	
Approach Delay		14.9			24.5			12.4			2.4	
Approach LOS		B			C			B			A	
Queue Length 50th (ft)	10	49		5	112		5	179		2	8	
Queue Length 95th (ft)	23	77		19	190		m14	284		m7	33	
Internal Link Dist (ft)		1628			6307			1720			885	
Turn Bay Length (ft)												
Base Capacity (vph)	213	557		259	555		651	1073		290	1059	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.25	0.48		0.07	0.59		0.04	0.64		0.04	0.23	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 68 (97%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Pretimed			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 13.8		Intersection LOS: B	
Intersection Capacity Utilization 63.7%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 22: 3rd & Brady





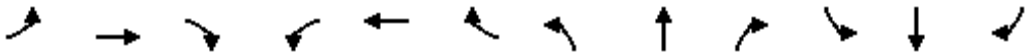
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	232	16	16	247	52	27	520	113	12	107	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.97		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1845		1770	1814		1770	1813		1770	1715	
Flt Permitted	0.38	1.00		0.46	1.00		0.60	1.00		0.27	1.00	
Satd. Flow (perm)	711	1845		863	1814		1113	1813		496	1715	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	252	17	17	268	57	29	565	123	13	116	130
RTOR Reduction (vph)	0	4	0	0	11	0	0	11	0	0	54	0
Lane Group Flow (vph)	53	266	0	17	314	0	29	677	0	13	192	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	21.0	21.0		21.0	21.0		41.0	41.0		41.0	41.0	
Effective Green, g (s)	21.0	21.0		21.0	21.0		41.0	41.0		41.0	41.0	
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.59	0.59		0.59	0.59	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	213	554		259	544		652	1062		291	1005	
v/s Ratio Prot		0.14			c0.17			c0.37			0.11	
v/s Ratio Perm	0.07			0.02			0.03			0.03		
v/c Ratio	0.25	0.48		0.07	0.58		0.04	0.64		0.04	0.19	
Uniform Delay, d1	18.5	20.0		17.5	20.7		6.2	9.6		6.2	6.8	
Progression Factor	0.61	0.59		1.00	1.00		0.95	1.00		0.71	0.51	
Incremental Delay, d2	2.7	2.8		0.5	4.4		0.1	2.9		0.3	0.4	
Delay (s)	14.0	14.7		18.0	25.1		6.0	12.5		4.7	3.9	
Level of Service	B	B		B	C		A	B		A	A	
Approach Delay (s)		14.6			24.8			12.2			3.9	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Brady-Harrison Phase 1

Existing One-Way Streets
2030 AM Peak Hour Traffic

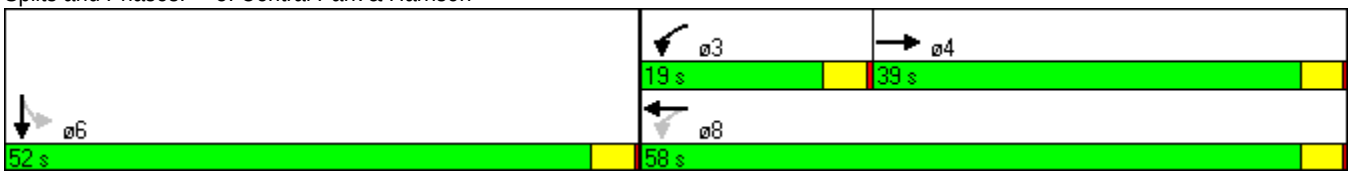


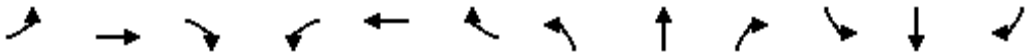
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	296	54	50	148	0	0	0	0	87	999	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86
Frt		0.977									0.989	
Flt Protected				0.950							0.996	
Satd. Flow (prot)	0	3458	0	1770	1863	0	0	0	0	0	6312	0
Flt Permitted				0.437							0.996	
Satd. Flow (perm)	0	3458	0	814	1863	0	0	0	0	0	6312	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20									19	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2320			1712			1008			640	
Travel Time (s)		52.7			38.9			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	322	59	54	161	0	0	0	0	95	1086	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	381	0	54	161	0	0	0	0	0	1273	0
Number of Detectors		1		1	1					1	1	
Detector Template												
Leading Detector (ft)		50		50	50					50	50	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		50		50	50					50	50	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Turn Type				pm+pt						Perm		
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Detector Phase		4		3	8					6	6	
Switch Phase												
Minimum Initial (s)		4.0		4.0	4.0					4.0	4.0	
Minimum Split (s)		20.0		8.0	20.0					20.0	20.0	
Total Split (s)	0.0	39.0	0.0	19.0	58.0	0.0	0.0	0.0	0.0	52.0	52.0	0.0
Total Split (%)	0.0%	35.5%	0.0%	17.3%	52.7%	0.0%	0.0%	0.0%	0.0%	47.3%	47.3%	0.0%
Maximum Green (s)		35.0		15.0	54.0					48.0	48.0	
Yellow Time (s)		3.5		3.5	3.5					3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5					0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Recall Mode		Max		None	None					C-Max	C-Max	
Walk Time (s)		5.0			5.0					5.0	5.0	
Flash Dont Walk (s)		11.0			11.0					11.0	11.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)		44.6		54.0	54.0						48.0	
Actuated g/C Ratio		0.41		0.49	0.49						0.44	
v/c Ratio		0.27		0.12	0.18						0.46	
Control Delay		22.0		7.3	7.5						22.2	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		22.0		7.3	7.5						22.2	
LOS		C		A	A						C	
Approach Delay		22.0			7.5						22.2	
Approach LOS		C			A						C	
Queue Length 50th (ft)		90		10	31						177	
Queue Length 95th (ft)		131		19	45						209	
Internal Link Dist (ft)		2240			1632			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)		1415		530	915						2765	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.27		0.10	0.18						0.46	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 20.5		Intersection LOS: C	
Intersection Capacity Utilization 42.6%		ICU Level of Service A	
Analysis Period (min) 15			

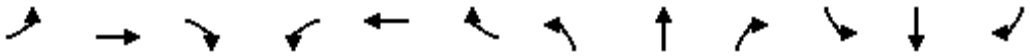
Splits and Phases: 5: Central Park & Harrison





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	296	54	50	148	0	0	0	0	87	999	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.95		1.00	1.00						0.86	
Frt		0.98		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		3457		1770	1863						6315	
Flt Permitted		1.00		0.44	1.00						1.00	
Satd. Flow (perm)		3457		814	1863						6315	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	322	59	54	161	0	0	0	0	95	1086	92
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	369	0	54	161	0	0	0	0	0	1262	0
Turn Type				pm+pt						Perm		
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		44.6		54.8	54.8						47.2	
Effective Green, g (s)		44.6		54.8	54.8						47.2	
Actuated g/C Ratio		0.41		0.50	0.50						0.43	
Clearance Time (s)		4.0		4.0	4.0						4.0	
Vehicle Extension (s)		3.0		3.0	3.0						3.0	
Lane Grp Cap (vph)		1402		459	928						2710	
v/s Ratio Prot		c0.11		0.01	c0.09							
v/s Ratio Perm				0.05							0.20	
v/c Ratio		0.26		0.12	0.17						0.47	
Uniform Delay, d1		21.8		14.6	15.2						22.4	
Progression Factor		1.00		0.45	0.45						1.00	
Incremental Delay, d2		0.5		0.1	0.1						0.6	
Delay (s)		22.2		6.7	6.9						23.0	
Level of Service		C		A	A						C	
Approach Delay (s)		22.2			6.9			0.0			23.0	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

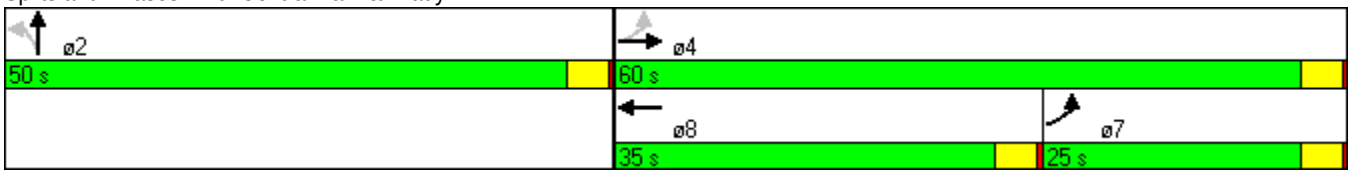


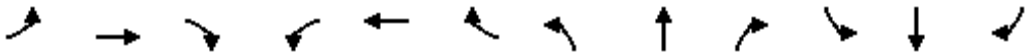
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	219	245	0	0	179	76	64	816	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.86	0.86	0.86	1.00	1.00	1.00
Frt					0.955			0.997				
Flt Protected	0.950							0.996				
Satd. Flow (prot)	1770	1863	0	0	3380	0	0	6363	0	0	0	0
Flt Permitted	0.531							0.996				
Satd. Flow (perm)	989	1863	0	0	3380	0	0	6363	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					60			4				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			1008			640	
Travel Time (s)		38.9			54.5			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	238	266	0	0	195	83	70	887	21	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	238	266	0	0	278	0	0	978	0	0	0	0
Turn Type	pm+pt						Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	8.0	20.0			20.0		20.0	20.0				
Total Split (s)	25.0	60.0	0.0	0.0	35.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0
Total Split (%)	22.7%	54.5%	0.0%	0.0%	31.8%	0.0%	45.5%	45.5%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	21.0	56.0			31.0		46.0	46.0				
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5				
All-Red Time (s)	0.5	0.5			0.5		0.5	0.5				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Walk Time (s)		5.0			5.0		5.0	5.0				
Flash Dont Walk (s)		11.0			11.0		11.0	11.0				
Pedestrian Calls (#/hr)		0			0		0	0				
Act Effct Green (s)	56.0	56.0			31.0			46.0				
Actuated g/C Ratio	0.51	0.51			0.28			0.42				
v/c Ratio	0.36	0.28			0.28			0.37				
Control Delay	30.3	26.0			24.8			11.6				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	30.3	26.0			24.8			11.6				
LOS	C	C			C			B				
Approach Delay		28.1			24.8			11.6				
Approach LOS		C			C			B				
Queue Length 50th (ft)	115	130			62			76				
Queue Length 95th (ft)	211	231			98			87				
Internal Link Dist (ft)		1632			2320			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)	653	948			996			2663				
Starvation Cap Reductn	0	0			0			0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0			0			0				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.36	0.28			0.28			0.37				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Pretimed			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 18.4		Intersection LOS: B	
Intersection Capacity Utilization 42.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Central Park & Brady

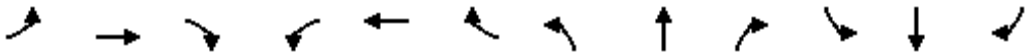




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	219	245	0	0	179	76	64	816	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			0.95			0.86				
Frt	1.00	1.00			0.96			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			3381			6364				
Flt Permitted	0.53	1.00			1.00			1.00				
Satd. Flow (perm)	990	1863			3381			6364				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	238	266	0	0	195	83	70	887	21	0	0	0
RTOR Reduction (vph)	0	0	0	0	43	0	0	2	0	0	0	0
Lane Group Flow (vph)	238	266	0	0	235	0	0	976	0	0	0	0
Turn Type	pm+pt						Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)	56.0	56.0			31.0			46.0				
Effective Green, g (s)	56.0	56.0			31.0			46.0				
Actuated g/C Ratio	0.51	0.51			0.28			0.42				
Clearance Time (s)	4.0	4.0			4.0			4.0				
Lane Grp Cap (vph)	653	948			953			2661				
v/s Ratio Prot	c0.07	0.14			0.07							
v/s Ratio Perm	c0.12							0.15				
v/c Ratio	0.36	0.28			0.25			0.37				
Uniform Delay, d1	18.9	15.5			30.5			22.0				
Progression Factor	1.58	1.61			1.00			0.51				
Incremental Delay, d2	1.5	0.7			0.6			0.4				
Delay (s)	31.4	25.6			31.1			11.6				
Level of Service	C	C			C			B				
Approach Delay (s)		28.3			31.1			11.6			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

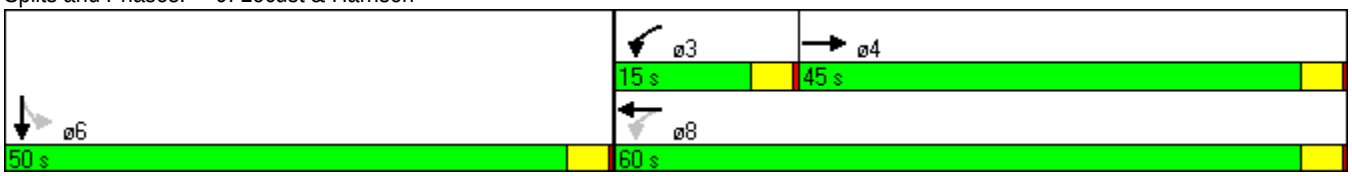


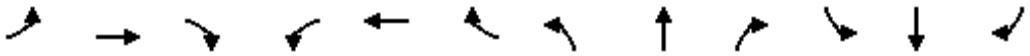
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	601	48	117	382	0	0	0	0	127	847	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.86	0.86	0.86
Frt		0.989									0.993	
Flt Protected				0.950							0.994	
Satd. Flow (prot)	0	3500	0	1770	3539	0	0	0	0	0	6325	0
Flt Permitted				0.231							0.994	
Satd. Flow (perm)	0	3500	0	430	3539	0	0	0	0	0	6325	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9									10	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2240			1712			2656			1008	
Travel Time (s)		50.9			38.9			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	653	52	127	415	0	0	0	0	138	921	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	705	0	127	415	0	0	0	0	0	1108	0
Turn Type				pm+pt						Perm		
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Minimum Split (s)		20.0		8.0	20.0					20.0	20.0	
Total Split (s)	0.0	45.0	0.0	15.0	60.0	0.0	0.0	0.0	0.0	50.0	50.0	0.0
Total Split (%)	0.0%	40.9%	0.0%	13.6%	54.5%	0.0%	0.0%	0.0%	0.0%	45.5%	45.5%	0.0%
Maximum Green (s)		41.0		11.0	56.0					46.0	46.0	
Yellow Time (s)		3.5		3.5	3.5					3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5					0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Walk Time (s)		5.0			5.0					5.0	5.0	
Flash Dont Walk (s)		11.0			11.0					11.0	11.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effct Green (s)		41.0		56.0	56.0						46.0	
Actuated g/C Ratio		0.37		0.51	0.51						0.42	
v/c Ratio		0.54		0.36	0.23						0.42	
Control Delay		28.6		40.9	40.8						12.1	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		28.6		40.9	40.8						12.1	
LOS		C		D	D						B	
Approach Delay		28.6			40.8						12.1	
Approach LOS		C			D						B	
Queue Length 50th (ft)		200		93	161						59	
Queue Length 95th (ft)		259		156	214						68	
Internal Link Dist (ft)		2160			1632			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)		1310		353	1802						2651	
Starvation Cap Reductn		0		0	0						0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.54		0.36	0.23						0.42	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Pretimed			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 23.6		Intersection LOS: C	
Intersection Capacity Utilization 49.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Locust & Harrison

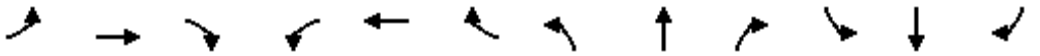




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	601	48	117	382	0	0	0	0	127	847	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.95		1.00	0.95						0.86	
Frt		0.99		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3500		1770	3539						6326	
Flt Permitted		1.00		0.23	1.00						0.99	
Satd. Flow (perm)		3500		430	3539						6326	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	653	52	127	415	0	0	0	0	138	921	49
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	699	0	127	415	0	0	0	0	0	1102	0
Turn Type				pm+pt						Perm		
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		41.0		56.0	56.0						46.0	
Effective Green, g (s)		41.0		56.0	56.0						46.0	
Actuated g/C Ratio		0.37		0.51	0.51						0.42	
Clearance Time (s)		4.0		4.0	4.0						4.0	
Lane Grp Cap (vph)		1305		353	1802						2645	
v/s Ratio Prot		c0.20		c0.04	0.12							
v/s Ratio Perm				0.15							0.17	
v/c Ratio		0.54		0.36	0.23						0.42	
Uniform Delay, d1		27.0		16.1	15.0						22.5	
Progression Factor		1.00		2.66	2.68						0.52	
Incremental Delay, d2		1.6		2.3	0.2						0.4	
Delay (s)		28.6		45.0	40.5						12.1	
Level of Service		C		D	D						B	
Approach Delay (s)		28.6			41.6			0.0			12.1	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

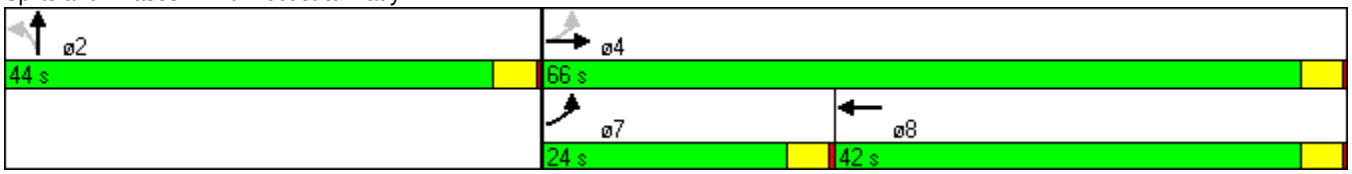


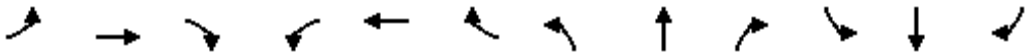
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	429	0	0	513	158	75	563	104	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.86	0.86	0.86	1.00	1.00	1.00
Frt					0.965			0.979				
Flt Protected	0.950							0.995				
Satd. Flow (prot)	1770	3539	0	0	3415	0	0	6242	0	0	0	0
Flt Permitted	0.200							0.995				
Satd. Flow (perm)	373	3539	0	0	3415	0	0	6242	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					41			42				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			2656			1008	
Travel Time (s)		38.9			54.5			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	466	0	0	558	172	82	612	113	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	466	0	0	730	0	0	807	0	0	0	0
Turn Type	pm+pt						Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	8.0	20.0			20.0		20.0	20.0				
Total Split (s)	24.0	66.0	0.0	0.0	42.0	0.0	44.0	44.0	0.0	0.0	0.0	0.0
Total Split (%)	21.8%	60.0%	0.0%	0.0%	38.2%	0.0%	40.0%	40.0%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	20.0	62.0			38.0		40.0	40.0				
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5				
All-Red Time (s)	0.5	0.5			0.5		0.5	0.5				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Walk Time (s)		5.0			5.0		5.0	5.0				
Flash Dont Walk (s)		11.0			11.0		11.0	11.0				
Pedestrian Calls (#/hr)		0			0		0	0				
Act Effct Green (s)	62.0	62.0			38.0			40.0				
Actuated g/C Ratio	0.56	0.56			0.35			0.36				
v/c Ratio	0.27	0.23			0.60			0.35				
Control Delay	31.7	31.4			30.5			39.5				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	31.7	31.4			30.5			39.5				
LOS	C	C			C			D				
Approach Delay		31.5			30.5			39.5				
Approach LOS		C			C			D				
Queue Length 50th (ft)	78	147			210			152				
Queue Length 95th (ft)	133	195			274			185				
Internal Link Dist (ft)		1632			2320			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	464	1995			1207			2297				
Starvation Cap Reductn	0	0			0			0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0			0			0				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.27	0.23			0.60			0.35				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Pretimed			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 34.2		Intersection LOS: C	
Intersection Capacity Utilization 49.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 10: Locust & Brady

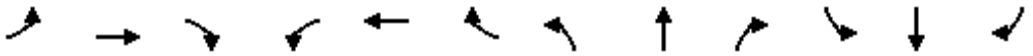




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	429	0	0	513	158	75	563	104	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	0.95			0.95			0.86				
Frt	1.00	1.00			0.96			0.98				
Flt Protected	0.95	1.00			1.00			0.99				
Satd. Flow (prot)	1770	3539			3414			6242				
Flt Permitted	0.20	1.00			1.00			0.99				
Satd. Flow (perm)	373	3539			3414			6242				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	466	0	0	558	172	82	612	113	0	0	0
RTOR Reduction (vph)	0	0	0	0	27	0	0	27	0	0	0	0
Lane Group Flow (vph)	126	466	0	0	703	0	0	780	0	0	0	0
Turn Type	pm+pt						Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)	62.0	62.0			38.0			40.0				
Effective Green, g (s)	62.0	62.0			38.0			40.0				
Actuated g/C Ratio	0.56	0.56			0.35			0.36				
Clearance Time (s)	4.0	4.0			4.0			4.0				
Lane Grp Cap (vph)	464	1995			1179			2270				
v/s Ratio Prot	c0.05	0.13			c0.21							
v/s Ratio Perm	0.10							0.13				
v/c Ratio	0.27	0.23			0.60			0.34				
Uniform Delay, d1	13.4	12.1			29.7			25.5				
Progression Factor	2.66	2.56			1.00			1.61				
Incremental Delay, d2	1.2	0.2			2.2			0.4				
Delay (s)	36.9	31.1			31.9			41.5				
Level of Service	D	C			C			D				
Approach Delay (s)		32.4			31.9			41.5			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM Average Control Delay	35.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

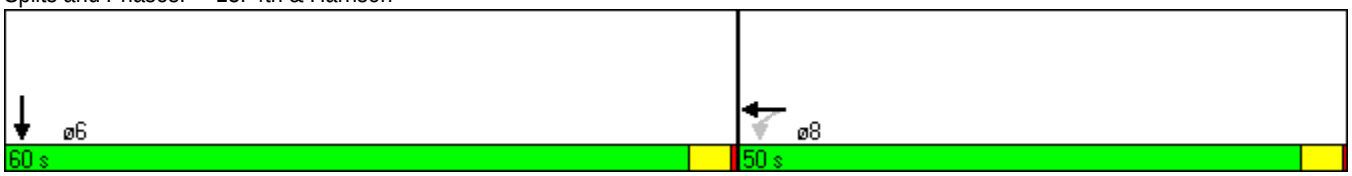


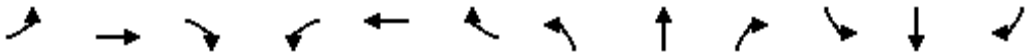
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	107	338	0	0	0	0	0	535	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.86	0.86
Frt											0.948	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1770	3539	0	0	0	0	0	6075	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	1770	3539	0	0	0	0	0	6075	0
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)				116							178	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			898			2656	
Travel Time (s)		48.0			38.9			17.5			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	116	367	0	0	0	0	0	582	310
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	116	367	0	0	0	0	0	892	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Minimum Split (s)				20.0	20.0						20.0	
Total Split (s)	0.0	0.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	45.5%	45.5%	0.0%	0.0%	0.0%	0.0%	0.0%	54.5%	0.0%
Maximum Green (s)				46.0	46.0						56.0	
Yellow Time (s)				3.5	3.5						3.5	
All-Red Time (s)				0.5	0.5						0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0						5.0	
Flash Dont Walk (s)				11.0	11.0						11.0	
Pedestrian Calls (#/hr)				0	0						0	
Act Effct Green (s)				46.0	46.0						56.0	
Actuated g/C Ratio				0.42	0.42						0.51	
v/c Ratio				0.14	0.25						0.28	
Control Delay				2.1	16.6						22.1	
Queue Delay				0.0	0.0						0.0	
Total Delay				2.1	16.6						22.1	
LOS				A	B						C	
Approach Delay					13.1						22.1	
Approach LOS					B						C	
Queue Length 50th (ft)				0	54						131	
Queue Length 95th (ft)				16	73						149	
Internal Link Dist (ft)		2032			1632			818			2576	
Turn Bay Length (ft)												
Base Capacity (vph)				808	1480						3180	
Starvation Cap Reductn				0	0						0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn				0	0						0	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.14	0.25						0.28	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBT, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 18.9		Intersection LOS: B	
Intersection Capacity Utilization 30.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 13: 4th & Harrison





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	107	338	0	0	0	0	0	535	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				1.00	0.95						0.86	
Frt				1.00	1.00						0.95	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1770	3539						6074	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1770	3539						6074	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	116	367	0	0	0	0	0	582	310
RTOR Reduction (vph)	0	0	0	67	0	0	0	0	0	0	87	0
Lane Group Flow (vph)	0	0	0	49	367	0	0	0	0	0	805	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)				46.0	46.0						56.0	
Effective Green, g (s)				46.0	46.0						56.0	
Actuated g/C Ratio				0.42	0.42						0.51	
Clearance Time (s)				4.0	4.0						4.0	
Lane Grp Cap (vph)				740	1480						3092	
v/s Ratio Prot					c0.10						c0.13	
v/s Ratio Perm				0.03								
v/c Ratio				0.07	0.25						0.26	
Uniform Delay, d1				19.1	20.8						15.3	
Progression Factor				0.48	0.77						1.80	
Incremental Delay, d2				0.2	0.4						0.2	
Delay (s)				9.3	16.5						27.7	
Level of Service				A	B						C	
Approach Delay (s)		0.0			14.8			0.0			27.7	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	30.3%	ICU Level of Service	A
Analysis Period (min)	15		

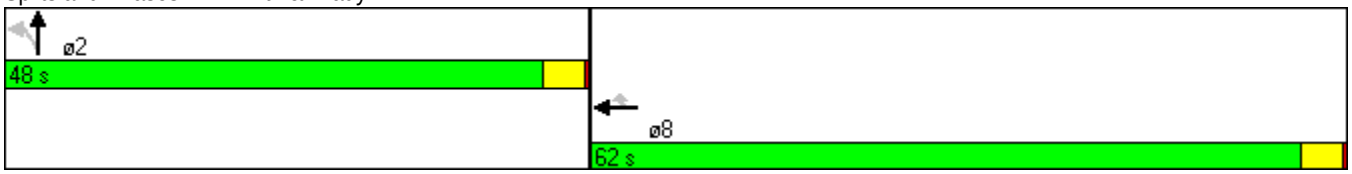
c Critical Lane Group

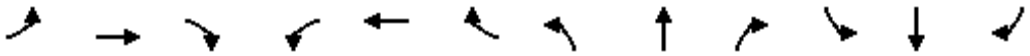
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	504	107	32	468	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frt						0.850						
Flt Protected								0.997				
Satd. Flow (prot)	0	0	0	0	3539	1583	0	5070	0	0	0	0
Flt Permitted								0.997				
Satd. Flow (perm)	0	0	0	0	3539	1583	0	5070	0	0	0	0
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						116		12				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			898			2656	
Travel Time (s)		38.9			53.1			17.5			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	548	116	35	509	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	548	116	0	544	0	0	0	0
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Minimum Split (s)					20.0	20.0	20.0	20.0				
Total Split (s)	0.0	0.0	0.0	0.0	62.0	62.0	48.0	48.0	0.0	0.0	0.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	56.4%	56.4%	43.6%	43.6%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)					58.0	58.0	44.0	44.0				
Yellow Time (s)					3.5	3.5	3.5	3.5				
All-Red Time (s)					0.5	0.5	0.5	0.5				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					5.0	5.0	5.0	5.0				
Flash Dont Walk (s)					11.0	11.0	11.0	11.0				
Pedestrian Calls (#/hr)					0	0	0	0				
Act Effct Green (s)					58.0	58.0		44.0				
Actuated g/C Ratio					0.53	0.53		0.40				
v/c Ratio					0.29	0.13		0.27				
Control Delay					15.1	2.8		16.1				
Queue Delay					0.0	0.0		0.0				
Total Delay					15.1	2.8		16.1				
LOS					B	A		B				
Approach Delay					12.9			16.1				
Approach LOS					B			B				
Queue Length 50th (ft)					108	0		53				
Queue Length 95th (ft)					144	27		71				
Internal Link Dist (ft)		1632			2256			818			2576	
Turn Bay Length (ft)												
Base Capacity (vph)					1866	890		2035				
Starvation Cap Reductn					0	0		0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn					0	0		0				
Storage Cap Reductn					0	0		0				
Reduced v/c Ratio					0.29	0.13		0.27				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.29			
Intersection Signal Delay: 14.3		Intersection LOS: B	
Intersection Capacity Utilization 30.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 14: 4th & Brady

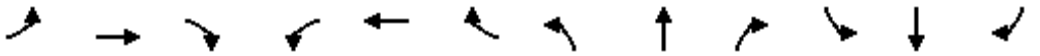




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	504	107	32	468	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0		4.0				
Lane Util. Factor					0.95	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					3539	1583		5069				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					3539	1583		5069				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	548	116	35	509	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	55	0	7	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	548	61	0	537	0	0	0	0
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Actuated Green, G (s)					58.0	58.0		44.0				
Effective Green, g (s)					58.0	58.0		44.0				
Actuated g/C Ratio					0.53	0.53		0.40				
Clearance Time (s)					4.0	4.0		4.0				
Lane Grp Cap (vph)					1866	835		2028				
v/s Ratio Prot					c0.15							
v/s Ratio Perm						0.04		0.11				
v/c Ratio					0.29	0.07		0.26				
Uniform Delay, d1					14.5	12.8		22.1				
Progression Factor					1.00	1.00		0.72				
Incremental Delay, d2					0.4	0.2		0.3				
Delay (s)					14.9	13.0		16.4				
Level of Service					B	B		B				
Approach Delay (s)		0.0			14.6			16.4			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	30.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

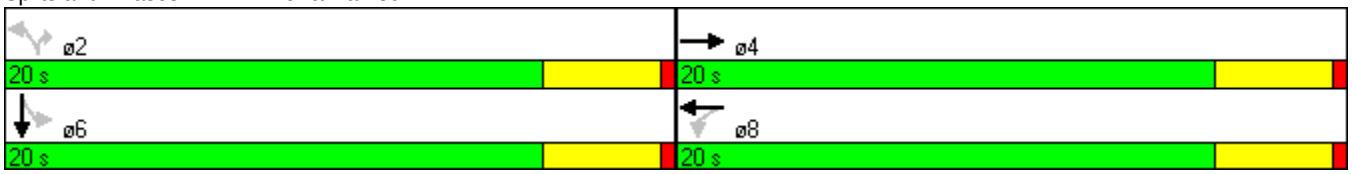


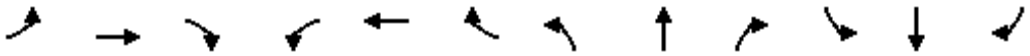
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	557	14	12	540	0	9	0	5	42	19	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	0.95	0.95
Frt		0.996							0.850		0.888	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3525	0	1770	3539	0	1770	0	1583	3433	3143	0
Flt Permitted				0.383			0.700			0.950		
Satd. Flow (perm)	0	3525	0	713	3539	0	1304	0	1583	3433	3143	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7							5		63	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2016			1720			288			2560	
Travel Time (s)		45.8			39.1			5.6			49.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	605	15	13	587	0	10	0	5	46	21	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	620	0	13	587	0	10	0	5	46	84	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Minimum Split (s)		20.0		20.0	20.0		20.0		20.0	20.0	20.0	
Total Split (s)	0.0	20.0	0.0	20.0	20.0	0.0	20.0	0.0	20.0	20.0	20.0	0.0
Total Split (%)	0.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)		16.0		16.0	16.0		16.0		16.0	16.0	16.0	
Yellow Time (s)		3.5		3.5	3.5		3.5		3.5	3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0		0	0	0	
Act Effct Green (s)		16.0		16.0	16.0		16.0		16.0	16.0	16.0	
Actuated g/C Ratio		0.40		0.40	0.40		0.40		0.40	0.40	0.40	
v/c Ratio		0.44		0.05	0.41		0.02		0.01	0.03	0.06	
Control Delay		9.8		0.6	1.5		7.4		5.2	7.4	3.8	
Queue Delay		0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay		9.8		0.6	1.5		7.4		5.2	7.4	3.8	
LOS		A		A	A		A		A	A	A	
Approach Delay		9.8			1.5						5.1	
Approach LOS		A			A						A	
Queue Length 50th (ft)		48		0	1		1		0	3	1	
Queue Length 95th (ft)		80		m0	2		7		4	9	9	
Internal Link Dist (ft)		1936			1640			208			2480	
Turn Bay Length (ft)												
Base Capacity (vph)		1414		285	1416		522		636	1373	1295	
Starvation Cap Reductn		0		0	0		0		0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0		0		0	0	0	
Storage Cap Reductn		0		0	0		0		0	0	0	
Reduced v/c Ratio		0.44		0.05	0.41		0.02		0.01	0.03	0.06	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NBL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 5.7		Intersection LOS: A	
Intersection Capacity Utilization 32.5%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 17: River & Harrison

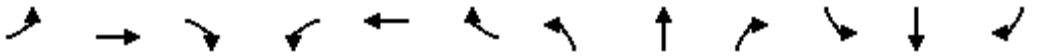




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	557	14	12	540	0	9	0	5	42	19	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	0.97	0.95	
Frt		1.00		1.00	1.00		1.00		0.85	1.00	0.89	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3526		1770	3539		1770		1583	3433	3141	
Flt Permitted		1.00		0.38	1.00		0.70		1.00	0.95	1.00	
Satd. Flow (perm)		3526		713	3539		1303		1583	3433	3141	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	605	15	13	587	0	10	0	5	46	21	63
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	3	0	38	0
Lane Group Flow (vph)	0	616	0	13	587	0	10	0	2	46	46	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Actuated Green, G (s)		16.0		16.0	16.0		16.0		16.0	16.0	16.0	
Effective Green, g (s)		16.0		16.0	16.0		16.0		16.0	16.0	16.0	
Actuated g/C Ratio		0.40		0.40	0.40		0.40		0.40	0.40	0.40	
Clearance Time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)		1410		285	1416		521		633	1373	1256	
v/s Ratio Prot		c0.17			0.17						c0.01	
v/s Ratio Perm				0.02			0.01		0.00	0.01		
v/c Ratio		0.44		0.05	0.41		0.02		0.00	0.03	0.04	
Uniform Delay, d1		8.7		7.3	8.6		7.3		7.2	7.3	7.3	
Progression Factor		1.00		0.04	0.08		1.00		1.00	1.00	1.00	
Incremental Delay, d2		1.0		0.3	0.8		0.1		0.0	0.0	0.1	
Delay (s)		9.7		0.6	1.5		7.3		7.2	7.3	7.4	
Level of Service		A		A	A		A		A	A	A	
Approach Delay (s)		9.7			1.5			7.3			7.4	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

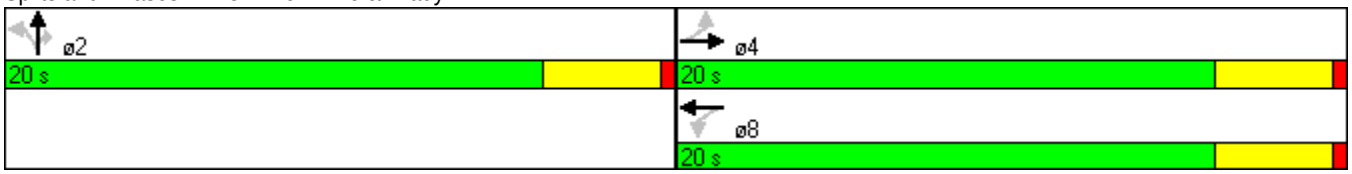


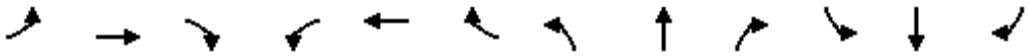
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	479	12	8	588	53	3	6	4	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.988				0.850			
Flt Protected	0.950			0.950				0.985				
Satd. Flow (prot)	1770	3525	0	1770	3497	0	0	1835	1583	0	0	0
Flt Permitted	0.335			0.441				0.985				
Satd. Flow (perm)	624	3525	0	821	3497	0	0	1835	1583	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			28				4			
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1720			7927			272			2560	
Travel Time (s)		39.1			180.2			5.3			49.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	521	13	9	639	58	3	7	4	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	534	0	9	697	0	0	10	4	0	0	0
Turn Type	Perm			Perm			Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4			8			2		2			
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0			
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	20.0	0.0	0.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%	0.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0	16.0			
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5			
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0			
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0			
Act Effct Green (s)	16.0	16.0		16.0	16.0			16.0	16.0			
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.40	0.40			
v/c Ratio	0.33	0.38		0.03	0.49			0.01	0.01			
Control Delay	5.7	2.4		11.1	14.4			7.3	5.5			
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			
Total Delay	5.7	2.4		11.1	14.4			7.3	5.5			
LOS	A	A		B	B			A	A			
Approach Delay		2.9			14.4			6.8				
Approach LOS		A			B			A				
Queue Length 50th (ft)	2	5		2	75			1	0			
Queue Length 95th (ft)	m9	8		m8	116			7	4			
Internal Link Dist (ft)		1640			7847			192			2480	
Turn Bay Length (ft)												
Base Capacity (vph)	250	1414		328	1416			734	636			
Starvation Cap Reductn	0	0		0	0			0	0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0			0	0			
Storage Cap Reductn	0	0		0	0			0	0			
Reduced v/c Ratio	0.33	0.38		0.03	0.49			0.01	0.01			

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 9.0		Intersection LOS: A	
Intersection Capacity Utilization 35.4%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 18: River Drive & Brady

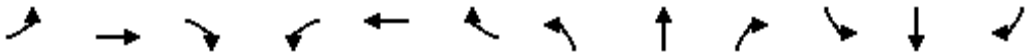




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	479	12	8	588	53	3	6	4	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0			
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00			
Frt	1.00	1.00		1.00	0.99			1.00	0.85			
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00			
Satd. Flow (prot)	1770	3526		1770	3495			1835	1583			
Flt Permitted	0.33	1.00		0.44	1.00			0.99	1.00			
Satd. Flow (perm)	624	3526		821	3495			1835	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	521	13	9	639	58	3	7	4	0	0	0
RTOR Reduction (vph)	0	4	0	0	17	0	0	0	2	0	0	0
Lane Group Flow (vph)	82	530	0	9	680	0	0	10	2	0	0	0
Turn Type	Perm			Perm			Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4			8			2		2			
Actuated Green, G (s)	16.0	16.0		16.0	16.0			16.0	16.0			
Effective Green, g (s)	16.0	16.0		16.0	16.0			16.0	16.0			
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.40	0.40			
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0			
Lane Grp Cap (vph)	250	1410		328	1398			734	633			
v/s Ratio Prot		0.15			c0.19							
v/s Ratio Perm	0.13			0.01				0.01	0.00			
v/c Ratio	0.33	0.38		0.03	0.49			0.01	0.00			
Uniform Delay, d1	8.3	8.5		7.3	8.9			7.2	7.2			
Progression Factor	0.26	0.20		1.47	1.50			1.00	1.00			
Incremental Delay, d2	3.2	0.7		0.2	1.2			0.0	0.0			
Delay (s)	5.4	2.4		10.9	14.6			7.3	7.2			
Level of Service	A	A		B	B			A	A			
Approach Delay (s)		2.8			14.5			7.3			0.0	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



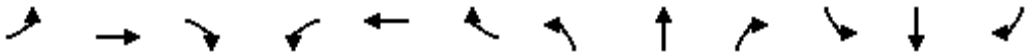
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	318	101	0	0	0	0	0	0	152	379	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	1.00
Frt		0.964										
Flt Protected										0.950	0.997	
Satd. Flow (prot)	0	6177	0	0	0	0	0	0	0	1522	4791	0
Flt Permitted										0.950	0.997	
Satd. Flow (perm)	0	6177	0	0	0	0	0	0	0	1522	4791	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)		86								139	13	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2033			1714			2560			898	
Travel Time (s)		46.2			39.0			49.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	346	110	0	0	0	0	0	0	165	412	0
Shared Lane Traffic (%)										16%		
Lane Group Flow (vph)	0	456	0	0	0	0	0	0	0	139	438	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Minimum Split (s)		20.0								20.0	20.0	
Total Split (s)	0.0	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.0	63.0	0.0
Total Split (%)	0.0%	42.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	57.3%	57.3%	0.0%
Maximum Green (s)		43.0								59.0	59.0	
Yellow Time (s)		3.5								3.5	3.5	
All-Red Time (s)		0.5								0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0								5.0	5.0	
Flash Dont Walk (s)		11.0								11.0	11.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effct Green (s)		43.0								59.0	59.0	
Actuated g/C Ratio		0.39								0.54	0.54	
v/c Ratio		0.18								0.16	0.17	
Control Delay		17.9								1.7	7.7	
Queue Delay		0.0								0.0	0.0	
Total Delay		17.9								1.7	7.7	
LOS		B								A	A	
Approach Delay		17.9									6.2	
Approach LOS		B									A	
Queue Length 50th (ft)		48								1	28	
Queue Length 95th (ft)		67								0	34	
Internal Link Dist (ft)		1953			1634			2480			818	
Turn Bay Length (ft)												
Base Capacity (vph)		2467								881	2576	
Starvation Cap Reductn		0								0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0								0	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.18								0.16	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.18			
Intersection Signal Delay: 11.4		Intersection LOS: B	
Intersection Capacity Utilization 28.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 21: 3rd & Harrison

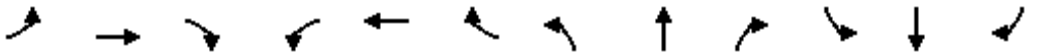




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	318	101	0	0	0	0	0	0	152	379	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.86								0.86	0.86	
Frt		0.96								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		6176								1522	4792	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		6176								1522	4792	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	346	110	0	0	0	0	0	0	165	412	0
RTOR Reduction (vph)	0	52	0	0	0	0	0	0	0	64	6	0
Lane Group Flow (vph)	0	404	0	0	0	0	0	0	0	75	432	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		43.0								59.0	59.0	
Effective Green, g (s)		43.0								59.0	59.0	
Actuated g/C Ratio		0.39								0.54	0.54	
Clearance Time (s)		4.0								4.0	4.0	
Lane Grp Cap (vph)		2414								816	2570	
v/s Ratio Prot		c0.07										
v/s Ratio Perm										0.05	0.09	
v/c Ratio		0.17								0.09	0.17	
Uniform Delay, d1		21.8								12.4	13.0	
Progression Factor		1.00								0.63	0.59	
Incremental Delay, d2		0.1								0.2	0.1	
Delay (s)		22.0								8.0	7.9	
Level of Service		C								A	A	
Approach Delay (s)		22.0			0.0			0.0			7.9	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	28.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

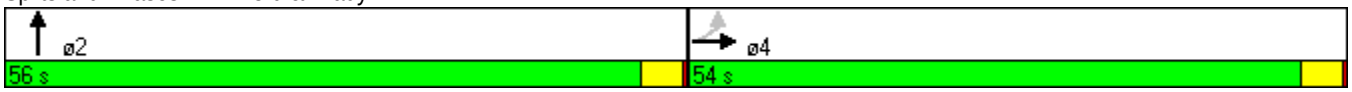


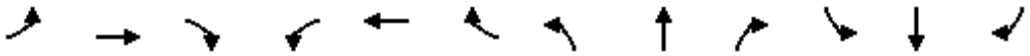
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	474	0	0	0	0	0	365	146	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00
Frt								0.957				
Flt Protected	0.950	0.999										
Satd. Flow (prot)	1522	4801	0	0	0	0	0	4867	0	0	0	0
Flt Permitted	0.950	0.999										
Satd. Flow (perm)	1522	4801	0	0	0	0	0	4867	0	0	0	0
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	99	3						125				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1714			7509			2560			898	
Travel Time (s)		39.0			170.7			49.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	515	0	0	0	0	0	397	159	0	0	0
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	99	526	0	0	0	0	0	556	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	20.0	20.0						20.0				
Total Split (s)	54.0	54.0	0.0	0.0	0.0	0.0	0.0	56.0	0.0	0.0	0.0	0.0
Total Split (%)	49.1%	49.1%	0.0%	0.0%	0.0%	0.0%	0.0%	50.9%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	50.0	50.0						52.0				
Yellow Time (s)	3.5	3.5						3.5				
All-Red Time (s)	0.5	0.5						0.5				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0				
Flash Dont Walk (s)	11.0	11.0						11.0				
Pedestrian Calls (#/hr)	0	0						0				
Act Effct Green (s)	50.0	50.0						52.0				
Actuated g/C Ratio	0.45	0.45						0.47				
v/c Ratio	0.13	0.24						0.23				
Control Delay	5.3	18.4						13.4				
Queue Delay	0.0	0.0						0.0				
Total Delay	5.3	18.4						13.4				
LOS	A	B						B				
Approach Delay		16.3						13.4				
Approach LOS		B						B				
Queue Length 50th (ft)	0	65						62				
Queue Length 95th (ft)	31	102						86				
Internal Link Dist (ft)		1634			7429			2480			818	
Turn Bay Length (ft)												
Base Capacity (vph)	746	2184						2367				
Starvation Cap Reductn	0	0						0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0						0				
Storage Cap Reductn	0	0						0				
Reduced v/c Ratio	0.13	0.24						0.23				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.24			
Intersection Signal Delay: 14.9		Intersection LOS: B	
Intersection Capacity Utilization 54.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: 3rd & Brady





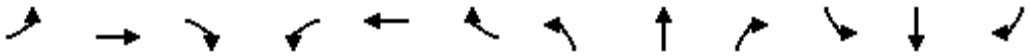
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	474	0	0	0	0	0	365	146	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0				
Lane Util. Factor	0.86	0.86						0.91				
Frt	1.00	1.00						0.96				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1522	4801						4867				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1522	4801						4867				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	515	0	0	0	0	0	397	159	0	0	0
RTOR Reduction (vph)	54	2	0	0	0	0	0	66	0	0	0	0
Lane Group Flow (vph)	45	524	0	0	0	0	0	490	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)	50.0	50.0						52.0				
Effective Green, g (s)	50.0	50.0						52.0				
Actuated g/C Ratio	0.45	0.45						0.47				
Clearance Time (s)	4.0	4.0						4.0				
Lane Grp Cap (vph)	692	2182						2301				
v/s Ratio Prot								c0.10				
v/s Ratio Perm	0.03	0.11										
v/c Ratio	0.07	0.24						0.21				
Uniform Delay, d1	16.9	18.4						17.0				
Progression Factor	1.39	0.99						1.00				
Incremental Delay, d2	0.2	0.3						0.2				
Delay (s)	23.7	18.4						17.2				
Level of Service	C	B						B				
Approach Delay (s)		19.2			0.0			17.2			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Brady-Harrison Phase 1

Existing One-Way Streets
2030 PM Peak Hour Traffic



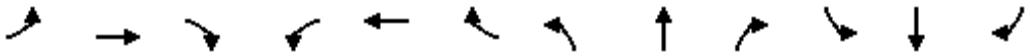
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	296	49	5	148	0	32	0	109	87	999	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.979							0.850		0.988	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3465	0	1770	1863	0	1770	0	1583	1770	3497	0
Flt Permitted				0.495			0.172			0.950		
Satd. Flow (perm)	0	3465	0	922	1863	0	320	0	1583	1770	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32							118		24	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2320			1712			1008			640	
Travel Time (s)		52.7			38.9			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	322	53	5	161	0	35	0	118	95	1086	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	375	0	5	161	0	35	0	118	95	1178	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Minimum Split (s)		20.0		20.0	20.0		20.0		20.0	20.0	20.0	
Total Split (s)	0.0	22.0	0.0	22.0	22.0	0.0	38.0	0.0	38.0	38.0	38.0	0.0
Total Split (%)	0.0%	36.7%	0.0%	36.7%	36.7%	0.0%	63.3%	0.0%	63.3%	63.3%	63.3%	0.0%
Maximum Green (s)		18.0		18.0	18.0		34.0		34.0	34.0	34.0	
Yellow Time (s)		3.5		3.5	3.5		3.5		3.5	3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0		0	0	0	
Act Effct Green (s)		18.0		18.0	18.0		34.0		34.0	34.0	34.0	
Actuated g/C Ratio		0.30		0.30	0.30		0.57		0.57	0.57	0.57	
v/c Ratio		0.35		0.02	0.29		0.19		0.12	0.09	0.59	
Control Delay		16.1		12.4	14.4		8.2		1.7	6.3	9.8	
Queue Delay		0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay		16.1		12.4	14.4		8.2		1.7	6.3	9.8	
LOS		B		B	B		A		A	A	A	
Approach Delay		16.1			14.3						9.5	
Approach LOS		B			B						A	
Queue Length 50th (ft)		50		1	35		4		0	14	126	
Queue Length 95th (ft)		82		m4	61		m13		0	31	178	
Internal Link Dist (ft)		2240			1632			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)		1062		277	559		181		948	1003	1992	
Starvation Cap Reductn		0		0	0		0		0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0		0		0	0	0	
Storage Cap Reductn		0		0	0		0		0	0	0	
Reduced v/c Ratio		0.35		0.02	0.29		0.19		0.12	0.09	0.59	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 28 (47%), Referenced to phase 2:NBL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 10.7		Intersection LOS: B	
Intersection Capacity Utilization 46.7%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Central Park & Harrison

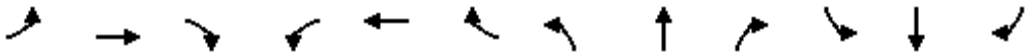




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	296	49	5	148	0	32	0	109	87	999	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	1.00		1.00		1.00	1.00	0.95	
Frt		0.98		1.00	1.00		1.00		0.85	1.00	0.99	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3464		1770	1863		1770		1583	1770	3498	
Flt Permitted		1.00		0.49	1.00		0.17		1.00	0.95	1.00	
Satd. Flow (perm)		3464		921	1863		320		1583	1770	3498	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	322	53	5	161	0	35	0	118	95	1086	92
RTOR Reduction (vph)	0	22	0	0	0	0	0	0	51	0	10	0
Lane Group Flow (vph)	0	353	0	5	161	0	35	0	67	95	1168	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Actuated Green, G (s)		18.0		18.0	18.0		34.0		34.0	34.0	34.0	
Effective Green, g (s)		18.0		18.0	18.0		34.0		34.0	34.0	34.0	
Actuated g/C Ratio		0.30		0.30	0.30		0.57		0.57	0.57	0.57	
Clearance Time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)		1039		276	559		181		897	1003	1982	
v/s Ratio Prot		c0.10			0.09						c0.33	
v/s Ratio Perm				0.01			0.11		0.04	0.05		
v/c Ratio		0.34		0.02	0.29		0.19		0.07	0.09	0.59	
Uniform Delay, d1		16.4		14.8	16.1		6.3		5.9	6.0	8.5	
Progression Factor		1.00		0.81	0.79		0.83		0.96	1.00	1.00	
Incremental Delay, d2		0.9		0.1	1.3		2.2		0.2	0.2	1.3	
Delay (s)		17.3		12.1	14.0		7.5		5.8	6.1	9.7	
Level of Service		B		B	B		A		A	A	A	
Approach Delay (s)		17.3			14.0			6.2			9.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

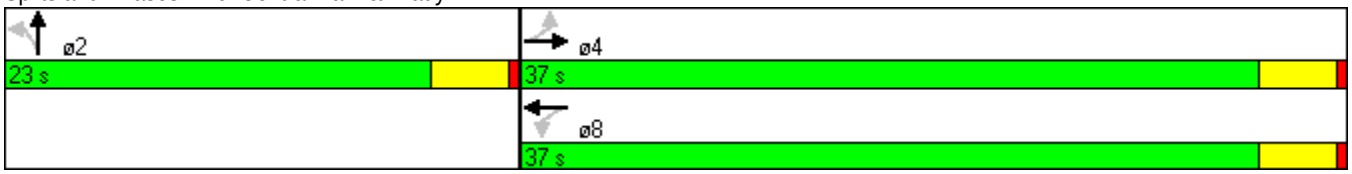


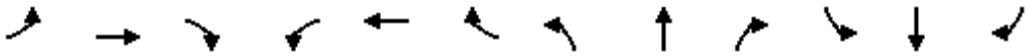
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	328	245	5	45	179	76	32	653	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.997			0.955			0.996				
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	1857	0	1770	1779	0	1770	3525	0	0	0	0
Flt Permitted	0.572			0.578			0.950					
Satd. Flow (perm)	1065	1857	0	1077	1779	0	1770	3525	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			54			5				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			1008			640	
Travel Time (s)		38.9			54.5			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	357	266	5	49	195	83	35	710	21	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	357	271	0	49	278	0	35	731	0	0	0	0
Turn Type	Perm			Perm			Perm					
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0				
Total Split (s)	37.0	37.0	0.0	37.0	37.0	0.0	23.0	23.0	0.0	0.0	0.0	0.0
Total Split (%)	61.7%	61.7%	0.0%	61.7%	61.7%	0.0%	38.3%	38.3%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	33.0	33.0		33.0	33.0		19.0	19.0				
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5				
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)	0	0		0	0		0	0				
Act Effct Green (s)	33.0	33.0		33.0	33.0		19.0	19.0				
Actuated g/C Ratio	0.55	0.55		0.55	0.55		0.32	0.32				
v/c Ratio	0.61	0.26		0.08	0.28		0.06	0.65				
Control Delay	9.9	3.9		6.9	6.6		11.0	15.5				
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				
Total Delay	9.9	3.9		6.9	6.6		11.0	15.5				
LOS	A	A		A	A		B	B				
Approach Delay		7.3			6.6			15.2				
Approach LOS		A			A			B				
Queue Length 50th (ft)	37	21		8	37		7	84				
Queue Length 95th (ft)	174	35		20	72		m20	126				
Internal Link Dist (ft)		1632			2320			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)	586	1023		592	1003		561	1120				
Starvation Cap Reductn	0	0		0	0		0	0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0				
Storage Cap Reductn	0	0		0	0		0	0				
Reduced v/c Ratio	0.61	0.26		0.08	0.28		0.06	0.65				

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 14 (23%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 10.7		Intersection LOS: B	
Intersection Capacity Utilization 60.9%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 6: Central Park & Brady

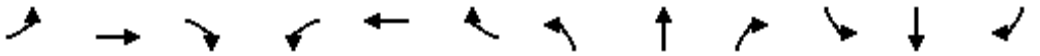




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	328	245	5	45	179	76	32	653	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95				
Frt	1.00	1.00		1.00	0.96		1.00	1.00				
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00				
Satd. Flow (prot)	1770	1858		1770	1779		1770	3524				
Flt Permitted	0.57	1.00		0.58	1.00		0.95	1.00				
Satd. Flow (perm)	1066	1858		1077	1779		1770	3524				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	357	266	5	49	195	83	35	710	21	0	0	0
RTOR Reduction (vph)	0	1	0	0	24	0	0	3	0	0	0	0
Lane Group Flow (vph)	357	270	0	49	254	0	35	728	0	0	0	0
Turn Type	Perm			Perm			Perm					
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Actuated Green, G (s)	33.0	33.0		33.0	33.0		19.0	19.0				
Effective Green, g (s)	33.0	33.0		33.0	33.0		19.0	19.0				
Actuated g/C Ratio	0.55	0.55		0.55	0.55		0.32	0.32				
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0				
Lane Grp Cap (vph)	586	1022		592	978		561	1116				
v/s Ratio Prot		0.15			0.14			c0.21				
v/s Ratio Perm	c0.33			0.05			0.02					
v/c Ratio	0.61	0.26		0.08	0.26		0.06	0.65				
Uniform Delay, d1	9.1	7.1		6.4	7.1		14.3	17.7				
Progression Factor	0.53	0.45		1.00	1.00		0.74	0.70				
Incremental Delay, d2	4.6	0.6		0.3	0.6		0.2	2.9				
Delay (s)	9.4	3.8		6.6	7.7		10.8	15.3				
Level of Service	A	A		A	A		B	B				
Approach Delay (s)		7.0			7.6			15.1			0.0	
Approach LOS		A			A			B			A	

Intersection Summary					
HCM Average Control Delay	10.7	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.62				
Actuated Cycle Length (s)	60.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	60.9%	ICU Level of Service		B	
Analysis Period (min)	15				

c Critical Lane Group

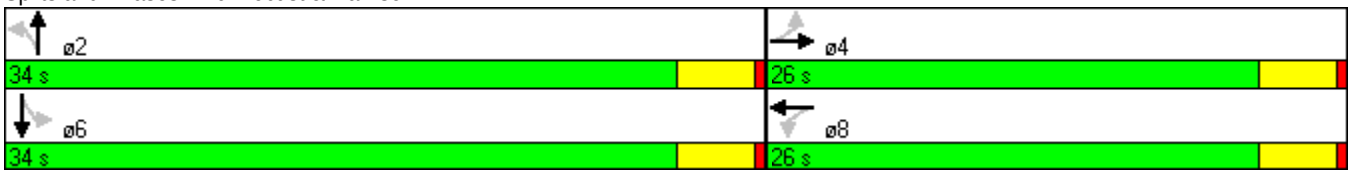


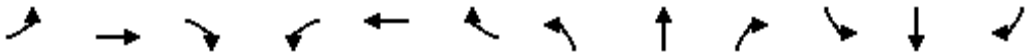
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	601	24	59	382	79	37	281	52	64	423	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.974			0.976			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3447	0	1770	1818	0	1770	1848	0
Flt Permitted	0.415			0.297			0.372			0.481		
Satd. Flow (perm)	773	3518	0	553	3447	0	693	1818	0	896	1848	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			46			22			7	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2240			1712			2656			1008	
Travel Time (s)		50.9			38.9			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	653	26	64	415	86	40	305	57	70	460	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	679	0	64	501	0	40	362	0	70	485	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	26.0	26.0	0.0	26.0	26.0	0.0	34.0	34.0	0.0	34.0	34.0	0.0
Total Split (%)	43.3%	43.3%	0.0%	43.3%	43.3%	0.0%	56.7%	56.7%	0.0%	56.7%	56.7%	0.0%
Maximum Green (s)	22.0	22.0		22.0	22.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	22.0	22.0		22.0	22.0		30.0	30.0		30.0	30.0	
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.50	0.50		0.50	0.50	
v/c Ratio	0.22	0.52		0.32	0.39		0.12	0.39		0.16	0.52	
Control Delay	15.7	16.5		9.7	5.6		6.2	7.3		9.2	10.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.7	16.5		9.7	5.6		6.2	7.3		9.2	10.5	
LOS	B	B		A	A		A	A		A	B	
Approach Delay		16.5			6.1			7.2			10.4	
Approach LOS		B			A			A			B	
Queue Length 50th (ft)	15	97		6	18		7	66		10	70	
Queue Length 95th (ft)	41	142		m11	27		23	127		m22	132	
Internal Link Dist (ft)		2160			1632			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	283	1294		203	1293		347	920		448	928	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.22	0.52		0.32	0.39		0.12	0.39		0.16	0.52	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 32 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 10.7		Intersection LOS: B	
Intersection Capacity Utilization 61.0%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 9: Locust & Harrison

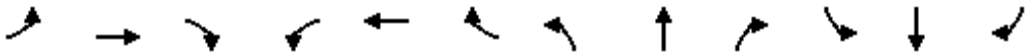




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	601	24	59	382	79	37	281	52	64	423	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3519		1770	3448		1770	1819		1770	1848	
Flt Permitted	0.41	1.00		0.30	1.00		0.37	1.00		0.48	1.00	
Satd. Flow (perm)	772	3519		553	3448		693	1819		895	1848	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	653	26	64	415	86	40	305	57	70	460	25
RTOR Reduction (vph)	0	4	0	0	29	0	0	11	0	0	4	0
Lane Group Flow (vph)	63	675	0	64	472	0	40	351	0	70	482	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.0	22.0		22.0	22.0		30.0	30.0		30.0	30.0	
Effective Green, g (s)	22.0	22.0		22.0	22.0		30.0	30.0		30.0	30.0	
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.50	0.50		0.50	0.50	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	283	1290		203	1264		347	910		448	924	
v/s Ratio Prot		c0.19			0.14			0.19			c0.26	
v/s Ratio Perm	0.08			0.12			0.06			0.08		
v/c Ratio	0.22	0.52		0.32	0.37		0.12	0.39		0.16	0.52	
Uniform Delay, d1	13.1	14.9		13.6	13.9		8.0	9.3		8.1	10.1	
Progression Factor	1.00	1.00		0.41	0.38		0.66	0.67		1.00	0.84	
Incremental Delay, d2	1.8	1.5		3.6	0.7		0.7	1.2		0.6	1.7	
Delay (s)	14.9	16.4		9.2	6.0		5.9	7.5		8.8	10.3	
Level of Service	B	B		A	A		A	A		A	B	
Approach Delay (s)		16.3			6.4			7.3			10.1	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

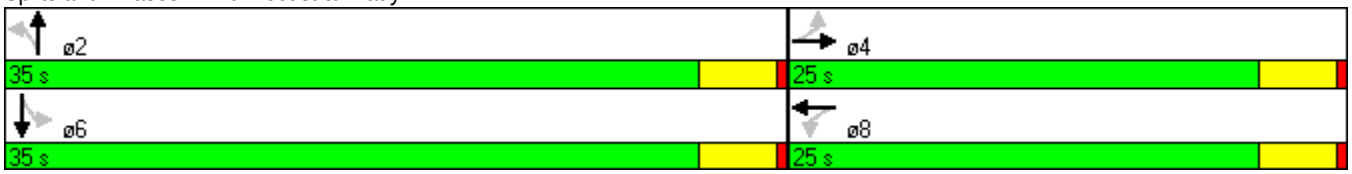


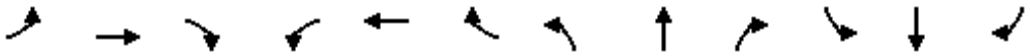
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	429	24	58	513	79	38	282	52	63	423	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.980			0.977			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3511	0	1770	3468	0	1770	1820	0	1770	1850	0
Flt Permitted	0.309			0.415			0.383			0.485		
Satd. Flow (perm)	576	3511	0	773	3468	0	713	1820	0	903	1850	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			31			23			6	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			2656			1008	
Travel Time (s)		38.9			54.5			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	466	26	63	558	86	41	307	57	68	460	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	492	0	63	644	0	41	364	0	68	484	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	25.0	25.0	0.0	25.0	25.0	0.0	35.0	35.0	0.0	35.0	35.0	0.0
Total Split (%)	41.7%	41.7%	0.0%	41.7%	41.7%	0.0%	58.3%	58.3%	0.0%	58.3%	58.3%	0.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	21.0	21.0		21.0	21.0		31.0	31.0		31.0	31.0	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.52	0.52		0.52	0.52	
v/c Ratio	0.31	0.40		0.23	0.52		0.11	0.38		0.15	0.50	
Control Delay	13.0	9.4		16.7	16.6		10.3	12.8		8.1	11.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.0	9.4		16.7	16.6		10.3	12.8		8.1	11.2	
LOS	B	A		B	B		B	B		A	B	
Approach Delay		9.8			16.6			12.6			10.8	
Approach LOS		A			B			B			B	
Queue Length 50th (ft)	7	27		16	90		12	113		11	103	
Queue Length 95th (ft)	m20	57		42	134		34	176		29	174	
Internal Link Dist (ft)		1632			2320			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	202	1235		271	1234		368	951		467	959	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.31	0.40		0.23	0.52		0.11	0.38		0.15	0.50	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 12.7		Intersection LOS: B	
Intersection Capacity Utilization 60.3%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 10: Locust & Brady

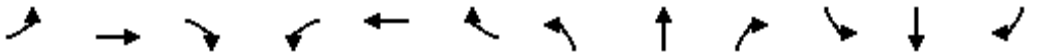




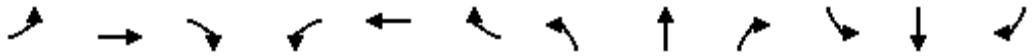
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	429	24	58	513	79	38	282	52	63	423	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3511		1770	3468		1770	1819		1770	1849	
Flt Permitted	0.31	1.00		0.41	1.00		0.38	1.00		0.49	1.00	
Satd. Flow (perm)	576	3511		773	3468		713	1819		904	1849	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	466	26	63	558	86	41	307	57	68	460	24
RTOR Reduction (vph)	0	7	0	0	20	0	0	11	0	0	3	0
Lane Group Flow (vph)	63	486	0	63	624	0	41	353	0	68	481	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	21.0	21.0		21.0	21.0		31.0	31.0		31.0	31.0	
Effective Green, g (s)	21.0	21.0		21.0	21.0		31.0	31.0		31.0	31.0	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.52	0.52		0.52	0.52	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	202	1229		271	1214		368	940		467	955	
v/s Ratio Prot		0.14			c0.18			0.19			c0.26	
v/s Ratio Perm	0.11			0.08			0.06			0.08		
v/c Ratio	0.31	0.40		0.23	0.51		0.11	0.38		0.15	0.50	
Uniform Delay, d1	14.2	14.7		13.8	15.5		7.4	8.7		7.6	9.5	
Progression Factor	0.61	0.58		1.00	1.00		1.23	1.39		0.94	0.95	
Incremental Delay, d2	3.6	0.8		2.0	1.6		0.6	1.1		0.7	1.9	
Delay (s)	12.2	9.4		15.8	17.0		9.7	13.2		7.8	10.9	
Level of Service	B	A		B	B		A	B		A	B	
Approach Delay (s)		9.7			16.9			12.8			10.6	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



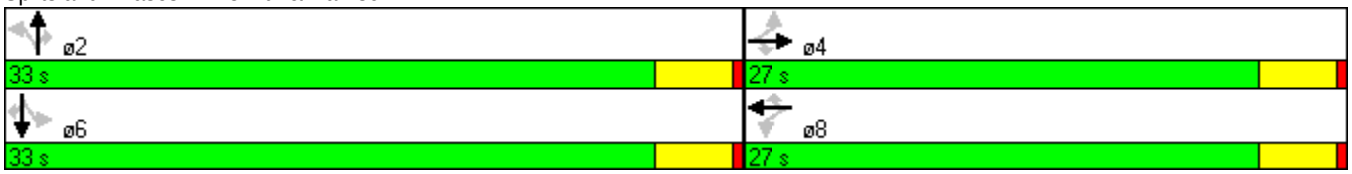
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	26	27	169	26	8	234	36	38	268	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.636			0.648			0.542			0.579		
Satd. Flow (perm)	1185	1863	1583	1207	1863	1583	1010	1863	1583	1079	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			28			28			39			78
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			1163			2656	
Travel Time (s)		48.0			38.9			22.7			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	28	29	184	28	9	254	39	41	291	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	173	28	29	184	28	9	254	39	41	291	78
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	33.0	33.0	33.0	33.0	33.0	33.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	55.0%	55.0%	55.0%	55.0%	55.0%	55.0%
Maximum Green (s)	23.0	23.0	23.0	23.0	23.0	23.0	29.0	29.0	29.0	29.0	29.0	29.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	23.0	23.0	23.0	23.0	23.0	23.0	29.0	29.0	29.0	29.0	29.0	29.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.48	0.48	0.48	0.48	0.48	0.48
v/c Ratio	0.06	0.24	0.04	0.06	0.26	0.04	0.02	0.28	0.05	0.08	0.32	0.10
Control Delay	12.2	13.8	5.5	6.1	6.9	1.5	8.8	10.1	3.9	5.0	6.3	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	13.8	5.5	6.1	6.9	1.5	8.8	10.1	3.9	5.0	6.3	1.4
LOS	B	B	A	A	A	A	A	B	A	A	A	A
Approach Delay		12.6			6.2			9.2			5.2	
Approach LOS		B			A			A			A	
Queue Length 50th (ft)	6	41	0	3	18	0	1	44	1	5	51	0
Queue Length 95th (ft)	19	79	13	m8	33	m2	8	91	11	m9	90	m5
Internal Link Dist (ft)		2032			1632			1083			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	454	714	624	463	714	624	488	900	785	522	900	805
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

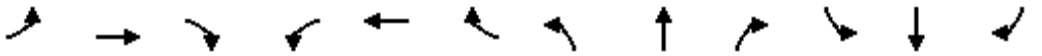


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.24	0.04	0.06	0.26	0.04	0.02	0.28	0.05	0.08	0.32	0.10

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 32 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 7.9		Intersection LOS: A	
Intersection Capacity Utilization 43.0%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 13: 4th & Harrison

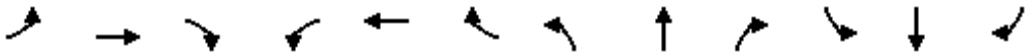




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	26	27	169	26	8	234	36	38	268	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.64	1.00	1.00	0.65	1.00	1.00	0.54	1.00	1.00	0.58	1.00	1.00
Satd. Flow (perm)	1184	1863	1583	1207	1863	1583	1010	1863	1583	1079	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	28	29	184	28	9	254	39	41	291	78
RTOR Reduction (vph)	0	0	17	0	0	17	0	0	20	0	0	40
Lane Group Flow (vph)	27	173	11	29	184	11	9	254	19	41	291	38
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	23.0	23.0	23.0	23.0	23.0	23.0	29.0	29.0	29.0	29.0	29.0	29.0
Effective Green, g (s)	23.0	23.0	23.0	23.0	23.0	23.0	29.0	29.0	29.0	29.0	29.0	29.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.48	0.48	0.48	0.48	0.48	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	454	714	607	463	714	607	488	900	765	522	900	765
v/s Ratio Prot		0.09			c0.10			0.14			c0.16	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.01		0.01	0.04		0.02
v/c Ratio	0.06	0.24	0.02	0.06	0.26	0.02	0.02	0.28	0.02	0.08	0.32	0.05
Uniform Delay, d1	11.7	12.6	11.5	11.7	12.7	11.5	8.1	9.3	8.1	8.3	9.5	8.2
Progression Factor	1.00	1.00	1.00	0.49	0.47	0.26	1.06	0.97	1.15	0.55	0.56	0.46
Incremental Delay, d2	0.3	0.8	0.1	0.2	0.8	0.1	0.1	0.8	0.1	0.3	0.8	0.1
Delay (s)	11.9	13.4	11.5	6.0	6.7	3.1	8.6	9.8	9.4	4.8	6.1	3.8
Level of Service	B	B	B	A	A	A	A	A	A	A	A	A
Approach Delay (s)		13.0			6.2			9.7			5.6	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

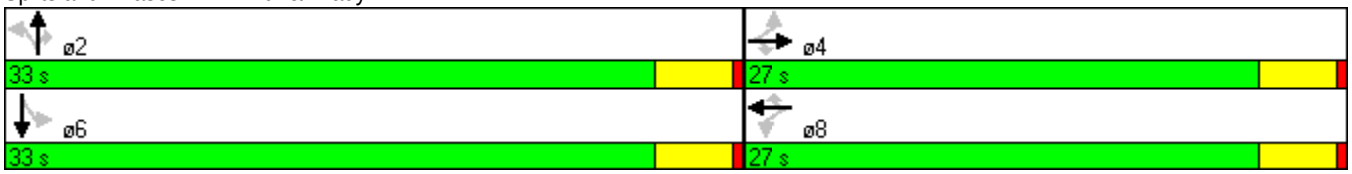


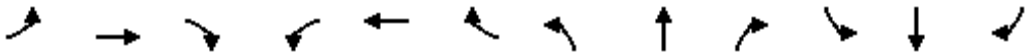
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	237	25	27	252	27	8	235	36	38	268	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1805	0
Flt Permitted	0.523			0.543			0.468			0.578		
Satd. Flow (perm)	974	1863	1583	1011	1863	1583	872	1863	1583	1077	1805	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			39		31	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			1163			2656	
Travel Time (s)		38.9			53.1			22.7			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	258	27	29	274	29	9	255	39	41	291	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	258	27	29	274	29	9	255	39	41	368	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	33.0	33.0	33.0	33.0	33.0	0.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	55.0%	55.0%	55.0%	55.0%	55.0%	0.0%
Maximum Green (s)	23.0	23.0	23.0	23.0	23.0	23.0	29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	23.0	23.0	23.0	23.0	23.0	23.0	29.0	29.0	29.0	29.0	29.0	
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.48	0.48	0.48	0.48	0.48	
v/c Ratio	0.08	0.36	0.04	0.07	0.38	0.05	0.02	0.28	0.05	0.08	0.41	
Control Delay	10.7	12.3	4.4	12.5	15.4	5.3	10.8	14.1	6.8	3.9	5.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.7	12.3	4.4	12.5	15.4	5.3	10.8	14.1	6.8	3.9	5.3	
LOS	B	B	A	B	B	A	B	B	A	A	A	
Approach Delay		11.5			14.2			13.0			5.1	
Approach LOS		B			B			B			A	
Queue Length 50th (ft)	5	45	1	6	69	0	2	76	0	3	19	
Queue Length 95th (ft)	17	89	10	21	123	13	m11	127	21	m6	30	
Internal Link Dist (ft)		1632			2256			1083			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	373	714	623	388	714	625	421	900	785	521	888	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.08	0.36	0.04	0.07	0.38	0.05	0.02	0.28	0.05	0.08	0.41	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 54 (90%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 10.6		Intersection LOS: B	
Intersection Capacity Utilization 51.7%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 14: 4th & Brady

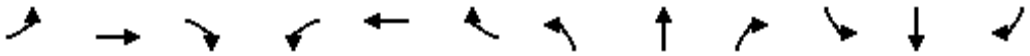




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	237	25	27	252	27	8	235	36	38	268	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1804	
Flt Permitted	0.52	1.00	1.00	0.54	1.00	1.00	0.47	1.00	1.00	0.58	1.00	
Satd. Flow (perm)	974	1863	1583	1011	1863	1583	872	1863	1583	1077	1804	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	258	27	29	274	29	9	255	39	41	291	77
RTOR Reduction (vph)	0	0	17	0	0	18	0	0	20	0	16	0
Lane Group Flow (vph)	28	258	10	29	274	11	9	255	19	41	352	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	23.0	23.0	23.0	23.0	23.0	23.0	29.0	29.0	29.0	29.0	29.0	
Effective Green, g (s)	23.0	23.0	23.0	23.0	23.0	23.0	29.0	29.0	29.0	29.0	29.0	
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.48	0.48	0.48	0.48	0.48	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	373	714	607	388	714	607	421	900	765	521	872	
v/s Ratio Prot		0.14			c0.15			0.14			c0.20	
v/s Ratio Perm	0.03		0.01	0.03		0.01	0.01		0.01	0.04		
v/c Ratio	0.08	0.36	0.02	0.07	0.38	0.02	0.02	0.28	0.02	0.08	0.40	
Uniform Delay, d1	11.7	13.2	11.5	11.7	13.4	11.5	8.1	9.3	8.1	8.3	9.9	
Progression Factor	0.85	0.79	0.80	1.00	1.00	1.00	1.29	1.39	2.04	0.42	0.42	
Incremental Delay, d2	0.4	1.4	0.1	0.4	1.6	0.1	0.1	0.8	0.1	0.3	1.2	
Delay (s)	10.3	11.9	9.3	12.1	14.9	11.5	10.6	13.6	16.6	3.8	5.4	
Level of Service	B	B	A	B	B	B	B	B	B	A	A	
Approach Delay (s)		11.6			14.4			13.9			5.3	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



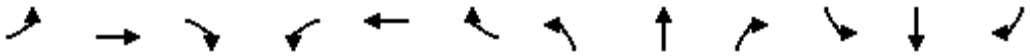
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	557	14	12	540	26	9	3	5	21	10	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.993			0.906			0.888	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1855	0	1770	1850	0	1770	1688	0	1770	1654	0
Flt Permitted	0.311			0.308			0.729			0.752		
Satd. Flow (perm)	579	1855	0	574	1850	0	1358	1688	0	1401	1654	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			7			5			32	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2016			1710			288			1848	
Travel Time (s)		45.8			38.9			5.6			36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	605	15	13	587	28	10	3	5	23	11	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	620	0	13	615	0	10	8	0	23	43	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	38.0	38.0	0.0	38.0	38.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	63.3%	63.3%	0.0%	63.3%	63.3%	0.0%	36.7%	36.7%	0.0%	36.7%	36.7%	0.0%
Maximum Green (s)	34.0	34.0		34.0	34.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	34.0	34.0		34.0	34.0		18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.57	0.57		0.57	0.57		0.30	0.30		0.30	0.30	
v/c Ratio	0.12	0.59		0.04	0.59		0.02	0.02		0.05	0.08	
Control Delay	7.2	11.3		5.2	7.9		15.1	11.4		9.6	5.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.2	11.3		5.2	7.9		15.1	11.4		9.6	5.4	
LOS	A	B		A	A		B	B		A	A	
Approach Delay		11.1			7.8			13.5			6.8	
Approach LOS		B			A			B			A	
Queue Length 50th (ft)	6	128		2	75		3	1		6	0	
Queue Length 95th (ft)	19	214		m4	105		12	9		20	4	
Internal Link Dist (ft)		1936			1630			208			1768	
Turn Bay Length (ft)												
Base Capacity (vph)	328	1052		325	1051		407	510		420	519	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.12	0.59		0.04	0.59		0.02	0.02		0.05	0.08	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 24 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 9.4		Intersection LOS: A	
Intersection Capacity Utilization 45.2%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 17: River & Harrison

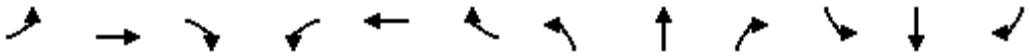




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	557	14	12	540	26	9	3	5	21	10	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.91		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1856		1770	1850		1770	1688		1770	1655	
Flt Permitted	0.31	1.00		0.31	1.00		0.73	1.00		0.75	1.00	
Satd. Flow (perm)	580	1856		573	1850		1358	1688		1402	1655	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	605	15	13	587	28	10	3	5	23	11	32
RTOR Reduction (vph)	0	1	0	0	3	0	0	4	0	0	22	0
Lane Group Flow (vph)	40	619	0	13	612	0	10	5	0	23	21	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.0	34.0		34.0	34.0		18.0	18.0		18.0	18.0	
Effective Green, g (s)	34.0	34.0		34.0	34.0		18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.57	0.57		0.57	0.57		0.30	0.30		0.30	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	329	1052		325	1048		407	506		421	497	
v/s Ratio Prot		c0.33			0.33			0.00			0.01	
v/s Ratio Perm	0.07			0.02			0.01			c0.02		
v/c Ratio	0.12	0.59		0.04	0.58		0.02	0.01		0.05	0.04	
Uniform Delay, d1	6.1	8.4		5.8	8.4		14.8	14.7		14.9	14.9	
Progression Factor	1.00	1.00		0.83	0.65		1.00	1.00		0.61	0.63	
Incremental Delay, d2	0.8	2.4		0.2	2.2		0.1	0.0		0.2	0.2	
Delay (s)	6.8	10.9		5.0	7.7		14.9	14.8		9.4	9.5	
Level of Service	A	B		A	A		B	B		A	A	
Approach Delay (s)		10.6			7.6			14.9			9.4	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



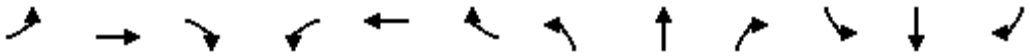
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	588	12	8	479	27	3	3	4	21	9	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.992				0.850		0.886	
Flt Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1770	1857	0	1770	1848	0	0	1818	1583	1770	1650	0
Flt Permitted	0.358			0.285				0.938		0.754		
Satd. Flow (perm)	667	1857	0	531	1848	0	0	1747	1583	1405	1650	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			8				4		32	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1710			6778			272			1848	
Travel Time (s)		38.9			154.0			5.3			36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	639	13	9	521	29	3	3	4	23	10	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	652	0	9	550	0	0	6	4	23	42	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	
Total Split (s)	38.0	38.0	0.0	38.0	38.0	0.0	22.0	22.0	22.0	22.0	22.0	0.0
Total Split (%)	63.3%	63.3%	0.0%	63.3%	63.3%	0.0%	36.7%	36.7%	36.7%	36.7%	36.7%	0.0%
Maximum Green (s)	34.0	34.0		34.0	34.0		18.0	18.0	18.0	18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	34.0	34.0		34.0	34.0			18.0	18.0	18.0	18.0	
Actuated g/C Ratio	0.57	0.57		0.57	0.57			0.30	0.30	0.30	0.30	
v/c Ratio	0.11	0.62		0.03	0.52			0.01	0.01	0.05	0.08	
Control Delay	2.6	4.6		6.1	10.1			14.8	10.5	8.9	4.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	2.6	4.6		6.1	10.1			14.8	10.5	8.9	4.0	
LOS	A	A		A	B			B	B	A	A	
Approach Delay		4.4			10.1			13.1			5.7	
Approach LOS		A			B			B			A	
Queue Length 50th (ft)	2	30		1	107			2	0	4	2	
Queue Length 95th (ft)	m3	40		6	179			8	6	15	5	
Internal Link Dist (ft)		1630			6698			192			1768	
Turn Bay Length (ft)												
Base Capacity (vph)	378	1054		301	1051			524	478	422	517	
Starvation Cap Reductn	0	0		0	0			0	0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.11	0.62		0.03	0.52			0.01	0.01	0.05	0.08	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 6.9		Intersection LOS: A	
Intersection Capacity Utilization 48.3%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 18: River & Brady

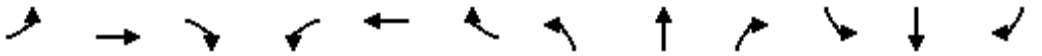




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	588	12	8	479	27	3	3	4	21	9	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99			1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1857		1770	1848			1817	1583	1770	1650	
Flt Permitted	0.36	1.00		0.29	1.00			0.94	1.00	0.75	1.00	
Satd. Flow (perm)	667	1857		531	1848			1747	1583	1404	1650	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	639	13	9	521	29	3	3	4	23	10	32
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	3	0	22	0
Lane Group Flow (vph)	41	651	0	9	547	0	0	6	1	23	20	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	34.0	34.0		34.0	34.0			18.0	18.0	18.0	18.0	
Effective Green, g (s)	34.0	34.0		34.0	34.0			18.0	18.0	18.0	18.0	
Actuated g/C Ratio	0.57	0.57		0.57	0.57			0.30	0.30	0.30	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	378	1052		301	1047			524	475	421	495	
v/s Ratio Prot		c0.35			0.30						0.01	
v/s Ratio Perm	0.06			0.02				0.00	0.00	c0.02		
v/c Ratio	0.11	0.62		0.03	0.52			0.01	0.00	0.05	0.04	
Uniform Delay, d1	6.0	8.7		5.7	8.0			14.8	14.7	14.9	14.9	
Progression Factor	0.32	0.24		1.00	1.00			1.00	1.00	0.57	0.47	
Incremental Delay, d2	0.5	2.4		0.2	1.9			0.0	0.0	0.2	0.1	
Delay (s)	2.5	4.4		5.9	9.9			14.8	14.7	8.7	7.1	
Level of Service	A	A		A	A			B	B	A	A	
Approach Delay (s)		4.3			9.8			14.8			7.7	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

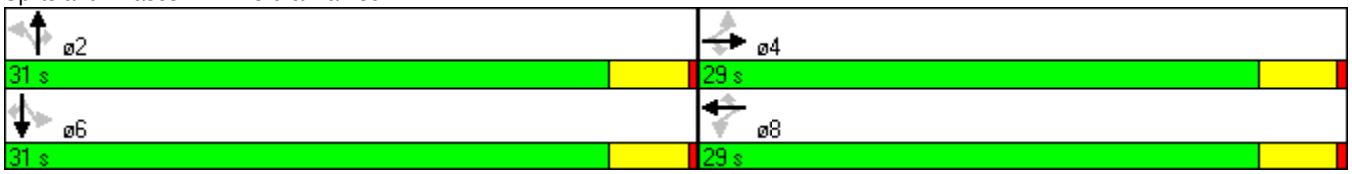


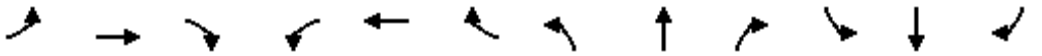
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	25	27	169	27	8	156	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.641			0.648			0.621			0.650		
Satd. Flow (perm)	1194	1863	1583	1207	1863	1583	1157	1863	1583	1211	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			40			77
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2089			1711			1848			1163	
Travel Time (s)		47.5			38.9			36.0			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	27	29	184	29	9	170	40	41	207	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	173	27	29	184	29	9	170	40	41	207	77
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Split (%)	48.3%	48.3%	48.3%	48.3%	48.3%	48.3%	51.7%	51.7%	51.7%	51.7%	51.7%	51.7%
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	27.0	27.0	27.0	27.0	27.0	27.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	27.0	27.0	27.0	27.0	27.0	27.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.42	0.42	0.45	0.45	0.45	0.45	0.45	0.45
v/c Ratio	0.05	0.22	0.04	0.06	0.24	0.04	0.02	0.20	0.05	0.08	0.25	0.10
Control Delay	10.9	12.2	4.9	7.7	8.6	2.3	7.8	9.3	2.9	13.3	14.8	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.9	12.2	4.9	7.7	8.6	2.3	7.8	9.3	2.9	13.3	14.8	6.5
LOS	B	B	A	A	A	A	A	A	A	B	B	A
Approach Delay		11.2			7.7			8.1			12.6	
Approach LOS		B			A			A			B	
Queue Length 50th (ft)	6	38	0	4	27	0	2	35	0	9	49	4
Queue Length 95th (ft)	18	74	12	12	45	4	m7	m65	m12	26	86	19
Internal Link Dist (ft)		2009			1631			1768			1083	
Turn Bay Length (ft)												
Base Capacity (vph)	498	776	675	503	776	677	521	838	734	545	838	755
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.22	0.04	0.06	0.24	0.04	0.02	0.20	0.05	0.08	0.25	0.10

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 34 (57%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.25			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 38.9%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 21: 3rd & Harrison

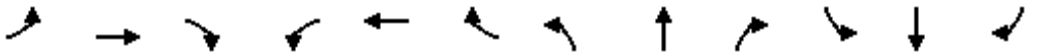




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	25	27	169	27	8	156	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.64	1.00	1.00	0.65	1.00	1.00	0.62	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	1195	1863	1583	1207	1863	1583	1158	1863	1583	1210	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	27	29	184	29	9	170	40	41	207	77
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	22	0	0	42
Lane Group Flow (vph)	27	173	11	29	184	12	9	170	18	41	207	35
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	25.0	25.0	25.0	25.0	25.0	25.0	27.0	27.0	27.0	27.0	27.0	27.0
Effective Green, g (s)	25.0	25.0	25.0	25.0	25.0	25.0	27.0	27.0	27.0	27.0	27.0	27.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.42	0.42	0.45	0.45	0.45	0.45	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	498	776	660	503	776	660	521	838	712	545	838	712
v/s Ratio Prot		0.09			c0.10			0.09			c0.11	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.01		0.01	0.03		0.02
v/c Ratio	0.05	0.22	0.02	0.06	0.24	0.02	0.02	0.20	0.03	0.08	0.25	0.05
Uniform Delay, d1	10.4	11.3	10.3	10.5	11.3	10.3	9.1	10.0	9.2	9.4	10.2	9.3
Progression Factor	1.00	1.00	1.00	0.69	0.68	0.48	0.83	0.85	0.75	1.35	1.34	2.10
Incremental Delay, d2	0.2	0.7	0.0	0.2	0.7	0.0	0.1	0.5	0.1	0.3	0.7	0.1
Delay (s)	10.7	11.9	10.3	7.5	8.4	5.0	7.6	9.1	6.9	13.0	14.4	19.6
Level of Service	B	B	B	A	A	A	A	A	A	B	B	B
Approach Delay (s)		11.6			7.8			8.6			15.4	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

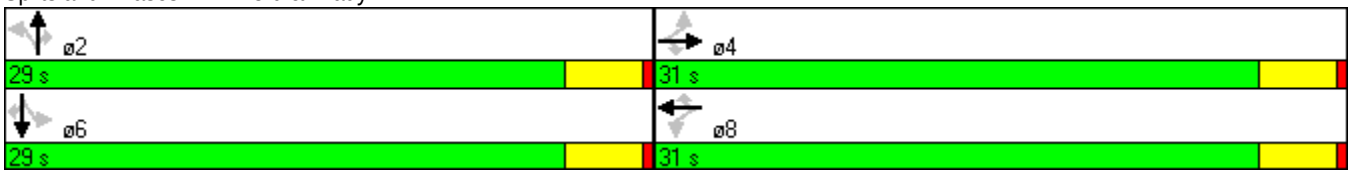


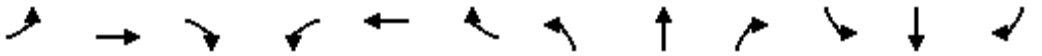
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	237	25	26	252	27	8	165	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.549			0.566			0.614			0.644		
Satd. Flow (perm)	1023	1863	1583	1054	1863	1583	1144	1863	1583	1200	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			40			77
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1711			6523			1848			1163	
Travel Time (s)		38.9			148.3			36.0			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	258	27	28	274	29	9	179	40	41	207	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	258	27	28	274	29	9	179	40	41	207	77
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	51.7%	51.7%	51.7%	51.7%	51.7%	51.7%	48.3%	48.3%	48.3%	48.3%	48.3%	48.3%
Maximum Green (s)	27.0	27.0	27.0	27.0	27.0	27.0	25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	27.0	27.0	27.0	27.0	27.0	27.0	25.0	25.0	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45	0.42	0.42	0.42	0.42	0.42	0.42
v/c Ratio	0.06	0.31	0.04	0.06	0.33	0.04	0.02	0.23	0.06	0.08	0.27	0.11
Control Delay	6.7	7.7	2.3	9.8	12.0	4.2	8.5	10.6	3.0	5.9	6.6	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.7	7.7	2.3	9.8	12.0	4.2	8.5	10.6	3.0	5.9	6.6	0.7
LOS	A	A	A	A	B	A	A	B	A	A	A	A
Approach Delay		7.2			11.2			9.2			5.1	
Approach LOS		A			B			A			A	
Queue Length 50th (ft)	3	33	1	5	60	0	2	40	1	4	20	0
Queue Length 95th (ft)	11	59	5	18	107	12	m7	71	m11	m10	35	1
Internal Link Dist (ft)		1631			6443			1768			1083	
Turn Bay Length (ft)												
Base Capacity (vph)	460	838	727	474	838	728	477	776	683	500	776	705
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.31	0.04	0.06	0.33	0.04	0.02	0.23	0.06	0.08	0.27	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 12 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.33			
Intersection Signal Delay: 8.1		Intersection LOS: A	
Intersection Capacity Utilization 43.3%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 22: 3rd & Brady





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	237	25	26	252	27	8	165	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.55	1.00	1.00	0.57	1.00	1.00	0.61	1.00	1.00	0.64	1.00	1.00
Satd. Flow (perm)	1022	1863	1583	1054	1863	1583	1144	1863	1583	1200	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	258	27	28	274	29	9	179	40	41	207	77
RTOR Reduction (vph)	0	0	15	0	0	16	0	0	23	0	0	45
Lane Group Flow (vph)	27	258	12	28	274	13	9	179	17	41	207	32
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	27.0	27.0	27.0	27.0	27.0	27.0	25.0	25.0	25.0	25.0	25.0	25.0
Effective Green, g (s)	27.0	27.0	27.0	27.0	27.0	27.0	25.0	25.0	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45	0.42	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	460	838	712	474	838	712	477	776	660	500	776	660
v/s Ratio Prot		0.14			c0.15			0.10			c0.11	
v/s Ratio Perm	0.03		0.01	0.03		0.01	0.01		0.01	0.03		0.02
v/c Ratio	0.06	0.31	0.02	0.06	0.33	0.02	0.02	0.23	0.03	0.08	0.27	0.05
Uniform Delay, d1	9.3	10.5	9.1	9.3	10.6	9.2	10.3	11.3	10.3	10.6	11.5	10.4
Progression Factor	0.67	0.62	0.52	1.00	1.00	1.00	0.81	0.85	0.68	0.51	0.49	0.11
Incremental Delay, d2	0.2	0.9	0.0	0.2	1.0	0.0	0.1	0.7	0.1	0.3	0.8	0.1
Delay (s)	6.5	7.5	4.8	9.6	11.7	9.2	8.4	10.3	7.1	5.7	6.4	1.3
Level of Service	A	A	A	A	B	A	A	B	A	A	A	A
Approach Delay (s)		7.2			11.3			9.6			5.1	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Brady-Harrison Phase 1

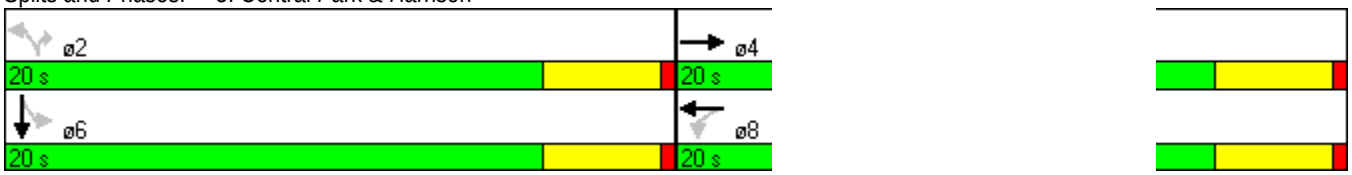
Converted Two-Way Streets
2030 AM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		[redacted]		[redacted]	[redacted]		[redacted]		[redacted]	[redacted]	[redacted]	
Volume (vph)	0	296	49	5	148	0	32	0	109	87	999	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.979							0.850		0.988	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3465	0	1770	1863	0	1770	0	1583	1770	3497	0
Flt Permitted				0.529			0.250			0.950		
Satd. Flow (perm)	0	3465	0	985	1863	0	466	0	1583	1770	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28							118		26	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2320			1712			1008			640	
Travel Time (s)		52.7			38.9			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	322	53	5	161	0	35	0	118	95	1086	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	375	0	5	161	0	35	0	118	95	1178	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Minimum Split (s)		20.0		20.0	20.0		20.0		20.0	20.0	20.0	
Total Split (s)	0.0	20.0	0.0	20.0	20.0	0.0	20.0	0.0	20.0	20.0	20.0	0.0
Total Split (%)	0.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	0.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)		16.0		16.0	16.0		16.0		16.0	16.0	16.0	
Yellow Time (s)		3.5		3.5	3.5		3.5		3.5	3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0		0	0	0	
Act Effct Green (s)		16.0		16.0	16.0		16.0		16.0	16.0	16.0	
Actuated g/C Ratio		0.40		0.40	0.40		0.40		0.40	0.40	0.40	
v/c Ratio		0.27		0.01	0.22		0.19		0.17	0.13	0.83	
Control Delay		8.1		7.4	8.9		7.4		1.9	8.3	18.1	
Queue Delay		0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay		8.1		7.4	8.9		7.4		1.9	8.3	18.1	
LOS		A		A	A		A		A	A	B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		8.1			8.8						17.3	
Approach LOS		A			A						B	
Queue Length 50th (ft)		25		1	22		3		0	13	113	
Queue Length 95th (ft)		45		5	49		m8		m7	32	#220	
Internal Link Dist (ft)		2240			1632			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)		1403		394	745		186		704	708	1414	
Starvation Cap Reductn		0		0	0		0		0	0	0	
Spillback Cap Reductn		0		0	0		0		0	0	0	
Storage Cap Reductn		0		0	0		0		0	0	0	
Reduced v/c Ratio		0.27		0.01	0.22		0.19		0.17	0.13	0.83	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 16 (40%), Referenced to phase 2:NBL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 13.8		Intersection LOS: B	
Intersection Capacity Utilization 46.7%		ICU Level of Service A	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Central Park & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		[redacted]		[redacted]	[redacted]		[redacted]		[redacted]	[redacted]	[redacted]	
Volume (vph)	0	296	49	5	148	0	32	0	109	87	999	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	1.00		1.00		1.00	1.00	0.95	
Frt		0.98		1.00	1.00		1.00		0.85	1.00	0.99	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3464		1770	1863		1770		1583	1770	3498	
Flt Permitted		1.00		0.53	1.00		0.25		1.00	0.95	1.00	
Satd. Flow (perm)		3464		985	1863		466		1583	1770	3498	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	322	53	5	161	0	35	0	118	95	1086	92
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	71	0	16	0
Lane Group Flow (vph)	0	358	0	5	161	0	35	0	47	95	1162	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Actuated Green, G (s)		16.0		16.0	16.0		16.0		16.0	16.0	16.0	
Effective Green, g (s)		16.0		16.0	16.0		16.0		16.0	16.0	16.0	
Actuated g/C Ratio		0.40		0.40	0.40		0.40		0.40	0.40	0.40	
Clearance Time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)		1386		394	745		186		633	708	1399	
v/s Ratio Prot		c0.10			0.09						c0.33	
v/s Ratio Perm				0.01			0.08		0.03	0.05		
v/c Ratio		0.26		0.01	0.22		0.19		0.07	0.13	0.83	
Uniform Delay, d1		8.0		7.2	7.9		7.8		7.4	7.6	10.8	
Progression Factor		1.00		1.00	1.00		0.61		0.60	1.00	1.00	
Incremental Delay, d2		0.5		0.1	0.7		2.1		0.2	0.4	5.9	
Delay (s)		8.5		7.3	8.5		6.8		4.7	8.0	16.7	
Level of Service		A		A	A		A		A	A	B	
Approach Delay (s)		8.5			8.5			5.2			16.0	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

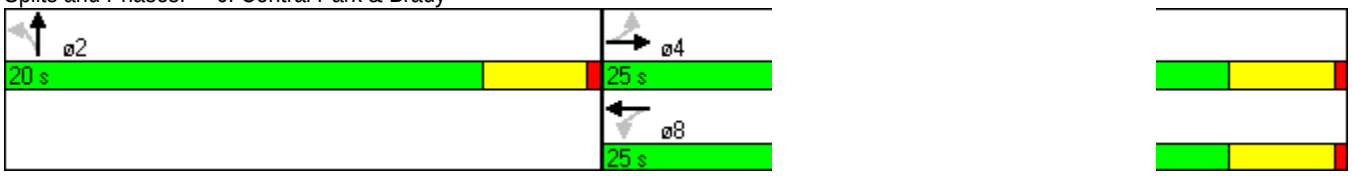
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	328	245	5	45	179	76	32	653	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.997			0.955			0.996				
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	1857	0	1770	1779	0	1770	3525	0	0	0	0
Flt Permitted	0.578			0.585			0.950					
Satd. Flow (perm)	1077	1857	0	1090	1779	0	1770	3525	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			64			7				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			1008			640	
Travel Time (s)		38.9			54.5			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	357	266	5	49	195	83	35	710	21	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	357	271	0	49	278	0	35	731	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm					
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0				
Total Split (s)	25.0	25.0	0.0	25.0	25.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
Total Split (%)	55.6%	55.6%	0.0%	55.6%	55.6%	0.0%	44.4%	44.4%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		16.0	16.0				
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5				
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)	0	0		0	0		0	0				
Act Effct Green (s)	21.0	21.0		21.0	21.0		16.0	16.0				
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.36	0.36				
v/c Ratio	0.71	0.31		0.10	0.32		0.06	0.58				
Control Delay	20.5	8.7		7.4	7.0		9.9	13.9				
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				
Total Delay	20.5	8.7		7.4	7.0		9.9	13.9				
LOS	C	A		A	A		A	B				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		15.4			7.0			13.7				
Approach LOS		B			A			B				
Queue Length 50th (ft)	67	39		6	30		6	76				
Queue Length 95th (ft)	#183	76		20	66		19	118				
Internal Link Dist (ft)		1632			2320			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)	503	868		509	864		629	1258				
Starvation Cap Reductn	0	0		0	0		0	0				
Spillback Cap Reductn	0	0		0	0		0	0				
Storage Cap Reductn	0	0		0	0		0	0				
Reduced v/c Ratio	0.71	0.31		0.10	0.32		0.06	0.58				

Intersection Summary

Area Type: Other
Cycle Length: 45
Actuated Cycle Length: 45
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 60.9% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Central Park & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	328	245	5	45	179	76	32	653	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95				
Frt	1.00	1.00		1.00	0.96		1.00	1.00				
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00				
Satd. Flow (prot)	1770	1858		1770	1779		1770	3524				
Flt Permitted	0.58	1.00		0.59	1.00		0.95	1.00				
Satd. Flow (perm)	1077	1858		1090	1779		1770	3524				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	357	266	5	49	195	83	35	710	21	0	0	0
RTOR Reduction (vph)	0	2	0	0	34	0	0	5	0	0	0	0
Lane Group Flow (vph)	357	269	0	49	244	0	35	726	0	0	0	0
Turn Type	Perm			Perm			Perm					
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Actuated Green, G (s)	21.0	21.0		21.0	21.0		16.0	16.0				
Effective Green, g (s)	21.0	21.0		21.0	21.0		16.0	16.0				
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.36	0.36				
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0				
Lane Grp Cap (vph)	503	867		509	830		629	1253				
v/s Ratio Prot		0.15			0.14			c0.21				
v/s Ratio Perm	c0.33			0.04			0.02					
v/c Ratio	0.71	0.31		0.10	0.29		0.06	0.58				
Uniform Delay, d1	9.6	7.5		6.7	7.4		9.5	11.8				
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00				
Incremental Delay, d2	8.2	0.9		0.4	0.9		0.2	2.0				
Delay (s)	17.8	8.4		7.1	8.3		9.7	13.7				
Level of Service	B	A		A	A		A	B				
Approach Delay (s)		13.8			8.1			13.5			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

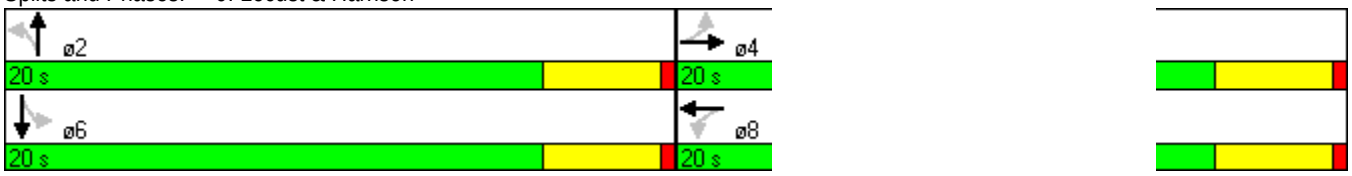
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	601	24	59	382	79	37	281	52	64	423	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.974			0.976			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3447	0	1770	1818	0	1770	1848	0
Flt Permitted	0.465			0.346			0.339			0.476		
Satd. Flow (perm)	866	3518	0	645	3447	0	631	1818	0	887	1848	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			72			28			8	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2240			1712			2656			1008	
Travel Time (s)		50.9			38.9			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	653	26	64	415	86	40	305	57	70	460	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	679	0	64	501	0	40	362	0	70	485	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.18	0.48		0.25	0.35		0.16	0.49		0.20	0.65	
Control Delay	9.5	10.2		4.6	2.0		8.3	9.9		2.8	6.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.5	10.2		4.6	2.0		8.3	9.9		2.8	6.9	
LOS	A	B		A	A		A	A		A	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		10.1			2.3			9.7			6.4	
Approach LOS		B			A			A			A	
Queue Length 50th (ft)	9	54		3	4		5	69		1	6	
Queue Length 95th (ft)	26	87		m6	9		m23	131		m1	m8	
Internal Link Dist (ft)		2160			1632			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	346	1414		258	1422		252	744		355	744	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.48		0.25	0.35		0.16	0.49		0.20	0.65	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 7.2		Intersection LOS: A	
Intersection Capacity Utilization 61.0%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 9: Locust & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	601	24	59	382	79	37	281	52	64	423	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3519		1770	3448		1770	1819		1770	1848	
Flt Permitted	0.46	1.00		0.35	1.00		0.34	1.00		0.48	1.00	
Satd. Flow (perm)	866	3519		644	3448		632	1819		886	1848	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	653	26	64	415	86	40	305	57	70	460	25
RTOR Reduction (vph)	0	7	0	0	43	0	0	17	0	0	5	0
Lane Group Flow (vph)	63	672	0	64	458	0	40	345	0	70	480	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	346	1408		258	1379		253	728		354	739	
v/s Ratio Prot		c0.19			0.13			0.19			c0.26	
v/s Ratio Perm	0.07			0.10			0.06			0.08		
v/c Ratio	0.18	0.48		0.25	0.33		0.16	0.47		0.20	0.65	
Uniform Delay, d1	7.8	8.9		8.0	8.3		7.7	8.9		7.8	9.7	
Progression Factor	1.00	1.00		0.28	0.19		0.83	0.88		0.24	0.41	
Incremental Delay, d2	1.2	1.2		2.1	0.6		1.3	2.2		0.7	2.5	
Delay (s)	8.9	10.1		4.3	2.2		7.7	10.0		2.6	6.5	
Level of Service	A	B		A	A		A	B		A	A	
Approach Delay (s)		10.0			2.4			9.8			6.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

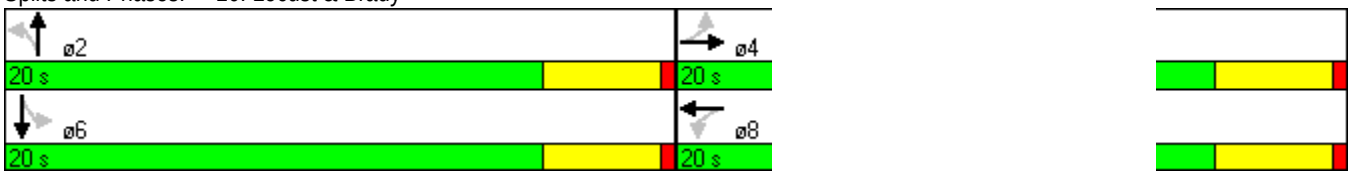
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	429	24	58	513	79	38	282	52	63	423	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.980			0.977			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3511	0	1770	3468	0	1770	1820	0	1770	1850	0
Flt Permitted	0.367			0.471			0.340			0.473		
Satd. Flow (perm)	684	3511	0	877	3468	0	633	1820	0	881	1850	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			51			28			8	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			2656			1008	
Travel Time (s)		38.9			54.5			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	466	26	63	558	86	41	307	57	68	460	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	492	0	63	644	0	41	364	0	68	484	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.23	0.35		0.18	0.45		0.16	0.49		0.19	0.65	
Control Delay	6.7	5.2		9.4	9.3		7.9	9.7		9.6	14.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.7	5.2		9.4	9.3		7.9	9.7		9.6	14.7	
LOS	A	A		A	A		A	A		A	B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		5.4			9.3			9.5			14.1	
Approach LOS		A			A			A			B	
Queue Length 50th (ft)	0	10		9	47		7	69		9	80	
Queue Length 95th (ft)	m0	16		26	78		m22	127		28	153	
Internal Link Dist (ft)		1632			2320			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	274	1415		351	1418		253	745		352	745	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.23	0.35		0.18	0.45		0.16	0.49		0.19	0.65	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 2 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 9.6		Intersection LOS: A	
Intersection Capacity Utilization 60.3%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 10: Locust & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	429	24	58	513	79	38	282	52	63	423	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3511		1770	3468		1770	1819		1770	1849	
Flt Permitted	0.37	1.00		0.47	1.00		0.34	1.00		0.47	1.00	
Satd. Flow (perm)	684	3511		878	3468		634	1819		882	1849	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	466	26	63	558	86	41	307	57	68	460	24
RTOR Reduction (vph)	0	10	0	0	31	0	0	17	0	0	5	0
Lane Group Flow (vph)	63	482	0	63	613	0	41	347	0	68	479	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	274	1404		351	1387		254	728		353	740	
v/s Ratio Prot		0.14			c0.18			0.19			c0.26	
v/s Ratio Perm	0.09			0.07			0.06			0.08		
v/c Ratio	0.23	0.34		0.18	0.44		0.16	0.48		0.19	0.65	
Uniform Delay, d1	7.9	8.3		7.8	8.7		7.7	8.9		7.8	9.7	
Progression Factor	0.56	0.56		1.00	1.00		0.79	0.86		1.00	1.00	
Incremental Delay, d2	1.8	0.6		1.1	1.0		1.3	2.2		1.2	4.4	
Delay (s)	6.2	5.3		8.9	9.8		7.4	9.8		9.0	14.1	
Level of Service	A	A		A	A		A	A		A	B	
Approach Delay (s)		5.4			9.7			9.6			13.4	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

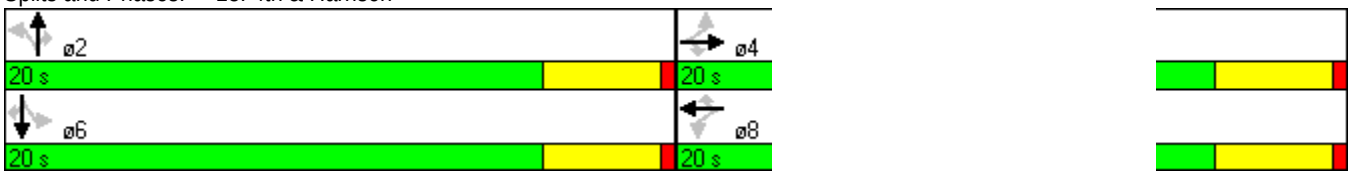
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	26	27	169	26	8	234	36	38	268	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.641			0.648			0.559			0.602		
Satd. Flow (perm)	1194	1863	1583	1207	1863	1583	1041	1863	1583	1121	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			28			28			39			78
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			1163			2656	
Travel Time (s)		48.0			38.9			22.7			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	28	29	184	28	9	254	39	41	291	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	173	28	29	184	28	9	254	39	41	291	78
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.06	0.23	0.04	0.06	0.25	0.04	0.02	0.34	0.06	0.09	0.39	0.11
Control Delay	7.8	9.0	3.9	3.9	4.5	1.2	4.9	6.4	1.7	4.9	7.9	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	9.0	3.9	3.9	4.5	1.2	4.9	6.4	1.7	4.9	7.9	2.2
LOS	A	A	A	A	A	A	A	A	A	A	A	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		8.3			4.1			5.7			6.5	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	3	24	0	2	12	0	1	22	1	3	42	3
Queue Length 95th (ft)	13	52	9	m5	24	m1	m4	42	5	m5	m56	m4
Internal Link Dist (ft)		2032			1632			1083			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	478	745	650	483	745	650	416	745	657	448	745	680
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.23	0.04	0.06	0.25	0.04	0.02	0.34	0.06	0.09	0.39	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 20 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.39			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 43.0%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 13: 4th & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	26	27	169	26	8	234	36	38	268	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.64	1.00	1.00	0.65	1.00	1.00	0.56	1.00	1.00	0.60	1.00	1.00
Satd. Flow (perm)	1195	1863	1583	1207	1863	1583	1041	1863	1583	1121	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	28	29	184	28	9	254	39	41	291	78
RTOR Reduction (vph)	0	0	17	0	0	17	0	0	23	0	0	47
Lane Group Flow (vph)	27	173	11	29	184	11	9	254	16	41	291	31
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	478	745	633	483	745	633	416	745	633	448	745	633
v/s Ratio Prot		0.09			c0.10			0.14			c0.16	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.01		0.01	0.04		0.02
v/c Ratio	0.06	0.23	0.02	0.06	0.25	0.02	0.02	0.34	0.02	0.09	0.39	0.05
Uniform Delay, d1	7.4	7.9	7.3	7.4	8.0	7.3	7.3	8.3	7.3	7.5	8.5	7.3
Progression Factor	1.00	1.00	1.00	0.47	0.45	0.29	0.65	0.59	0.44	0.58	0.74	0.70
Incremental Delay, d2	0.2	0.7	0.1	0.2	0.7	0.0	0.1	1.2	0.1	0.3	1.2	0.1
Delay (s)	7.6	8.7	7.3	3.7	4.4	2.1	4.8	6.2	3.3	4.7	7.6	5.3
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		8.4			4.0			5.7			6.8	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

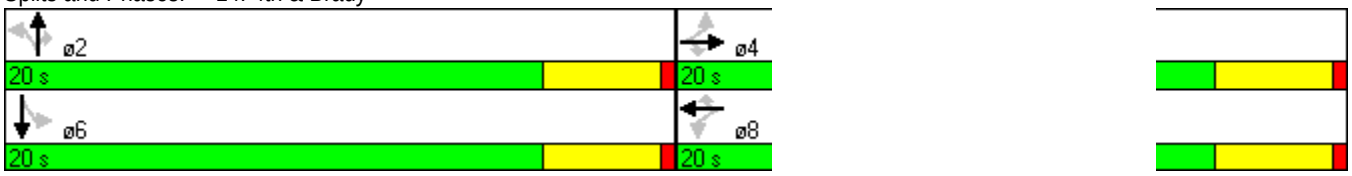
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	237	25	27	252	27	8	235	36	38	268	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1805	0
Flt Permitted	0.579			0.599			0.469			0.601		
Satd. Flow (perm)	1079	1863	1583	1116	1863	1583	874	1863	1583	1120	1805	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			39		40	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			1163			2656	
Travel Time (s)		38.9			53.1			22.7			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	258	27	29	274	29	9	255	39	41	291	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	258	27	29	274	29	9	255	39	41	368	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	
v/c Ratio	0.06	0.35	0.04	0.07	0.37	0.04	0.03	0.34	0.06	0.09	0.49	
Control Delay	7.1	9.5	3.3	8.0	10.3	3.9	4.6	6.3	1.6	4.3	7.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.1	9.5	3.3	8.0	10.3	3.9	4.6	6.3	1.6	4.3	7.3	
LOS	A	A	A	A	B	A	A	A	A	A	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		8.8			9.5			5.7			7.0	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	2	23	1	4	40	0	1	19	1	3	53	
Queue Length 95th (ft)	9	69	3	14	81	10	m3	37	4	m5	m71	
Internal Link Dist (ft)		1632			2256			1083			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	432	745	649	446	745	651	350	745	657	448	746	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.35	0.04	0.07	0.37	0.04	0.03	0.34	0.06	0.09	0.49	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 22 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 7.7		Intersection LOS: A	
Intersection Capacity Utilization 51.7%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 14: 4th & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	237	25	27	252	27	8	235	36	38	268	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1804	
Flt Permitted	0.58	1.00	1.00	0.60	1.00	1.00	0.47	1.00	1.00	0.60	1.00	
Satd. Flow (perm)	1079	1863	1583	1116	1863	1583	873	1863	1583	1120	1804	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	258	27	29	274	29	9	255	39	41	291	77
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	23	0	24	0
Lane Group Flow (vph)	28	258	11	29	274	12	9	255	16	41	344	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	432	745	633	446	745	633	349	745	633	448	722	
v/s Ratio Prot		0.14			c0.15			0.14			c0.19	
v/s Ratio Perm	0.03		0.01	0.03		0.01	0.01		0.01	0.04		
v/c Ratio	0.06	0.35	0.02	0.07	0.37	0.02	0.03	0.34	0.02	0.09	0.48	
Uniform Delay, d1	7.4	8.4	7.2	7.4	8.4	7.3	7.3	8.3	7.3	7.5	8.9	
Progression Factor	0.89	0.94	0.83	1.00	1.00	1.00	0.60	0.58	0.40	0.51	0.65	
Incremental Delay, d2	0.3	1.3	0.0	0.3	1.4	0.1	0.1	1.2	0.1	0.3	1.8	
Delay (s)	6.9	9.1	6.1	7.7	9.8	7.3	4.5	6.1	3.0	4.1	7.6	
Level of Service	A	A	A	A	A	A	A	A	A	A	A	
Approach Delay (s)		8.6			9.4			5.7			7.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

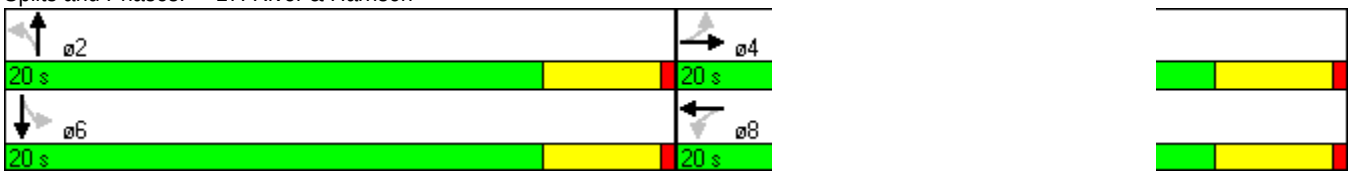
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	557	14	12	540	26	9	3	5	21	10	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.993			0.906			0.888	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1855	0	1770	1850	0	1770	1688	0	1770	1654	0
Flt Permitted	0.250			0.250			0.729			0.752		
Satd. Flow (perm)	466	1855	0	466	1850	0	1358	1688	0	1401	1654	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			7			5			32	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2016			1710			288			1848	
Travel Time (s)		45.8			38.9			5.6			36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	605	15	13	587	28	10	3	5	23	11	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	620	0	13	615	0	10	8	0	23	43	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.22	0.83		0.07	0.83		0.02	0.01		0.04	0.06	
Control Delay	11.5	24.3		2.4	14.9		7.4	5.9		4.6	2.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.5	24.3		2.4	14.9		7.4	5.9		4.6	2.0	
LOS	B	C		A	B		A	A		A	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		23.6			14.6			6.7			2.9	
Approach LOS		C			B			A			A	
Queue Length 50th (ft)	6	115		0	17		1	0		1	0	
Queue Length 95th (ft)	21	#272		m1	m#225		7	5		m5	3	
Internal Link Dist (ft)		1936			1630			208			1768	
Turn Bay Length (ft)												
Base Capacity (vph)	186	744		186	744		543	678		560	681	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.22	0.83		0.07	0.83		0.02	0.01		0.04	0.06	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 18.3		Intersection LOS: B	
Intersection Capacity Utilization 45.2%		ICU Level of Service A	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 17: River & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	557	14	12	540	26	9	3	5	21	10	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.91		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1856		1770	1850		1770	1688		1770	1655	
Flt Permitted	0.25	1.00		0.25	1.00		0.73	1.00		0.75	1.00	
Satd. Flow (perm)	466	1856		466	1850		1358	1688		1402	1655	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	605	15	13	587	28	10	3	5	23	11	32
RTOR Reduction (vph)	0	2	0	0	4	0	0	3	0	0	19	0
Lane Group Flow (vph)	40	618	0	13	611	0	10	5	0	23	24	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	186	742		186	740		543	675		561	662	
v/s Ratio Prot		c0.33			0.33			0.00			0.01	
v/s Ratio Perm	0.09			0.03			0.01			c0.02		
v/c Ratio	0.22	0.83		0.07	0.83		0.02	0.01		0.04	0.04	
Uniform Delay, d1	7.9	10.8		7.4	10.7		7.3	7.2		7.3	7.3	
Progression Factor	1.00	1.00		0.23	0.32		1.00	1.00		0.59	0.42	
Incremental Delay, d2	2.6	10.6		0.6	8.2		0.1	0.0		0.1	0.1	
Delay (s)	10.5	21.4		2.3	11.7		7.3	7.2		4.5	3.2	
Level of Service	B	C		A	B		A	A		A	A	
Approach Delay (s)		20.7			11.5			7.3			3.6	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

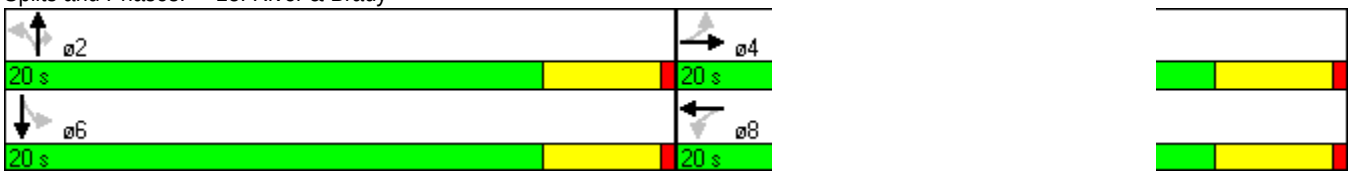
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	588	12	8	479	27	3	3	4	21	9	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.992				0.850		0.886	
Flt Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1770	1857	0	1770	1848	0	0	1818	1583	1770	1650	0
Flt Permitted	0.271			0.250				0.938		0.754		
Satd. Flow (perm)	505	1857	0	466	1848	0	0	1747	1583	1405	1650	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			8				4		32	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1710			6778			272			1848	
Travel Time (s)		38.9			154.0			5.3			36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	639	13	9	521	29	3	3	4	23	10	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	652	0	9	550	0	0	6	4	23	42	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	16.0	16.0		16.0	16.0			16.0	16.0	16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.40	0.40	0.40	0.40	
v/c Ratio	0.20	0.88		0.05	0.74			0.01	0.01	0.04	0.06	
Control Delay	3.0	16.9		5.0	16.3			7.3	5.5	4.8	2.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	3.0	16.9		5.0	16.3			7.3	5.5	4.8	2.2	
LOS	A	B		A	B			A	A	A	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		16.0			16.1			6.6			3.1	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	1	14		1	113			1	0	1	1	
Queue Length 95th (ft)	m1	m#34		m2	#240			5	4	m5	0	
Internal Link Dist (ft)		1630			6698			192			1768	
Turn Bay Length (ft)												
Base Capacity (vph)	202	745		186	744			699	636	562	679	
Starvation Cap Reductn	0	0		0	0			0	0	0	0	
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.20	0.88		0.05	0.74			0.01	0.01	0.04	0.06	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 15.4		Intersection LOS: B	
Intersection Capacity Utilization 48.3%		ICU Level of Service A	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 18: River & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	588	12	8	479	27	3	3	4	21	9	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99			1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1857		1770	1848			1817	1583	1770	1650	
Flt Permitted	0.27	1.00		0.25	1.00			0.94	1.00	0.75	1.00	
Satd. Flow (perm)	504	1857		466	1848			1747	1583	1404	1650	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	639	13	9	521	29	3	3	4	23	10	32
RTOR Reduction (vph)	0	2	0	0	5	0	0	0	2	0	19	0
Lane Group Flow (vph)	41	650	0	9	545	0	0	6	2	23	23	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0			16.0	16.0	16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0			16.0	16.0	16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.40	0.40	0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	202	743		186	739			699	633	562	660	
v/s Ratio Prot		c0.35			0.30						0.01	
v/s Ratio Perm	0.08			0.02				0.00	0.00	c0.02		
v/c Ratio	0.20	0.88		0.05	0.74			0.01	0.00	0.04	0.03	
Uniform Delay, d1	7.8	11.1		7.3	10.2			7.2	7.2	7.3	7.3	
Progression Factor	0.17	0.25		0.58	0.79			1.00	1.00	0.62	0.47	
Incremental Delay, d2	1.5	9.7		0.5	6.3			0.0	0.0	0.1	0.1	
Delay (s)	2.8	12.5		4.8	14.3			7.2	7.2	4.7	3.5	
Level of Service	A	B		A	B			A	A	A	A	
Approach Delay (s)		11.9			14.2			7.2			4.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

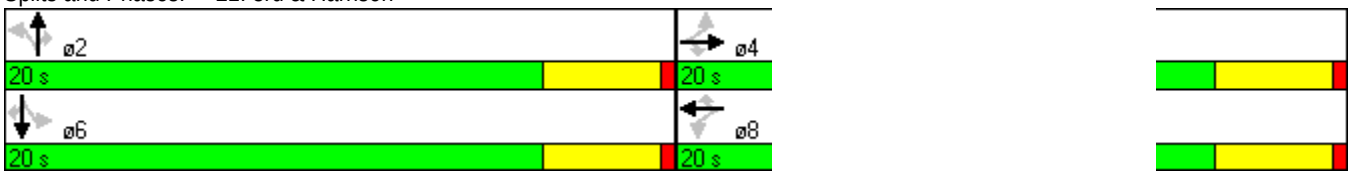
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	25	27	169	27	8	156	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.641			0.648			0.628			0.650		
Satd. Flow (perm)	1194	1863	1583	1207	1863	1583	1170	1863	1583	1211	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			40			77
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2089			1711			1848			1163	
Travel Time (s)		47.5			38.9			36.0			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	27	29	184	29	9	170	40	41	207	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	173	27	29	184	29	9	170	40	41	207	77
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.06	0.23	0.04	0.06	0.25	0.04	0.02	0.23	0.06	0.08	0.28	0.11
Control Delay	7.8	9.0	4.0	2.9	3.9	0.7	10.8	12.8	6.8	3.2	3.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	9.0	4.0	2.9	3.9	0.7	10.8	12.8	6.8	3.2	3.8	0.5
LOS	A	A	A	A	A	A	B	B	A	A	A	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		8.3			3.4			11.6			2.9	
Approach LOS		A			A			B			A	
Queue Length 50th (ft)	3	24	0	2	9	1	2	31	2	2	9	0
Queue Length 95th (ft)	13	52	9	m4	19	m1	m8	m62	m15	m5	19	1
Internal Link Dist (ft)		2009			1631			1768			1083	
Turn Bay Length (ft)												
Base Capacity (vph)	478	745	649	483	745	651	468	745	657	484	745	679
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.23	0.04	0.06	0.25	0.04	0.02	0.23	0.06	0.08	0.28	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 38.9%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 21: 3rd & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	25	27	169	27	8	156	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.64	1.00	1.00	0.65	1.00	1.00	0.63	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	1195	1863	1583	1207	1863	1583	1170	1863	1583	1210	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	27	29	184	29	9	170	40	41	207	77
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	24	0	0	46
Lane Group Flow (vph)	27	173	11	29	184	12	9	170	16	41	207	31
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	478	745	633	483	745	633	468	745	633	484	745	633
v/s Ratio Prot		0.09			c0.10			0.09			c0.11	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.01		0.01	0.03		0.02
v/c Ratio	0.06	0.23	0.02	0.06	0.25	0.02	0.02	0.23	0.03	0.08	0.28	0.05
Uniform Delay, d1	7.4	7.9	7.2	7.4	8.0	7.3	7.3	7.9	7.3	7.5	8.1	7.3
Progression Factor	1.00	1.00	1.00	0.35	0.37	0.14	1.44	1.46	1.94	0.37	0.34	0.07
Incremental Delay, d2	0.2	0.7	0.0	0.2	0.8	0.1	0.1	0.7	0.1	0.3	0.9	0.1
Delay (s)	7.6	8.7	7.3	2.8	3.7	1.1	10.5	12.3	14.2	3.1	3.6	0.7
Level of Service	A	A	A	A	A	A	B	B	B	A	A	A
Approach Delay (s)		8.4			3.3			12.5			2.9	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

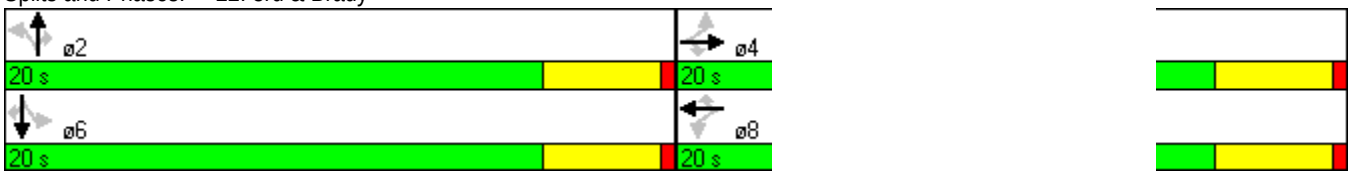
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	237	25	26	252	27	8	165	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.579			0.599			0.628			0.644		
Satd. Flow (perm)	1079	1863	1583	1116	1863	1583	1170	1863	1583	1200	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			40			77
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1711			6523			1848			1163	
Travel Time (s)		38.9			148.3			36.0			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	258	27	28	274	29	9	179	40	41	207	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	258	27	28	274	29	9	179	40	41	207	77
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.06	0.35	0.04	0.06	0.37	0.04	0.02	0.24	0.06	0.09	0.28	0.11
Control Delay	5.6	7.8	2.4	8.1	10.9	4.3	10.5	12.6	6.6	4.6	5.2	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	7.8	2.4	8.1	10.9	4.3	10.5	12.6	6.6	4.6	5.2	0.9
LOS	A	A	A	A	B	A	B	B	A	A	A	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		7.1			10.1			11.4			4.1	
Approach LOS		A			B			B			A	
Queue Length 50th (ft)	2	20	0	4	50	0	2	33	1	3	15	1
Queue Length 95th (ft)	9	43	4	17	99	13	m8	m66	m15	m6	27	m0
Internal Link Dist (ft)		1631			6443			1768			1083	
Turn Bay Length (ft)												
Base Capacity (vph)	432	745	649	446	745	651	468	745	657	480	745	679
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.35	0.04	0.06	0.37	0.04	0.02	0.24	0.06	0.09	0.28	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 8.0		Intersection LOS: A	
Intersection Capacity Utilization 43.3%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 22: 3rd & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	237	25	26	252	27	8	165	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.58	1.00	1.00	0.60	1.00	1.00	0.63	1.00	1.00	0.64	1.00	1.00
Satd. Flow (perm)	1079	1863	1583	1116	1863	1583	1170	1863	1583	1200	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	258	27	28	274	29	9	179	40	41	207	77
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	24	0	0	46
Lane Group Flow (vph)	27	258	11	28	274	12	9	179	16	41	207	31
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	432	745	633	446	745	633	468	745	633	480	745	633
v/s Ratio Prot		0.14			c0.15			0.10			c0.11	
v/s Ratio Perm	0.03		0.01	0.03		0.01	0.01		0.01	0.03		0.02
v/c Ratio	0.06	0.35	0.02	0.06	0.37	0.02	0.02	0.24	0.03	0.09	0.28	0.05
Uniform Delay, d1	7.4	8.4	7.2	7.4	8.4	7.3	7.3	8.0	7.3	7.5	8.1	7.3
Progression Factor	0.70	0.74	0.60	1.02	1.07	1.11	1.41	1.42	1.88	0.55	0.52	0.22
Incremental Delay, d2	0.3	1.3	0.0	0.3	1.4	0.1	0.1	0.8	0.1	0.3	0.9	0.1
Delay (s)	5.4	7.5	4.4	7.8	10.5	8.1	10.3	12.1	13.8	4.4	5.0	1.8
Level of Service	A	A	A	A	B	A	B	B	B	A	A	A
Approach Delay (s)		7.0			10.0			12.3			4.2	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Brady-Harrison Phase 1

Converted Two-Way Streets
2030 PM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		[redacted]		[redacted]	[redacted]		[redacted]		[redacted]	[redacted]	[redacted]	
Volume (vph)	0	422	49	65	265	0	32	0	0	145	1302	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.984									0.984	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3483	0	1770	1863	0	1770	0	1863	1770	3483	0
Flt Permitted				0.380			0.129			0.950		
Satd. Flow (perm)	0	3483	0	708	1863	0	240	0	1863	1770	3483	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23									39	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2320			1712			1008			640	
Travel Time (s)		52.7			38.9			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	459	53	71	288	0	35	0	0	158	1415	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	512	0	71	288	0	35	0	0	158	1589	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Minimum Split (s)		20.0		20.0	20.0		20.0		20.0	20.0	20.0	
Total Split (s)	0.0	20.0	0.0	20.0	20.0	0.0	35.0	0.0	35.0	35.0	35.0	0.0
Total Split (%)	0.0%	36.4%	0.0%	36.4%	36.4%	0.0%	63.6%	0.0%	63.6%	63.6%	63.6%	0.0%
Maximum Green (s)		16.0		16.0	16.0		31.0		31.0	31.0	31.0	
Yellow Time (s)		3.5		3.5	3.5		3.5		3.5	3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0		0	0	0	
Act Effct Green (s)		16.0		16.0	16.0		31.0			31.0	31.0	
Actuated g/C Ratio		0.29		0.29	0.29		0.56			0.56	0.56	
v/c Ratio		0.50		0.34	0.53		0.26			0.16	0.80	
Control Delay		17.4		10.6	10.4		9.5			6.3	13.4	
Queue Delay		0.0		0.0	0.0		0.0			0.0	0.0	
Total Delay		17.4		10.6	10.4		9.5			6.3	13.4	
LOS		B		B	B		A			A	B	
Approach Delay		17.4			10.4						12.8	
Approach LOS		B			B						B	
Queue Length 50th (ft)		68		9	35		6			22	186	
Queue Length 95th (ft)		107		m23	m93		m9			44	270	
Internal Link Dist (ft)		2240			1632			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)		1030		206	542		135			998	1980	
Starvation Cap Reductn		0		0	0		0			0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0		0			0	0	
Storage Cap Reductn		0		0	0		0			0	0	
Reduced v/c Ratio		0.50		0.34	0.53		0.26			0.16	0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 50 (91%), Referenced to phase 2:NBL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 13.3		Intersection LOS: B	
Intersection Capacity Utilization 67.9%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Central Park & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		[redacted]		[redacted]	[redacted]		[redacted]		[redacted]	[redacted]	[redacted]	
Volume (vph)	0	422	49	65	265	0	32	0	0	145	1302	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0			4.0	4.0	
Lane Util. Factor		0.95		1.00	1.00		1.00			1.00	0.95	
Frt		0.98		1.00	1.00		1.00			1.00	0.98	
Flt Protected		1.00		0.95	1.00		0.95			0.95	1.00	
Satd. Flow (prot)		3484		1770	1863		1770			1770	3481	
Flt Permitted		1.00		0.38	1.00		0.13			0.95	1.00	
Satd. Flow (perm)		3484		708	1863		240			1770	3481	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	459	53	71	288	0	35	0	0	158	1415	174
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	17	0
Lane Group Flow (vph)	0	496	0	71	288	0	35	0	0	158	1572	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Actuated Green, G (s)		16.0		16.0	16.0		31.0			31.0	31.0	
Effective Green, g (s)		16.0		16.0	16.0		31.0			31.0	31.0	
Actuated g/C Ratio		0.29		0.29	0.29		0.56			0.56	0.56	
Clearance Time (s)		4.0		4.0	4.0		4.0			4.0	4.0	
Lane Grp Cap (vph)		1014		206	542		135			998	1962	
v/s Ratio Prot		0.14			c0.15						c0.45	
v/s Ratio Perm				0.10			0.15			0.09		
v/c Ratio		0.49		0.34	0.53		0.26			0.16	0.80	
Uniform Delay, d1		16.1		15.4	16.4		6.1			5.7	9.5	
Progression Factor		1.00		0.43	0.44		1.07			1.00	1.00	
Incremental Delay, d2		1.7		3.7	3.1		2.0			0.3	3.6	
Delay (s)		17.8		10.3	10.3		8.6			6.1	13.1	
Level of Service		B		B	B		A			A	B	
Approach Delay (s)		17.8			10.3			8.6			12.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	274	355	5	7	263	108	77	1771	54	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.998			0.956			0.996				
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	1859	0	1770	3383	0	1770	3525	0	0	0	0
Flt Permitted	0.308			0.235			0.950					
Satd. Flow (perm)	574	1859	0	438	3383	0	1770	3525	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			43			5				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			1008			640	
Travel Time (s)		38.9			54.5			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	298	386	5	8	286	117	84	1925	59	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	298	391	0	8	403	0	84	1984	0	0	0	0
Turn Type	pm+pt			Perm			Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4			8			2					
Minimum Split (s)	9.0	21.0		21.0	21.0		21.0	21.0				
Total Split (s)	20.0	41.0	0.0	21.0	21.0	0.0	69.0	69.0	0.0	0.0	0.0	0.0
Total Split (%)	18.2%	37.3%	0.0%	19.1%	19.1%	0.0%	62.7%	62.7%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	16.5	37.5		17.5	17.5		65.5	65.5				
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0				
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5				
Lost Time Adjust (s)	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag			Lead	Lead							
Lead-Lag Optimize?	Yes			Yes	Yes							
Walk Time (s)		5.0		5.0	5.0		5.0	5.0				
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)		0		0	0		0	0				
Act Effct Green (s)	37.0	37.0		17.0	17.0		65.0	65.0				
Actuated g/C Ratio	0.34	0.34		0.15	0.15		0.59	0.59				
v/c Ratio	0.81	0.62		0.12	0.72		0.08	0.95				
Control Delay	50.6	30.0		44.9	47.6		8.3	29.1				
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				
Total Delay	50.6	30.0		44.9	47.6		8.3	29.1				
LOS	D	C		D	D		A	C				
Approach Delay		38.9			47.5			28.2				
Approach LOS		D			D			C				
Queue Length 50th (ft)	142	189		5	128		21	549				
Queue Length 95th (ft)	#262	256		21	183		m32	m#628				
Internal Link Dist (ft)		1632			2320			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)	367	626		68	559		1046	2085				
Starvation Cap Reductn	0	0		0	0		0	0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0				
Storage Cap Reductn	0	0		0	0		0	0				
Reduced v/c Ratio	0.81	0.62		0.12	0.72		0.08	0.95				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 90 (82%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 33.1		Intersection LOS: C	
Intersection Capacity Utilization 86.6%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 6: Central Park & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	274	355	5	7	263	108	77	1771	54	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	0.95				
Frt	1.00	1.00		1.00	0.96		1.00	1.00				
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00				
Satd. Flow (prot)	1770	1859		1770	3385		1770	3523				
Flt Permitted	0.31	1.00		0.24	1.00		0.95	1.00				
Satd. Flow (perm)	574	1859		438	3385		1770	3523				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	298	386	5	8	286	117	84	1925	59	0	0	0
RTOR Reduction (vph)	0	1	0	0	36	0	0	2	0	0	0	0
Lane Group Flow (vph)	298	390	0	8	367	0	84	1982	0	0	0	0
Turn Type	pm+pt			Perm			Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4			8			2					
Actuated Green, G (s)	37.5	37.5		17.5	17.5		65.5	65.5				
Effective Green, g (s)	37.0	37.0		17.0	17.0		65.0	65.0				
Actuated g/C Ratio	0.34	0.34		0.15	0.15		0.59	0.59				
Clearance Time (s)	3.5	3.5		3.5	3.5		3.5	3.5				
Lane Grp Cap (vph)	367	625		68	523		1046	2082				
v/s Ratio Prot	c0.12	0.21			0.11			c0.56				
v/s Ratio Perm	c0.15			0.02			0.05					
v/c Ratio	0.81	0.62		0.12	0.70		0.08	0.95				
Uniform Delay, d1	37.5	30.7		40.0	44.1		9.7	21.0				
Progression Factor	0.84	0.82		1.00	1.00		0.83	0.86				
Incremental Delay, d2	16.7	4.4		3.5	7.6		0.1	10.4				
Delay (s)	48.2	29.6		43.5	51.7		8.2	28.4				
Level of Service	D	C		D	D		A	C				
Approach Delay (s)		37.6			51.6			27.6			0.0	
Approach LOS		D			D			C			A	

Intersection Summary			
HCM Average Control Delay	32.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		

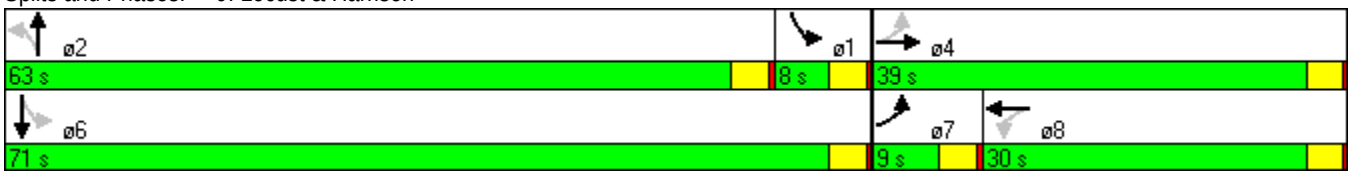
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	657	32	64	578	124	65	702	95	93	423	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.973			0.982			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3444	0	1770	1829	0	1770	1842	0
Flt Permitted	0.133			0.254			0.382			0.107		
Satd. Flow (perm)	248	3514	0	473	3444	0	712	1829	0	199	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			22			10			6	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2240			1712			2656			1008	
Travel Time (s)		50.9			38.9			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	714	35	70	628	135	71	763	103	101	460	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	749	0	70	763	0	71	866	0	101	495	0
Turn Type	pm+pt			Perm			Perm			pm+pt		
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	8.0	20.0		20.0	20.0		20.0	20.0		8.0	20.0	
Total Split (s)	9.0	39.0	0.0	30.0	30.0	0.0	63.0	63.0	0.0	8.0	71.0	0.0
Total Split (%)	8.2%	35.5%	0.0%	27.3%	27.3%	0.0%	57.3%	57.3%	0.0%	7.3%	64.5%	0.0%
Maximum Green (s)	5.5	35.5		26.5	26.5		59.5	59.5		4.5	67.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.5	0.5	0.5	0.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.0	4.5
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lag		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Walk Time (s)		5.0		5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0			0	
Act Effct Green (s)	35.0	35.0		26.0	26.0		59.0	59.0		67.0	67.0	
Actuated g/C Ratio	0.32	0.32		0.24	0.24		0.54	0.54		0.61	0.61	
v/c Ratio	0.90	0.67		0.62	0.92		0.19	0.88		0.57	0.44	
Control Delay	84.2	35.7		49.3	43.8		12.0	29.5		23.9	8.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	84.2	35.7		49.3	43.8		12.0	29.5		23.9	8.6	
LOS	F	D		D	D		B	C		C	A	
Approach Delay		43.1			44.3			28.1			11.2	
Approach LOS		D			D			C			B	
Queue Length 50th (ft)	69	238		32	178		25	419		26	172	
Queue Length 95th (ft)	#160	306		m51	#366		52	#766		m34	m231	
Internal Link Dist (ft)		2160			1632			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	148	1122		112	831		382	986		178	1124	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.90	0.67		0.63	0.92		0.19	0.88		0.57	0.44	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 90 (82%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 33.2		Intersection LOS: C	
Intersection Capacity Utilization 87.9%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 9: Locust & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	657	32	64	578	124	65	702	95	93	423	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3514		1770	3445		1770	1830		1770	1843	
Flt Permitted	0.13	1.00		0.25	1.00		0.38	1.00		0.11	1.00	
Satd. Flow (perm)	248	3514		473	3445		711	1830		199	1843	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	714	35	70	628	135	71	763	103	101	460	35
RTOR Reduction (vph)	0	3	0	0	17	0	0	5	0	0	2	0
Lane Group Flow (vph)	133	746	0	70	746	0	71	861	0	101	493	0
Turn Type	pm+pt			Perm			Perm			pm+pt		
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	35.5	35.5		26.5	26.5		59.5	59.5		67.5	67.5	
Effective Green, g (s)	35.0	35.0		26.0	26.0		59.0	59.0		67.0	67.0	
Actuated g/C Ratio	0.32	0.32		0.24	0.24		0.54	0.54		0.61	0.61	
Clearance Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	148	1118		112	814		381	982		178	1123	
v/s Ratio Prot	c0.04	0.21			0.22			c0.47		0.02	c0.27	
v/s Ratio Perm	c0.24			0.15			0.10			0.32		
v/c Ratio	0.90	0.67		0.62	0.92		0.19	0.88		0.57	0.44	
Uniform Delay, d1	33.9	32.5		37.6	40.9		13.1	22.3		40.2	11.5	
Progression Factor	1.00	1.00		0.74	0.73		0.80	0.80		0.71	0.68	
Incremental Delay, d2	50.9	3.2		18.5	13.6		1.0	10.7		7.8	0.8	
Delay (s)	84.9	35.6		46.3	43.7		11.5	28.5		36.4	8.5	
Level of Service	F	D		D	D		B	C		D	A	
Approach Delay (s)		43.0			43.9			27.2			13.2	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	33.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		

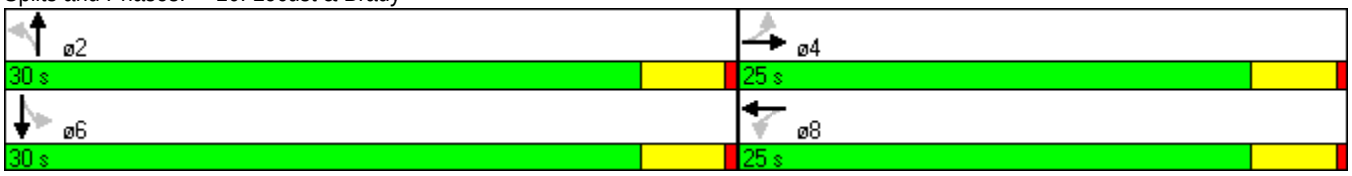
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	890	32	63	720	124	65	702	95	93	423	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.978			0.982			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3522	0	1770	3461	0	1770	1829	0	1770	1842	0
Flt Permitted	0.190			0.190			0.353			0.154		
Satd. Flow (perm)	354	3522	0	354	3461	0	658	1829	0	287	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			41			17			9	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			2656			1008	
Travel Time (s)		38.9			54.5			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	967	35	68	783	135	71	763	103	101	460	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	1002	0	68	918	0	71	866	0	101	495	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	25.0	25.0	0.0	25.0	25.0	0.0	30.0	30.0	0.0	30.0	30.0	0.0
Total Split (%)	45.5%	45.5%	0.0%	45.5%	45.5%	0.0%	54.5%	54.5%	0.0%	54.5%	54.5%	0.0%
Maximum Green (s)	21.0	21.0		21.0	21.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	21.0	21.0		21.0	21.0		26.0	26.0		26.0	26.0	
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.47	0.47		0.47	0.47	
v/c Ratio	0.99	0.74		0.50	0.68		0.23	0.99		0.74	0.57	
Control Delay	90.6	14.5		30.2	16.7		7.8	42.3		46.6	13.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	90.6	14.5		30.2	16.7		7.8	42.3		46.6	13.0	
LOS	F	B		C	B		A	D		D	B	
Approach Delay		23.4			17.6			39.7			18.7	
Approach LOS		C			B			D			B	
Queue Length 50th (ft)	45	123		16	121		8	286		25	104	
Queue Length 95th (ft)	m#200	m191		#66	177		m16	#568		#154	149	
Internal Link Dist (ft)		1632			2320			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	135	1350		135	1347		311	874		136	876	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.99	0.74		0.50	0.68		0.23	0.99		0.74	0.57	

Intersection Summary	
Area Type:	Other
Cycle Length: 55	
Actuated Cycle Length: 55	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 50	
Control Type: Pretimed	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 25.2	Intersection LOS: C
Intersection Capacity Utilization 91.8%	ICU Level of Service F
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 10: Locust & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	890	32	63	720	124	65	702	95	93	423	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3521		1770	3461		1770	1830		1770	1843	
Flt Permitted	0.19	1.00		0.19	1.00		0.35	1.00		0.15	1.00	
Satd. Flow (perm)	355	3521		355	3461		657	1830		287	1843	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	967	35	68	783	135	71	763	103	101	460	35
RTOR Reduction (vph)	0	5	0	0	25	0	0	9	0	0	5	0
Lane Group Flow (vph)	133	997	0	68	893	0	71	857	0	101	490	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	21.0	21.0		21.0	21.0		26.0	26.0		26.0	26.0	
Effective Green, g (s)	21.0	21.0		21.0	21.0		26.0	26.0		26.0	26.0	
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.47	0.47		0.47	0.47	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	136	1344		136	1321		311	865		136	871	
v/s Ratio Prot		0.28			0.26			c0.47			0.27	
v/s Ratio Perm	c0.37			0.19			0.11			0.35		
v/c Ratio	0.98	0.74		0.50	0.68		0.23	0.99		0.74	0.56	
Uniform Delay, d1	16.8	14.7		13.0	14.2		8.6	14.4		11.8	10.4	
Progression Factor	0.96	0.77		1.00	1.00		0.69	0.85		0.99	0.99	
Incremental Delay, d2	65.3	3.2		12.5	2.8		1.6	27.7		30.3	2.6	
Delay (s)	81.4	14.5		25.5	16.9		7.5	39.9		42.0	12.9	
Level of Service	F	B		C	B		A	D		D	B	
Approach Delay (s)		22.3			17.5			37.5			17.8	
Approach LOS		C			B			D			B	

Intersection Summary			
HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

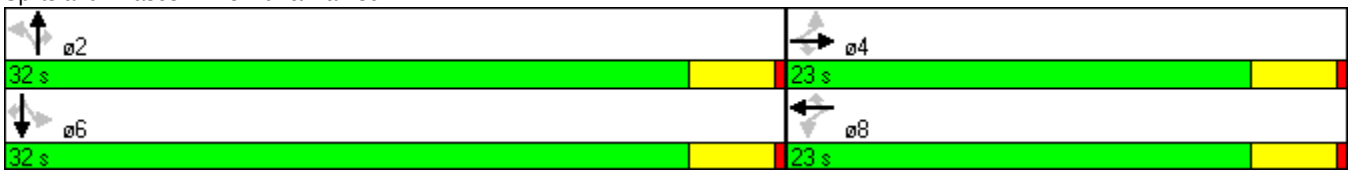
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	266	15	17	283	52	19	453	81	19	263	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.469			0.494			0.562			0.377		
Satd. Flow (perm)	874	1863	1583	920	1863	1583	1047	1863	1583	702	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			16			57			88			93
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			965			2656	
Travel Time (s)		48.0			38.9			18.8			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	289	16	18	308	57	21	492	88	21	286	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	289	16	18	308	57	21	492	88	21	286	93
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	32.0	32.0	32.0	32.0	32.0	32.0
Total Split (%)	41.8%	41.8%	41.8%	41.8%	41.8%	41.8%	58.2%	58.2%	58.2%	58.2%	58.2%	58.2%
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	28.0	28.0	28.0	28.0	28.0	28.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	28.0	28.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.35	0.35	0.51	0.51	0.51	0.51	0.51	0.51
v/c Ratio	0.17	0.45	0.03	0.06	0.48	0.10	0.04	0.52	0.10	0.06	0.30	0.11
Control Delay	14.4	16.7	6.7	17.3	19.0	8.0	4.4	9.9	1.4	4.8	6.2	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	16.7	6.7	17.3	19.0	8.0	4.4	9.9	1.4	4.8	6.2	1.2
LOS	B	B	A	B	B	A	A	A	A	A	A	A
Approach Delay		15.9			17.3			8.5			5.0	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	12	71	0	4	70	0	2	123	1	3	45	4
Queue Length 95th (ft)	33	129	10	m10	123	m15	m5	192	4	m5	54	m8
Internal Link Dist (ft)		2032			1632			885			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	302	644	557	318	644	584	533	948	849	357	948	852
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.45	0.03	0.06	0.48	0.10	0.04	0.52	0.10	0.06	0.30	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 26 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 11.1		Intersection LOS: B	
Intersection Capacity Utilization 52.1%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 13: 4th & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	266	15	17	283	52	19	453	81	19	263	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.47	1.00	1.00	0.49	1.00	1.00	0.56	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	874	1863	1583	921	1863	1583	1046	1863	1583	703	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	289	16	18	308	57	21	492	88	21	286	93
RTOR Reduction (vph)	0	0	10	0	0	37	0	0	43	0	0	46
Lane Group Flow (vph)	52	289	6	18	308	20	21	492	45	21	286	47
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	19.0	19.0	19.0	19.0	19.0	19.0	28.0	28.0	28.0	28.0	28.0	28.0
Effective Green, g (s)	19.0	19.0	19.0	19.0	19.0	19.0	28.0	28.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.35	0.35	0.51	0.51	0.51	0.51	0.51	0.51
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	302	644	547	318	644	547	533	948	806	358	948	806
v/s Ratio Prot		0.16			c0.17			c0.26			0.15	
v/s Ratio Perm	0.06		0.00	0.02		0.01	0.02		0.03	0.03		0.03
v/c Ratio	0.17	0.45	0.01	0.06	0.48	0.04	0.04	0.52	0.06	0.06	0.30	0.06
Uniform Delay, d1	12.5	13.9	11.8	12.0	14.1	11.9	6.8	9.0	6.8	6.8	7.8	6.8
Progression Factor	1.00	1.00	1.00	1.39	1.17	2.31	0.62	0.84	0.56	0.65	0.69	0.63
Incremental Delay, d2	1.2	2.3	0.0	0.3	2.2	0.1	0.1	2.0	0.1	0.3	0.7	0.1
Delay (s)	13.8	16.2	11.9	17.0	18.7	27.7	4.3	9.6	3.9	4.7	6.1	4.4
Level of Service	B	B	B	B	B	C	A	A	A	A	A	A
Approach Delay (s)		15.6			19.9			8.6			5.7	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	237	15	17	253	52	20	454	81	20	235	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.974			0.977			0.960	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1846	0	1770	1814	0	1770	1820	0	1770	1788	0
Flt Permitted	0.409			0.493			0.516			0.328		
Satd. Flow (perm)	762	1846	0	918	1814	0	961	1820	0	611	1788	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			20			26			53	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			965			2656	
Travel Time (s)		38.9			53.1			18.8			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	258	16	18	275	57	22	493	88	22	255	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	274	0	18	332	0	22	581	0	22	348	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	21.0	21.0	0.0	21.0	21.0	0.0	34.0	34.0	0.0	34.0	34.0	0.0
Total Split (%)	38.2%	38.2%	0.0%	38.2%	38.2%	0.0%	61.8%	61.8%	0.0%	61.8%	61.8%	0.0%
Maximum Green (s)	17.0	17.0		17.0	17.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	17.0	17.0		17.0	17.0		30.0	30.0		30.0	30.0	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.55	0.55		0.55	0.55	
v/c Ratio	0.22	0.48		0.06	0.58		0.04	0.58		0.07	0.35	
Control Delay	14.2	14.0		14.2	19.8		4.6	10.0		3.2	3.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.2	14.0		14.2	19.8		4.6	10.0		3.2	3.2	
LOS	B	B		B	B		A	B		A	A	
Approach Delay		14.1			19.5			9.8			3.2	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	7	36		4	84		2	138		1	13	
Queue Length 95th (ft)	22	78		16	153		m5	199		m2	m18	
Internal Link Dist (ft)		1632			2256			885			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	236	575		284	575		524	1005		333	999	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.22	0.48		0.06	0.58		0.04	0.58		0.07	0.35	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 54 (98%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 11.2		Intersection LOS: B	
Intersection Capacity Utilization 58.6%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 14: 4th & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	237	15	17	253	52	20	454	81	20	235	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1846		1770	1815		1770	1820		1770	1788	
Flt Permitted	0.41	1.00		0.49	1.00		0.52	1.00		0.33	1.00	
Satd. Flow (perm)	762	1846		918	1815		960	1820		611	1788	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	258	16	18	275	57	22	493	88	22	255	93
RTOR Reduction (vph)	0	4	0	0	14	0	0	12	0	0	24	0
Lane Group Flow (vph)	52	270	0	18	318	0	22	569	0	22	324	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.0	17.0		17.0	17.0		30.0	30.0		30.0	30.0	
Effective Green, g (s)	17.0	17.0		17.0	17.0		30.0	30.0		30.0	30.0	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.55	0.55		0.55	0.55	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	236	571		284	561		524	993		333	975	
v/s Ratio Prot		0.15			c0.18			c0.31			0.18	
v/s Ratio Perm	0.07			0.02			0.02			0.04		
v/c Ratio	0.22	0.47		0.06	0.57		0.04	0.57		0.07	0.33	
Uniform Delay, d1	14.1	15.4		13.4	15.9		5.8	8.3		5.9	6.9	
Progression Factor	0.83	0.74		1.00	1.00		0.76	0.95		0.48	0.41	
Incremental Delay, d2	2.0	2.7		0.4	4.1		0.1	2.3		0.3	0.8	
Delay (s)	13.8	14.1		13.8	20.0		4.6	10.2		3.2	3.6	
Level of Service	B	B		B	C		A	B		A	A	
Approach Delay (s)		14.0			19.7			9.9			3.6	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	744	17	14	610	23	29	9	33	68	23	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.995			0.883			0.896	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1857	0	1770	1853	0	1770	1645	0	1770	1669	0
Flt Permitted	0.282			0.193			0.704			0.727		
Satd. Flow (perm)	525	1857	0	360	1853	0	1311	1645	0	1354	1669	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			6			36			57	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2016			1700			288			1800	
Travel Time (s)		45.8			38.6			5.6			35.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	809	18	15	663	25	32	10	36	74	25	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	827	0	15	688	0	32	46	0	74	82	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	40.0	40.0	0.0	40.0	40.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	66.7%	66.7%	0.0%	66.7%	66.7%	0.0%	33.3%	33.3%	0.0%	33.3%	33.3%	0.0%
Maximum Green (s)	36.0	36.0		36.0	36.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	36.0	36.0		36.0	36.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.27	0.27		0.27	0.27	
v/c Ratio	0.22	0.74		0.07	0.62		0.09	0.10		0.20	0.17	
Control Delay	7.8	13.8		4.7	6.8		17.5	8.8		18.9	9.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.8	13.8		4.7	6.8		17.5	8.8		18.9	9.0	
LOS	A	B		A	A		B	A		B	A	
Approach Delay		13.3			6.8			12.3			13.7	
Approach LOS		B			A			B			B	
Queue Length 50th (ft)	10	186		2	71		9	3		21	7	
Queue Length 95th (ft)	29	318		m3	104		27	23		50	34	
Internal Link Dist (ft)		1936			1620			208			1720	
Turn Bay Length (ft)												
Base Capacity (vph)	315	1115		216	1114		350	465		361	487	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.22	0.74		0.07	0.62		0.09	0.10		0.20	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 26 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 10.8		Intersection LOS: B	
Intersection Capacity Utilization 64.0%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 17: River & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	744	17	14	610	23	29	9	33	68	23	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.88		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1857		1770	1853		1770	1644		1770	1669	
Flt Permitted	0.28	1.00		0.19	1.00		0.70	1.00		0.73	1.00	
Satd. Flow (perm)	525	1857		359	1853		1311	1644		1354	1669	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	809	18	15	663	25	32	10	36	74	25	57
RTOR Reduction (vph)	0	1	0	0	2	0	0	26	0	0	42	0
Lane Group Flow (vph)	70	826	0	15	686	0	32	20	0	74	40	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.0	36.0		36.0	36.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	36.0	36.0		36.0	36.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.27	0.27		0.27	0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	315	1114		215	1112		350	438		361	445	
v/s Ratio Prot		c0.44			0.37			0.01			0.02	
v/s Ratio Perm	0.13			0.04			0.02			c0.05		
v/c Ratio	0.22	0.74		0.07	0.62		0.09	0.04		0.20	0.09	
Uniform Delay, d1	5.5	8.6		5.0	7.6		16.5	16.3		17.1	16.5	
Progression Factor	1.00	1.00		0.78	0.58		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	4.5		0.5	2.2		0.5	0.2		1.3	0.4	
Delay (s)	7.2	13.1		4.4	6.6		17.1	16.5		18.3	16.9	
Level of Service	A	B		A	A		B	B		B	B	
Approach Delay (s)		12.6			6.5			16.7			17.6	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	728	23	23	593	23	16	9	24	67	22	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.994				0.850		0.896	
Flt Protected	0.950			0.950				0.969		0.950		
Satd. Flow (prot)	1770	1853	0	1770	1852	0	0	1805	1583	1770	1669	0
Flt Permitted	0.294			0.200				0.864		0.740		
Satd. Flow (perm)	548	1853	0	373	1852	0	0	1609	1583	1378	1669	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			6				26		55	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1700			6636			272			1800	
Travel Time (s)		38.6			150.8			5.3			35.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	791	25	25	645	25	17	10	26	73	24	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	816	0	25	670	0	0	27	26	73	79	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	
Total Split (s)	40.0	40.0	0.0	40.0	40.0	0.0	20.0	20.0	20.0	20.0	20.0	0.0
Total Split (%)	66.7%	66.7%	0.0%	66.7%	66.7%	0.0%	33.3%	33.3%	33.3%	33.3%	33.3%	0.0%
Maximum Green (s)	36.0	36.0		36.0	36.0		16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	36.0	36.0		36.0	36.0			16.0	16.0	16.0	16.0	
Actuated g/C Ratio	0.60	0.60		0.60	0.60			0.27	0.27	0.27	0.27	
v/c Ratio	0.21	0.73		0.11	0.60			0.06	0.06	0.20	0.16	
Control Delay	4.5	6.8		6.7	10.3			17.0	8.0	18.8	9.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	4.5	6.8		6.7	10.3			17.0	8.0	18.8	9.0	
LOS	A	A		A	B			B	A	B	A	
Approach Delay		6.6			10.2			12.6			13.7	
Approach LOS		A			B			B			B	
Queue Length 50th (ft)	5	55		3	130			7	0	20	6	
Queue Length 95th (ft)	m9	98		13	217			23	15	49	34	
Internal Link Dist (ft)		1620			6556			192			1720	
Turn Bay Length (ft)												
Base Capacity (vph)	329	1114		224	1114			429	441	367	485	
Starvation Cap Reductn	0	0		0	0			0	0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.21	0.73		0.11	0.60			0.06	0.06	0.20	0.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 8.8		Intersection LOS: A	
Intersection Capacity Utilization 63.4%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 18: River & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	728	23	23	593	23	16	9	24	67	22	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99			1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1854		1770	1852			1806	1583	1770	1668	
Flt Permitted	0.29	1.00		0.20	1.00			0.86	1.00	0.74	1.00	
Satd. Flow (perm)	547	1854		372	1852			1609	1583	1378	1668	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	791	25	25	645	25	17	10	26	73	24	55
RTOR Reduction (vph)	0	2	0	0	2	0	0	0	19	0	40	0
Lane Group Flow (vph)	70	814	0	25	668	0	0	27	7	73	39	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	36.0	36.0		36.0	36.0			16.0	16.0	16.0	16.0	
Effective Green, g (s)	36.0	36.0		36.0	36.0			16.0	16.0	16.0	16.0	
Actuated g/C Ratio	0.60	0.60		0.60	0.60			0.27	0.27	0.27	0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	328	1112		223	1111			429	422	367	445	
v/s Ratio Prot		c0.44			0.36						0.02	
v/s Ratio Perm	0.13			0.07				0.02	0.00	c0.05		
v/c Ratio	0.21	0.73		0.11	0.60			0.06	0.02	0.20	0.09	
Uniform Delay, d1	5.5	8.6		5.1	7.5			16.4	16.2	17.0	16.5	
Progression Factor	0.56	0.40		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	3.1		1.0	2.4			0.3	0.1	1.2	0.4	
Delay (s)	4.2	6.6		6.2	9.9			16.7	16.3	18.3	16.9	
Level of Service	A	A		A	A			B	B	B	B	
Approach Delay (s)		6.4			9.8			16.5			17.5	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

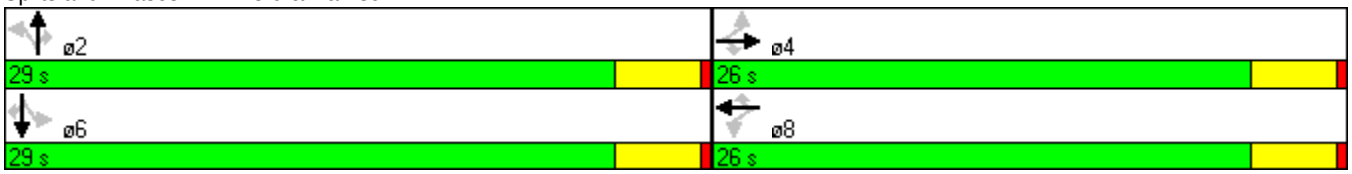
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	266	16	16	284	51	19	317	81	19	145	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.498			0.522			0.657			0.485		
Satd. Flow (perm)	928	1863	1583	972	1863	1583	1224	1863	1583	903	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			17			55			88			93
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2072			1708			1800			965	
Travel Time (s)		47.1			38.8			35.1			18.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	289	17	17	309	55	21	345	88	21	158	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	289	17	17	309	55	21	345	88	21	158	93
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	47.3%	47.3%	47.3%	47.3%	47.3%	47.3%	52.7%	52.7%	52.7%	52.7%	52.7%	52.7%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	25.0	25.0	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.45	0.45	0.45	0.45	0.45	0.45
v/c Ratio	0.14	0.39	0.03	0.04	0.41	0.08	0.04	0.41	0.11	0.05	0.19	0.12
Control Delay	11.8	13.7	5.6	12.4	13.5	5.2	8.6	11.9	2.9	4.7	6.0	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	13.7	5.6	12.4	13.5	5.2	8.6	11.9	2.9	4.7	6.0	3.3
LOS	B	B	A	B	B	A	A	B	A	A	A	A
Approach Delay		13.0			12.3			10.0			5.0	
Approach LOS		B			B			B			A	
Queue Length 50th (ft)	11	64	0	3	50	0	4	71	0	4	39	0
Queue Length 95th (ft)	30	116	9	m9	104	m13	13	125	19	9	54	22
Internal Link Dist (ft)		1992			1628			1720			885	
Turn Bay Length (ft)												
Base Capacity (vph)	371	745	643	389	745	666	556	847	768	410	847	770
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.39	0.03	0.04	0.41	0.08	0.04	0.41	0.11	0.05	0.19	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 10.4		Intersection LOS: B	
Intersection Capacity Utilization 45.0%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 21: 3rd & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	266	16	16	284	51	19	317	81	19	145	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.50	1.00	1.00	0.52	1.00	1.00	0.66	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)	928	1863	1583	972	1863	1583	1223	1863	1583	903	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	289	17	17	309	55	21	345	88	21	158	93
RTOR Reduction (vph)	0	0	10	0	0	33	0	0	48	0	0	51
Lane Group Flow (vph)	53	289	7	17	309	22	21	345	40	21	158	42
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	22.0	22.0	22.0	22.0	22.0	22.0	25.0	25.0	25.0	25.0	25.0	25.0
Effective Green, g (s)	22.0	22.0	22.0	22.0	22.0	22.0	25.0	25.0	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.45	0.45	0.45	0.45	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	371	745	633	389	745	633	556	847	720	410	847	720
v/s Ratio Prot		0.16			c0.17			c0.19			0.08	
v/s Ratio Perm	0.06		0.00	0.02		0.01	0.02		0.03	0.02		0.03
v/c Ratio	0.14	0.39	0.01	0.04	0.41	0.03	0.04	0.41	0.06	0.05	0.19	0.06
Uniform Delay, d1	10.5	11.7	9.9	10.1	11.9	10.0	8.3	10.0	8.4	8.4	8.9	8.4
Progression Factor	1.00	1.00	1.00	1.20	0.99	1.76	1.00	1.00	1.00	0.53	0.60	1.65
Incremental Delay, d2	0.8	1.5	0.0	0.2	1.6	0.1	0.1	1.5	0.1	0.2	0.5	0.2
Delay (s)	11.3	13.2	10.0	12.2	13.3	17.8	8.5	11.5	8.5	4.7	5.9	14.0
Level of Service	B	B	A	B	B	B	A	B	A	A	A	B
Approach Delay (s)		12.8			13.9			10.8			8.6	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

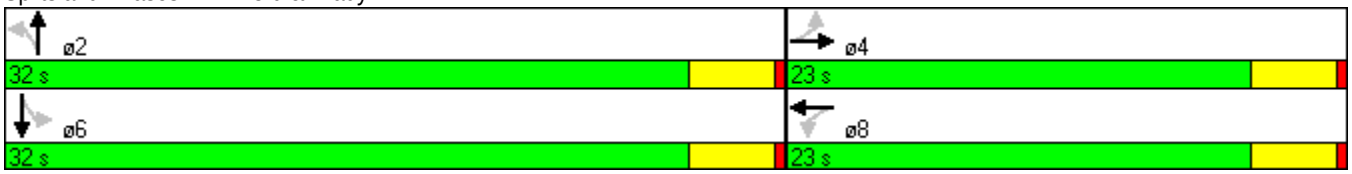
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	237	16	16	253	52	19	345	81	19	145	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.974			0.971			0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1846	0	1770	1814	0	1770	1809	0	1770	1758	0
Flt Permitted	0.438			0.513			0.595			0.402		
Satd. Flow (perm)	816	1846	0	956	1814	0	1108	1809	0	749	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			21			31			78	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1708			6387			1800			965	
Travel Time (s)		38.8			145.2			35.1			18.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	258	17	17	275	57	21	375	88	21	158	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	275	0	17	332	0	21	463	0	21	251	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	23.0	23.0	0.0	23.0	23.0	0.0	32.0	32.0	0.0	32.0	32.0	0.0
Total Split (%)	41.8%	41.8%	0.0%	41.8%	41.8%	0.0%	58.2%	58.2%	0.0%	58.2%	58.2%	0.0%
Maximum Green (s)	19.0	19.0		19.0	19.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	19.0	19.0		19.0	19.0		28.0	28.0		28.0	28.0	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.51	0.51		0.51	0.51	
v/c Ratio	0.19	0.43		0.05	0.52		0.04	0.49		0.06	0.27	
Control Delay	9.8	10.2		12.7	16.9		7.1	10.5		5.7	5.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.8	10.2		12.7	16.9		7.1	10.5		5.7	5.7	
LOS	A	B		B	B		A	B		A	A	
Approach Delay		10.1			16.7			10.3			5.7	
Approach LOS		B			B			B			A	
Queue Length 50th (ft)	7	33		4	78		3	83		4	53	
Queue Length 95th (ft)	15	53		15	143		12	148		m9	66	
Internal Link Dist (ft)		1628			6307			1720			885	
Turn Bay Length (ft)												
Base Capacity (vph)	282	642		330	640		564	936		381	933	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.19	0.43		0.05	0.52		0.04	0.49		0.06	0.27	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 28 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 11.0		Intersection LOS: B	
Intersection Capacity Utilization 52.9%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 22: 3rd & Brady



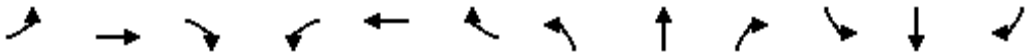
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	237	16	16	253	52	19	345	81	19	145	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1845		1770	1815		1770	1810		1770	1759	
Flt Permitted	0.44	1.00		0.51	1.00		0.60	1.00		0.40	1.00	
Satd. Flow (perm)	816	1845		955	1815		1109	1810		749	1759	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	258	17	17	275	57	21	375	88	21	158	93
RTOR Reduction (vph)	0	5	0	0	14	0	0	15	0	0	38	0
Lane Group Flow (vph)	53	270	0	17	318	0	21	448	0	21	213	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	19.0	19.0		19.0	19.0		28.0	28.0		28.0	28.0	
Effective Green, g (s)	19.0	19.0		19.0	19.0		28.0	28.0		28.0	28.0	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.51	0.51		0.51	0.51	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	282	637		330	627		565	921		381	895	
v/s Ratio Prot		0.15			c0.18			c0.25			0.12	
v/s Ratio Perm	0.06			0.02			0.02			0.03		
v/c Ratio	0.19	0.42		0.05	0.51		0.04	0.49		0.06	0.24	
Uniform Delay, d1	12.6	13.8		12.0	14.3		6.8	8.8		6.8	7.5	
Progression Factor	0.64	0.60		1.00	1.00		1.00	1.00		0.78	0.95	
Incremental Delay, d2	1.4	2.0		0.3	2.9		0.1	1.8		0.3	0.6	
Delay (s)	9.5	10.3		12.3	17.2		6.9	10.6		5.6	7.8	
Level of Service	A	B		B	B		A	B		A	A	
Approach Delay (s)		10.1			17.0			10.5			7.6	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Brady-Harrison Phase 1

Converted Two-Way Streets
Imbalanced Cross-Sections
2030 AM Peak Hour Traffic

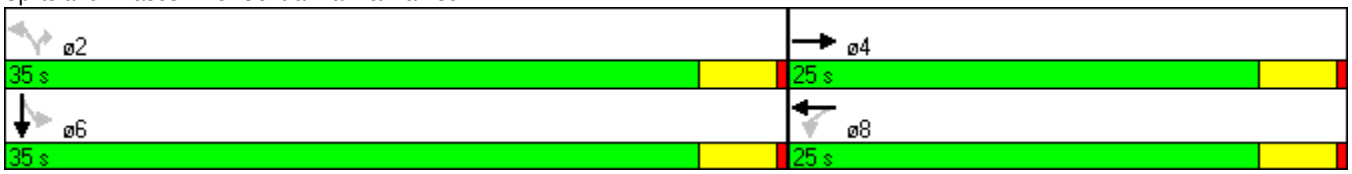


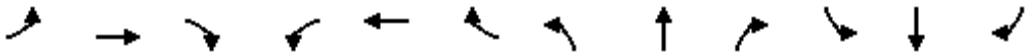
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	296	49	5	148	0	32	0	84	187	899	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.981							0.850		0.987	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	1827	0	1770	1863	0	1770	0	1583	1770	3493	0
Flt Permitted				0.378			0.188			0.950		
Satd. Flow (perm)	0	1827	0	704	1863	0	350	0	1583	1770	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15							91		24	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2320			1712			1008			640	
Travel Time (s)		52.7			38.9			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	322	53	5	161	0	35	0	91	203	977	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	375	0	5	161	0	35	0	91	203	1069	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Minimum Split (s)		20.0		20.0	20.0		20.0		20.0	20.0	20.0	
Total Split (s)	0.0	25.0	0.0	25.0	25.0	0.0	35.0	0.0	35.0	35.0	35.0	0.0
Total Split (%)	0.0%	41.7%	0.0%	41.7%	41.7%	0.0%	58.3%	0.0%	58.3%	58.3%	58.3%	0.0%
Maximum Green (s)		21.0		21.0	21.0		31.0		31.0	31.0	31.0	
Yellow Time (s)		3.5		3.5	3.5		3.5		3.5	3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0		0	0	0	
Act Effct Green (s)		21.0		21.0	21.0		31.0		31.0	31.0	31.0	
Actuated g/C Ratio		0.35		0.35	0.35		0.52		0.52	0.52	0.52	
v/c Ratio		0.58		0.02	0.25		0.19		0.11	0.22	0.59	
Control Delay		19.5		17.0	17.4		12.6		5.0	8.7	11.5	
Queue Delay		0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay		19.5		17.0	17.4		12.6		5.0	8.7	11.5	
LOS		B		B	B		B		A	A	B	
Approach Delay		19.5			17.4						11.0	
Approach LOS		B			B						B	
Queue Length 50th (ft)		103		1	36		8		3	37	126	
Queue Length 95th (ft)		179		m5	86		m22		23	69	177	
Internal Link Dist (ft)		2240			1632			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)		649		246	652		181		862	915	1816	
Starvation Cap Reductn		0		0	0		0		0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0		0		0	0	0	
Storage Cap Reductn		0		0	0		0		0	0	0	
Reduced v/c Ratio		0.58		0.02	0.25		0.19		0.11	0.22	0.59	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 40 (67%), Referenced to phase 2:NBL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 13.0		Intersection LOS: B	
Intersection Capacity Utilization 52.8%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Central Park & Harrison

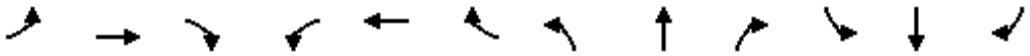




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	296	49	5	148	0	32	0	84	187	899	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00		1.00	1.00	0.95	
Frt		0.98		1.00	1.00		1.00		0.85	1.00	0.99	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		1827		1770	1863		1770		1583	1770	3494	
Flt Permitted		1.00		0.38	1.00		0.19		1.00	0.95	1.00	
Satd. Flow (perm)		1827		704	1863		351		1583	1770	3494	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	322	53	5	161	0	35	0	91	203	977	92
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	44	0	12	0
Lane Group Flow (vph)	0	365	0	5	161	0	35	0	47	203	1057	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Actuated Green, G (s)		21.0		21.0	21.0		31.0		31.0	31.0	31.0	
Effective Green, g (s)		21.0		21.0	21.0		31.0		31.0	31.0	31.0	
Actuated g/C Ratio		0.35		0.35	0.35		0.52		0.52	0.52	0.52	
Clearance Time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)		639		246	652		181		818	915	1805	
v/s Ratio Prot		c0.20			0.09						c0.30	
v/s Ratio Perm				0.01			0.10		0.03	0.11		
v/c Ratio		0.57		0.02	0.25		0.19		0.06	0.22	0.59	
Uniform Delay, d1		15.8		12.8	13.9		7.8		7.2	7.9	10.1	
Progression Factor		1.00		1.30	1.16		1.18		2.19	1.00	1.00	
Incremental Delay, d2		3.7		0.1	0.9		2.2		0.1	0.6	1.4	
Delay (s)		19.5		16.7	17.0		11.4		15.9	8.5	11.5	
Level of Service		B		B	B		B		B	A	B	
Approach Delay (s)		19.5			17.0			14.7			11.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



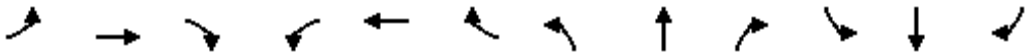
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	328	245	5	45	179	76	32	653	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	1.00	1.00	1.00
Frt		0.997			0.955			0.996				
Flt Protected	0.950			0.950				0.998				
Satd. Flow (prot)	1770	1857	0	1770	1779	0	0	5055	0	0	0	0
Flt Permitted	0.576			0.582				0.998				
Satd. Flow (perm)	1073	1857	0	1084	1779	0	0	5055	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			45			7				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			1008			640	
Travel Time (s)		38.9			54.5			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	357	266	5	49	195	83	35	710	21	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	357	271	0	49	278	0	0	766	0	0	0	0
Turn Type	Perm			Perm			Perm					
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0				
Total Split (s)	38.0	38.0	0.0	38.0	38.0	0.0	22.0	22.0	0.0	0.0	0.0	0.0
Total Split (%)	63.3%	63.3%	0.0%	63.3%	63.3%	0.0%	36.7%	36.7%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	34.0	34.0		34.0	34.0		18.0	18.0				
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5				
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)	0	0		0	0		0	0				
Act Effct Green (s)	34.0	34.0		34.0	34.0			18.0				
Actuated g/C Ratio	0.57	0.57		0.57	0.57			0.30				
v/c Ratio	0.59	0.26		0.08	0.27			0.50				
Control Delay	9.2	3.8		6.4	6.3			14.3				
Queue Delay	0.0	0.0		0.0	0.0			0.0				
Total Delay	9.2	3.8		6.4	6.3			14.3				
LOS	A	A		A	A			B				
Approach Delay		6.9			6.3			14.3				
Approach LOS		A			A			B				
Queue Length 50th (ft)	29	21		7	37			47				
Queue Length 95th (ft)	43	34		19	71			93				
Internal Link Dist (ft)		1632			2320			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)	608	1054		614	1028			1521				
Starvation Cap Reductn	0	0		0	0			0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0			0				
Storage Cap Reductn	0	0		0	0			0				
Reduced v/c Ratio	0.59	0.26		0.08	0.27			0.50				

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 32 (53%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Pretimed			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 55.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: Central Park & Brady

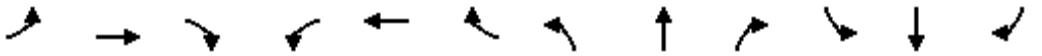




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	328	245	5	45	179	76	32	653	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0				
Lane Util. Factor	1.00	1.00		1.00	1.00			0.91				
Frt	1.00	1.00		1.00	0.96			1.00				
Flt Protected	0.95	1.00		0.95	1.00			1.00				
Satd. Flow (prot)	1770	1858		1770	1779			5053				
Flt Permitted	0.58	1.00		0.58	1.00			1.00				
Satd. Flow (perm)	1073	1858		1084	1779			5053				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	357	266	5	49	195	83	35	710	21	0	0	0
RTOR Reduction (vph)	0	1	0	0	20	0	0	5	0	0	0	0
Lane Group Flow (vph)	357	270	0	49	259	0	0	761	0	0	0	0
Turn Type	Perm			Perm			Perm					
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Actuated Green, G (s)	34.0	34.0		34.0	34.0			18.0				
Effective Green, g (s)	34.0	34.0		34.0	34.0			18.0				
Actuated g/C Ratio	0.57	0.57		0.57	0.57			0.30				
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0				
Lane Grp Cap (vph)	608	1053		614	1008			1516				
v/s Ratio Prot		0.15			0.15							
v/s Ratio Perm	c0.33			0.05				0.15				
v/c Ratio	0.59	0.26		0.08	0.26			0.50				
Uniform Delay, d1	8.4	6.6		5.9	6.6			17.3				
Progression Factor	0.57	0.49		1.00	1.00			0.76				
Incremental Delay, d2	3.9	0.6		0.3	0.6			1.1				
Delay (s)	8.7	3.8		6.2	7.2			14.2				
Level of Service	A	A		A	A			B				
Approach Delay (s)		6.6			7.0			14.2			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

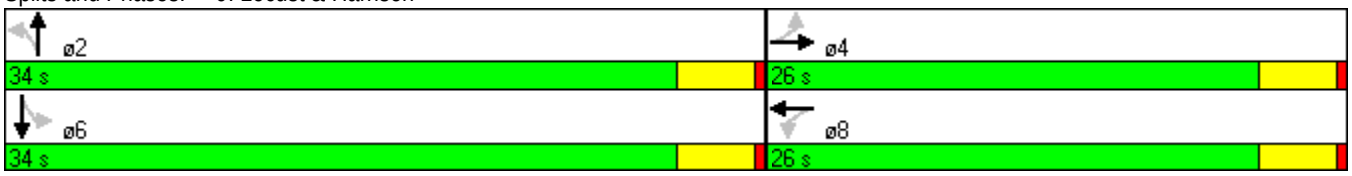


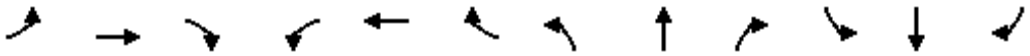
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	601	24	117	382	79	23	222	116	264	598	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.994			0.974			0.949			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3447	0	1770	1768	0	1770	3504	0
Flt Permitted	0.415			0.297			0.340			0.476		
Satd. Flow (perm)	773	3518	0	553	3447	0	633	1768	0	887	3504	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			46			63			17	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2240			1712			2656			1008	
Travel Time (s)		50.9			38.9			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	653	26	127	415	86	25	241	126	287	650	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	679	0	127	501	0	25	367	0	287	695	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	26.0	26.0	0.0	26.0	26.0	0.0	34.0	34.0	0.0	34.0	34.0	0.0
Total Split (%)	43.3%	43.3%	0.0%	43.3%	43.3%	0.0%	56.7%	56.7%	0.0%	56.7%	56.7%	0.0%
Maximum Green (s)	22.0	22.0		22.0	22.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	22.0	22.0		22.0	22.0		30.0	30.0		30.0	30.0	
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.50	0.50		0.50	0.50	
v/c Ratio	0.22	0.52		0.63	0.39		0.08	0.40		0.65	0.39	
Control Delay	15.7	16.5		30.0	10.5		4.7	4.6		9.7	2.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.7	16.5		30.0	10.5		4.7	4.6		9.7	2.6	
LOS	B	B		C	B		A	A		A	A	
Approach Delay		16.5			14.5			4.6			4.7	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	15	97		39	67		2	23		12	13	
Queue Length 95th (ft)	41	142		#113	105		m7	41		#165	18	
Internal Link Dist (ft)		2160			1632			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	283	1294		203	1293		317	916		444	1761	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.22	0.52		0.63	0.39		0.08	0.40		0.65	0.39	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 58 (97%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 70.6%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 9: Locust & Harrison

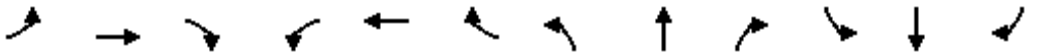




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	601	24	117	382	79	23	222	116	264	598	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	0.95	
Frt	1.00	0.99		1.00	0.97		1.00	0.95		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3519		1770	3448		1770	1767		1770	3505	
Flt Permitted	0.41	1.00		0.30	1.00		0.34	1.00		0.48	1.00	
Satd. Flow (perm)	772	3519		553	3448		634	1767		887	3505	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	653	26	127	415	86	25	241	126	287	650	45
RTOR Reduction (vph)	0	4	0	0	29	0	0	32	0	0	9	0
Lane Group Flow (vph)	63	675	0	127	472	0	25	336	0	287	687	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.0	22.0		22.0	22.0		30.0	30.0		30.0	30.0	
Effective Green, g (s)	22.0	22.0		22.0	22.0		30.0	30.0		30.0	30.0	
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.50	0.50		0.50	0.50	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	283	1290		203	1264		317	884		444	1753	
v/s Ratio Prot		0.19			0.14			0.19			0.20	
v/s Ratio Perm	0.08			c0.23			0.04			c0.32		
v/c Ratio	0.22	0.52		0.63	0.37		0.08	0.38		0.65	0.39	
Uniform Delay, d1	13.1	14.9		15.6	13.9		7.8	9.3		11.1	9.3	
Progression Factor	1.00	1.00		0.83	0.75		0.52	0.42		0.28	0.22	
Incremental Delay, d2	1.8	1.5		13.3	0.8		0.5	1.2		5.8	0.5	
Delay (s)	14.9	16.4		26.3	11.3		4.5	5.1		9.0	2.6	
Level of Service	B	B		C	B		A	A		A	A	
Approach Delay (s)		16.3			14.3			5.0			4.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



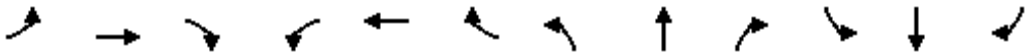
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	201	429	149	58	513	58	53	341	73	13	100	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.961			0.985			0.974			0.956	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3401	0	1770	3486	0	1770	3447	0	1770	1781	0
Flt Permitted	0.398			0.394			0.658			0.419		
Satd. Flow (perm)	741	3401	0	734	3486	0	1226	3447	0	780	1781	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		138			34			42			35	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			2656			1008	
Travel Time (s)		38.9			54.5			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	218	466	162	63	558	63	58	371	79	14	109	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	218	628	0	63	621	0	58	450	0	14	154	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	39.0	39.0	0.0	39.0	39.0	0.0	21.0	21.0	0.0	21.0	21.0	0.0
Total Split (%)	65.0%	65.0%	0.0%	65.0%	65.0%	0.0%	35.0%	35.0%	0.0%	35.0%	35.0%	0.0%
Maximum Green (s)	35.0	35.0		35.0	35.0		17.0	17.0		17.0	17.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	35.0	35.0		35.0	35.0		17.0	17.0		17.0	17.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.28	0.28		0.28	0.28	
v/c Ratio	0.50	0.31		0.15	0.30		0.17	0.45		0.06	0.29	
Control Delay	11.2	4.2		6.8	6.4		12.0	11.6		14.7	12.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.2	4.2		6.8	6.4		12.0	11.6		14.7	12.8	
LOS	B	A		A	A		B	B		B	B	
Approach Delay		6.0			6.5			11.7			13.0	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	29	14		9	48		10	35		4	33	
Queue Length 95th (ft)	m84	39		25	73		26	58		m15	73	
Internal Link Dist (ft)		1632			2320			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	432	2041		428	2048		347	1007		221	530	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.50	0.31		0.15	0.30		0.17	0.45		0.06	0.29	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 24 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Pretimed			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 8.0		Intersection LOS: A	
Intersection Capacity Utilization 55.6%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 10: Locust & Brady

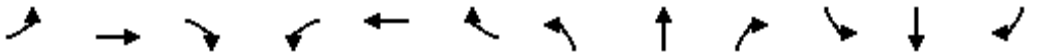




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	201	429	149	58	513	58	53	341	73	13	100	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3402		1770	3485		1770	3446		1770	1781	
Flt Permitted	0.40	1.00		0.39	1.00		0.66	1.00		0.42	1.00	
Satd. Flow (perm)	742	3402		735	3485		1226	3446		781	1781	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	218	466	162	63	558	63	58	371	79	14	109	45
RTOR Reduction (vph)	0	58	0	0	14	0	0	30	0	0	25	0
Lane Group Flow (vph)	218	571	0	63	607	0	58	420	0	14	129	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	35.0	35.0		35.0	35.0		17.0	17.0		17.0	17.0	
Effective Green, g (s)	35.0	35.0		35.0	35.0		17.0	17.0		17.0	17.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.28	0.28		0.28	0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	433	1985		429	2033		347	976		221	505	
v/s Ratio Prot		0.17			0.17			c0.12			0.07	
v/s Ratio Perm	c0.29			0.09			0.05			0.02		
v/c Ratio	0.50	0.29		0.15	0.30		0.17	0.43		0.06	0.26	
Uniform Delay, d1	7.4	6.3		5.7	6.3		16.2	17.5		15.7	16.6	
Progression Factor	0.91	0.79		1.00	1.00		0.65	0.63		0.87	0.86	
Incremental Delay, d2	3.5	0.3		0.7	0.4		1.0	1.4		0.6	1.2	
Delay (s)	10.2	5.2		6.4	6.7		11.6	12.5		14.2	15.5	
Level of Service	B	A		A	A		B	B		B	B	
Approach Delay (s)		6.5			6.7			12.4			15.4	
Approach LOS		A			A			B			B	

Intersection Summary					
HCM Average Control Delay	8.6	HCM Level of Service		A	
HCM Volume to Capacity ratio	0.48				
Actuated Cycle Length (s)	60.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	55.6%	ICU Level of Service		B	
Analysis Period (min)	15				

c Critical Lane Group

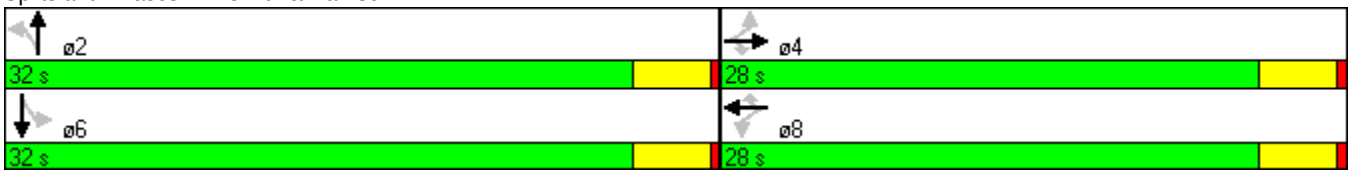


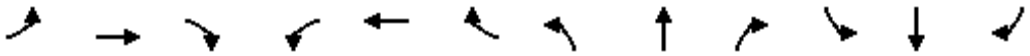
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	26	27	169	26	8	234	36	38	268	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850		0.980			0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1825	0	1770	3426	0
Flt Permitted	0.639			0.648			0.532			0.535		
Satd. Flow (perm)	1190	1863	1583	1207	1863	1583	991	1825	0	997	3426	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			28			28		17			76	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			1163			2656	
Travel Time (s)		48.0			38.9			22.7			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	28	29	184	28	9	254	39	41	291	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	173	28	29	184	28	9	293	0	41	369	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0		20.0	20.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	32.0	32.0	0.0	32.0	32.0	0.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%	53.3%	53.3%	0.0%	53.3%	53.3%	0.0%
Maximum Green (s)	24.0	24.0	24.0	24.0	24.0	24.0	28.0	28.0		28.0	28.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	24.0	24.0	24.0	24.0	24.0	24.0	28.0	28.0		28.0	28.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.47	0.47		0.47	0.47	
v/c Ratio	0.06	0.23	0.04	0.06	0.25	0.04	0.02	0.34		0.09	0.23	
Control Delay	11.6	13.0	5.2	6.8	7.5	1.7	8.0	10.7		9.6	8.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	11.6	13.0	5.2	6.8	7.5	1.7	8.0	10.7		9.6	8.4	
LOS	B	B	A	A	A	A	A	B		A	A	
Approach Delay		11.9			6.8			10.6			8.6	
Approach LOS		B			A			B			A	
Queue Length 50th (ft)	6	40	0	3	21	0	2	71		11	45	
Queue Length 95th (ft)	19	77	13	m9	39	m2	m9	128		m25	74	
Internal Link Dist (ft)		2032			1632			1083			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	476	745	650	483	745	650	462	861		465	1639	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.06	0.23	0.04	0.06	0.25	0.04	0.02	0.34		0.09	0.23	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 8 (13%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 9.4		Intersection LOS: A	
Intersection Capacity Utilization 43.4%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 13: 4th & Harrison

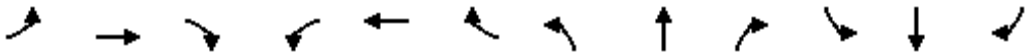




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	26	27	169	26	8	234	36	38	268	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1826		1770	3427	
Flt Permitted	0.64	1.00	1.00	0.65	1.00	1.00	0.53	1.00		0.53	1.00	
Satd. Flow (perm)	1190	1863	1583	1207	1863	1583	991	1826		996	3427	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	28	29	184	28	9	254	39	41	291	78
RTOR Reduction (vph)	0	0	17	0	0	17	0	9	0	0	41	0
Lane Group Flow (vph)	27	173	11	29	184	11	9	284	0	41	328	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	24.0	24.0	24.0	24.0	24.0	24.0	28.0	28.0		28.0	28.0	
Effective Green, g (s)	24.0	24.0	24.0	24.0	24.0	24.0	28.0	28.0		28.0	28.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.47	0.47		0.47	0.47	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	476	745	633	483	745	633	462	852		465	1599	
v/s Ratio Prot		0.09			c0.10			c0.16			0.10	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.01			0.04		
v/c Ratio	0.06	0.23	0.02	0.06	0.25	0.02	0.02	0.33		0.09	0.21	
Uniform Delay, d1	11.1	11.9	10.9	11.1	12.0	10.9	8.6	10.1		8.9	9.4	
Progression Factor	1.00	1.00	1.00	0.58	0.55	0.32	0.90	0.98		1.00	1.08	
Incremental Delay, d2	0.2	0.7	0.1	0.2	0.7	0.0	0.1	1.0		0.3	0.3	
Delay (s)	11.3	12.6	10.9	6.6	7.4	3.5	7.8	10.9		9.2	10.4	
Level of Service	B	B	B	A	A	A	A	B		A	B	
Approach Delay (s)		12.3			6.8			10.8			10.3	
Approach LOS		B			A			B			B	

Intersection Summary					
HCM Average Control Delay	10.1	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.29				
Actuated Cycle Length (s)	60.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	43.4%	ICU Level of Service		A	
Analysis Period (min)	15				

c Critical Lane Group

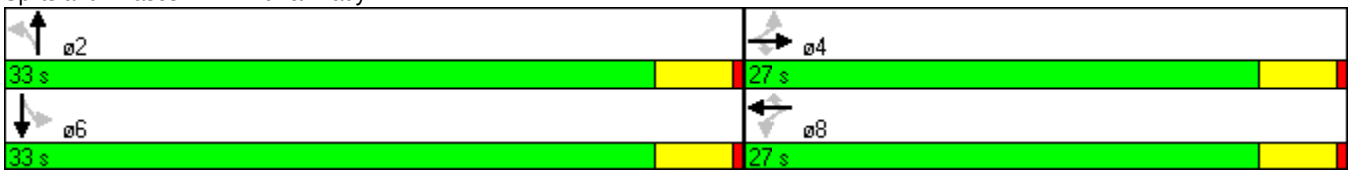


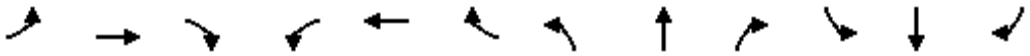
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	237	25	27	252	27	8	235	36	38	268	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt			0.850			0.850		0.980			0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3468	0	1770	1805	0
Flt Permitted	0.523			0.543			0.468			0.572		
Satd. Flow (perm)	974	1863	1583	1011	1863	1583	872	3468	0	1065	1805	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29		39			31	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			1163			2656	
Travel Time (s)		38.9			53.1			22.7			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	258	27	29	274	29	9	255	39	41	291	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	258	27	29	274	29	9	294	0	41	368	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0		20.0	20.0	
Total Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	33.0	33.0	0.0	33.0	33.0	0.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	55.0%	55.0%	0.0%	55.0%	55.0%	0.0%
Maximum Green (s)	23.0	23.0	23.0	23.0	23.0	23.0	29.0	29.0		29.0	29.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	23.0	23.0	23.0	23.0	23.0	23.0	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.48	0.48		0.48	0.48	
v/c Ratio	0.08	0.36	0.04	0.07	0.38	0.05	0.02	0.17		0.08	0.41	
Control Delay	10.2	12.0	3.8	12.5	15.4	5.3	9.6	9.7		10.8	13.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	10.2	12.0	3.8	12.5	15.4	5.3	9.6	9.7		10.8	13.8	
LOS	B	B	A	B	B	A	A	A		B	B	
Approach Delay		11.1			14.2			9.7			13.5	
Approach LOS		B			B			A			B	
Queue Length 50th (ft)	5	48	1	6	69	0	2	36		9	81	
Queue Length 95th (ft)	m16	82	m8	21	123	13	10	58		23	143	
Internal Link Dist (ft)		1632			2256			1083			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	373	714	623	388	714	625	421	1696		515	888	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.08	0.36	0.04	0.07	0.38	0.05	0.02	0.17		0.08	0.41	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 34 (57%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 12.3		Intersection LOS: B	
Intersection Capacity Utilization 51.7%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 14: 4th & Brady

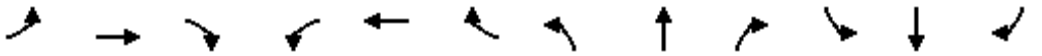




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	237	25	27	252	27	8	235	36	38	268	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3469		1770	1804	
Flt Permitted	0.52	1.00	1.00	0.54	1.00	1.00	0.47	1.00		0.57	1.00	
Satd. Flow (perm)	974	1863	1583	1011	1863	1583	872	3469		1066	1804	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	258	27	29	274	29	9	255	39	41	291	77
RTOR Reduction (vph)	0	0	17	0	0	18	0	20	0	0	16	0
Lane Group Flow (vph)	28	258	10	29	274	11	9	274	0	41	352	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	23.0	23.0	23.0	23.0	23.0	23.0	29.0	29.0		29.0	29.0	
Effective Green, g (s)	23.0	23.0	23.0	23.0	23.0	23.0	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.48	0.48		0.48	0.48	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	373	714	607	388	714	607	421	1677		515	872	
v/s Ratio Prot		0.14			c0.15			0.08			c0.20	
v/s Ratio Perm	0.03		0.01	0.03		0.01	0.01			0.04		
v/c Ratio	0.08	0.36	0.02	0.07	0.38	0.02	0.02	0.16		0.08	0.40	
Uniform Delay, d1	11.7	13.2	11.5	11.7	13.4	11.5	8.1	8.7		8.3	9.9	
Progression Factor	0.80	0.77	0.70	1.00	1.00	1.00	1.16	1.24		1.22	1.31	
Incremental Delay, d2	0.4	1.4	0.1	0.4	1.6	0.1	0.1	0.2		0.3	1.4	
Delay (s)	9.8	11.6	8.1	12.1	14.9	11.5	9.4	11.0		10.5	14.4	
Level of Service	A	B	A	B	B	B	A	B		B	B	
Approach Delay (s)		11.2			14.4			11.0			14.0	
Approach LOS		B			B			B			B	

Intersection Summary				
HCM Average Control Delay	12.8	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.39			
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	51.7%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group



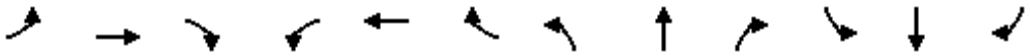
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	557	14	12	540	26	9	3	5	21	10	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.993			0.906			0.888	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1855	0	1770	1850	0	1770	1688	0	1770	1654	0
Flt Permitted	0.311			0.308			0.729			0.752		
Satd. Flow (perm)	579	1855	0	574	1850	0	1358	1688	0	1401	1654	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			7			5			32	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2016			1710			288			1848	
Travel Time (s)		45.8			38.9			5.6			36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	605	15	13	587	28	10	3	5	23	11	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	620	0	13	615	0	10	8	0	23	43	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	38.0	38.0	0.0	38.0	38.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	63.3%	63.3%	0.0%	63.3%	63.3%	0.0%	36.7%	36.7%	0.0%	36.7%	36.7%	0.0%
Maximum Green (s)	34.0	34.0		34.0	34.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	34.0	34.0		34.0	34.0		18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.57	0.57		0.57	0.57		0.30	0.30		0.30	0.30	
v/c Ratio	0.12	0.59		0.04	0.59		0.02	0.02		0.05	0.08	
Control Delay	7.2	11.3		3.8	5.8		15.1	11.4		15.0	8.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.2	11.3		3.8	5.8		15.1	11.4		15.0	8.6	
LOS	A	B		A	A		B	B		B	A	
Approach Delay		11.1			5.8			13.5			10.8	
Approach LOS		B			A			B			B	
Queue Length 50th (ft)	6	128		1	44		3	1		7	0	
Queue Length 95th (ft)	19	214		m2	65		12	9		26	30	
Internal Link Dist (ft)		1936			1630			208			1768	
Turn Bay Length (ft)												
Base Capacity (vph)	328	1052		325	1051		407	510		420	519	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.12	0.59		0.04	0.59		0.02	0.02		0.05	0.08	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 24 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 8.7		Intersection LOS: A	
Intersection Capacity Utilization 45.2%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 17: River & Harrison

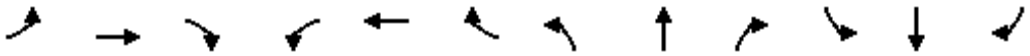




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	557	14	12	540	26	9	3	5	21	10	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.91		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1856		1770	1850		1770	1688		1770	1655	
Flt Permitted	0.31	1.00		0.31	1.00		0.73	1.00		0.75	1.00	
Satd. Flow (perm)	580	1856		573	1850		1358	1688		1402	1655	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	605	15	13	587	28	10	3	5	23	11	32
RTOR Reduction (vph)	0	1	0	0	3	0	0	4	0	0	22	0
Lane Group Flow (vph)	40	619	0	13	612	0	10	5	0	23	21	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.0	34.0		34.0	34.0		18.0	18.0		18.0	18.0	
Effective Green, g (s)	34.0	34.0		34.0	34.0		18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.57	0.57		0.57	0.57		0.30	0.30		0.30	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	329	1052		325	1048		407	506		421	497	
v/s Ratio Prot		c0.33			0.33			0.00			0.01	
v/s Ratio Perm	0.07			0.02			0.01			c0.02		
v/c Ratio	0.12	0.59		0.04	0.58		0.02	0.01		0.05	0.04	
Uniform Delay, d1	6.1	8.4		5.8	8.4		14.8	14.7		14.9	14.9	
Progression Factor	1.00	1.00		0.59	0.41		1.00	1.00		0.96	1.03	
Incremental Delay, d2	0.8	2.4		0.2	2.2		0.1	0.0		0.2	0.2	
Delay (s)	6.8	10.9		3.6	5.7		14.9	14.8		14.6	15.6	
Level of Service	A	B		A	A		B	B		B	B	
Approach Delay (s)		10.6			5.6			14.9			15.2	
Approach LOS		B			A			B			B	

Intersection Summary					
HCM Average Control Delay	8.6	HCM Level of Service		A	
HCM Volume to Capacity ratio	0.40				
Actuated Cycle Length (s)	60.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	45.2%	ICU Level of Service		A	
Analysis Period (min)	15				

c Critical Lane Group



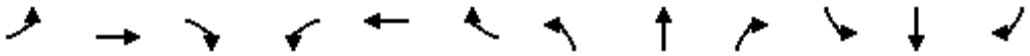
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	588	12	8	479	27	3	3	4	21	9	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.992				0.850		0.886	
Flt Protected	0.950			0.950				0.976		0.950		
Satd. Flow (prot)	1770	1857	0	1770	1848	0	0	1818	1583	1770	1650	0
Flt Permitted	0.358			0.285				0.938		0.754		
Satd. Flow (perm)	667	1857	0	531	1848	0	0	1747	1583	1405	1650	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			8				4		32	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1710			6778			272			1848	
Travel Time (s)		38.9			154.0			5.3			36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	639	13	9	521	29	3	3	4	23	10	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	652	0	9	550	0	0	6	4	23	42	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	
Total Split (s)	38.0	38.0	0.0	38.0	38.0	0.0	22.0	22.0	22.0	22.0	22.0	0.0
Total Split (%)	63.3%	63.3%	0.0%	63.3%	63.3%	0.0%	36.7%	36.7%	36.7%	36.7%	36.7%	0.0%
Maximum Green (s)	34.0	34.0		34.0	34.0		18.0	18.0	18.0	18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	34.0	34.0		34.0	34.0			18.0	18.0	18.0	18.0	
Actuated g/C Ratio	0.57	0.57		0.57	0.57			0.30	0.30	0.30	0.30	
v/c Ratio	0.11	0.62		0.03	0.52			0.01	0.01	0.05	0.08	
Control Delay	4.8	7.0		6.1	10.1			14.8	10.5	14.1	8.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	4.8	7.0		6.1	10.1			14.8	10.5	14.1	8.7	
LOS	A	A		A	B			B	B	B	A	
Approach Delay		6.9			10.1			13.1			10.6	
Approach LOS		A			B			B			B	
Queue Length 50th (ft)	4	62		1	107			2	0	8	4	
Queue Length 95th (ft)	m7	84		6	179			8	6	m20	m28	
Internal Link Dist (ft)		1630			6698			192			1768	
Turn Bay Length (ft)												
Base Capacity (vph)	378	1054		301	1051			524	478	422	517	
Starvation Cap Reductn	0	0		0	0			0	0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.11	0.62		0.03	0.52			0.01	0.01	0.05	0.08	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 52 (87%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 8.5		Intersection LOS: A	
Intersection Capacity Utilization 48.3%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 18: River & Brady

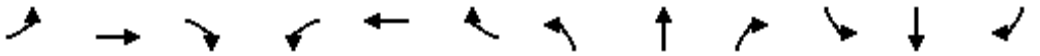




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	588	12	8	479	27	3	3	4	21	9	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99			1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1857		1770	1848			1817	1583	1770	1650	
Flt Permitted	0.36	1.00		0.29	1.00			0.94	1.00	0.75	1.00	
Satd. Flow (perm)	667	1857		531	1848			1747	1583	1404	1650	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	639	13	9	521	29	3	3	4	23	10	32
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	3	0	22	0
Lane Group Flow (vph)	41	651	0	9	547	0	0	6	1	23	20	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	34.0	34.0		34.0	34.0			18.0	18.0	18.0	18.0	
Effective Green, g (s)	34.0	34.0		34.0	34.0			18.0	18.0	18.0	18.0	
Actuated g/C Ratio	0.57	0.57		0.57	0.57			0.30	0.30	0.30	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	378	1052		301	1047			524	475	421	495	
v/s Ratio Prot		c0.35			0.30						0.01	
v/s Ratio Perm	0.06			0.02				0.00	0.00	c0.02		
v/c Ratio	0.11	0.62		0.03	0.52			0.01	0.00	0.05	0.04	
Uniform Delay, d1	6.0	8.7		5.7	8.0			14.8	14.7	14.9	14.9	
Progression Factor	0.67	0.51		1.00	1.00			1.00	1.00	0.91	1.07	
Incremental Delay, d2	0.5	2.4		0.2	1.9			0.0	0.0	0.2	0.1	
Delay (s)	4.5	6.8		5.9	9.9			14.8	14.7	13.8	16.0	
Level of Service	A	A		A	A			B	B	B	B	
Approach Delay (s)		6.6			9.8			14.8			15.2	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

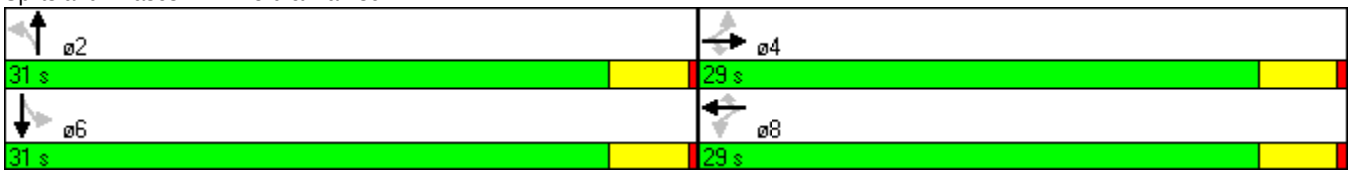


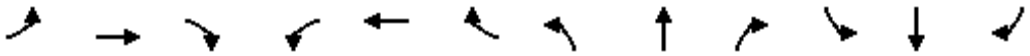
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	25	27	169	27	8	156	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850		0.971			0.959	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1809	0	1770	3394	0
Flt Permitted	0.641			0.648			0.578			0.618		
Satd. Flow (perm)	1194	1863	1583	1207	1863	1583	1077	1809	0	1151	3394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29		26			77	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2089			1711			1848			1163	
Travel Time (s)		47.5			38.9			36.0			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	27	29	184	29	9	170	40	41	207	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	173	27	29	184	29	9	210	0	41	284	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0		20.0	20.0	
Total Split (s)	29.0	29.0	29.0	29.0	29.0	29.0	31.0	31.0	0.0	31.0	31.0	0.0
Total Split (%)	48.3%	48.3%	48.3%	48.3%	48.3%	48.3%	51.7%	51.7%	0.0%	51.7%	51.7%	0.0%
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	27.0	27.0		27.0	27.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	27.0	27.0		27.0	27.0	
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.42	0.42	0.45	0.45		0.45	0.45	
v/c Ratio	0.05	0.22	0.04	0.06	0.24	0.04	0.02	0.25		0.08	0.18	
Control Delay	10.9	12.2	4.9	5.5	6.1	1.3	7.6	8.3		4.9	2.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	10.9	12.2	4.9	5.5	6.1	1.3	7.6	8.3		4.9	2.7	
LOS	B	B	A	A	A	A	A	A		A	A	
Approach Delay		11.2			5.5			8.2			3.0	
Approach LOS		B			A			A			A	
Queue Length 50th (ft)	6	38	0	3	18	0	2	36		3	3	
Queue Length 95th (ft)	18	74	12	m8	32	m2	m7	73		9	11	
Internal Link Dist (ft)		2009			1631			1768			1083	
Turn Bay Length (ft)												
Base Capacity (vph)	498	776	675	503	776	677	485	828		518	1570	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.05	0.22	0.04	0.06	0.24	0.04	0.02	0.25		0.08	0.18	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 32 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.25			
Intersection Signal Delay: 6.6		Intersection LOS: A	
Intersection Capacity Utilization 39.4%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 21: 3rd & Harrison

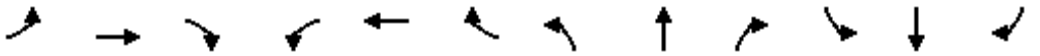




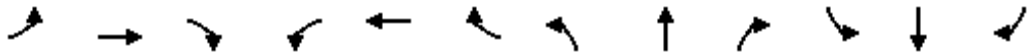
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	25	27	169	27	8	156	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1810		1770	3395	
Flt Permitted	0.64	1.00	1.00	0.65	1.00	1.00	0.58	1.00		0.62	1.00	
Satd. Flow (perm)	1195	1863	1583	1207	1863	1583	1076	1810		1151	3395	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	27	29	184	29	9	170	40	41	207	77
RTOR Reduction (vph)	0	0	16	0	0	17	0	14	0	0	42	0
Lane Group Flow (vph)	27	173	11	29	184	12	9	196	0	41	242	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	25.0	25.0	25.0	25.0	25.0	25.0	27.0	27.0		27.0	27.0	
Effective Green, g (s)	25.0	25.0	25.0	25.0	25.0	25.0	27.0	27.0		27.0	27.0	
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.42	0.42	0.45	0.45		0.45	0.45	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	498	776	660	503	776	660	484	815		518	1528	
v/s Ratio Prot		0.09			c0.10			c0.11			0.07	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.01			0.04		
v/c Ratio	0.05	0.22	0.02	0.06	0.24	0.02	0.02	0.24		0.08	0.16	
Uniform Delay, d1	10.4	11.3	10.3	10.5	11.3	10.3	9.2	10.2		9.4	9.8	
Progression Factor	1.00	1.00	1.00	0.49	0.47	0.26	0.81	0.82		0.48	0.35	
Incremental Delay, d2	0.2	0.7	0.0	0.2	0.7	0.0	0.1	0.7		0.3	0.2	
Delay (s)	10.7	11.9	10.3	5.4	5.9	2.7	7.5	9.0		4.8	3.6	
Level of Service	B	B	B	A	A	A	A	A		A	A	
Approach Delay (s)		11.6			5.5			9.0			3.7	
Approach LOS		B			A			A			A	

Intersection Summary					
HCM Average Control Delay	7.0	HCM Level of Service		A	
HCM Volume to Capacity ratio	0.24				
Actuated Cycle Length (s)	60.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	39.4%	ICU Level of Service		A	
Analysis Period (min)	15				

c Critical Lane Group



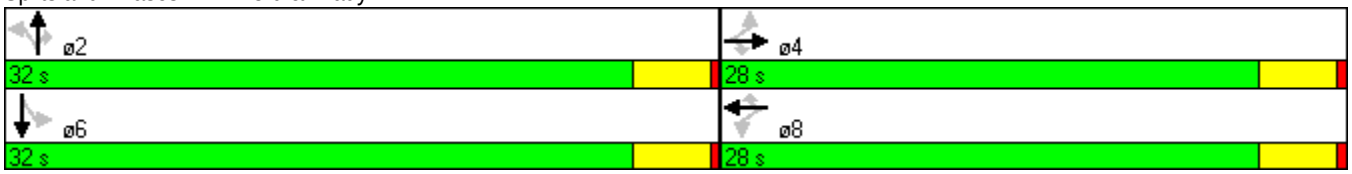
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	237	25	26	252	27	8	165	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.968	
Flt Protected	0.950			0.950			0.950				0.994	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	0	1792	0
Flt Permitted	0.530			0.549			0.539				0.951	
Satd. Flow (perm)	987	1863	1583	1023	1863	1583	1004	1863	1583	0	1715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			40		35	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1711			6523			1848			1163	
Travel Time (s)		38.9			148.3			36.0			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	258	27	28	274	29	9	179	40	41	207	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	258	27	28	274	29	9	179	40	0	325	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	32.0	32.0	32.0	32.0	32.0	0.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%	53.3%	0.0%
Maximum Green (s)	24.0	24.0	24.0	24.0	24.0	24.0	28.0	28.0	28.0	28.0	28.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	24.0	24.0	24.0	24.0	24.0	24.0	28.0	28.0	28.0		28.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.47	0.47	0.47		0.47	
v/c Ratio	0.07	0.35	0.04	0.07	0.37	0.04	0.02	0.21	0.05		0.40	
Control Delay	9.8	11.5	3.9	11.8	14.5	5.0	6.9	8.1	2.2		4.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	
Total Delay	9.8	11.5	3.9	11.8	14.5	5.0	6.9	8.1	2.2		4.4	
LOS	A	B	A	B	B	A	A	A	A		A	
Approach Delay		10.7			13.4			7.0			4.4	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	5	51	0	6	67	0	1	25	1		19	
Queue Length 95th (ft)	17	86	11	20	119	13	m6	55	m7		32	
Internal Link Dist (ft)		1631			6443			1768			1083	
Turn Bay Length (ft)												
Base Capacity (vph)	395	745	649	409	745	651	469	869	760		819	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0		0	

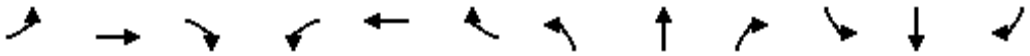


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0		0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0		0	
Reduced v/c Ratio	0.07	0.35	0.04	0.07	0.37	0.04	0.02	0.21	0.05		0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 54 (90%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 9.0		Intersection LOS: A	
Intersection Capacity Utilization 55.0%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 22: 3rd & Brady





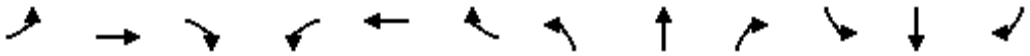
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	237	25	26	252	27	8	165	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583		1792	
Flt Permitted	0.53	1.00	1.00	0.55	1.00	1.00	0.54	1.00	1.00		0.95	
Satd. Flow (perm)	988	1863	1583	1023	1863	1583	1003	1863	1583		1715	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	258	27	28	274	29	9	179	40	41	207	77
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	21	0	19	0
Lane Group Flow (vph)	27	258	11	28	274	12	9	179	19	0	306	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	24.0	24.0	24.0	24.0	24.0	24.0	28.0	28.0	28.0		28.0	
Effective Green, g (s)	24.0	24.0	24.0	24.0	24.0	24.0	28.0	28.0	28.0		28.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.47	0.47	0.47		0.47	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	
Lane Grp Cap (vph)	395	745	633	409	745	633	468	869	739		800	
v/s Ratio Prot		0.14			c0.15			0.10				
v/s Ratio Perm	0.03		0.01	0.03		0.01	0.01		0.01		c0.18	
v/c Ratio	0.07	0.35	0.02	0.07	0.37	0.02	0.02	0.21	0.03		0.38	
Uniform Delay, d1	11.1	12.5	10.9	11.1	12.7	10.9	8.6	9.4	8.6		10.4	
Progression Factor	0.82	0.79	0.74	1.00	1.00	1.00	0.77	0.78	0.59		0.31	
Incremental Delay, d2	0.3	1.3	0.0	0.3	1.4	0.1	0.1	0.5	0.1		1.3	
Delay (s)	9.5	11.2	8.1	11.4	14.1	10.9	6.7	7.9	5.2		4.6	
Level of Service	A	B	A	B	B	B	A	A	A		A	
Approach Delay (s)		10.8			13.6			7.3			4.6	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Brady-Harrison Phase 1

Converted Two-Way Streets
Imbalanced Cross-Sections
2030 PM Peak Hour Traffic



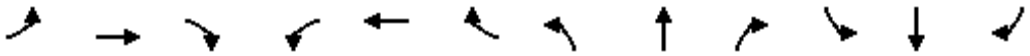
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	412	54	72	259	0	15	0	183	290	1172	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.983							0.850		0.983	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3479	0	1770	1863	0	1770	0	1583	1770	3479	0
Flt Permitted				0.354			0.112			0.950		
Satd. Flow (perm)	0	3479	0	659	1863	0	209	0	1583	1770	3479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18							153		30	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2320			1712			1008			640	
Travel Time (s)		52.7			38.9			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	448	59	78	282	0	16	0	199	315	1274	158
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	507	0	78	282	0	16	0	199	315	1432	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Minimum Split (s)		20.0		20.0	20.0		20.0		20.0	20.0	20.0	
Total Split (s)	0.0	28.0	0.0	28.0	28.0	0.0	52.0	0.0	52.0	52.0	52.0	0.0
Total Split (%)	0.0%	35.0%	0.0%	35.0%	35.0%	0.0%	65.0%	0.0%	65.0%	65.0%	65.0%	0.0%
Maximum Green (s)		24.0		24.0	24.0		48.0		48.0	48.0	48.0	
Yellow Time (s)		3.5		3.5	3.5		3.5		3.5	3.5	3.5	
All-Red Time (s)		0.5		0.5	0.5		0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0		0	0	0	
Act Effct Green (s)		24.0		24.0	24.0		48.0		48.0	48.0	48.0	
Actuated g/C Ratio		0.30		0.30	0.30		0.60		0.60	0.60	0.60	
v/c Ratio		0.48		0.39	0.50		0.13		0.20	0.30	0.68	
Control Delay		23.9		18.9	17.4		20.4		11.5	8.7	12.7	
Queue Delay		0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay		23.9		18.9	17.4		20.4		11.5	8.7	12.7	
LOS		C		B	B		C		B	A	B	
Approach Delay		23.9			17.8						12.0	
Approach LOS		C			B						B	
Queue Length 50th (ft)		104		19	142		6		42	69	225	
Queue Length 95th (ft)		150		m60	m200		m10		m98	112	296	
Internal Link Dist (ft)		2240			1632			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)		1056		198	559		125		1011	1062	2099	
Starvation Cap Reductn		0		0	0		0		0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0		0		0	0	0	
Storage Cap Reductn		0		0	0		0		0	0	0	
Reduced v/c Ratio		0.48		0.39	0.50		0.13		0.20	0.30	0.68	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 48 (60%), Referenced to phase 2:NBL and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Pretimed			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 14.9		Intersection LOS: B	
Intersection Capacity Utilization 64.1%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Central Park & Harrison

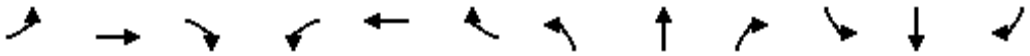




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	412	54	72	259	0	15	0	183	290	1172	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95		1.00	1.00		1.00		1.00	1.00	0.95	
Frt		0.98		1.00	1.00		1.00		0.85	1.00	0.98	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3477		1770	1863		1770		1583	1770	3481	
Flt Permitted		1.00		0.35	1.00		0.11		1.00	0.95	1.00	
Satd. Flow (perm)		3477		659	1863		209		1583	1770	3481	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	448	59	78	282	0	16	0	199	315	1274	158
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	61	0	12	0
Lane Group Flow (vph)	0	494	0	78	282	0	16	0	138	315	1420	0
Turn Type				Perm			custom		custom	Perm		
Protected Phases		4			8						6	
Permitted Phases				8			2		2	6		
Actuated Green, G (s)		24.0		24.0	24.0		48.0		48.0	48.0	48.0	
Effective Green, g (s)		24.0		24.0	24.0		48.0		48.0	48.0	48.0	
Actuated g/C Ratio		0.30		0.30	0.30		0.60		0.60	0.60	0.60	
Clearance Time (s)		4.0		4.0	4.0		4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)		1043		198	559		125		950	1062	2089	
v/s Ratio Prot		0.14			c0.15						c0.41	
v/s Ratio Perm				0.12			0.08		0.09	0.18		
v/c Ratio		0.47		0.39	0.50		0.13		0.15	0.30	0.68	
Uniform Delay, d1		22.8		22.2	23.1		6.9		7.0	7.8	10.8	
Progression Factor		1.00		0.61	0.63		2.40		5.12	1.00	1.00	
Incremental Delay, d2		1.5		4.3	2.4		1.6		0.2	0.7	1.8	
Delay (s)		24.4		18.0	17.1		18.2		36.1	8.5	12.6	
Level of Service		C		B	B		B		D	A	B	
Approach Delay (s)		24.4			17.3			34.8			11.9	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

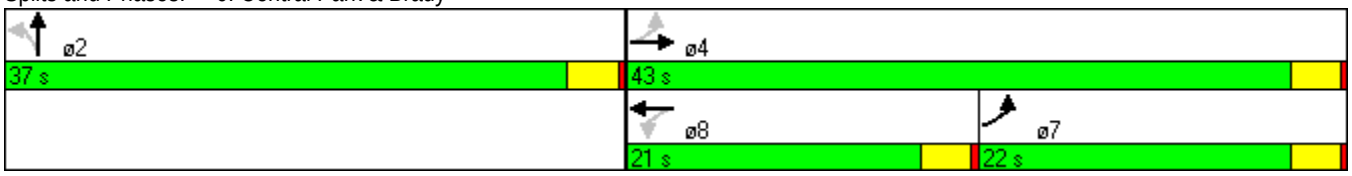


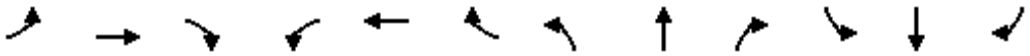
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	451	347	130	0	257	108	138	1594	49	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.91	0.91	0.91	1.00	1.00	1.00
Frt		0.959			0.956			0.996				
Flt Protected	0.950							0.996				
Satd. Flow (prot)	1770	1786	0	1863	3383	0	0	5045	0	0	0	0
Flt Permitted	0.413							0.996				
Satd. Flow (perm)	769	1786	0	1863	3383	0	0	5045	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			60			6				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			1008			640	
Travel Time (s)		38.9			54.5			19.6			12.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	490	377	141	0	279	117	150	1733	53	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	490	518	0	0	396	0	0	1936	0	0	0	0
Turn Type	pm+pt			Perm			Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4			8			2					
Minimum Split (s)	9.0	21.0		21.0	21.0		21.0	21.0				
Total Split (s)	22.0	43.0	0.0	21.0	21.0	0.0	37.0	37.0	0.0	0.0	0.0	0.0
Total Split (%)	27.5%	53.8%	0.0%	26.3%	26.3%	0.0%	46.3%	46.3%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	18.5	39.5		17.5	17.5		33.5	33.5				
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0				
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5				
Lost Time Adjust (s)	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag			Lead	Lead							
Lead-Lag Optimize?	Yes			Yes	Yes							
Walk Time (s)		5.0		5.0	5.0		5.0	5.0				
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)		0		0	0		0	0				
Act Effct Green (s)	39.0	39.0			17.0			33.0				
Actuated g/C Ratio	0.49	0.49			0.21			0.41				
v/c Ratio	0.82	0.58			0.52			0.93				
Control Delay	26.2	9.1			26.2			20.4				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	26.2	9.1			26.2			20.4				
LOS	C	A			C			C				
Approach Delay		17.4			26.2			20.4				
Approach LOS		B			C			C				
Queue Length 50th (ft)	130	60			77			196				
Queue Length 95th (ft)	#222	146			121			m197				
Internal Link Dist (ft)		1632			2320			928			560	
Turn Bay Length (ft)												
Base Capacity (vph)	600	888			766			2085				
Starvation Cap Reductn	0	0			0			0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0			0			0				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.82	0.58			0.52			0.93				

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 22 (28%), Referenced to phase 2:NBTL and 6:, Start of Green	
Natural Cycle: 70	
Control Type: Pretimed	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 20.2	Intersection LOS: C
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: Central Park & Brady

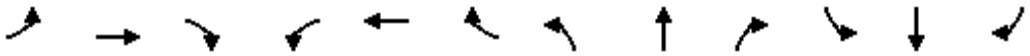




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	451	347	130	0	257	108	138	1594	49	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			0.95			0.91				
Frt	1.00	0.96			0.96			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1787			3382			5045				
Flt Permitted	0.41	1.00			1.00			1.00				
Satd. Flow (perm)	770	1787			3382			5045				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	490	377	141	0	279	117	150	1733	53	0	0	0
RTOR Reduction (vph)	0	17	0	0	47	0	0	4	0	0	0	0
Lane Group Flow (vph)	490	501	0	0	349	0	0	1932	0	0	0	0
Turn Type	pm+pt			Perm			Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4			8			2					
Actuated Green, G (s)	39.5	39.5			17.5			33.5				
Effective Green, g (s)	39.0	39.0			17.0			33.0				
Actuated g/C Ratio	0.49	0.49			0.21			0.41				
Clearance Time (s)	3.5	3.5			3.5			3.5				
Lane Grp Cap (vph)	600	871			719			2081				
v/s Ratio Prot	c0.18	0.28			0.10							
v/s Ratio Perm	c0.21							0.38				
v/c Ratio	0.82	0.58			0.49			0.93				
Uniform Delay, d1	19.7	14.6			27.7			22.4				
Progression Factor	0.61	0.46			1.00			0.70				
Incremental Delay, d2	11.2	2.6			2.3			3.7				
Delay (s)	23.3	9.3			30.0			19.4				
Level of Service	C	A			C			B				
Approach Delay (s)		16.1			30.0			19.4			0.0	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



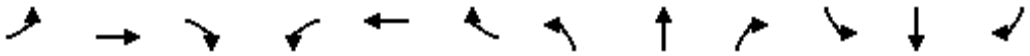
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	641	64	100	578	0	39	498	283	311	573	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.986						0.948			0.991	
Flt Protected				0.950				0.998			0.984	
Satd. Flow (prot)	1863	3490	0	1770	3539	0	0	3348	0	0	3451	0
Flt Permitted				0.210				0.864			0.521	
Satd. Flow (perm)	1863	3490	0	391	3539	0	0	2899	0	0	1827	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14						99			14	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2240			1712			2656			1008	
Travel Time (s)		50.9			38.9			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	697	70	109	628	0	42	541	308	338	623	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	767	0	109	628	0	0	891	0	0	1024	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		8.0	20.0	
Total Split (s)	31.0	31.0	0.0	31.0	31.0	0.0	41.0	41.0	0.0	8.0	49.0	0.0
Total Split (%)	38.8%	38.8%	0.0%	38.8%	38.8%	0.0%	51.3%	51.3%	0.0%	10.0%	61.3%	0.0%
Maximum Green (s)	27.5	27.5		27.5	27.5		37.5	37.5		4.5	45.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.5	0.5	0.5	0.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.0	4.5
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		27.0		27.0	27.0			37.0			45.0	
Actuated g/C Ratio		0.34		0.34	0.34			0.46			0.56	
v/c Ratio		0.65		0.83	0.53			0.64			1.18dl	
Control Delay		25.1		39.9	7.7			17.9			19.3	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		25.1		39.9	7.7			17.9			19.3	
LOS		C		D	A			B			B	
Approach Delay		25.1			12.5			17.9			19.3	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)		165		37	53			158			57	
Queue Length 95th (ft)		225		m63	m70			237			#106	
Internal Link Dist (ft)		2160			1632			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)		1187		132	1194			1394			1115	
Starvation Cap Reductn		0		0	0			0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.65		0.83	0.53			0.64			0.92	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 70 (88%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Pretimed			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 18.8		Intersection LOS: B	
Intersection Capacity Utilization 89.3%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			
dl Defacto Left Lane. Recode with 1 though lane as a left lane.			

Splits and Phases: 9: Locust & Harrison



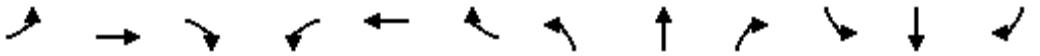


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	641	64	100	578	0	39	498	283	311	573	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor		0.95		1.00	0.95			0.95			0.95	
Frt		0.99		1.00	1.00			0.95			0.99	
Flt Protected		1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)		3491		1770	3539			3348			3450	
Flt Permitted		1.00		0.21	1.00			0.86			0.52	
Satd. Flow (perm)		3491		390	3539			2898			1827	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	697	70	109	628	0	42	541	308	338	623	63
RTOR Reduction (vph)	0	9	0	0	0	0	0	53	0	0	6	0
Lane Group Flow (vph)	0	758	0	109	628	0	0	838	0	0	1018	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		27.5		27.5	27.5			37.5			45.5	
Effective Green, g (s)		27.0		27.0	27.0			37.0			45.0	
Actuated g/C Ratio		0.34		0.34	0.34			0.46			0.56	
Clearance Time (s)		3.5		3.5	3.5			3.5			3.5	
Lane Grp Cap (vph)		1178		132	1194			1340			1109	
v/s Ratio Prot		0.22			0.18						c0.05	
v/s Ratio Perm				c0.28				0.29			c0.47	
v/c Ratio		0.64		0.83	0.53			0.63			1.18dl	
Uniform Delay, d1		22.4		24.3	21.3			16.3			15.8	
Progression Factor		1.00		0.40	0.32			1.07			0.47	
Incremental Delay, d2		2.7		22.5	0.7			2.2			10.5	
Delay (s)		25.1		32.2	7.6			19.5			18.1	
Level of Service		C		C	A			B			B	
Approach Delay (s)		25.1			11.3			19.5			18.1	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



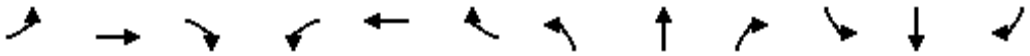
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	470	890	143	27	720	248	91	906	133	19	130	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.979			0.962			0.981			0.954	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3465	0	1770	3405	0	1770	3472	0	1770	1777	0
Flt Permitted	0.143			0.254			0.554			0.160		
Satd. Flow (perm)	266	3465	0	473	3405	0	1032	3472	0	298	1777	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			54			21			29	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2400			2656			1008	
Travel Time (s)		38.9			54.5			51.7			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	511	967	155	29	783	270	99	985	145	21	141	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	511	1122	0	29	1053	0	99	1130	0	21	204	0
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	8.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	23.0	51.0	0.0	28.0	28.0	0.0	29.0	29.0	0.0	29.0	29.0	0.0
Total Split (%)	28.8%	63.8%	0.0%	35.0%	35.0%	0.0%	36.3%	36.3%	0.0%	36.3%	36.3%	0.0%
Maximum Green (s)	19.0	47.0		24.0	24.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Walk Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	47.0	47.0		24.0	24.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.59	0.59		0.30	0.30		0.31	0.31		0.31	0.31	
v/c Ratio	1.00	0.55		0.20	0.99		0.31	1.03		0.23	0.35	
Control Delay	61.4	7.6		25.4	54.5		21.6	59.1		17.8	10.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	61.4	7.6		25.4	54.5		21.6	59.1		17.8	10.9	
LOS	E	A		C	D		C	E		B	B	
Approach Delay		24.4			53.7			56.0			11.6	
Approach LOS		C			D			E			B	
Queue Length 50th (ft)	220	120		11	262		35	~246		7	57	
Queue Length 95th (ft)	m#381	m156		33	#403		m69	#425		m15	94	
Internal Link Dist (ft)		1632			2320			2576			928	
Turn Bay Length (ft)												
Base Capacity (vph)	513	2052		142	1059		323	1099		93	575	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.00	0.55		0.20	0.99		0.31	1.03		0.23	0.35	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 12 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 75			
Control Type: Pretimed			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 40.7		Intersection LOS: D	
Intersection Capacity Utilization 99.8%		ICU Level of Service F	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 10: Locust & Brady

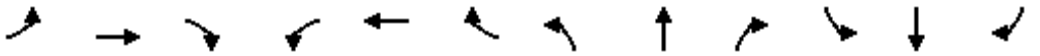




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	470	890	143	27	720	248	91	906	133	19	130	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3466		1770	3403		1770	3471		1770	1776	
Flt Permitted	0.14	1.00		0.25	1.00		0.55	1.00		0.16	1.00	
Satd. Flow (perm)	266	3466		473	3403		1031	3471		298	1776	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	511	967	155	29	783	270	99	985	145	21	141	63
RTOR Reduction (vph)	0	16	0	0	38	0	0	14	0	0	20	0
Lane Group Flow (vph)	511	1106	0	29	1015	0	99	1116	0	21	184	0
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	47.0	47.0		24.0	24.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	47.0	47.0		24.0	24.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.59	0.59		0.30	0.30		0.31	0.31		0.31	0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	513	2036		142	1021		322	1085		93	555	
v/s Ratio Prot	c0.24	0.32			0.30			c0.32			0.10	
v/s Ratio Perm	c0.35			0.06			0.10			0.07		
v/c Ratio	1.00	0.54		0.20	0.99		0.31	1.03		0.23	0.33	
Uniform Delay, d1	22.3	10.0		20.9	27.9		20.9	27.5		20.3	21.1	
Progression Factor	1.23	0.69		1.00	1.00		0.88	0.85		0.56	0.50	
Incremental Delay, d2	34.9	0.9		3.2	26.8		2.4	34.1		5.3	1.5	
Delay (s)	62.4	7.7		24.1	54.8		20.8	57.6		16.7	12.1	
Level of Service	E	A		C	D		C	E		B	B	
Approach Delay (s)		24.8			53.9			54.7			12.6	
Approach LOS		C			D			D			B	

Intersection Summary			
HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

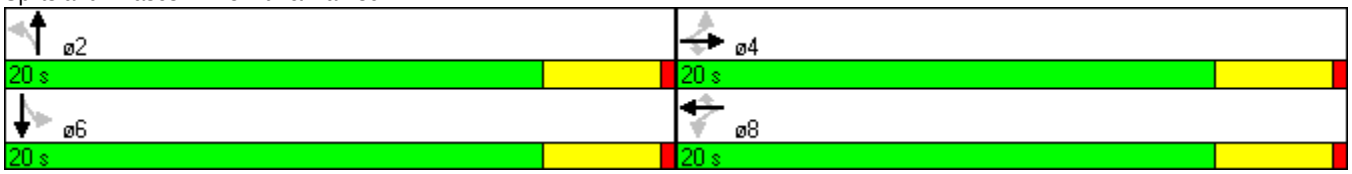


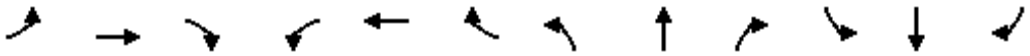
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	260	16	17	277	52	23	272	49	40	330	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850		0.977			0.960	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1820	0	1770	3398	0
Flt Permitted	0.547			0.569			0.474			0.491		
Satd. Flow (perm)	1019	1863	1583	1060	1863	1583	883	1820	0	915	3398	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			17			57		27			130	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			965			2656	
Travel Time (s)		48.0			38.9			18.8			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	283	17	18	301	57	25	296	53	43	359	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	283	17	18	301	57	25	349	0	43	489	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40		0.40	0.40	
v/c Ratio	0.13	0.38	0.03	0.04	0.40	0.09	0.07	0.47		0.12	0.34	
Control Delay	8.7	10.4	4.4	6.2	9.4	2.4	5.0	6.9		7.9	7.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	8.7	10.4	4.4	6.2	9.4	2.4	5.0	6.9		7.9	7.1	
LOS	A	B	A	A	A	A	A	A		A	A	
Approach Delay		9.8			8.2			6.8			7.1	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	7	42	0	3	57	1	2	21		8	43	
Queue Length 95th (ft)	22	83	7	m5	87	6	m4	33		m8	m45	
Internal Link Dist (ft)		2032			1632			885			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	408	745	643	424	745	667	353	744		366	1437	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.13	0.38	0.03	0.04	0.40	0.09	0.07	0.47		0.12	0.34	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 24 (60%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 7.9		Intersection LOS: A	
Intersection Capacity Utilization 51.9%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 13: 4th & Harrison

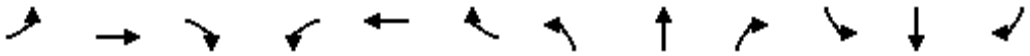




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	260	16	17	277	52	23	272	49	40	330	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1820		1770	3398	
Flt Permitted	0.55	1.00	1.00	0.57	1.00	1.00	0.47	1.00		0.49	1.00	
Satd. Flow (perm)	1019	1863	1583	1059	1863	1583	882	1820		914	3398	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	283	17	18	301	57	25	296	53	43	359	130
RTOR Reduction (vph)	0	0	10	0	0	34	0	16	0	0	78	0
Lane Group Flow (vph)	53	283	7	18	301	23	25	333	0	43	411	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	408	745	633	424	745	633	353	728		366	1359	
v/s Ratio Prot		0.15			c0.16			c0.18			0.12	
v/s Ratio Perm	0.05		0.00	0.02		0.01	0.03			0.05		
v/c Ratio	0.13	0.38	0.01	0.04	0.40	0.04	0.07	0.46		0.12	0.30	
Uniform Delay, d1	7.6	8.5	7.2	7.3	8.6	7.3	7.4	8.8		7.6	8.2	
Progression Factor	1.00	1.00	1.00	0.80	0.89	0.94	0.60	0.59		0.98	1.12	
Incremental Delay, d2	0.7	1.5	0.0	0.2	1.5	0.1	0.4	2.0		0.3	0.3	
Delay (s)	8.3	10.0	7.3	6.1	9.2	7.0	4.8	7.1		7.7	9.5	
Level of Service	A	A	A	A	A	A	A	A		A	A	
Approach Delay (s)		9.6			8.7			7.0			9.3	
Approach LOS		A			A			A			A	

Intersection Summary				
HCM Average Control Delay	8.7	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.43			
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	51.9%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

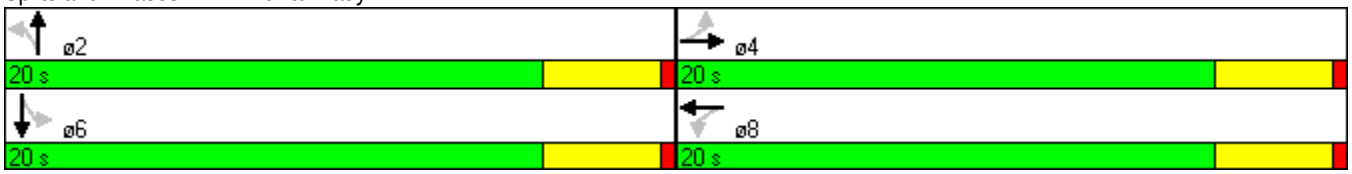


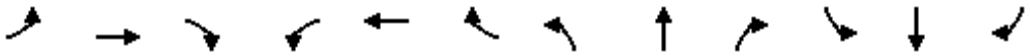
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	232	16	17	247	52	54	635	113	17	142	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.991			0.974			0.977			0.931	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1846	0	1770	1814	0	1770	3458	0	1770	1734	0
Flt Permitted	0.519			0.586			0.567			0.270		
Satd. Flow (perm)	967	1846	0	1092	1814	0	1056	3458	0	503	1734	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			32			60			127	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			965			2656	
Travel Time (s)		38.9			53.1			18.8			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	252	17	18	268	57	59	690	123	18	154	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	269	0	18	325	0	59	813	0	18	284	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.14	0.36		0.04	0.44		0.14	0.57		0.09	0.37	
Control Delay	5.7	6.2		7.8	10.1		6.4	7.6		6.6	4.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.7	6.2		7.8	10.1		6.4	7.6		6.6	4.2	
LOS	A	A		A	B		A	A		A	A	
Approach Delay		6.2			10.0			7.5			4.4	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	5	25		2	44		6	41		2	20	
Queue Length 95th (ft)	m12	40		10	90		m12	54		m5	36	
Internal Link Dist (ft)		1632			2256			885			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	387	744		437	745		422	1419		201	770	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.36		0.04	0.44		0.14	0.57		0.09	0.37	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 16 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 7.2		Intersection LOS: A	
Intersection Capacity Utilization 57.3%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 14: 4th & Brady

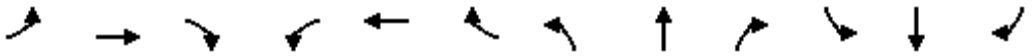




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	232	16	17	247	52	54	635	113	17	142	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1845		1770	1814		1770	3459		1770	1735	
Flt Permitted	0.52	1.00		0.59	1.00		0.57	1.00		0.27	1.00	
Satd. Flow (perm)	966	1845		1091	1814		1057	3459		503	1735	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	252	17	18	268	57	59	690	123	18	154	130
RTOR Reduction (vph)	0	6	0	0	19	0	0	36	0	0	76	0
Lane Group Flow (vph)	53	263	0	18	306	0	59	777	0	18	208	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	386	738		436	726		423	1384		201	694	
v/s Ratio Prot		0.14			c0.17			c0.22			0.12	
v/s Ratio Perm	0.05			0.02			0.06			0.04		
v/c Ratio	0.14	0.36		0.04	0.42		0.14	0.56		0.09	0.30	
Uniform Delay, d1	7.6	8.4		7.3	8.7		7.6	9.3		7.5	8.2	
Progression Factor	0.63	0.60		1.00	1.00		0.72	0.69		0.74	0.65	
Incremental Delay, d2	0.7	1.3		0.2	1.8		0.7	1.6		0.8	1.0	
Delay (s)	5.5	6.3		7.5	10.5		6.2	8.0		6.3	6.3	
Level of Service	A	A		A	B		A	A		A	A	
Approach Delay (s)		6.2			10.3			7.9			6.3	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



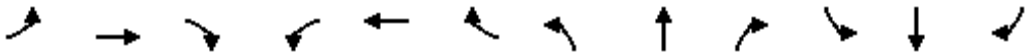
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	744	17	14	610	23	29	9	33	68	23	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.995			0.883			0.896	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1857	0	1770	1853	0	1770	1645	0	1770	1669	0
Flt Permitted	0.313			0.236			0.704			0.727		
Satd. Flow (perm)	583	1857	0	440	1853	0	1311	1645	0	1354	1669	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			36			57	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2016			1700			288			1800	
Travel Time (s)		45.8			38.6			5.6			35.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	809	18	15	663	25	32	10	36	74	25	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	827	0	15	688	0	32	46	0	74	82	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	58.0	58.0	0.0	58.0	58.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	72.5%	72.5%	0.0%	72.5%	72.5%	0.0%	27.5%	27.5%	0.0%	27.5%	27.5%	0.0%
Maximum Green (s)	54.0	54.0		54.0	54.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	54.0	54.0		54.0	54.0		18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.22	0.22		0.22	0.22	
v/c Ratio	0.18	0.66		0.05	0.55		0.11	0.12		0.24	0.20	
Control Delay	6.1	10.8		1.8	5.5		25.9	12.1		19.1	7.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.1	10.8		1.8	5.5		25.9	12.1		19.1	7.1	
LOS	A	B		A	A		C	B		B	A	
Approach Delay		10.4			5.5			17.7			12.8	
Approach LOS		B			A			B			B	
Queue Length 50th (ft)	11	207		0	78		13	4		22	0	
Queue Length 95th (ft)	27	321		m1	210		35	30		44	3	
Internal Link Dist (ft)		1936			1620			208			1720	
Turn Bay Length (ft)												
Base Capacity (vph)	394	1254		297	1252		295	398		305	420	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.66		0.05	0.55		0.11	0.12		0.24	0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 34 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 9.0		Intersection LOS: A	
Intersection Capacity Utilization 64.0%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 17: River & Harrison

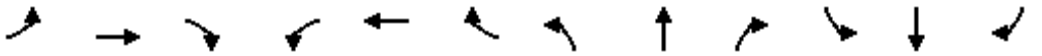




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	744	17	14	610	23	29	9	33	68	23	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.88		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1857		1770	1853		1770	1644		1770	1669	
Flt Permitted	0.31	1.00		0.24	1.00		0.70	1.00		0.73	1.00	
Satd. Flow (perm)	583	1857		439	1853		1311	1644		1354	1669	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	809	18	15	663	25	32	10	36	74	25	57
RTOR Reduction (vph)	0	1	0	0	2	0	0	28	0	0	44	0
Lane Group Flow (vph)	70	826	0	15	686	0	32	18	0	74	38	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	54.0	54.0		54.0	54.0		18.0	18.0		18.0	18.0	
Effective Green, g (s)	54.0	54.0		54.0	54.0		18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.22	0.22		0.22	0.22	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	394	1253		296	1251		295	370		305	376	
v/s Ratio Prot		c0.44			0.37			0.01			0.02	
v/s Ratio Perm	0.12			0.03			0.02			c0.05		
v/c Ratio	0.18	0.66		0.05	0.55		0.11	0.05		0.24	0.10	
Uniform Delay, d1	4.8	7.6		4.4	6.7		24.6	24.3		25.4	24.6	
Progression Factor	1.00	1.00		0.32	0.57		1.00	1.00		0.66	0.53	
Incremental Delay, d2	1.0	2.7		0.3	1.5		0.7	0.3		1.8	0.5	
Delay (s)	5.8	10.3		1.7	5.4		25.4	24.5		18.6	13.5	
Level of Service	A	B		A	A		C	C		B	B	
Approach Delay (s)		10.0			5.3			24.9			16.0	
Approach LOS		A			A			C			B	

Intersection Summary				
HCM Average Control Delay	9.3	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.55			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	64.0%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group



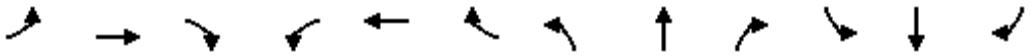
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	728	23	23	593	23	16	9	24	67	22	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.994				0.850		0.896	
Flt Protected	0.950			0.950				0.969		0.950		
Satd. Flow (prot)	1770	1853	0	1770	1852	0	0	1805	1583	1770	1669	0
Flt Permitted	0.323			0.242				0.858		0.740		
Satd. Flow (perm)	602	1853	0	451	1852	0	0	1598	1583	1378	1669	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			5				26		55	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1700			6636			272			1800	
Travel Time (s)		38.6			150.8			5.3			35.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	791	25	25	645	25	17	10	26	73	24	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	816	0	25	670	0	0	27	26	73	79	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	
Total Split (s)	58.0	58.0	0.0	58.0	58.0	0.0	22.0	22.0	22.0	22.0	22.0	0.0
Total Split (%)	72.5%	72.5%	0.0%	72.5%	72.5%	0.0%	27.5%	27.5%	27.5%	27.5%	27.5%	0.0%
Maximum Green (s)	54.0	54.0		54.0	54.0		18.0	18.0	18.0	18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	54.0	54.0		54.0	54.0			18.0	18.0	18.0	18.0	
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.22	0.22	0.22	0.22	
v/c Ratio	0.17	0.65		0.08	0.54			0.08	0.07	0.24	0.19	
Control Delay	3.1	5.1		4.5	7.4			25.2	10.7	25.9	12.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	3.1	5.1		4.5	7.4			25.2	10.7	25.9	12.1	
LOS	A	A		A	A			C	B	C	B	
Approach Delay		4.9			7.3			18.1			18.7	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	5	57		3	99			11	0	29	0	
Queue Length 95th (ft)	m8	78		9	143			31	19	55	32	
Internal Link Dist (ft)		1620			6556			192			1720	
Turn Bay Length (ft)												
Base Capacity (vph)	406	1252		304	1252			360	376	310	418	
Starvation Cap Reductn	0	0		0	0			0	0	0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.17	0.65		0.08	0.54			0.08	0.07	0.24	0.19	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 70 (88%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 7.4		Intersection LOS: A	
Intersection Capacity Utilization 63.4%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 18: River & Brady

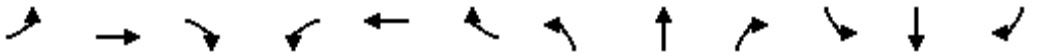




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	728	23	23	593	23	16	9	24	67	22	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99			1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1854		1770	1852			1806	1583	1770	1668	
Flt Permitted	0.32	1.00		0.24	1.00			0.86	1.00	0.74	1.00	
Satd. Flow (perm)	603	1854		450	1852			1599	1583	1378	1668	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	791	25	25	645	25	17	10	26	73	24	55
RTOR Reduction (vph)	0	1	0	0	2	0	0	0	20	0	43	0
Lane Group Flow (vph)	70	815	0	25	668	0	0	27	6	73	36	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	54.0	54.0		54.0	54.0			18.0	18.0	18.0	18.0	
Effective Green, g (s)	54.0	54.0		54.0	54.0			18.0	18.0	18.0	18.0	
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.22	0.22	0.22	0.22	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	407	1251		304	1250			360	356	310	375	
v/s Ratio Prot		c0.44			0.36						0.02	
v/s Ratio Perm	0.12			0.06				0.02	0.00	c0.05		
v/c Ratio	0.17	0.65		0.08	0.53			0.08	0.02	0.24	0.10	
Uniform Delay, d1	4.8	7.5		4.5	6.6			24.4	24.1	25.4	24.6	
Progression Factor	0.47	0.37		0.83	0.84			1.00	1.00	0.93	0.98	
Incremental Delay, d2	0.7	2.1		0.5	1.6			0.4	0.1	1.7	0.5	
Delay (s)	3.0	4.9		4.3	7.2			24.8	24.2	25.2	24.5	
Level of Service	A	A		A	A			C	C	C	C	
Approach Delay (s)		4.8			7.1			24.5			24.8	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

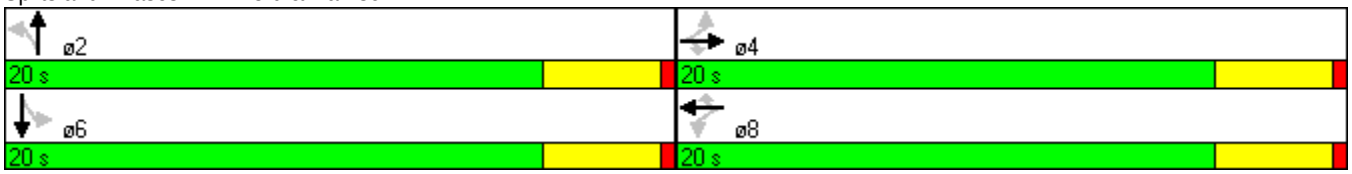


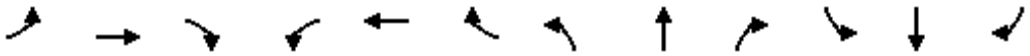
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	260	16	17	277	52	23	272	49	40	255	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850		0.977			0.952	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1820	0	1770	3369	0
Flt Permitted	0.547			0.569			0.513			0.491		
Satd. Flow (perm)	1019	1863	1583	1060	1863	1583	956	1820	0	915	3369	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			17			57		27			130	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2072			1708			1800			965	
Travel Time (s)		47.1			38.8			35.1			18.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	283	17	18	301	57	25	296	53	43	277	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	283	17	18	301	57	25	349	0	43	407	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40		0.40	0.40	
v/c Ratio	0.13	0.38	0.03	0.04	0.40	0.09	0.07	0.47		0.12	0.29	
Control Delay	8.7	10.4	4.4	5.2	8.5	2.0	7.6	9.8		4.2	2.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	8.7	10.4	4.4	5.2	8.5	2.0	7.6	9.8		4.2	2.1	
LOS	A	B	A	A	A	A	A	A		A	A	
Approach Delay		9.8			7.4			9.7			2.3	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	7	42	0	2	56	0	3	51		3	4	
Queue Length 95th (ft)	22	83	7	m4	74	2	m10	84		6	7	
Internal Link Dist (ft)		1992			1628			1720			885	
Turn Bay Length (ft)												
Base Capacity (vph)	408	745	643	424	745	667	382	744		366	1426	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.13	0.38	0.03	0.04	0.40	0.09	0.07	0.47		0.12	0.29	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 4 (10%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 7.0		Intersection LOS: A	
Intersection Capacity Utilization 51.9%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 21: 3rd & Harrison

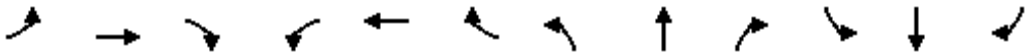




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	260	16	17	277	52	23	272	49	40	255	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1820		1770	3370	
Flt Permitted	0.55	1.00	1.00	0.57	1.00	1.00	0.51	1.00		0.49	1.00	
Satd. Flow (perm)	1019	1863	1583	1059	1863	1583	955	1820		914	3370	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	283	17	18	301	57	25	296	53	43	277	130
RTOR Reduction (vph)	0	0	10	0	0	34	0	16	0	0	78	0
Lane Group Flow (vph)	53	283	7	18	301	23	25	333	0	43	329	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	408	745	633	424	745	633	382	728		366	1348	
v/s Ratio Prot		0.15			c0.16			c0.18			0.10	
v/s Ratio Perm	0.05		0.00	0.02		0.01	0.03			0.05		
v/c Ratio	0.13	0.38	0.01	0.04	0.40	0.04	0.07	0.46		0.12	0.24	
Uniform Delay, d1	7.6	8.5	7.2	7.3	8.6	7.3	7.4	8.8		7.6	8.0	
Progression Factor	1.00	1.00	1.00	0.68	0.80	0.77	0.96	0.93		0.46	0.29	
Incremental Delay, d2	0.7	1.5	0.0	0.2	1.5	0.1	0.3	2.1		0.6	0.4	
Delay (s)	8.3	10.0	7.3	5.1	8.4	5.7	7.4	10.2		4.1	2.7	
Level of Service	A	A	A	A	A	A	A	B		A	A	
Approach Delay (s)		9.6			7.8			10.0			2.9	
Approach LOS		A			A			B			A	

Intersection Summary				
HCM Average Control Delay	7.3	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.43			
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	51.9%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

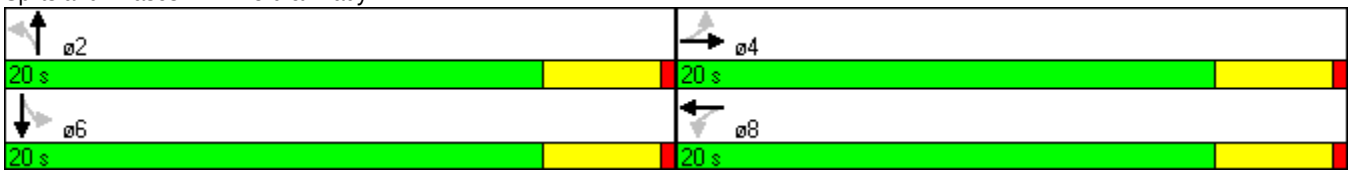


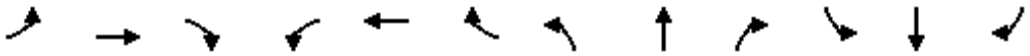
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	237	16	16	253	52	19	345	81	19	145	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.974			0.971			0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1846	0	1770	1814	0	1770	1809	0	1770	1758	0
Flt Permitted	0.510			0.578			0.603			0.363		
Satd. Flow (perm)	950	1846	0	1077	1814	0	1123	1809	0	676	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			31			35			88	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1708			6387			1800			965	
Travel Time (s)		38.8			145.2			35.1			18.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	258	17	17	275	57	21	375	88	21	158	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	275	0	17	332	0	21	463	0	21	251	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.14	0.37		0.04	0.45		0.05	0.62		0.08	0.33	
Control Delay	5.4	5.9		6.9	9.7		8.0	13.3		7.1	5.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.4	5.9		6.9	9.7		8.0	13.3		7.1	5.5	
LOS	A	A		A	A		A	B		A	A	
Approach Delay		5.9			9.5			13.0			5.6	
Approach LOS		A			A			B			A	
Queue Length 50th (ft)	5	24		2	46		3	81		2	16	
Queue Length 95th (ft)	m11	37		m8	96		m9	128		m6	26	
Internal Link Dist (ft)		1628			6307			1720			885	
Turn Bay Length (ft)												
Base Capacity (vph)	380	744		431	744		449	745		270	756	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.37		0.04	0.45		0.05	0.62		0.08	0.33	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 38 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 52.9%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 22: 3rd & Brady





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	237	16	16	253	52	19	345	81	19	145	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1845		1770	1815		1770	1810		1770	1759	
Flt Permitted	0.51	1.00		0.58	1.00		0.60	1.00		0.36	1.00	
Satd. Flow (perm)	951	1845		1077	1815		1124	1810		676	1759	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	258	17	17	275	57	21	375	88	21	158	93
RTOR Reduction (vph)	0	6	0	0	19	0	0	21	0	0	53	0
Lane Group Flow (vph)	53	269	0	17	313	0	21	442	0	21	198	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	380	738		431	726		450	724		270	704	
v/s Ratio Prot		0.15			c0.17			c0.24			0.11	
v/s Ratio Perm	0.06			0.02			0.02			0.03		
v/c Ratio	0.14	0.36		0.04	0.43		0.05	0.61		0.08	0.28	
Uniform Delay, d1	7.6	8.4		7.3	8.7		7.3	9.5		7.4	8.1	
Progression Factor	0.60	0.55		0.89	0.93		1.04	1.03		0.84	0.80	
Incremental Delay, d2	0.7	1.3		0.2	1.9		0.2	3.8		0.6	1.0	
Delay (s)	5.3	6.0		6.7	9.9		7.9	13.7		6.8	7.5	
Level of Service	A	A		A	A		A	B		A	A	
Approach Delay (s)		5.9			9.8			13.4			7.4	
Approach LOS		A			A			B			A	

Intersection Summary					
HCM Average Control Delay	9.7	HCM Level of Service		A	
HCM Volume to Capacity ratio	0.52				
Actuated Cycle Length (s)	40.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	52.9%	ICU Level of Service		A	
Analysis Period (min)	15				

c Critical Lane Group

3rd and 4th Streets

Two-Way Conversion
Synchro Analysis Reports

3rd and 4th Streets

Existing One-Way Streets
2009 AM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	107	330	0	0	0	0	0	522	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.86	0.86
Frt											0.947	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1770	3539	0	0	0	0	0	6068	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	1770	3539	0	0	0	0	0	6068	0
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)				116							180	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			898			2656	
Travel Time (s)		48.0			38.9			17.5			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	116	359	0	0	0	0	0	567	310
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	116	359	0	0	0	0	0	877	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Minimum Split (s)				21.0	21.0						21.0	
Total Split (s)	0.0	0.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	45.5%	45.5%	0.0%	0.0%	0.0%	0.0%	0.0%	54.5%	0.0%
Maximum Green (s)				45.0	45.0						55.0	
Yellow Time (s)				4.0	4.0						4.0	
All-Red Time (s)				1.0	1.0						1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	5.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0						5.0	
Flash Dont Walk (s)				11.0	11.0						11.0	
Pedestrian Calls (#/hr)				0	0						0	
Act Effct Green (s)				45.0	45.0						55.0	
Actuated g/C Ratio				0.41	0.41						0.50	
v/c Ratio				0.15	0.25						0.28	
Control Delay				2.1	17.0						15.7	
Queue Delay				0.0	0.0						0.0	
Total Delay				2.1	17.0						15.7	
LOS				A	B						B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay					13.3						15.7	
Approach LOS					B						B	
Queue Length 50th (ft)				0	53						54	
Queue Length 95th (ft)				16	72						130	
Internal Link Dist (ft)		2032			1632			818			2576	
Turn Bay Length (ft)												
Base Capacity (vph)				793	1448						3124	
Starvation Cap Reductn				0	0						0	
Spillback Cap Reductn				0	0						0	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.15	0.25						0.28	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBT, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 14.9		Intersection LOS: B	
Intersection Capacity Utilization 31.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 13: 4th & Harrison

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				[redacted]	[redacted]						[redacted]	
Volume (vph)	0	0	0	107	330	0	0	0	0	0	522	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	
Lane Util. Factor				1.00	0.95						0.86	
Frt				1.00	1.00						0.95	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1770	3539						6068	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1770	3539						6068	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	116	359	0	0	0	0	0	567	310
RTOR Reduction (vph)	0	0	0	69	0	0	0	0	0	0	90	0
Lane Group Flow (vph)	0	0	0	47	359	0	0	0	0	0	787	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)				45.0	45.0						55.0	
Effective Green, g (s)				45.0	45.0						55.0	
Actuated g/C Ratio				0.41	0.41						0.50	
Clearance Time (s)				5.0	5.0						5.0	
Lane Grp Cap (vph)				724	1448						3034	
v/s Ratio Prot					c0.10						c0.13	
v/s Ratio Perm				0.03								
v/c Ratio				0.07	0.25						0.26	
Uniform Delay, d1				19.7	21.4						15.8	
Progression Factor				0.46	0.77						1.24	
Incremental Delay, d2				0.2	0.4						0.2	
Delay (s)				9.3	16.8						19.8	
Level of Service				A	B						B	
Approach Delay (s)		0.0			15.0			0.0			19.8	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					[redacted]	[redacted]		[redacted]				
Volume (vph)	0	0	0	0	492	107	32	457	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frt						0.850						
Flt Protected								0.997				
Satd. Flow (prot)	0	0	0	0	3539	1583	0	5070	0	0	0	0
Flt Permitted								0.997				
Satd. Flow (perm)	0	0	0	0	3539	1583	0	5070	0	0	0	0
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						116		12				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			898			2656	
Travel Time (s)		38.9			53.1			17.5			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	535	116	35	497	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	535	116	0	532	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Minimum Split (s)					21.0	21.0	21.0	21.0				
Total Split (s)	0.0	0.0	0.0	0.0	62.0	62.0	48.0	48.0	0.0	0.0	0.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	56.4%	56.4%	43.6%	43.6%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)					57.0	57.0	43.0	43.0				
Yellow Time (s)					4.0	4.0	4.0	4.0				
All-Red Time (s)					1.0	1.0	1.0	1.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					5.0	5.0	5.0	5.0				
Flash Dont Walk (s)					11.0	11.0	11.0	11.0				
Pedestrian Calls (#/hr)					0	0	0	0				
Act Effct Green (s)					57.0	57.0		43.0				
Actuated g/C Ratio					0.52	0.52		0.39				
v/c Ratio					0.29	0.13		0.27				
Control Delay					15.6	2.9		16.5				
Queue Delay					0.0	0.0		0.0				
Total Delay					15.6	2.9		16.5				
LOS					B	A		B				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay					13.3			16.5				
Approach LOS					B			B				
Queue Length 50th (ft)					108	0		52				
Queue Length 95th (ft)					144	27		71				
Internal Link Dist (ft)		1632			2256			818			2576	
Turn Bay Length (ft)												
Base Capacity (vph)					1834	876		1989				
Starvation Cap Reductn					0	0		0				
Spillback Cap Reductn					0	0		0				
Storage Cap Reductn					0	0		0				
Reduced v/c Ratio					0.29	0.13		0.27				

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	
Maximum v/c Ratio: 0.29	
Intersection Signal Delay: 14.7	Intersection LOS: B
Intersection Capacity Utilization 31.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 14: 4th & Brady

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					[redacted]	[redacted]		[redacted]				
Volume (vph)	0	0	0	0	492	107	32	457	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0		5.0				
Lane Util. Factor					0.95	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					3539	1583		5069				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					3539	1583		5069				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	535	116	35	497	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	56	0	7	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	535	60	0	525	0	0	0	0
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Actuated Green, G (s)					57.0	57.0		43.0				
Effective Green, g (s)					57.0	57.0		43.0				
Actuated g/C Ratio					0.52	0.52		0.39				
Clearance Time (s)					5.0	5.0		5.0				
Lane Grp Cap (vph)					1834	820		1982				
v/s Ratio Prot					c0.15							
v/s Ratio Perm						0.04		0.10				
v/c Ratio					0.29	0.07		0.26				
Uniform Delay, d1					15.0	13.3		22.8				
Progression Factor					1.00	1.00		0.72				
Incremental Delay, d2					0.4	0.2		0.3				
Delay (s)					15.4	13.4		16.8				
Level of Service					B	B		B				
Approach Delay (s)		0.0			15.1			16.8			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	310	101	0	0	0	0	0	0	152	370	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	1.00
Frt		0.963										
Flt Protected										0.950	0.997	
Satd. Flow (prot)	0	6171	0	0	0	0	0	0	0	1522	4791	0
Flt Permitted										0.950	0.997	
Satd. Flow (perm)	0	6171	0	0	0	0	0	0	0	1522	4791	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)		87								137	14	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2033			1714			2560			898	
Travel Time (s)		46.2			39.0			49.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	337	110	0	0	0	0	0	0	165	402	0
Shared Lane Traffic (%)										17%		
Lane Group Flow (vph)	0	447	0	0	0	0	0	0	0	137	430	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Minimum Split (s)		21.0								21.0	21.0	
Total Split (s)	0.0	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.0	63.0	0.0
Total Split (%)	0.0%	42.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	57.3%	57.3%	0.0%
Maximum Green (s)		42.0								58.0	58.0	
Yellow Time (s)		4.0								4.0	4.0	
All-Red Time (s)		1.0								1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0								5.0	5.0	
Flash Dont Walk (s)		11.0								11.0	11.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effct Green (s)		42.0								58.0	58.0	
Actuated g/C Ratio		0.38								0.53	0.53	
v/c Ratio		0.19								0.16	0.17	
Control Delay		18.2								2.6	10.5	
Queue Delay		0.0								0.0	0.0	
Total Delay		18.2								2.6	10.5	
LOS		B								A	B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		18.2									8.6	
Approach LOS		B									A	
Queue Length 50th (ft)		47								2	34	
Queue Length 95th (ft)		67								2	44	
Internal Link Dist (ft)		1953			1634			2480			818	
Turn Bay Length (ft)												
Base Capacity (vph)		2410								867	2533	
Starvation Cap Reductn		0								0	0	
Spillback Cap Reductn		0								0	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.19								0.16	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.19			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 29.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 21: 3rd & Harrison

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	310	101	0	0	0	0	0	0	152	370	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.0	5.0	
Lane Util. Factor		0.86								0.86	0.86	
Frt		0.96								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		6171								1522	4790	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		6171								1522	4790	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	337	110	0	0	0	0	0	0	165	402	0
RTOR Reduction (vph)	0	54	0	0	0	0	0	0	0	65	7	0
Lane Group Flow (vph)	0	393	0	0	0	0	0	0	0	72	423	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		42.0								58.0	58.0	
Effective Green, g (s)		42.0								58.0	58.0	
Actuated g/C Ratio		0.38								0.53	0.53	
Clearance Time (s)		5.0								5.0	5.0	
Lane Grp Cap (vph)		2356								803	2526	
v/s Ratio Prot		c0.06										
v/s Ratio Perm										0.05	0.09	
v/c Ratio		0.17								0.09	0.17	
Uniform Delay, d1		22.4								12.9	13.5	
Progression Factor		1.00								0.99	0.79	
Incremental Delay, d2		0.2								0.2	0.1	
Delay (s)		22.6								13.0	10.8	
Level of Service		C								B	B	
Approach Delay (s)		22.6			0.0			0.0			11.3	
Approach LOS		C			A			A			B	

Intersection Summary					
HCM Average Control Delay	16.3	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.17				
Actuated Cycle Length (s)	110.0	Sum of lost time (s)		10.0	
Intersection Capacity Utilization	29.8%	ICU Level of Service		A	
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	462	0	0	0	0	0	356	146	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00
Frt								0.956				
Flt Protected	0.950	0.999										
Satd. Flow (prot)	1522	4801	0	0	0	0	0	4862	0	0	0	0
Flt Permitted	0.950	0.999										
Satd. Flow (perm)	1522	4801	0	0	0	0	0	4862	0	0	0	0
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	99	3						126				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1714			7509			2560			898	
Travel Time (s)		39.0			170.7			49.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	502	0	0	0	0	0	387	159	0	0	0
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	99	513	0	0	0	0	0	546	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	21.0	21.0						21.0				
Total Split (s)	54.0	54.0	0.0	0.0	0.0	0.0	0.0	56.0	0.0	0.0	0.0	0.0
Total Split (%)	49.1%	49.1%	0.0%	0.0%	0.0%	0.0%	0.0%	50.9%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	49.0	49.0						51.0				
Yellow Time (s)	4.0	4.0						4.0				
All-Red Time (s)	1.0	1.0						1.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0				
Flash Dont Walk (s)	11.0	11.0						11.0				
Pedestrian Calls (#/hr)	0	0						0				
Act Effct Green (s)	49.0	49.0						51.0				
Actuated g/C Ratio	0.45	0.45						0.46				
v/c Ratio	0.14	0.24						0.24				
Control Delay	7.7	21.7						13.7				
Queue Delay	0.0	0.0						0.0				
Total Delay	7.7	21.7						13.7				
LOS	A	C						B				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		19.5						13.7				
Approach LOS		B						B				
Queue Length 50th (ft)	0	75						61				
Queue Length 95th (ft)	39	113						86				
Internal Link Dist (ft)		1634			7429			2480			818	
Turn Bay Length (ft)												
Base Capacity (vph)	733	2140						2322				
Starvation Cap Reductn	0	0						0				
Spillback Cap Reductn	0	0						0				
Storage Cap Reductn	0	0						0				
Reduced v/c Ratio	0.14	0.24						0.24				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.24			
Intersection Signal Delay: 16.7		Intersection LOS: B	
Intersection Capacity Utilization 54.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: 3rd & Brady

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	462	0	0	0	0	0	356	146	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0						5.0				
Lane Util. Factor	0.86	0.86						0.91				
Frt	1.00	1.00						0.96				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1522	4801						4863				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1522	4801						4863				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	502	0	0	0	0	0	387	159	0	0	0
RTOR Reduction (vph)	55	2	0	0	0	0	0	68	0	0	0	0
Lane Group Flow (vph)	44	511	0	0	0	0	0	478	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)	49.0	49.0						51.0				
Effective Green, g (s)	49.0	49.0						51.0				
Actuated g/C Ratio	0.45	0.45						0.46				
Clearance Time (s)	5.0	5.0						5.0				
Lane Grp Cap (vph)	678	2139						2255				
v/s Ratio Prot								c0.10				
v/s Ratio Perm	0.03	0.11										
v/c Ratio	0.07	0.24						0.21				
Uniform Delay, d1	17.4	18.9						17.5				
Progression Factor	2.01	1.13						1.00				
Incremental Delay, d2	0.2	0.3						0.2				
Delay (s)	35.2	21.7						17.8				
Level of Service	D	C						B				
Approach Delay (s)		23.9			0.0			17.8			0.0	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

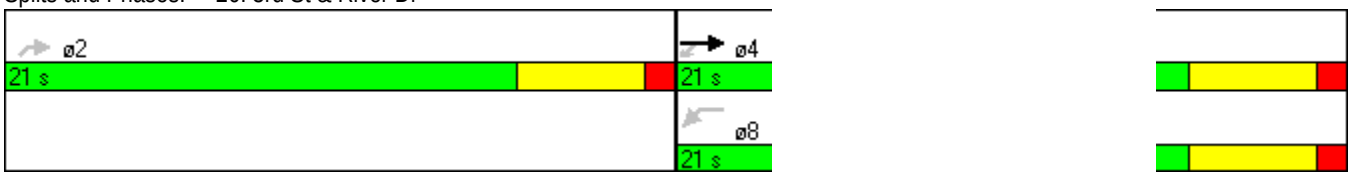
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	94	4	268	0	0	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	0.97	1.00	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950			
Satd. Flow (prot)	3539	1583	3433	0	0	2787
Flt Permitted			0.688			
Satd. Flow (perm)	3539	1583	2486	0	0	2787
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		4				1365
Link Speed (mph)	30			30	30	
Link Distance (ft)	7509			1122	7927	
Travel Time (s)	170.7			25.5	180.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	4	291	0	0	135
Shared Lane Traffic (%)						
Lane Group Flow (vph)	102	4	291	0	0	135
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type		Perm	custom			custom
Protected Phases	4					
Permitted Phases		4	8			2
Minimum Split (s)	21.0	21.0	21.0			21.0
Total Split (s)	21.0	21.0	21.0	0.0	0.0	21.0
Total Split (%)	50.0%	50.0%	50.0%	0.0%	0.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0			16.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	1.0	1.0	1.0			1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	4.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	16.0	16.0	16.0			16.0
Actuated g/C Ratio	0.38	0.38	0.38			0.38
v/c Ratio	0.08	0.01	0.31			0.07
Control Delay	8.5	6.0	10.3			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	8.5	6.0	10.3			0.1
LOS	A	A	B			A

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Approach Delay	8.4					
Approach LOS	A					
Queue Length 50th (ft)	7	0	23			0
Queue Length 95th (ft)	17	4	44			0
Internal Link Dist (ft)	7429			1042	7847	
Turn Bay Length (ft)						
Base Capacity (vph)	1348	606	947			1907
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.08	0.01	0.31			0.07

Intersection Summary			
Area Type:	Other		
Cycle Length: 42			
Actuated Cycle Length: 42			
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay: 7.3		Intersection LOS: A	
Intersection Capacity Utilization 18.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 26: 3rd St & River Dr



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	[redacted]	[redacted]	[redacted]			
Volume (vph)	94	4	268	0	0	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0			5.0
Lane Util. Factor	0.95	1.00	0.97			0.88
Frt	1.00	0.85	1.00			0.85
Flt Protected	1.00	1.00	0.95			1.00
Satd. Flow (prot)	3539	1583	3433			2787
Flt Permitted	1.00	1.00	0.69			1.00
Satd. Flow (perm)	3539	1583	2485			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	4	291	0	0	135
RTOR Reduction (vph)	0	2	0	0	0	84
Lane Group Flow (vph)	102	2	291	0	0	51
Turn Type		Perm	custom			custom
Protected Phases	4					
Permitted Phases		4	8			2
Actuated Green, G (s)	16.0	16.0	16.0			16.0
Effective Green, g (s)	16.0	16.0	16.0			16.0
Actuated g/C Ratio	0.38	0.38	0.38			0.38
Clearance Time (s)	5.0	5.0	5.0			5.0
Lane Grp Cap (vph)	1348	603	947			1062
v/s Ratio Prot	0.03					
v/s Ratio Perm		0.00	c0.12			c0.02
v/c Ratio	0.08	0.00	0.31			0.05
Uniform Delay, d1	8.3	8.1	9.1			8.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	0.0	0.8			0.1
Delay (s)	8.4	8.1	10.0			8.3
Level of Service	A	A	A			A
Approach Delay (s)	8.4			10.0	8.3	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	42.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

3rd and 4th Streets

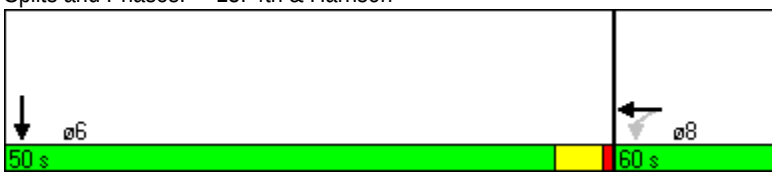
Existing One-Way Streets
2009 PM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	66	554	0	0	0	0	0	461	344
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.86	0.86
Frt											0.936	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1770	3539	0	0	0	0	0	5998	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	1770	3539	0	0	0	0	0	5998	0
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)				72							207	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			869			2656	
Travel Time (s)		48.0			38.9			16.9			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	72	602	0	0	0	0	0	501	374
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	72	602	0	0	0	0	0	875	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Minimum Split (s)				21.0	21.0						21.0	
Total Split (s)	0.0	0.0	0.0	60.0	60.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	54.5%	54.5%	0.0%	0.0%	0.0%	0.0%	0.0%	45.5%	0.0%
Maximum Green (s)				55.0	55.0						45.0	
Yellow Time (s)				4.0	4.0						4.0	
All-Red Time (s)				1.0	1.0						1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	5.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0						5.0	
Flash Dont Walk (s)				11.0	11.0						11.0	
Pedestrian Calls (#/hr)				0	0						0	
Act Effct Green (s)				55.0	55.0						45.0	
Actuated g/C Ratio				0.50	0.50						0.41	
v/c Ratio				0.08	0.34						0.34	
Control Delay				13.4	26.9						36.9	
Queue Delay				0.0	0.0						0.0	
Total Delay				13.4	26.9						36.9	
LOS				B	C						D	
Approach Delay					25.5						36.9	
Approach LOS					C						D	
Queue Length 50th (ft)				0	141						150	
Queue Length 95th (ft)				43	203						170	
Internal Link Dist (ft)		2032			1632			789			2576	
Turn Bay Length (ft)												
Base Capacity (vph)				921	1770						2576	
Starvation Cap Reductn				0	0						0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn				0	0						0	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.08	0.34						0.34	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBT, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 32.0		Intersection LOS: C	
Intersection Capacity Utilization 40.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 13: 4th & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				[redacted]	[redacted]						[redacted]	
Volume (vph)	0	0	0	66	554	0	0	0	0	0	461	344
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	
Lane Util. Factor				1.00	0.95						0.86	
Frt				1.00	1.00						0.94	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1770	3539						5997	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1770	3539						5997	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	72	602	0	0	0	0	0	501	374
RTOR Reduction (vph)	0	0	0	36	0	0	0	0	0	0	122	0
Lane Group Flow (vph)	0	0	0	36	602	0	0	0	0	0	753	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)				55.0	55.0						45.0	
Effective Green, g (s)				55.0	55.0						45.0	
Actuated g/C Ratio				0.50	0.50						0.41	
Clearance Time (s)				5.0	5.0						5.0	
Lane Grp Cap (vph)				885	1770						2453	
v/s Ratio Prot					c0.17						c0.13	
v/s Ratio Perm				0.02								
v/c Ratio				0.04	0.34						0.31	
Uniform Delay, d1				14.0	16.6						22.0	
Progression Factor				3.88	1.58						2.20	
Incremental Delay, d2				0.1	0.5						0.3	
Delay (s)				54.5	26.7						48.5	
Level of Service				D	C						D	
Approach Delay (s)		0.0			29.7			0.0			48.5	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM Average Control Delay	40.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					[redacted]	[redacted]		[redacted]				
Volume (vph)	0	0	0	0	494	207	77	885	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frt						0.850						
Flt Protected								0.996				
Satd. Flow (prot)	0	0	0	0	3539	1583	0	5065	0	0	0	0
Flt Permitted								0.996				
Satd. Flow (perm)	0	0	0	0	3539	1583	0	5065	0	0	0	0
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						84		18				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			869			2656	
Travel Time (s)		38.9			53.1			16.9			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	537	225	84	962	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	537	225	0	1046	0	0	0	0
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Minimum Split (s)					21.0	21.0	21.0	21.0				
Total Split (s)	0.0	0.0	0.0	0.0	50.0	50.0	60.0	60.0	0.0	0.0	0.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	45.5%	45.5%	54.5%	54.5%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)					45.0	45.0	55.0	55.0				
Yellow Time (s)					4.0	4.0	4.0	4.0				
All-Red Time (s)					1.0	1.0	1.0	1.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					5.0	5.0	5.0	5.0				
Flash Dont Walk (s)					11.0	11.0	11.0	11.0				
Pedestrian Calls (#/hr)					0	0	0	0				
Act Effct Green (s)					45.0	45.0		55.0				
Actuated g/C Ratio					0.41	0.41		0.50				
v/c Ratio					0.37	0.32		0.41				
Control Delay					23.6	14.9		7.8				
Queue Delay					0.0	0.0		0.0				
Total Delay					23.6	14.9		7.8				
LOS					C	B		A				
Approach Delay					21.0			7.8				
Approach LOS					C			A				
Queue Length 50th (ft)					136	63		48				
Queue Length 95th (ft)					181	122		63				
Internal Link Dist (ft)		1632			2256			789			2576	
Turn Bay Length (ft)												
Base Capacity (vph)					1448	697		2542				
Starvation Cap Reductn					0	0		0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn					0	0		0				
Storage Cap Reductn					0	0		0				
Reduced v/c Ratio					0.37	0.32		0.41				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 13.4		Intersection LOS: B	
Intersection Capacity Utilization 40.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 14: 4th & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					[redacted]	[redacted]		[redacted]				
Volume (vph)	0	0	0	0	494	207	77	885	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0		5.0				
Lane Util. Factor					0.95	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					3539	1583		5065				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					3539	1583		5065				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	537	225	84	962	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	50	0	9	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	537	175	0	1037	0	0	0	0
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Actuated Green, G (s)					45.0	45.0		55.0				
Effective Green, g (s)					45.0	45.0		55.0				
Actuated g/C Ratio					0.41	0.41		0.50				
Clearance Time (s)					5.0	5.0		5.0				
Lane Grp Cap (vph)					1448	648		2533				
v/s Ratio Prot					c0.15							
v/s Ratio Perm						0.11		0.20				
v/c Ratio					0.37	0.27		0.41				
Uniform Delay, d1					22.6	21.6		17.3				
Progression Factor					1.00	1.00		0.43				
Incremental Delay, d2					0.7	1.0		0.5				
Delay (s)					23.4	22.6		7.9				
Level of Service					C	C		A				
Approach Delay (s)		0.0			23.1			7.9			0.0	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	520	62	0	0	0	0	0	0	105	356	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	1.00
Frt		0.984										
Flt Protected										0.950	0.999	
Satd. Flow (prot)	0	6305	0	0	0	0	0	0	0	1522	4801	0
Flt Permitted										0.950	0.999	
Satd. Flow (perm)	0	6305	0	0	0	0	0	0	0	1522	4801	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)		34								103	5	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2103			1714			1550			869	
Travel Time (s)		47.8			39.0			30.2			16.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	565	67	0	0	0	0	0	0	114	387	0
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	632	0	0	0	0	0	0	0	103	398	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Minimum Split (s)		21.0								21.0	21.0	
Total Split (s)	0.0	55.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.0	55.0	0.0
Total Split (%)	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)		50.0								50.0	50.0	
Yellow Time (s)		4.0								4.0	4.0	
All-Red Time (s)		1.0								1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0								5.0	5.0	
Flash Dont Walk (s)		11.0								11.0	11.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effct Green (s)		50.0								50.0	50.0	
Actuated g/C Ratio		0.45								0.45	0.45	
v/c Ratio		0.22								0.14	0.18	
Control Delay		17.4								0.5	5.6	
Queue Delay		0.0								0.0	0.0	
Total Delay		17.4								0.5	5.6	
LOS		B								A	A	
Approach Delay		17.4									4.6	
Approach LOS		B									A	
Queue Length 50th (ft)		72								0	17	
Queue Length 95th (ft)		92								0	24	
Internal Link Dist (ft)		2023			1634			1470			789	
Turn Bay Length (ft)												
Base Capacity (vph)		2884								748	2185	
Starvation Cap Reductn		0								0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0								0	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.22								0.14	0.18	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.22			
Intersection Signal Delay: 11.7		Intersection LOS: B	
Intersection Capacity Utilization 36.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 21: 3rd & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		[redacted]								[redacted]	[redacted]	
Volume (vph)	0	520	62	0	0	0	0	0	0	105	356	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.0	5.0	
Lane Util. Factor		0.86								0.86	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		6306								1522	4799	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		6306								1522	4799	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	565	67	0	0	0	0	0	0	114	387	0
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	56	3	0
Lane Group Flow (vph)	0	613	0	0	0	0	0	0	0	47	395	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		50.0								50.0	50.0	
Effective Green, g (s)		50.0								50.0	50.0	
Actuated g/C Ratio		0.45								0.45	0.45	
Clearance Time (s)		5.0								5.0	5.0	
Lane Grp Cap (vph)		2866								692	2181	
v/s Ratio Prot		c0.10										
v/s Ratio Perm										0.03	0.08	
v/c Ratio		0.21								0.07	0.18	
Uniform Delay, d1		18.1								16.9	17.8	
Progression Factor		1.00								0.03	0.31	
Incremental Delay, d2		0.2								0.2	0.2	
Delay (s)		18.3								0.6	5.7	
Level of Service		B								A	A	
Approach Delay (s)		18.3			0.0			0.0			4.6	
Approach LOS		B			A			A			A	

Intersection Summary				
HCM Average Control Delay	12.3	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.20			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0	
Intersection Capacity Utilization	36.1%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	464	0	0	0	0	0	743	107	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00
Frt								0.981				
Flt Protected	0.950	0.997										
Satd. Flow (prot)	1522	4791	0	0	0	0	0	4989	0	0	0	0
Flt Permitted	0.950	0.997										
Satd. Flow (perm)	1522	4791	0	0	0	0	0	4989	0	0	0	0
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	140	12						35				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1714			6511			1540			869	
Travel Time (s)		39.0			148.0			30.0			16.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	504	0	0	0	0	0	808	116	0	0	0
Shared Lane Traffic (%)	18%											
Lane Group Flow (vph)	173	542	0	0	0	0	0	924	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	21.0	21.0						21.0				
Total Split (s)	48.0	48.0	0.0	0.0	0.0	0.0	0.0	62.0	0.0	0.0	0.0	0.0
Total Split (%)	43.6%	43.6%	0.0%	0.0%	0.0%	0.0%	0.0%	56.4%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	43.0	43.0						57.0				
Yellow Time (s)	4.0	4.0						4.0				
All-Red Time (s)	1.0	1.0						1.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0				
Flash Dont Walk (s)	11.0	11.0						11.0				
Pedestrian Calls (#/hr)	0	0						0				
Act Effct Green (s)	43.0	43.0						57.0				
Actuated g/C Ratio	0.39	0.39						0.52				
v/c Ratio	0.25	0.29						0.36				
Control Delay	3.4	16.9						18.0				
Queue Delay	0.0	0.0						0.0				
Total Delay	3.4	16.9						18.0				
LOS	A	B						B				
Approach Delay		13.6						18.0				
Approach LOS		B						B				
Queue Length 50th (ft)	3	60						145				
Queue Length 95th (ft)	27	76						180				
Internal Link Dist (ft)		1634			6431			1460			789	
Turn Bay Length (ft)												
Base Capacity (vph)	680	1880						2602				
Starvation Cap Reductn	0	0						0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0						0				
Storage Cap Reductn	0	0						0				
Reduced v/c Ratio	0.25	0.29						0.36				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 16.1		Intersection LOS: B	
Intersection Capacity Utilization 61.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 22: 3rd & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	464	0	0	0	0	0	743	107	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0						5.0				
Lane Util. Factor	0.86	0.86						0.91				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1522	4789						4990				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1522	4789						4990				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	504	0	0	0	0	0	808	116	0	0	0
RTOR Reduction (vph)	85	7	0	0	0	0	0	17	0	0	0	0
Lane Group Flow (vph)	88	535	0	0	0	0	0	907	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)	43.0	43.0						57.0				
Effective Green, g (s)	43.0	43.0						57.0				
Actuated g/C Ratio	0.39	0.39						0.52				
Clearance Time (s)	5.0	5.0						5.0				
Lane Grp Cap (vph)	595	1872						2586				
v/s Ratio Prot								c0.18				
v/s Ratio Perm	0.06	0.11										
v/c Ratio	0.15	0.29						0.35				
Uniform Delay, d1	21.7	23.0						15.6				
Progression Factor	0.41	0.73						1.17				
Incremental Delay, d2	0.5	0.4						0.4				
Delay (s)	9.5	17.1						18.6				
Level of Service	A	B						B				
Approach Delay (s)		15.3			0.0			18.6			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

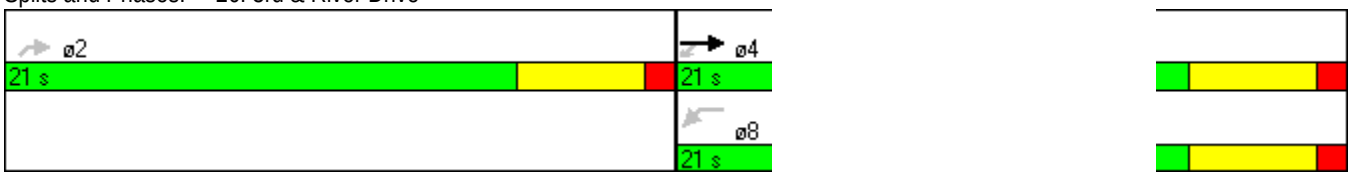
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	254	24	208	0	0	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	0.97	1.00	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950			
Satd. Flow (prot)	3539	1583	3433	0	0	2787
Flt Permitted			0.582			
Satd. Flow (perm)	3539	1583	2103	0	0	2787
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		26				754
Link Speed (mph)	30			30	30	
Link Distance (ft)	6511			1400	6688	
Travel Time (s)	148.0			31.8	152.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	276	26	226	0	0	271
Shared Lane Traffic (%)						
Lane Group Flow (vph)	276	26	226	0	0	271
Turn Type		Perm	custom			custom
Protected Phases	4					
Permitted Phases		4	8			2
Minimum Split (s)	21.0	21.0	21.0			21.0
Total Split (s)	21.0	21.0	21.0	0.0	0.0	21.0
Total Split (%)	50.0%	50.0%	50.0%	0.0%	0.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0			16.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	1.0	1.0	1.0			1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	4.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	16.0	16.0	16.0			16.0
Actuated g/C Ratio	0.38	0.38	0.38			0.38
v/c Ratio	0.20	0.04	0.28			0.18
Control Delay	9.3	4.5	10.2			0.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	9.3	4.5	10.2			0.3
LOS	A	A	B			A
Approach Delay	8.8					
Approach LOS	A					
Queue Length 50th (ft)	21	0	18			0
Queue Length 95th (ft)	40	10	36			0
Internal Link Dist (ft)	6431			1320	6608	
Turn Bay Length (ft)						
Base Capacity (vph)	1348	619	801			1528
Starvation Cap Reductn	0	0	0			0

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.20	0.04	0.28			0.18

Intersection Summary			
Area Type:	Other		
Cycle Length: 42			
Actuated Cycle Length: 42			
Offset: 28 (67%), Referenced to phase 2:NER and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 6.3		Intersection LOS: A	
Intersection Capacity Utilization 24.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 26: 3rd & River Drive



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	254	24	208	0	0	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0			5.0
Lane Util. Factor	0.95	1.00	0.97			0.88
Frt	1.00	0.85	1.00			0.85
Flt Protected	1.00	1.00	0.95			1.00
Satd. Flow (prot)	3539	1583	3433			2787
Flt Permitted	1.00	1.00	0.58			1.00
Satd. Flow (perm)	3539	1583	2103			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	276	26	226	0	0	271
RTOR Reduction (vph)	0	16	0	0	0	168
Lane Group Flow (vph)	276	10	226	0	0	103
Turn Type		Perm	custom			custom
Protected Phases	4					
Permitted Phases		4	8			2
Actuated Green, G (s)	16.0	16.0	16.0			16.0
Effective Green, g (s)	16.0	16.0	16.0			16.0
Actuated g/C Ratio	0.38	0.38	0.38			0.38
Clearance Time (s)	5.0	5.0	5.0			5.0
Lane Grp Cap (vph)	1348	603	801			1062
v/s Ratio Prot	0.08					
v/s Ratio Perm		0.01	c0.11			c0.04
v/c Ratio	0.20	0.02	0.28			0.10
Uniform Delay, d1	8.7	8.1	9.0			8.4
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.3	0.0	0.9			0.2
Delay (s)	9.1	8.1	9.9			8.5
Level of Service	A	A	A			A
Approach Delay (s)	9.0			9.9	8.5	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	42.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	24.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

3rd and 4th Streets

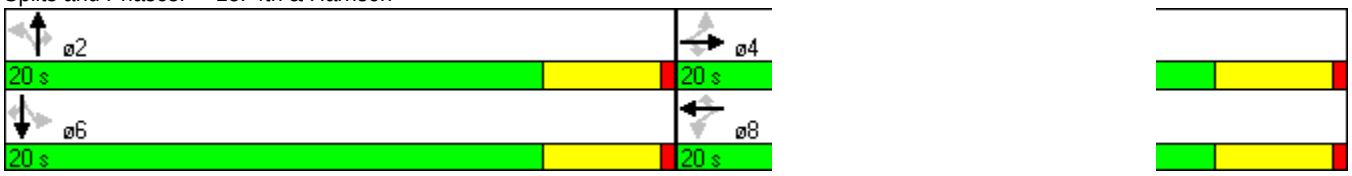
Converted Two-Way Streets
2009 AM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	155	26	27	165	26	8	228	36	38	261	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.644			0.651			0.567			0.605		
Satd. Flow (perm)	1200	1863	1583	1213	1863	1583	1056	1863	1583	1127	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			28			28			39			78
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			1163			2656	
Travel Time (s)		48.0			38.9			22.7			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	168	28	29	179	28	9	248	39	41	284	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	168	28	29	179	28	9	248	39	41	284	78
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.06	0.23	0.04	0.06	0.24	0.04	0.02	0.33	0.06	0.09	0.38	0.11
Control Delay	7.8	9.0	3.9	3.9	4.6	1.3	4.9	6.4	1.8	4.9	7.8	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	9.0	3.9	3.9	4.6	1.3	4.9	6.4	1.8	4.9	7.8	2.2
LOS	A	A	A	A	A	A	A	A	A	A	A	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		8.2			4.1			5.7			6.4	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	3	23	0	2	12	0	1	22	1	3	42	3
Queue Length 95th (ft)	13	51	9	m5	24	m1	m4	41	5	m5	m57	m4
Internal Link Dist (ft)		2032			1632			1083			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	480	745	650	485	745	650	422	745	657	451	745	680
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.23	0.04	0.06	0.24	0.04	0.02	0.33	0.06	0.09	0.38	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 20 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 42.4%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 13: 4th & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	155	26	27	165	26	8	228	36	38	261	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.64	1.00	1.00	0.65	1.00	1.00	0.57	1.00	1.00	0.61	1.00	1.00
Satd. Flow (perm)	1200	1863	1583	1212	1863	1583	1057	1863	1583	1127	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	168	28	29	179	28	9	248	39	41	284	78
RTOR Reduction (vph)	0	0	17	0	0	17	0	0	23	0	0	47
Lane Group Flow (vph)	27	168	11	29	179	11	9	248	16	41	284	31
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	480	745	633	485	745	633	423	745	633	451	745	633
v/s Ratio Prot		0.09			c0.10			0.13			c0.15	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.01		0.01	0.04		0.02
v/c Ratio	0.06	0.23	0.02	0.06	0.24	0.02	0.02	0.33	0.02	0.09	0.38	0.05
Uniform Delay, d1	7.4	7.9	7.3	7.4	8.0	7.3	7.3	8.3	7.3	7.5	8.5	7.3
Progression Factor	1.00	1.00	1.00	0.48	0.46	0.31	0.65	0.60	0.46	0.59	0.74	0.72
Incremental Delay, d2	0.2	0.7	0.1	0.2	0.7	0.0	0.1	1.2	0.1	0.3	1.2	0.1
Delay (s)	7.6	8.6	7.3	3.8	4.4	2.3	4.8	6.2	3.4	4.7	7.5	5.4
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		8.3			4.1			5.8			6.8	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

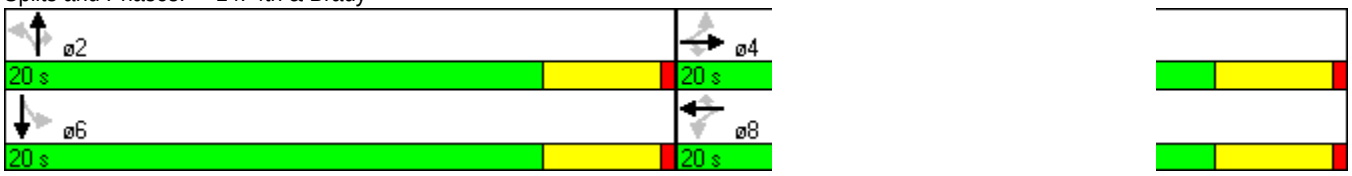
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	231	25	27	246	27	8	229	36	38	261	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1803	0
Flt Permitted	0.588			0.603			0.477			0.605		
Satd. Flow (perm)	1095	1863	1583	1123	1863	1583	889	1863	1583	1127	1803	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			39		41	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			1163			2656	
Travel Time (s)		38.9			53.1			22.7			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	251	27	29	267	29	9	249	39	41	284	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	251	27	29	267	29	9	249	39	41	361	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	
v/c Ratio	0.06	0.34	0.04	0.06	0.36	0.04	0.03	0.33	0.06	0.09	0.48	
Control Delay	7.2	9.5	3.5	7.9	10.2	3.9	4.8	6.3	1.6	4.3	7.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.2	9.5	3.5	7.9	10.2	3.9	4.8	6.3	1.6	4.3	7.2	
LOS	A	A	A	A	B	A	A	A	A	A	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		8.8			9.4			5.7			6.9	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	2	22	1	4	39	0	1	18	1	3	51	
Queue Length 95th (ft)	9	66	3	14	79	10	m3	37	4	m5	m73	
Internal Link Dist (ft)		1632			2256			1083			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	438	745	649	449	745	651	356	745	657	451	746	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.34	0.04	0.06	0.36	0.04	0.03	0.33	0.06	0.09	0.48	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 22 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 7.7		Intersection LOS: A	
Intersection Capacity Utilization 51.0%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 14: 4th & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	231	25	27	246	27	8	229	36	38	261	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1803	
Flt Permitted	0.59	1.00	1.00	0.60	1.00	1.00	0.48	1.00	1.00	0.60	1.00	
Satd. Flow (perm)	1095	1863	1583	1124	1863	1583	888	1863	1583	1126	1803	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	251	27	29	267	29	9	249	39	41	284	77
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	23	0	25	0
Lane Group Flow (vph)	28	251	11	29	267	12	9	249	16	41	336	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	438	745	633	450	745	633	355	745	633	450	721	
v/s Ratio Prot		0.13			c0.14			0.13			c0.19	
v/s Ratio Perm	0.03		0.01	0.03		0.01	0.01		0.01	0.04		
v/c Ratio	0.06	0.34	0.02	0.06	0.36	0.02	0.03	0.33	0.02	0.09	0.47	
Uniform Delay, d1	7.4	8.3	7.2	7.4	8.4	7.3	7.3	8.3	7.3	7.5	8.9	
Progression Factor	0.90	0.95	0.86	1.00	1.00	1.00	0.62	0.59	0.42	0.51	0.65	
Incremental Delay, d2	0.3	1.2	0.0	0.3	1.3	0.1	0.1	1.2	0.1	0.3	1.8	
Delay (s)	6.9	9.1	6.3	7.7	9.7	7.3	4.6	6.1	3.1	4.2	7.5	
Level of Service	A	A	A	A	A	A	A	A	A	A	A	
Approach Delay (s)		8.7			9.3			5.7			7.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

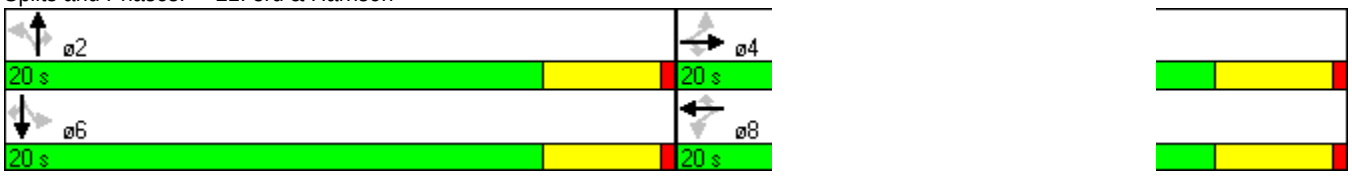
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	155	25	27	165	27	8	152	37	38	185	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.644			0.651			0.632			0.653		
Satd. Flow (perm)	1200	1863	1583	1213	1863	1583	1177	1863	1583	1216	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			40			77
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2089			1711			1848			1163	
Travel Time (s)		47.5			38.9			36.0			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	168	27	29	179	29	9	165	40	41	201	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	168	27	29	179	29	9	165	40	41	201	77
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.06	0.23	0.04	0.06	0.24	0.04	0.02	0.22	0.06	0.08	0.27	0.11
Control Delay	7.8	9.0	4.0	2.9	3.9	0.7	10.9	12.8	6.9	3.2	3.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	9.0	4.0	2.9	3.9	0.7	10.9	12.8	6.9	3.2	3.8	0.5
LOS	A	A	A	A	A	A	B	B	A	A	A	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		8.2			3.4			11.6			2.9	
Approach LOS		A			A			B			A	
Queue Length 50th (ft)	3	23	0	2	9	1	2	31	2	2	9	0
Queue Length 95th (ft)	13	51	9	m5	19	m1	m8	m61	m15	m6	19	1
Internal Link Dist (ft)		2009			1631			1768			1083	
Turn Bay Length (ft)												
Base Capacity (vph)	480	745	649	485	745	651	471	745	657	486	745	679
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.23	0.04	0.06	0.24	0.04	0.02	0.22	0.06	0.08	0.27	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.27			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 38.4%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 21: 3rd & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	155	25	27	165	27	8	152	37	38	185	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.64	1.00	1.00	0.65	1.00	1.00	0.63	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	1200	1863	1583	1212	1863	1583	1177	1863	1583	1216	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	168	27	29	179	29	9	165	40	41	201	77
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	24	0	0	46
Lane Group Flow (vph)	27	168	11	29	179	12	9	165	16	41	201	31
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	480	745	633	485	745	633	471	745	633	486	745	633
v/s Ratio Prot		0.09			c0.10			0.09			c0.11	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.01		0.01	0.03		0.02
v/c Ratio	0.06	0.23	0.02	0.06	0.24	0.02	0.02	0.22	0.03	0.08	0.27	0.05
Uniform Delay, d1	7.4	7.9	7.2	7.4	8.0	7.3	7.3	7.9	7.3	7.5	8.1	7.3
Progression Factor	1.00	1.00	1.00	0.35	0.38	0.15	1.45	1.47	1.97	0.38	0.35	0.08
Incremental Delay, d2	0.2	0.7	0.0	0.2	0.7	0.1	0.1	0.7	0.1	0.3	0.9	0.1
Delay (s)	7.6	8.6	7.3	2.8	3.8	1.1	10.6	12.3	14.4	3.1	3.7	0.7
Level of Service	A	A	A	A	A	A	B	B	B	A	A	A
Approach Delay (s)		8.3			3.3			12.6			2.9	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

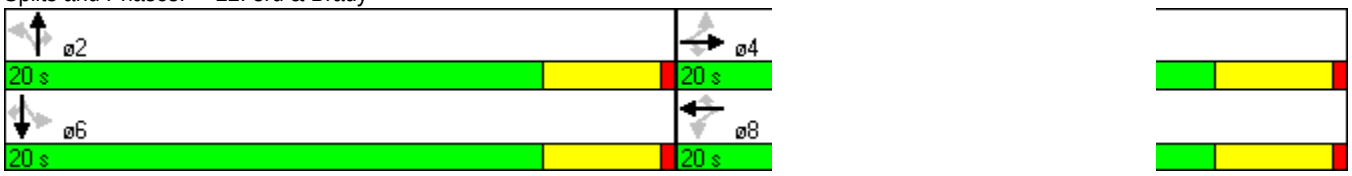
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	231	25	26	246	27	8	161	37	38	185	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.588			0.603			0.632			0.647		
Satd. Flow (perm)	1095	1863	1583	1123	1863	1583	1177	1863	1583	1205	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			40			77
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1711			6523			1848			1163	
Travel Time (s)		38.9			148.3			36.0			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	251	27	28	267	29	9	175	40	41	201	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	251	27	28	267	29	9	175	40	41	201	77
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.06	0.34	0.04	0.06	0.36	0.04	0.02	0.23	0.06	0.09	0.27	0.11
Control Delay	5.8	7.8	2.5	8.1	10.9	4.4	10.5	12.5	6.6	4.5	5.2	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.8	7.8	2.5	8.1	10.9	4.4	10.5	12.5	6.6	4.5	5.2	0.9
LOS	A	A	A	A	B	A	B	B	A	A	A	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		7.1			10.0			11.3			4.1	
Approach LOS		A			B			B			A	
Queue Length 50th (ft)	2	20	0	5	49	0	2	32	2	3	15	1
Queue Length 95th (ft)	9	43	5	17	97	13	m8	m64	m15	m6	25	m0
Internal Link Dist (ft)		1631			6443			1768			1083	
Turn Bay Length (ft)												
Base Capacity (vph)	438	745	649	449	745	651	471	745	657	482	745	679
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.34	0.04	0.06	0.36	0.04	0.02	0.23	0.06	0.09	0.27	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 7.9		Intersection LOS: A	
Intersection Capacity Utilization 42.7%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 22: 3rd & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	231	25	26	246	27	8	161	37	38	185	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.59	1.00	1.00	0.60	1.00	1.00	0.63	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	1095	1863	1583	1124	1863	1583	1177	1863	1583	1205	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	251	27	28	267	29	9	175	40	41	201	77
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	24	0	0	46
Lane Group Flow (vph)	27	251	11	28	267	12	9	175	16	41	201	31
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	438	745	633	450	745	633	471	745	633	482	745	633
v/s Ratio Prot		0.13			c0.14			0.09			c0.11	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.01		0.01	0.03		0.02
v/c Ratio	0.06	0.34	0.02	0.06	0.36	0.02	0.02	0.23	0.03	0.09	0.27	0.05
Uniform Delay, d1	7.4	8.3	7.2	7.4	8.4	7.3	7.3	7.9	7.3	7.5	8.1	7.3
Progression Factor	0.71	0.75	0.61	1.02	1.08	1.13	1.41	1.42	1.88	0.54	0.52	0.21
Incremental Delay, d2	0.3	1.2	0.0	0.3	1.3	0.1	0.1	0.7	0.1	0.3	0.8	0.1
Delay (s)	5.5	7.5	4.5	7.8	10.4	8.3	10.3	12.0	13.7	4.4	5.0	1.7
Level of Service	A	A	A	A	B	A	B	B	B	A	A	A
Approach Delay (s)		7.0			10.0			12.2			4.1	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

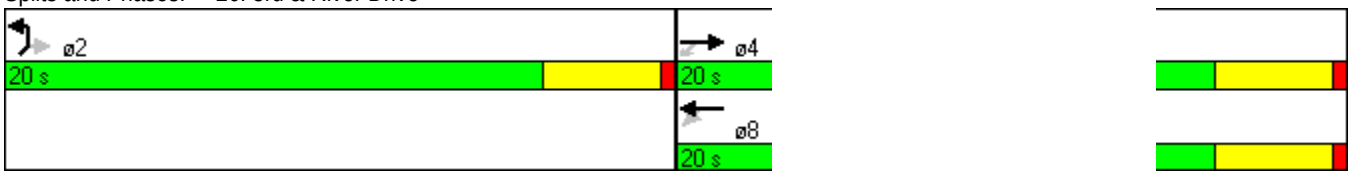


Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	47	2	268	127	12	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.724		0.950	
Satd. Flow (perm)	1863	1583	1349	1863	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		2				122
Link Speed (mph)	30			30	30	
Link Distance (ft)	6523			1869	6778	
Travel Time (s)	148.3			42.5	154.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	2	291	138	13	122
Shared Lane Traffic (%)						
Lane Group Flow (vph)	51	2	291	138	13	122
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.07	0.00	0.54	0.19	0.02	0.17
Control Delay	8.2	6.0	13.8	8.6	15.0	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	6.0	13.8	8.6	15.0	10.1
LOS	A	A	B	A	B	B

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Approach Delay	8.1			12.1	10.5	
Approach LOS	A			B	B	
Queue Length 50th (ft)	10	0	47	19	3	6
Queue Length 95th (ft)	30	m1	100	43	m5	m21
Internal Link Dist (ft)	6443			1789	6698	
Turn Bay Length (ft)						
Base Capacity (vph)	745	634	540	745	708	706
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.00	0.54	0.19	0.02	0.17

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NEL and 6:, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 11.4		Intersection LOS: B	
Intersection Capacity Utilization 31.5%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 26: 3rd & River Drive





Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	47	2	268	127	12	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.72	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1348	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	2	291	138	13	122
RTOR Reduction (vph)	0	1	0	0	0	73
Lane Group Flow (vph)	51	1	291	138	13	49
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	745	633	539	745	708	633
v/s Ratio Prot	0.03			0.07	0.01	
v/s Ratio Perm		0.00	c0.22			c0.03
v/c Ratio	0.07	0.00	0.54	0.19	0.02	0.08
Uniform Delay, d1	7.4	7.2	9.2	7.8	7.3	7.4
Progression Factor	1.05	1.05	1.00	1.00	2.03	4.09
Incremental Delay, d2	0.2	0.0	3.8	0.5	0.0	0.2
Delay (s)	8.0	7.5	13.0	8.3	14.8	30.5
Level of Service	A	A	B	A	B	C
Approach Delay (s)	7.9			11.5	29.0	
Approach LOS	A			B	C	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

3rd and 4th Streets

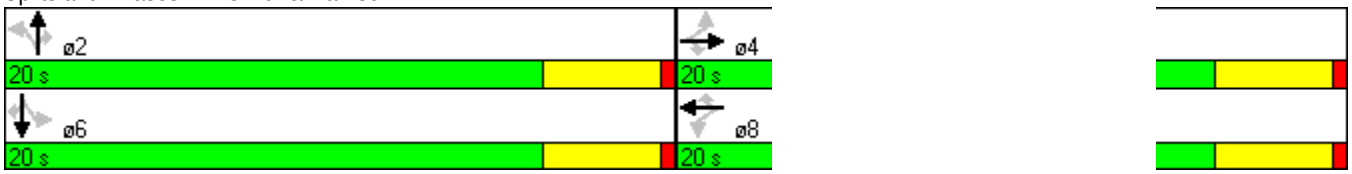
Converted Two-Way Streets
2009 PM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	260	15	17	277	52	19	442	81	19	231	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.547			0.569			0.603			0.345		
Satd. Flow (perm)	1019	1863	1583	1060	1863	1583	1123	1863	1583	643	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			16			57			88			93
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			965			2656	
Travel Time (s)		48.0			38.9			18.8			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	283	16	18	301	57	21	480	88	21	251	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	283	16	18	301	57	21	480	88	21	251	93
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.13	0.38	0.02	0.04	0.40	0.09	0.05	0.64	0.13	0.08	0.34	0.13
Control Delay	8.6	10.4	4.4	7.8	10.7	3.3	6.1	13.5	2.5	8.2	8.7	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	10.4	4.4	7.8	10.7	3.3	6.1	13.5	2.5	8.2	8.7	2.9
LOS	A	B	A	A	B	A	A	B	A	A	A	A
Approach Delay		9.9			9.4			11.6			7.2	
Approach LOS		A			A			B			A	
Queue Length 50th (ft)	7	42	0	2	45	0	3	99	0	2	30	0
Queue Length 95th (ft)	22	83	7	10	89	14	m6	150	8	m8	83	m21
Internal Link Dist (ft)		2032			1632			885			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	408	745	643	424	745	667	449	745	686	257	745	689
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.38	0.02	0.04	0.40	0.09	0.05	0.64	0.13	0.08	0.34	0.13

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 32 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 9.8		Intersection LOS: A	
Intersection Capacity Utilization 51.2%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 13: 4th & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	260	15	17	277	52	19	442	81	19	231	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.55	1.00	1.00	0.57	1.00	1.00	0.60	1.00	1.00	0.34	1.00	1.00
Satd. Flow (perm)	1019	1863	1583	1059	1863	1583	1124	1863	1583	642	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	283	16	18	301	57	21	480	88	21	251	93
RTOR Reduction (vph)	0	0	10	0	0	34	0	0	53	0	0	56
Lane Group Flow (vph)	52	283	6	18	301	23	21	480	35	21	251	37
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	408	745	633	424	745	633	450	745	633	257	745	633
v/s Ratio Prot		0.15			c0.16			c0.26			0.13	
v/s Ratio Perm	0.05		0.00	0.02		0.01	0.02		0.02	0.03		0.02
v/c Ratio	0.13	0.38	0.01	0.04	0.40	0.04	0.05	0.64	0.06	0.08	0.34	0.06
Uniform Delay, d1	7.6	8.5	7.2	7.3	8.6	7.3	7.3	9.7	7.4	7.4	8.3	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.93	1.10	0.99	0.89	1.32
Incremental Delay, d2	0.6	1.5	0.0	0.2	1.6	0.1	0.2	4.2	0.2	0.6	1.1	0.2
Delay (s)	8.2	10.0	7.3	7.5	10.2	7.4	6.0	13.2	8.3	7.9	8.5	9.9
Level of Service	A	A	A	A	B	A	A	B	A	A	A	A
Approach Delay (s)		9.6			9.7			12.2			8.8	
Approach LOS		A			A			B			A	

Intersection Summary					
HCM Average Control Delay	10.4	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.52				
Actuated Cycle Length (s)	40.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	51.2%	ICU Level of Service		A	
Analysis Period (min)	15				

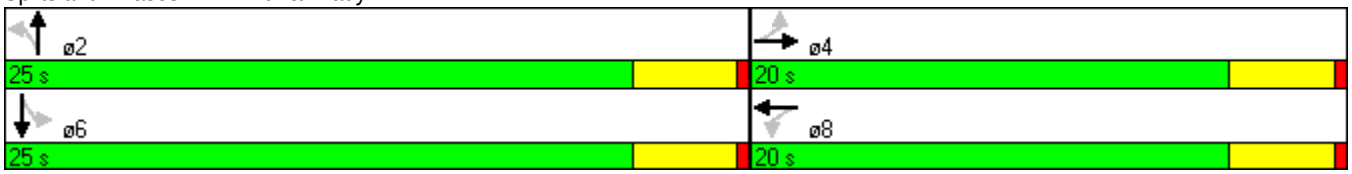
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	232	15	17	247	52	20	443	81	20	230	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.974			0.977			0.959	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1846	0	1770	1814	0	1770	1820	0	1770	1786	0
Flt Permitted	0.480			0.554			0.511			0.297		
Satd. Flow (perm)	894	1846	0	1032	1814	0	952	1820	0	553	1786	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			26			27			56	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			965			2656	
Travel Time (s)		38.9			53.1			18.8			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	252	16	18	268	57	22	482	88	22	250	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	268	0	18	325	0	22	570	0	22	343	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	25.0	25.0	0.0	25.0	25.0	0.0
Total Split (%)	44.4%	44.4%	0.0%	44.4%	44.4%	0.0%	55.6%	55.6%	0.0%	55.6%	55.6%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		21.0	21.0		21.0	21.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.0	16.0		16.0	16.0		21.0	21.0		21.0	21.0	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.47	0.47		0.47	0.47	
v/c Ratio	0.16	0.40		0.05	0.49		0.05	0.66		0.09	0.40	
Control Delay	11.6	12.9		10.1	13.5		7.0	13.3		5.0	4.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.6	12.9		10.1	13.5		7.0	13.3		5.0	4.4	
LOS	B	B		B	B		A	B		A	A	
Approach Delay		12.7			13.3			13.1			4.4	
Approach LOS		B			B			B			A	
Queue Length 50th (ft)	9	48		3	57		3	97		2	20	
Queue Length 95th (ft)	27	96		12	113		11	183		m3	m31	
Internal Link Dist (ft)		1632			2256			885			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	318	662		367	662		444	864		258	863	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.16	0.40		0.05	0.49		0.05	0.66		0.09	0.40	

Intersection Summary	
Area Type:	Other
Cycle Length: 45	
Actuated Cycle Length: 45	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 45	
Control Type: Pretimed	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 11.1	Intersection LOS: B
Intersection Capacity Utilization 57.7%	ICU Level of Service B
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 14: 4th & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	232	15	17	247	52	20	443	81	20	230	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1846		1770	1814		1770	1820		1770	1787	
Flt Permitted	0.48	1.00		0.55	1.00		0.51	1.00		0.30	1.00	
Satd. Flow (perm)	894	1846		1033	1814		952	1820		554	1787	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	252	16	18	268	57	22	482	88	22	250	93
RTOR Reduction (vph)	0	5	0	0	17	0	0	14	0	0	30	0
Lane Group Flow (vph)	52	263	0	18	308	0	22	556	0	22	313	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		21.0	21.0		21.0	21.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		21.0	21.0		21.0	21.0	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.47	0.47		0.47	0.47	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	318	656		367	645		444	849		259	834	
v/s Ratio Prot		0.14			c0.17			c0.31			0.18	
v/s Ratio Perm	0.06			0.02			0.02			0.04		
v/c Ratio	0.16	0.40		0.05	0.48		0.05	0.65		0.08	0.38	
Uniform Delay, d1	9.9	10.9		9.5	11.3		6.6	9.2		6.7	7.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.64	0.50	
Incremental Delay, d2	1.1	1.8		0.3	2.5		0.2	3.9		0.5	1.1	
Delay (s)	11.0	12.7		9.8	13.8		6.8	13.1		4.8	4.9	
Level of Service	B	B		A	B		A	B		A	A	
Approach Delay (s)		12.4			13.6			12.9			4.9	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

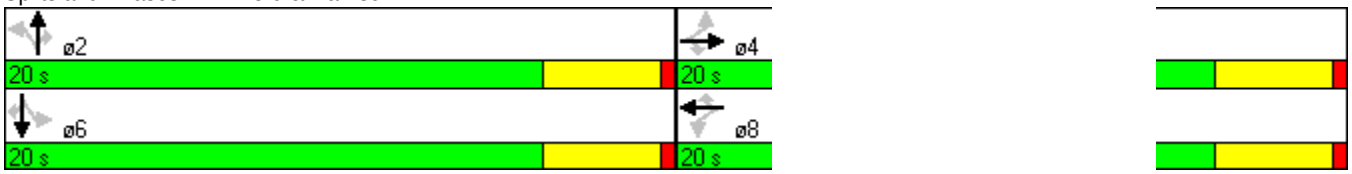
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	260	16	16	277	51	19	310	81	19	142	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.547			0.569			0.659			0.505		
Satd. Flow (perm)	1019	1863	1583	1060	1863	1583	1228	1863	1583	941	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			17			55			88			93
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2072			1708			1800			965	
Travel Time (s)		47.1			38.8			35.1			18.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	283	17	17	301	55	21	337	88	21	154	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	283	17	17	301	55	21	337	88	21	154	93
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.13	0.38	0.03	0.04	0.40	0.08	0.04	0.45	0.13	0.06	0.21	0.13
Control Delay	8.7	10.4	4.4	5.0	6.7	1.3	7.7	11.3	3.0	5.6	6.2	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.7	10.4	4.4	5.0	6.7	1.3	7.7	11.3	3.0	5.6	6.2	2.2
LOS	A	B	A	A	A	A	A	B	A	A	A	A
Approach Delay		9.8			5.8			9.5			4.7	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	7	42	0	1	27	0	3	52	0	3	23	1
Queue Length 95th (ft)	22	83	7	m4	41	1	11	101	17	m7	31	2
Internal Link Dist (ft)		1992			1628			1720			885	
Turn Bay Length (ft)												
Base Capacity (vph)	408	745	643	424	745	666	491	745	686	376	745	689
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.38	0.03	0.04	0.40	0.08	0.04	0.45	0.13	0.06	0.21	0.13

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 4 (10%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 7.7		Intersection LOS: A	
Intersection Capacity Utilization 44.2%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 21: 3rd & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	260	16	16	277	51	19	310	81	19	142	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.55	1.00	1.00	0.57	1.00	1.00	0.66	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	1019	1863	1583	1059	1863	1583	1228	1863	1583	940	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	283	17	17	301	55	21	337	88	21	154	93
RTOR Reduction (vph)	0	0	10	0	0	33	0	0	53	0	0	56
Lane Group Flow (vph)	53	283	7	17	301	22	21	337	35	21	154	37
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	408	745	633	424	745	633	491	745	633	376	745	633
v/s Ratio Prot		0.15			c0.16			c0.18			0.08	
v/s Ratio Perm	0.05		0.00	0.02		0.01	0.02		0.02	0.02		0.02
v/c Ratio	0.13	0.38	0.01	0.04	0.40	0.03	0.04	0.45	0.06	0.06	0.21	0.06
Uniform Delay, d1	7.6	8.5	7.2	7.3	8.6	7.3	7.3	8.8	7.4	7.4	7.8	7.4
Progression Factor	1.00	1.00	1.00	0.65	0.58	0.46	1.00	1.00	1.00	0.71	0.69	0.96
Incremental Delay, d2	0.7	1.5	0.0	0.2	1.5	0.1	0.2	2.0	0.2	0.3	0.6	0.2
Delay (s)	8.3	10.0	7.3	4.9	6.5	3.4	7.5	10.8	7.5	5.5	6.0	7.2
Level of Service	A	A	A	A	A	A	A	B	A	A	A	A
Approach Delay (s)		9.6			6.0			10.0			6.4	
Approach LOS		A			A			A			A	

Intersection Summary					
HCM Average Control Delay	8.2	HCM Level of Service		A	
HCM Volume to Capacity ratio	0.43				
Actuated Cycle Length (s)	40.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	44.2%	ICU Level of Service		A	
Analysis Period (min)	15				

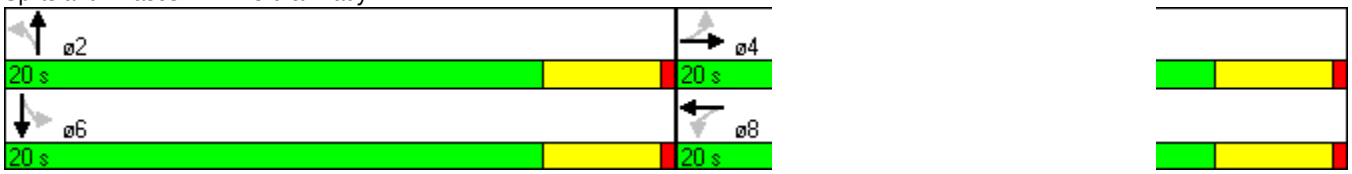
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	232	16	16	247	52	19	337	81	19	142	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.974			0.971			0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1846	0	1770	1814	0	1770	1809	0	1770	1758	0
Flt Permitted	0.519			0.586			0.606			0.373		
Satd. Flow (perm)	967	1846	0	1092	1814	0	1129	1809	0	695	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			32			36			91	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1708			6387			1800			965	
Travel Time (s)		38.8			145.2			35.1			18.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	252	17	17	268	57	21	366	88	21	154	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	269	0	17	325	0	21	454	0	21	247	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.14	0.36		0.04	0.44		0.05	0.61		0.08	0.33	
Control Delay	5.1	6.4		7.1	9.4		7.8	13.0		8.4	6.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.1	6.4		7.1	9.4		7.8	13.0		8.4	6.8	
LOS	A	A		A	A		A	B		A	A	
Approach Delay		6.2			9.3			12.8			6.9	
Approach LOS		A			A			B			A	
Queue Length 50th (ft)	2	10		2	42		3	68		3	21	
Queue Length 95th (ft)	6	31		7	69		11	136		12	55	
Internal Link Dist (ft)		1628			6307			1720			885	
Turn Bay Length (ft)												
Base Capacity (vph)	387	744		437	745		452	745		278	758	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.36		0.04	0.44		0.05	0.61		0.08	0.33	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 8 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 52.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: 3rd & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	232	16	16	247	52	19	337	81	19	142	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1845		1770	1814		1770	1809		1770	1758	
Flt Permitted	0.52	1.00		0.59	1.00		0.61	1.00		0.37	1.00	
Satd. Flow (perm)	966	1845		1091	1814		1128	1809		694	1758	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	252	17	17	268	57	21	366	88	21	154	93
RTOR Reduction (vph)	0	6	0	0	19	0	0	22	0	0	55	0
Lane Group Flow (vph)	53	263	0	17	306	0	21	432	0	21	192	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	386	738		436	726		451	724		278	703	
v/s Ratio Prot		0.14			c0.17			c0.24			0.11	
v/s Ratio Perm	0.05			0.02			0.02			0.03		
v/c Ratio	0.14	0.36		0.04	0.42		0.05	0.60		0.08	0.27	
Uniform Delay, d1	7.6	8.4		7.3	8.7		7.3	9.5		7.4	8.1	
Progression Factor	0.56	0.62		0.92	0.94		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	1.3		0.2	1.8		0.2	3.6		0.5	1.0	
Delay (s)	5.0	6.5		6.9	10.0		7.5	13.1		8.0	9.0	
Level of Service	A	A		A	A		A	B		A	A	
Approach Delay (s)		6.2			9.8			12.8			9.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	127	12	208	47	2	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950	0.969	0.950	
Satd. Flow (prot)	1863	1583	1681	1715	1770	1583
Flt Permitted			0.669	0.764	0.950	
Satd. Flow (perm)	1863	1583	1184	1352	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		13				271
Link Speed (mph)	30			30	30	
Link Distance (ft)	6387			1560	6636	
Travel Time (s)	145.2			35.5	150.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	13	226	51	2	271
Shared Lane Traffic (%)			41%			
Lane Group Flow (vph)	138	13	133	144	2	271
Turn Type		Perm	Perm			Perm
Protected Phases	4!			8	4!	
Permitted Phases		4	8			4
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	36.0	36.0	36.0	36.0	36.0	36.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	36.0	36.0	36.0	36.0	36.0	36.0
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45
v/c Ratio	0.16	0.02	0.25	0.24	0.00	0.31
Control Delay	13.6	7.2	15.2	14.9	12.0	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	7.2	15.2	14.9	12.0	2.9
LOS	B	A	B	B	B	A
Approach Delay	13.0			15.1	3.0	
Approach LOS	B			B	A	
Queue Length 50th (ft)	39	1	42	45	1	0
Queue Length 95th (ft)	m70	m3	81	84	4	40
Internal Link Dist (ft)	6307			1480	6556	
Turn Bay Length (ft)						
Base Capacity (vph)	838	720	533	608	797	861
Starvation Cap Reductn	0	0	0	0	0	0

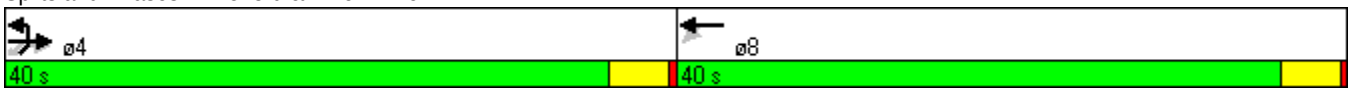
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.02	0.25	0.24	0.00	0.31

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2: and 6:, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 28.8%		ICU Level of Service A	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

! Phase conflict between lane groups.

Splits and Phases: 25: 3rd & River Drive





Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	127	12	208	47	2	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (prot)	1863	1583	1681	1714	1770	1583
Flt Permitted	1.00	1.00	0.67	0.76	0.95	1.00
Satd. Flow (perm)	1863	1583	1184	1352	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	13	226	51	2	271
RTOR Reduction (vph)	0	7	0	0	0	149
Lane Group Flow (vph)	138	6	133	144	2	122
Turn Type		Perm	Perm			Perm
Protected Phases	4!			8	4!	
Permitted Phases		4	8			4
Actuated Green, G (s)	36.0	36.0	36.0	36.0	36.0	36.0
Effective Green, g (s)	36.0	36.0	36.0	36.0	36.0	36.0
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	838	712	533	608	797	712
v/s Ratio Prot	0.07				0.00	
v/s Ratio Perm		0.00	c0.11	0.11		c0.08
v/c Ratio	0.16	0.01	0.25	0.24	0.00	0.17
Uniform Delay, d1	13.1	12.1	13.6	13.5	12.1	13.1
Progression Factor	0.99	1.09	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	1.1	0.9	0.0	0.5
Delay (s)	13.3	13.3	14.7	14.5	12.1	13.6
Level of Service	B	B	B	B	B	B
Approach Delay (s)	13.3			14.6	13.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

3rd and 4th Streets

Existing One-Way Streets
2030 AM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	107	338	0	0	0	0	0	535	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.86	0.86
Frt											0.948	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1770	3539	0	0	0	0	0	6075	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	1770	3539	0	0	0	0	0	6075	0
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)				116							178	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			898			2656	
Travel Time (s)		48.0			38.9			17.5			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	116	367	0	0	0	0	0	582	310
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	116	367	0	0	0	0	0	892	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Minimum Split (s)				20.0	20.0						20.0	
Total Split (s)	0.0	0.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	45.5%	45.5%	0.0%	0.0%	0.0%	0.0%	0.0%	54.5%	0.0%
Maximum Green (s)				46.0	46.0						56.0	
Yellow Time (s)				3.5	3.5						3.5	
All-Red Time (s)				0.5	0.5						0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0						5.0	
Flash Dont Walk (s)				11.0	11.0						11.0	
Pedestrian Calls (#/hr)				0	0						0	
Act Effct Green (s)				46.0	46.0						56.0	
Actuated g/C Ratio				0.42	0.42						0.51	
v/c Ratio				0.14	0.25						0.28	
Control Delay				2.1	16.6						22.1	
Queue Delay				0.0	0.0						0.0	
Total Delay				2.1	16.6						22.1	
LOS				A	B						C	
Approach Delay					13.1						22.1	
Approach LOS					B						C	
Queue Length 50th (ft)				0	54						131	
Queue Length 95th (ft)				16	73						149	
Internal Link Dist (ft)		2032			1632			818			2576	
Turn Bay Length (ft)												
Base Capacity (vph)				808	1480						3180	
Starvation Cap Reductn				0	0						0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn				0	0						0	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.14	0.25						0.28	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBT, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 18.9		Intersection LOS: B	
Intersection Capacity Utilization 30.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 13: 4th & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				[redacted]	[redacted]						[redacted]	
Volume (vph)	0	0	0	107	338	0	0	0	0	0	535	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				1.00	0.95						0.86	
Frt				1.00	1.00						0.95	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1770	3539						6074	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1770	3539						6074	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	116	367	0	0	0	0	0	582	310
RTOR Reduction (vph)	0	0	0	67	0	0	0	0	0	0	87	0
Lane Group Flow (vph)	0	0	0	49	367	0	0	0	0	0	805	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)				46.0	46.0						56.0	
Effective Green, g (s)				46.0	46.0						56.0	
Actuated g/C Ratio				0.42	0.42						0.51	
Clearance Time (s)				4.0	4.0						4.0	
Lane Grp Cap (vph)				740	1480						3092	
v/s Ratio Prot					c0.10						c0.13	
v/s Ratio Perm				0.03								
v/c Ratio				0.07	0.25						0.26	
Uniform Delay, d1				19.1	20.8						15.3	
Progression Factor				0.48	0.77						1.80	
Incremental Delay, d2				0.2	0.4						0.2	
Delay (s)				9.3	16.5						27.7	
Level of Service				A	B						C	
Approach Delay (s)		0.0			14.8			0.0			27.7	
Approach LOS		A			B			A			C	

Intersection Summary					
HCM Average Control Delay	23.2	HCM Level of Service		C	
HCM Volume to Capacity ratio	0.25				
Actuated Cycle Length (s)	110.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	30.3%	ICU Level of Service		A	
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					[redacted]	[redacted]		[redacted]				
Volume (vph)	0	0	0	0	504	107	32	468	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frt						0.850						
Flt Protected								0.997				
Satd. Flow (prot)	0	0	0	0	3539	1583	0	5070	0	0	0	0
Flt Permitted								0.997				
Satd. Flow (perm)	0	0	0	0	3539	1583	0	5070	0	0	0	0
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						116		12				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			898			2656	
Travel Time (s)		38.9			53.1			17.5			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	548	116	35	509	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	548	116	0	544	0	0	0	0
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Minimum Split (s)					20.0	20.0	20.0	20.0				
Total Split (s)	0.0	0.0	0.0	0.0	62.0	62.0	48.0	48.0	0.0	0.0	0.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	56.4%	56.4%	43.6%	43.6%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)					58.0	58.0	44.0	44.0				
Yellow Time (s)					3.5	3.5	3.5	3.5				
All-Red Time (s)					0.5	0.5	0.5	0.5				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					5.0	5.0	5.0	5.0				
Flash Dont Walk (s)					11.0	11.0	11.0	11.0				
Pedestrian Calls (#/hr)					0	0	0	0				
Act Effct Green (s)					58.0	58.0		44.0				
Actuated g/C Ratio					0.53	0.53		0.40				
v/c Ratio					0.29	0.13		0.27				
Control Delay					15.1	2.8		16.1				
Queue Delay					0.0	0.0		0.0				
Total Delay					15.1	2.8		16.1				
LOS					B	A		B				
Approach Delay					12.9			16.1				
Approach LOS					B			B				
Queue Length 50th (ft)					108	0		53				
Queue Length 95th (ft)					144	27		71				
Internal Link Dist (ft)		1632			2256			818			2576	
Turn Bay Length (ft)												
Base Capacity (vph)					1866	890		2035				
Starvation Cap Reductn					0	0		0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn					0	0		0				
Storage Cap Reductn					0	0		0				
Reduced v/c Ratio					0.29	0.13		0.27				

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green	
Natural Cycle: 40	
Control Type: Pretimed	
Maximum v/c Ratio: 0.29	
Intersection Signal Delay: 14.3	Intersection LOS: B
Intersection Capacity Utilization 30.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 14: 4th & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					[redacted]	[redacted]		[redacted]				
Volume (vph)	0	0	0	0	504	107	32	468	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0	4.0		4.0				
Lane Util. Factor					0.95	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					3539	1583		5069				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					3539	1583		5069				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	548	116	35	509	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	55	0	7	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	548	61	0	537	0	0	0	0
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Actuated Green, G (s)					58.0	58.0		44.0				
Effective Green, g (s)					58.0	58.0		44.0				
Actuated g/C Ratio					0.53	0.53		0.40				
Clearance Time (s)					4.0	4.0		4.0				
Lane Grp Cap (vph)					1866	835		2028				
v/s Ratio Prot					c0.15							
v/s Ratio Perm						0.04		0.11				
v/c Ratio					0.29	0.07		0.26				
Uniform Delay, d1					14.5	12.8		22.1				
Progression Factor					1.00	1.00		0.72				
Incremental Delay, d2					0.4	0.2		0.3				
Delay (s)					14.9	13.0		16.4				
Level of Service					B	B		B				
Approach Delay (s)		0.0			14.6			16.4			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	30.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	318	101	0	0	0	0	0	0	152	379	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	1.00
Frt		0.964										
Flt Protected										0.950	0.997	
Satd. Flow (prot)	0	6177	0	0	0	0	0	0	0	1522	4791	0
Flt Permitted										0.950	0.997	
Satd. Flow (perm)	0	6177	0	0	0	0	0	0	0	1522	4791	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)		86								139	13	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2033			1714			2560			898	
Travel Time (s)		46.2			39.0			49.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	346	110	0	0	0	0	0	0	165	412	0
Shared Lane Traffic (%)										16%		
Lane Group Flow (vph)	0	456	0	0	0	0	0	0	0	139	438	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Minimum Split (s)		20.0								20.0	20.0	
Total Split (s)	0.0	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.0	63.0	0.0
Total Split (%)	0.0%	42.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	57.3%	57.3%	0.0%
Maximum Green (s)		43.0								59.0	59.0	
Yellow Time (s)		3.5								3.5	3.5	
All-Red Time (s)		0.5								0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0								5.0	5.0	
Flash Dont Walk (s)		11.0								11.0	11.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effct Green (s)		43.0								59.0	59.0	
Actuated g/C Ratio		0.39								0.54	0.54	
v/c Ratio		0.18								0.16	0.17	
Control Delay		17.9								1.7	7.7	
Queue Delay		0.0								0.0	0.0	
Total Delay		17.9								1.7	7.7	
LOS		B								A	A	
Approach Delay		17.9									6.2	
Approach LOS		B									A	
Queue Length 50th (ft)		48								1	28	
Queue Length 95th (ft)		67								0	34	
Internal Link Dist (ft)		1953			1634			2480			818	
Turn Bay Length (ft)												
Base Capacity (vph)		2467								881	2576	
Starvation Cap Reductn		0								0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0								0	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.18								0.16	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.18			
Intersection Signal Delay: 11.4		Intersection LOS: B	
Intersection Capacity Utilization 28.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 21: 3rd & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		[redacted]								[redacted]	[redacted]	
Volume (vph)	0	318	101	0	0	0	0	0	0	152	379	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.86								0.86	0.86	
Frt		0.96								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		6176								1522	4792	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		6176								1522	4792	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	346	110	0	0	0	0	0	0	165	412	0
RTOR Reduction (vph)	0	52	0	0	0	0	0	0	0	64	6	0
Lane Group Flow (vph)	0	404	0	0	0	0	0	0	0	75	432	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		43.0								59.0	59.0	
Effective Green, g (s)		43.0								59.0	59.0	
Actuated g/C Ratio		0.39								0.54	0.54	
Clearance Time (s)		4.0								4.0	4.0	
Lane Grp Cap (vph)		2414								816	2570	
v/s Ratio Prot		c0.07										
v/s Ratio Perm										0.05	0.09	
v/c Ratio		0.17								0.09	0.17	
Uniform Delay, d1		21.8								12.4	13.0	
Progression Factor		1.00								0.63	0.59	
Incremental Delay, d2		0.1								0.2	0.1	
Delay (s)		22.0								8.0	7.9	
Level of Service		C								A	A	
Approach Delay (s)		22.0			0.0			0.0			7.9	
Approach LOS		C			A			A			A	

Intersection Summary				
HCM Average Control Delay	14.1	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.17			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	28.5%	ICU Level of Service	A	
Analysis Period (min)	15			

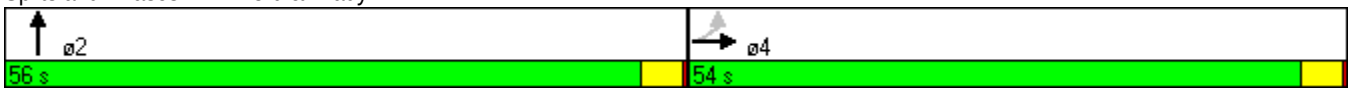
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	474	0	0	0	0	0	365	146	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00
Frt								0.957				
Flt Protected	0.950	0.999										
Satd. Flow (prot)	1522	4801	0	0	0	0	0	4867	0	0	0	0
Flt Permitted	0.950	0.999										
Satd. Flow (perm)	1522	4801	0	0	0	0	0	4867	0	0	0	0
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	99	3						125				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1714			7509			2560			898	
Travel Time (s)		39.0			170.7			49.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	515	0	0	0	0	0	397	159	0	0	0
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	99	526	0	0	0	0	0	556	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	20.0	20.0						20.0				
Total Split (s)	54.0	54.0	0.0	0.0	0.0	0.0	0.0	56.0	0.0	0.0	0.0	0.0
Total Split (%)	49.1%	49.1%	0.0%	0.0%	0.0%	0.0%	0.0%	50.9%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	50.0	50.0						52.0				
Yellow Time (s)	3.5	3.5						3.5				
All-Red Time (s)	0.5	0.5						0.5				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0				
Flash Dont Walk (s)	11.0	11.0						11.0				
Pedestrian Calls (#/hr)	0	0						0				
Act Effct Green (s)	50.0	50.0						52.0				
Actuated g/C Ratio	0.45	0.45						0.47				
v/c Ratio	0.13	0.24						0.23				
Control Delay	5.3	18.4						13.4				
Queue Delay	0.0	0.0						0.0				
Total Delay	5.3	18.4						13.4				
LOS	A	B						B				
Approach Delay		16.3						13.4				
Approach LOS		B						B				
Queue Length 50th (ft)	0	65						62				
Queue Length 95th (ft)	31	102						86				
Internal Link Dist (ft)		1634			7429			2480			818	
Turn Bay Length (ft)												
Base Capacity (vph)	746	2184						2367				
Starvation Cap Reductn	0	0						0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0						0				
Storage Cap Reductn	0	0						0				
Reduced v/c Ratio	0.13	0.24						0.23				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.24			
Intersection Signal Delay: 14.9		Intersection LOS: B	
Intersection Capacity Utilization 54.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: 3rd & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	474	0	0	0	0	0	365	146	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0				
Lane Util. Factor	0.86	0.86						0.91				
Frt	1.00	1.00						0.96				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1522	4801						4867				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1522	4801						4867				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	515	0	0	0	0	0	397	159	0	0	0
RTOR Reduction (vph)	54	2	0	0	0	0	0	66	0	0	0	0
Lane Group Flow (vph)	45	524	0	0	0	0	0	490	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)	50.0	50.0						52.0				
Effective Green, g (s)	50.0	50.0						52.0				
Actuated g/C Ratio	0.45	0.45						0.47				
Clearance Time (s)	4.0	4.0						4.0				
Lane Grp Cap (vph)	692	2182						2301				
v/s Ratio Prot								c0.10				
v/s Ratio Perm	0.03	0.11										
v/c Ratio	0.07	0.24						0.21				
Uniform Delay, d1	16.9	18.4						17.0				
Progression Factor	1.39	0.99						1.00				
Incremental Delay, d2	0.2	0.3						0.2				
Delay (s)	23.7	18.4						17.2				
Level of Service	C	B						B				
Approach Delay (s)		19.2			0.0			17.2			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

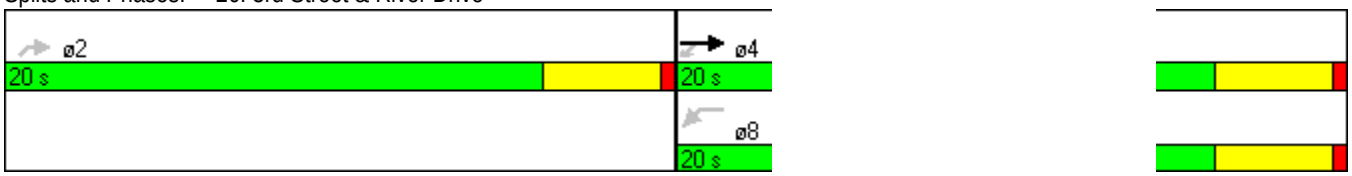
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	96	4	275	0	0	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	0.97	1.00	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950			
Satd. Flow (prot)	3539	1583	3433	0	0	2787
Flt Permitted			0.686			
Satd. Flow (perm)	3539	1583	2479	0	0	2787
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		4				1379
Link Speed (mph)	30			30	30	
Link Distance (ft)	7509			1122	7927	
Travel Time (s)	170.7			25.5	180.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	4	299	0	0	138
Shared Lane Traffic (%)						
Lane Group Flow (vph)	104	4	299	0	0	138
Turn Type		Perm	custom			custom
Protected Phases	4					
Permitted Phases		4	8			2
Minimum Split (s)	20.0	20.0	20.0			20.0
Total Split (s)	20.0	20.0	20.0	0.0	0.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	0.0%	0.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0			16.0
Yellow Time (s)	3.5	3.5	3.5			3.5
All-Red Time (s)	0.5	0.5	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	16.0	16.0	16.0			16.0
Actuated g/C Ratio	0.40	0.40	0.40			0.40
v/c Ratio	0.07	0.01	0.30			0.07
Control Delay	7.6	5.5	9.3			0.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	7.6	5.5	9.3			0.1
LOS	A	A	A			A
Approach Delay	7.6					
Approach LOS	A					
Queue Length 50th (ft)	6	0	22			0
Queue Length 95th (ft)	16	4	41			0
Internal Link Dist (ft)	7429			1042	7847	
Turn Bay Length (ft)						
Base Capacity (vph)	1416	636	992			1942
Starvation Cap Reductn	0	0	0			0

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.07	0.01	0.30			0.07

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.30			
Intersection Signal Delay: 6.6		Intersection LOS: A	
Intersection Capacity Utilization 17.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 26: 3rd Street & River Drive



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	96	4	275	0	0	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	0.95	1.00	0.97			0.88
Frt	1.00	0.85	1.00			0.85
Flt Protected	1.00	1.00	0.95			1.00
Satd. Flow (prot)	3539	1583	3433			2787
Flt Permitted	1.00	1.00	0.69			1.00
Satd. Flow (perm)	3539	1583	2480			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	4	299	0	0	138
RTOR Reduction (vph)	0	2	0	0	0	83
Lane Group Flow (vph)	104	2	299	0	0	55
Turn Type		Perm	custom			custom
Protected Phases	4					
Permitted Phases		4	8			2
Actuated Green, G (s)	16.0	16.0	16.0			16.0
Effective Green, g (s)	16.0	16.0	16.0			16.0
Actuated g/C Ratio	0.40	0.40	0.40			0.40
Clearance Time (s)	4.0	4.0	4.0			4.0
Lane Grp Cap (vph)	1416	633	992			1115
v/s Ratio Prot	0.03					
v/s Ratio Perm		0.00	c0.12			c0.02
v/c Ratio	0.07	0.00	0.30			0.05
Uniform Delay, d1	7.4	7.2	8.2			7.3
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	0.0	0.8			0.1
Delay (s)	7.5	7.2	9.0			7.4
Level of Service	A	A	A			A
Approach Delay (s)	7.5			9.0	7.4	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

3rd and 4th Streets

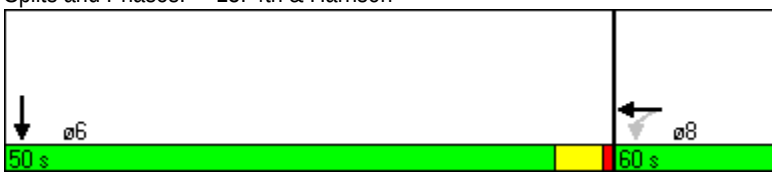
Existing One-Way Streets
2030 PM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	66	567	0	0	0	0	0	472	344
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.86	0.86
Frt											0.937	
Flt Protected				0.950								
Satd. Flow (prot)	0	0	0	1770	3539	0	0	0	0	0	6004	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	1770	3539	0	0	0	0	0	6004	0
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)				72							203	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			869			2656	
Travel Time (s)		48.0			38.9			16.9			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	72	616	0	0	0	0	0	513	374
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	72	616	0	0	0	0	0	887	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Minimum Split (s)				21.0	21.0						21.0	
Total Split (s)	0.0	0.0	0.0	60.0	60.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	54.5%	54.5%	0.0%	0.0%	0.0%	0.0%	0.0%	45.5%	0.0%
Maximum Green (s)				55.0	55.0						45.0	
Yellow Time (s)				4.0	4.0						4.0	
All-Red Time (s)				1.0	1.0						1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	5.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0						5.0	
Flash Dont Walk (s)				11.0	11.0						11.0	
Pedestrian Calls (#/hr)				0	0						0	
Act Effct Green (s)				55.0	55.0						45.0	
Actuated g/C Ratio				0.50	0.50						0.41	
v/c Ratio				0.08	0.35						0.34	
Control Delay				13.7	27.5						30.5	
Queue Delay				0.0	0.0						0.0	
Total Delay				13.7	27.5						30.5	
LOS				B	C						C	
Approach Delay					26.1						30.5	
Approach LOS					C						C	
Queue Length 50th (ft)				0	146						153	
Queue Length 95th (ft)				44	210						173	
Internal Link Dist (ft)		2032			1632			789			2576	
Turn Bay Length (ft)												
Base Capacity (vph)				921	1770						2576	
Starvation Cap Reductn				0	0						0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn				0	0						0	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.08	0.35						0.34	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBT, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 28.6		Intersection LOS: C	
Intersection Capacity Utilization 41.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 13: 4th & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				[redacted]	[redacted]						[redacted]	
Volume (vph)	0	0	0	66	567	0	0	0	0	0	472	344
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	
Lane Util. Factor				1.00	0.95						0.86	
Frt				1.00	1.00						0.94	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1770	3539						6003	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1770	3539						6003	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	72	616	0	0	0	0	0	513	374
RTOR Reduction (vph)	0	0	0	36	0	0	0	0	0	0	120	0
Lane Group Flow (vph)	0	0	0	36	616	0	0	0	0	0	767	0
Turn Type				Perm								
Protected Phases					8						6	
Permitted Phases				8								
Actuated Green, G (s)				55.0	55.0						45.0	
Effective Green, g (s)				55.0	55.0						45.0	
Actuated g/C Ratio				0.50	0.50						0.41	
Clearance Time (s)				5.0	5.0						5.0	
Lane Grp Cap (vph)				885	1770						2456	
v/s Ratio Prot					c0.17						c0.13	
v/s Ratio Perm				0.02								
v/c Ratio				0.04	0.35						0.31	
Uniform Delay, d1				14.0	16.6						22.0	
Progression Factor				3.96	1.61						1.79	
Incremental Delay, d2				0.1	0.5						0.3	
Delay (s)				55.7	27.3						39.6	
Level of Service				E	C						D	
Approach Delay (s)		0.0			30.2			0.0			39.6	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM Average Control Delay	35.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					[redacted]	[redacted]		[redacted]				
Volume (vph)	0	0	0	0	506	207	77	907	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frt						0.850						
Flt Protected								0.996				
Satd. Flow (prot)	0	0	0	0	3539	1583	0	5065	0	0	0	0
Flt Permitted								0.996				
Satd. Flow (perm)	0	0	0	0	3539	1583	0	5065	0	0	0	0
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						79		18				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			869			2656	
Travel Time (s)		38.9			53.1			16.9			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	550	225	84	986	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	550	225	0	1070	0	0	0	0
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Minimum Split (s)					21.0	21.0	21.0	21.0				
Total Split (s)	0.0	0.0	0.0	0.0	50.0	50.0	60.0	60.0	0.0	0.0	0.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	45.5%	45.5%	54.5%	54.5%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)					45.0	45.0	55.0	55.0				
Yellow Time (s)					4.0	4.0	4.0	4.0				
All-Red Time (s)					1.0	1.0	1.0	1.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					5.0	5.0	5.0	5.0				
Flash Dont Walk (s)					11.0	11.0	11.0	11.0				
Pedestrian Calls (#/hr)					0	0	0	0				
Act Effct Green (s)					45.0	45.0		55.0				
Actuated g/C Ratio					0.41	0.41		0.50				
v/c Ratio					0.38	0.32		0.42				
Control Delay					23.7	15.5		8.5				
Queue Delay					0.0	0.0		0.0				
Total Delay					23.7	15.5		8.5				
LOS					C	B		A				
Approach Delay					21.3			8.5				
Approach LOS					C			A				
Queue Length 50th (ft)					140	66		53				
Queue Length 95th (ft)					186	125		67				
Internal Link Dist (ft)		1632			2256			789			2576	
Turn Bay Length (ft)												
Base Capacity (vph)					1448	694		2542				
Starvation Cap Reductn					0	0		0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn					0	0		0				
Storage Cap Reductn					0	0		0				
Reduced v/c Ratio					0.38	0.32		0.42				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.42			
Intersection Signal Delay: 13.9		Intersection LOS: B	
Intersection Capacity Utilization 41.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 14: 4th & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					[redacted]	[redacted]		[redacted]				
Volume (vph)	0	0	0	0	506	207	77	907	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0		5.0				
Lane Util. Factor					0.95	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					3539	1583		5065				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					3539	1583		5065				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	550	225	84	986	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	47	0	9	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	550	178	0	1061	0	0	0	0
Turn Type						Perm	Perm					
Protected Phases					8			2				
Permitted Phases						8	2					
Actuated Green, G (s)					45.0	45.0		55.0				
Effective Green, g (s)					45.0	45.0		55.0				
Actuated g/C Ratio					0.41	0.41		0.50				
Clearance Time (s)					5.0	5.0		5.0				
Lane Grp Cap (vph)					1448	648		2533				
v/s Ratio Prot					c0.16							
v/s Ratio Perm						0.11		0.21				
v/c Ratio					0.38	0.28		0.42				
Uniform Delay, d1					22.7	21.6		17.4				
Progression Factor					1.00	1.00		0.46				
Incremental Delay, d2					0.8	1.1		0.5				
Delay (s)					23.5	22.7		8.6				
Level of Service					C	C		A				
Approach Delay (s)		0.0			23.3			8.6			0.0	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	533	62	0	0	0	0	0	0	105	364	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	1.00
Frt		0.984										
Flt Protected										0.950	0.999	
Satd. Flow (prot)	0	6305	0	0	0	0	0	0	0	1522	4801	0
Flt Permitted										0.950	0.999	
Satd. Flow (perm)	0	6305	0	0	0	0	0	0	0	1522	4801	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)		34								103	4	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2103			1714			1550			869	
Travel Time (s)		47.8			39.0			30.2			16.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	579	67	0	0	0	0	0	0	114	396	0
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	646	0	0	0	0	0	0	0	103	407	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Minimum Split (s)		21.0								21.0	21.0	
Total Split (s)	0.0	56.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.0	54.0	0.0
Total Split (%)	0.0%	50.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	49.1%	49.1%	0.0%
Maximum Green (s)		51.0								49.0	49.0	
Yellow Time (s)		4.0								4.0	4.0	
All-Red Time (s)		1.0								1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0								5.0	5.0	
Flash Dont Walk (s)		11.0								11.0	11.0	
Pedestrian Calls (#/hr)		0								0	0	
Act Effct Green (s)		51.0								49.0	49.0	
Actuated g/C Ratio		0.46								0.45	0.45	
v/c Ratio		0.22								0.14	0.19	
Control Delay		16.9								0.5	4.4	
Queue Delay		0.0								0.0	0.0	
Total Delay		16.9								0.5	4.4	
LOS		B								A	A	
Approach Delay		16.9									3.6	
Approach LOS		B									A	
Queue Length 50th (ft)		72								1	13	
Queue Length 95th (ft)		93								0	24	
Internal Link Dist (ft)		2023			1634			1470			789	
Turn Bay Length (ft)												
Base Capacity (vph)		2941								735	2141	
Starvation Cap Reductn		0								0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0								0	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.22								0.14	0.19	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.22			
Intersection Signal Delay: 11.0		Intersection LOS: B	
Intersection Capacity Utilization 36.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 21: 3rd & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		[redacted]								[redacted]	[redacted]	
Volume (vph)	0	533	62	0	0	0	0	0	0	105	364	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.0	5.0	
Lane Util. Factor		0.86								0.86	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		6308								1522	4799	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		6308								1522	4799	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	579	67	0	0	0	0	0	0	114	396	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	57	2	0
Lane Group Flow (vph)	0	628	0	0	0	0	0	0	0	46	405	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		51.0								49.0	49.0	
Effective Green, g (s)		51.0								49.0	49.0	
Actuated g/C Ratio		0.46								0.45	0.45	
Clearance Time (s)		5.0								5.0	5.0	
Lane Grp Cap (vph)		2925								678	2138	
v/s Ratio Prot		c0.10										
v/s Ratio Perm										0.03	0.08	
v/c Ratio		0.21								0.07	0.19	
Uniform Delay, d1		17.6								17.4	18.5	
Progression Factor		1.00								0.03	0.23	
Incremental Delay, d2		0.2								0.2	0.2	
Delay (s)		17.7								0.6	4.4	
Level of Service		B								A	A	
Approach Delay (s)		17.7			0.0			0.0			3.6	
Approach LOS		B			A			A			A	

Intersection Summary				
HCM Average Control Delay	11.5	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.20			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0	
Intersection Capacity Utilization	36.6%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	475	0	0	0	0	0	761	107	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00
Frt								0.982				
Flt Protected	0.950	0.997										
Satd. Flow (prot)	1522	4791	0	0	0	0	0	4994	0	0	0	0
Flt Permitted	0.950	0.997										
Satd. Flow (perm)	1522	4791	0	0	0	0	0	4994	0	0	0	0
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	138	11						35				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1714			6511			1540			869	
Travel Time (s)		39.0			148.0			30.0			16.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	516	0	0	0	0	0	827	116	0	0	0
Shared Lane Traffic (%)	17%											
Lane Group Flow (vph)	175	552	0	0	0	0	0	943	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	21.0	21.0						21.0				
Total Split (s)	47.0	47.0	0.0	0.0	0.0	0.0	0.0	63.0	0.0	0.0	0.0	0.0
Total Split (%)	42.7%	42.7%	0.0%	0.0%	0.0%	0.0%	0.0%	57.3%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	42.0	42.0						58.0				
Yellow Time (s)	4.0	4.0						4.0				
All-Red Time (s)	1.0	1.0						1.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0				
Flash Dont Walk (s)	11.0	11.0						11.0				
Pedestrian Calls (#/hr)	0	0						0				
Act Effct Green (s)	42.0	42.0						58.0				
Actuated g/C Ratio	0.38	0.38						0.53				
v/c Ratio	0.26	0.30						0.36				
Control Delay	3.6	17.3						17.0				
Queue Delay	0.0	0.0						0.0				
Total Delay	3.6	17.3						17.0				
LOS	A	B						B				
Approach Delay		14.0						17.0				
Approach LOS		B						B				
Queue Length 50th (ft)	4	63						144				
Queue Length 95th (ft)	29	80						179				
Internal Link Dist (ft)		1634			6431			1460			789	
Turn Bay Length (ft)												
Base Capacity (vph)	666	1836						2650				
Starvation Cap Reductn	0	0						0				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0						0				
Storage Cap Reductn	0	0						0				
Reduced v/c Ratio	0.26	0.30						0.36				

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 15.7		Intersection LOS: B	
Intersection Capacity Utilization 62.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 22: 3rd & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	475	0	0	0	0	0	761	107	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0						5.0				
Lane Util. Factor	0.86	0.86						0.91				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1522	4790						4991				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1522	4790						4991				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	516	0	0	0	0	0	827	116	0	0	0
RTOR Reduction (vph)	85	7	0	0	0	0	0	17	0	0	0	0
Lane Group Flow (vph)	90	545	0	0	0	0	0	926	0	0	0	0
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)	42.0	42.0						58.0				
Effective Green, g (s)	42.0	42.0						58.0				
Actuated g/C Ratio	0.38	0.38						0.53				
Clearance Time (s)	5.0	5.0						5.0				
Lane Grp Cap (vph)	581	1829						2632				
v/s Ratio Prot								c0.19				
v/s Ratio Perm	0.06	0.11										
v/c Ratio	0.15	0.30						0.35				
Uniform Delay, d1	22.3	23.7						15.1				
Progression Factor	0.41	0.72						1.14				
Incremental Delay, d2	0.6	0.4						0.4				
Delay (s)	9.8	17.5						17.5				
Level of Service	A	B						B				
Approach Delay (s)		15.7			0.0			17.5			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

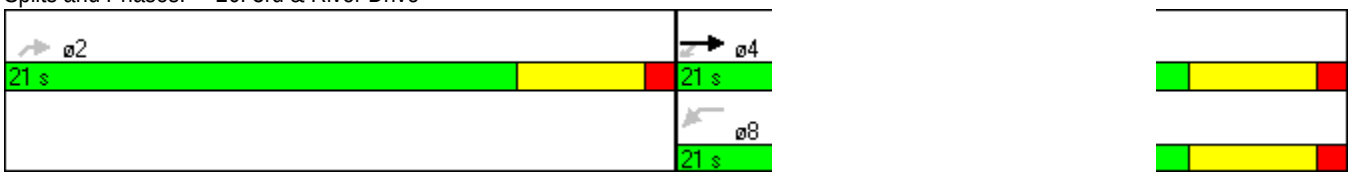
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	260	24	213	0	0	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	0.97	1.00	1.00	0.88
Frt		0.850				0.850
Flt Protected			0.950			
Satd. Flow (prot)	3539	1583	3433	0	0	2787
Flt Permitted			0.578			
Satd. Flow (perm)	3539	1583	2089	0	0	2787
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		26				736
Link Speed (mph)	30			30	30	
Link Distance (ft)	6511			1400	6688	
Travel Time (s)	148.0			31.8	152.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	26	232	0	0	277
Shared Lane Traffic (%)						
Lane Group Flow (vph)	283	26	232	0	0	277
Turn Type		Perm	custom			custom
Protected Phases	4					
Permitted Phases		4	8			2
Minimum Split (s)	21.0	21.0	21.0			21.0
Total Split (s)	21.0	21.0	21.0	0.0	0.0	21.0
Total Split (%)	50.0%	50.0%	50.0%	0.0%	0.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0			16.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	1.0	1.0	1.0			1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	4.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	16.0	16.0	16.0			16.0
Actuated g/C Ratio	0.38	0.38	0.38			0.38
v/c Ratio	0.21	0.04	0.29			0.18
Control Delay	9.3	4.5	10.3			0.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	9.3	4.5	10.3			0.3
LOS	A	A	B			A
Approach Delay	8.9					
Approach LOS	A					
Queue Length 50th (ft)	22	0	18			0
Queue Length 95th (ft)	41	10	37			0
Internal Link Dist (ft)	6431			1320	6608	
Turn Bay Length (ft)						
Base Capacity (vph)	1348	619	796			1517
Starvation Cap Reductn	0	0	0			0

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.21	0.04	0.29			0.18

Intersection Summary			
Area Type:	Other		
Cycle Length: 42			
Actuated Cycle Length: 42			
Offset: 8 (19%), Referenced to phase 2:NER and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.29			
Intersection Signal Delay: 6.4		Intersection LOS: A	
Intersection Capacity Utilization 24.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 26: 3rd & River Drive



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	260	24	213	0	0	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0			5.0
Lane Util. Factor	0.95	1.00	0.97			0.88
Frt	1.00	0.85	1.00			0.85
Flt Protected	1.00	1.00	0.95			1.00
Satd. Flow (prot)	3539	1583	3433			2787
Flt Permitted	1.00	1.00	0.58			1.00
Satd. Flow (perm)	3539	1583	2089			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	26	232	0	0	277
RTOR Reduction (vph)	0	16	0	0	0	171
Lane Group Flow (vph)	283	10	232	0	0	106
Turn Type		Perm	custom			custom
Protected Phases	4					
Permitted Phases		4	8			2
Actuated Green, G (s)	16.0	16.0	16.0			16.0
Effective Green, g (s)	16.0	16.0	16.0			16.0
Actuated g/C Ratio	0.38	0.38	0.38			0.38
Clearance Time (s)	5.0	5.0	5.0			5.0
Lane Grp Cap (vph)	1348	603	796			1062
v/s Ratio Prot	0.08					
v/s Ratio Perm		0.01	c0.11			c0.04
v/c Ratio	0.21	0.02	0.29			0.10
Uniform Delay, d1	8.7	8.1	9.1			8.4
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.4	0.0	0.9			0.2
Delay (s)	9.1	8.1	10.0			8.6
Level of Service	A	A	A			A
Approach Delay (s)	9.0			10.0	8.6	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	42.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	24.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

3rd and 4th Streets

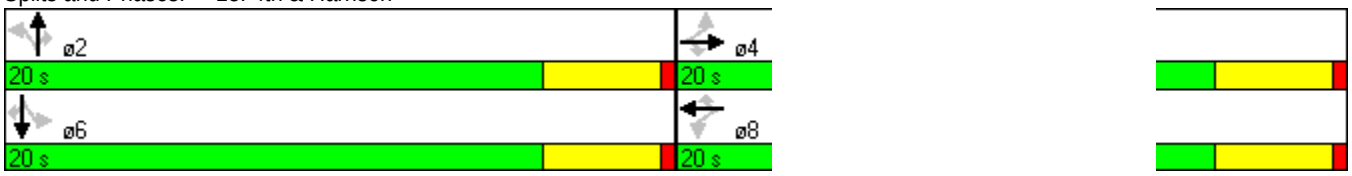
Converted Two-Way Streets
2030 AM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	26	27	169	26	8	234	36	38	268	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.641			0.648			0.559			0.602		
Satd. Flow (perm)	1194	1863	1583	1207	1863	1583	1041	1863	1583	1121	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			28			28			39			78
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			1163			2656	
Travel Time (s)		48.0			38.9			22.7			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	28	29	184	28	9	254	39	41	291	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	173	28	29	184	28	9	254	39	41	291	78
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.06	0.23	0.04	0.06	0.25	0.04	0.02	0.34	0.06	0.09	0.39	0.11
Control Delay	7.8	9.0	3.9	3.9	4.5	1.2	4.9	6.4	1.7	4.9	7.9	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	9.0	3.9	3.9	4.5	1.2	4.9	6.4	1.7	4.9	7.9	2.2
LOS	A	A	A	A	A	A	A	A	A	A	A	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		8.3			4.1			5.7			6.5	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	3	24	0	2	12	0	1	22	1	3	42	3
Queue Length 95th (ft)	13	52	9	m5	24	m1	m4	42	5	m5	m56	m4
Internal Link Dist (ft)		2032			1632			1083			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	478	745	650	483	745	650	416	745	657	448	745	680
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.23	0.04	0.06	0.25	0.04	0.02	0.34	0.06	0.09	0.39	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 20 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.39			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 43.0%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 13: 4th & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	26	27	169	26	8	234	36	38	268	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.64	1.00	1.00	0.65	1.00	1.00	0.56	1.00	1.00	0.60	1.00	1.00
Satd. Flow (perm)	1195	1863	1583	1207	1863	1583	1041	1863	1583	1121	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	28	29	184	28	9	254	39	41	291	78
RTOR Reduction (vph)	0	0	17	0	0	17	0	0	23	0	0	47
Lane Group Flow (vph)	27	173	11	29	184	11	9	254	16	41	291	31
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	478	745	633	483	745	633	416	745	633	448	745	633
v/s Ratio Prot		0.09			c0.10			0.14			c0.16	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.01		0.01	0.04		0.02
v/c Ratio	0.06	0.23	0.02	0.06	0.25	0.02	0.02	0.34	0.02	0.09	0.39	0.05
Uniform Delay, d1	7.4	7.9	7.3	7.4	8.0	7.3	7.3	8.3	7.3	7.5	8.5	7.3
Progression Factor	1.00	1.00	1.00	0.47	0.45	0.29	0.65	0.59	0.44	0.58	0.74	0.70
Incremental Delay, d2	0.2	0.7	0.1	0.2	0.7	0.0	0.1	1.2	0.1	0.3	1.2	0.1
Delay (s)	7.6	8.7	7.3	3.7	4.4	2.1	4.8	6.2	3.3	4.7	7.6	5.3
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		8.4			4.0			5.7			6.8	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

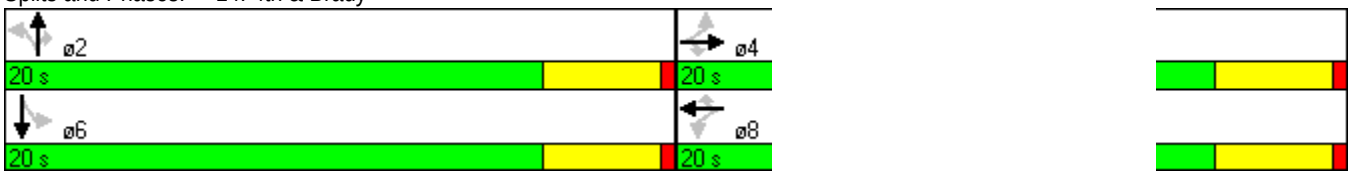
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	237	25	27	252	27	8	235	36	38	268	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1805	0
Flt Permitted	0.579			0.599			0.469			0.601		
Satd. Flow (perm)	1079	1863	1583	1116	1863	1583	874	1863	1583	1120	1805	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			39		40	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			1163			2656	
Travel Time (s)		38.9			53.1			22.7			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	258	27	29	274	29	9	255	39	41	291	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	258	27	29	274	29	9	255	39	41	368	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	
v/c Ratio	0.06	0.35	0.04	0.07	0.37	0.04	0.03	0.34	0.06	0.09	0.49	
Control Delay	7.1	9.5	3.3	8.0	10.3	3.9	4.6	6.3	1.6	4.3	7.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.1	9.5	3.3	8.0	10.3	3.9	4.6	6.3	1.6	4.3	7.3	
LOS	A	A	A	A	B	A	A	A	A	A	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		8.8			9.5			5.7			7.0	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	2	23	1	4	40	0	1	19	1	3	53	
Queue Length 95th (ft)	9	69	3	14	81	10	m3	37	4	m5	m71	
Internal Link Dist (ft)		1632			2256			1083			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	432	745	649	446	745	651	350	745	657	448	746	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.35	0.04	0.07	0.37	0.04	0.03	0.34	0.06	0.09	0.49	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 22 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 7.7		Intersection LOS: A	
Intersection Capacity Utilization 51.7%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 14: 4th & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	237	25	27	252	27	8	235	36	38	268	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1804	
Flt Permitted	0.58	1.00	1.00	0.60	1.00	1.00	0.47	1.00	1.00	0.60	1.00	
Satd. Flow (perm)	1079	1863	1583	1116	1863	1583	873	1863	1583	1120	1804	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	258	27	29	274	29	9	255	39	41	291	77
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	23	0	24	0
Lane Group Flow (vph)	28	258	11	29	274	12	9	255	16	41	344	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	432	745	633	446	745	633	349	745	633	448	722	
v/s Ratio Prot		0.14			c0.15			0.14			c0.19	
v/s Ratio Perm	0.03		0.01	0.03		0.01	0.01		0.01	0.04		
v/c Ratio	0.06	0.35	0.02	0.07	0.37	0.02	0.03	0.34	0.02	0.09	0.48	
Uniform Delay, d1	7.4	8.4	7.2	7.4	8.4	7.3	7.3	8.3	7.3	7.5	8.9	
Progression Factor	0.89	0.94	0.83	1.00	1.00	1.00	0.60	0.58	0.40	0.51	0.65	
Incremental Delay, d2	0.3	1.3	0.0	0.3	1.4	0.1	0.1	1.2	0.1	0.3	1.8	
Delay (s)	6.9	9.1	6.1	7.7	9.8	7.3	4.5	6.1	3.0	4.1	7.6	
Level of Service	A	A	A	A	A	A	A	A	A	A	A	
Approach Delay (s)		8.6			9.4			5.7			7.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

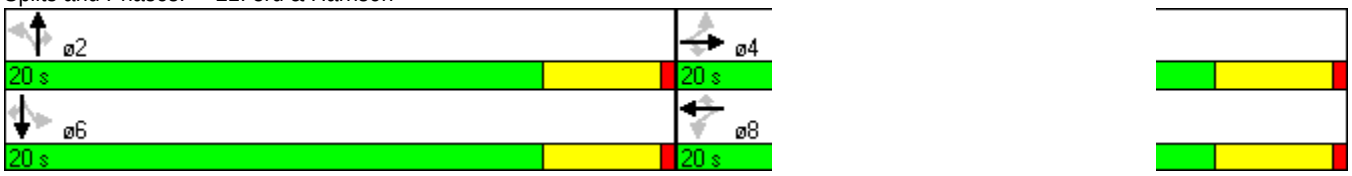
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	25	27	169	27	8	156	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.641			0.648			0.628			0.650		
Satd. Flow (perm)	1194	1863	1583	1207	1863	1583	1170	1863	1583	1211	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			40			77
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2089			1711			1848			1163	
Travel Time (s)		47.5			38.9			36.0			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	27	29	184	29	9	170	40	41	207	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	173	27	29	184	29	9	170	40	41	207	77
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.06	0.23	0.04	0.06	0.25	0.04	0.02	0.23	0.06	0.08	0.28	0.11
Control Delay	7.8	9.0	4.0	2.9	3.9	0.7	10.8	12.8	6.8	3.2	3.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	9.0	4.0	2.9	3.9	0.7	10.8	12.8	6.8	3.2	3.8	0.5
LOS	A	A	A	A	A	A	B	B	A	A	A	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		8.3			3.4			11.6			2.9	
Approach LOS		A			A			B			A	
Queue Length 50th (ft)	3	24	0	2	9	1	2	31	2	2	9	0
Queue Length 95th (ft)	13	52	9	m4	19	m1	m8	m62	m15	m5	19	1
Internal Link Dist (ft)		2009			1631			1768			1083	
Turn Bay Length (ft)												
Base Capacity (vph)	478	745	649	483	745	651	468	745	657	484	745	679
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.23	0.04	0.06	0.25	0.04	0.02	0.23	0.06	0.08	0.28	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 38.9%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 21: 3rd & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	159	25	27	169	27	8	156	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.64	1.00	1.00	0.65	1.00	1.00	0.63	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	1195	1863	1583	1207	1863	1583	1170	1863	1583	1210	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	173	27	29	184	29	9	170	40	41	207	77
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	24	0	0	46
Lane Group Flow (vph)	27	173	11	29	184	12	9	170	16	41	207	31
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	478	745	633	483	745	633	468	745	633	484	745	633
v/s Ratio Prot		0.09			c0.10			0.09			c0.11	
v/s Ratio Perm	0.02		0.01	0.02		0.01	0.01		0.01	0.03		0.02
v/c Ratio	0.06	0.23	0.02	0.06	0.25	0.02	0.02	0.23	0.03	0.08	0.28	0.05
Uniform Delay, d1	7.4	7.9	7.2	7.4	8.0	7.3	7.3	7.9	7.3	7.5	8.1	7.3
Progression Factor	1.00	1.00	1.00	0.35	0.37	0.14	1.44	1.46	1.94	0.37	0.34	0.07
Incremental Delay, d2	0.2	0.7	0.0	0.2	0.8	0.1	0.1	0.7	0.1	0.3	0.9	0.1
Delay (s)	7.6	8.7	7.3	2.8	3.7	1.1	10.5	12.3	14.2	3.1	3.6	0.7
Level of Service	A	A	A	A	A	A	B	B	B	A	A	A
Approach Delay (s)		8.4			3.3			12.5			2.9	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

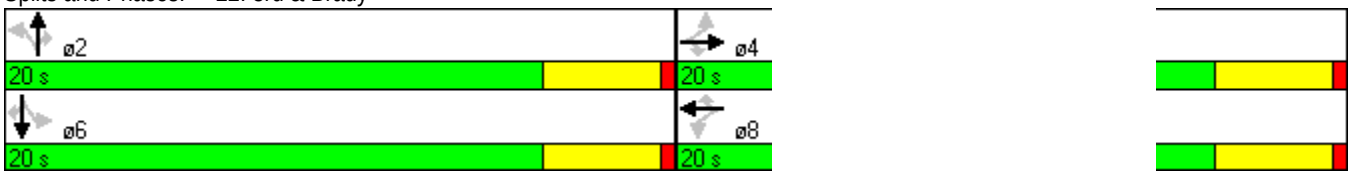
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	237	25	26	252	27	8	165	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.579			0.599			0.628			0.644		
Satd. Flow (perm)	1079	1863	1583	1116	1863	1583	1170	1863	1583	1200	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			29			40			77
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1711			6523			1848			1163	
Travel Time (s)		38.9			148.3			36.0			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	258	27	28	274	29	9	179	40	41	207	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	258	27	28	274	29	9	179	40	41	207	77
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.06	0.35	0.04	0.06	0.37	0.04	0.02	0.24	0.06	0.09	0.28	0.11
Control Delay	5.6	7.8	2.4	8.1	10.9	4.3	10.5	12.6	6.6	4.6	5.2	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	7.8	2.4	8.1	10.9	4.3	10.5	12.6	6.6	4.6	5.2	0.9
LOS	A	A	A	A	B	A	B	B	A	A	A	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		7.1			10.1			11.4			4.1	
Approach LOS		A			B			B			A	
Queue Length 50th (ft)	2	20	0	4	50	0	2	33	1	3	15	1
Queue Length 95th (ft)	9	43	4	17	99	13	m8	m66	m15	m6	27	m0
Internal Link Dist (ft)		1631			6443			1768			1083	
Turn Bay Length (ft)												
Base Capacity (vph)	432	745	649	446	745	651	468	745	657	480	745	679
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.35	0.04	0.06	0.37	0.04	0.02	0.24	0.06	0.09	0.28	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 8.0		Intersection LOS: A	
Intersection Capacity Utilization 43.3%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 22: 3rd & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	237	25	26	252	27	8	165	37	38	190	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.58	1.00	1.00	0.60	1.00	1.00	0.63	1.00	1.00	0.64	1.00	1.00
Satd. Flow (perm)	1079	1863	1583	1116	1863	1583	1170	1863	1583	1200	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	258	27	28	274	29	9	179	40	41	207	77
RTOR Reduction (vph)	0	0	16	0	0	17	0	0	24	0	0	46
Lane Group Flow (vph)	27	258	11	28	274	12	9	179	16	41	207	31
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	432	745	633	446	745	633	468	745	633	480	745	633
v/s Ratio Prot		0.14			c0.15			0.10			c0.11	
v/s Ratio Perm	0.03		0.01	0.03		0.01	0.01		0.01	0.03		0.02
v/c Ratio	0.06	0.35	0.02	0.06	0.37	0.02	0.02	0.24	0.03	0.09	0.28	0.05
Uniform Delay, d1	7.4	8.4	7.2	7.4	8.4	7.3	7.3	8.0	7.3	7.5	8.1	7.3
Progression Factor	0.70	0.74	0.60	1.02	1.07	1.11	1.41	1.42	1.88	0.55	0.52	0.22
Incremental Delay, d2	0.3	1.3	0.0	0.3	1.4	0.1	0.1	0.8	0.1	0.3	0.9	0.1
Delay (s)	5.4	7.5	4.4	7.8	10.5	8.1	10.3	12.1	13.8	4.4	5.0	1.8
Level of Service	A	A	A	A	B	A	B	B	B	A	A	A
Approach Delay (s)		7.0			10.0			12.3			4.2	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

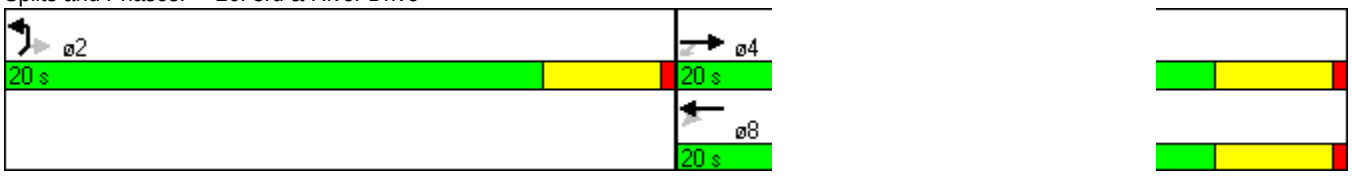
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	48	2	274	127	12	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.723		0.950	
Satd. Flow (perm)	1863	1583	1347	1863	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		2				124
Link Speed (mph)	30			30	30	
Link Distance (ft)	6523			1869	6778	
Travel Time (s)	148.3			42.5	154.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	2	298	138	13	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	2	298	138	13	124
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.07	0.00	0.55	0.19	0.02	0.18
Control Delay	8.1	6.0	14.1	8.6	14.9	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	6.0	14.1	8.6	14.9	9.9
LOS	A	A	B	A	B	A

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Approach Delay	8.0			12.4	10.4	
Approach LOS	A			B	B	
Queue Length 50th (ft)	10	0	48	19	3	9
Queue Length 95th (ft)	30	m1	103	43	m4	m15
Internal Link Dist (ft)	6443			1789	6698	
Turn Bay Length (ft)						
Base Capacity (vph)	745	634	539	745	708	708
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.00	0.55	0.19	0.02	0.18

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NEL and 6:, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 31.8%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 26: 3rd & River Drive





Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	48	2	274	127	12	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.72	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1347	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	2	298	138	13	124
RTOR Reduction (vph)	0	1	0	0	0	74
Lane Group Flow (vph)	52	1	298	138	13	50
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	745	633	539	745	708	633
v/s Ratio Prot	0.03			0.07	0.01	
v/s Ratio Perm		0.00	c0.22			c0.03
v/c Ratio	0.07	0.00	0.55	0.19	0.02	0.08
Uniform Delay, d1	7.4	7.2	9.2	7.8	7.3	7.4
Progression Factor	1.04	1.06	1.00	1.00	2.03	4.11
Incremental Delay, d2	0.2	0.0	4.0	0.5	0.0	0.1
Delay (s)	7.9	7.6	13.3	8.3	14.7	30.7
Level of Service	A	A	B	A	B	C
Approach Delay (s)	7.9			11.7	29.2	
Approach LOS	A			B	C	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	31.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

3rd and 4th Streets

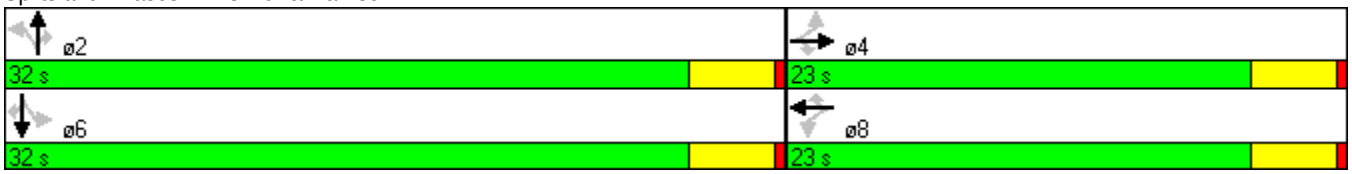
Converted Two-Way Streets
2030 PM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	266	15	17	283	52	19	453	81	19	263	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.469			0.494			0.562			0.377		
Satd. Flow (perm)	874	1863	1583	920	1863	1583	1047	1863	1583	702	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			16			57			88			93
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2112			1712			965			2656	
Travel Time (s)		48.0			38.9			18.8			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	289	16	18	308	57	21	492	88	21	286	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	289	16	18	308	57	21	492	88	21	286	93
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	32.0	32.0	32.0	32.0	32.0	32.0
Total Split (%)	41.8%	41.8%	41.8%	41.8%	41.8%	41.8%	58.2%	58.2%	58.2%	58.2%	58.2%	58.2%
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	28.0	28.0	28.0	28.0	28.0	28.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	28.0	28.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.35	0.35	0.51	0.51	0.51	0.51	0.51	0.51
v/c Ratio	0.17	0.45	0.03	0.06	0.48	0.10	0.04	0.52	0.10	0.06	0.30	0.11
Control Delay	14.4	16.7	6.7	17.3	19.0	8.0	4.4	9.9	1.4	4.8	6.2	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	16.7	6.7	17.3	19.0	8.0	4.4	9.9	1.4	4.8	6.2	1.2
LOS	B	B	A	B	B	A	A	A	A	A	A	A
Approach Delay		15.9			17.3			8.5			5.0	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	12	71	0	4	70	0	2	123	1	3	45	4
Queue Length 95th (ft)	33	129	10	m10	123	m15	m5	192	4	m5	54	m8
Internal Link Dist (ft)		2032			1632			885			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	302	644	557	318	644	584	533	948	849	357	948	852
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.45	0.03	0.06	0.48	0.10	0.04	0.52	0.10	0.06	0.30	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 26 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 11.1		Intersection LOS: B	
Intersection Capacity Utilization 52.1%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 13: 4th & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	266	15	17	283	52	19	453	81	19	263	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.47	1.00	1.00	0.49	1.00	1.00	0.56	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	874	1863	1583	921	1863	1583	1046	1863	1583	703	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	289	16	18	308	57	21	492	88	21	286	93
RTOR Reduction (vph)	0	0	10	0	0	37	0	0	43	0	0	46
Lane Group Flow (vph)	52	289	6	18	308	20	21	492	45	21	286	47
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	19.0	19.0	19.0	19.0	19.0	19.0	28.0	28.0	28.0	28.0	28.0	28.0
Effective Green, g (s)	19.0	19.0	19.0	19.0	19.0	19.0	28.0	28.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.35	0.35	0.51	0.51	0.51	0.51	0.51	0.51
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	302	644	547	318	644	547	533	948	806	358	948	806
v/s Ratio Prot		0.16			c0.17			c0.26			0.15	
v/s Ratio Perm	0.06		0.00	0.02		0.01	0.02		0.03	0.03		0.03
v/c Ratio	0.17	0.45	0.01	0.06	0.48	0.04	0.04	0.52	0.06	0.06	0.30	0.06
Uniform Delay, d1	12.5	13.9	11.8	12.0	14.1	11.9	6.8	9.0	6.8	6.8	7.8	6.8
Progression Factor	1.00	1.00	1.00	1.39	1.17	2.31	0.62	0.84	0.56	0.65	0.69	0.63
Incremental Delay, d2	1.2	2.3	0.0	0.3	2.2	0.1	0.1	2.0	0.1	0.3	0.7	0.1
Delay (s)	13.8	16.2	11.9	17.0	18.7	27.7	4.3	9.6	3.9	4.7	6.1	4.4
Level of Service	B	B	B	B	B	C	A	A	A	A	A	A
Approach Delay (s)		15.6			19.9			8.6			5.7	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	237	15	17	253	52	20	454	81	20	235	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.974			0.977			0.960	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1846	0	1770	1814	0	1770	1820	0	1770	1788	0
Flt Permitted	0.409			0.493			0.516			0.328		
Satd. Flow (perm)	762	1846	0	918	1814	0	961	1820	0	611	1788	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			20			26			53	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1712			2336			965			2656	
Travel Time (s)		38.9			53.1			18.8			51.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	258	16	18	275	57	22	493	88	22	255	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	274	0	18	332	0	22	581	0	22	348	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	21.0	21.0	0.0	21.0	21.0	0.0	34.0	34.0	0.0	34.0	34.0	0.0
Total Split (%)	38.2%	38.2%	0.0%	38.2%	38.2%	0.0%	61.8%	61.8%	0.0%	61.8%	61.8%	0.0%
Maximum Green (s)	17.0	17.0		17.0	17.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	17.0	17.0		17.0	17.0		30.0	30.0		30.0	30.0	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.55	0.55		0.55	0.55	
v/c Ratio	0.22	0.48		0.06	0.58		0.04	0.58		0.07	0.35	
Control Delay	14.2	14.0		14.2	19.8		4.6	10.0		3.2	3.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.2	14.0		14.2	19.8		4.6	10.0		3.2	3.2	
LOS	B	B		B	B		A	B		A	A	
Approach Delay		14.1			19.5			9.8			3.2	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	7	36		4	84		2	138		1	13	
Queue Length 95th (ft)	22	78		16	153		m5	199		m2	m18	
Internal Link Dist (ft)		1632			2256			885			2576	
Turn Bay Length (ft)												
Base Capacity (vph)	236	575		284	575		524	1005		333	999	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.22	0.48		0.06	0.58		0.04	0.58		0.07	0.35	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 54 (98%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 11.2		Intersection LOS: B	
Intersection Capacity Utilization 58.6%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 14: 4th & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	237	15	17	253	52	20	454	81	20	235	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1846		1770	1815		1770	1820		1770	1788	
Flt Permitted	0.41	1.00		0.49	1.00		0.52	1.00		0.33	1.00	
Satd. Flow (perm)	762	1846		918	1815		960	1820		611	1788	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	258	16	18	275	57	22	493	88	22	255	93
RTOR Reduction (vph)	0	4	0	0	14	0	0	12	0	0	24	0
Lane Group Flow (vph)	52	270	0	18	318	0	22	569	0	22	324	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.0	17.0		17.0	17.0		30.0	30.0		30.0	30.0	
Effective Green, g (s)	17.0	17.0		17.0	17.0		30.0	30.0		30.0	30.0	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.55	0.55		0.55	0.55	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	236	571		284	561		524	993		333	975	
v/s Ratio Prot		0.15			c0.18			c0.31			0.18	
v/s Ratio Perm	0.07			0.02			0.02			0.04		
v/c Ratio	0.22	0.47		0.06	0.57		0.04	0.57		0.07	0.33	
Uniform Delay, d1	14.1	15.4		13.4	15.9		5.8	8.3		5.9	6.9	
Progression Factor	0.83	0.74		1.00	1.00		0.76	0.95		0.48	0.41	
Incremental Delay, d2	2.0	2.7		0.4	4.1		0.1	2.3		0.3	0.8	
Delay (s)	13.8	14.1		13.8	20.0		4.6	10.2		3.2	3.6	
Level of Service	B	B		B	C		A	B		A	A	
Approach Delay (s)		14.0			19.7			9.9			3.6	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

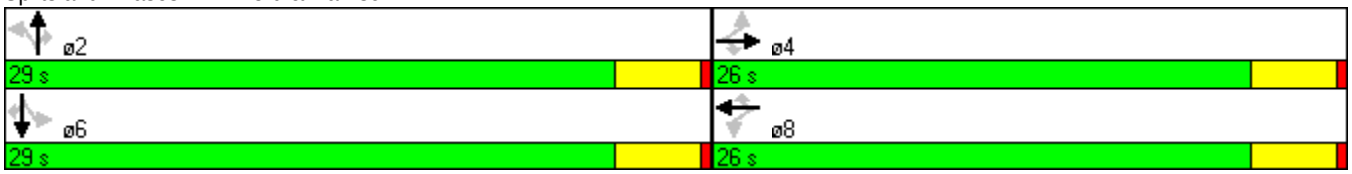
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	266	16	16	284	51	19	317	81	19	145	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.498			0.522			0.657			0.485		
Satd. Flow (perm)	928	1863	1583	972	1863	1583	1224	1863	1583	903	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			17			55			88			93
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		2072			1708			1800			965	
Travel Time (s)		47.1			38.8			35.1			18.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	289	17	17	309	55	21	345	88	21	158	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	289	17	17	309	55	21	345	88	21	158	93
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	47.3%	47.3%	47.3%	47.3%	47.3%	47.3%	52.7%	52.7%	52.7%	52.7%	52.7%	52.7%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	25.0	25.0	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.45	0.45	0.45	0.45	0.45	0.45
v/c Ratio	0.14	0.39	0.03	0.04	0.41	0.08	0.04	0.41	0.11	0.05	0.19	0.12
Control Delay	11.8	13.7	5.6	12.4	13.5	5.2	8.6	11.9	2.9	4.7	6.0	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	13.7	5.6	12.4	13.5	5.2	8.6	11.9	2.9	4.7	6.0	3.3
LOS	B	B	A	B	B	A	A	B	A	A	A	A
Approach Delay		13.0			12.3			10.0			5.0	
Approach LOS		B			B			B			A	
Queue Length 50th (ft)	11	64	0	3	50	0	4	71	0	4	39	0
Queue Length 95th (ft)	30	116	9	m9	104	m13	13	125	19	9	54	22
Internal Link Dist (ft)		1992			1628			1720			885	
Turn Bay Length (ft)												
Base Capacity (vph)	371	745	643	389	745	666	556	847	768	410	847	770
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.39	0.03	0.04	0.41	0.08	0.04	0.41	0.11	0.05	0.19	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 10.4		Intersection LOS: B	
Intersection Capacity Utilization 45.0%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 21: 3rd & Harrison



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	266	16	16	284	51	19	317	81	19	145	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.50	1.00	1.00	0.52	1.00	1.00	0.66	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)	928	1863	1583	972	1863	1583	1223	1863	1583	903	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	289	17	17	309	55	21	345	88	21	158	93
RTOR Reduction (vph)	0	0	10	0	0	33	0	0	48	0	0	51
Lane Group Flow (vph)	53	289	7	17	309	22	21	345	40	21	158	42
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	22.0	22.0	22.0	22.0	22.0	22.0	25.0	25.0	25.0	25.0	25.0	25.0
Effective Green, g (s)	22.0	22.0	22.0	22.0	22.0	22.0	25.0	25.0	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.45	0.45	0.45	0.45	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	371	745	633	389	745	633	556	847	720	410	847	720
v/s Ratio Prot		0.16			c0.17			c0.19			0.08	
v/s Ratio Perm	0.06		0.00	0.02		0.01	0.02		0.03	0.02		0.03
v/c Ratio	0.14	0.39	0.01	0.04	0.41	0.03	0.04	0.41	0.06	0.05	0.19	0.06
Uniform Delay, d1	10.5	11.7	9.9	10.1	11.9	10.0	8.3	10.0	8.4	8.4	8.9	8.4
Progression Factor	1.00	1.00	1.00	1.20	0.99	1.76	1.00	1.00	1.00	0.53	0.60	1.65
Incremental Delay, d2	0.8	1.5	0.0	0.2	1.6	0.1	0.1	1.5	0.1	0.2	0.5	0.2
Delay (s)	11.3	13.2	10.0	12.2	13.3	17.8	8.5	11.5	8.5	4.7	5.9	14.0
Level of Service	B	B	A	B	B	B	A	B	A	A	A	B
Approach Delay (s)		12.8			13.9			10.8			8.6	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

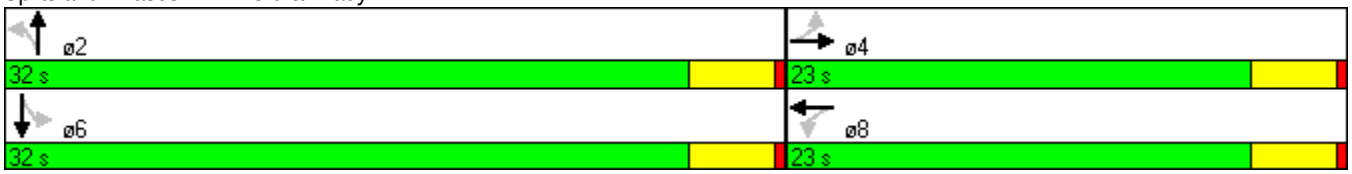
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	237	16	16	253	52	19	345	81	19	145	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.974			0.971			0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1846	0	1770	1814	0	1770	1809	0	1770	1758	0
Flt Permitted	0.438			0.513			0.595			0.402		
Satd. Flow (perm)	816	1846	0	956	1814	0	1108	1809	0	749	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			21			31			78	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1708			6387			1800			965	
Travel Time (s)		38.8			145.2			35.1			18.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	258	17	17	275	57	21	375	88	21	158	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	275	0	17	332	0	21	463	0	21	251	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	23.0	23.0	0.0	23.0	23.0	0.0	32.0	32.0	0.0	32.0	32.0	0.0
Total Split (%)	41.8%	41.8%	0.0%	41.8%	41.8%	0.0%	58.2%	58.2%	0.0%	58.2%	58.2%	0.0%
Maximum Green (s)	19.0	19.0		19.0	19.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	19.0	19.0		19.0	19.0		28.0	28.0		28.0	28.0	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.51	0.51		0.51	0.51	
v/c Ratio	0.19	0.43		0.05	0.52		0.04	0.49		0.06	0.27	
Control Delay	9.8	10.2		12.7	16.9		7.1	10.5		5.7	5.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.8	10.2		12.7	16.9		7.1	10.5		5.7	5.7	
LOS	A	B		B	B		A	B		A	A	
Approach Delay		10.1			16.7			10.3			5.7	
Approach LOS		B			B			B			A	
Queue Length 50th (ft)	7	33		4	78		3	83		4	53	
Queue Length 95th (ft)	15	53		15	143		12	148		m9	66	
Internal Link Dist (ft)		1628			6307			1720			885	
Turn Bay Length (ft)												
Base Capacity (vph)	282	642		330	640		564	936		381	933	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.19	0.43		0.05	0.52		0.04	0.49		0.06	0.27	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 28 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 11.0		Intersection LOS: B	
Intersection Capacity Utilization 52.9%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 22: 3rd & Brady



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	237	16	16	253	52	19	345	81	19	145	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1845		1770	1815		1770	1810		1770	1759	
Flt Permitted	0.44	1.00		0.51	1.00		0.60	1.00		0.40	1.00	
Satd. Flow (perm)	816	1845		955	1815		1109	1810		749	1759	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	258	17	17	275	57	21	375	88	21	158	93
RTOR Reduction (vph)	0	5	0	0	14	0	0	15	0	0	38	0
Lane Group Flow (vph)	53	270	0	17	318	0	21	448	0	21	213	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	19.0	19.0		19.0	19.0		28.0	28.0		28.0	28.0	
Effective Green, g (s)	19.0	19.0		19.0	19.0		28.0	28.0		28.0	28.0	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.51	0.51		0.51	0.51	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	282	637		330	627		565	921		381	895	
v/s Ratio Prot		0.15			c0.18			c0.25			0.12	
v/s Ratio Perm	0.06			0.02			0.02			0.03		
v/c Ratio	0.19	0.42		0.05	0.51		0.04	0.49		0.06	0.24	
Uniform Delay, d1	12.6	13.8		12.0	14.3		6.8	8.8		6.8	7.5	
Progression Factor	0.64	0.60		1.00	1.00		1.00	1.00		0.78	0.95	
Incremental Delay, d2	1.4	2.0		0.3	2.9		0.1	1.8		0.3	0.6	
Delay (s)	9.5	10.3		12.3	17.2		6.9	10.6		5.6	7.8	
Level of Service	A	B		B	B		A	B		A	A	
Approach Delay (s)		10.1			17.0			10.5			7.6	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

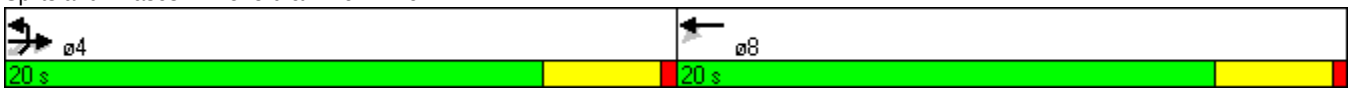
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	130	12	213	47	2	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950	0.968	0.950	
Satd. Flow (prot)	1863	1583	1681	1713	1770	1583
Flt Permitted			0.667	0.765	0.950	
Satd. Flow (perm)	1863	1583	1180	1354	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		13				277
Link Speed (mph)	30			30	30	
Link Distance (ft)	6387			1560	6636	
Travel Time (s)	145.2			35.5	150.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	13	232	51	2	277
Shared Lane Traffic (%)			41%			
Lane Group Flow (vph)	141	13	137	146	2	277
Turn Type		Perm	Perm			Perm
Protected Phases	4!			8	4!	
Permitted Phases		4	8			4
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.19	0.02	0.29	0.27	0.00	0.35
Control Delay	8.7	4.6	10.3	9.8	7.0	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.7	4.6	10.3	9.8	7.0	2.9
LOS	A	A	B	A	A	A
Approach Delay	8.3			10.0	2.9	
Approach LOS	A			B	A	
Queue Length 50th (ft)	19	0	20	22	0	0
Queue Length 95th (ft)	43	6	50	51	3	30
Internal Link Dist (ft)	6307			1480	6556	
Turn Bay Length (ft)						
Base Capacity (vph)	745	641	472	542	708	799
Starvation Cap Reductn	0	0	0	0	0	0

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.02	0.29	0.27	0.00	0.35

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2: and 6:, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 6.9		Intersection LOS: A	
Intersection Capacity Utilization 29.3%		ICU Level of Service A	
Analysis Period (min) 15			
! Phase conflict between lane groups.			

Splits and Phases: 25: 3rd & River Drive



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	130	12	213	47	2	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (prot)	1863	1583	1681	1714	1770	1583
Flt Permitted	1.00	1.00	0.67	0.77	0.95	1.00
Satd. Flow (perm)	1863	1583	1180	1354	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	13	232	51	2	277
RTOR Reduction (vph)	0	8	0	0	0	166
Lane Group Flow (vph)	141	5	137	146	2	111
Turn Type		Perm	Perm			Perm
Protected Phases	4!			8	4!	
Permitted Phases		4	8			4
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	745	633	472	542	708	633
v/s Ratio Prot	c0.08				0.00	
v/s Ratio Perm		0.00	c0.12	0.11		0.07
v/c Ratio	0.19	0.01	0.29	0.27	0.00	0.18
Uniform Delay, d1	7.8	7.2	8.1	8.1	7.2	7.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.0	1.6	1.2	0.0	0.6
Delay (s)	8.4	7.2	9.7	9.3	7.2	8.3
Level of Service	A	A	A	A	A	A
Approach Delay (s)	8.3			9.5	8.3	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

West Kimberly Road

Road Diet Concept
Synchro Analysis Reports

West Kimberly Road

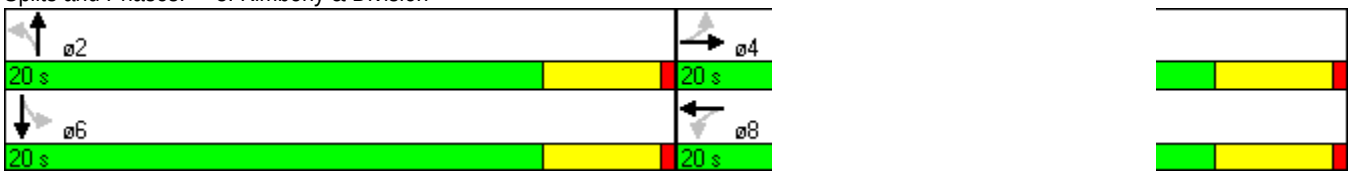
Existing Cross Section
2009 AM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	462	103	134	380	84	96	323	164	112	368	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.973			0.973			0.950			0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3444	0	1770	3444	0	1770	3362	0	1770	3461	0
Flt Permitted	0.462			0.387			0.483			0.444		
Satd. Flow (perm)	861	3444	0	721	3444	0	900	3362	0	827	3461	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		80			78			178			59	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1072			6848			2320			1488	
Travel Time (s)		24.4			155.6			52.7			33.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	502	112	146	413	91	104	351	178	122	400	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	614	0	146	504	0	104	529	0	122	470	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.29	0.43		0.51	0.35		0.29	0.36		0.37	0.33	
Control Delay	11.0	8.6		17.0	7.9		10.9	6.3		12.5	8.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.0	8.6		17.0	7.9		10.9	6.3		12.5	8.0	
LOS	B	A		B	A		B	A		B	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		9.0			9.9			7.1			8.9	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	14	41		23	32		15	25		18	30	
Queue Length 95th (ft)	39	71		#70	56		40	50		49	54	
Internal Link Dist (ft)		992			6768			2240			1408	
Turn Bay Length (ft)												
Base Capacity (vph)	344	1426		288	1424		360	1452		331	1420	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.29	0.43		0.51	0.35		0.29	0.36		0.37	0.33	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 8.7		Intersection LOS: A	
Intersection Capacity Utilization 57.2%		ICU Level of Service B	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Kimberly & Division



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	462	103	134	380	84	96	323	164	112	368	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.97		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3442		1770	3443		1770	3361		1770	3460	
Flt Permitted	0.46	1.00		0.39	1.00		0.48	1.00		0.44	1.00	
Satd. Flow (perm)	862	3442		720	3443		899	3361		828	3460	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	502	112	146	413	91	104	351	178	122	400	70
RTOR Reduction (vph)	0	48	0	0	47	0	0	107	0	0	35	0
Lane Group Flow (vph)	99	566	0	146	457	0	104	422	0	122	435	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	345	1377		288	1377		360	1344		331	1384	
v/s Ratio Prot		0.16			0.13			0.13			0.13	
v/s Ratio Perm	0.11			c0.20			0.12			c0.15		
v/c Ratio	0.29	0.41		0.51	0.33		0.29	0.31		0.37	0.31	
Uniform Delay, d1	8.1	8.6		9.0	8.3		8.1	8.2		8.4	8.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	0.9		6.2	0.6		2.0	0.6		3.1	0.6	
Delay (s)	10.2	9.5		15.3	9.0		10.2	8.8		11.6	8.8	
Level of Service	B	A		B	A		B	A		B	A	
Approach Delay (s)		9.6			10.4			9.1			9.4	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	925	122	79	622	71	136	169	91	139	217	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.367			0.228			0.532			0.614		
Satd. Flow (perm)	684	3539	1583	425	3539	1583	991	1863	1583	1144	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133			77			99			230
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		6848			8922			2176			1568	
Travel Time (s)		155.6			202.8			49.5			35.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1005	133	86	676	77	148	184	99	151	236	371
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	1005	133	86	676	77	148	184	99	151	236	371
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (%)	63.3%	63.3%	63.3%	63.3%	63.3%	63.3%	36.7%	36.7%	36.7%	36.7%	36.7%	36.7%
Maximum Green (s)	34.0	34.0	34.0	34.0	34.0	34.0	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	34.0	34.0	34.0	34.0	34.0	34.0	18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.59	0.50	0.14	0.36	0.34	0.08	0.50	0.33	0.18	0.44	0.42	0.58
Control Delay	16.3	9.0	1.8	12.4	7.5	2.0	24.3	18.4	5.1	21.9	19.7	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	9.0	1.8	12.4	7.5	2.0	24.3	18.4	5.1	21.9	19.7	11.2
LOS	B	A	A	B	A	A	C	B	A	C	B	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		9.5			7.5			17.3			16.0	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	48	103	0	15	61	0	44	51	0	43	68	39
Queue Length 95th (ft)	119	144	18	45	89	14	94	97	28	91	123	110
Internal Link Dist (ft)		6768			8842			2096			1488	
Turn Bay Length (ft)												
Base Capacity (vph)	388	2005	955	241	2005	930	297	559	544	343	559	636
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.50	0.14	0.36	0.34	0.08	0.50	0.33	0.18	0.44	0.42	0.58

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 62.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: Kimberly & Marquette



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	925	122	79	622	71	136	169	91	139	217	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.37	1.00	1.00	0.23	1.00	1.00	0.53	1.00	1.00	0.61	1.00	1.00
Satd. Flow (perm)	683	3539	1583	425	3539	1583	992	1863	1583	1143	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1005	133	86	676	77	148	184	99	151	236	371
RTOR Reduction (vph)	0	0	58	0	0	33	0	0	69	0	0	161
Lane Group Flow (vph)	229	1005	75	86	676	44	148	184	30	151	236	210
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	34.0	34.0	34.0	34.0	34.0	34.0	18.0	18.0	18.0	18.0	18.0	18.0
Effective Green, g (s)	34.0	34.0	34.0	34.0	34.0	34.0	18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.30	0.30	0.30	0.30	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	387	2005	897	241	2005	897	298	559	475	343	559	475
v/s Ratio Prot		0.28			0.19			0.10			0.13	
v/s Ratio Perm	c0.34		0.05	0.20		0.03	c0.15		0.02	0.13		0.13
v/c Ratio	0.59	0.50	0.08	0.36	0.34	0.05	0.50	0.33	0.06	0.44	0.42	0.44
Uniform Delay, d1	8.5	7.9	5.9	7.1	7.0	5.8	17.3	16.3	15.0	16.9	16.8	16.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	0.9	0.2	4.1	0.5	0.1	5.8	1.6	0.3	4.1	2.3	3.0
Delay (s)	15.0	8.8	6.1	11.1	7.4	5.9	23.1	17.9	15.2	21.0	19.2	19.9
Level of Service	B	A	A	B	A	A	C	B	B	C	B	B
Approach Delay (s)		9.5			7.7			19.1			19.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

West Kimberly Road

Existing Cross Section
2009 PM Peak Hour Traffic

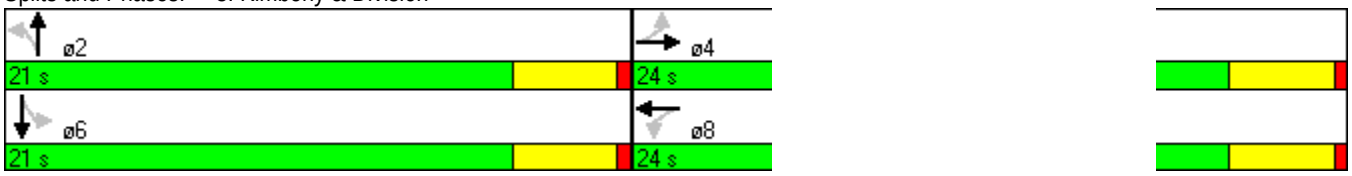
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	573	124	215	781	183	170	535	145	122	536	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.973			0.972			0.968			0.974	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3444	0	1770	3440	0	1770	3426	0	1770	3447	0
Flt Permitted	0.200			0.307			0.311			0.289		
Satd. Flow (perm)	373	3444	0	572	3440	0	579	3426	0	538	3447	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		74			81			88			62	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1072			6848			2320			1488	
Travel Time (s)		24.4			155.6			52.7			33.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	623	135	234	849	199	185	582	158	133	583	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	134	758	0	234	1048	0	185	740	0	133	703	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	24.0	24.0	0.0	24.0	24.0	0.0	21.0	21.0	0.0	21.0	21.0	0.0
Total Split (%)	53.3%	53.3%	0.0%	53.3%	53.3%	0.0%	46.7%	46.7%	0.0%	46.7%	46.7%	0.0%
Maximum Green (s)	20.0	20.0		20.0	20.0		17.0	17.0		17.0	17.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	20.0	20.0		20.0	20.0		17.0	17.0		17.0	17.0	
Actuated g/C Ratio	0.44	0.44		0.44	0.44		0.38	0.38		0.38	0.38	
v/c Ratio	0.81	0.48		0.92	0.67		0.84	0.55		0.66	0.52	
Control Delay	53.4	9.2		59.4	11.6		51.8	11.4		32.5	11.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	53.4	9.2		59.4	11.6		51.8	11.4		32.5	11.6	
LOS	D	A		E	B		D	B		C	B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		15.8			20.3			19.5			14.9	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)	28	59		52	94		42	64		27	63	
Queue Length 95th (ft)	#109	94		#163	146		#136	105		#98	101	
Internal Link Dist (ft)		992			6768			2240			1408	
Turn Bay Length (ft)												
Base Capacity (vph)	166	1572		254	1574		219	1349		203	1341	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.81	0.48		0.92	0.67		0.84	0.55		0.66	0.52	

Intersection Summary

Area Type: Other
Cycle Length: 45
Actuated Cycle Length: 45
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 17.9 Intersection LOS: B
Intersection Capacity Utilization 75.3% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Kimberly & Division



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	573	124	215	781	183	170	535	145	122	536	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.97		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3445		1770	3438		1770	3426		1770	3449	
Flt Permitted	0.20	1.00		0.31	1.00		0.31	1.00		0.29	1.00	
Satd. Flow (perm)	373	3445		572	3438		579	3426		539	3449	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	623	135	234	849	199	185	582	158	133	583	120
RTOR Reduction (vph)	0	41	0	0	45	0	0	55	0	0	39	0
Lane Group Flow (vph)	134	717	0	234	1003	0	185	685	0	133	664	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	20.0	20.0		20.0	20.0		17.0	17.0		17.0	17.0	
Effective Green, g (s)	20.0	20.0		20.0	20.0		17.0	17.0		17.0	17.0	
Actuated g/C Ratio	0.44	0.44		0.44	0.44		0.38	0.38		0.38	0.38	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	166	1531		254	1528		219	1294		204	1303	
v/s Ratio Prot		0.21			0.29			0.20			0.19	
v/s Ratio Perm	0.36			c0.41			c0.32			0.25		
v/c Ratio	0.81	0.47		0.92	0.66		0.84	0.53		0.65	0.51	
Uniform Delay, d1	10.8	8.8		11.8	9.8		12.8	10.9		11.6	10.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	32.9	1.0		39.3	2.2		31.0	1.6		15.1	1.4	
Delay (s)	43.7	9.8		51.1	12.0		43.8	12.4		26.6	12.2	
Level of Service	D	A		D	B		D	B		C	B	
Approach Delay (s)		14.9			19.2			18.7			14.5	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	925	122	79	622	71	136	169	91	139	217	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.367			0.228			0.532			0.614		
Satd. Flow (perm)	684	3539	1583	425	3539	1583	991	1863	1583	1144	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133			77			99			230
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		6848			8922			2176			1568	
Travel Time (s)		155.6			202.8			49.5			35.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1005	133	86	676	77	148	184	99	151	236	371
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	1005	133	86	676	77	148	184	99	151	236	371
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (%)	63.3%	63.3%	63.3%	63.3%	63.3%	63.3%	36.7%	36.7%	36.7%	36.7%	36.7%	36.7%
Maximum Green (s)	34.0	34.0	34.0	34.0	34.0	34.0	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	34.0	34.0	34.0	34.0	34.0	34.0	18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.59	0.50	0.14	0.36	0.34	0.08	0.50	0.33	0.18	0.44	0.42	0.58
Control Delay	16.3	9.0	1.8	12.4	7.5	2.0	24.3	18.4	5.1	21.9	19.7	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	9.0	1.8	12.4	7.5	2.0	24.3	18.4	5.1	21.9	19.7	11.2
LOS	B	A	A	B	A	A	C	B	A	C	B	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		9.5			7.5			17.3			16.0	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	48	103	0	15	61	0	44	51	0	43	68	39
Queue Length 95th (ft)	119	144	18	45	89	14	94	97	28	91	123	110
Internal Link Dist (ft)		6768			8842			2096			1488	
Turn Bay Length (ft)												
Base Capacity (vph)	388	2005	955	241	2005	930	297	559	544	343	559	636
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.50	0.14	0.36	0.34	0.08	0.50	0.33	0.18	0.44	0.42	0.58

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 62.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: Kimberly & Marquette



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	925	122	79	622	71	136	169	91	139	217	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.37	1.00	1.00	0.23	1.00	1.00	0.53	1.00	1.00	0.61	1.00	1.00
Satd. Flow (perm)	683	3539	1583	425	3539	1583	992	1863	1583	1143	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1005	133	86	676	77	148	184	99	151	236	371
RTOR Reduction (vph)	0	0	58	0	0	33	0	0	69	0	0	161
Lane Group Flow (vph)	229	1005	75	86	676	44	148	184	30	151	236	210
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	34.0	34.0	34.0	34.0	34.0	34.0	18.0	18.0	18.0	18.0	18.0	18.0
Effective Green, g (s)	34.0	34.0	34.0	34.0	34.0	34.0	18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.30	0.30	0.30	0.30	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	387	2005	897	241	2005	897	298	559	475	343	559	475
v/s Ratio Prot		0.28			0.19			0.10			0.13	
v/s Ratio Perm	c0.34		0.05	0.20		0.03	c0.15		0.02	0.13		0.13
v/c Ratio	0.59	0.50	0.08	0.36	0.34	0.05	0.50	0.33	0.06	0.44	0.42	0.44
Uniform Delay, d1	8.5	7.9	5.9	7.1	7.0	5.8	17.3	16.3	15.0	16.9	16.8	16.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	0.9	0.2	4.1	0.5	0.1	5.8	1.6	0.3	4.1	2.3	3.0
Delay (s)	15.0	8.8	6.1	11.1	7.4	5.9	23.1	17.9	15.2	21.0	19.2	19.9
Level of Service	B	A	A	B	A	A	C	B	B	C	B	B
Approach Delay (s)		9.5			7.7			19.1			19.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

West Kimberly Road

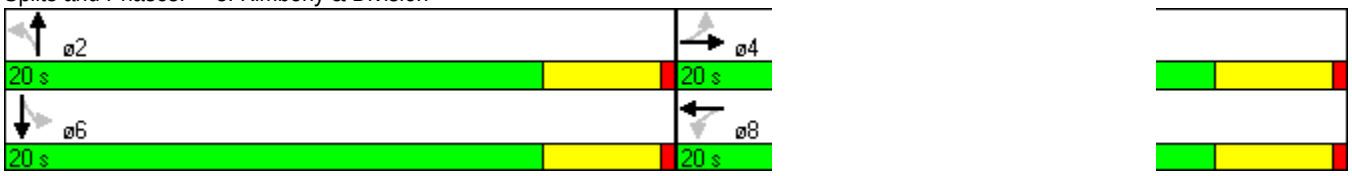
Conceptual Road Diet Section
2009 AM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	462	103	134	380	84	96	323	164	112	368	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.973			0.973			0.950			0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3444	0	1770	3444	0	1770	3362	0	1770	3461	0
Flt Permitted	0.462			0.387			0.483			0.444		
Satd. Flow (perm)	861	3444	0	721	3444	0	900	3362	0	827	3461	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		80			78			178			59	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1072			6848			2320			1488	
Travel Time (s)		24.4			155.6			52.7			33.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	502	112	146	413	91	104	351	178	122	400	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	614	0	146	504	0	104	529	0	122	470	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.29	0.43		0.51	0.35		0.29	0.36		0.37	0.33	
Control Delay	11.0	8.6		17.0	7.9		10.9	6.3		12.5	8.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.0	8.6		17.0	7.9		10.9	6.3		12.5	8.0	
LOS	B	A		B	A		B	A		B	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		9.0			9.9			7.1			8.9	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	14	41		23	32		15	25		18	30	
Queue Length 95th (ft)	39	71		#70	56		40	50		49	54	
Internal Link Dist (ft)		992			6768			2240			1408	
Turn Bay Length (ft)												
Base Capacity (vph)	344	1426		288	1424		360	1452		331	1420	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.29	0.43		0.51	0.35		0.29	0.36		0.37	0.33	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 8.7		Intersection LOS: A	
Intersection Capacity Utilization 57.2%		ICU Level of Service B	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Kimberly & Division



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	462	103	134	380	84	96	323	164	112	368	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.97		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3442		1770	3443		1770	3361		1770	3460	
Flt Permitted	0.46	1.00		0.39	1.00		0.48	1.00		0.44	1.00	
Satd. Flow (perm)	862	3442		720	3443		899	3361		828	3460	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	502	112	146	413	91	104	351	178	122	400	70
RTOR Reduction (vph)	0	48	0	0	47	0	0	107	0	0	35	0
Lane Group Flow (vph)	99	566	0	146	457	0	104	422	0	122	435	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	345	1377		288	1377		360	1344		331	1384	
v/s Ratio Prot		0.16			0.13			0.13			0.13	
v/s Ratio Perm	0.11			c0.20			0.12			c0.15		
v/c Ratio	0.29	0.41		0.51	0.33		0.29	0.31		0.37	0.31	
Uniform Delay, d1	8.1	8.6		9.0	8.3		8.1	8.2		8.4	8.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	0.9		6.2	0.6		2.0	0.6		3.1	0.6	
Delay (s)	10.2	9.5		15.3	9.0		10.2	8.8		11.6	8.8	
Level of Service	B	A		B	A		B	A		B	A	
Approach Delay (s)		9.6			10.4			9.1			9.4	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

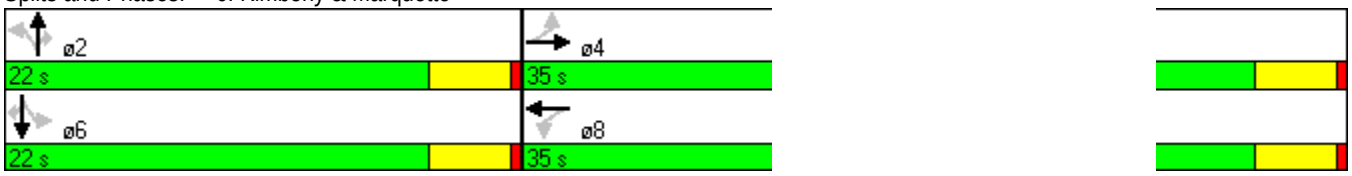
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	925	122	79	622	71	136	169	91	139	217	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.985				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3476	0	1770	3486	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.326			0.178			0.548			0.626		
Satd. Flow (perm)	607	3476	0	332	3486	0	1021	1863	1583	1166	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			33				94			215
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		6848			2128			2176			1568	
Travel Time (s)		155.6			48.4			49.5			35.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1005	133	86	676	77	148	184	99	151	236	371
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	1138	0	86	753	0	148	184	99	151	236	371
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	35.0	35.0	0.0	35.0	35.0	0.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (%)	61.4%	61.4%	0.0%	61.4%	61.4%	0.0%	38.6%	38.6%	38.6%	38.6%	38.6%	38.6%
Maximum Green (s)	31.0	31.0		31.0	31.0		18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	31.0	31.0		31.0	31.0		18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.54	0.54		0.54	0.54		0.32	0.32	0.32	0.32	0.32	0.32
v/c Ratio	0.69	0.60		0.48	0.39		0.46	0.31	0.18	0.41	0.40	0.57
Control Delay	24.4	10.1		19.0	7.9		21.3	16.6	5.2	19.5	17.8	11.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	10.1		19.0	7.9		21.3	16.6	5.2	19.5	17.8	11.0
LOS	C	B		B	A		C	B	A	B	B	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		12.5			9.1			15.6			14.8	
Approach LOS		B			A			B			B	
Queue Length 50th (ft)	51	118		16	66		40	47	1	40	62	40
Queue Length 95th (ft)	#161	169		#63	98		87	90	28	85	114	109
Internal Link Dist (ft)		6768			2048			2096			1488	
Turn Bay Length (ft)												
Base Capacity (vph)	330	1909		181	1911		322	588	564	368	588	647
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.60		0.48	0.39		0.46	0.31	0.18	0.41	0.40	0.57

Intersection Summary			
Area Type:	Other		
Cycle Length: 57			
Actuated Cycle Length: 57			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 12.5		Intersection LOS: B	
Intersection Capacity Utilization 66.1%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 6: Kimberly & Marquette



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	925	122	79	622	71	136	169	91	139	217	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3477		1770	3485		1770	1863	1583	1770	1863	1583
Flt Permitted	0.33	1.00		0.18	1.00		0.55	1.00	1.00	0.63	1.00	1.00
Satd. Flow (perm)	608	3477		331	3485		1020	1863	1583	1166	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1005	133	86	676	77	148	184	99	151	236	371
RTOR Reduction (vph)	0	18	0	0	15	0	0	0	64	0	0	147
Lane Group Flow (vph)	229	1120	0	86	738	0	148	184	35	151	236	224
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	31.0	31.0		31.0	31.0		18.0	18.0	18.0	18.0	18.0	18.0
Effective Green, g (s)	31.0	31.0		31.0	31.0		18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.54	0.54		0.54	0.54		0.32	0.32	0.32	0.32	0.32	0.32
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	331	1891		180	1895		322	588	500	368	588	500
v/s Ratio Prot		0.32			0.21			0.10			0.13	
v/s Ratio Perm	c0.38			0.26			c0.15		0.02	0.13		0.14
v/c Ratio	0.69	0.59		0.48	0.39		0.46	0.31	0.07	0.41	0.40	0.45
Uniform Delay, d1	9.5	8.7		8.0	7.5		15.6	14.8	13.6	15.3	15.3	15.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.3	1.4		8.8	0.6		4.7	1.4	0.3	3.4	2.0	2.9
Delay (s)	20.8	10.1		16.8	8.1		20.3	16.2	13.9	18.7	17.3	18.4
Level of Service	C	B		B	A		C	B	B	B	B	B
Approach Delay (s)		11.9			9.0			17.1			18.1	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

West Kimberly Road

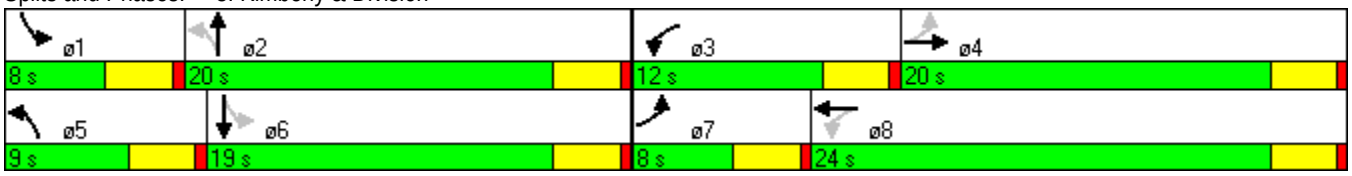
Conceptual Road Diet Section
2009 PM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	587	124	215	801	183	170	548	145	122	549	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.974			0.972			0.969			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3447	0	1770	3440	0	1770	3429	0	1770	3451	0
Flt Permitted	0.250			0.200			0.250			0.267		
Satd. Flow (perm)	466	3447	0	373	3440	0	466	3429	0	497	3451	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			49			54			37	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1072			6848			2320			1488	
Travel Time (s)		24.4			155.6			52.7			33.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	638	135	234	871	199	185	596	158	133	597	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	134	773	0	234	1070	0	185	754	0	133	717	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	8.0	20.0		8.0	20.0		8.0	8.0		8.0	8.0	
Total Split (s)	8.0	20.0	0.0	12.0	24.0	0.0	9.0	20.0	0.0	8.0	19.0	0.0
Total Split (%)	13.3%	33.3%	0.0%	20.0%	40.0%	0.0%	15.0%	33.3%	0.0%	13.3%	31.7%	0.0%
Maximum Green (s)	4.5	16.5		8.5	20.5		5.5	16.5		4.5	15.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Walk Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	20.0	16.0		28.0	20.0		21.0	16.0		19.0	15.0	
Actuated g/C Ratio	0.33	0.27		0.47	0.33		0.35	0.27		0.32	0.25	
v/c Ratio	0.55	0.81		0.65	0.91		0.68	0.79		0.55	0.80	
Control Delay	20.5	28.3		20.8	27.7		28.5	26.5		22.4	28.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.5	28.3		20.8	27.7		28.5	26.5		22.4	28.8	
LOS	C	C		C	C		C	C		C	C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		27.1			26.5			26.9			27.8	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	26	130		46	133		43	123		30	121	
Queue Length 95th (ft)	#58	#215		#108	#307		#93	#203		#65	#202	
Internal Link Dist (ft)		992			6768			2240			1408	
Turn Bay Length (ft)												
Base Capacity (vph)	242	949		360	1179		272	954		242	891	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.55	0.81		0.65	0.91		0.68	0.79		0.55	0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 24 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 27.0		Intersection LOS: C	
Intersection Capacity Utilization 76.2%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Kimberly & Division



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	587	124	215	801	183	170	548	145	122	549	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.97		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3447		1770	3440		1770	3428		1770	3450	
Flt Permitted	0.25	1.00		0.20	1.00		0.25	1.00		0.27	1.00	
Satd. Flow (perm)	466	3447		373	3440		466	3428		497	3450	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	638	135	234	871	199	185	596	158	133	597	120
RTOR Reduction (vph)	0	30	0	0	33	0	0	40	0	0	28	0
Lane Group Flow (vph)	134	743	0	234	1037	0	185	714	0	133	689	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	21.0	16.5		28.5	20.5		22.0	16.5		20.0	15.5	
Effective Green, g (s)	20.0	16.0		28.0	20.0		21.0	16.0		19.0	15.0	
Actuated g/C Ratio	0.33	0.27		0.47	0.33		0.35	0.27		0.32	0.25	
Clearance Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	242	919		360	1147		272	914		242	863	
v/s Ratio Prot	0.04	0.22		c0.09	c0.30		c0.06	c0.21		0.04	0.20	
v/s Ratio Perm	0.15			0.22			0.18			0.14		
v/c Ratio	0.55	0.81		0.65	0.90		0.68	0.78		0.55	0.80	
Uniform Delay, d1	15.4	20.6		11.6	19.1		15.0	20.4		15.7	21.1	
Progression Factor	1.00	1.00		1.14	0.82		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.8	7.6		8.2	10.9		12.9	6.6		8.7	7.6	
Delay (s)	24.2	28.2		21.4	26.5		27.9	27.0		24.4	28.7	
Level of Service	C	C		C	C		C	C		C	C	
Approach Delay (s)		27.6			25.6			27.2			28.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	925	122	79	622	71	136	169	91	139	217	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.985				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3476	0	1770	3486	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.334			0.189			0.522			0.608		
Satd. Flow (perm)	622	3476	0	352	3486	0	972	1863	1583	1133	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			35				99			241
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		6848			2128			2176			1568	
Travel Time (s)		155.6			48.4			49.5			35.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1005	133	86	676	77	148	184	99	151	236	371
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	1138	0	86	753	0	148	184	99	151	236	371
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	39.0	39.0	0.0	39.0	39.0	0.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (%)	65.0%	65.0%	0.0%	65.0%	65.0%	0.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%
Maximum Green (s)	35.0	35.0		35.0	35.0		17.0	17.0	17.0	17.0	17.0	17.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	35.0	35.0		35.0	35.0		17.0	17.0	17.0	17.0	17.0	17.0
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.28	0.28	0.28	0.28	0.28	0.28
v/c Ratio	0.63	0.56		0.42	0.37		0.54	0.35	0.19	0.47	0.45	0.60
Control Delay	14.0	5.8		14.8	6.9		26.8	19.4	5.4	23.6	20.9	11.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	5.8		14.8	6.9		26.8	19.4	5.4	23.6	20.9	11.4
LOS	B	A		B	A		C	B	A	C	C	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		7.1			7.7			18.7			16.8	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	28	66		15	62		45	53	0	45	69	36
Queue Length 95th (ft)	m44	m92		51	92		98	100	29	94	126	108
Internal Link Dist (ft)		6768			2048			2096			1488	
Turn Bay Length (ft)												
Base Capacity (vph)	363	2045		205	2048		275	528	519	321	528	621
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.56		0.42	0.37		0.54	0.35	0.19	0.47	0.45	0.60

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 10.9		Intersection LOS: B	
Intersection Capacity Utilization 66.1%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 6: Kimberly & Marquette



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	925	122	79	622	71	136	169	91	139	217	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3477		1770	3485		1770	1863	1583	1770	1863	1583
Flt Permitted	0.33	1.00		0.19	1.00		0.52	1.00	1.00	0.61	1.00	1.00
Satd. Flow (perm)	622	3477		353	3485		973	1863	1583	1132	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1005	133	86	676	77	148	184	99	151	236	371
RTOR Reduction (vph)	0	17	0	0	15	0	0	0	71	0	0	173
Lane Group Flow (vph)	229	1121	0	86	738	0	148	184	28	151	236	198
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	35.0	35.0		35.0	35.0		17.0	17.0	17.0	17.0	17.0	17.0
Effective Green, g (s)	35.0	35.0		35.0	35.0		17.0	17.0	17.0	17.0	17.0	17.0
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.28	0.28	0.28	0.28	0.28	0.28
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	363	2028		206	2033		276	528	449	321	528	449
v/s Ratio Prot		0.32			0.21			0.10			0.13	
v/s Ratio Perm	c0.37			0.24			c0.15		0.02	0.13		0.13
v/c Ratio	0.63	0.55		0.42	0.36		0.54	0.35	0.06	0.47	0.45	0.44
Uniform Delay, d1	8.2	7.7		6.9	6.6		18.2	17.1	15.7	17.8	17.6	17.6
Progression Factor	0.65	0.63		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.0	0.9		6.1	0.5		7.3	1.8	0.3	4.9	2.7	3.1
Delay (s)	12.4	5.8		13.0	7.1		25.5	18.9	16.0	22.7	20.4	20.7
Level of Service	B	A		B	A		C	B	B	C	C	C
Approach Delay (s)		6.9			7.7			20.5			21.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

West Kimberly Road

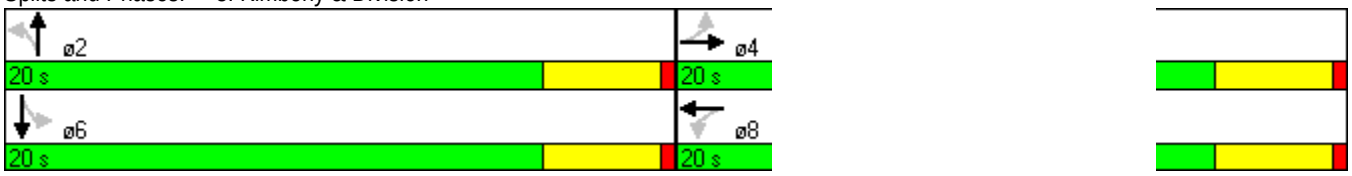
Existing Cross Section
2030 AM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	474	103	134	390	84	96	331	164	112	372	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.973			0.973			0.950			0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3444	0	1770	3444	0	1770	3362	0	1770	3461	0
Flt Permitted	0.454			0.378			0.481			0.438		
Satd. Flow (perm)	846	3444	0	704	3444	0	896	3362	0	816	3461	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		77			76			178			59	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1072			6848			2320			1488	
Travel Time (s)		24.4			155.6			52.7			33.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	515	112	146	424	91	104	360	178	122	404	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	627	0	146	515	0	104	538	0	122	474	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.29	0.44		0.52	0.36		0.29	0.37		0.37	0.33	
Control Delay	11.1	8.8		17.8	8.0		10.9	6.4		12.7	8.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.1	8.8		17.8	8.0		10.9	6.4		12.7	8.0	
LOS	B	A		B	A		B	A		B	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		9.1			10.2			7.1			9.0	
Approach LOS		A			B			A			A	
Queue Length 50th (ft)	14	43		23	33		15	26		18	31	
Queue Length 95th (ft)	39	73		#81	58		40	51		49	55	
Internal Link Dist (ft)		992			6768			2240			1408	
Turn Bay Length (ft)												
Base Capacity (vph)	338	1424		282	1423		358	1452		326	1420	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.29	0.44		0.52	0.36		0.29	0.37		0.37	0.33	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 8.9		Intersection LOS: A	
Intersection Capacity Utilization 57.7%		ICU Level of Service B	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Kimberly & Division



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	474	103	134	390	84	96	331	164	112	372	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.97		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3444		1770	3445		1770	3364		1770	3461	
Flt Permitted	0.45	1.00		0.38	1.00		0.48	1.00		0.44	1.00	
Satd. Flow (perm)	847	3444		704	3445		895	3364		816	3461	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	515	112	146	424	91	104	360	178	122	404	70
RTOR Reduction (vph)	0	46	0	0	46	0	0	107	0	0	35	0
Lane Group Flow (vph)	99	581	0	146	469	0	104	431	0	122	439	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	339	1378		282	1378		358	1346		326	1384	
v/s Ratio Prot		0.17			0.14			0.13			0.13	
v/s Ratio Perm	0.12			c0.21			0.12			c0.15		
v/c Ratio	0.29	0.42		0.52	0.34		0.29	0.32		0.37	0.32	
Uniform Delay, d1	8.2	8.7		9.1	8.3		8.1	8.3		8.5	8.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.9		6.6	0.7		2.0	0.6		3.3	0.6	
Delay (s)	10.3	9.6		15.7	9.0		10.2	8.9		11.7	8.8	
Level of Service	B	A		B	A		B	A		B	A	
Approach Delay (s)		9.7			10.5			9.1			9.4	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

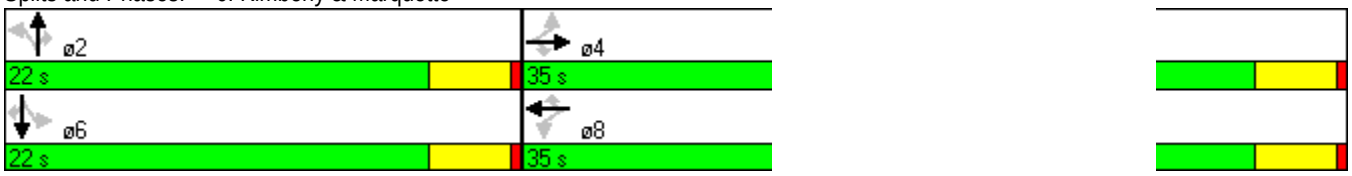
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	948	122	79	638	71	136	173	91	139	222	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.355			0.214			0.540			0.620		
Satd. Flow (perm)	661	3539	1583	399	3539	1583	1006	1863	1583	1155	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133			77			88			206
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		6848			2128			2176			1568	
Travel Time (s)		155.6			48.4			49.5			35.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1030	133	86	693	77	148	188	99	151	241	371
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	1030	133	86	693	77	148	188	99	151	241	371
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (%)	61.4%	61.4%	61.4%	61.4%	61.4%	61.4%	38.6%	38.6%	38.6%	38.6%	38.6%	38.6%
Maximum Green (s)	31.0	31.0	31.0	31.0	31.0	31.0	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	31.0	31.0	31.0	31.0	31.0	31.0	18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.54	0.54	0.54	0.54	0.54	0.54	0.32	0.32	0.32	0.32	0.32	0.32
v/c Ratio	0.64	0.54	0.14	0.40	0.36	0.09	0.47	0.32	0.18	0.41	0.41	0.58
Control Delay	19.8	9.7	1.9	14.4	8.0	2.2	21.5	16.7	5.7	19.6	17.9	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.8	9.7	1.9	14.4	8.0	2.2	21.5	16.7	5.7	19.6	17.9	11.4
LOS	B	A	A	B	A	A	C	B	A	B	B	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		10.6			8.2			15.9			15.1	
Approach LOS		B			A			B			B	
Queue Length 50th (ft)	49	106	0	15	63	0	40	48	3	40	63	42
Queue Length 95th (ft)	#151	151	19	49	93	14	87	92	29	85	117	113
Internal Link Dist (ft)		6768			2048			2096			1488	
Turn Bay Length (ft)												
Base Capacity (vph)	359	1925	922	217	1925	896	318	588	560	365	588	641
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.54	0.14	0.40	0.36	0.09	0.47	0.32	0.18	0.41	0.41	0.58

Intersection Summary			
Area Type:	Other		
Cycle Length: 57			
Actuated Cycle Length: 57			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 11.7		Intersection LOS: B	
Intersection Capacity Utilization 63.1%		ICU Level of Service B	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 6: Kimberly & Marquette



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	948	122	79	638	71	136	173	91	139	222	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.36	1.00	1.00	0.21	1.00	1.00	0.54	1.00	1.00	0.62	1.00	1.00
Satd. Flow (perm)	662	3539	1583	398	3539	1583	1007	1863	1583	1154	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1030	133	86	693	77	148	188	99	151	241	371
RTOR Reduction (vph)	0	0	61	0	0	35	0	0	60	0	0	141
Lane Group Flow (vph)	229	1030	72	86	693	42	148	188	39	151	241	230
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	31.0	31.0	31.0	31.0	31.0	31.0	18.0	18.0	18.0	18.0	18.0	18.0
Effective Green, g (s)	31.0	31.0	31.0	31.0	31.0	31.0	18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.54	0.54	0.54	0.54	0.54	0.54	0.32	0.32	0.32	0.32	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	360	1925	861	216	1925	861	318	588	500	364	588	500
v/s Ratio Prot		0.29			0.20			0.10			0.13	
v/s Ratio Perm	c0.35		0.05	0.22		0.03	c0.15		0.02	0.13		0.15
v/c Ratio	0.64	0.54	0.08	0.40	0.36	0.05	0.47	0.32	0.08	0.41	0.41	0.46
Uniform Delay, d1	9.1	8.4	6.2	7.6	7.4	6.1	15.6	14.8	13.7	15.4	15.3	15.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.3	1.1	0.2	5.4	0.5	0.1	4.8	1.4	0.3	3.5	2.1	3.0
Delay (s)	17.4	9.4	6.4	13.0	7.9	6.2	20.5	16.3	14.0	18.8	17.4	18.6
Level of Service	B	A	A	B	A	A	C	B	B	B	B	B
Approach Delay (s)		10.5			8.3			17.2			18.3	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

West Kimberly Road

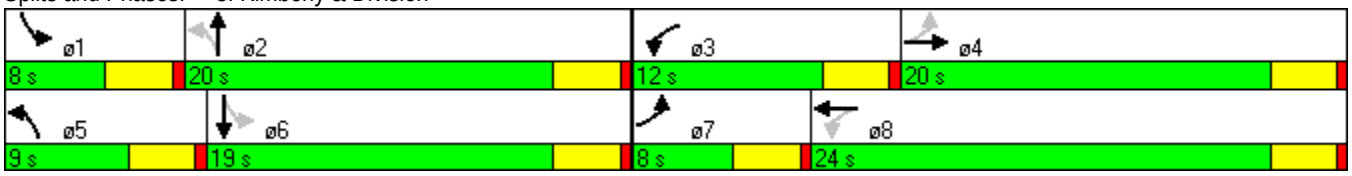
Existing Cross Section
2030 PM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	587	124	215	801	183	170	548	145	122	549	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.974			0.972			0.969			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3447	0	1770	3440	0	1770	3429	0	1770	3451	0
Flt Permitted	0.250			0.200			0.250			0.267		
Satd. Flow (perm)	466	3447	0	373	3440	0	466	3429	0	497	3451	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			49			54			37	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1072			6848			2320			1488	
Travel Time (s)		24.4			155.6			52.7			33.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	638	135	234	871	199	185	596	158	133	597	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	134	773	0	234	1070	0	185	754	0	133	717	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	8.0	20.0		8.0	20.0		8.0	8.0		8.0	8.0	
Total Split (s)	8.0	20.0	0.0	12.0	24.0	0.0	9.0	20.0	0.0	8.0	19.0	0.0
Total Split (%)	13.3%	33.3%	0.0%	20.0%	40.0%	0.0%	15.0%	33.3%	0.0%	13.3%	31.7%	0.0%
Maximum Green (s)	4.5	16.5		8.5	20.5		5.5	16.5		4.5	15.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Walk Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	20.0	16.0		28.0	20.0		21.0	16.0		19.0	15.0	
Actuated g/C Ratio	0.33	0.27		0.47	0.33		0.35	0.27		0.32	0.25	
v/c Ratio	0.55	0.81		0.65	0.91		0.68	0.79		0.55	0.80	
Control Delay	20.5	28.3		22.2	26.6		28.5	26.5		22.4	28.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.5	28.3		22.2	26.6		28.5	26.5		22.4	28.8	
LOS	C	C		C	C		C	C		C	C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		27.1			25.8			26.9			27.8	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	26	130		46	138		43	123		30	121	
Queue Length 95th (ft)	#58	#215		#106	#278		#93	#203		#65	#202	
Internal Link Dist (ft)		992			6768			2240			1408	
Turn Bay Length (ft)												
Base Capacity (vph)	242	949		360	1179		272	954		242	891	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.55	0.81		0.65	0.91		0.68	0.79		0.55	0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 20 (33%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 26.8		Intersection LOS: C	
Intersection Capacity Utilization 76.2%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Kimberly & Division



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	587	124	215	801	183	170	548	145	122	549	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.97		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3447		1770	3440		1770	3428		1770	3450	
Flt Permitted	0.25	1.00		0.20	1.00		0.25	1.00		0.27	1.00	
Satd. Flow (perm)	466	3447		373	3440		466	3428		497	3450	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	638	135	234	871	199	185	596	158	133	597	120
RTOR Reduction (vph)	0	30	0	0	33	0	0	40	0	0	28	0
Lane Group Flow (vph)	134	743	0	234	1037	0	185	714	0	133	689	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	21.0	16.5		28.5	20.5		22.0	16.5		20.0	15.5	
Effective Green, g (s)	20.0	16.0		28.0	20.0		21.0	16.0		19.0	15.0	
Actuated g/C Ratio	0.33	0.27		0.47	0.33		0.35	0.27		0.32	0.25	
Clearance Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	242	919		360	1147		272	914		242	863	
v/s Ratio Prot	0.04	0.22		c0.09	c0.30		c0.06	c0.21		0.04	0.20	
v/s Ratio Perm	0.15			0.22			0.18			0.14		
v/c Ratio	0.55	0.81		0.65	0.90		0.68	0.78		0.55	0.80	
Uniform Delay, d1	15.4	20.6		11.6	19.1		15.0	20.4		15.7	21.1	
Progression Factor	1.00	1.00		1.28	0.75		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.8	7.6		8.2	11.0		12.9	6.6		8.7	7.6	
Delay (s)	24.2	28.2		23.1	25.3		27.9	27.0		24.4	28.7	
Level of Service	C	C		C	C		C	C		C	C	
Approach Delay (s)		27.6			24.9			27.2			28.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	948	122	79	638	71	136	173	91	139	222	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.358			0.219			0.525			0.607		
Satd. Flow (perm)	667	3539	1583	408	3539	1583	978	1863	1583	1131	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133			77			98			221
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		6848			2128			2176			1568	
Travel Time (s)		155.6			48.4			49.5			35.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1030	133	86	693	77	148	188	99	151	241	371
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	1030	133	86	693	77	148	188	99	151	241	371
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (%)	63.3%	63.3%	63.3%	63.3%	63.3%	63.3%	36.7%	36.7%	36.7%	36.7%	36.7%	36.7%
Maximum Green (s)	34.5	34.5	34.5	34.5	34.5	34.5	18.5	18.5	18.5	18.5	18.5	18.5
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	34.0	34.0	34.0	34.0	34.0	34.0	18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.61	0.51	0.14	0.37	0.35	0.08	0.51	0.34	0.18	0.45	0.43	0.59
Control Delay	14.0	6.4	1.0	13.0	7.6	2.0	24.6	18.5	5.2	22.1	19.8	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	6.4	1.0	13.0	7.6	2.0	24.6	18.5	5.2	22.1	19.8	11.7
LOS	B	A	A	B	A	A	C	B	A	C	B	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		7.2			7.6			17.5			16.3	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	27	62	0	15	63	0	44	52	0	44	69	41
Queue Length 95th (ft)	m43	m85	m4	47	91	14	95	99	28	92	126	114
Internal Link Dist (ft)		6768			2048			2096			1488	
Turn Bay Length (ft)												
Base Capacity (vph)	378	2005	955	231	2005	930	293	559	544	339	559	630
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.51	0.14	0.37	0.35	0.08	0.51	0.34	0.18	0.45	0.43	0.59

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 10.6		Intersection LOS: B	
Intersection Capacity Utilization 63.1%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 6: Kimberly & Marquette



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	948	122	79	638	71	136	173	91	139	222	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.36	1.00	1.00	0.22	1.00	1.00	0.52	1.00	1.00	0.61	1.00	1.00
Satd. Flow (perm)	668	3539	1583	408	3539	1583	977	1863	1583	1131	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1030	133	86	693	77	148	188	99	151	241	371
RTOR Reduction (vph)	0	0	58	0	0	33	0	0	69	0	0	155
Lane Group Flow (vph)	229	1030	75	86	693	44	148	188	30	151	241	216
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	34.5	34.5	34.5	34.5	34.5	34.5	18.5	18.5	18.5	18.5	18.5	18.5
Effective Green, g (s)	34.0	34.0	34.0	34.0	34.0	34.0	18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.30	0.30	0.30	0.30	0.30	0.30
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Lane Grp Cap (vph)	379	2005	897	231	2005	897	293	559	475	339	559	475
v/s Ratio Prot		0.29			0.20			0.10			0.13	
v/s Ratio Perm	c0.34		0.05	0.21		0.03	c0.15		0.02	0.13		0.14
v/c Ratio	0.60	0.51	0.08	0.37	0.35	0.05	0.51	0.34	0.06	0.45	0.43	0.46
Uniform Delay, d1	8.6	7.9	5.9	7.1	7.0	5.8	17.3	16.3	15.0	17.0	16.9	17.0
Progression Factor	0.77	0.69	0.53	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	0.8	0.2	4.5	0.5	0.1	6.1	1.6	0.3	4.2	2.4	3.1
Delay (s)	12.7	6.3	3.3	11.7	7.5	5.9	23.4	18.0	15.2	21.2	19.3	20.2
Level of Service	B	A	A	B	A	A	C	B	B	C	B	C
Approach Delay (s)		7.1			7.8			19.2			20.1	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

West Kimberly Road

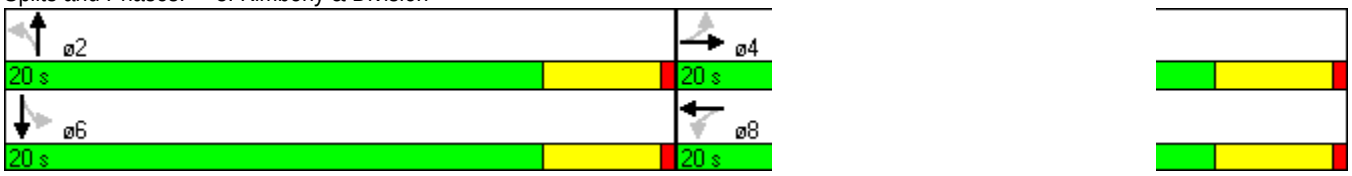
Conceptual Road Diet Section
2030 AM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	474	103	134	390	84	96	331	164	112	372	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.973			0.973			0.950			0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3444	0	1770	3444	0	1770	3362	0	1770	3461	0
Flt Permitted	0.454			0.378			0.481			0.438		
Satd. Flow (perm)	846	3444	0	704	3444	0	896	3362	0	816	3461	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		77			76			178			59	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1072			6848			2320			1488	
Travel Time (s)		24.4			155.6			52.7			33.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	515	112	146	424	91	104	360	178	122	404	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	627	0	146	515	0	104	538	0	122	474	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
v/c Ratio	0.29	0.44		0.52	0.36		0.29	0.37		0.37	0.33	
Control Delay	11.1	8.8		17.8	8.0		10.9	6.4		12.7	8.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.1	8.8		17.8	8.0		10.9	6.4		12.7	8.0	
LOS	B	A		B	A		B	A		B	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		9.1			10.2			7.1			9.0	
Approach LOS		A			B			A			A	
Queue Length 50th (ft)	14	43		23	33		15	26		18	31	
Queue Length 95th (ft)	39	73		#81	58		40	51		49	55	
Internal Link Dist (ft)		992			6768			2240			1408	
Turn Bay Length (ft)												
Base Capacity (vph)	338	1424		282	1423		358	1452		326	1420	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.29	0.44		0.52	0.36		0.29	0.37		0.37	0.33	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 40			
Control Type: Pretimed			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 8.9		Intersection LOS: A	
Intersection Capacity Utilization 57.7%		ICU Level of Service B	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Kimberly & Division



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	474	103	134	390	84	96	331	164	112	372	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.97		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3444		1770	3445		1770	3364		1770	3461	
Flt Permitted	0.45	1.00		0.38	1.00		0.48	1.00		0.44	1.00	
Satd. Flow (perm)	847	3444		704	3445		895	3364		816	3461	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	515	112	146	424	91	104	360	178	122	404	70
RTOR Reduction (vph)	0	46	0	0	46	0	0	107	0	0	35	0
Lane Group Flow (vph)	99	581	0	146	469	0	104	431	0	122	439	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	339	1378		282	1378		358	1346		326	1384	
v/s Ratio Prot		0.17			0.14			0.13			0.13	
v/s Ratio Perm	0.12			c0.21			0.12			c0.15		
v/c Ratio	0.29	0.42		0.52	0.34		0.29	0.32		0.37	0.32	
Uniform Delay, d1	8.2	8.7		9.1	8.3		8.1	8.3		8.5	8.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.9		6.6	0.7		2.0	0.6		3.3	0.6	
Delay (s)	10.3	9.6		15.7	9.0		10.2	8.9		11.7	8.8	
Level of Service	B	A		B	A		B	A		B	A	
Approach Delay (s)		9.7			10.5			9.1			9.4	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

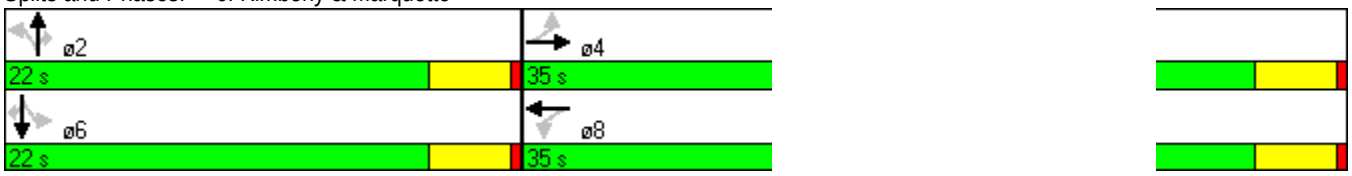
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	948	122	79	638	71	136	173	91	139	222	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.985				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3479	0	1770	3486	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.319			0.170			0.540			0.620		
Satd. Flow (perm)	594	3479	0	317	3486	0	1006	1863	1583	1155	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			33				88			206
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		6848			2128			2176			1568	
Travel Time (s)		155.6			48.4			49.5			35.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1030	133	86	693	77	148	188	99	151	241	371
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	1163	0	86	770	0	148	188	99	151	241	371
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	35.0	35.0	0.0	35.0	35.0	0.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (%)	61.4%	61.4%	0.0%	61.4%	61.4%	0.0%	38.6%	38.6%	38.6%	38.6%	38.6%	38.6%
Maximum Green (s)	31.0	31.0		31.0	31.0		18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	31.0	31.0		31.0	31.0		18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.54	0.54		0.54	0.54		0.32	0.32	0.32	0.32	0.32	0.32
v/c Ratio	0.71	0.61		0.50	0.40		0.47	0.32	0.18	0.41	0.41	0.58
Control Delay	25.7	10.2		21.3	8.0		21.5	16.7	5.7	19.6	17.9	11.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	10.2		21.3	8.0		21.5	16.7	5.7	19.6	17.9	11.4
LOS	C	B		C	A		C	B	A	B	B	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		12.8			9.4			15.9			15.1	
Approach LOS		B			A			B			B	
Queue Length 50th (ft)	52	122		16	68		40	48	3	40	63	42
Queue Length 95th (ft)	#164	175		#74	101		87	92	29	85	117	113
Internal Link Dist (ft)		6768			2048			2096			1488	
Turn Bay Length (ft)												
Base Capacity (vph)	323	1909		172	1911		318	588	560	365	588	641
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.61		0.50	0.40		0.47	0.32	0.18	0.41	0.41	0.58

Intersection Summary			
Area Type:	Other		
Cycle Length: 57			
Actuated Cycle Length: 57			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 67.0%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 6: Kimberly & Marquette



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	948	122	79	638	71	136	173	91	139	222	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3479		1770	3486		1770	1863	1583	1770	1863	1583
Flt Permitted	0.32	1.00		0.17	1.00		0.54	1.00	1.00	0.62	1.00	1.00
Satd. Flow (perm)	593	3479		316	3486		1007	1863	1583	1154	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1030	133	86	693	77	148	188	99	151	241	371
RTOR Reduction (vph)	0	17	0	0	15	0	0	0	60	0	0	141
Lane Group Flow (vph)	229	1146	0	86	755	0	148	188	39	151	241	230
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	31.0	31.0		31.0	31.0		18.0	18.0	18.0	18.0	18.0	18.0
Effective Green, g (s)	31.0	31.0		31.0	31.0		18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.54	0.54		0.54	0.54		0.32	0.32	0.32	0.32	0.32	0.32
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	323	1892		172	1896		318	588	500	364	588	500
v/s Ratio Prot		0.33			0.22			0.10			0.13	
v/s Ratio Perm	c0.39			0.27			c0.15		0.02	0.13		0.15
v/c Ratio	0.71	0.61		0.50	0.40		0.47	0.32	0.08	0.41	0.41	0.46
Uniform Delay, d1	9.7	8.8		8.1	7.6		15.6	14.8	13.7	15.4	15.3	15.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.4	1.4		10.0	0.6		4.8	1.4	0.3	3.5	2.1	3.0
Delay (s)	22.1	10.3		18.2	8.2		20.5	16.3	14.0	18.8	17.4	18.6
Level of Service	C	B		B	A		C	B	B	B	B	B
Approach Delay (s)		12.2			9.2			17.2			18.3	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

West Kimberly Road

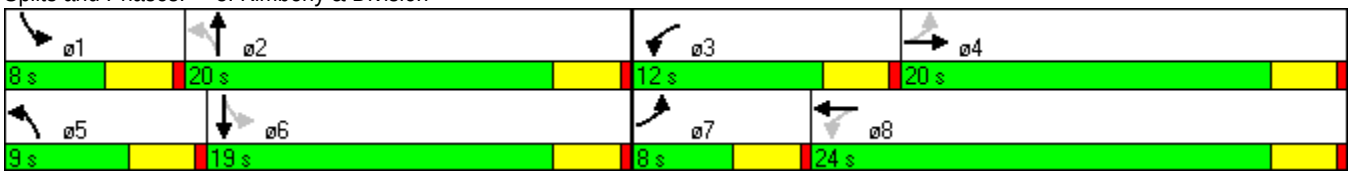
Conceptual Road Diet Section
2030 PM Peak Hour Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	587	124	215	801	183	170	548	145	122	549	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.974			0.972			0.969			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3447	0	1770	3440	0	1770	3429	0	1770	3451	0
Flt Permitted	0.250			0.200			0.250			0.267		
Satd. Flow (perm)	466	3447	0	373	3440	0	466	3429	0	497	3451	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			49			54			37	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1072			6848			2320			1488	
Travel Time (s)		24.4			155.6			52.7			33.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	638	135	234	871	199	185	596	158	133	597	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	134	773	0	234	1070	0	185	754	0	133	717	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	8.0	20.0		8.0	20.0		8.0	8.0		8.0	8.0	
Total Split (s)	8.0	20.0	0.0	12.0	24.0	0.0	9.0	20.0	0.0	8.0	19.0	0.0
Total Split (%)	13.3%	33.3%	0.0%	20.0%	40.0%	0.0%	15.0%	33.3%	0.0%	13.3%	31.7%	0.0%
Maximum Green (s)	4.5	16.5		8.5	20.5		5.5	16.5		4.5	15.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Walk Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	20.0	16.0		28.0	20.0		21.0	16.0		19.0	15.0	
Actuated g/C Ratio	0.33	0.27		0.47	0.33		0.35	0.27		0.32	0.25	
v/c Ratio	0.55	0.81		0.65	0.91		0.68	0.79		0.55	0.80	
Control Delay	20.5	28.3		21.2	27.2		28.5	26.5		22.4	28.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.5	28.3		21.2	27.2		28.5	26.5		22.4	28.8	
LOS	C	C		C	C		C	C		C	C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		27.1			26.2			26.9			27.8	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	26	130		49	133		43	123		30	121	
Queue Length 95th (ft)	#58	#215		#117	#299		#93	#203		#65	#202	
Internal Link Dist (ft)		992			6768			2240			1408	
Turn Bay Length (ft)												
Base Capacity (vph)	242	949		360	1179		272	954		242	891	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.55	0.81		0.65	0.91		0.68	0.79		0.55	0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 24 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 26.9		Intersection LOS: C	
Intersection Capacity Utilization 76.2%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Kimberly & Division



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	587	124	215	801	183	170	548	145	122	549	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.97		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3447		1770	3440		1770	3428		1770	3450	
Flt Permitted	0.25	1.00		0.20	1.00		0.25	1.00		0.27	1.00	
Satd. Flow (perm)	466	3447		373	3440		466	3428		497	3450	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	638	135	234	871	199	185	596	158	133	597	120
RTOR Reduction (vph)	0	30	0	0	33	0	0	40	0	0	28	0
Lane Group Flow (vph)	134	743	0	234	1037	0	185	714	0	133	689	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	21.0	16.5		28.5	20.5		22.0	16.5		20.0	15.5	
Effective Green, g (s)	20.0	16.0		28.0	20.0		21.0	16.0		19.0	15.0	
Actuated g/C Ratio	0.33	0.27		0.47	0.33		0.35	0.27		0.32	0.25	
Clearance Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	242	919		360	1147		272	914		242	863	
v/s Ratio Prot	0.04	0.22		c0.09	c0.30		c0.06	c0.21		0.04	0.20	
v/s Ratio Perm	0.15			0.22			0.18			0.14		
v/c Ratio	0.55	0.81		0.65	0.90		0.68	0.78		0.55	0.80	
Uniform Delay, d1	15.4	20.6		11.6	19.1		15.0	20.4		15.7	21.1	
Progression Factor	1.00	1.00		1.19	0.79		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.8	7.6		8.1	10.9		12.9	6.6		8.7	7.6	
Delay (s)	24.2	28.2		21.9	26.0		27.9	27.0		24.4	28.7	
Level of Service	C	C		C	C		C	C		C	C	
Approach Delay (s)		27.6			25.3			27.2			28.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	948	122	79	638	71	136	173	91	139	222	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.985				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3479	0	1770	3486	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.322			0.176			0.525			0.607		
Satd. Flow (perm)	600	3479	0	328	3486	0	978	1863	1583	1131	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			33				98			221
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		6848			2128			2176			1568	
Travel Time (s)		155.6			48.4			49.5			35.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1030	133	86	693	77	148	188	99	151	241	371
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	1163	0	86	770	0	148	188	99	151	241	371
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	38.0	38.0	0.0	38.0	38.0	0.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (%)	63.3%	63.3%	0.0%	63.3%	63.3%	0.0%	36.7%	36.7%	36.7%	36.7%	36.7%	36.7%
Maximum Green (s)	34.0	34.0		34.0	34.0		18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	34.0	34.0		34.0	34.0		18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.57	0.57		0.57	0.57		0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.67	0.59		0.46	0.39		0.51	0.34	0.18	0.45	0.43	0.59
Control Delay	17.7	6.3		17.9	7.6		24.6	18.5	5.2	22.1	19.8	11.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	6.3		17.9	7.6		24.6	18.5	5.2	22.1	19.8	11.7
LOS	B	A		B	A		C	B	A	C	B	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		8.2			8.6			17.5			16.3	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	29	71		16	68		44	52	0	44	69	41
Queue Length 95th (ft)	m46	m97		58	100		95	99	28	92	126	114
Internal Link Dist (ft)		6768			2048			2096			1488	
Turn Bay Length (ft)												
Base Capacity (vph)	340	1988		186	1990		293	559	544	339	559	630
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.59		0.46	0.39		0.51	0.34	0.18	0.45	0.43	0.59

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 11.3		Intersection LOS: B	
Intersection Capacity Utilization 67.0%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 6: Kimberly & Marquette



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	948	122	79	638	71	136	173	91	139	222	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3479		1770	3486		1770	1863	1583	1770	1863	1583
Flt Permitted	0.32	1.00		0.18	1.00		0.52	1.00	1.00	0.61	1.00	1.00
Satd. Flow (perm)	600	3479		328	3486		977	1863	1583	1131	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1030	133	86	693	77	148	188	99	151	241	371
RTOR Reduction (vph)	0	16	0	0	14	0	0	0	69	0	0	155
Lane Group Flow (vph)	229	1147	0	86	756	0	148	188	30	151	241	216
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	34.0	34.0		34.0	34.0		18.0	18.0	18.0	18.0	18.0	18.0
Effective Green, g (s)	34.0	34.0		34.0	34.0		18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.57	0.57		0.57	0.57		0.30	0.30	0.30	0.30	0.30	0.30
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	340	1971		186	1975		293	559	475	339	559	475
v/s Ratio Prot		0.33			0.22			0.10			0.13	
v/s Ratio Perm	c0.38			0.26			c0.15		0.02	0.13		0.14
v/c Ratio	0.67	0.58		0.46	0.38		0.51	0.34	0.06	0.45	0.43	0.46
Uniform Delay, d1	9.1	8.4		7.6	7.2		17.3	16.3	15.0	17.0	16.9	17.0
Progression Factor	0.67	0.63		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.9	1.1		8.1	0.6		6.1	1.6	0.3	4.2	2.4	3.1
Delay (s)	15.0	6.4		15.7	7.8		23.4	18.0	15.2	21.2	19.3	20.2
Level of Service	B	A		B	A		C	B	B	C	B	C
Approach Delay (s)		7.8			8.6			19.2			20.1	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Appendix D Cost Estimation Methodology

This appendix provides general cost estimates for various elements of surface street construction, improvement, and reconstruction projects. These estimates include average cost ranges for different project types, such as road diets and bicycle lanes, and individual components, such as striping, signage, intersection upgrades and other ancillary roadway, bicycle and pedestrian facilities. These figures are intended only to provide high-level budgetary estimates and actual costs will vary on a project-by-project basis.

Cost estimates were derived from a variety of sources including the Atlanta Regional Commission's transportation cost model, cost estimation reports or appendices from various cities and MPOs, as well as from technical reports from both the Federal Highway Administration and the Transportation Research Board. Most cost estimates have been converted to linear miles for consistency.

Cost estimates with outdated figures were adjusted for inflation using the Consumer Price Index (CPI). The most notable example of this is average new street construction figure (originally in 2000 dollars). This figure could vary from actual capital costs, as the CPI typically measures the price change over for bundles of goods rather than specific cost elements.

Finally, although project costs always vary to some degree, construction material input prices have increasingly become more expensive and variable in recent years. This makes costs very difficult to predict and for this reason ranges are provided for some project categories. In addition, many cost estimates vary in their assumptions. For example, the average new construction figure includes the cost of construction, materials, right-of-way acquisition, project engineering and contingency fees.

Major Street Project Categories	Cost Element	Construction Type	Cost	Unit	Notes	Source
New street construction	Average new street construction	New Construction	$ 690,000	Per lane mile	(A) (B) (I)	(2)
Two-way conversion	Full road restriping w/ bike lanes and signal replacement	Redesign	$750,000 - $ 950,000	Per linear mile	(C) (F) (H)	(7)
4-3 lane road diet	Full road restriping	Redesign	$ 95,000	Per linear mile	(C) (F)	(7)
Green streets	General improvements	Redesign	$ 31,000	Per linear mile	(E)	(3)
Intersection cost elements	Signal Replacement	Redesign	$ 160,000	Per intersection		(7)
	Traffic Circle/roundabout	Redesign	$ 150,000	Per item	(G)	(6)
Bicycle/Pedestrian facilities	Bike lane striping	Redesign	$ 60,000 - $80,000	Per linear mile	(D) (F)	(7)
	Sharrow markings	Redesign	$ 10,000 - $17,000	Per linear mile	(F) (J)	(7)
	Bikeway, 4 feet both sides	New Construction	$ 225,000	Per linear mile		(1)
	Sidewalk, 5 ft. each side	New Construction	$ 187,000	Per linear mile		(1)
	Pedestrian bridge	New Construction	$ 100,000	Per item		(7)
	Multi-use path	New Construction	$ 400,000 - $600,000	Per linear mile	(A) (B)	(1), (7)
Traffic Calming/Safety elements	Mini-roundabouts	Redesign	$ 6,000	Per item	(G)	(5)
	Curb extensions/bulbouts	Redesign	$ 10,000	Per corner		(3) (4)
	Zebra pedestrian crossing	Redesign	$ 500	Per linear foot		(4)

Sources: (1) Atlanta Regional Commission Transportation Cost Tool (2006), (2) TCRP Report 74 (2000—adjusted for inflation), (3) Columbus (OH) Traffic Management Cost Estimates (2005), (4) Jacksonville (NC) Urban Area MPO Bicycle and Pedestrian Plan (2008), (5) FHWA Low Cost Traffic Engineering Improvements (2003), (6) TRB "Mini-roundabouts: Technical Summary"(2010), (7) Based on comparable projects from Washington State, 2007

Notes:

(A) This figure includes cost of construction, materials, right-of-way acquisition

(B) Includes project engineering and contingency fees

(C) Cost covers streets with or without bike lane striping

(D) Includes cost of all MUTCD compliant pavement markings that supplement a bike lane

(E) General cost factor for a typical "green street" including street trees, pavement markings, and minor pavement modifications such as traffic calming features

(F) Cost elements with bicycle facilities cover both sides of the street

(G) Mid-range estimate consisting of a variety of traffic calming features and pedestrian amenities

(H) Does not include required costs for signal modification/replacement

(I) This figure has been adjusted for inflation using the Consumer Price Index

(J) General assumptions: $250 per marking, on the high side for thermoplastic, but including contingency costs. Given one marking every 250-300 feet or one per block in an urban context, about 20-21 markings per side of the street per mile). $300 per sign and post, placed every 1000 feet or one every three blocks in an urban context, and as necessary e.g. at route turns.