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Pennsylvania Community Transportation Initiative (PCTI) Oakland/CMU Pedestrian Safety Mobility Study

Scope of Work

Issue Defined:

The Oakland community has the highest concentration of academic and medical institutions in the region and state. It has a daytime population of over 100,000 workers, students and visitors mingling with over 60,000 automobiles passing through on its two main arterials – Fifth Avenue and Forbes Avenue. The Oakland Transportation Management Association (OTMA) and Carnegie Mellon University (CMU) recognize that a smart transportation system should consider the infrastructure necessary to support multi-modal access, including walking, bicycling, transit, and private automobiles. Safety and mobility for all pedestrians, motorists, transit users and bikers have been constant concerns in the Oakland community.

Scope of the Project:

- 1. Review and analyze Accident data
 - PennDOT will supply 5 year accident data for GAI.
 (As Fifth Avenue is a city road and Forbes Avenue is a state road; PennDOT will request both city and state data).
 - b. KAI will analyze the accident data and document patterns and trends, and identify target locations for potential modifications. GAI will review and confirm findings.
 - c. GAI will submit information to add to the PCTI public comment website to solicit information from students, employees, and other interested parties regarding potential improvement locations and pedestrian needs within the study area.
- 2. Inventory University parking supply (number of spaces) document needs
 - a. Carnegie Mellon University Parking and Transportation will provide an inventory of all on campus parking lots and spaces.
 - b. The Pittsburgh Parking Authority will provide an inventory of on street metered parking spaces in the study area.
 - c. GAI will identify all on-street non metered parking and restrictions in the study area (see the attached map). GAI will not identify legally and illegally parked vehicles, but GAI will identify locations where parked vehicles interfere with traffic flow of any mode.
 - GAI will provide analysis of the current parking capacity and demand within the study area. Parking occupancy counts will be taken midday between 10 AM and 2 PM. CMU will provide commuting population figures for all undergraduate and graduate full time and part time enrolments.
 - e. GAI will provide parking management recommendations for the approved future growth scenario provided by Ayers Saint Gross, the CMU master planning consulting team.





- 3. Identify campus destinations and bike/pedestrian corridors
 - a. GAI and KAI will meet with University and Ayers Saint Gross to identify current pedestrian and bicycle corridors.
 - b. GAI and KAI will interview members of the steering committee including CMU, OTMA and City of Pittsburgh staff to establish campus and community planning trends and land use patterns.
 - c. GAI will provide an urban design analysis and will provide a land use analysis for the study area corridors.
- 4. Concept designs
 - a. GAI will provide conceptual diagrams, in both plan and section, of possible Complete Street configurations within existing Rights-of way.
 - b. GAI and KAI will create options and make recommendations on the configurations.
 - c. GAI and KAI will provide analysis of impacts on capacity of recommended options.
 - d. GAI will create detailed concept designs for improvements at each intersection, and typical "Complete Streets" sections for all connecting streets.
- 5. Counts and Data Gathering
 - a. TWE will collect pedestrian and cyclist, through traffic and turning movement counts at the ten (10) intersections in the study area (see map).
 - b. Counts will be made during peak hours (7:00am 10:00am and 3:00pm 6:00pm).
 - c. Counts will be conducted on regular business days (Tuesday, Wednesday and Thursday).
 - d. Counts will be conducted while classes are in session the 2010/2011 school year begins on August 30, 2010.
 - e. Counts will be summarized every 15min.
 - f. CMU will explore the option of working with graduate level Civil and Environmental Engineering students to assist in conducting manual counts.
 - g. KAI will provide capacity analysis and signal phasing and timing changes for the entire study area.
 - h. GAI will obtain details on the recently completed bicycle plan component of the "Pittsburgh Plan" Comprehensive Plan, currently underway.
 - i. GAI will obtain current Port Authority Bus routings and stops and planned changes to routings due in June and September of 2010, as available.
 - j. GAI will document typical street cross sections within the ten (10) intersection study areas.
 - k. GAI will identify existing ADA ramps and traffic signal related components within the ten (10) study area intersections only, which obviously do not comply with current standards and guidelines.





- 6. Meetings and Presentations
 - a. GAI will attend bi-weekly with the Steering Committee provide progress updates and to gather input and authorization on next steps from the Committee, KAI will attend via phone.
 - b. GAI and KAI will meet with Ayers Saint Gross on June 3, 2010 regarding coordination with the University's Master Plan
 - c. GAI and KAI will conduct one half-day open workshop (date and time to be determined) for members of the campus and city community to participate in the planning process
 - d. GAI and KAI will interview up to 10 individuals as identified by the steering committee
 - e. GAI will present all findings and recommendations to the steering committee before November 30, 2010

Deliverables:

- 1. **Phase 1: A macro level report** to be used as an Appendix to the Carnegie Mellon University Institutional Master Plan 2010. This report will accomplish the following:
 - a. Identify the major transportation, safety and mobility issues in the study area.
 - b. Graphically represent accidents in the study corridor that provide detail about the type of accident, location and time of day.
 - c. Provide a needs / demands assessment that includes an inventory of parking lots, number of spaces and overall capacity of the University's parking reservoir.
 - d. Analyze current parking utilization and provide recommendations for future parking management and development strategies.
 - e. Identify pedestrian and bicycle corridors and desired destinations.
 - f. Provide an urban design and land use analysis for the study area that assesses the relationship between planning and transportation issues.
 - g. Provide Draft concept designs and schematics for potential improvements. throughout the study area utilizing "Complete Streets" design theories and best practices.

DUE DATE: October 5, 2010.





- 2. **Phase 2: A micro level report** to be used to guide future design and construction activities and to pursue funding for physical infrastructure improvements by the Oakland Transportation Management Association. This report will include the following items:
 - a. Pedestrian and cyclist counts at each intersection and throughout the study area.
 - b. Traffic counts at each intersection and throughout the corridors.
 - c. Turning movements at each intersection.
 - d. Capacity analysis and cycle changes of roadways.
 - e. Options for corridor improvements to enhance safety, movement and aesthetics.
 - f. Options for pedestrian enhancements.
 - g. Options for improved bicycle facilities.
 - h. Options for bus stop relocations or eliminations.
 - i. Recommendations on proposed options and feasibility of options on two or three key project initiatives.
 - j. Refine Concept designs and schematics for the two or three recommended improvements.

DUE DATE: December 3, 2010.

<u>Schedule</u>

	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
Technical Scope				5				
Phase 1								
Phase 2								
Presentation								



Appendix B: Non-Motorized Safety Toolbox Oakland/CMU Pedestrian Safety Mobility Study

The Toolbox of Potential Strategies contains descriptions and examples of possible pedestrian and bicycle improvements to implement in the area around Carnegie Mellon University. These tools are based on some of the best practices across the country and are applicable to many locations in the study area. The Carnegie Mellon University Pedestrian Safety study will focus on near-term improvements that can be implemented at specific locations. Additional future considerations are presented at the end of this section, intended to serve as guidance as development occurs and/or additional funding becomes available.

The strategies presented in this section serve as countermeasures to many of the deficiencies and challenges that exist in the area. While each strategy is only applicable in certain locations, the combination of systematic pedestrian improvements throughout a given area has been shown to create significant improvements to pedestrian safety. For instance, a study contained in the 2010 Transportation Research Record, entitled "Reduction of Pedestrian Fatalities, Injuries, Conflicts, and Other Surrogate Measures in Miami-Dade, Florida" (Reference 5), documents the positive impact of inexpensive pedestrian safety measures. Several small-scale pedestrian improvements were implemented on eight high-crash corridors, following a public education and enforcement program on pedestrian safety. The two years following the installation of improvements resulted in a 41 percent reduction in the number of crashes.

The strategies contained in the next few pages are low-cost pedestrian and bicycle improvements that could be implemented in the next 1 to 5 years, depending on available funding. Projects include new installations or changes to existing pedestrian crossings, minor signal timing changes, and additional amenities for pedestrians. The treatments presented on the following pages are organized into five categories:

- Bicycle Improvements aimed facilitating safe cycling behavior as well as encouraging cycling by creating more comfortable facilities
- Signal Timing Changes aimed at promoting safety at intersection by making various changes in signal phase lengths and signal amenities
- Pedestrian Crossing Improvements aimed at improving safety at locations where pedestrians cross roadways, including intersections
- Comfort and Convenience aimed at improving the pedestrian and bicyclist experience with improved amenities, as well as better orienting travelers toward area destinations
- Other Improvements

The treatments presented under the category Comfort and Convenience serve to encourage travel by foot and by bicycle, which, particularly in the case of bicyclists, can lead to improved safety through increased number of users.





The treatments described below are organized to address deficiencies that were documented during our field visit and a review of historical crashes. The specific treatments within each category represent options for improvements.

This information is intended to provide an overview of each treatment, with information on its intended application. Many of the summaries also provide one or more examples of a recommended project in the project study area. Each example in the study area provides additional context for the development of the complete recommendation list for this plan.

Each treatment is presented on a half page with the following basic information:

- Typical cost provided by the Pedestrian and Bicycle Information Center (Reference 6)
- Description
- Effectiveness
- Implementation considerations
- Compliance with standards contained in the Manual on Uniform Traffic Control Devices (MUTCD) and Public Rights-of-Way Accessibility Guidelines (PROWAG)
- Photo or graphic

For each of the treatments, there may be specific locations within the study area that are identified for possible application. However, there are a number of treatments presented here for which a specific application has not been identified. More specific location recommendations will be made in the fall pending further data collection and analysis.

Several references were used to compile the information in the following sections, including the *Desktop Reference for Crash Reduction Factors* (Reference 8), "Pedestrian Countdown Signals: Experience with an Extensive Pilot Installation" (Reference 9), *NCHRP Report 562: Improving Pedestrian Safety at Unsignalized Crossings* (Reference 10), *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach* (Reference 11), and other references cited throughout this report.



Signal Timing Changes

Signal timing changes at intersections range from minor changes in the amount of time for crossing pedestrians to the addition of pedestrian signals and push-buttons. These intersection improvements provide walkers with the time and awareness to cross approaches of the intersection, increasing safety for pedestrians and drivers.

LEADING PEDESTRIAN INTERVAL

Cost: Minimal staff time for signal re-timing

Description: Pedestrians are allowed to begin crossing at the crosswalk before conflicting vehicles start moving. For example, right-turning vehicles may have a red light for 5 to 7 seconds while pedestrians and through vehicles are allowed to begin through the intersection.



Effectiveness: Pedestrians get a head start on vehicles in crossing the roadway, increasing the percentage of turning drivers yielding to pedestrians. Note that right-turn-on-red is often prohibited in conjunction with leading pedestrian intervals (5).

Implementation Considerations: Adding a leading pedestrian interval reduces the amount of green time available for conflicting vehicle movements.

Compliance with Standards: Pedestrian Walk intervals should be a minimum of 4 to 7 seconds in duration. The Flash Don't Walk phase, according to the 2009 MUTCD, is based on the amount of time it takes a pedestrian to cross with a walk speed of 3.5 feet per second.

Application in Study Area: Intersections with heavy turning volumes could benefit from leading pedestrian intervals. No specific locations identified at this time, but may be identified pending data collection and analysis.



PEDESTRIAN COUNTDOWN SIGNALS

Cost: \$20,000 to \$40,000 for all four legs

Description: All new pedestrian signal heads, contrasted with static Walk/Flash Don't Walk signals, inform pedestrians of the time remaining to cross the street with a countdown on the signal head.



Effectiveness: Fewer pedestrians crossing the street late in the countdown, as compared to signal heads with only the Flash Don't Walk light. Fewer pedestrians left in crosswalk in steady don't walk phase (9).

Implementation Considerations: Pedestrian signal heads should be clearly visible while pedestrians are waiting and crossing the street.

Compliance with Standards: The 2009 MUTCD requires all new pedestrian signals, and any retrofitted signals, to include countdown pedestrian signals. Per MUTCD guidance, the countdown should include enough time for pedestrians to cross the full width of the street or, in rare cases, reach a refuge island.

Application in Study Area: The highest priority locations are at intersections that lack pedestrian signal heads altogether, such as along Fifth Avenue. All other pedestrian signals should be considered for retrofit to become compliant under the new MUTCD guidelines.

PROHIBIT RIGHT-TURNS ON RED

Cost: \$300 to \$500 per sign; \$1,000 to \$3,000 for electronic signs

Description: Reduces conflicts between cars and pedestrians by prohibiting cars to turn right, into the path of crossing pedestrians. This treatment may be deployed on a full-time or restricted basis.



Effectiveness: Electronic NRTOR signs have been shown to decrease pedestrian/vehicle conflicts significantly (5). According to the forthcoming AASHTO Highway Safety Manual, NRTOR also significantly reduces pedestrian crashes.

Implementation Considerations: Restricting right-turns at an intersection may increase delay for drivers.

Compliance with Standards: Prohibiting right-turns at intersections during the red phase complies with MUTCD standards

Application in Study Area: A number of intersections in the study area currently make use of NRTOR signs. Additional applications TBD.





CYCLE LENGTH ADJUSTMENTS

Cost: Minimal

Description: Reduce the amount of green time, and therefore overall cycle length, at intersections to decrease the amount of time pedestrians wait to cross the street.



Effectiveness: By reducing the average amount of time pedestrians wait to cross the street, pedestrians are more likely to cross during the Walk phase.

Implementation Considerations: May reduce capacity for vehicles and require coordination with jurisdictions operating signals on a corridor

Compliance with Standards: Signal timing changes comply with MUTCD standards as long as the minimum Walk and clearance times for the intersection are met.

Application in Study Area: TBD

PUSH-BUTTON RETROFITS

Cost: \$5,000 to \$10,000 for all four legs

Description: Signs above the pedestrian push-button indicate direction of crossing. "Confirm" press buttons acknowledge activation through a light or sound after called by a pedestrian.



Effectiveness: Confirm press buttons have been shown to increase the number of pedestrians using the push-button, and more pedestrians wait for the Walk phase at the signal (5).

Implementation Considerations: New confirm press pedestrian push-buttons are easily exchanged with existing ones. New installations at intersections without existing push-buttons are more costly. Intersections with high pedestrian delay, such as where there is an exclusive pedestrian phase, can benefit from the increased wait tolerance induced by push-buttons.

Compliance with Standards: The MUTCD specifies that separate poles, located at least 10 feet apart, should be used for pedestrian push-buttons unless physical constraints make use of two poles impractical.

Application in Study Area: All locations without confirm press push-buttons are candidates for installation. Priority should be given to locations with high pedestrian volumes or existing trends of low compliance. For example, the Forbes Avenue/Morewood Avenue intersection should likely be outfitted with push-buttons. Other new pedestrian signal installations along Fifth Avenue should also include confirm press push-buttons.





Crossing Improvements

Crossing improvements include upgrading intersection and mid-block crosswalks, reducing crossing distances for pedestrians, and adding new crossings locations. The strategies contained in this section improve safety at pedestrian crossing by reducing the amount of time they are exposed to vehicle traffic. Several of the complete street principles identified in the Countywide Mater Plan relate to crossing improvements:

- Encourage medians as pedestrian refuge islands.
- Design turning radii to slow turning vehicles.
- Reduce crossing distances.
- Increase crossing opportunities.

HIGH VISIBILITY CROSSWALKS

Cost: \$1,200 for all four legs

Description: High visibility crosswalks better warn motorists to expect pedestrian crossings and indicate preferred crossing locations.



Effectiveness: At non-intersection locations, crosswalks are safest on roadways with lower traffic volumes and where drivers might expect pedestrians.

Implementation Considerations: Marked crosswalks should be used in conjunction with other improvements that help physically reinforce crosswalks and reduce vehicle speeds, especially at uncontrolled locations and on multi-lane or high-volume roadways. It is important that maintenance and durability are considered to ensure that crosswalks retain visibility.

Compliance with Standards: The MUTCD allows for various crosswalk marking patterns, but the "international" (or "ladder") markings are strongly preferred due to increased visibility.

Application in Study Area: When restriping faded crosswalks at intersections and other crossings in the study area, more visible crosswalk patterns and/or more durable striping technology can be implemented.





RAISED MEDIAN ISLANDS

Interim striping/flex-bollards cost: \$1,300 to \$2,000 per crossing;

full construction cost: \$4,000 to \$30,000 per crossing

Description: Provide a protected area in the middle of a crosswalk for pedestrians to stop while crossing. Interim islands consist of striping on the pavement to identify pedestrian space, while fully constructed islands typically include curbs and signs notifying drivers to avoid the location.



Effectiveness: Installing raised medians have been shown to reduce the number of crashes at marked and unmarked crosswalks, as documented in the *Desktop Reference for Crash Reduction Factors* (8).

Implementation Considerations: Raised islands should notify crossing pedestrians that they are exiting a safe place by including detectable warning surfaces or changes in direction (for example, directing pedestrians towards oncoming traffic) in the design.

Compliance with Standards: At a minimum, raised islands should be 6 feet wide to accommodate persons in wheelchairs. Wider islands are often preferred, particularly when included on multilane facilities.

Application in Study Area: Refuge islands could be used in conjunction with a road diet and other pedestrian crossing improvements along Forbes Avenue and other roadway segments where the addition of a signalized intersection is impractical.

IN-STREET "YIELD FOR PEDESTRIANS" SIGNS

Cost: \$300 to \$500 per sign

Description: Signs placed in the middle of crosswalks to increase driver awareness of pedestrians and the legal responsibility to yield right-of-way to pedestrians in crosswalks



Effectiveness: Increases the number of drivers that yield to pedestrians in the crosswalk (10).

Implementation Considerations: Signs are placed in the middle of the roadway and are subject to possible damage from cars and trucks. In-street signs usually require more maintenance due to more frequent replacement.

Compliance with Standards: Signs comply with the latest guidance contained in the MUTCD.

Application in Study Area: A sign could be used in conjunction with other improvements, such as high-visibility crosswalk markings, beacons, or a hybrid signal at the midblock crossing on Forbes Avenue in front of the Hamburg building.





RECTANGULAR RAPID FLASH BEACON

Cost: \$10,000 to \$15,000 for both directions

Description: Signs with a pedestrian-activated "strobe-light" flashing pattern attracts attention and notifies the driver that pedestrians are at the crosswalk.

Effectiveness: RRFBs on the side of the road increase driver yielding behavior significantly (to around 80% typically). Additional signs can be included on a center island or median, although these have a lower marginal benefit as compared to roadside signs (10).

Implementation Considerations: Flashing pattern can be activated with manual push-buttons or automated passive (e.g., video or infrared) pedestrian detection, and should be unlit when not activated.

Compliance with Standards: The MUTCD gave interim approval to RRFBs for optional use in limited circumstances in July 2008. The interim approval allows for usage as a warning beacon to supplement standard pedestrian crossing warning signs and markings at either a pedestrian or school crossing, where the crosswalk approach is not controlled by a YIELD sign, STOP sign, traffic-control signal, or at a roundabout.

Application in Study Area: A Rectangular Rapid Flash Beacon should be considered at the midblock crossing on Forbes Avenue in front of the Hamburg building to increase pedestrian visibility and remind drivers to stop for crossing pedestrians.

PEDESTRIAN HYBRID SIGNAL

Cost: \$50,000 to \$75,000 per installation

Description: The pedestrian activated signal (also known as a HAWK signal), unlit when not in use, begins with a flashing yellow light altering drivers to slow. A solid red light requires drivers to stop while pedestrians have the right-of-way to cross the street. While the pedestrian signal is in the Flash Don't Walk Phase, the overhead signal flashes red, and drivers may proceed if the crosswalk is clear.



Effectiveness: Studies show that hybrid signals result in over 95 percent of drivers yielding to pedestrians. Moreover, drivers experience less delay at hybrid signals compared to other signalized intersections (10).

Implementation Considerations: Pedestrian Hybrid Signals should only be installed at marked crosswalk locations with additional signs to warn drivers about the pedestrian crossing. Maintenance is similar to a full signal.

Compliance with Standards: Included in the 2009 MUTCD

Application in Study Area: The long distances between intersection crossings on Forbes Avenue and Fifth Avenue could be reduced with the installation of a pedestrian hybrid signal.



CURB EXTENSIONS

Interim striping cost: \$1,300 to \$2,000 per corner; full construction cost: \$5,000 to \$25,000 per curb

Description: Extend the sidewalk into the street (typically a parking lane) to create additional space for pedestrians

Effectiveness: Allow pedestrians and vehicles to see each other at the crosswalk. Curb extensions (or pedestrian bulb-outs) also reduce crossing distance for pedestrians, reducing the amount of exposure to traffic.

Implementation Considerations: Curb extensions are more easily installed along roadways with on-street parking since not all lanes are used for through traffic. They may be installed at intersections or mid-block crossings.

Compliance with Standards: Curb extensions comply with the MUTCD and PROWAG. Note that PROWAG provides design specifications associated with curb ramps (at curb extensions and elsewhere).





Application in Study Area: Curb extensions should be considered along roadways in the study area that have onstreet parking, such as S Craig Street and portions of Fifth Avenue.

REDUCED CURB RADII

Interim striping cost: \$2,500 to \$4,000 per corner; full construction cost: \$5,000 to \$25,000 per curb

Description: Reconstructing a street corner with a smaller radius to reduce vehicle speeds while turning.

Effectiveness: Smaller curb radii can improve the safety for pedestrians at intersections by reducing crossing width, providing additional space for pedestrians to wait before crossing, and slowing turning vehicles.



Implementation Considerations: The design of the curb radius is a function of the angle between the intersecting streets, typical size of vehicles at the intersection, and maintenance. For example, intersections with several large trucks may need to have a slightly larger curb radius than local streets, typically 15 to 25 feet. However, streets with on-street parking or bicycle lanes can have smaller radii since vehicles have more space to negotiate turns.

Compliance with Standards: Curb radius modifications comply with the MUTCD and PROWAG. Note that PROWAG provides design specifications associated with curb ramps (at curb extensions and elsewhere).

Application in Study Area: Most of the intersections along Fifth Avenue would benefit from reduced curb radii and/or curb extensions. The Forbes Avenue/Morewood Avenue intersection is also recommended for a curb radii reduction and accompanying crosswalk realignment.





Comfort and Convenience

Strategies to improve comfort and convenience for pedestrians enhance the pedestrian environment, encouraging people to walk between destinations. Types of improvements include pedestrian-scaled amenities such as wayfinding signs, parks, lighting, and benches. The strategies contained in this section focus on creating a comfortable and safe pedestrian environment that increases the number of pedestrians in the area. These strategies primarily fulfill needs to "Encourage pedestrian-scaled land use and urban design," as included in the Countywide Master Plan of Transportation.

IMPROVED WAYFINDING

Cost: \$500 for signs, more for complete network

Description: Signs directing pedestrians towards destinations in the area, typically including distances or average walk times.

Effectiveness: Wayfinding signs make it easier for residents and visitors to navigate the station area.

Implementation Considerations: Signing should be uniform and consistent through the area, and should complement existing wayfinding signs implemented by other agencies.



Compliance with Standards: Pedestrian wayfinding is not covered by the MUTCD. The MUTCD provides standard guidance signs for bicycle wayfinding applications.

Application in Study Area: Provide guidance along major pedestrian routes for reaching area attractions including university facilities. Complement wayfinding signs for drivers with cyclist-oriented information.





LANDSCAPING

Cost: Wide range based on treatment

Description: Landscaping treatments range from planted strips on roadways to small "pocket" parks on corners to improve aesthetics.

Effectiveness: Not applicable

Implementation Considerations: Depending on the application, landscaping costs vary substantially based on the type of amenities provided. The amount of space available for landscaping will influence the extents. Landscaping such as shrubs, trees, and flowers should be regularly maintained to preserve the quality of public space.



Compliance with Standards: Landscaping is not a traffic control device, and is not covered by the MUTCD.

Application in Study Area: The sidewalk along Forbes Avenue west of Morewood Avenue could be made more comfortable by scaling back the landscaping.

LIGHTING

Cost: \$10,000 to \$15,000 per light

Description: Pedestrian-scaled lighting along sidewalks and pathways

Effectiveness: Street lighting enhances pedestrian safety and security by lighting areas at night, making walkers visible to drivers and others. Lighting is particularly beneficial in commercial districts or frequently traveled routes.

Implementation Considerations: The physical structure (pole) should not obstruct sidewalks and all pathways, particularly crosswalks, should be well lit. Lighting levels should be uniform as to not distract drivers on the roadway.



Compliance with Standards: The Illuminating Engineering Society of North America provides specific guidance for walkways and bikeways (12).

Application in Study Area: TBD





BENCHES AND TRASH RECEPTACLES

Cost: \$500 to \$1,500 for benches and \$500 to \$1,000 for trash receptacles

Description: Benches are typically placed along sidewalks or multiuse pathways for pedestrians to rest, while trash receptacles provide a location for waste along frequented paths.



Effectiveness: Benches enhance pedestrian areas, particularly commercial districts, by allowing people to socialize and linger.

Implementation Considerations: These investments should be made where there is currently, or expected, heavy pedestrian activity. In order to preserve park and open spaces, trash cans should be provided to reduce the likelihood of littering in these more sensitive areas. Trash cans need to be emptied regularly to prevent overflowing.

Compliance with Standards: Street furniture should not reduce the minimum clear distances required for adjacent pedestrian walkways.

Application in Study Area: Both treatments are recommended throughout the study area.



Bicycle Improvements

Bicycle improvements include a range of treatments that can be installed along sections of roadway or at intersections in order to foster safe bicyclist behavior and to improve visibility of bicycle users among other roadway users. The treatments contained in this section focus on using existing roadway space for bicyclists. On-street facilities can also be combined with other mentioned treatments, such as improved wayfinding.

BIKE LANE MARKINGS

Cost: \$1,000 to \$5,000 per mile

Description: Bike lanes are the area of a roadway designated for non-motorized bicycle use, separated from vehicles by pavement markings.

Effectiveness: Bike lanes improve safety and comfort by increasing visibility and awareness of cyclists, in addition to providing adequate facilities for biking.

Implementation Considerations: Bike lanes are typically 5 feet or wider on roadways with a curb and gutter. Consideration should be given for a wider bike lane depending on the amount space consumed by existing gutters and other obstructions.

Compliance with Standards: The AASHTO Guide for the Development of Bicycle Facilities recommends a minimum width of 5 feet for bike lanes adjacent to parking, curbs, or guardrails (6).

Application in Study Area: Bike lanes could incorporated into a road diet along Forbes Avenue.





BICYCLE SHARROWS

Cost: \$200 to \$300 per stencil

Description: A shared-lane marking, or sharrow, is a pavement marking that can be used where space does not allow for a bike lane. Sharrows remind motorists of the presence of bicycles and indicate to cyclists where to safely ride within the roadway.



Effectiveness: Studies in San Francisco and in Florida have found that sharrows significantly reduce wrong-way and sidewalk riding, as well as improve cyclist positioning in the roadway.

Implementation Considerations: Sharrow are placed inside of a travel lane and should be located so as to position riders safely outside of the "door zone." Sharrows can be useful on busier roads when speeds are not too high.

Compliance with Standards: Included in the 2009 MUTCD.

Application in Study Area: Craig Street may be a good candidate for sharrows.

ENHANCED SHARROWS

Cost: Uncertain; \$10,000 to \$50,000 per mile

Description: An enhanced sharrrow combines the sharrow marking with a colored stripe that further emphasizes the presence and likely riding location of cyclists.

Effectiveness: Enhanced sharrows can theoretically further the benefits provided by normal sharrows.



Implementation Considerations: Same as for sharrows. Enhanced sharrows have been installed in only a few locations. Ongoing costs to maintain color may be a concern.

Compliance with Standards: Like colored bike lanes, enhanced sharrows are not yet MUTCD compliant.

Application in Study Area: Enhanced sharrows could be used in areas where sharrows work to add extra visibility and awareness. Craig Street may be a good candidate for sharrows or enhanced sharrows.



BIKE BOX

Cost: Varies based on materials and related signage or signal needs. Up to \$10,000 or more per box.

Description: A bike box is a marked area in front of the stop bar at a signalized intersection that allows cyclists to correctly position themselves for turning movements during the red signal phase by pulling ahead of the queue.

Effectiveness: Bike boxes have been shown to decrease conflicts and accidents between cars and bicycles. They have been found to be most effective when combined with a colored bike lane that continues straight into the intersection.



Implementation Considerations: Bike boxes should be located in a right-hand lane where on-street bike treatments exist. A bike box should be implemented in conjunction with a No Right Turn On Red sign and regulation. On-going costs to maintain color may be a concern.

Compliance with Standards: Not yet MUTCD compliant.

Application in Study Area: TBD



Other Improvements

This last type of treatments included in this section are improvements that include installing new walkways, consolidating or relocating bus stops to improve transit times, and establishing waiting space for transit riders at stops. The strategies contained in this section improve pedestrian comfort and safety by defining space for walkers, while improving access to transit.

BUS STOP CONSOLIDATION/ RELOCATION

Cost: minimal cost to remove existing stops; new shelters cost \$10,000 to \$15,000

Description: Bus stops located close to one another can be consolidated into a single stop, reducing the total number of stops the bus has to make and concentrating boardings/alightings at one location. Bus stops can also be relocated to improve access to existing sidewalks, crosswalks, or destinations.



Effectiveness: Reducing the number of stops from 10 per mile to 8 per mile increases average bus speeds by 1.5 minutes/mile or more, depending on average dwell time at stops.

Implementation Considerations: The placement of bus stops depends on the existing transit network and operator. Coordination with The Port Authority is necessary to determine if or where potential stops could be moved. Consideration should also be given to the available right-of-way and/or willingness of adjacent property owners to have stop amenities on their property.

Compliance with Standards: N/A

Application in Study Area: TBD



MULTIUSE PATHWAYS

Cost: \$11 to \$15 per square foot

Description: Sidewalks and multiuse pathways are the primary facilities for pedestrians to travel and provide mobility to various destinations. They can also serve as additional facilities for bicyclists.





Effectiveness: Safe and comfortable walkways have been shown to increase pedestrian use.

Implementation Considerations: Walkways should be part of every new roadway and retrofitted in locations without them to complete a network of pedestrian facilities. Where possible, a buffer (4 to 6 feet) should be provided to separate pedestrians from vehicle traffic.

Compliance with Standards: For ADA compliance, the minimum clear width of a sidewalk is 4 feet, but the FHWA and the Institute of Transportation Engineers (ITE) recommend a 5-foot minimum for pedestrians to pass one another or walk side-by-side.

Application in Study Area: No specific locations identified.

ACCESS MANAGEMENT

Cost: N/A

Description: Access management represents a long-term strategy focused on reducing conflicts at access points Excessive curb cuts along sidewalks contribute to an uncomfortable and unsafe pedestrian environment.

Effectiveness: N/A

Implementation Considerations: As redevelopment and reconstruction occurs, driveway access should be consolidated among properties where possible and curb cuts should be reduced to the minimum distance needed for safe ingress/egress.

Compliance with Standards: N/A

Application in Study Area: Several driveways with full or partial access exist along Forbes Road. As redevelopment opportunities arise, driveways should be consolidated and/or shrunk to minimize conflicts between turning vehicles and pedestrians. Where feasible, building accesses should be on minor streets or in the rear of buildings to improve pedestrian safety.







References

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Appendix A

CMU Pedestrian Safety Mobility Public Workshop November 17, 2010

Summary of Feedback and Public Comments

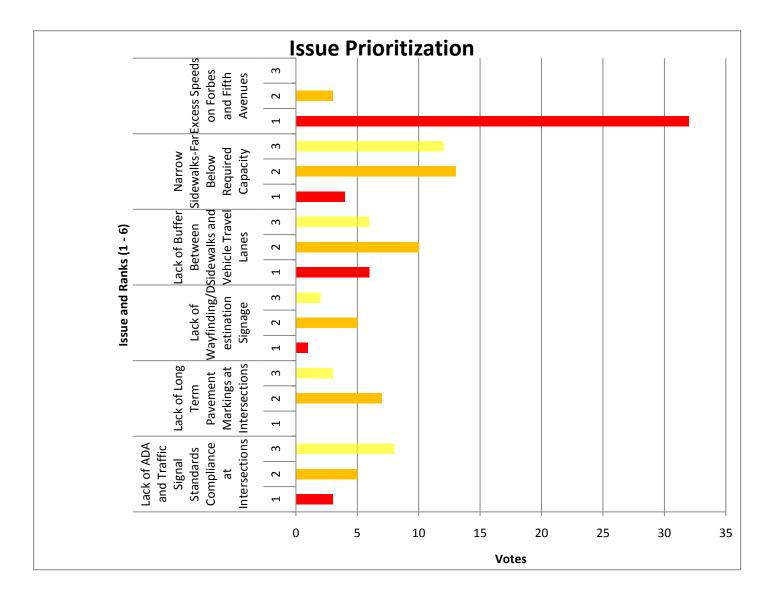
Issue Prioritization

Attendees were asked to rank the top three priorities to be addressed of the following six:

- Lack of ADA and Traffic Signal Standards
- Lack of Long Term Pavement Markings at Intersections
- Lack of Wayfinding/Destination Signage
- Lack of Buffer Between Sidewalks and Vehicle Travel Lanes
- Narrow Sidewalks-Far Below Required Capacity
- Excess Speeds on Forbes and Fifth Avenues







The following chart presents the results of the issue prioritization exercise.





Issue Prioritization Analysis

- "Excess speeds on Forbes and Fifth Avenues" was ranked as the most important issue by 32 of the attendees.
- "Lack of Buffer Between Sidewalks and Vehicle Travel Lanes" was ranked as the most important issue by 6 attendees, and was ranked as the second or third most important issue by 16 attendees.
- "Narrow Sidewalks Far Below Required Capacity" was ranked as the most important issue by only four attendees, but 25 attendees ranked it second or third.
- "Lack of ADA and Traffic Signal Standards," "Lack of Long Term Pavement Markings at Intersections," and "Lack of Wayfinding/Destination Signage" were ranked as the most important issue by 3, 0, and 1 attendees, respectively. These issues were given lower priority rankings, if they were ranked at all.

Comments – Overview

Forty-nine (49) attendees provided written comments on the feedback sheets. Overwhelmingly, the inclusion and consideration of bike lanes and bike traffic was the most discussed topic. The following bullets summarize attendees' comments:

- Attendees named the lack of safe, adequate bike lanes as the biggest issue
- Attendees felt that adding bike lanes would slow traffic and would be safer for pedestrians
- Busses entering the bike lanes and bike safety at intersections were two major issues discussed
- Other issues included concern about high-speed traffic and pedestrian safety, lack of adequate parking, lack of adequate signage, and the importance of public transportation





Comments – Details – As Direct Quotes by the Attendees

- <u>Comments on specific concepts</u>
 - I like #14 (Forbes Ave. Bike Lane) with median trees.
 - As a bicyclist I like the Morewood Ave. sidewalk alternative concept. 8' is plenty for cyclists to pass each other and the sidewalk way off the street is wonderful. The Fifth Ave. bike lane alternative concept Figure # 15 is the best way to go.
 - The Forbes Ave bike lane alternative concept figure #14 has long been needed.
 - Figure 6- There needs to be an expansion of bike racks on the academic mall.
 - Figure 10- On street biking routes differ little in practical terms to cautionary bike routes. There are no dedicated lanes and the automotive traffic is hostile. Dedicated bike lanes which are culturally separated from the auto lanes is absolutely necessary to ensure the safety of bikers.
 - Figure 13- The alternative concept elects a bush more important than including bike lanes. Additionally, the bush separates lanes of traffic instead of pedestrian and automotive.
 - Figure 14-Second concept needs bike lanes with the sidewalk traffic.
 - Figure 17- This concept has most promise, only change should be separated bike lanes.
 - Of the 4 scenarios presented for Forbes, the bike lane alt. concept is by far the best. But, why is the median so large? Two smaller medians, one between each bike lane and the traffic would be better. Cars turning across the bike lanes without looking first is a huge concern. Where's the bus stop? Turning left from Morewood onto Forbes and then entering CMU campus (up the sidewalk by bike) needs consideration.
 - Forbes Ave bike lane alternative concept- best of the four presented. Is the 6' median for bus passengers?
 - Morewood- Sidewalk alternative looks great. My bike route home continues up Morewood into the 1-way section, so to avoid crossing I would use the road when going north, trail for south.
 - Fifth-Bike lane alt looks great.
 - Love the bike lanes on Fifth. Much better use of the real estate than parking cars on it.
 - Forbes: Would like to see a hybrid of them with 2 5' bike lanes and 3 10' auto lanes for a total of 40'. Do not want to see the bike lanes pushed out of this.
 Separated bike paths are great and all but they also require a dedicated level of maintenance that simple paint wouldn't do (plowing, sweeping, etc)





- The plans proposed for Fifth Ave and Morewood look helpful. I worry that the bike trail on Morewood might not be wide enough, especially for 2-way traffic-there is a lot of bike traffic on that street. As far as Forbes, a problem with separating the bike track is that left turns for cyclists would be made trickier. Another concern I have about Forbes Ave is that there is a lot of bus traffic and busses would be pulled into the bike lanes frequently, causing problems for cyclists needing to merge into a single traffic lane to go around busses.
- Can a single side of the road bike trail be developed in the study area (figure 17) beyond Morewood Avenue, for example, on Forbes Ave?
- DO NOT LINE BIKE PATHS WITH CURBS. Dangerous to bikes.
- Bike lane issues
 - No bike lanes. Having two lanes on either side is unnecessary. They could easily be eliminated to make way for bike lanes.
 - Safe bicycle circulation on streets.
 - The CMU campus as such has always (40 years in my personal experience) done a good job of accommodating both bicycle and pedestrian circulation on wide walkways. However, west of campus (pretty much everything except Schenley Park) is consistently a nightmare.
 - Providing a safe facility for bicyclists thus enhancing their safety.
 - Lack of bike lanes most important.
 - Please place the highest priority on establishing bicycle lanes throughout the Oakland corridor, as well as bike boxes to prevent right hooks at intersections.
 - Biking access/bike lanes.- Why isn't this on your list? You've obviously thought about giving the bikeways in some of the alternative plans.
 - Please consider how this planning fits into larger scale planning in the city. As a cyclist, I appreciate the marked bike lanes, but a REAL commitment to cycling as an alternative includes the kind of dedicated and SEPERATED bikeways shown in some of the alternatives.
 - Lack of safe bike lanes, adequate bike parking and good public transportation.
 - Bike lanes will reduce automobile traffic.
 - Strongly in favor of bike lane additions as a calming influence on Forbes Ave.
 - Wider sidewalk on Forbes Ave. bridge
 - In order to encourage a more sustainable future, I would suggest bike lanes on Fifth and Forbes. The public might be slow to accept them, but if bike lanes are





postponed indefinitely, then almost no one new will take up bike commuting and the streets will get more and more crowded.

- Bicycle circulation at nearby streets.
- Lack of bike lanes needs addressed.
- I like the idea of a bike lane separated by a median. East Liberty Blvd. has a nice bike lane, but it is frequently used as a drive lane (at passing speeds). A median would provide for safer cycling and encourage students to use alternative transit.
- More bike lanes please.
- Bikes should be a part of any design.
- The biggest problem bikes have is at intersections. Need improvements here not just bike lanes mid-block.
- "Bike boxes" is great idea.
- Also, pedestrian crossings take too long to stop the traffic.
- Advanced stop lights for bikes work well at intersections- right turn on red is not permitted and bikes are allowed to stop near lights ahead of the cars. This lets bikes exit the intersection faster before the cars move on.
- Need bicycle lanes, esp. on Morewood, but also on Forbes and 5th.
- Bike lanes would be such an important addition to this development. The number of cyclists in Pittsburgh is growing; both residents and students commute by bike. Bike lanes make sense and they provide safety for everyonecyclists and motorists.
- BIKE LANES! More space for bikes make more space on sidewalks. Less lanes slows traffic.
- Lack of dedicated east-west dedicated bike lanes. Fifth is a major artery, as is Forbes
- My highest priority is installing bike infrastructure. On Forbes, there should be a bike lane (not separated) on the downhill side and a lane or separated path on the uphill side. Increase bike lanes.
- Bike paths needed.
- Concern about busses
 - If there is a way to route bikes AROUND THE BUS STOPS, that would be great.
 - If you were to build bike lanes, the busses would most definitely jump into the bike lane to pick up passengers.





• Pedestrian traffic issues

- Lack of facilities separating bicycles from pedestrians. Bike lanes will enhance pedestrian safety.
- A major complaint I hear all the time from pedestrians in Oakland is that there are too many bicyclists riding on the sidewalk and jeopardizing their safety. However, without proper on-street facilities, some bicyclists currently feel safer riding on sidewalks. We need to lanes in order to 1. Get more cyclists onto the streets and off the sidewalks 2.

• Traffic and high-speed issues

- If vehicle capacity on Forbes is reduced, what will be the effect on other roads i.e. through Schenley Park?
- Put a buffer between the sidewalks and fast moving vehicle travel lanes.
- Traffic control to help with speed.
- Space, especially on 5th is so limited so making traffic of all kind as efficient as possible is essential.
- Parked at Daugherty Lot, had to run across Forbes as cars sped by. It felt like the cars TRIED to hit the pedestrians.
- Frew Street is like a freeway. Motorist travel at high rates of speed on a street that connects to the Oakland business district.
- Excess speeds on Forbes and Fifth is not an issue near CMU campus, only Pitt.
- \circ I like idea of slowing traffic on Forbes and creating signage prior to intersections.
- Consider speed tables, possibly combined with cross walks, for speed control on Forbes and Fifth
- \circ I feel that a 25 mph speed limit through a pedestrian area is still too fast.
- Constricting the flow of traffic eastbound on Fifth from 2 to 1 lane seems unlikely to succeed because of how much it will increase congestion. In this same vein, if any of the sections of Forbes and Fifth that currently serve 2 lanes are reduces to 1, where will the busses stop? Either: Traffic will have to stop (unpopular, problematic, increases congestion) or the busses will need dedicated pull-aside areas (needs a lot of planning and how could these be made to interact safely with the bike lanes?)





<u>Signal and lane issues</u>

- Be sure traffic signals will sense bicyclists.
- Blinking light as you exit U.C. onto Forbes.
- Consider surrounding areas- if 5th/Forbes reduced to fewer lanes but further down is still 3 lanes?
- Lack of long term pavement markings at intersections- particularly "bike boxes" as used in Portland Oregon.
- Lack of wayfinding/destination signage- especially planned bicycle route signage.
- Lack of turn lanes.
- Do not support the "median" concept on Forbes Ave.
- Sidewalks on Negley

• <u>Communication issues</u>

- More notice for meetings/comments.
- I would love to get involved as someone who lives in Oakland. I am a student looking to make a big impact on the City of Pittsburgh. Please contact me for more input. <u>bplarkin@andrew.cmu.edu</u>

<u>Parking</u>

- More parking! The lots are not convenient to the Tepper building, forcing staff and students to park at the meters. The meters are old and broken and most staff park at the meters for 8+ hours, limiting availability.
- Lots are full=recheck the numbers! Garage is NOT always available during events, fairs, alum events etc. Also garage parking is expensive =Daugherty More wood \$80 a month, Sorority = \$95 a month, Fine Arts=\$110 a month, cars are trying to find parking on street causing unsafe driving conditions.





Public Transportation

- Figure 9- Bus stops completely lack posted bus schedules, most lack the "text for schedule" service and the couple "text for schedule" are not compliant with the Port Authority website schedules or with the actual buses.
- Keep bus transit to Oakland alive.
- <u>Access</u>
 - You are missing one major crossing of Forbes, Devonshire IS a point of access to the campus. Devon is used by many from Shadyside as an access to campus.





Appendix B

Traffic Counts

The traffic counts were obtained by T.W. Engineering Inc. during the week of September 12, 2010. The counts were not performed per the original schedule to accommodate a variety of conditions. We chose the week of September 12, 2010 as full fall enrollment at Carnegie Mellon University, the University of Pittsburgh, Chatham University, and Carlow University was not achieved until the week of September 5, 2010. An additional factor was the major Jewish religious holiday of Rosh Hashanah which occurred over the period of September 9th through September 12, 2010.

Therefore full counting did not begin until September 14, 2010 and was performed using video counting units, by Microvision Technologies, Inc. Data reduction and tabulations were completed in October, 2010.

This data presented herein was utilized to determine existing capacities of the intersections, and determine effects of the proposed options, such as road diets, on intersection capacities in the corridors considered in this study. The analyses are presented in Appendix C. This data will also be used as resource data to provide guidance for future improvements with regard to accommodation of pedestrians during design development and construction.

Full video recordings of all counts are available upon request.

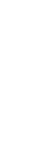




Study Name: Oakland/CMU - Fifth Ave and Bellefield Ave Start Date: 09/14/2010

Start Time: 7:00 AM Site Code:

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3:15 PM	17	29	46	+	2	3	18	29	47	10	11	21	117
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3:45 PM	20	36	56	0	0	0	32	33	65	38	34	72	193
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Oakland/CMU
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Study Name: Oakland/CMU - Fifth Ave and Bellefield Ave Start Date: 09/14/2010

Start Time: 7:00 AM

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Oakland/CMU	09/21/2010
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Study Name: Oakland/CMU Fifth Ave & Dithridge St

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Start Date: 09/21/2010 Start Time: 7:00 AM

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Study Name: Oakland/CMU Fifth Ave & Dithridge St Start Date: 09/21/2010

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Study Name: Oakland/CMU Fifth Ave & Dithridge St Start Date: 09/21/2010 Start Time: 7:00 AM Site Code:





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Study Name: Oakland/CMU - Forbes Avenue & Margret Morrison Start Date: 9/22/2010

Start Time: 7:00 AM

Site Code:

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Study Name: Oakland/CMU - Forbes Avenue & Margret Morrison

Start Date: 9/22/2010

Start Time: 7:00 AM

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Study Name: CMU/Oakland - Forbes Ave & Beeler St Start Date: 09/22/2010

Start Time: 7:00 AM

Site Code:

	Southbou	Southbound Street -	- Beeler St	Westboun	d Street - Fi Westhound	- Forbes Ave	Northbound	Northbound Street - Parking Garage Northbound	ng Garage	Eastboun	Eastbound Street - Forbes Ave Eastbound		Intersection Totals
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T. W. CONSULTANTS, INCORPORATED



Gai consultants
 Insectioning More into Instity

Study Name: CMU/Oakland - Forbes Ave & Beeler St Start Date: 09/22/2010

Start Time: 7:00 AM

Site Code:

	Southbox	Southbound Street - Beeler St	Beeler St	Westboun	d Street	- Forbes Ave	Northbound Street Northb	d Street - Parki Northbound	- Parking Garage Jound	Eastbound	Eastbound Street - Forbes Ave Eastbound		Intersection Totals
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gai consultants mailtaining issue into vesition

Study Name: Oakland/CMU Forbes Ave & Morewood Avenue

Start Date: 09/22/2010 Start Time: 7:00 AM

Site Code:

	Southbound	Southbound Street - Morewood Ave	rewood Ave	Westboun	ld Street - Forbes Ave	orbes Ave	Northboun	Northbound Street - Does Not Exist Northbound Street - Does Not Exist	Not Exist	Eastbound	Eastbound Street - Forbes Ave Eastbound		Intersection Totals
		Southbound	9		Westbound				Cubtotale	Peds CCW	Peds CW	Subtotals	
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7:45 AM	e	-	4	5	12	14	> (- 2	74	234	17	251	318
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8:15 AM	7	3	10	3	59	62	4 (5 5	15	114	6	123	173
8:30 AM	e	1	4	0	31	33	~ ~	2 4	14	87	~	94	152
8:45 AM	8	-	6	0	35	çç Ç	- c	55	10	246	2	253	327
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9:15 AM	6	0	10	0	78	84	7	<u>2</u> α	: 0	148	55	203	245
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Eastbound Street - Forbes Ave Eastbound	15	31	40	44	AF	2 2 2 2	00 00		138	142					301	327	000	078	888	901	899	447	460	526					4:00 PM		901		0.39	
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d Street - Morev Southbound	Peds CW 3	4	4	. <u>.</u> .	, v	, u		0	<u>ی</u>	4	3					თ	α	- - -		20	32	31	43	40	42					4:30 PM		43	24.0	- .
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gai consultants
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Study Name: Oakland/CMU Forbes Ave & Morewood Avenue Start Date: 09/22/2010

Start Time: 7:00 AM

Site Code:

	Southbound	Street - Mo	Southbound Street - Morewood Ave	Westboun	d Street - Mesthour	Forbes Ave	Northbound Street Northb	d Street - Does Northbound	Not Exist	Eastboun	Eastbound Street - Forbes Eastbound	orbes Ave	ntersection Totals
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Intersection Totals	-	6	9	10	11	13	12	11	15					9	9	4	4	- <u>c</u>	10	10		2					5:00 PM		50		0.37
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d Street - More Southbound	Bikes CW	0	0	0	0	0	0	0	0	0						0	0	0	0	0	0	0	0						¢		t t t
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Hourly totals	Beginning @	7:00 AM	7:15 AM	7:30 AM	7:45 AM	8:00 AM	8:15 AM	8:30 AM	8:45 AM	9:00 AM	9:15 AM	9:30 AM	9:45 AM		3:00 PM	3:15 PM	3:30 PM	3:45 PM	4:00 PM	4:15 PM	4 30 PM	A-45 PM	5:00 PM	5:15 PM	5:30 PM	5:45 PM		Peak Hour		Volume	PHF





Study Name: Oakland/CMU - Forbes Ave. & Hamburg Hall Start Date: 09/21/2010

Start Time: 7:00 AM

Site Code:

	Southbound Street	nd Street - P Soutbhound	- Parking Lot	Westboun	d Street Westbol	- Forbes Ave Ind	Northboun	Northbound Street - Does Northbound	Not Exist	Eastbound	Eastbound Street - Forbes Ave Eastbound		Intersection Totals
	1.00		20	NUCCOPPO	Dade CW	Subtotals	Peds CCW	Peds CW	Subtotals	Peds CCW	Peds CW	Subtotals	
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Study Name: Oakland/CMU - Forbes Ave.& Craig Street Start Date: 09/21/2010

Start Time: 7:00 AM

Site Code:

	Southbo	Southbound Street - Craig St	Craig St	Westbound	nd Street - Fr	- Forbes Ave	Northbound Street	Street - Museu	- Museum Parking	Eastboun	Eastbound Street - Forbes Ave		Intersection
		Southbound	7		Westbound			Nortnoouna				O. Little	101012
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MP OD-8		2	21	21	10	31	2	5	7		12	13	72
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	74		21	3	23	<u>2</u> 6	4	8	12	4	15	19	78
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		- 4	23	-	18	19	5	2	7	9	12	18	67
8.00 AM	4	> ~	10	. ц.	16	21	9	4	10	-	6	10	60
9.10 AIV			2 6) (C	20	23	3	5	ω	9	4	10	50
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M-100-4	, c	19	45	34	24	58	19	25	44	30	12	42	189
	20	23	52	33	4	74	21	29	50	32	25	57	233
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0.10 F.M	4	25	65	28	14	42	11	9	17	16	18	34	158
D. JOU F M	34	37	71	33	23	56	8	12	20	28	14	42	189
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l Street - For Eastbound	Peds CW	20	26	36	50	49	49	AA I	23	S 6	30				57	8	B	8	2	57	64	68	68	02				3:45 PM		70		0.70
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id Street - Forbes Ave	-	27.	2	8	44	00	80	88	- 19	76	71					42	33	48	99	78	109	125	116	115				MG OF A	N 100.4	125		0.76
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d Street - C	a –	N.	8	35	33	22	20	20	19	17	40			•••••		95	94	96	60	8 8	5 4		1077	139					100 PM	100	201	0.64
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Generation and Consultants



Study Name: Oakland/CMU - Forbes Ave & Craig Street Start Date: 09/21/2010

Start Time: 7:00 AM

Site Code:

	Southbo	Southbound Street - Craig St Southbound	- Craig St	Westboun	d Street Westbou	- Forbes Ave	Northbound Street North)	Street - Museum Northbound	um Parking	Eastbound	Eastbound Street - Forbes Ave Eastbound	100000000000000000000000000000000000000	Intersection Totals
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T. W. CONSULTANTS, INCORPORATED ENGINEERS AND PLANDERS



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Study Name: Oakland/CMU Fifth & Morewood Start Date: 09/22/2010 Start Date:

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Start uate:	Start Time:

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	Southboun	Southbound Street - Morewood Ave	ewood Ave	Westbour	and Street - I	- Fifth Ave	Northbound	Northbound Street - Morewood Ave Northbound	swood Ave	Eastboun	Eastbound Street - Fitth Ave Eastbound		Intersection Totals
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9:00 AM	12	0	12	0	16	<u> </u>		~ ~	2 4	12	4	16	108
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so S	28	41	63	83	93	96	85	74	71					56	46	35	31	44	55	53	59	48					8:15 AM		96	0.0	0.80
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l Street - More Southbound	Peds CW	4	4	3	2	2	2	0	0	0					5	7	8	7	14	17	21	22	. 18				4.45 DM	M1 (4) 4	ç	77	0.61
Southbound Street - Morewood Ave Southbound	Peds CCW		35	57	73	80	84	74	61	47					24	24	16	11	11	10	10	12	11					MH 215 AM		\$2	0.75
Houriv totals			7:15 AM	7:30 AM	7:45 AM	8:00 AM	8:15 AM	8:30 AM	8:45 AM	9:00 AM	9:15 AM	9:30 AM	9:45 AM		3:00 PM	3:15 PM	3:30 PM	3:45 PM	4:00 PM	4.15 PM	4:30 PM	4:45 PM	5:00 PM	5:15 PM	5:30 PM	5:45 PM		Peak Hour		Volume	PHF

T. W. CONSULTANTS, INCORPORATED



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**Oakland/CMU Fifth & Morewood** 09/22/2010 7:00 AM Start Date: Study Name: Start Time:

Site Code:

Intersection Totals Subtotals Eastbound Street - Fifth Ave Ť ဖ က 0 2 0 0 0 0 e 2 0 0 0  $\sim$ • **** τ--**T ~~** Eastbound **Bikes CW** 0 0 0 0 0 0 0 0  $\sim$ 0 0 0  $\circ$ 0 0 0 0 **** <del>~</del> <del>~ -</del> -----**Bikes CCW** 9 0 0 ო 0  $\circ$ 0 N 0  $\sim$ 0 0 ----0 N  $\sim$ 4 **~**---÷---* Northbound Street - Morewood Ave Subtotals 0 0  $\circ$ 0 0 က 0 0 2 0 0  $\sim$ 0 0 **.**.... **~**~~ -----**~**___ **** Northbound **Bikes CW** o 0 0 0 0 o 0 0 0 0 0 0 0 0 0 ~~~~ ~ **~**~~ **Bikes CCW** 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  $\sim$  $\sim$ -<del>....</del> **....** Subtotals Westbound Street - Fifth Ave 0 ŝ 0 0 O 0 2 2 2 0  $\circ$ 0  $\circ$ 0 0 0 4 2 <del>....</del> Westbound Bikes CW 0 0  $\circ$ 0 0 0 N  $\sim$ N 0 O 0  $\circ$ 0 o 0  $\circ$ 4 o **Bikes CCW** 0 0 0 0 0 0 0 0 0 0 0 0 N 0 0 0 0 0 4 ~ * Subtotals Southbound Street - Morewood Ave 0 0 0 0 e ന ന 0 0 0 0 0 0 0  $\sim$ 2 0 ~ **~** Ť Southbound Bikes CW 0 0 0 0 0 ****  $\circ$ 0 0 0 0 0 0 0 0 0 0 0 0 0  $\circ$ Bikes CCW 0 0 2 0 0 o 0  $\circ$ က  $\sim$ ~ ဗ 0 0 0 0 0  $\sim$ **** <del>~</del>~ <del>~~</del> Start Time 4:00 PM 4:45 PM 7:45 AM 8:30 AM 5:00 PM 7:00 AM 7:15 AM 7:30 AM 8:15 AM 8:45 AM 9:00 AM 9:30 AM 9:45 AM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:15 PM 4:30 PM 8:00 AM 9:15 AM

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Hourly totals	Southbound	Southbound Street - Morewood Ave Southbound	rewood Ave	Westbour	und Street - Fifth Ave Westbound	Fifth Ave	Northbound	Northbound Street - Morewood Ave Northbound	ewood Ave	Eastbour	Eastbound Street - Fifth Ave Eastbound		ntersection Totals
Beginning @	Bikes CCW	Bikes CW	Subtotals	<b>Bikes CCW</b>	Bikes CW	Subtotals	<b>Bikes CCW</b>	Bikes CW	Subtotals	Bikes CCW	Bikes CW	Subtotals	
	0	0	0	0	0	0	ţ	3	4	4	0	4	8
Ī	3	0	3	0	0	0	1	2	3	4	0	4	10
	5	~	9	0	2	2	0	1	1	3	~	4	13
	9	<del>ب</del>	7	0	4	4	0	1	1	3	~	4	16
	6	-	10	0	9	9	0	2	2	2	<del>~</del>	3	21
	60	<b>***</b>	2	0	9	9	0	2	2	2	2	4	19
	4	0	4	0	4	4	0	2	2	12	7	14	24
	9	0	3	0	2	2	0	1	1	14	2	16	22
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	3	0	e	11	-	12	2	0	2	8	3	11	28
	2	<b>.</b>	ဖ	14	3	17	0	0	0	9	4	10	33
5:00 PM	4	2	9	17	9	23	0	0	0	5	4	6	38
Peak Hour	8:00 AM	5:00 PM	8:00 AM	5:00 PM	5:00 PM	5:00 PM	3:00 PM	7:00 AM	3:00 PM	8:45 AM	4:45 PM	8:45 AM	5:00 PM
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	0.75	0.50	0.83	0.61	0.38	0.64	0.50	0.75	0.42	0.35	0.50	0.36	0.68





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Study Name: Oakland/CMU - Fifth Ave & Neville St Start Date: 09/21/2010 Start Time: 7:00 AM

Site Code:

Intersection Totals 1463 115 75 96 53 30 36 80 58 58 00 64 89 50 58 80 56 64 22 47 52 60 42 17 61 Subtotals Eastbound Street - Fifth Ave 146 12 <del>1</del>0 ÷ 13 α ഗ ŝ တ 4 ŝ ω ന ø က 0 ~ ဖ က ဖ **V** c ~ ~~ ~ Eastbound Peds CW 9 78 ŝ ŝ ო 1 4  $\sim$ 0 ŝ 4 c ~ 0 0 o  $\sim$  $\sim$  $\sim$ 0 2 2 ~ ~ ~ 146 Peds CCW 68 ĉ ဆ 0 က ω ന ဖ 2 ŝ 4  $\sim$ 0 ന ŝ က <del>~</del>--- $\sim$ <u>~</u> N · · · · ~ *~*~~ ~ ~ Subtotals Northbound Street - Neville St 485 35 26 29 29 00 29 10 4 12 29 27 **0** 4 22 õ 3 51 <del>~</del> 3 S 4 4 **~**___ 4 Northbound Peds CW 290 15 5 3 0 8 12 17 22 37 30 26 17 S ထ က ŝ တ 4 0 တ  $\sim$ ----r 485 Peds CCW 195 9 6 23 5 2 13 ω S က 17 တ ~ 2 က 0 <u>-</u> ന S က 4 G 3 ~ Subtotals Westbound Street - Fifth Ave 333 9 16 33 4 23 5 9 5 16 23 18 17 12 F 7 23 ω ω 3 က 2 ω ~ Westbound Peds CW 214 ŝ ŝ 16 ŝ 3 20 3 2 ŝ ŝ თ S ω 1O ഹവ S 3 ŝ ω က ~ 2 r 333 Peds CCW 119 18 33 5 2 12 4 0 က 2 0 0 က 0 σ ဖ Ø ω 0 0 0 0 0 2 -Subtotals Southbound Street - Neville St 499 9 15 33 5 28 <del>2</del> 23 28 23 30 23 19 31 33 17 1 27 27 က 5 17 21 3 တ Southbound Peds CW 206 5 19 10 20 2 <u>1</u>9 თ თ တ တ 2 ~ G 4 ဖ ŝ ဖ 4 ----ĉ ~ ဖ 5 499 Peds CCW 293 <del>1</del>9 <u>o</u> 2 4 9 17 17 25 <del>1</del>8 22 3 0 12 8 S თ ဖ ω တ  $\sim$ ŝ 4 ~ Totals By Leg Start Time Subtotals 3:30 PM 4:15 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 7:00 AM 7:15 AM 7:30 AM 9:15 AM 9:45 AM 3:00 PM 3:15 PM 3:45 PM 4:00 PM 4:30 PM 7:45 AM 8:00 AM 8:15 AM 8:30 AM 8:45 AM 9:00 AM 9:30 AM



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ntersection Totals		203	228	244	232	262	276	274	227	183				240	236	251	308	346	339	316	265	229				4:00 PM	346	0.75
	Subtotals	19	16	14	16	19	19	24	19	12				27	26	29	34	40	42	36	38	29				4:15 PM	42	0.88
Eastbound Street - Fifth Ave Eastbound	Peds CW	2	4	4	5	5 L	2	2	~	ۍ ۲		*****		17	17	20	20	26	28	25	32	23				4:45 PM	32	0.73
Eastbour	Peds CCW	17	12	10	11	14	14	17	12	7	******		********	10	6	6	14	14	14	11	9	9				7:00 AM	17	0.71
veville St	Subtotals	70	73	80	73	84	82	71	54	42				107	105	105	144	169	144	119	60	13				4:00 PM	169	0.70
Northbound Street - Neville St Northbound	Peds CW	53	58	57	46	52	49	44	31	17				56	55	65	93	106	90	72	35	9				4:00 PM	106	0.72
Northbour	Peds CCW	17	15	23	27	32	33	27	23	25				51	50	40	51	63	54	47	25	7				4:00 PM	63	0.68
iiih Ave	Subtotals	44	49	56	51	61	72	74	61	50	***	******		41	44	59	61	65	67	61	64	72				8:30 AM	74	0.80
und Street - Fifth Ave Westbound	Peds CW	44	49	56	50	57	66	66	54	46				23	23	20	18	18	18	18	22	26				8:15 AM	99	0.83
Westbour	Peds CCW		0	0	-	4	9	8	7	4		****		4	21	39	43	47	49	43	42	46				4:15 PM	49	0.68
Veville St	Subtotals		6	94	92	98	103	105	93	79				55	61	58	69	72	86	100	103	115				5:00 PM	115	0.93
Southbound Street - Neville St Southbound	Peds CW	38	42	36	23	21	21	21	16	14		*****		23	35	31	31	34	45	53	63	66				5:00 PM	66	0.83
Southbou	Peds CCW		48	58	69	22	82	84	17	65				30	36	27	38	38	41	47	40	49				8:30 AM	84	0.84
Hourty totals	Reginning @	7-00 AM	7:15 AM	7:30 AM	7.45 AM	8:00 AM	8:15 AM	8:30 AM	8.45 AM	9:00 AM	9:15 AM	9:30 AM	9:45 AM		2.15 DM	3-30 PM	3:45 PM	4-00 PM	4.15 PM	4-30 PM	4:45 PM	5:00 PM	5:15 PM	5:30 PM	5:45 PM	Peak Hour	 Volume	РНЕ





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**Oakland/CMU** - Fifth Ave & Neville St 09/21/2010 7:00 AM Start Date: Study Name: **Start Time:** 

Site Code:

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Totals By Leg



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	Southbound		V	Westbound		4	Northbound		H	Eastbound		Totals
<b>Bikes COW</b>	Bikes CW	Subtotals	Bikes CCW	Bikes CW	Subtotals	Bikes CCW	Bikes CW	Subtotais	Bikes CCW	Bikes CW	Subtotals	
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	3	6	-	0	<b>~</b>	0	e	e	۳	4	2	18
					30.0		38	0 38	0.25	0.50	0.58	0.50
0.58	0.38	96.0	GZ.U	5	62.0		000	22.2	24.5	2		





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Study Name: Oakland/CMU - Fifth Ave and Craig Street Start Date: 09/14/2010 7:00 AM Start Time: Site Code: Intersection Totals Subtotals Eastbound Street - Fifth Ave <del>ر</del> ဓ္က Ċ Eastbound Peds CW <del>1</del>9 ő က S 0 0 က ഹ က ~ Peds CCW <del>1</del>5 É € € <del>1</del>0 Ť တ ო Subtotals Northbound Street - Craig St ŝ <del>1</del>9 ð ž S ω ω ~ Northbound Peds CW ŝ တ ω თ Ę ထ ~ ŝ o  $\sim$ က Ø Peds CCW ΰ ÷ တ ဖ ဖ ന N ന ŝ ŝ ~ Subtotals Westbound Street - Fifth Ave ŝ 29 σ ဖ Westbound Peds CW S ÷ တ S ഗ ŝ ω တ ŝ Peds CCW တ ဖ တ ß တ N Subtotals Southbound Street - Craig St š S တ Southbound Peds CW ŝ ω თ တ ~ ~~~ ~ ი Peds CCW ŝ ŝ ÷ ω ~  $\sim$ က ဖ N  $\sim$ Start Time Subtotals 7:30 AM 3:30 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:45 PM 3:00 PM 3:15 PM 3:45 PM 4:00 PM 4:15 PM 8:30 AM 9:00 AM 9:15 AM 9:30 AM 9:45 AM 7:00 AM 7:15 AM 7:45 AM 8:00 AM 8:15 AM 8:45 AM



Totals By Leg





ifth Ave Intersection Totals	Subtotals	44 183	60 222	88 290		127 362	146 428	131 397		109 399				126 417	138 403	136 389	134 391	141 400	150 450	161 493	159 493	145 486		*****		-	4:30 PM 4:30 PM		161 493
Eastbound Street - Fifth Ave Eastbound	Peds CW	7	12	19	22	22	22	16	16	16				75	82	86	88	88	96	101	92	84	******				4:30 PM		
Eastbour	Peds CCW	37	48	69	88	105	124	115	97	93				51	56	50	46	53	54	60	67	61					8:15 AM		
Craig St	Subtotals	24	28	46	54	59	67	60	59	57				113	113	103	88	73	99	63	59	68					3:00 PM	410	-
Northbound Street - Craig St Northbound	Peds CW	16	18	33	40	43	47	37	38	39				58	55	52	42	28	23	20	21	22					3:00 PM	03	
Northbou	Peds COW	8	10	13	14	16	20	23	21	18				55	58	51	46	45	43	43	38	46					3:15 PM	0	
Fifth Ave	Subtotals	72	79	81	88	81	87	76	75	88				94	76	8	95	123	137	139	138	125					4:30 PM		
und Street - Fifth Ave Westhound	Peds CW	37	41	44	56	56	60	52	56	67				35	31	32	29	38	44	46	45	43					9:00 AM	r .	;
Westbou	Peds CCW	35	38	37	32	25	27	24	19	21				59	45	52	99	85	93	93	93	82					4:15 PM	6	
Craig St	Subtotals		55	75	82	95	128	130	140	145				84	76	99	74	63	67	130	137	148					5:00 PM		
Southbound Street - Craig St Southbound	Peds CW	33	39	55	64	78	96	88	06	85				C12	36	31	36	25	36	44	44	57					8:15 AM	ł	
Southbou	Peds CCW		16	20	18	17	32	42	50	60				C4	40	35	38	38	61	86	93	91					4:45 PM		
-	Hourry totals Reginning @	7:00 AM	7:15 AM	7:30 AM	7:45 AM	8:00 AM	8:15 AM	8:30 AM	8:45 AM	9:00 AM	9:15 AM	9:30 AM	9:45 AM	3-00 PM	3-15 PM	3:30 PM	3.45 PM	4-00 PM	4.15 PM	4:30 PM	4:45 PM	5:00 PM	5:15 PM	5:30 PM	5:45 PM		Peak Hour		







Study Name: Oakland/CMU - Fifth Ave and Craig Street Start Date: 09/14/2010 Start Time: 7:00 AM

Site Code:

Intersection Totals ĥ  $\sim$ က က 0 0 ŝ со ω က e N ~  $\sim$ Subtotals Eastbound Street - Fifth Ave **~**~  $\circ$ ~ Eastbound **Bikes CW**  $\circ$  $\circ$ **~**~~ **Bikes CCW** o  $\sim$ <del>~~</del> Subtotals Northbound Street - Craig St  $\circ$ ----<del>،</del> ~~ <del>۱</del> Northbound **Bikes CW** o o O **T** ~~ **Bikes CCW** <del>...</del> Subtotals Westbound Street - Fifth Ave.  $\circ$ O **~**~ **~**.. -----~~~ Westbound Bikes CW o  $\circ$ T **~**~~ **Bikes CCW** O ~ Subtotals Southbound Street - Craig St က ന ŝ က ~ ŝ က <del>~</del> ന  $\circ$  $\sim$ ~  $\sim$ <del>. .</del> Southbound **Bikes CW** က က က ŝ ന ŝ **~**--**~**~ Bikes CCW  $\circ$ *** ۳-- $\circ$  $\circ$ *** *** Start Time 4:30 PM 9:00 AM 4:15 PM 4:45 PM 5:30 PM 9:30 AM 9:45 AM 3:00 PM 3:15 PM 3:30 PM 3:45 PM 4:00 PM 5:00 PM 5:15 PM 5:45 PM 7:30 AM 7:45 AM 8:15 AM 8:30 AM 8:45 AM 9:15 AM 7:00 AM 7:15 AM 8:00 AM





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Intersection Totals		11	14	19	19	21	22	23	22	18					10	6	7	7	S	ω	6	41	15				8:30 AM	23	0.72
ifth Ave	Subtotals		-	-	0	0	0	2	2	2				,	3	-		1	0	0	t	1	-				3:00 PM	0	0.38
Eastbound Street - Fifth Ave Eastbound	Bikes CW	0	0	0	0	0	0	0	0	0					e	-		-	0	ο	-	-	-				3:00 PM	3	0.38
Eastbour	Bikes CCW	-	1	-	0	0	0	2	2	5					0	0	0	0	0	0	0	0	0				8:30 AM	2	0.25
- Craig St d	Subtotals	+-	1	0	-	-	1	*	0	2					2	3	2	2	1	0	0	0	0				3:15 PM	3	0.75
Northbound Street - Northbound	Bikes CW	1	1	0	1	÷	1	~	0	2	*****					<del>, -</del>	0	0	0	0	0	0	0				9:00 AM	2	0.25
Northbou	Bikes CCW	0	0	0	0	0	0	0	0	0			******		<b>~~</b> ~	2	2	2	L	0	0	0	0				3:15 PM	2	0.50
-ifth Ave	Subtotals	0	0	0	<b>~</b>	ł	<b>~</b>	2	+	1					0	0		Ļ		2	2	3	ო				4:45 PM	3	0.75
und Street - Fifth Ave Westbound	Bikes CW	0	0	0	Ļ	-	-	2	1	1					0	0	0	0	0	0	0	<b>4</b>	1				8:30 AM	2	0.50
Westbour	Bikes CCW		0	0	0	0	0	0	0	0			******		0	0	-	~	-	2	2	2	2				4:15 PM	2	0.50
Craig St	Subtotals		12	18	17	19	20	18	19	13					ŝ	5	e	3	3	9	9	10	11				8:15 AM	20	0.71
Southbound Street - Craig St Southbound	Bikes CW	6	12	18	17	19	20	18	19	13					£	S	3	3	5	4	3	9	8				8:15 AM	20	0.71
Southbou	Bikes CCW	0	0	0	0	0	0	0	0	0					0	0	0	0	-	2	9	4	3				4.45 PM	4	1.00
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Study Name: Oakland/CMU - Fifth Avenue & Margret Morrison

Start Date: 09/22/2010

Start Time: 7:00 AM

Site Code:

	Wes	Westbound Street Westbound	et	Northb	Northbound Street Northbound		Eastbo Eas	Eastbound Street Eastbound	
Start Time	Thru	Left	U-Tum	Right	Left U-	U-Tum F	Right 1	Thru U-	U-Turn
7:00 AM	63	2	0	2	18	0	18	26	0
7:15 AM	79	7	0	~	16	0	27	41	0
7:30 AM	105	4	0	7	25	0	19	44	0
7:45 AM	131	9	0	~	19	0	22	46	0
8:00 AM	127	5	0	ო	20	0	48	44	0
8:15 AM	139	17	0	Q	36	0	55	40	0
8:30 AM	110	17	0	12	45	0	62	36	0
8:45 AM	105	თ	0	10	39	0	29	41	0
9:00 AM	56	7	0	ŋ	25	0	42	51	0
9.15 AM	68	10	0	ო	22	0	39	47	0
9:30 AM	73	S	0	~	26	0	31	45	0
9:45 AM	60	7	0	0	20	0	17	47	0
3:00 PM	50	5 2	0	7	18	0	38	111	0
3:15 PM	71	Q	0	4	18	0	50	116	0
3:30 PM	67	10	0	თ	24	0	35	136	0
3:45 PM	42	7	0	4	29	0	48	114	0
4:00 PM	54	7	0	4	29	0	54	144	0
4:15 PM	51	Q	0	с,	31	0	52	162	0
4:30 PM	53	5	0	8	30	0	47	142	0
4:45 PM	61	2	0	ę	20	0	61	178	0
5:00 PM	61	Ω.	0	<u>-</u>	40	0	54	182	0
5:15 PM	22	9	0	8	30	0	58	189	0
5:30 PM	68	4	0	4	36	0	43	150	0
5:45 PM	75	7	0	5	30	0	51	127	o



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Study Name: Oakland/CMU - Fifth & M. Morrison

Start Date: 09/22/2010

Start Time: 7:00 AM

Site Code:

	Westbo	Westbound Street Westbound		Northbound Northbou	thbound Street Northbound		Eastbo Eas	Eastbound Street Eastbound	
Start Time	Thru	Left U-Turn		Right L	Left U	U-Tum R	Right 7	Thru U-	U-Turn
7:00 AM	2	0		0	0	0	2	e	0
7:15 AM	<b>4</b>	0	0	<b>4</b>	0	0	<del></del>	2	0
7:30 AM	0	0	0	0	0	0	2	e	0
7:45 AM	3	0	0	0	<b>4</b>	0	<del>~</del>	*	0
8:00 AM	2	0	0	0	0	0	<del></del>	2	0
8:15 AM	0	0	0	0	0	0	0	0	0
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5:45 PM	0	0	0	0	0	0	2	****	0



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Study Name: Oakland/CMU - Fifth & M. Morrison

Start Date: 09/22/2010

Start Time: 7:00 AM

Site Code:

	Westb	Westbound Street		Northbo	Northbound Street		Eastbou	Eastbound Street	
Start Time	Thru	westoound Left U-T	U-Tum	Right L	Left U-	l-Tum R	Right T		l-Turn
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7:15 AM	4	0	0	0	0	0	0	<b>4</b>	0
7:30 AM	4	0	0	0	0	0	0	4	0
7:45 AM	4	0	0	0	0	0	0	4	0
8:00 AM	က	0	0	0	0	0	0	4	0
8:15 AM	9	0	0	0	0	0	0	7	0
8:30 AM	9	0	0	0	0	0	*	Q	0
8:45 AM	5	0	0	0	0	0	0	0	0
9:00 AM	9	0	0	0	0	0	0	4	0
9:15 AM	4	0	0	0	0	0	0	4	0
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9:45 AM	<del>~~</del>	0	0	0	0	0	0	5	0
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3:15 PM	с	0	0	0	0	0	0	5	0
3:30 PM	7	0	0	0	0	0	0	5	0
3:45 PM	4	0	0	0	0	0	0	9	0
4:00 PM	2	0	0	0	0	0	0	4	0
4:15 PM	5 2	0	0	0	0	0	0	ო	0
4:30 PM	4	0	0	0	0	0	0	ო	0
4:45 PM	7	0	0	0	0	0	0	9	0
5:00 PM	£	0	0	0	0	0	0	2	0
5:15 PM	4	0	0	0	0	0	0	4	0
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Study Name: Oakland/CMU - Fifth & M. Morrison

Start Date: 09/22/2010

Start Time: 7:00 AM

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	West	Westbound Street Westbound		Northbo North	Northbound Street Northbound		Eastbo Ea:	Eastbound Street Eastbound	
Start Time	Thru	Left U-Tum	m m	Right I	Left U-1	um	Right	Thru U	-Turn
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:15 AM	4	0	0	0	0	0	0	<b>~</b> ~~	0
7:30 AM	4	0	0	0	0	0	0	4	0
:45 AM	4	0	0	0	0	0	0	4	0
:00 AM	с С	0	0	0	0	0	0	4	0
:15 AM	Q	0	0	0	0	0	0	7	0
:30 AM	Q	0	0	0	0	0	~	Q	0
:45 AM	5	0	0	0	0	0	0	0	0
:00 AM	9	0	0	0	0	0	0	4	0
15 AM	4	0	0	0	0	0	0	4	0
30 AM	ო	0	0	0	0	0	0	ი	0
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30 PM	7	0	0	0	0	0	0	ъ	0
45 PM	4	0	0	0	0	0	0	9	0
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:30 PM	4	0	0	0	0	0	0	e	0
:45 PM	7	0	0	0	0	0	0	0	0
:00 PM	5	0	0	0	0	0	0	2	0
5:15 PM	4	0	0	0	0	0	0	4	0
5:30 PM	<b>~</b>	0	0	0	0	0	0	~	0
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Study Star Star	Study Name: ( Start Date: 0 Start Time: 7	Oakland/CMU - Fifth Avenue & Margret Morrison 09/22/2010 7:00 AM	/CMU -   10	Fifth Av	venue	ŝ Marg	ret Norr	ison	·													
	No.	Southbound Street Dres Not Exist	StreetD	oes Not	Exist		Westb	Westbound Street - Forbes Avenue	et - Forbe	as Avenue	-	North	bound Sta	set - Mang	ert Morrise	on	Eat	Eastbound Street - Forbes Avenue	reet - Fort	bes Aven		Intersection
	} ·	S I	Southbound	p		- X		Wei	Westbound				ž	httpaund				ш_ Ш	Eastbound		1 1 1 1	Totals
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8-30 AM		C	, c			0	0	116	18	0	134	12	0	46	0	58	64	45	0	0	109	301
8-45 AM		s c	c			0	0	113	6	0	122	10	0	39	0	49	32	49	0	0	81	252
0-00 AM			c			C	0	64	~	0	2	5	0	26	0	31	44	57	0	0	101	203
9:15 AM	0	0				0	0	94	10	0	104	0	0	23	0	26	40	51	0	0	9	221
9:30 AM	0		0		0	0	0	76	9	0	82	1	0	26	0	27	32	56	0	0	88	197
9-45 AM			C	}		0	0	62	2	0	69	-	0	21	0	22	19	53	0	0	72	163
3-00 PM		0			0	0	0	58	5	0	63	4	0	18	0	25	39	118	0	0	157	245
3:15 PM	0	0	0		0	0	0	74	9	0	80	4	0	18	0	22	50	122	0	0	172	274
3:30 PM	0	0	0		0	0	0	74	10	0	84	6	0	26	0	35	36	143	0	0	179	298
3:45 PM	0	0	0		0	0	0	46	7	0	53	4	0	29	0	33	48	121	0	0	169	255
4:00 PM	0	0	0		0	0	0	56	~	0	63	4	0	29	0	33	54	148	0	0	202	298
4.15 PM	0	o	0		0	0	0	56	5	0	61	3	0	31	0	34	52	166	0	0	218	313
4:30 PM	0	10	0		0	0	0	58	5	0	63	8	0	31	0	33	47	149	0	0	196	298
4:45 PM	0	0	0		0	0	0	63	2	0	65	3	0	20	0	23	63	187	0	0	250	338
5:00 PM	ō	0	0		0	0	0	67	5	0	72	5	0	41	0	52	54	184	0	0	238	362
5:15 PM	0	0	0		0	0	0	81	9	0	87	8	0	30	ō	38	58	193	0	0	251	376
5:30 PM	0	0	0		0	0	0	69	4	0	73	4	0	36	0	40	44	151	0	0	195	308
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Total Heavy Vehicles		O	_					95					0			Ł		86				193
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Intersection Totals		776	891	1011	1100	1113	1057	977	873	784				1072	1125	1164		1247	1311	1374	1384	1358	5			4:45 PM	1001	+001	0.92
	Totals	270	317	342	379	386	388	382	361	352				677	722			866				871				4:30 PM	100	890	0.93
rbes Ave	U-Tum	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0	0	0	0				1	4		
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Eastbound Street - Forbes Avenue Eastbound	Thru	178	196	194	188	186	193	202	213	217				504	534	578	584	650	686	713	715	659				4:45 PM	4	<b>G</b> []	0.93
8	Rìght	92	121	148	191	200	195	180	148	135	*****	****		173	188	190	201	216	216	222	219	212	,			4:30 PM		777	0.88
rison	Totals	86	89	113	144	172	180	164	133	106				115	123	135	139	129	148	152	153	171				8:15 AM		180	0.78
rgert Mon d	U-Tum	0	0	0	0	0	0	0	0	0		.,		0	0	0	0	0	0	0	0	0				1		0	1
Northbound Street - Margert Morrison Northbound	Left	162	81	101	122	141	147	134	114	96				91	102	115	120	111	123	122	127	137				8:15 AM		147	0.80
hbound S	Thru	ō	Ö	ö	0	0	ō	0	ö	0				0	0	0	ō	0	0	0	0	0	,					0	
Nort	Right	7	8	12	22	31	33	30	19	10				24	21	20	19			30	26	34				5:00 PM		34	0.77
TUe	Tofais	420	485	556	577	555	489	431	379	326				280	280	261	240	252	261	287	297	316				7:45 AM		577	0.89
rbes Avel	U-Tum	0	0	0	0	0	0	0	0	0			,,,,,,,,,,,	0	0	0	0	0	0	0	0	0						0	1
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Westbound Street - Forbes Avenue Westbound	Thri	401	463	524	531	506	438	387	347	296				252	250	232	216	233	244	269	280	294				7:45 AM		531	0.92
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Study Name: CMU/Oakland - Fobres Ave & Beeler St

Start Date: 09/22/2010

Start Time: 7:00 AM

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	S	Southbound Street	nd Street		>	Westbound Street Wootbound	d Street		Nor	Northbound Stree Northbound Stree	Street		ß	Eastbound Stree Fasthound	Street	
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8:30 AM	42	თ	19	0	9	126	15	0	0	0	0	0	~	78	14	0
8:45 AM	42	7	12	0	ო	125	12	0	0	0	0	0	4	61	თ	0
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3:15 PM	7	2	11	0	თ	77	0	0	ç	2	0	0	0	140	28	0
3:30 PM	12	<del></del>	12	0	13	71	2	0	4	2	<del></del>	0	<del>~~</del>	159	19	0
3:45 PM	12	0	7	0	16	52	2	0	9	0	2	0	0	151	31	0
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Study Name: CMU/Oakland - Fobres Ave & Beeler St

Start Date: 09/22/2010

Start Time: 7:00 AM Site Code:

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Study Name: CMU/Oakland - Fobres Ave & Beeler St

Start Date: 09/22/2010

Start Time: 7:00 AM

Site Code:

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Study Name: CMU/Oakland - Fobres Ave & Beeler St Start Date: 09/22/2010 Start Time: 7:00 AM Site Code:

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**Gai consultants** 



Study Name:	Study Name: Oakland/CMU - Fifth Ave & Neville St AM	tt AM
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Start Time: 7:00 AM	7:00 AM	

V NO	7:00	
Start Date:	Start Time:	Site Code:

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Study Name: Oakland/CMU - Fifth Ave & Neville St AM

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Start Date: 09/21/2010

Start Time: 7:00 AM Site Code: 

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Study Name: Oakland/CMU - Fifth Ave & Neville St AM Start Date: 09/21/2010 Start Time: 7:00 AM

Site Code:

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Study Name: Oakland/CMU - Fifth Ave & Neville St AM Start Date: 09/21/2010 Start Time: 7:00 AM Site Code: T. W. CUNSUL LAND, S. NO ORPORTIED



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Study Name:	Study Name: Oakland/CMU - Fifth Ave and Craig Street
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## Start Date: 09/14/2010 Start Time: 7:00 AM Site Code:

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Study Name: Oakland/CMU - Fifth Ave and Craig Street Start Date: 09/14/2010 Start Time: 7:00 AM Site Gode:

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Study Name: Oakland/CMU Fifth & Morewood

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Start Time: 7:00 AM

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Start Time: 7:00 AM Site Code:

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	104	55	38	0	103	30		6	0	213	50	52	6	0	111	14	143	4	0	161	588
Md UE-E	ď	57	37	0	102				0	199	59	51	4	0	114	14	178	4	5	196	611
3-45 PM	11	35	22	0	68	27			0	196	59	35	9	0	100	17	205	0	0	222	586
WI OUT	18	61	26	6	105				0	223	58	46	80	0	112	26	207	9	0	239	679
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5-15 DM	13	681	17	G	98				0	219	20	60	11	0	141	21	231	5	0	257	715
E-30 PM	12	R	23	0	105		197	28	0	253	72	78	11	0	161	11	222	4	0	237	756
6-45 PM	Ø	54	13	0	86	26			0	259	57	55	9	0	118	14	179	6	0	202	665
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Totals	Itersection Totals		1946	1989	1950	2002	2025	1973	2021	2003	1922			2380	2464	2522	2569	2666	2728	2797	2895	2877				4:45 PM		C697	0.96
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and the second se	Avenue	U-Tum	0	0	0	0	0	0	0	0	0			0	0	0	0	-	0	0	0	5				4			
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n Avenue U-Tum Subblas Right			1001	976	606	953	995	367	968	976	940			814	831	847	878	910	900	890	913	944				7:00 AM 4		1001	0.85
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nd Street - Eitht Avonue Westbound Left U-Tum	2	Left	66	135	148	158	177	161	142	109	11	(),,,,,,,,,,,,,,		44	52	56	54	57	51	60	19	78				8:00 AM		177	0.89
Westbound S We Thru	Sector Sectors		777	698	618	645	649	647	689	745	777			673	679	669	721	750	752	725	723	756				7:00 AM 8		111	0.77
Rgin	N	Right	125	143	143	150	169	159	137	122	98			97	100	92	103	103	67	105	111	110				8:00 AM 7		169	0.77
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wood Avenue U-Tum Sublotais	adAvenue	U-Tum 1	0	0	0	0	0	0	0	ō	0			0	0	0	0	0	0	0	0	0				5:0		0	1
Street - Morewoo Southbourd	Southbound	Left U	41	50	57	09	57	51	55	52	51			123	123	111	8	86	83	74	17	76				3:00 PM		123	0.81
Southbound Street - Morewood Avenue Southbound Thru I teft U-turn St	Southbound Street - Morewood Avenue Southbound	Thru 1	117	154	200	238	249	259	234	200	173			194	208	215	213	227	236	242	257	272	*****			5:00 PM 3:00		272	0.97
Southb	Southb	Right T	31	35	33	29	27	30	32	42	45	, 		43	47	50	54	46	40	40	40	46				3:45 PM 5:0		54	0.75 (
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Start Time	Hourty totals	Beginning @	7:00 AM	7:15 AM	7:30 AM	7.45 AM	8:00 AM	8:15 AM	8 30 AM	8:45 AM	9:00 AM	9:15 AM 9:30 AM	9:45 AM	3:00 PM	3.15 PM	3:30 PM	3:45 PM	4:00 PM	4:15 PM	4:30 PM	4:45 PM	5:00 PM	5:15 PM	MH 05:0	5:45 PM	Peak Hour		Volume	PHF





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)akland/CMU - Forbes Ave & Craig Street	2010
Oakla	09/21/
Study Name:	Start Date: 09/21/2010

Start Date: U9/21/2010 Start Time: 7:00 AM

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Study Name: Oakland/CMU - Forbes Ave & Craig Street

Start Date: 09/21/2010

Start Time: 7:00 AM Site Code:

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Study Name: Oakland/CMU - Forbes Ave & Craig Street

Start Date: 09/21/2010

Start Time: 7:00 AM Site Code:

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Study Name: Oakland/CMU - Forbes Ave & Craig Street			
Oakland/CMU	Start Date: 09/21/2010	7:00 AM	
Study Name:	Start Date:	Start Time: 7:00 AM	Site Code:

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gai consultants

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Study Name: Oakland/CMU Forbes Ave & Morewood

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Start Time: 7:00 AM

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gai consultants transforming ideas into reality,

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Appendix C

Signal Timings and Capacity Analyses

This Appendix summarizes traffic operations analysis performed by Kittelson & Associates, Inc. (KAI) to support the Oakland/CMU Pedestrian Safety Mobility Study. This study is recommending a comprehensive set of solutions to improve walking and bicycling conditions in the vicinity of the Carnegie Mellon University campus. Supporting documentation for the study's Immediate Action Recommendations is contained herein. Analyses of existing traffic operations along the study corridors and evaluations of the impacts of proposed improvements to traffic operations were performed.

The analyses focused on signal timing changes and geometric modifications to the study area roadway network, which were considered on the basis of improving safety conditions for pedestrians and careful consideration of need for the roadways to function adequately for all modes. The analyses also assessed signal timings in order to optimize the splits for cars, as well as upgrade the pedestrian phases to meet the 2009 Manual on Uniform Traffic Control Devices (MUTCD) standard walking speed of 3.5 ft/s for pedestrian clearance intervals.

Implications for Immediate Action Items

The timing change recommendations could be implemented at some of the intersections where current equipment can implement the changes, but overall implementation would be part of Immediate Action Recommendation 1 – Upgrade of all Signals and Infrastructure.

Immediate Action Recommendation 2 – The road diet on Forbes Avenue to reduce the number of through travel lanes to one (1) in each direction between Craig Street and Morewood Street would have limited operational impacts and would maintain adequate operations at all study intersections.

Immediate Action Recommendation 3 – The creation of the sidewalk systems is only further reinforced by the analyses, which serves to maintain the motorized vehicle capacity on Morewood.

Table 1 summarizes operations at study intersections under both existing proposed signal timing and lane configurations.







Intersecti	Opera	tions					
on	Time	Cycle L	ength	V/C Rat	tio	LOS	
	Peri od	Existi ng	Recommen ded	Existi ng	With Changes	Existi ng	With Changes
¹ Fifth Ave	AM	80	80	0.98	0.97	С	С
& Bellefield Ave	РМ	80	80	0.81	0.88	С	С
¹ Fifth Ave	AM	80	80	0.58	0.66	С	В
& Dithridge St.	PM	80	80	0.56	0.59	В	С
² Fifth Ave	AM	80	80	1.19	0.86	F	С
& Craig St.	РМ	80	80	0.93	0.65	E	В
³ Fifth Ave	AM	80	80	0.80	0.82	С	С
& Neville St.	РМ	80	80	0.81	0.72	С	D
³ Fifth Ave	AM	80	80	0.82	0.68	С	С
& Morewoo d Ave	PM	80	80	0.99	0.90	D	С
⁴ Forbes	AM	80	100	0.64	0.72	В	С
Ave & Craig St.	РМ	80	98	1.03	0.92	F	D
⁵ Forbes	AM	79	80.5	0.31	0.53	А	А
Ave & Hamburg Hall	PM	79	80	0.63	0.83	В	В
⁵ Forbes	AM	124	150	1.24	1.14	F	F
Ave & Morewoo d Ave	PM	124	109	0.72	0.81	С	С
⁶ Forbes	AM	80	88	0.69	0.91	С	D
Ave & Beeler St.	PM	80	88	0.45	0.71	В	С

Table 1 Operations Summary for Existing Conditions and RecommendedChanges







Intersecti on	Opera	Operations											
	Time	Cycle Length		V/C Rat	io	LOS							
	Peri od	Existi ng	Recommen ded	Existi ng	With Changes	Existi ng	With Changes						
⁷ Forbes	AM	80	85	0.41	0.66	В	В						
Ave & Margaret Morrison St.	РМ	80	87	0.65	0.66	В	В						

¹ Recommended changes along Fifth Avenue at the Bellefield Avenue and Dithridge Street intersections include vehicular signal timing modifications as well as the addition of pedestrian indications crossings concurrent with parallel traffic flow and crossing times to meet current 2009 MUTCD standards.

²Recommended changes along Fifth Avenue at the Craig Street intersection include vehicular signal timing modifications, removal of the exclusive pedestrian phase, addition of pedestrian crossings concurrent with parallel traffic flow and updating the crossing times to meet current 2009 MUTCD standards

³Recommended changes along Fifth Avenue at the Neville Street and Morewood Avenue intersections include vehicular signal timing modifications as well as updating the pedestrian crossing times to meet current 2009 MUTCD standards.

⁴Recommended changes along Forbes Avenue at the Craig Street intersection include the removal of one (1) through lane "road diet" along Forbes Avenue to provide for one (1) through lane, addition of exclusive eastbound left turn lane, vehicular signal timing modifications, removal of the exclusive pedestrian phase, addition of pedestrian crossings concurrent with parallel traffic flow and updating the crossing times to meet current 2009 MUTCD standards.

⁵Recommended changes along Forbes Avenue at the Hamburg Hall and Morewood Avenue intersections include the "road diet" along Forbes Avenue which provides for one (1) through lane, vehicular signal timing modifications, removal of the exclusive pedestrian phase at Hamburg Hall, addition of pedestrian crossings concurrent with parallel traffic flow at the Hamburg Hall intersection and updating the crossing times at Morewood Avenue to meet current 2009 MUTCD standards.







⁶Recommended changes along Forbes Avenue at the Beeler Street intersection include the "road diet" along Forbes Avenue which provides for one (1) through lane, vehicular signal timing modifications, addition of pedestrian crossings concurrent with parallel traffic flow and updating the pedestrian crossing clearance times to meet current 2009 MUTCD standards.

⁷Recommended changes along Forbes Avenue at the Margaret Morrison Street intersection include the removal of one (1) through lane "road diet" along Forbes Avenue to provide for one (1) through lane, removal of exclusive eastbound right turn lane, addition of exclusive westbound left turn lane, vehicular signal timing modifications, addition of pedestrian indications & crossings concurrent with parallel traffic flow and crossing times to meet current 2009 MUTCD standards.

<u>Methodology</u>

The analysis presented in this memorandum is based on traffic volume data collected during September 2010, during mid-week AM and PM peak hours. Eastbound and westbound volumes along Fifth Avenue were balanced between Bellefield Ave. and Neville St., to ensure that volumes match between adjacent intersections. Balancing was not done between other intersections, as the presence of unsignalized intersections and driveways make it feasible for volumes to change significantly between signals.

To best understand the study area, KAI analyzed the study intersections by modeling the signal timings provided by the City of Pittsburgh in Synchro 7.0 software. The signal timing summary sheets provided, however, did not include the tables that provided the force-off points. This made it difficult to determine the splits for some of the intersections where the cycle length varied from the peak and off-peak hours. In these cases, the signal timings were estimated based on the split percentages calculated from the timings provided in the summary sheets. Synchro was then adjusted to simulate and evaluate pedestrian improvements alternatives. More specifically, this analysis includes:

- Year 2010 existing traffic conditions at intersections within the study area;
- Analysis of signal performance with changes that meet MUTCD compliance;
- Analysis of proposed geometric changes to roads for improvements for pedestrians and cyclists;
- Conclusions and recommendations.





The volume to capacity (v/c) ratios, Level of Service (LOS), and intersection delay of each intersection were the main indicators in determining the operation of each intersection for existing conditions and recommendations. These performance measures were estimated using *2000 Highway Capacity Manual* procedures, and consistent with the Pennsylvania Department of Transportation Policies and Procedures for Traffic Impact Studies.

The improvements evaluated were based on recommendations made by KAI in an initial review of existing conditions along the roadways, including current intersection facilities and historic crash data. Signal timing changes and geometric changes were analyzed to determine their effect on motor vehicle traffic operations in the study area. The signal timing changes examined represent one aspect of recommended intersection improvements intended to deal with various issues identified at existing intersections, including a lack of standard pedestrian signal heads, and unnecessary exclusive pedestrian phases. Most significantly, the geometric changes examined included Immediate Action Recommendation 1 – the proposed lane reduction, road diet along Forbes Avenue.

Existing Conditions

KAI completed an analysis of the existing pedestrian conditions as well as the pedestrian and traffic signal operations. 0 summarizes the existing conditions for each of the intersections studied during the AM and PM peak hours. Figure 1 shows the existing lane configuration and Figures 2 and 3 shows the existing intersection operations for the AM and the PM peak hours.







Intersection	Pedestri	an Accomm	odations	Operati	ons		
	Ped. Signals	Exclusive Ped. Phase	Adequate Clearance?	Time Period	V/C Ratio	LOS	Average Delay
Fifth Ave. &	No	No	⁸ N/A	AM	0.98	С	34.9
Bellefield Ave.	NO			РМ	0.81	С	26.8
Fifth Ave. &	No	No	⁸ N/A	AM	0.58	С	23.7
Dithridge St.	INO	INU		РМ	0.56	В	18.1
Fifth Ave. &	Yes	Yes	No	AM	1.19	F	92.7
Craig St.	165	165	NO	PM	0.93	Е	67.6
Fifth Ave. &	Yes	No	No	AM	0.80	С	26.9
Neville St.	165	NU	NO	РМ	0.81	С	27.1
Fifth Ave. &	Yes	No	No	AM	0.82	С	24.5
Morewood Ave.	res	NO	NO	РМ	0.99	D	44.7
Forbes Ave. &	Yes	Yes	No	AM	0.64	В	14.3
Craig St.	165	165	NO	РМ	1.03	F	91.7
Forbes Ave. &	Yes	Yes	Yes	AM	0.31	А	3.8
Hamburg Hall	165	165	165	PM	0.63	В	14.7
Forbes Ave. &	Yes	Yes	No	AM	1.24	F	120.6
Morewood Ave	165	165		PM	0.72	С	21.9
Forbes Ave. &	Yes	No	No	AM	0.69	С	26.0
Beeler St.	165			PM	0.45	В	13.0
Forbes Ave. &			8	AM	0.41	В	10.2
Margaret Morrison St.	No	No	⁸ N/A	РМ	0.65	В	13.9

Table 2 Summary of Existing Conditions

⁸Pedestrian indications "walk/don't walk" currently do not exist at these intersections. Pedestrian movements are controlled by smaller 8" vehicular signals and timings are from vehicle phasing times.





All intersections do not meet 2009 MUTCD standards for pedestrian signals. This is largely because these intersections do not meet the minimum time clearance time for a Flash Don't Walk signal required by the MUTCD. The 2009 MUTCD Flash Don't Walk signal timing requirements are based on a pedestrian walking speed of 3.5 feet per second, compared to 4 feet per second in the 2003 MUTCD, a significant reduction, and one which will certainly help to accommodate the crossing of elderly pedestrians, an issue recently brought to GAI's attention by the City of Pittsburgh.

A major issue at many of the intersections is a lack of pedestrian head signals. Instead, smaller traffic signals are in place of where pedestrian signals typically are and are programmed to turn yellow for the pedestrian movements at the same time it turns yellow for the vehicle movement. This allots the pedestrian the same amount of time to finish crossing the intersection as the vehicle movements. The MUTCD clearance time is meant to provide enough time for most people crossing the street to be able to finish crossing once the Flash Don't Walk signal phase begins. The necessary time for the Flash Don't Walk phase was calculated based on the longest crossing distance in each direction for each intersection.

Four (4) study intersections have exclusive pedestrian phases. While exclusive pedestrian phases benefit pedestrians by providing them with a dedicated phase, they can also negatively impact pedestrian movements by increasing delay (cycle lengths are longer and pedestrians are prohibited from crossing during concurrently with parallel traffic). For this reason, exclusive pedestrian phases are most applicable only in locations with very high pedestrian volumes. The potential to replace exclusive pedestrian phases with alternative pedestrian enhancements was tested in the alternatives analysis, and is achieved at three (3) of the four (4) intersections, Morewood Avenue at Forbes the only exception.

Most cycle lengths on Fifth Avenue are 80 seconds. These short cycle lengths work well for pedestrians by reducing delay, but also limit the cycle time available for the WALK phase. Standard practice provides 7 to 12 seconds of WALK time, but several intersections on Fifth Avenue have time for only 4 to 5 seconds to maintain the 80-second cycle length, and provide adequate pedestrian clearance time. Despite the short resulting WALK phase, the analysis performed maintained a consistent 80-second cycle length to both reduce delay and allow for coordinated signal operations.







Summary of Analyses

Signalization, Immediate Action Recommendation Item 1

Table 3 summarizes the intersections lacking pedestrian signal heads and provides the necessary pedestrian clearance intervals for each study intersection.

 Table 3 Summary of Signal Changes to Meet MUTCD Standards

Intersection	Existing Pedestri anSignal s?	Existing Pedestri an ⁹ Times	Necessary ¹¹ Clearance (Flashing Don't Walk) East-West/ North- South
Fifth Ave & Bellefield Ave	No	¹⁰ N/A	18/25
Fifth Ave & Dithridge St.	No	¹⁰ N/A	18/18
Fifth Ave & Craig St.	Yes	28/28	20/23
Fifth Ave & Neville St.	Yes	20/17	21/18
Fifth Ave & Morewood Ave	Yes	19/19	15/11
Forbes Ave & Craig St.	Yes	23/23	13 /17
Forbes Ave & Hamburg Hall	Yes	17/17	12/9
Forbes Ave & Morewood Ave	Yes	22/22	18 (All Pedestrian Phase)
Forbes Ave & Beeler St.	Yes	22/17	19/14
Forbes Ave & Margaret Morrison St.	No	⁹ N/A	11/13

⁹Includes both "Walk" and "Don't Walk" times as indicated on the City of Pittsburgh Traffic Signal Timing summary sheets.

¹⁰Pedestrian indications "walk/don't walk" and timings currently do not exist at these intersections. Pedestrian movements are controlled by smaller 8" vehicular signals and timings are from vehicle phasing times.

¹¹Does not include the minimum 7 second "Walk" time required as indicated in MUTCD 2009.





The following list summarizes the recommended signal timing and hardware changes to enhance pedestrian operations:

- All signals should provide adequate pedestrian clearance based on the values in Table 3.
- All study intersections should have pedestrian signal heads on each approach to improve pedestrian safety.
- The exclusive pedestrian phase at Forbes Ave./Morewood Ave. should be retained due to the very high pedestrian volumes and the high volume of turning vehicles.
- All other exclusive pedestrian phases within the study area should be removed.
- Leading pedestrian intervals (LPI's) should be installed at all study intersections (with the exception of Forbes Ave./Morewood Ave.) for all pedestrian movements. These movements should be prioritized for LPI's due to the potential for conflicts between pedestrians and traffic turning from side streets onto Fifth Avenue and Forbes Avenue.
- All of the above recommendations will be incorporated into Immediate Action Item 1 Upgrade of All Signals.

The Forbes Avenue Road Diet, Immediate Action Item 2

During the multiple field visits to the study area, it was noted and reported in the existing conditions report that Forbes Avenue is particularly wide and may have excess capacity given the current volume of traffic on the roadway. A "road diet" was considered and analyzed in Synchro on Forbes Ave., assuming one (1) through lane in each direction along the corridor. Such a lane reduction would provide space on the roadway to create dedicated bike facilities, meeting one of the key desires of stakeholders. O summarizes the operations of the intersections on Forbes Avenue with the proposed road diet, and shows that all study intersections would continue to operate under capacity, in most cases well under capacity, in both the AM and PM peak periods.







Table 4 Operations of Forbes Avenue with the Forbes Road Diet in the AM andPM Peak Hour

Intersection	New Lane Configuration	v/c Ratio	LOS
Forbes Ave & Craig St.			
АМ	▲ そ ⊞ 争	0.72	С
РМ	5 1 7	0.92	D
Forbes Ave & Hamburg Hall			
АМ	人	0.53	А
PM	-4 ∰ ←	0.83	В
Forbes Ave & Morewood Ave			
АМ	八 ≼∰≿	1.14	F
РМ	→ ₩ ←	0.81	С
Forbes Ave & Beeler St.			
АМ	× ↓ ↓ ↓	0.91	D
РМ	7 W / %	0.71	С
Forbes Ave & Margaret Morrison			
АМ	↓ ↓ 191	0.66	В
РМ	★ ★	0.66	В

*Red lane movements are lanes that require 100 ft. of storage.

Figure 4 shows the proposed lane configurations with the recommended changes, including the Forbes Ave road diet and changes to pedestrian operations. Figure 5 and Figure 6 show the intersection operations with the proposed changes.





The proposed lane configurations and operations shown in 0 do not include any modifications to the existing signal equipment. As indicated in Table 4, the Forbes Ave./ Morewood Ave. intersection will fail in the AM peak period with the Forbes Ave. Road Diet. Further analysis, however, show that this could be mitigated by installing a southbound right-turn overlap phase at Forbes Ave./Morewood Ave., which would require installing a new signal head for southbound right-turning vehicles. This modification in the signal equipment would allow the Forbes Ave. Road Diet to operate at an acceptable level. This requirement could be incorporated as part of the Forbes Avenue road diet or be incorporated as a stand-alone signal upgrade project at Morewood Avenue along with the Forbes Avenue road diet improvements on a separate intersection under Immediate Action Item 1.

In addition, there is no reason from a pure capacity standpoint why Craig Street requires two (2) westbound through lanes. However, operationally, as relocation of the bus stop is not anticipated at this time, we feel the two-lane approach for westbound Forbes Avenue at Craig Street will minimize various delays at this intersection due to the high volume of bus roadways at this intersection. Four (4) bus systems operate at this intersection, Port Authority, and the CMU, Pitt, and Chatham shuttle services all utilizing the nearside stop. Additionally, reducing to one (1) through lane would require installation of a new mast arm to place the signal heads over the center travel lane rather than the curbside lane. By direct observations, significant pedestrian movements often delay turning vehicles, therefore the Forbes Avenue westbound approach to Craig Street will remain two-lanes.

Other options

Fifth Avenue Road Diet

In addition to the recommended changes described above, several other alternative changes were also considered but dismissed as infeasible or inappropriate. In particular, a road diet on Fifth Avenue was also considered. Similar to the Forbes Avenue road diet, this would reduce Fifth Avenue to one (1) lane in each direction, with a few intersections requiring a turning lane with storage. Table 5 shows that under this scenario most of the intersections on Fifth Avenue would fail or exceed capacity with a road diet. This is largely due to the high volume of traffic on Fifth Avenue during the AM and PM peak hours.







Intersecti	Opera	tions			
on	Time	V/C Rat	io	LOS	
	Peri od	Existi ng	w/Road Diet	Existi ng	w/ Road Diet
Fifth Ave./	AM	1.15	1.41	F	F
Bellefield Ave.	PM	0.82	1.15	С	F
Fifth Ave./	AM	0.56	1.07	F	F
Dithridge St.	PM	0.56	1.35	F	F
Fifth Ave./	AM	1.27	1.30	С	F
Craig St.	PM	0.95	1.65	С	F
Fifth Ave./	AM	0.85	1.22	E	F
Neville St.	PM	0.74	1.27	С	F
Fifth Ave./	AM	0.65	0.97	E	D
Morewoo d Ave	РМ	0.96	1.66	С	F

Table 5 Summary of Operations for Fifth Ave Road Diet







	>	~	٩	Å	p	\$	Ŷ					
Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT	ø9				
Lane Configurations	个	<u></u>	ሻ	4Î	ŕ		4.					
Volume (vph)	36	897	262	185	397	175	0					
Turn Type	To the second	///////////////////////////////////////	Perm		Perm	Perm					- 11-11	outros en correcto tal
Protected Phases	2	6		8			4	9				
Permitted Phases			8		8	4					tanana tana ang tanana tanafa ing dita di	
Detector Phase	2	6	8	8	8	- 4	4					
Switch Phase											the element follow is to the start of the	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1.5				
Minimum Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	38.0	4.0				tanan kar banan karan, dara yanan
Total Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	38.0	4.0				
Total Split (%)	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%	5%				term between one of a start
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0				
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.5				
Lost Time Adjust (s)	-1.6	-1.6	-1.6	-1.6	-1,6	-1.6	-1.6	CHRENZMANNE				
Total Lost Time (s)	3,4	3.4	3.4	3.4	3.4	3.4	3.4					
Lead/Lag												
Lead-Lag Optimize?	1999-1999-1999-1999-1999-1999-1999-199	a fallen ander en ander en allen en al	- 494 (MAREEN (1914 (1915 (1914									
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max				
Act Effct Green (s)	34.6	34.6	34.6	34.6	34.6		34.6					
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43		0.43					
v/c Ratio	0.12	0.77	0.99	0.49	0.51		0.89					
Control Delay	14.7	25.2	73.2	19.5	20.5		46.6					
Queue Delay	0.0	0.3	0.0	0.0	0.0		0.0					-
Total Delay	14.7	25.5	73.2	19.5	20.5		46.6					
LOS	B	С	E	В	С		D					
Approach Delay	14.7	25.5		39.2			46.6					
Approach LOS	В	С		D	an ann a' sharar an 1999 an a	2 (1 ((((((((((((((((((D					
Intersection Summary												
Cycle Length: 80												
Actuated Cycle Length: 80												
Offset: 35 (44%), Reference	ed to phase	2:EBT a	nd 6:WB	T, Start o	f Green			********************				
Natural Cycle: 90												
Control Type: Pretimed					and a former of the of processing side		Second of a first of a			5015).5107704141414		
Maximum v/c Ratio: 0.99	tana Alasha dalam dalam dalam tang tang tang tang tang tang tang tang											
Intersection Signal Delay: 3	3.8	angani angang sang sang sang sang sang sang sa	masalanniitti		ntersectio	on LOS: C			2			
Intersection Capacity Utiliza					and the second se	of Servic	mentioner and recommendation in 1993 or					
Analysis Period (min) 15	e - e e e e e e e e e e e e e e e e e e	orenentatoreta (FIAS			n pasalisti metili da							
	4. A A. P.	.11.421-3 A										
Splits and Phases: 1: Fift	h Ave & Be	menela A	ve		11							1

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38 s	38s	4 :
←		
38 s	38 s	

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SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Under Road Diet Conditions, PM 1: Fifth Ave & Bellefield Ave

	*		_ ₩	F	4	Ł	1	Å	P	\$	Å	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		个			朴 ኈ		ኻ	۹ î	7		4 >	a tha tha better and a directed
Volume (vph)	0	- 36	0	0	897	- 34	262	185	397	175	0	106
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		3.4			3.4		3.4	3.4	3.4		3.4	
Lane Util. Factor	ng mag galadan kabupatan ng k	1.00	urststeinininingin (de		0.95		1.00	0.95	0.95	TRACTORIST	1.00	
Frpb, ped/bikes		1.00			0.98		1.00	0.99	0.96		0.91	
Flpb, ped/bikes	a sind al costa en la caracteriza	1.00			1.00		0.89	1.00	1.00		0.99	
		1.00			0.99		1.00	0.94	0.85		0.94	
Fit Protected		1.00			1.00		0.95	1.00 1516	1.00 1322		0.97 1432	
Satd. Flow (prot)		921			3093		1340	1.00	1.00		0.53	
Flt Permitted		1.00			1.00	NERACINIEURE	0.57 803	1516	1322		0.55 779	inan an Iana A' Long Ia Mari In Mari Mari Mari Mari I Mari Mari Mari
Satd. Flow (perm)		921		4 00	3093				0.95	0.92	0.25	0.76
Peak-hour factor, PHF	0.94	0.75	0.25	1.00	0.91	0.78 44	0.76 345	0.95 1 95	418	190	0.25	139
Adj. Flow (vph)	Ó	48	0	0	986	August See Over States		сет 0	4 IO 0	190 0	0 32	109 0
RTOR Reduction (vph)	0 0	0 48	0 0	0 0	0 1030	0	0 345	320	293	0	297	Ŭ -
Lane Group Flow (vph)	240	40	280	280	10-00	0 240	245	320	293 31	31 31	000209355	245
Confl. Peds. (#/hr)	240 (1993)		200 14	200 Milling Mark		240 9	literio Esterio			Nendersen		сто 7
Confl. Bikes (#/hr) Heavy Vehicles (%)	0%	90%	0%	0%	5%	1%	11%	1%	3%	1%	0%	2%
							Perm		Perm	Perm		
Turn Type Protected Phases		2			1910-000-000-000-000-000-000-000-000-000			8			u on of Sector 4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		33.0			33.0		33.0	33.0	33.0		33.0	and second states
Effective Green, g (s)		34.6			34.6		34.6	34.6	34.6		34.6	
Actuated g/C Ratio		0.43			0.43	, la la la superior de	0.43	0.43	0.43	and a constraint of the second se	0.43	and an and a state of the
Clearance Time (s)		5.0			5.0		5.0	5.0	5.0		5.0	
Lane Grp Cap (vph)		398	purs and the first of the second		1338		347	656	572		337	
v/s Ratio Prot		0.05			c0.33			0.21				
v/s Ratio Perm				ensetsessaa		ngeller igherholden bie	c0.43		0.22	a ni mini ni mini ni ni ni ni ni ni ni ni	0.38	
v/c Ratio		0.12			0.77		0.99	0.49	0.51		0.88	
Uniform Delay, d1	2010 10 10 10 10 10 10 10 10 10 10 10 10	13.6	0919399999999999999999999		19.3	x	22.6	16.3	16.5		20.8	
Progression Factor		1.00			1.10		1.00	1.00	1.00		1.00	
Incremental Delay, d2	0012102001001000000000	0.6			3.5		46.9	2.6	3.3		26.4	
Delay (s)		14.2			24,7		69.5	18.9	19.8		47.2	
Level of Service		В			С		E	В	В		D	an a
Approach Delay (s)		14.2			24.7			37.4			47.2	
Approach LOS		В			С			D			D	
Intersection Summary												
HCM Average Control Delay			32.7	H	CM Level	of Servic)e	1.1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	C			ova kura averara
HCM Volume to Capacity rati	0		0.88									
Actuated Cycle Length (s)			80.0		um of lost			tet en toppten a chandetet fil die offer	10.8		•	aanaanaanaa
Intersection Capacity Utilizati	on		88.4%	IC	CU Level o	of Service			E			
Analysis Period (min)		and a second of the second	15					un de la compañía de		ný rytku doza ú kradý ***		ing a state of the
c Critical Lane Group												

SIGNAL TIMINGS-- Fifth and Forbes Avenues Under Road Diet Condtions, PM

	×		4	4	٩,	Â	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	<u>80</u>
Lane Configurations		4°P	und hunded presided define D4	ብ	*	þ	
Volume (vph)	15	529	14	813	118	83	
Turn Type	Perm		Perm	te an an des l'hons and only a grant de	Perm	nia nime a interview we det	
Protected Phases		4		8		2	9
Permitted Phases	4		8	Alamata hara Awaraw (Shio Ing	2	itaan maraan waxaa maraa fada ah	ан ан маан ан ал ан ал ан
Detector Phase	4	4	8	8	2	2	
Switch Phase	a a covered from to billion beyond of a		second fed and a formula of programmed		sola intermeters sentes se		
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	1.5
Minimum Split (s)	33.0	33.0	33.0	33.0	29.0	29.0	4.0
Total Split (s)	46.0	46.0	46.0	46.0	30.0	30.0	4.0
Total Split (%)		57.5%	57.5%	57.5%	37.5%	37.5%	
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.5
Lost Time Adjust (s)	-1.6	-1.6	-1.6	-1.6	-0.8	-0.8	
Total Lost Time (s)	3.4	3.4	3.4	3.4	5.2	5.2	
Lead/Lag							
Lead-Lag Optimize?	te di la calcular tama di cancerte esti	ners for hundred 1 (100-2015) 2 4 4	an halos na tratten de anglene tra	mined from the second such		rector of the first of the state of the	
Recall Mode	Max	Max	Max	Max	Max	Max	Max
Act Effct Green (s)		42.6		42.6	24.8	24.8	
Actuated g/C Ratio		0.53		0.53	0.31	0.31	
v/c Ratio	er en	0.44	medelele	0.64	0.30	0.57	
Control Delay		22.8		24.4	23.2	20.5	
Queue Delay	en comparate e contra a contra de contra	0.0	TEXASTRATION AND AND AND AND AND AND AND AND AND AN	0.5	0.0	0.0	
Total Delay		22.8		24.9	23.2	20.5	
LOS		С	Excession cost	С	С	C	
Approach Delay		22.8		24.9		21.4	
Approach LOS		С		С		С	
Intersection Summary							
Cycle Length: 80							
Actuated Cycle Length: 80							
Offset: 46 (58%), Reference	d to phase	4·FBTI	and 8 [.] WF	3TL Start	of Gree	٦	
Natural Cycle: 70							
Control Type: Pretimed		TERESCONSERVE	under Heiser	1990 Carlot Carlot Carlot	unsionest de la constant La constant de la constant La constant de la constant de la constant de la constant de La constant de la const La constant de la const La constant de la const La constant de la constant de	energen anderer geheinigen.	ni senengan perangan perangkan perangkan kerangkan kerangkan perangkan perangkan perangkan perangkan perangkan Perangkan perangkan p
Maximum v/c Ratio: 0.64							
Intersection Signal Delay: 2	1999-1999-1999 3 5	1944999000000000	an de la companya angla de La companya angla de la comp	n alla calendaria anna anna anna anna anna anna anna	ntersectio	on LOS: C	anzari mini nini zi ni wana dan bakazi za zana kana biran nini zi ni ni mini na maka wa mazi zaza na zaza ni su Mi
Intersection Capacity Utiliza				and a second	a statiles of all line to compare the	of Service	B
Analysis Period (min) 15	a an	asersistendü	er sette nagionagio	egisteletetetetetetetetetetetetetetetetetet	ne en anti-	un strantin an di Fri	
i nanjene i antee (nimi) i e							
Splits and Phases: 2: Fift	h Ave & Dit	hridge St	t				
L. A		- J= -	秦				A.
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30 s			46 \$				

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SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Under Road Diet Condtions, PM 2: Fifth Ave & Dithridge St

			*	F	·	2	1	Î	p	\$	\$	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ৰ্ব 'ট			eî î>		ሻ	\$				
Volume (vph)	15	529	24	14	813	- 24	118	83	154	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		3.4			3.4		5.2	5.2				
Lane Util. Factor		0.95			0.95		1.00	1.00				1
Frpb, ped/bikes		0.98			0.99		1.00	0.96				
Flpb, ped/bikes		1.00			1.00		0.92	1.00		• Incomes - Acces 10 as aly fac to 10 a 1 alors	., fo fann Namara fo fann fo F annanafara f	
Frt		0.99			1.00		1.00	0.91				
Fit Protected		1.00			1.00		0.95	1.00	- Name Tananga ng Atao Tanana Tanan analang T		name of the residence former operation	mate to the Alternation
Satd. Flow (prot)		2984			3128		1497	1502				
Flt Permitted		0.90			0.93		0.95	1.00	terre and between the second second second	ana and a fana ana fan an fara an fara	ta baalahan mara taati Alama	
Satd. Flow (perm)		2677		ala ola bi angle sinta a Angle si kange si nagi s	2920		1497	1502				
Peak-hour factor, PHF	0.61	0.93	0.75	0.59	0.86	0.80	0.85	0.67	0.88	0.25	0.75	0.25
Adj. Flow (vph)	25	569	32	24	945	- 30	139	124	175	0	0	0
RTOR Reduction (vph)	0	5	0	0	3	0	0	63	0	0	0	0
Lane Group Flow (vph)	0	621	0	0	996	0	139	236	0	0	0	D
Confl. Peds. (#/hr)	173	uda far Varist I farf. Ta sta far han	166	166	1	173	78	waare maarad namet is before 1.4	49	49	e Materia ha Kasta ka ta a Kastilit	78
Confl. Bikes (#/hr)			29			2						
Heavy Vehicles (%)	5%	9%	1%	2%	5%	1%	2%	3%	2%	0%	0%	0%
Tum Type	Perm			Perm			Perm					
Protected Phases		4			8			2		• • Teamore (**********************	-	energinense fresteinens
Permitted Phases	4			8			2					
Actuated Green, G (s)	and a subscription of the second sector of a street of	41.0	na statut da ana mana da b	nan kana tin kana mata	41.0		24.0	24.0		mentrustranstruktion matching and the	h, not not totand marks foot had to dive	wood to preserve the
Effective Green, g (s)		42.6			42.6		24.8	24.8				
Actuated g/C Ratio		0.53		the Learning on a second party of the last	0.53	and the first state of the second	0.31	0.31		and in the same section of the sec	on a second and a second second	
Clearance Time (s)		5.0			5.0		6.0	6.0				
Lane Grp Cap (vph)		1426			1555		464	466				
v/s Ratio Prot								c0.16				
v/s Ratio Perm		0.23			c0.34		0.09		5 - 2012 - 11 - 2016 - 5 M - 12 - 2013 - 21 - 21 - 2013	414 b 411 ³ 4 - 11114 1144 114 1 8 48 44		
v/c Ratio		0.44			0.64		0.30	0.51				
Uniform Delay, d1		11.4			13.3		21.0	22.6		· · · · · · · · · · · · · · · · · · ·		
Progression Factor		1.93			1.68		1.00	1.00				nungan si
Incremental Delay, d2	age by case were built-smaller as yo	0.8			1.6	da Sarang mang mang mang mang mang mang mang m	1.7	3.9	temiştikatorya jaşınko aşaşlarlı	napamka pagta kejara tak	a ka kachanga panjut kapang at kaca	
Delay (s)		22.7			23.9		22.6	26.5				
Level of Service	constitutions (military)	С		The second s		and the provided of the standard standard of the standard standard standard standard standard standard standard	C	C Nikalis sakular		HIND PROFESSION		RAME REPORTS
Approach Delay (s)		22.7			23.9			25.3			0,0	
Approach LOS		С			С			C C			A	
Intersection Summary												
HCM Average Control Delay	d phone for the second	Guident internet word in a root of	23.9	H	CM Level	of Servic	e	edió i vien restaviu in euro a	C	renet plast med kitet star é tre	re di divert seru in du ili suò da	AUXILIARI SANSAS
HCM Volume to Capacity ration	0		0.59									
Actuated Cycle Length (s)	1 (June 10) 100 (June 10) 100 (June 10)	KALE NUMBER OF STREET, ST	80.0	A CHARGE AND A CONTRACTOR OF A CONTRACT OF A	um of lost	A data for a state of the second state of the	n new pour section de die		12.6	nennen geschilte im m		
Intersection Capacity Utilization	on		63.1%	10	U Level o	of Service			B			
Analysis Period (min)	111174(193)Minish122-510	mananan	15					1993 (Sector Sector	and a state of the	nggaalaaanno		1999984Gine
c Critical Lane Group												

SIGNAL TIMINGS-- Fifth and Forbes Avenues Under Road Diet Condtions, PM

	-		4	144 000000	٩,	1	\searrow	↓				
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	ø8			
Lane Configurations	•	ፋጉ		ፈኑ	ሻ	4Î	ኻ	ĵ≽	1			/
Volume (vph)	- 18	647	- 27	682	59	145	107	121				
Turn Type	Perm		Perm		Perm	non ly man cynyn rywydd h fer ynyn	Perm	la hu u na hunnad sana kwakan		alanda daska sanada talini	si sang kang kala kala kala kala kala kala kala kal	
Protected Phases		2		2		4		4	8			
Permitted Phases	2		2		4	and the second	4		to a second s	the strategy and the colours of size	wad waar in Lubalance in sector	
Detector Phase	2	2	2	2	- 4	- 4	4	4				
Switch Phase						and the second state of the		مع الحد الحد الحسوب الحسوبا حول الحسوب وحال ا	entrantent analtan tra benezitati de 2003 estes	weet and the set of the set		
Minimum Initial (s)	25.0	25.0	25.0	25.0	14.0	14.0	14.0	14.0	1.0			
Minimum Split (s)	35.0	35.0	35.0	35.0	31.0	31.0	31.0	31.0	4.0			eren de la la belerada
Total Split (s)	42.0	42.0	42.0	42.0	34.0	34.0	34.0	34.0	4.0			
Total Split (%)	52.5%	52.5%	52.5%	52.5%	42.5%	42.5%	42.5%	42.5%	5%		an and a fact that the first state of the stat	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.0			
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Lead/Lag												
Lead-Lag Optimize?	222 Contrast Contrast Contrast Contrast	and a second	-1476 (1474) - 1476 (1476) - 1476 (1476) - 1476 (1476) - 1476 (1476) - 1476 (1476) - 1476 (1476) - 1476 (1476)									
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max	Max			
Act Effct Green (s)	els répresentation de la serie de la s	36.5	•	36.5	28.5	28.5	28.5	28.5				
Actuated g/C Ratio		0.46		0.46	0.36	0.36	0.36	0.36				
v/c Ratio	angenergenergenergenergenergenergenergen	0.60	- 1000 (1000) (1000 (1000 (1000 (1000 (1000 (1000 (1000 (1000 (1000 (0.71	0.25	0.58	0.45	0.56				
Control Delay		19.0		14.2	21.2	26.4	26.5	26.1				
Queue Delay	and franking inter in som mener	0.0		0.0	0.0	0.0	0.0	0.0			•	
Total Delay		19.0		14.2	21.2	26.4	26.5	26.1				
LOS	212912-10411234444443141444444	В	and in the state of the state o	B	С	С	С	С				
Approach Delay		19.0		14.2		25.5		26.2				
Approach LOS	od wiji a bri si graf an di pana	В	and a faile of the provide of	В	100000000000000000000000	С		С		, , , , , , , , , , , , , , , , , , ,		
Intersection Summary												
Cycle Length: 80											and much second photometry	
Actuated Cycle Length: 80												
Offset: 0 (0%), Referenced	to phase 2	EBWB a	nd 6:, Sta	rt of Gree	en							
Natural Cycle: 70												
Control Type: Pretimed												
Maximum v/c Ratio: 0.71												
Intersection Signal Delay: 1	9.5	oyona ana ba ang bar		II	ntersectio	on LOS: B	1. 1. 1. 2. dalah magni bu					
Intersection Capacity Utiliza				i i i i i i i i i i i i i i i i i i i	CU Level	of Service	•E					
Analysis Period (min) 15	en e					, e, egener, recentle affecti (Ad						
Splits and Phases: 3: Fift	th Ave & Cr	ain St										
opino and rindoes. o. rin		aigot			r i	1.1						1

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42 \$	34 s	4 s

SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Under Road Diet Conditions, PM 3: Fifth Ave & Craig St

(<u>, , , , , , , , , , , , , , , , , , , </u>	Å		\mathbf{i}	4	4	Ł	٩	Î	P	\$	Å	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ፋኈ			€Î Î∌	e gel in fee fee fan her e fef an de fer ean	ኻ	م		5	Þ	tradeotype assort a dealers as
Volume (vph)	18	647	18	27	682	55	59	145	135	107	121	110
ldeal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.5			5.5		5.5	5.5		5.5	5.5	
Lane Util. Factor	inano acia mana kudurutu i meni ita	0.95		an na am na indini wakadani i	0.95	a har ware of the second	1.00	1.00		1.00	1.00	ters of static types (a)
Frpb, ped/bikes		1.00			0.98		1.00	0.93		1.00	0.92	
Flpb, ped/bikes	in a state of the	1.00		una lang nasarang halong kal	1.00	organi madel sin tel da	0.90	1.00		0.92	1.00	pelasaalaastasis
Frt		1.00			0.99		1.00	0.93		1.00	0.93	
Fit Protected		1.00	anan kalan katalah kat	ykalata sulgalyksisi	1.00	daganagayahailan	0.95	1.00	uber ein ter stelle stelle bereiter stelle ber	0.95	1.00	
Satd. Flow (prot)		2994			3040		1459	1438		1472	1380	
Fit Permitted	es de la compose de la comp	0.90			0.86	ing a state of the second s	0.51	1.00		0.48	1.00	columns being
Satd. Flow (perm)		2713			2631		786	1438		747	1380	
Peak-hour factor, PHF	0.70	0.93	0.75	0.54	0.92	0.90	0.86	0.94	0.94	0.89	0.85	0.83
Adj. Flow (vph)	26	696	24	50	741	61	69	154	144	120	142	133
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	746	0	0	852	0	69	298	0	120	275	0
Confl. Peds. (#/hr)	137	NATURA DA	59	59	eta data data data data data data data d	137	159	studiobisistication	138	138		159
Confl. Bikes (#/hr)						10			3.0			1
Heavy Vehicles (%)	33%	9%	5%	3%	6%	6%	3%	7%	3%	4%	5%	12%
Tum Type	Perm			Perm			Perm			Perm		
Protected Phases		2	a na sana kana kana kana k	-	2	n neuropa kenda adalah kebuaran		4		anaroa de inde informa an Arres de inde interna an	4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)	-	36.5	en fersjoeren gewen kommen en in	parases participaries (partie	36.5		28.5	28.5		28.5	28.5	dentrativenteta
Effective Green, g (s)		36.5			36.5		28.5	28.5		28.5	28.5	
Actuated g/C Ratio		0.46			0.46	ana sa ka	0.36	0.36	delicitation and the	0.36	0.36	
Clearance Time (s)		5.5			5.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)		1238			1200		280	512		266	492	
v/s Ratio Prot								c0.21			0.20	
v/s Ratio Perm	siyya yaqaq myaqada radaga g	0.27	sanitrinnsians		c0.32	water course stickings	0.09		adesdelvenari	0.16	underige Margeoni	den ar 1990 an
v/c Ratio		0.60			0.71		0.25	0.58		0.45	0.56	
Uniform Delay, d1		16.3		FINER OF STREET	17.5		18.2	20.9	izhanzanista (da)	19.8	20.7	
Progression Factor		1.02			0.66		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.0	King and Marine		2.2		2.1	4.8		5.4	4.5	zosto mesto totalo do DESTRUCTOR CONTRA
Delay (s)		18.6			13.8		20.3	25.7		25.2	25.2	
Level of Service		B			B			C 24.7		C International	C 25.2	
Approach Delay (s)		18.6			13.8	in a san sa					IN THE REPORT OF COMPACE INCO.	
Approach LOS		В			В			С			С	
Intersection Summary												
HCM Average Control Delay			18.9	H	CM Level	of Servic	æ		B		*******	dint is in the first part in one
HCM Volume to Capacity rati	0		0.65				nuine de meire. Seguere de meire					
Actuated Cycle Length (s)	na india fan ante an eren er	/////	80.0		um of lost		talasta verito sito ini i		15.0			dama an an an da a
Intersection Capacity Utilizati	on		90.7%	1C	U Level o	of Service			E			
Analysis Period (min)			15			Papelse first transmission, down in faces with		253 6143553 626269 636269 10		the by a part of source ways	alla Districture de constante	-
c Critical Lane Group												

SIGNAL TIMINGS-- Fifth and Forbes Avenues Under Road Diet Condtions, PM

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	ø8
Lane Configurations		đ þ		ፋ የ		4		ب	ሻ	
Volume (vph)	135	744	60	577	6	140	92	99	181	
Turn Type	pm+pt		Perm		Perm		Perm		Perm	
Protected Phases	1	2		6		4		4		8
Permitted Phases	2		6		4		4		4	ومن و معالماً المالية المالية المراجع و من و من و من و من المالية المالية المالية المالية المالية الم
Detector Phase		- 2	6	6	4	4	4	4	- 4	
Switch Phase							a ja kan ji kanan ji an kana ja a panang par		na partita i increasing a di tanga 16 gan ing	Wang and a start of the
Minimum Initial (s)	4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0
Minimum Split (s)	8.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	5.0
Total Split (s)	7.0	41.0	34.0	34.0	35.0	35.0	35.0	35.0	35.0	4.0
Total Split (%)	8.8%	51.3%	42.5%	42.5%	43.8%	43.8%	43.8%	43.8%	43.8%	5%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	- 3.0
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.8	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	0.8	
Total Lost Time (s)	4.8	4.4	4.4	4.4	4.4	4.4	4.4	4.4	6.8	
Lead/Lag	Lead		Lag	Lag						
Lead-Lag Optimize?	Yes		Yes	Yes						
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	anna ann an ann an ann an an ann an an a	36.6		29.6		30.6		30.6	28.2	
Actuated g/C Ratio		0.46		0.37		0.38		0.38	0.35	
v/c Ratio		1.13		0.86		0.59		0.59	0.49	
Control Delay		91.2	ETRINCISIE CENT TATALAN	45.7		24.6		27.0	24.9	
Queue Delay		0.0		0.0		0.0		0.0	0.0	
Total Delay		91.2		45.7		24.6		27.0	24.9	
LOS		F		D		С		С	С	
Approach Delay		91.2		45.7		24.6		26.0		
Approach LOS		F		D		С		С		
Intersection Summary										
Cycle Length: 80						ana kanalar tan pangang pinagang pa				where the second sec
Actuated Cycle Length: 80										
Offset: 0 (0%), Referenced	to phase 6	WBTL, S	tart of Gr	een			Course out and provide and a summary of			
Natural Cycle: 85									n in Andri Son an Angr Senta Angra San Angr	
Control Type: Pretimed										in yeste faitheen ja tyyseene eelen ja ohtymeelen konnennen konnynpoor hetyd ogs
Maximum v/c Ratio: 1.13										
Intersection Signal Delay: 5	57.2				ntersectio	and a second state of the state of the state of the state of the state	get) werded twee are confirm	and a large later of the	s to bis las rais filminist i	
Intersection Capacity Utiliza	ation 106.6 ⁰	6		l l	CU Level	of Servic	e G			
Analysis Period (min) 15										
	11. A O 34									
Splits and Phases: 4: Fif	th Ave & Ne	eville St								

	V ø4	ÅÅ
41 s	35 s	4 s
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SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Under Road Diet Condtions, PM 4: Fifth Ave & Neville St

	A	>>	~>		<u></u>	×.	٩	Â	P	1	₿ 	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ર્લ છે			ፈ ጉ»			4	igalga (nakilin meninjag gan	ndaga tertari serien d	ର୍ଶ	ሻ
Volume (vph)	135	744	10	60	577	39	6	140	155	92	99	181
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.4			4.4			4.4			4.4	6.8
Lane Util. Factor	to define products definition of the	0.95	DED BEREKEN STATE	THE REPORT OF THE PARTY OF THE	0.95		nyasalo posiolisisti da	1.00			1.00	1.00
Frpb, ped/bikes		1.00			0.99			0.97			1.00	0.95
Flpb, ped/bikes	SING PROFESSION	1.00		an and a second starting the	1.00			1.00		and a second	0.99	1.00
Frt		1.00			0.99			0.94			1.00	0.85
Fit Protected		0.99	N HERREN PORTSON	an a	1.00	urgeruiztőjei bisztjáni	n sisto Paris versio s	1.00			0.98	1.00
Satd. Flow (prot)		3083			3145			1578			1618	1286
Flt Permitted		0.60			0.74			0.98		THE SUBSCRIPTION OF THE SUBSCRIPTON OF THE SUBSCRIPTION OF THE SUB	0.63	1.00
Satd. Flow (perm)		1878			2354			1553		- -	1040	1286
Peak-hour factor, PHF	0.82	0.90	0.58	0.80	0.92	0.77	0.38	0.84	0.94	0.79	0.84	0.81
Adj. Flow (vph)	165	827	17	75	627	51	16	167	165	116	118	223
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1009	0	0	753	0	0	348	0	0	234	223
Confl. Peds. (#/hr)	103	u se en el se e	60	60	TINHT DATA AND	103	38		64	64		38
Confl. Bikes (#/hr)						8					~~	5
Heavy Vehicles (%)	17%	4%	0%	0%	3%	2%	0%	0%	0%	8%	0%	10%
Tum Type	pm+pt			Perm			Perm			Perm		Perm
Protected Phases	1 1	2			6			4	SAN DAN DAN DAN DAN DAN DAN DAN DAN DAN D	a Boolean San	4	propa acquin ideality in New York and the second
Permitted Phases	2			6			4			4		4
Actuated Green, G (s)	STATES CONTRACTOR	39.0	weet the second		32.0			29.0			29.0	29.0
Effective Green, g (s)		40.6			33.6			30.6			30.6	28.2
Actuated g/C Ratio		0.51		-	0.42			0.38			0.38	0.35
Clearance Time (s)		6.0			6.0			6.0			6.0	6.0
Lane Grp Cap (vph)	and the second statement of the second s	1022	Antoineineineineineinei	olanogangio (decisio)	989		ogeographicited	594		nsmerini	398	453
v/s Ratio Prot		c0.06										
v/s Ratio Perm	1999-1997 STATISTICAL STREET	0.44	n pilsiessaan seessaa		c0.32		THE REPORT OF THE	0.22	i de la companya de l	htsiittiin lipiki	c0.23	0.17
v/c Ratio		0.99			0.76			0.59			0.59 19.7	0.49 20.3
Uniform Delay, d1		19.4			19.8	an a survey of the second s		19.7		-	19.7	1.00
Progression Factor		0.92			1.67			1.00 4.2			6.2	1.00 3.8
Incremental Delay, d2	a pa hada, bal'na og kanta ka alferta a	23.0			2.8			egos (ye he hange he (ang he hy commendation)			25.9	24,1
Delay (s)		40.9			35,8			23.8 C			چى 20.9	۲ ۹ .۱ C
Level of Service		D			D 35,8			23.8			25.0	
Approach Delay (s)		40.9			- 33,0 D	NACES OF COMPANY		23.0 C			<u>دی</u> ۲	
Approach LOS		D			U		112 - 1170 - 1170 - 1170 - 1170 - 1170 - 1170 - 1170 - 1170 - 1170 - 1170 - 1170 - 1170 - 1170 - 1170 - 1170 -	U.			U .	onomáslasztekterésztésé
Intersection Summary												
HCM Average Control Delay			34.3	Н	CM Leve	l of Servic	æ		С	A 1717 1 1017 1 A 10 10 10 10 10 10 10		
HCM Volume to Capacity rat	io		0.72									
Actuated Cycle Length (s)			80.0		um of los				13.2	Augusta in the set of several set	*****	
Intersection Capacity Utilizat	ion		106.6%	l IC	CU Level	of Service			G			
Analysis Period (min)	and an an end of All States and a state of a	e W hele I schop des Includies I school of	15		ananang malakan kalakan sa sa	Certaration of the second second	ter a statute a terrar de la secta en a primi de la secta de la	+ (4 critica casa tano antena	CARGINESS COMPANY	1999-00-00-00-00-00-00-00-00-00-00-00-00-	airaa iy witteraa taacee	XXXXIII XXXXXIII XXXXIII XXXXXX
c Critical Lane Group							NUCCESSION					

SIGNAL TIMINGS-- Fifth and Forbes Avenues Under Road Diet Condtions, PM

	٨	ip	*	<	4	î	P	1	Ļ	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	ø9
Lane Configurations	14-1	র্নাট	totente a sulta inizia	ብ î	estensos sécurito internativalis;	র্ধ	ř	۲	þ	
Volume (vph)	23	933	79	723	37	248	289	77	257	
Turn Type	Perm		pm+pt	and the strength we dealed a discussion	Perm		Perm	Perm		i genere ing di na mina kant da mana kant da kang ing kang
Protected Phases		2	5 W A 4	6		8			4	9
Permitted Phases	2		6	non-constantin (sector) (sector)	8	a the second	8	4	rour Marginets in 1990 i 1993	
Detector Phase	2	2	ti de seu t e	6	8	8	8	4	4	
Switch Phase			المرود وروا ومعمور ومعرف المرود	ware and the second second second			ng saturation and a static generation of the	a langa karangan da sarang ni baranga	a sesse a production of the second	
Minimum Initial (s)	15.0	15.0	4.0	15.0	7.0	7.0	7.0	7.0	7.0	1.0
Minimum Split (s)	40.0	40.0	8.0	45.0	29.0	29.0	29.0	29.0	29.0	5.0
Total Split (s)	40.0	40.0	8.0	48.0	28.0	28.0	28.0	28.0	28.0	4.0
Total Split (%)	50.0%	50.0%	10.0%	60.0%	35.0%	35.0%	35.0%	35.0%	35.0%	5%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.6	-1.6	0.0	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	
Total Lost Time (s)	4.4	4.4	4.0	4.4	4.4	4.4	4.4	4.4	4.4	prostanting to a process process on prostance of the design of American American American Statements for the
Lead/Lag	Lag	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes				an a state of the	الريادية والأروادية والمراجع	e - La - Je a man franke trime	- terry or we start and a start of the second start of the second start of the second start of the second start
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max
Act Effct Green (s)		35.6		43.6		23.6	23.6	23.6	23.6	a ta sension particular that has been been to be an advertised of the sense of the
Actuated g/C Ratio		0.44		0.54		0.30	0.30	0.30	0.30	
v/c Ratio		0.94		0.86		0.94	0.67	0.64	0.64	an a constant and a sub-statement to the side of the sub-shift in the sub-statement of the sub-
Control Delay		35.9		24.0		63.3	21.5	47.2	30.2	
Queue Delay		0.0		0.0	•	0.0	0.0	0.0	0.0	۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۶۰۰ - ۲۶۰۰ - ۲۶۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰
Total Delay		35.9		24.0		63.3	21.5	47.2	30.2	
LOS		D		С		E	С	D	С	a 1444-1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 -
Approach Delay		35.9		24.0		44.1			34.1	
Approach LOS		D		С		D			С	
Intersection Summary										
Cycle Length: 80				*****						
Actuated Cycle Length: 80										
Offset: 0 (0%), Referenced	I to phase 2	EBTL. SI	art of Gr	een		la filipela ang si sa		(west) of a 1 mod wave of a second		
Natural Cycle: 85										
Control Type: Pretimed	n an	(Y+5161) (S+10) (S+510) (S	7590127209511517675471		1912-1912-1919-1919-1919-1919-1919-1919		222941494048484949494		1997-1997-1997-1997-1997-1998-1998-1998-	an na manana an a
Maximum v/c Ratio: 0.94										
Intersection Signal Delay:	33.6	alayaa ku seebeele	an Sigan ang Sigan	electrological sectors	ntersectio	n LOS: C	k Lines geneteel ei vite gegengenge L			
Intersection Capacity Utiliz		%			CU Level	and all as a second start as a fill shart to the start of second start as	the formed framework present of the state of the			
Analysis Period (min) 15		anen de Billion	loivenssi oleiloitellij	ESECTIVE STREET			-escalation of the PACE of the PACE	in and an		
racing of a crow frainty to										
Splits and Phases: 5: Fi	fth Ave & M	orewood	Ave							
			-			1	I.			

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83		40 s	1000		4 s	1200
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48	s					

SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Under Road Diet Conditions, PM 5: Fifth Ave & Morewood Ave

	A	>>	À	st and a start of the start of	4		٩		P	1	ŧ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ፋኈ			ብ ኈ			র্ধ	7	٢	þ	natural de competent
Volume (vph)	23	933	78	79	723	111	37	248	289	77	257	40
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4,4			4,4			4,4	4.4	4,4	4,4	
Lane Util. Factor		0.95		hourse sound to be set of the	0.95		SERVICENEN	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.98			0.99			1.00	0.83	1.00	0.98	
Flpb, ped/bikes		1.00			1.00			0.99	1.00 0.85	0.93	0.97	
		0.99			0.98			0.99	1.00	0.95	0.97 1.00	
Flt Protected		1.00			1.00 3158			1694	1220	1536	1665	
Satd. Flow (prot)		3115			0.66			0.77	1.00	0.31	1.00	
Flt Permitted		0.89			2097			1319	1220	506	1665	
Satd: Flow (perm)		2766	0.00			0.02	0.71	0.79	0.93	0.81	0.97	0.75
Peak-hour factor, PHF	0.63	0.92	0.68	0.89	0.87 831	0.93 119	52	314	311	95	265	53
Adj. Flow (vph)	37	1014	115	89	001 11	0	52 0	0 0	101	33 0	203 9	0
RTOR Reduction (vph)	0 0	10 1156	0 0	0 0	1028	0	0	366	210	95	309	Ö
Lane Group Flow (vph)	34	EE 11 30 EE	0 72	72	1020	34	59		115	115		59
Confl. Peds. (#/hr)			12 Normanie	r - Uningenere		6			17			10
Confl. Bikes (#/hr)	3%	2%	13%	2%	2%	1%	2%	2%	1%	1%	1%	0%
Heavy Vehicles (%)	Perm	2 /0 Ferminis		pm+pt			Perm		Perm	Perm		
Turn Type Protected Phases	генн	2		рш: р. 1	6			8			4 4	- CANERADA
Protected Phases	2	ل الأرادية (1996)		6			8		8	4		
Actuated Green, G (s)		38.0			46.0			22.0	22.0	22.0	22.0	19946423776130190
Effective Green, g (s)		39.6			47.6	A REAL PROPERTY AND A REAL		23.6	23.6	23.6	23.6	
Actuated g/C Ratio		0.50			0.60	Carlo Andreas and an	(4)\$\$rad/Abstaciae	0.30	0.30	0.30	0.30	iningati di distante.
Clearance Time (s)		6.0			6.0			6.0	6.0	6.0	6.0	
Lane Grp Cap (vph)		1369			1322			389	360	149	491	
v/s Ratio Prot					c0.05						0,19	
v/s Ratio Perm		c0.42		(SHODIAL BARRISS)	0.41	and a second second second		c0.28	0.17	0.19	na ning ng papitolog ng 1210	
v/c Ratio		0.84			0.78			0.94	0.58	0.64	0,63	
Uniform Delay, d1		17.5	112261142001922193	en leielein phan an seite	12.2	GREENING CONTRACTORS	ngny specific contracts	27.5	24.0	24.5	24.4	
Progression Factor		1.38			1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	Song Cardina and Andrewsin ()	2.4	200503 double de la reserve	ang napa di di di di di di di	4.6	an a		32.9	6.8	19.0	6.0	
Delay (s)		26.6			16.8			60.4	30.8	43.5	30.4	
Level of Service		С			В			E	С	D	С	
Approach Delay (s)		26.6			16.8			46.8			33.4	
Approach LOS		С			В			D			С	
Intersection Summary									-			
HCM Average Control Delay	100/2701010101010101010	ana mangalanga sarata an ana	28.5	H	CM Leve	l of Servic	e Mataganatas	TRANSPORT	C			133320000000
HCM Volume to Capacity rat	O		0.90									
Actuated Cycle Length (s)			80.0			t time (s)	16/510/10/10/10/10	yyggeoone.	13.2		A Sept Spice moderne	
Intersection Capacity Utilizati	on		109.2%	10	CU Level	of Service			H			
Analysis Period (min)	ana a parte and defend a	e anto a la l	15	errene en		nnigrageansa	en e	gapposisse	TENESSION	-	NARRA ZARAKATA (<u>Harriste</u> rse
c Critical Lane Group												

	٨	\$>	*		4	Å	\$	Å			
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	ø9		
Lane Configurations	ሻ	۾		ፈኑ	ሻ	Þ	in for high statement of the state of the	\$	ekona basta bakta kala kasala kasaja		
Volume (vph)	165	685	4	179	34	70	164	10			
Turn Type	pm+pt		Perm		Perm	e pa come do a manuel por met i finat	Perm	metalan ing and and and	d o la se acadesca i sitera i caracte i in	and a second	ere no start data inizia inizia
Protected Phases	5	2		6		8		4	9		
Permitted Phases	2		6		8		4	in any according to be in the local state of the	ha han i haaraana la haaraana he yo haraa	indun dama kana dalam kana dama dama dama da	e-e-sealered alterated and and and
Detector Phase	5	2	6	6	8	8	4	4			
Switch Phase							and the local state of the stat		ر مى		
Minimum Initial (s)	5.0	4,0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Minimum Split (s)	14.0	50.0	30.0	30.0	33.0	33.0	33.0	33.0	8.0		
Total Split (s)	14.0	50.0	36.0	36.0	40.0	40.0	40.0	40.0	8.0		
Total Split (%)	14.3%	51.0%	36.7%	36.7%	40.8%	40.8%	40.8%	40.8%	8%		
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0		
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0		
Lost Time Adjust (s)	0.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lead/Lag	Lead		Lag	Lag							
Lead-Lag Optimize?	eerden terbere en in de stad van de fan de fan de fan de fan de stad de fan de stad de fan de fan de fan de fa	1119-19-19-19-19-19-19-19-19-19-19-19-19	in politicitan en esperant fair avej in	alan oʻlini parto di sato d a oʻn pa		AB ABABABA A ABABABA A ABABA A ABABA					
Recall Mode	Max	C-Max	C-Max	C-Max	Min	Min	Min	Min	None		
Act Effct Green (s)	54.0	54.0	و (و هما المرابع (مورد المرابع (مورد المرابع (المرابع	32.0	36.0	36.0		36.0			
Actuated g/C Ratio	0.55	0.55		0.33	0.37	0.37		0.37			
v/c Ratio	0.36	0.86		0.42	0.18	0.45		1.02			
Control Delay	13.4	30.3		27.9	22.8	18.5		91.5			
Queue Delay	0.0	0.0	ala da mana kana sa mata ya a	0.0	0.0	0.0		0.0	,		
Total Delay	13.4	30.3		27.9	22.8	18.5		91.5			
LOS	B	C	an a state a sense ta an tartanan	C	С	В	and definition of where y	F		-1472-000-0-09-004-0049-0044-0	, 1999 (and 1999 () and 1999 () and 1999 () a
Approach Delay		27.1		27.9		19.5		91.5			
Approach LOS	rorinanissis (keristaaliya)	С		С		B	94949999999999999999999999999999999999	F	e forma na fan na ministra an an an	an iya a markiya a	
Intersection Summary											
Cycle Length: 98						an an age for a form, a food ongoing these lines	ne for tenancies for factor (see surgers	141-141-141-141-141-141-141-141-141-141	1 - 1 - 1 - 1		www.enviorentication.com
Actuated Cycle Length: 9	8										
Offset: 20 (20%), Referer	nced to phase	2:EBTL	and 6:WE	3TL, Starf	of Greer	1					and a first tax and a start of the first tax to be the start
Natural Cycle: 95											
Control Type: Actuated-C	oordinated										
Maximum v/c Ratio: 1.02											
Intersection Signal Delay	: 35.8		., .s.sereseletegegelid	h	ntersectio	n LOS: D					
Intersection Capacity Util		6		la de la de la della de la della d	CU Level	of Servic	e H				
Analysis Period (min) 15	g sengen televit vela fittili - tvikili	opter en			-,	and a second					
Splits and Phases: 6: F	orbes Ave &	Craig St									
upato anu i nabub. U. P E s	0.000 / 00 U	Jung Or			11						1

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5D s	40 s	8 s -
≠ ø5 ₹ ø6	# ø 8	
14 s 36 s	4 0 <i>s</i>	

SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Under Road Diet Condtions, PM 6: Forbes Ave & Craig St

	and the second	>	>	*	4	Ł	٩	Ť	p	\$	Å	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ካ	۾		and a second	eî îb	characterization in schedule scheres	ሻ	\$	ázar el manorolaritori artano	 maximizinini zmlr 	<i>ф</i> >	ter en for en of the full terrory
Volume (vph)	165	685	- 13	4	179	84	- 34	70	81	164	10	41
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0			4,0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00	anter and the second second	IN INTRODUCTION ADDRESS	0.95	Andrease and the second se	1.00	1.00	RESEARCH CO. LANSING MILLION		1.00	anathisysteel.
Frpb, ped/bikes	1.00	0.99			0.83		1.00	0.73			0.95	
Flpb, ped/bikes	0.88	1.00	NAMES OF THE PARTY	lahaken Mikeresen	1.00	tere constant from	0.89	1.00		Marking and Source	0.77	salaperný tales Katricki.
Fit	1.00	1.00			0.95		1.00	0.92			0.97	
Flt Protected	0.95	1.00		digi gili anciadanta a	1.00		0.95	1.00	usprizzairenden	deserver also de	0.97	
Satd. Flow (prot)	1416	1648			2404		1460	1152			1156	
Flt Permitted	0.46	1.00		redoration register provide Land	0.94		0.63	1.00	Second	erpendend	0.59	
Satd. Flow (perm)	682	1648			2257	MININGATE	962	1152			702	
Peak-hour factor, PHF	0.91	0.90	0.71	0.56	0.86	0.88	0.54	0.75	0.70	0.84	0.55	0.68
Adj, Flow (vph)	181	761	18	7	208	95	63	93	116	195	18	60
RTOR Reduction (vph)		0	0	0	0	0	0	46	0	0	10	0
Lane Group Flow (vph)	181	779	0	0	310	0	63	163	0	0	263	0
Confl. Peds. (#/hr)	260	nistastistast	144	144		260	170	Spilepartersidentics	235	235		170
Confl. Bikes (#/hr)					adalaa ka k	8			10			
Heavy Vehicles (%)	3%	5%	1%	1%	14%	1%	1%	1%	1%	1%	1%	12%
Tum Type	pm+pt			Perm			Perm			Perm		
Protected Phases	5	2		-	6			8			4	and the second se
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	53.0	53.0	Alaran da alaran da ara	n ingen etter Leisisispesitis	31.0		35.0	35.0			35.0	skyrrasteri
Effective Green, g (s)	53.0	54.0			32.0		36.0	36.0	SUM DELCEMENTS		36.0	
Actuated g/C Ratio	0.54	0.55		Regeneration	0.33		0.37	0.37		alaista kaisin	0.37	
Clearance Time (s)	4.0	5.0			5.0		5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0	and the states and	3.0	3.0			3.0	arinigrafiji
Lane Grp Cap (vph)	504	908			737		353	423			258	
v/s Ratio Prot	0.07	c0.47	omananga seria	0.09.01410-0014194116	ngeologia manya caladi	wad interint distant		0.14				et distriction of the
v/s Ratio Perm	0.13				0.14		0.07				c0.37	
v/c Ratio	0.36	0.86			0.42		0.18	0.39		-	1.02	AMAGERAD
Uniform Delay, d1	12,1	18.7			25.8		21.0	22.9			31.0	
Progression Factor	1.00	1.00	essistentian (scholadala Susara susara		1.00		1.00	1.00			1.00	
Incremental Delay, d2	2,0	10.3			1.8		0.2	0.6			61.0	
Delay (s)	14.1	29.0			27.5		21.2 C	23.4			92.0	INNER INTERNET
Level of Service	B	C C	WIEG HEWIDEN AN		07 E		See Constant	00.0			00 A	
Approach Delay (s)		26.2	HERE		27.5			22.9			92.0	
Approach LOS		C			C			С			Г	
Intersection Summary												
HCM Average Control Delay			35.8	H	CM Level	of Servic	e		D			
HCM Volume to Capacity rati	0		0.92									
Actuated Cycle Length (s)			98.0	Si	um of lost	time (s)			8.0			
						August Addated in the state of the second	DZ SS SKIELS SKIETS I ST	ALINA MONTH OF A DESCRIPTION OF A DESCRI			ويترجون وبرجون كيوتر تدريك	
Intersection Capacity Utilizati	on	a far an	110.1%		U Level a) 	1967)923(4)(579)573	H		n na shekarar na shekarar	

c Critical Lane Group

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*	F 53	P. C. T.	13/03/25	COL
Lane Group	EBL	EBT	WBT	SBL V
Lane Configurations	" 	ل ه ميم	ۇ مىم	
Volume (vph)		943	252	64
Turn Type	Perm		r.	4
Protected Phases		2	6	1995) 1997 1997 1997
Permitted Phases	2 2	2		4
Detector Phase			6	4.00
Switch Phase	000	00.0	000	7,0
Minimum Initial (s)	30.0	30.0	30.0	
Minimum Split (s)	35.0	35.0	35.0	16.0
Total Split (s)	60.0	60.0	60.0	16.0
Total Split (%)	75.0%	75.0%	75.0%	20.0%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1,0	-1,0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?	went were to the fact of the second	da marti del homeno di	tariere una sel tatu belesi (à	
Recall Mode	Max	Max	Max	None
Act Effct Green (s)	59.9	59.9	59.9	10.9
Actuated g/C Ratio	0.79	0.79	0.79	0.14
v/c Ratio	0.01	0.84	0.23	0.54
Control Delay	3.0	15.6	3,4	39.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.0	15.6	3.4	39.1
LOS	Α	В	Α	D
Approach Delay		15.5	3.4	39,1
Approach LOS		В	A	D
Intersection Summary				
Cycle Length: 80				
Actuated Cycle Length: 75	.3			
Natural Cycle: 80				
Control Type: Semi Act-Ur	ncoord			
Maximum v/c Ratio: 0.84	ngan magalapan manalakan		en de la company de la com	
Intersection Signal Delay:				ľ
Intersection Capacity Utiliz	ation 43.2%) gepeletetetetetetetetetetetetetetetetetet	ander Materiale) Kelenassandet
Analysis Period (min) 15				

Splits and Phases: 7: Forbes Ave & Hamburg Hall

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	۲	ৰ্ব	f >		\$ \$	
Volume (vph)	1	943	252	0	64	36
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	0.95	0.95	1.00	There is the standard state of the second state of	1.00	
Frpb, ped/bikes	1.00	1.00	1.00		0.98	
Flpb, ped/bikes	0.92	1.00	1.00	و الم الحالية (موادا محمد محمد المحمد ا	1.00	
Ert	1.00	1.00	1.00		0.95	
Fit Protected	0.95	1.00	1.00	a na seconda de la compañía de la co	0.97	
Satd. Flow (prot)	1446	1583	1606		1588	
Flt Permitted	0.58	1.00	1.00	in a survey or a large state of the large state	0.97	
Satd. Flow (perm)	881	1583	1606		1588	
Peak-hour factor, PHF	0.25	0.90	0.85	0.25	0.80	0.82
Adj. Flow (vph)	4	1048	296	0	80	44
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	4	1048	296	0	124	0
Confl. Peds. (#/hr)	139			139	156	
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	0%	5%	9%	0%	0%	0%
Turn Type	Perm					
Protected Phases		2	6	**********************	4	n 1972 a 1979 for the formation in the second se
Permitted Phases	2		Repeated			
Actuated Green, G (s)	58.0	58.0	58.0		8.4	
Effective Green, g (s)	59.0	59.0	59.0		9.4	
Actuated g/C Ratio	0.77	0.77	0.77		0.12	Managangana na mangana ang matang ang ang ang ang ang ang ang ang ang
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)	680	1222	1240		195	
v/s Ratio Prot		1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -	0.18		c0.08	
v/s Ratio Perm	0.00	0.66				
v/c Ratio	0.01	0.86	0.24		0.64	
Uniform Delay, d1	2.0	5.9	2.4		31.9	
Progression Factor	1.00	1.00	1.00	igi di Njagji (vi anna di shekara)	1.00	
Incremental Delay, d2	0.0	7.9	0.5		6.6	
Delay (s)	2.0	13.8	2.9		38.5	
Level of Service	A	B	A		D	
Approach Delay (s)	a statististististististististististististi	13.7	2.9	1. THE REPORT OF THE REPORT OF THE REPORT OF	38.5	NUMBER OF A DESCRIPTION OF A
Approach LOS		B	A		D	
	personal and the second second second					
Intersection Summary			40.0		21/1	
HCM Average Control Delay			13.6	H(IN Leve	I of Service B
HCM Volume to Capacity ratio) 53553000000000	usiyasiasiasi	0.83			
Actuated Cycle Length (s)			76.4			t time (s) 8:0
Intersection Capacity Utilization) ព នាខាន់ (សារ	e son big (de bier dies	43.2%	IC	U Level	of Service A
Analysis Period (min)			15			terk leh en en die die het die het die aller die die hen nede die die het die die het die het het het het het h

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SIGNAL TIMINGS-- Fifth and Forbes Avenues Under Road Diet Condtions, PM

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø8				
Lane Configurations	ካ	ŕ	个	ሾ	ሻ	7		Leszialtzaros			
Volume (vph)	292	630	265	161	419	79					
Turn Type	pm+pt			Perm		custom	energen hander filmbaldabberg (100		1		orten had and date (CODE)
Protected Phases	5	2	6		4	4	8				
Permitted Phases	2			6	el menera i palanta i la lescovorene	4	re wrether out in a linear second and a state the line in a second second second second second second second s			n linn na state to the state of the state	the state of the second st
Detector Phase	5	2	6	6	4	4					
Switch Phase		entre dana dan sebelari se	-	ja kysista in tel televeneta ing			sistement interviewent als kapet als jag				an an air an
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	4.0				
Minimum Split (s)	16.0	16.5	16.5	16.5	38.0	38.0	22.0	terahi di sua da matu carata	and a distance we share the	ennegel exemple in a fille of the	
Total Split (s)	18.0	49.0	31.0	31.0	38.0	38.0	22.0				
Total Split (%)	16.5%	45.0%	28.4%	28.4%	34.9%	34.9%	20%	(profesioldshiets)			NIPPLI INTENNES
Yellow Time (s)	2.0	4.0	4,0	4.0	4.0	4.0	2.0				
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0				enere le certer
Lost Time Adjust (s)	1.0	0.0	0.0	0.0	0.0	0.0					
Total Lost Time (s)	3.0	6.0	6.0	6.0	6.0	6.0	Ananany tamananjalajaja	na da katan katan da kata da katan da		Accumulation and a second	x nangangan dan dan dari
Lead/Lag	Lead		Lag	Làg							
Lead-Lag Optimize?	Yes		Yes	Yes		ad an integration of the state of the state	a se legel produktion produktion produktion produktion produktion produktion produktion produktion produktion p	PERCENTIAL PROPERTY OF LTD			alaan keskal keska
Recall Mode	None	Min	Min	Mìn	None	None	None				
Act Effct Green (s)	46.1	43.0	25.0	25.0	30.5	30.5			ten and a state of the state	lan sina artista radisi mbaltar	web-web-web-
Actuated g/C Ratio	0.54	0.50	0.29	0.29	0.36	0.36					
v/c Ratio	0.66	0.83	0.62	0.58	0.78	0.20	nadadoninia	NARONA IN STOCCOR DRIVING AND	(inter contractive contractions)	na posta posta posta posta de consta de c	ACCESSION OF THE OWNER OF THE OWN
Control Delay	18.9	29.0	33.4	34.1	35.5	20.1					
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0					186282855
Total Delay	18.9	29.0	33.4	34.1	35.5	20,1					
LOS	B	C	С	С	D	С) A TERRETA CONTRACTOR (1993) A 1993 A 1993 A			to sign and sources starting	anana sa
Approach Delay		25.7	33.7		32.8						
Approach LOS		С	С		С						
Intersection Summary											
Cycle Length: 109											
Actuated Cycle Length: 85.6											
Natural Cycle: 105											
Control Type: Actuated-Unc	oordinatee										
Maximum v/c Ratio: 0.83		undanda sanaya			WARISER MERINE	anali shaqanin		ana si kasa si			
Intersection Signal Delay: 2	95				ntersectio	n LOS: C					
Intersection Capacity Utiliza						of Service	C		renduscanacia		
Analysis Period (min) 15											
randyoloa chou thing to		panen filter i Diani (200 1973) - Angel Carlos (200 1973) - Angel Carlos (200				ourandes saides	199990951923219292				NAMABIANS

Splits and Phases: 8: Forbes Ave & Morewood Ave

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Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	ሻ	Ł	4	1	ሻ	ř	
Volume (vph)	292	630	265	161	419	79	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	3.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	0.86	1.00	1,00	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	
En	1.00	1.00	1.00	0.85	1.00	0.85	
Fit Protected	0.95	1.00	1.00	1.00	0.95	1.00	nya resena se sa tuka tuka se ta sa sa ta sa ta sa
Satd. Flow (prot)	1606	1667	1651	1259	1646	1390	
Fit Permitted	0.38	1.00	1.00	1.00	0.95	1.00	na ka sakan wanisi mai misi na kata ka sing kata ya kata ya kata ya kata na kata ya kuma kata ya kata ya kata y
Satd: Flow (perm)	645	1667	1651	1259	1646	1390	
Peak-hour factor, PHF	0.87	0.91	0.88	0.78	0.91	0.81	
Adj, Flow (vph)	336	692	301	206	460	98	
RTOR Reduction (vph)	0	0	0	0	0	0	ner a werne stere vereier, en je angena jest an ter
Lane Group Flow (vph)	336	692	301	206	460	98	
Confl. Peds. (#/hr)	69		a na servetar v požeta kutacita com Azia	69	174	763	
Confl. Bikes (#/hr)				1		3	
Heavy Vehicles (%)	2%	5%	6%	2%	1%	7%	
Turn Type	pm+pt			Perm		custom	
Protected Phases	5	2	6		4	4	
Permitted Phases	2			6		4	
Actuated Green, G (s)	43.0	43.0	25.0	25.0	30.5	30.5	
Effective Green, g (s)	42.0	43.0	25.0	25.0	30.5	30.5	
Actuated g/C Ratio	0.49	0.50	0.29	0.29	0.36	0.36	
Clearance Time (s)	2.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	485	838	483	368	587	496	
v/s Ratio Prot	0.12	c0.42	0.18		c0.28	0.07	
v/s Ratio Perm	0.22			0.16			
v/c Ratio	0.69	0.83	0.62	0.56	0.78	0.20	
Uniform Delay, d1	14.7	18.1	26.2	25.6	24.6	19.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.6	7.0	2.8	2.3	7.2	0.3	
Delay (s)	19.3	25.1	29.0	27.9	31.7	19.3	
Level of Service	В	C	C	C	С	B	
Approach Delay (s)		23.2	28.5		29.5		
Approach LOS		C	C		C		
Intersection Summary							
HCM Average Control Delay			26.2	ЦI	ChA Lawa	of Service	\mathbf{C}
HCM Volume to Capacity rati	io Nationalia	ngundakiga ili	0.81	ungenesis a N		VI UCI VIUC	
Actuated Cycle Length (s)		entrologici fica	85.5	¢,	im of los	time (e)	12.0
Intersection Capacity Utilizati	n na seu se		71.2%			of Service	C
Analysis Period (min)		neineeneosu	11.270				
c Critical Lane Group					Badanya Ali	werentertil	na kan kan kan kan kan kan kan kan kan k

SIGNAL TIMINGS-- Fifth and Forbes Avenues Under Road Diet Condtions, PM

			j	4	1	A	6	Mr.		
Lane Group	EBL	EBT	WBL	WBT	NEL	NET	SWL	SWT		
Lane Configurations	ኻ	1>	ካ	<u>î</u> >		ф		ŵ		
Volume (vph)	185	829	ĺ	340	16	- 33	38	0		
Turn Type	D.P+P		Perm		Perm		Perm		1-1-1-1-10-00-00-00-00-00-00-00-00-00-00	
Protected Phases	9	29		2		4		4		
Permitted Phases	2		2		4		4	to the state to share	er som en en en fra han si au terrere desementerere	ina antie wire canowe
Detector Phase	9	29	2	2	4	4	4	4		
Switch Phase			meneration of the set of the first of the	last v redenanski kilon			were agreed to branch and the bergen		dis halada analada da se	rictatifest
Minimum Initial (s)	1.5		4.0	4.0	4.0	4.0	4.0	4.0		
Minimum Split (s)	5.5	u ka kung bij kens to tut med	41.0	41.0	20.0	20.0	20.0	20.0		1.12ml 1.12ml
Total Split (s)	5.5	60.5	55.0	55.0	27.5	27.5	27.5	27.5		
Total Split (%)	6.3%	68.8%	62.5%	62.5%	31.3%	31.3%	31.3%	31.3%		NIN SINGS
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	1.0	geenentiis Certuit	2.0	2.0	2.0	2.0	2.0	2.0		1995 e Sta
Lost Time Adjust (s)	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5		
Total Lost Time (s)	4.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5		nasianan
Lead/Lag										
Lead-Lag Optimize?	o y bour firm follow, consumer or comparing a 21 S. J. of 2.2	ned semantal to be been	en francis i scarded i 5 (20) i 12	na haannan koʻlati koʻsi toose are	reason for start of a first of starting can be		eelen en dekemister	eren regeleren in b	andar hainen bere izen die een deel	e instanta inter-
Recall Mode	Max		Max	Max	Max	Max	Max	Max		
Act Effct Green (s)	52.5	49.5	49.5	49.5	A second of the public state of	22.0		22.0	-	sustanda
Actuated g/C Ratio	0.60	0.56	0.56	0.56		0.25		0.25		
v/c Ratio	0.56	0.92	0.01	0.50	Anata Kasa Jaan Kata	0.34		0.32	CONTRACTOR OF THE OWNER	State
Control Delay	15.9	34.8	9.0	13.5		16.4		14.6		
Queue Delay	0.0	0.0	0.0	0.0	stanoverski sva odki	0.0	ariikiiiiiii	0.0		THE REAL
Total Delay	15.9	34.8	9.0	13.5		16.4		14.6		
LOS	B	C	A	В	nizazi	В		B		7.6360
Approach Delay		30.8		13.5		16.4		14,6		
Approach LOS		С		В		В		В		
Intersection Summary										
Cycle Length: 88										
Actuated Cycle Length: 88										
Offset: 56 (64%), Referen		2:EBWB	and 6:. 8	Start of G	reen		22.224444444444444		den er det se kan de se se stand se he	skiese leve
Natural Cycle: 70	Line of the product with									
Control Type: Pretimed	ung perinti dia panglar perindikani	usentens (ANS HATE	sexteri oznana an		MINI PERINT PERINT	an a		pana ny kaodim-pana amin'ny faritr'i Ang	ani na mang pang kanalan kanalan kanalan kanala	aarenti bi
Maximum v/c Ratio: 0.92										
Intersection Signal Delay:	24.4	aactenvierdige	onadikti karafani	n an	ntersectio	on LOS: C	- 		een waard saar waar missione	
Intersection Capacity Utili	Interpretered states and a later of the					of Servic	tere an enter a second s			
Analysis Period (min) 15		(FREEDERSES)		ang sang sang sang sang sang sang sang s	- ARAQUUS -	n de la constantina d La constantina de la c				ever (SCEAL)
, and and a share (round for										
Splits and Phases: 9: F	orbes Ave &	Beeler S	t							
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SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Under Road Diet Conditions, PM 9: Forbes Ave & Beeler St

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	ሻ	13	e sources and the best of the	ሻ	eî			4>	* Antra i successi di Antra		\$	
Volume (vph)	185	829	0		340	54	16	33	59	38	0	66
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	5.5		5.5	5.5			5.5			5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00	a a a a a a a a a a a a a a a a a a a		1.00 0.87			1.00 0.99	
Frpb, ped/bikes	1.00	1.00		1.00	0,98			1.00			0.99	
Flpb, ped/bikes	0.98	1.00		1.00	0.98			0.92			0.94	
Fit Destanted	1.00 0.95	1.00		0.95	1.00			0.99			0.98	
Flt Protected Satd, Flow (prot)	1566	1699		1646	1610			1385			1415	
Flt Permitted	0.43	1.00		0.13	1.00			0.95	association of the second	Mashabababa	0.85	nin den en maner
Satd. Flow (perm)	702	1699		223	1610			1323			1228	
Peak-hour factor, PHF	0.78	0.94	0.25	0.67	0.89	0.75	0.80	0.89	0.82	0.88	0.50	0.93
Adj. Flow (vph)	237	882	0.20		382	72	20	37	72	43	0	71
RTOR Reduction (vph)	0 0		0	0 0	8	0	0	52	0	0	53	0
Lane Group Flow (vph)	237	882	Ō	1	446	0	0	77	0	0	61	0
Confl. Peds. (#/hr)	63		63	63		63	1	(999) (99) (99) (99) (99) (99) (99) (99	106	106		1
Confl. Bikes (#/hr)						3			- 2			
Heavy Vehicles (%)	4%	3%	1%	1%	4%	3%	1%	1%	1%	6%	0%	1%
Tum Type	D.P+P			Perm			Perm			Perm		
Protected Phases	9	29			2			4		presented to provide chains	4	enellement himpy
Permitted Phases	2			2			4			4		
Actuated Green, G (s)	51.5	55.5		50.0	50.0	construction in the local distance		22.5	wind wind wind with	SAME PERSONAL PROPERTY	22.5	ina ka ka mana a kwa
Effective Green, g (s)	51.5	50.5		49.5	49.5			22.0			22.0	
Actuated g/C Ratio	0.59	0.57	and a subsection of the subsec	0.56	0.56			0.25			0.25	
Clearance Time (s)	4.0			5.0	5.0			5.0			5.0	
Lane Grp Cap (vph)	426	975		125	906	nginganaway	pratek (Péripipi)	331	inana alianani ina ina ina		307	
v/s Ratio Prot	0.01	c0.52			0.28							
v/s Ratio Perm	0.32	enriter (SPOR	energenergenergenergenergenergenergener	0.00			dolaraageeee	c0.06		nenstistet	0.05	
v/c Ratio	0.56	0.90		0.01	0.49			0.23 26.3			0.20 26.0	
Uniform Delay, d1	13.7	16.6	MERICANICHE	8.5 1.00	11.6 1.00			1.00			1.00	
Progression Factor	1.00 5.2	1.00 13.4		0.1	1.9			1.6			1.4	
Incremental Delay, d2	oxista experimento recipita	recession of the later of the		8.6	13.6			27.9			27.5	
Delay (s) Level of Service	18,9 B	30.0 C		A A	B			C			C	ien en e
Approach Delay (s)		27.6			13.5			27.9			27.5	
Approach LOS	Kerener of the second se	C	(energenergenergenergenergenergenergener	15/20121212121212121212	B	CULTURE CONTRACTOR	n destanter opposite	С	ala ny solara alao ni ra-	(1)-1-1-4	С	ol-1990 (1992) (19
										4		
Intersection Summary			24.1	<u> </u>	CMLovo	l of Servic			С			
HCM Average Control Delay	en uen er en einer die die die deel die	NAMENASIAS	0,71				JC Infensionalia					
HCM Volume to Capacity rai	UU		88.0	unanterati S	um of los	t fime (s)	antalaciaista	in in the later of	16.5		ungewaden	
Actuated Cycle Length (s) Intersection Capacity Utilizal	lion		77.9%			of Service			D D			
Analysis Period (min)			15							standin (makja) (dalat) ida	ang	
c Critical Lane Group												
		indiada (2007)		ogetzpychi <u>ddill</u> t	ren of a second s	anathing GROUPE	www.commens.com/http:///w					, graphy and shall

	<u>هر</u>	A	Å	Ļ	1	
Lane Group	EBL	NBL	NBT	SBT	SBR	9 &
Lane Configurations	۲Ý		ą	个	۴	
Volume (vph)	127	17	280	715	219	
Turn Type	and a first for more the following on some	Perm	-	Lagen I word from Store and April 1	Perm	
Protected Phases	4		2	2		9
Permitted Phases	nala iza a di Universita verze na bez	2	er of sealer to be independent of the series	inta parata versi Medulu	2	
Detector Phase	4	2	2	2	2	
Switch Phase	واستعرابه والمحافظ وا		ta estadobil (en la cola da com	and a state of the		
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	1.0
Minimum Split (s)	23.0	26.5	26.5	26.5	26.5	
Total Split (s)	23.0	60.0	60.0	60.0	60.0	4.0
Total Split (%)	26.4%	69.0%	69.0%	69.0%	69.0%	5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	-1,0	-1.0	-1.0	-1.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	
Lead/Lag						
Lead-Lag Optimize?	ana 141 maana 1424a maasi 444aa ma	a ben frederik kan ben ber		entre toto i su chine andalada		
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	19.0		56.0	56.0	55.0	
Actuated g/C Ratio	0.22		0.64	0.64	0.63	
v/c Ratio	0.51		0.33	0.71	0.30	na na manana manini na mana harana na manana manana manana na mini ka mini ka mini ka manana na manana manana m
Control Delay	33.7		8.1	14.8	8.5	
Queue Delay	0.0		0.0	0.8	0.0	
Total Delay	33.7		8.1	15.6	8.5	
LOS	С	4-46-6-160302223757232197	Α	B	A	waaraan waxaa maa maa maa maa mada ka sa ahaa
Approach Delay	33.7		8.1	13.9		
Approach LOS	С		А	В		
Intersection Summary						
Cycle Length: 87						
Actuated Cycle Length: 87						
Offset: 76 (87%), Reference	ed to phase	2.NBSB	and 6: S	tart of Gr	een	
Natural Cycle: 65						
Control Type: Pretimed	Jensonariasias		oneneere			kazan menyarah dalak harang kangka kangka kangka kangka kangka dapangka kanya kenasyan kanya kanya kanya kanya Kanya kanya kanya kanya kanya kangka kanya kanya kanya kanya kanya kanya kenasyan kanya kanya kanya kanya kanya
Maximum v/c Ratio: 0.71						
Intersection Signal Delay: 1	15.0	ngunyan Heilli		nanang ng n	ntersectio	א איז איז איז איז איז איז איז איז איז אי
Intersection Capacity Utiliza	astes werden all and a strategies and a strategies of the strategi					of Service B
Analysis Period (min) 15		AND DEPENDENCE AND A DEPENDENCE A	angaranga ayon			nee contentation of the second as provided the second second second second second second second second second s
rangene r ande (mm) te						
Splits and Phases: 10: M	largaret Mo	rrison St	& Forbes	Ave		
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	A	N	٩	Ť	ł	4
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Ŵ			र्स	个	Ŕ
Volume (vph)	127	26	17	280	715	219
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4,0			4.0	4.0	5.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frpb, ped/bikes	0.99			1.00	1.00	0.89
Flpb, ped/bikes	1.00		701010100000910101010101	1.00	1.00	1.00
E4 CALLER STRUCT	0.98			1.00	1.00	0.85
Flt Protected	0.96			1.00	1.00	1.00
Satd. Flow (prot)	1608			1665	1683	1308
Flt Permitted	0.96	adaying atato (atau toraya	en de la companya de	0.94	1.00	1.00
Satd. Flow (perm)	1608			1564	1683	1308
Peak-hour factor, PHF	0.84	0.77	0.75	0.91	0.93	0.88
Adj. Flow (vph)	151	34	23	308	769	249
RTOR Reduction (vph)	1 0 1 9	0	<u>دع</u> 0	0	00 <i>1</i>	0
Lane Group Flow (vph)	176	0	0	331	769	249
Confl. Peds. (#/hr)	36	13	34	an a	Hora Agina	2 13 34
Confl. Bikes (#/hr)		сı Honoria (П	04 111111			34 2
	1%	40/	1%	90000000000000000000000000000000000000	4%	1%
Heavy Vehicles (%)	1 70	1%		070 	47 0 (19.00)	
Tum Type			Perm	~		Perm
Protected Phases	4 Hereiten der Bereiten			2	2	nissingereise
Permitted Phases			2			2
Actuated Green, G (s)	18.0	televice procession		55.0	55.0	55.0
Effective Green, g (s)	19.0		n den beid NENA Nater den nichtet	56.0	56.0	55.0
Actuated g/C Ratio	0.22	1	ini gan ing makala wa	0.64	0.64	0.63
Clearance Time (s)	5.0			5.0	5.0	5.0
Lane Grp Cap (vph)	351			1007	1083	827
v/s Ratio Prot	c0.11				c0.46	
v/s Ratio Perm		n in standard and and and and and and a second	1999-999-999-999-999-999-999-999-999-99	0.21		0.19
v/c Ratio	0.50	sentin de rei		0.33	0.71	0.30
Uniform Delay, d1	29.8	erner og forst for senset senset senset som som senset som som senset som	a ogsammen Billin Billing Billi	7.0	10.2	7.3
Progression Factor	1.00			1.00	1.00	1,00
Incremental Delay, d2	5.0	den sonder der der der der		0.9	4.0	0.9
Delay (s)	34.9			7.9	14,1	8.2
Level of Service	C			A	B	A
Approach Delay (s)	34.9			7.9	12.7	NENEDERIN
Approach LOS	с С	i de la company de la comp Company de la company de la Company de la company de la	Maukènèné	A A	B	nga napagaanga:
	V	ana ta	NADER BRITADING STREET AND	7	U	
Intersection Summary						
HCM Average Control Dela	iy		14.3	H	CM Level	of Service
HCM Volume to Capacity ra			0.66			
Actuated Cycle Length (s)			87.0	Sı	um of lost	t time (s)
Intersection Capacity Utilization	ation		62.5%			of Service
Analysis Period (min)			15		Spinginan Jaraha Kajalaj	lonație nazionali anti nazionali a
c Critical Lane Group						
S STRUCTURE CIVES				III ANN AN		aadaaddiiniig

		- 4	4	Î	P	1	Ļ	
Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT	80
Lane Configurations	†	♠ኈ	ሻ	ર્સ	7	1 1	ଜ୍ ଚ	
Volume (vph)	26	1152	370	210	184	61	0	
Turn Type			Perm		Perm	Perm	to fa fao form for more the days	
Protected Phases	2	2		- 8			4	9
Permitted Phases			8		8	4		
Detector Phase	2	2	8	8	8	4	4	
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1.0
Minimum Split (s)	37.0	37.0	33.0	33.0	33.0	33.0	33.0	3.5
Total Split (s)	37.0	37.0	39.0	39.0	39.0	39.0	39.0	4.0
Total Split (%)	46.3%	46.3%	48.8%	48.8%	48.8%	48.8%	48.8%	5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.5
Lost Time Adjust (s)	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	
Total Lost Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	3.4	
Lead/Lag								
Lead-Lag Optimize?	- (
Recall Mode	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	37.6	37.6	35.6	35.6	35.6	aloola et va va covi ta a te cov	35.6	
Actuated g/C Ratio	0.47	0.47	0.44	0.44	0.44		0,44	
v/c Ratio	0.08	0.95	0.99	0.61	0.36		0.58	
Control Delay	12.5	27.0	75.3	23.1	17.0		18.7	
Queue Delay	0.0	1.5	0.0	0.0	0.0		0.0	
Total Delay	12.5	28.6	75.3	23.1	17.0		18.7	
LOS	B	C	E	С	В	, , , , , , , , , , , , , , , , , , ,	В	
Approach Delay	12.5	28,6		41,2			18.7	
Approach LOS	B	С	ing an olive Alford and an operation	D	n of the second		В	
Intersection Summary								
Cycle Length: 80			energeenisee	a construction of the second				
Actuated Cycle Length: 8	0							
Offset: 51 (64%), Referen	nced to phase	2:EBWE	3 and 6:, 3	Start of G	reen			
Natural Cycle: 75								
Control Type: Actuated-C	coordinated		start and the second				makojuraj	
Maximum v/c Ratio: 0.99								
Intersection Signal Delay	every service and a deal to consider the start of the sta	n an			ntersectio	and an increase and a local in the set of th		
Intersection Capacity Util	ization 95.7%				CU Level	of Servic	6 F	dan kumun kungan di kungan
Analysis Period (min) 15								
		n. e. i. i						
Splits and Phases: 1: F	Fifth Ave & Be	elletield A	ve					1
1.a					2			A 8.

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37 s	29 s	4 }
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	89 %	L

	_		-	Ý	4	Ł	٩	Å	p	and the second sec	Ļ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL.	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			朴ኈ		ሻ	ęţ,	r.		4	
Volume (vph)	0	26	0	0	1152	21	370	210	184	61	0	201
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		3.4			3.4		3.4	3.4	3.4		3.4	
Lane Util. Factor		1.00			0.95		0.95	0.95	1.00		1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00	0.97		0.96	
Flpb, ped/bikes		1.00			1.00		0.98	0.99	1.00	n farfann yn frifan yn argy yr fregod	1.00	
Frt		1.00			1.00		1.00	1,00	0,85		0.90	
Fit Protected	nan hanna ana na kusha ku ku ani ku	1.00	Mar (manage for many 1 pr pro pro pro	- ver doch electrolisi det cellis	1.00	werdweren were in head in	0.95	0.98	1.00	Senglu () unbiod (spatial abia)	0.99	ANT INFORMATION
Satd. Flow (prot)		829			2826		1250	1405	1265		1321	
Flt Permitted	energy i est for Million et al annand.	1.00	in her aufernans meeste average to be bee	2024 (Altana talamatalan ta	1.00	a presi ing sika dise para ta	0.54	0.83	1.00	deservation of the second	0.82	
Satd. Flow (perm)		829			2826		705	1177	1265		1095	
Peak-hour factor, PHF	0.94	0.81	0.25	0.94	0.93	0.78	0.90	0.95	0.91	0.74	0.25	0.93
Adj. Flow (vph)	0	32	- 0	0	1239	27	411	221	202	82	0	216
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	31	0
Lane Group Flow (vph)	0	32	0	0	1266	0	312	320	202	0	267	0 52
Confl. Peds. (#/hr)	160	and starts for a start for the start of the starts	91	91		160	52		19	19		52
Confl. Bikes (#/hr)			9			10						2
Heavy Vehicles (%)	0%	90%	0%	0%	5%	1%	11%	1%	3%	1%	0%	2%
Turn Type							Perm		Perm	Perm		
Protected Phases	en alternationer an and the Carta	2	- to Amazena Atanana artana waka Andai	oossin undalamasi	2	anthe Scientification for Institut	ere succed assessed of succession of the success	8	come transferiates a cover	erateries beta i seguri de past	4	san a sa s
Permitted Phases							8		8	4		
Actuated Green, G (s)	and the second statements of the second s	36.0	TRENE AND A DAMAGE AND A	e ov been fra he make testeren.	36.0	ASSAMPLINE (MUSIC	34.0	34.0	34.0	u a a a a a a a a a a a a a a a a a a a	34.0	provini e e e e e e e e e e e e e e e e e e
Effective Green, g (s)		37.6			37.6		35.6	35.6	35,6		35.6	
Actuated g/C Ratio	en i sol a si a la sub la sub la sub	0.47	operative state (scalars state)		0.47		0.45	0.45	0.45	hickgradezeler eksemblig	0.45	the transmission of the test of test o
Clearance Time (s)		5.0			5.0		5.0	5.0	5.0		5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0		3.0	March (1117-737-1415
Lane Grp Cap (vph)		390			1328		314	524	563		487	
v/s Ratio Prot		0.04		** ** * * * * * * * * * * * * * * * * *	c0.45		و و و به این اور اور و و و و و و و و و و و و و و و و	nes va fativi uračina razma te			winnin construite Change	ner letter berner fors
v/s Ratio Perm							c0.44	0.27	0.16		0.24	
v/c Ratio		0.08		و بکر میں درسیدہ بندہ میں میں ا	0.95		0.99	0.61	0.36	y integrative state including	0.55	
Uniform Delay, d1		11.7			20.4		22.1	16.9	14,7		16.3	
Progression Factor		1.00	estitentetetetesetes	ini matala ang ang ang ang ang ang ang ang ang an	0.64	elastogisteren elser	1.00	1.00	1.00		1.00	usususususususus
Incremental Delay, d2		0.4			12.2		48.8	2.1	0.4		1.3	
Delay (s)	RESIDTE CONTRACTOR	12.1		ariyan kur di kur ku	25.2		70.9	19.0	15.1	ntervisitikisteläki	17.6	andanansa
Level of Service		В			Ċ		E	B	В		B	
Approach Delay (s)	enuquigges.	12.1	alisataran		25.2	utabaa ka k		37.5	e protection de la filia		17.6	
Approach LOS		- B			C			D			В	
Intersection Summary												
HCM Average Control Delay			28.3	h served t	CM Level	of Servic	e	19459 20 493	С			
HCM Volume to Capacity ratio	aarennigestaa D	1944)(stácyhtickýc)	0.97	nuimidenteili	्यत्र विश्व वि	ecologica (Colory da C	und2ndzii/18044149		o esta per protectura	oxazina Portik UK (Schild offi		ang babaran Gelina Si
Actuated Cycle Length (s)			80.0	S	um of lost	time (s)			6.8			
Intersection Capacity Utilization	ລາເວລະເອລະເອລະ)ກ		95.7%		CU Level o		a fransfillen de Maryada	and address of a state of second	F			
Analysis Period (min)			15									
c Critical Lane Group		www.energeneiter	a aranan menderi (1919)	100003-00900-9000 10000	anno, 1501 a 1763 (3473) 51		10-19 0 01-9 09 00 00 00 00 00 00 00 00 00 00 00 00					

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	ø9			
Lane Configurations	entretise sections. List 175 March 176	<u> </u>	er sold a lange die al la faron	ፈት>	ካ	در مواداتها ماهمانها ا				HANDERS
Volume (vph)	13	231	18	1124	49	98				
Turn Type	Perm		Perm	adenta (al mindra) (den)	Perm	Aziana) iyoso ng provincin		ener på som ford for garten til sockerer refererer av føre man for den som en sok for en sok	www.completenter.com	leseted
Protected Phases		4		8		2	9			
Permitted Phases	4	MICTORNAL AND A	8	ee oo xy aster te hanne te bester te	2	n han han die konstante				
Detector Phase	4	4	8	8	2	2				
Switch Phase	244000000000000000000000000000000000000									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	1.0			
Minimum Split (s)	52.0	52.0	52.0	52.0	24.0	24.0	4.0			rankadi
Total Split (s)	52.0	52.0	52.0	52.0	24.0	24.0	4.0			
Total Split (%)	65.0%	65.0%	65.0%	65.0%	30.0%	30.0%	5%			NARNER
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	2.0			
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.5		-	
Lost Time Adjust (s)	-1.6	-1.6	-1.6	-1.6	-0.8	-0.8				
Total Lost Time (s)	3.4	3.4	3.4	3.4	5.2	5.2	ana ana ana ang ang ang ang ang ang ang	en of states and states		uuseasa.
Lead/Lag										
Lead-Lag Optimize?	Sama Alarmana and Alarma									
Recall Mode	Max	Max	Max	Max	Max	Max	Max			
Act Effct Green (s)	an Alexandri Madri	48.6		48.6	18.8	18.8				nisagij
Actuated g/C Ratio		0.61		0.61	0.24	0.24				
v/c Ratio	adada seria Alexando Verseria	0.21		0.75	0.17	0.47	TRANSPORTATION OF THE PARTY OF			NA HARANGA
Control Delay		19.8		17.5	26.1	26.0				
Queue Delay	esciences magnetistics	0.0		1.1	0.0	0.0				nitensi
Total Delay		19.8		18.7	26.1	26.0				
LOS		B		B	C	C	news and the second states of the second			postokisi
Approach Delay		19.8		18.7		26.0				
Approach LOS		В		В		С				
Intersection Summary										
Cycle Length: 80										
Actuated Cycle Length: 80										
Offset: 48 (60%), Referenced	I to phase	4:EBTL	and 8:WI	3TL, Start	of Greer)				
Natural Cycle: 80										
Control Type: Pretimed	and and a second se	negeletesskieletet	1210222134515451515743	identationergib			and the local solution processing and the processing solution of the processing so		1997 - 1997 - 1997 - 1997 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 -	
Maximum v/c Ratio: 0.75										
Intersection Signal Delay: 19	.8	ana ana ang sang sang sang sang sang san	aniiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	n in the second s	ntersectio	n LOS: B	-tustusti siin taini too kulti saa		reneration de la constance de l	
Intersection Capacity Utilizati						of Service	D			
Analysis Period (min) 15		nadis na Britania	ninen musiki sigili	anta ang ang ang ang ang ang ang ang ang an	ungsin di Belli Pè	n an	nen men keren digat distantik		n new a that is a start of the start of th	er dage and have be
Splits and Phases: 2: Fifth	Ave & Di	ithridge S	ť							
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<u>e Territer - Annother Andrew Staten and Staten a</u>	هر		~	F		4	4	Î	p	\$	Ļ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Section in a start of the section in the	<u>ৰ্ব চি</u>	a ke a salari ta bişişe kararaşı be eş		ብ እ		****************	ዀ	suanaces <u>u</u> ngialagia	una kutato de terres	ander and service	a ang kang pang pang pang pang pang pang pang p
Volume (vph)	13	231	27	18	1124	28	49	98	51	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost fime (s)		3.4			3,4		5,2	5.2				
Lane Util. Factor	e el en este este este este este este este e	0.95		Managaran Managaran Salah	0.95	Wall Heller	1.00	1.00			The second s	
Frpb, ped/bikes		0.99			1.00		1.00	0.98				
Flpb, ped/bikes		1.00	ere en		1.00		0.97	1.00				
		0.98			1.00		1.00	0.95				
Flt Protected	wergene kening taget allegene	1.00		SINGSIDA	1.00	i kan lini kan juma kan politikan Distrik Santa kan politikan	0.95	1.00	n special star making starst			
Satd. Flow (prot)		2686			2834		1419	1426 1.00				
Flt Permitted		0.87	KGALINISIK		0.95		0.95	1426	animentosistelis			
Satd. Flow (perm)		2335			2688		1419		0.00	0.05	0 0C	0.05
Peak-hour factor, PHF	0.70	0.93	0.91	0.88	0.96	0.74	0.86	0.91	0.83	0.25	0.25	0.25
Adj. Flow (vph)	19	248	30	20	1171	38	57	108	61	0	0	0
RTOR Reduction (vph)	0	11	0	0	3	0	0 57	25 144	0 0	0 0	0 0	0
Lane Group Flow (vph)	0	286	0	0	1226	0	ал 30	144	34	34		0 30
Confl. Peds. (#/hr)	10		61 11	61		10 2	30 		J4 URANANA	34 الالالالالال		2
Confl. Bikes (#/hr)	F0/	~0/	1 VE PHE IS VE PUTS O YOU IS SAVE		ED/	2 1%	2%	3%	2%	0%	0%	2 0%
Heavy Vehicles (%)	5%	9%	1%	2%	5%	1 70 Maintena		370	£ 70	U /o	U /8	0 /0
Tum Type	Perm		onos dendentes Protos dendentes Protos dendentes de la composición de la compos	Perm	.		Perm	2				
Protected Phases		4		8	8		2	L		interiorizationen (h. 1913) Interiorizationen (h. 1913)		
Permitted Phases	4	47.0			47.0		18.0	18.0			BIRKAR	
Actuated Green, G (s)		47.0 48.6		e e contra de contra E contra de br>E contra de	47.0		18.8	18.8				
Effective Green, g (s)		40.0 0.61	an line and an		40.0 0.61	CARL MADVERNAM	0.24	0.24				addiskysky
Actuated g/C Ratio		5.0			5,0		6.0	6.0				
Clearance Time (s)					1633		333	335	and a second			
Lane Grp Cap (vph)		1419			1022		333	c0.10				
v/s Ratio Prot v/s Ratio Perm		0.12			c0.46		0.04					
v/c Ratio		0.12			0.75		0.17	0,43				
Uniform Delay, d1		0.20 7.0		ENG X COMPANY	11.3		24.4	26.0			lan fan gelena fa	iensialastatistal
Progression Factor		3.02			1.34		1.00	1.00				
Incremental Delay, d2		0.3			1.8		1.1	4.0				stanun andere der
Delay (s)		21,5			16.9		25.5	30.0				
Level of Service	2 A A A A A A A A A A A A A A A A A A A	C C			B		с С	C	ICEOLEGY BUD ISSU			provident of the set free
Approach Delay (s)		21.5			16.9			28.9			0.0	
Approach LOS		C	XIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	129960gmwisat	B	iquanterioriaa	2000 Six brance	C		1990 AUSTRACIO	A	naptablocelara
Intersection Summary												
HCM Average Control Delay	/		19.3	H	CM Leve	of Servio	e		В			and the second
HCM Volume to Capacity ra			0.66									
Actuated Cycle Length (s)	an Ministration (on finite of the finite of		80.0	nodangangg S	um of los	t time (s)	na na mana ang kataona ang	en her og skalasist	12.6	or a faith an	raantar taalaha ha 900	and an an an an and a second second second
Intersection Capacity Utiliza	tion		80.0%		CU Level				D			
Analysis Period (min)		20119-008205	15			enter en	a pipin ta éta kinjé té				an martine factor (1981) A	1094(9304)3(234548)
c Critical Lane Group												

SIGNAL TIMING-- Fifth and Forbes Avenues Under Road Diet Conditions, AM

	×		1	4	4	Î	\ _p	Å				
_ane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	ø9			
Lane Configurations		र्स कि		ৰ ি	ሻ	4Î	ሻ	4Î				
Volume (vph)	16	249	14	972	37	138	51	135				
Furn Type	Perm	densee the termine	Perm		Perm		Perm					
Protected Phases		2		6		8		4	9			
Permitted Phases	2		6		8		4					
Detector Phase	2	2	6	6	8	8	4	- 4				
Switch Phase	A Digen Belleweit ihn Ander Schleit	A	and the second									
Minimum Initial (s)	25.0	25.0	25.0	25.0	15.0	15.0	15.0	15.0	1.0			
Vinimum Split (s)	50.0	50.0	50.0	50.0	26.0	26.0	26.0	26.0	4.0			
Total Split (s)	50.0	50.0	50.0	50.0	26.0	26.0	26.0	26.0	4.0			
Total Split (%)	62.5%	62.5%	62.5%	62.5%	32.5%	32.5%	32.5%	32.5%	5%			
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.0			
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0			
Lost Time Adjust (s)	0.0	0,0	0.0	0.0	0,0	0.0	0.0	0.0			HOR GT 93 S	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
_ead/Lag												
_ead-Lag Optimize?	Colorado a Calabia de Calendaria de											
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max	Max			
Act Effct Green (s)	1615 de la reconstruction de la construction de la construcción de	44.5		44.5	20.5	20.5	20.5	20.5				
Actuated g/C Ratio		0.56		0.56	0.26	0.26	0.26	0.26				
v/c Ratio		0.27		0.82	0.34	0.69	0.35	0.97				
Control Delay		24.8		10.9	32.5	38.0	31.1	74.3				
Queue Delay	analysis of the set of	0.0		0.7	0.7	0.0	0.0	37.1				
Total Delay		24.8		11.6	33.2	38.0	31.1	111.4				
LOS	***************************************	С		В	С	D	С	F				
Approach Delay		24.8		11.6		37.2		98.2				
Approach LOS	1	С		В		D		F				
	in the second											
Intersection Summary						*						
Cycle Length: 80				olusekeiseksi	in the full believes to be at \$2,000 here and \$2,000 here at \$2,000 here at \$2,000 here at \$2,000 here at \$2,000							
Actuated Cycle Length: 80												
Offset: 13 (16%), Reference	d to phase		Start of C	<i>ireen</i>	(of rescanses the solution) in the provided by rescale						MERNEZERE	
Natural Cycle: 80									ada edada nin	Canadia ana ana ana ana ana ana ana ana ana a		
Control Type: Pretimed												a an
Maximum v/c Ratio: 0.97						- 1 00.0						
Intersection Signal Delay: 32	AUNIA/Internetional				and the second se	on LOS: C					na mening pering a statistical and a statistical statistical statistical statistical statistical statistical statistical statistical statistical	
Intersection Capacity Utiliza	110N 94.6%				OU LEVE	of Servic	СГ				<u>REPERSION OF THE PARTY OF THE </u>	HURDEN
Analysis Period (min) 15												
Splits and Phases: 3: Fift	h Ave & Cr	roja Cf										

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50 s			6 \$		

	۶		>	ý		÷	*	Ť	p	\$	Ŷ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ፋጉ	en fals fan fan jaar fanas beskel by besje sterjer		د () ک	ng ha fan Januaria an anna an A	ሻ	ዀ		ኻ	þ	.ioninastavatien):
Volume (vph)	16	249	17	14	972	22	37	138	76	51	135	151
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	16	11	11	16	13	14	14	13	_13	14
Total Lost time (s)	is not called a first of the called	5.5	a na ana ana ana ana ana ana ana ana an		5.5	elescenteridad	5.5	5.5		5.5	5.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00		1.00	0.97		1.00	0.94	
Flpb, ped/bikes		1.00			1.00		0,94	1.00		0.94	1.00	
Frt		0.99			1.00		1.00	0.95		1.00	0.92	
Fit Protected		1.00			1.00		0.95	1.00		0.95	1293	
Satd. Flow (prot)	NATION OF CONTRACT OF CONT	2539 0.82		tona ona series	2701 0.94		1411 0.36	1457 1.00		1403 0.47	1293	
Fit Permitted		ACTUAL CONTRACTORS			Access Street Street and a street of the str		0.36 539	1457		698	1293	
Satd. Flow (perm)		2084	0.00	0.00	2553	0.00			0.00	·····		0.00
Peak-hour factor, PHF	0.56	0.95	0.68	0.62	0.88	0.68	0.79	0.82	0.86	0,81 63	0.89 152	0.90 168
Adj. Flow (vph)	29	262 0	25	23 0	1105 0	32	47 0	801 0	88 0	оз 0	152	0
RTOR Reduction (vph)	0	0	0	anesembereden	The set of the interaction of the set of	0	47	256	ч 0	63	320	
Lane Group Flow (vph)	0 82	316	0 54	0 54	1160	0 82	47 110	OCS Neverence	88	03 88	JZU References	110
Confl. Peds. (#/hr)	82		34. 1	34		oz 17			00 1	00		
Confl. Bikes (#/hr)	33%	9%	5%	3%	6%	6%	3%	7%	3%	4%	5%	12%
Heavy Vehicles (%)		970	070		0/0	0 /0	Perm	1 / / /	J/0	Perm	U/0	1270
Turn Type	Perm	2		Perm	6		rem	8		renn	4	
Protected Phases Permitted Phases				6			8	O		4 (1997) 		
empresant and the definition of a state of a state of a spectra day of the definition of the state of the spectra	2 3033999999999	44.5		o Fisikainai	44.5		20.5	20.5		20.5	20.5	
Actuated Green, G (s)		44.5 44.5			44.5		20.5	20.5		20.5	20.5	
Effective Green, g (s) Actuated g/C Ratio		0.56			0.56		0.26	0.26		0.26	0.26	
Clearance Time (s)		5.5			5.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)		1159			1420		138	373		179	331	
v/s Ratio Prot		1100		MARINA			100.	0.18		nernsk Male	c0.25	
v/s Ratio Perm		0.15			c0.45		0.09			0.09	CC.CC	
v/c Ratio	CONTRACTOR OF STREET, S	0.10		SHIGSSERVING	0.82		0.34	0.69	8000400099986	0.35	0.97	
Uniform Delay, d1		9.3			14.4		24.2	26.8	<u>iusus</u>	24.3	29.4	
Progression Factor		2.56			0.57		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			2.1		6.6	9.9		5.4	41.7	
Delay (s)		24.3			10.3	and see all the set	30.8	36.7		29.7	71.1	Removingent
Level of Service		ĒČ			B		Ċ	D		Ċ	E	
Approach Delay (s)	istiadszertsis	24.3		BISHIPEKSI22	10.3	statetti tan (din (din (din (din (din (din (din (di	in na historia a sina	35.8	and colored and an other	Man Manin Brind	64.3	odi Mili Politik P
Approach LOS		Ċ			В			D		nin over see and over	BERRE E	
	RANKO MUTUMANI Na kaominina dia kaominina dia kaominina dia kaominina dia kaominina dia kaominina dia kaominina Ny INSEE dia kaominina dia k	estantaka Sabi				a an		ente esta di la constanti di la		unia matrixe (136		
Intersection Summary			00.0		ovu –	10				Masarsia.uu		
HCM Average Control Delay			25.5	F	CM Level	of Servic	æ		C	n ann 1960 à 1980 à 1980. Chairtean anns anns anns anns anns anns anns a		
HCM Volume to Capacity ratio			0.86	0002432028		11.23	n na sana ang sana a Tang sana ang		S 2 M M	nageaazaansi		
Actuated Cycle Length (s)			80.0		um of lost				15.0	HERE		
Intersection Capacity Utilization)n Bananakinaria		94.6%) 	CU Level c	T Service	; 		F	uścięcie		
Analysis Period (min)			15							NEUXLE (IEE)		çanasınınık

c Critical Lane Group

SIGNAL TIMING-- Fifth and Forbes Avenues Under Road Diet Conditions, AM

	_		*	4	٩	个	\$	Å	and a second sec	
ane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	ø9
ane Configurations		લે કે		ፈኑ		¢ ļ »		র্ন	ሻ	a tata ja tata ja ti an ta an dip tij ta tanan ataup ta manazimpyana
/olume (vph)	40	327	66	613	8	87	60	196	387	
furn Type	pm+pt		Perm		Perm		Perm		pm+ov	
Protected Phases	8	4		7		2		6	8	9
Permitted Phases	4		7		2		6		6	
Detector Phase	8	- 4	7 -	7	2	2	6	6	8	
Switch Phase										
Vinimum Initial (s)	1.0	1.0	1.0	1,0	2.4	2.4	24.0	24.0	1.0	1.5
Vinimum Split (s)	9.0	34.0	32.0	32.0	30.0	30.0	30.0	30.0	9.0	4.0
lotal Split (s)	14.0	46.0	32.0	32.0	30.0	30.0	30.0	30.0	14.0	4.0
Total Split (%)	17.5%	57.5%	40.0%	40.0%	37.5%	37.5%	37.5%	37.5%	17.5%	5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.5
ost Time Adjust (s)	0,8	-1.6	· 1.6	-1.6	-1.6	-1.6	-1.6	-1.6	0.8	
Fotal Lost Time (s)	6.8	4.4	4.4	4.4	4.4	4.4	4.4	4.4	6.8	
ead/Lag	Lead		Lag	Lag					Lead	
_ead-Lag Optimize?	Yes	(C) of D Hold D Article 2010)	Yes	Yes	an ang ana ang ang ang ang ang ang ang a	120101010100000000000000000000000000000			Yes	
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	1941-9441-1949(1942)(1949-1949)	41.6	n	27.6	10000001-12-03-12-12-12-12-12-12-12-12-12-12-12-12-12-	25.6		25.6	30.4	an a
Actuated g/C Ratio		0.52		0.34		0.32		0.32	0.38	
//c Ratio	enter for the second	0.31		0.95		0.39		0.70	0.88	
Control Delay	nen etterentettettet Finn etterentettettettettettettettettettettettette	4.6		34.1		24.1		33.2	40.5	
Queue Delay	lada da da kati kati da menerataran kati kati kati kati ka	0.0	91010111179000000000000000	0.0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.0	a na na falan di na pertuk pertuk di	0.0	0.0	n de jenneder en de de groepen neer per 2002 in 2022 partie partie de la solation de la solation de la solation
Total Delay		4.6		34.1		24.1		33.2	40.5	
_OS	lejet yil etet olemanytera (ertar)	A	ning (eg staats) on dae Su Georgee ve	С		C	-1.1, 2, 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2	С	D	
Approach Delay		4.6		34,1		24.1		37.4		
Approach LOS		A	and Aqual 9 (1) parts a large of	С		С		D	200-200-200-200-200-200-200-200-200-200	ο της της της της της της πολογοριας για για της του της του πολοτή μου που της του που του του του του του το
ntersection Summary										
Cycle Length: 80							entre jark de kolis kolis i d			
Actuated Cycle Length: 80										
Offset: 0 (0%), Referenced	to phase 4:	EDIL an	O O.COL,							S S I S S S S S S S S S S S S S S S S S
Natural Cycle: 80										
Control Type: Pretimed										
Maximum v/c Ratio: 0.95	2010-00-00-00-00-00-00-00-00-00-00-00-00-				tomooti-					
Intersection Signal Delay: 2	terret to an a second provide second second	Non-Kernensel	a Malender Sector	ten for the ten following starting	Concerns and an array Concern Data and	n LOS: C				
	auon 88.4%		una midsika ki	RING AL	TO LEVEL	of Service	t Crail Bai			un und Astro and a statut
Intersection Capacity Utiliz Analysis Period (min) 15		ovjetni ni na od ataleto i	her en der							

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30 s		46 ;	\$		4
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30 %		14	\$	32 s	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4 Þ			eî î»		remost substantian substantia	4	esteration and a second		র্ন	۴
Volume (vph)	40	327	9	66	613	18	8	87	48	60	196	387
Ideal Flow (vphpi)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4,4			4,4			4.4			4,4	6.8
Lane Util. Factor	efenerenter ananz oa ketete	0.95	poor mand to be prepared as long	a falan ini an kati ta pagan ini a	0.95	the state of the	Herrickie augeste state werde state we	1.00	nan ku da kana sa ka bayanan	a se instantion de la companya de l	1.00	1.00
Frpb, ped/bikes		1.00			0.99			0.98			1.00	0.98
Flpb, ped/bikes	Anto Auguro (pendiciona)	1.00	da herarn och dan kala julia kalagi		0.99		is delograde in the later	1.00	a kanala kata kata kata kata kata kata kata k		0.99	1.00
		0.99			0.99			0.95			1.00	0.85
Flt Protected	ughan gang progen kendurik	0.99		ry any panakani ya hani da	1.00	in in the second se		1.00		n south the second	0.99	1.00
Satd. Flow (prot)		3099			3170			1622			1681	1324
Fit Permitted		0.75			0.86		Personal Control of Party of P	0.97		MINNIN	0.87	1.00
Satd. Flow (perm)		2353			2742			1577			1477	1324
Peak-hour factor, PHF	0.85	0.96	0.65	0.80	0.78	0.60	0.63	0.76	0.67	0.73	0.79	0.87
Adj. Flow (vph)	47	341	14	82	786	30	13	114	72	82	248	445
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	402	0	0	898	0	0	199	0	0	330	445
Confl. Peds. (#/hr)	92	diseasers of a late	73	73		92	16		51	51		16
Heavy Vehicles (%)	17%	4%	0%	0%	3%	2%	0%	0%	0%	8%	0%	10%
Turn Type	pm+pt		un de la company de la company	Perm			Perm			Perm		pm+ov
Protected Phases	8	4			7			2			6	8
Permitted Phases	4 Sen Nelson Scholar	10.0		7 Notestassient		NEW BEINGERSE	2			6	010	6 32.0
Actuated Green, G (s)		40.0			26.0			24.0			24.0	Contraction Control Production Control
Effective Green, g (s)		41.6	Nikeulian kaiska	hanan seriese	27.6			25.6			25.6	30.4
Actuated g/C Ratio		0.52	en e		0.35			0.32			0.32 6.0	0.38
Clearance Time (s)		6.0	evidabalik0762636		6.0			6.0	N			
Lane Grp Cap (vph)		1313			946			505			473	616
v/s Ratio Prot		0.04	aharin Mishiri (Mi			SERVER SERVER		n 40			0.00	c0.07
v/s Ratio Perm		0.12			c0.33			0.13			0.22	0.27 0.72
v/c Ratio	elenievésisis	0.31 11.0			0.95 25.5	seliggous5495	NARIA DA	0.39 21.2			0.70	21.2
Uniform Delay, d1		0.38			2 3. 5 0.85			21.2 1.00			23.0 1.00	1.00
Progression Factor		0.30	CHINE CONTRACTOR		10.4	Nekkedenin	ISAN MARKARAN	2.3			8.3	7.2
Incremental Delay, d2		0.0 4.7			32.2			23.5			32.1	28.4
Delay (s) Level of Service	nta a plana noisi ni bina) Ni na kana kana ni bina	4.1 A			32.2 C	talırı Metalətini ildər Azərbaycan		23.3 C			JZ. 1 G	ZU. 4
Approach Delay (s)		4.7			32.2			23.5		inen nem kan	30.0	HENRIGE
Approach LOS		ч.) А			JZ.Z			20.0 C			C	
					NNISA SA							
Intersection Summary												
HCM Average Control Delay			25.8	H	CM Level	of Servic	e		C			
HCM Volume to Capacity rati	0	Name 1 (1999) (1999) (1999) (1999)	0.82	0			Interruption prime at way to be	معرب إستنقار وشعبت فرقت	American Sector America (Sector)	16 (Selected States of Second States)		TELEVISION CONTRACTOR
Actuated Cycle Length (s)			80.0		um of lost				15,2			
Intersection Capacity Utilizati	on		88.4%	IC	U Level o	of Service) denegáj podskovádský k		E		200703354034023403403403463463	
Analysis Period (min)			15									

SIGNAL TIMING-- Fifth and Forbes Avenues Under Road Diet Conditions, AM

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	ø9
Lane Configurations		矿萨		41>		ର୍ଣ୍	7	ሻ	þ	
Volume (vph)	15	327	158	645	17	192	126	60	238	
Turn Type	Perm		pm+pt	water product of source convertion	Perm	en antonene i sermero i edeor bioló de	Perm	Perm		n versen verste de de la salanza natural ad adama demanante en deserve deserve
Protected Phases		2		6		4			4	9
Permitted Phases	2		6		4	entered to the Starte Star Proc. 199	4	4		sees a first and a first and an instant for the second sector second second of the second second second second
Detector Phase	2	- 2	- 1	6	4	4	4	- 4	4	
Switch Phase							* y == 1 1 1	minemente i sul una efenca facilizza en		2 ja 1 g 1 y 1 y 1 y 1 y 1 y 1 y 1 y 1 y 1 y
Minimum Initial (s)	15.0	15.0	5.0	15.0	7.0	7.0	7.0	7.0	7.0	1.5
Minimum Split (s)	43.0	43.0	9.0	45.0	24.0	24.0	24.0	24.0	24.0	4.0
Total Split (s)	43.0	43.0	9.0	52.0	24.0	24.0	24.0	24.0	24.0	4.0
Total Split (%)	53.8%	53.8%	11.3%	65.0%	30.0%	30.0%	30.0%	30.0%	30.0%	5%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	0.5
Lost Time Adjust (s)	-1.6	-1.6	0.0	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	
Total Lost Time (s)	4,4	4.4	4.0	4.4	4.4	4.4	4,4	4.4	4.4	
Lead/Lag	Lag	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes							
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	and and a state of the second s	38.6		47.6		19.6	19.6	19.6	19.6	
Actuated g/C Ratio		0.48		0.60		0.24	0.24	0.24	0.24	
v/c Ratio		0.36		0.91		0.65	0.42	0.40	0.70	
Control Delay		13.5		24.8		36.3	7.8	34.0	37.0	
Queue Delay	and the second	0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay		13.5		24.8		36.3	7.8	34.0	37.0	
LOS		В		С		D	A	С	D	
Approach Delay		13.5		24.8		24.8			36.4	
Approach LOS		В		С		С			D	
Intersection Summary										
Cycle Length: 80										
Actuated Cycle Length: 80										
Offset: 68 (85%), Referenc	ed to phase	2:EBTL.	Start of (Green			an talah kanalar kanal Kanalar	aleave and the relations		la ha fan de ser en d
Natural Cycle: 80										
Control Type: Pretimed	eletienen hanten sin sin sin sin	930100127010200012325	1910)91/10/00/00/914	an fost (1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		an production of spirature.	4954040000030500000000000		4999749999999999999999999	A ARRENT AND A REPORT OF A
Maximum v/c Ratio: 0.91										
Intersection Signal Delay: 2	24.3	uaansansiariikeiiA	nt of the second se		ntersectio	n LOS: C			Area and a substantial second	
Intersection Capacity Utiliz	mention and the second states and the second			entrementaria entre entre Cost 2017	mound to provide one have been been	of Servic	weets extended bits (0)			na an an active season and a seas
Analysis Period (min) 15	anter estilitit	minini dangarang inis	and a sector of the sector of	na interinteri (interinterio)	perent Annual Sa 1990 (APRIL)	a na hEistennin Koltanioù fe			aanta da sa	an na n
o providente de la companya de la co	31. A 0 #4		A							
Splits and Phases: 5: Fif	th Ave & M	orewood	AVe				1.14	6		1

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ፋጉ		who is a second seco	ብ ፝ þ		na shi sa	ৰ	*	`	þ	
Volume (vph)	15	327	45	158	645	150	17	192	126	60	238	29
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4,4			4.4			4.4	4,4	4.4	4.4	
Lane Util. Factor	HMARAMERAS	0.95	DEPROPRING		0.95		z oznaciaj platra kolitikaj Svenestoj presistaj platikaj	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.99			0.97			1.00	0.78	1.00	0.98	
Flpb, ped/bikes		1.00			1.00		Manana ang kang kang kang kang kang kang	1.00	1.00	0.87	1.00	
		0.98			0.98			1.00	0.85	1.00	0.98	
Flt Protected		1.00		-	0.99	ugguppelebolgs	in Hernetsakser	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3080			3055			1702	1142	1435	1672 1.00	
Flt Permitted	iterrenter bestelen	0.87		ansananasaa	0.72	IN STREET, SAN DE SAN	USBANNENSE	0.93	1.00	0.43		angarann.
Satd. Flow (perm)		2690			2209	~ ~~~		1583	1142	656	1672	
Peak-hour factor, PHF	0.71	0.86	0.64	0.71	0.77	0.77	0.89	0.82	0.74	0.94	0.95	0.75
Adj. Flow (vph)	21	380	70	223	838	195	19	234	170	64	251	39
RTOR Reduction (vph)	0	18	0	0	19	0	0	0	128	0	7 ••••	0 Abkiela
Lane Group Flow (vph)	0	453	0 	0	1237	0 7	0	253	42	64	283	0
Confl. Peds. (#/hr)	75		35	35		75	83		161	161	NARABARAR	83 3
Confl. Bikes (#/hr)		00/	400/		- 	40/			4 1%	1%	1%	د میں 0%
Heavy Vehicles (%)	3%	2%	13%	2%	2%	1%	2%	2%			1 70	U70
Turn Type	Perm			pm+pt			Perm		Perm	Perm		29550220M25001
Protected Phases	diani abdoorani yaqain	2		1 	6			4 maaraadabbaaa	na sanaha ng		4 10300933988	
Permitted Phases	2			6			4	40.0	4 10 0	400	18.0	HRADING SHI
Actuated Green, G (s)		37.0	THE SECONDERS		46.0			18.0 19.6	18.0 19.6	18.0 19.6	19.6	aanaa ka k
Effective Green, g (s)		38.6			47.6			0.25	19.0 0.25	0.25	0.25	
Actuated g/C Ratio		0.48			0.60			6.0	6.0	6.0	6.0	
Clearance Time (s)		6.0							280	161	410	
Lane Grp Cap (vph)	un an sinte in t	1298		000000000000000000000000000000000000000	1384	Assanceside	n series (dajilo statija) Marini (dajilo statija)	388	∠80 Istratopio	101 Terendekiden	410 c0.17	son poss
v/s Ratio Prot		0 47			c0.07 0.46			0.16	0.04	0.10	CULIX	
v/s Ratio Perm	nungingerapr	0.17		on (kan kan se		inan an	RENIDIER	0.16	0.04	0.10	0.69	
V/c Ratio		0.35			0.89 14.0			27.1	23.7	25.3	27.4	
Uniform Delay, d1		12.9			14.0			1.00	1.00	20.0	1.00	
Progression Factor		1.06 0.7			9.2			8.3	1.00	7.2	9.2	
Incremental Delay, d2	ent organization and a state of the	0.7 14.3			9.2 23.2			35.4	24.8	32.4	36.6	
Delay (s) Level of Service		14.3 B			<u>ح</u> عــــــــــــــــــــــــــــــــــــ			D	24.0 C	с С	D	URBENER
Approach Delay (s)		14.3			23.2			31.1			35.9	
Approach LOS		ittaa B			<u>م</u> ح 2			e erte C				9 <u>99</u> 999999999999
		L			U	and and a second statements of the second		<u> </u>				terroren anderen stable
Intersection Summary												
HCM Average Control Delay			24.7	Н	CM Level	of Servic	e		С	negent autotan damada (1).	1941 SA	
HCM Volume to Capacity rational states of the second states of the secon	0		0.68									
Actuated Cycle Length (s)			80.0		um of los				12.8			
Intersection Capacity Utilization	on		91.1%	le lo	U Level	of Service			F			
Analysis Period (min)	د. ۱۹۹۰ - ۱۹۹۰ - ۱۹۹۰ - ۱۹۹۰ - ۱۹۹۰ - ۱۹	10 x x x 1 x x x x x x x x x x x x x x x	15			t nit musit references and field of the Carl			and a standard standard state	1 vales na captore essen como	alametojaprotrikcial"	aggi pagina tina ta
c Critical Lane Group												

SIGNAL TIMING--- Fifth and Forbes Avenues Under Road Diet Conditions, AM

	Å	>	F	~	4	Ť	1	Ŷ			
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	ø9		
Lane Configurations	ካ	4Î		ብ ኑ	ሻ	4 5		4 >	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -	nad menera pand na Unaderse (rada	nu koo walazafizikika
Volume (vph)	148	372	45	337	2	5	81	60			
Turn Type	pm+pt		Perm		Perm	mananan municipalas ta Montanta	Perm	In transmiss for earlies, the based of	www.wheedchicoline.com	to other the the prediction of the sector	nova novana posita pol na bada doran bit.
Protected Phases	5	2		6		8		4	9		
Permitted Phases	2		6	- 1 1 1 1	8	en manet tot the newspectations of the	4	nin line summer however a		-la venuele tana so inconcerna	n Augustan in Angeleine in the original in
etector Phase	- 5	2	6	6	8	8	4	4			
Switch Phase		and the langest of the state of the	و و و و و و و و و و و و و و و و و و و		مروح والمروح المروح المروح والمروح	en des altres and the best	-11.1 × 5		en inseranski stilet versa brza	saarmanin birmii	
Ainimum Initial (s)	1,5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
/inimum Split (s)	5.5	35.0	27.0	27.0	31.0	31.0	31.0	31.0	8.0	nang ka harang agahanny tuan anyan	
otal Split (s)	12.0	61.0	49.0	49.0	31.0	31.0	31.0	31.0	8.0		
otal Split (%)	12.0%	61.0%	49.0%	49.0%	31.0%	31.0%	31.0%	31.0%	8%		
ellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5		
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.5		
ost Time Adjust (s)	0.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	en fer ner verni		
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
ead/Lag	Lead		Lag	Lag							
.ead-Lag Optimize?											
Recall Mode	Max	C-Max	C-Max	C-Max	Min	Min	Min	Min	None		
Act Effct Green (s)	68.7	68.7	ender all search and s	45.0	23.3	23.3		23.3			
Actuated g/C Ratio	0.69	0.69		0.45	0.23	0.23		0.23			
//c Ratio	0.36	0.52		0.75	0.02	0.03		0.82			
Control Delay	8.5	10.8		28.7	27.5	23.6		59.0			
Queue Delay	0.0	0.0	1999 A 999 A 999 A 97 and 19 and 19 and	0.0	0.0	0.0		0.0			
Fotal Delay	8.5	10.8		28.7	27.5	23.6		59.0			
_OS	Α	В	3 (m tanatan tang ta tang t _a) .	С	С	С		E			
Approach Delay		10,2		28.7		24.5		59.0			
Approach LOS	anda dan da karatan karatan da ka	В		С	a harawa ya kasa ya kasa kasa kasa ya	С	2000)-11-11-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	E		a ya ana a shaki ku danay diyi kul da da da	
					X. K. K.						
ntersection Summary											
Cycle Length: 100	ian in appropriate the second s	Sussemptiquesticality	-medicina programme a sub-		seniri solaala (ola	onenterenter			elliyy tayli takini talari taka		HERBERGER
Actuated Cycle Length: 1									ning and the second s		
Offset: 3 (3%), Reference	ed to phase 2:	:EBTL an	d 6:WBT	L, Start of	Green	anananananana		STALL MARKED	Constrained statistic	te a constant of the second	
Vatural Cycle: 80											
Control Type: Actuated-C	entro de ser en entre entre entre 1930 de la contra de 1930	enconsider encourses and arrive banded		aran marka karda karin	n and a state of the later.				elegicitatis dissessibilitatia		and the second
/laximum v/c Ratio: 0.82											
ntersection Signal Delay	measured with the effective restriction of the firm	na ka boj ki sika interi Personana		And a fear and a fear and a fear and a	ntersectio	menunum kinekoren neorin han 10	and the second	Annia ana ana ana ana ana ana ana ana ana	San an prostant and	soononglassiishde	ter en
Intersection Capacity Util](CU Level	of Service	₽D				
Analysis Period (min) 15											
Splits and Phases: 6: I	Forbes Ave &	Craig St									
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ኻ	4î	mutative meno bibatic sti	te to és destados sectimitas	ቆ፟፝፝፞፝	****		4		accoulation of the factor	4	simpe desperies pro trapel de
Volume (vph)	148	372	87	45	337	160	2	5	2	81	60	24
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00	BICARDINALSON		0.95	NAMES OF A CONTRACT OF A CO	1.00	1.00			1.00	odestasanti
Frpb, ped/bikes	1.00	0.98			0.93		1.00	0.93	NESCENCES (STREET)		0.98	
Flpb, ped/bikes	0.99	1.00			1.00		0.95	1.00			0.90	
	1.00	0.97			0.95		1.00	0.95			0.98	
Flt Protected	0.95	1.00			1.00		0.95 1406	1.00 1383		heed oppositely	1303	
Satd. Flow (prot)	1439	1435			2426 0.87		0.55	1.00			0.85	
FIt Permitted	0.27	1.00			2120		820	1383			1131	
Satd. Flow (perm)	403	1435	0.00	0.04		0.70	shining and a second second		0.67	0.70		0.75
Peak-hour factor, PHF	0.87	0.89	0.89	0.81	0.79	0.70	0.75 3	0.75	0.67	0.79	0.69 87	0.75
Adj. Flow (vph)	170	418	98	56	427	meeting of the provided of the		7	al-turnul motor and a	essinense ophalaa	رہ 6	della farte della farte dana
RTOR Reduction (vph)	0 170	0	0 0	0 0	0 712	0	0 3	2 8	0 0	0 0	216	0 0
Lane Group Flow (vph)	68	516	36	36	/ 12	68	е 68		97	97	210	68
Confl. Peds. (#/hr)	00		30 2	06 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999		oo Hiskepter	oo Kalinaka		97 4	J C References		2
Confl. Bikes (#/hr)	3%	5%	2 1%	1%	14%	1%	1%	1%	1%	1%	1%	12%
Heavy Vehicles (%)		076 (889/889/889)	1 70		1470	1 /0	Perm	1 /0	I 70	Perm		
Turn Type	pm+pt	γ γ		Perm	6		гени	8		гени	4	
Protected Phases	5 2	2		6			8			4	+ 	SPANASINI SI SANA
Permitted Phases Actuated Green, G (s)	67.7	67.7			44.0	respondential de la composition de la c	22.3	22.3			22.3	
Effective Green, g (s)	67.7	68.7			45.0		23.3	23.3			23.3	
Actuated g/C Ratio	0.68	0.69			0.45	NEW CONTRACTOR	0.23	0.23			0.23	REAL PROPERTY IN CONTRACTOR
Clearance Time (s)	4.0	5.0			5.0		5.0	5.0			5.0	
Vehicle Extension (s)	4.0 3.0	3.0			3.0 3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	477	986			954		191	322			264	
v/s Ratio Prot	4/7 0.07	c0.36			004			0.01			- AVTIC	anusis sinti
v/s Ratio Perm	0.07				c0.34		0.00				c0.19	- Sector Se
v/c Ratio	0.36	0.52	enteresentato 24 p		0.75		0.02	0.02		addiren aan de	0.82	
Uniform Delay, d1	7,4	7.6			22.8		29.5	29.6			36.3	
Progression Factor	1.00	1.00		in dia	1.00		1.00	1.00	artelatel parteret	NENNING GEBAG	1.00	
Incremental Delay, d2	2.1	2.0			5,3		0.0	0.0			17.5	
Delay (s)	9.5	9.6			28.1		29.6	29.6	oleinineisinieisinieisi	allari təhçəbildi səs	53.9	8164166661919;9(2))
Level of Service	Ă	A			С		C	C			D	
Approach Delay (s)	0.999.009820.01959.5644	9.6	nexterra successive		28.1	2012201492012111121111111	()////////////////////////////////////	29.6	1968/98/16019090909090909		53.9	1999 (1997) (1997) (1997)
Approach LOS		A			С			C			D	
	enereten bold HARS 483	allan ticelli feolini										
Intersection Summary			00.0		011				~			
HCM Average Control Delay			23.8		CM Level	of Servic	e		С			philippian and an
HCM Volume to Capacity ra	llio Elemente de la companya		0.72			Hine 7-1			12.0			
Actuated Cycle Length (s)	elen tion		100.0 79.4%		um of lost CU Level o				IZ.V D			
Intersection Capacity Utiliza	uion Boolaiste		/9.4%									
Analysis Period (min)		, aga ga	0.000							neke sasisi		

		~	1	
Lane Group	EBT	WBT	SBL	Ø
Lane Configurations	Å	4	\ 7	
Volume (vph)	449	557	2	
Turn Type	andas samba di saladarani medinan		ensite the state of the state of the	
Protected Phases	2	6	4	9
Permitted Phases	2	6	4	
Detector Phase Switch Phase		0	4.00	
Minimum Initial (s)	30.0	30.0	7.0	1.5
Minimum Split (s)	39.0	39.0	18.0	4.5
Total Split (s)	58.0	58.0	18.0	4.5
Total Split (%)	72.0%	72.0%	22.4%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	4.0	4.0	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	None 8.1	None
Act Effct Green (s)	69.1 0.95	69.1 0.95	0.1 0,11	
Actuated g/C Ratio	0.95	0.95	0.07	
Control Delay	1.7	2.6	29.7	
Queue Delay	0.0	0.0	0.0	nneljeve
Total Delay	1,7	2.6	29.7	
LOS	A	A	С	10/12/2012/014194/4444
Approach Delay	1,7	2.6	29.7	
Approach LOS	A	A	С	
Intersection Summary				
Cycle Length: 80.5				
Actuated Cycle Length: 72.	5			
Natural Cycle: 65				
Control Type: Semi Act-Un	coord			
Maximum v/c Ratio: 0.48		a biographic pharmad the physical biographics.		a a goi se amete agul a bair
Intersection Signal Delay: 2				Inte
Intersection Capacity Utiliza	ation 49.1%			ICU
Analysis Period (min) 15				

Splits and Phases: 7: Forbes Ave & Hamburg Hall

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58 s	18 s	4.5 s
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Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations	<u>ماليدسة</u>	<u></u>	Â		<u>্ডেচ</u> ম্ব				
Volume (vph)	0	449	557		2				
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	N Mala Mala Mala da Para da Para		
Total Lost time (s)		4.0	4.0		4.0				
Lane Util. Factor		1.00	1.00		1.00				
Frpb, ped/bikes		1.00	1.00		0.99				
Flpb, ped/bikes	و الدوم المحام الحام الح	1.00	1.00	davada wa anda hata bata	1.00			territerretilerterretiers Fitzlike (1	
Fit		1.00	1.00		0.95				
Fit Protected	in e statuska boszt	1.00	1.00	ta letek eta kizara h	0.97	tegtista projektelje na je podalje je j	solaan mermula Danjak hijikin	and weight international and an and a second state of the second s	inine and a substantial initial vehicle inter-
Satd. Flow (prot)		1500	1443		1446				
		1.00	1.00	en de la compañía de	0.97				
Satd. Flow (perm)		1500	1443		1446	0.0F		na navenina kalati i Jung Albana kalati Na Mana ang Kalati i Ang Kalati na kalati i Ang Na Mana ang Kalati na kalati na kalati	
Peak-hour factor, PHF	0.97	0.89	0.84	0.25	0.25	0.25		CINES MANAGEMET AND	
Adj. Flow (vph) RTOR Reduction (vph)	0	504	663 0	4	8 0	4 0			
Lane Group Flow (vph)	0 0	0 504	667	0 0	u 12	0	n in an		
Confl. Peds. (#/hr)	59	-	007	59	83	5		BUGGININUN SPEKKERKEN	INGGARAN MERGERARY SAN DATA
Confl. Bikes (#/hr)									
Heavy Vehicles (%)	0%	5%	9%	0%	0%	0%	TRANSMENSION NEW YORK	konstalativali infinisti, can dan	
Turn Type									
Protected Phases		2	6	र्थविद्यालय हिंदावय	10001000000000000000000000000000000000				
Permitted Phases									
Actuated Green, G (s)	194 (1944) of Caroly (1946)	64.9	64.9		1.5				
Effective Green, g (s)		65.9	65.9		2.5				rana nan nasaran ase alay na n Taga nasaran na nasaran s
Actuated g/C Ratio		0.86	0.86	an ta barranta ta mata da se sina da s	0.03				
Clearance Time (s)		5.0	5.0		5.0				
Vehicle Extension (s)		3.0	3.0	to I propriet according to the propriet of the property of the	3.0				A. A
Lane Grp Cap (vph)		1294	1245		47				
v/s Ratio Prot		0.34	c0.46	eforenika kasterinski s	c0.01	AGEN CONTRACTOR OF CONTRACTOR		S MINISTRATIZZZ KODI KODI	sintin hayasa danya dulattin (data catara)
v/s Ratio Perm									
v/c Ratio	NIRGERAL	0.39	0.54 1.3	Contraction of the second	0.26				
Uniform Delay, d1		1.1 1.00	1.00		30.0 1.00				
Progression Factor Incremental Delay, d2		0.9	1.00		2.9				n per ang tanàna na amin'ny kaodim-paositra dia kaodim-paositra dia kaodim-paositra dia kaodim-paositra dia kao Jeografia
Delay (s)	onesines sus	2.0	3.0		38.9	ACCOUNTS AND ADD ADD ADD ADD ADD ADD	n season i che constant		
Level of Service		Â	Ă		D				
Approach Delay (s)	usuusuuk	2.0	9999-9999-66699 3.0		38.9	alaaniden printen and provinsi kan		an a	n (en fen in de streiger en sternerster sternerster sterner)
Approach LOS		A	A		D				
Intersection Summary									
HCM Average Control Delay		alutesta altera	2.9	H	CM Level	of Service		A	
HCM Volume to Capacity ratio	44444444444444	CORPORED VEHICLE	0.53		and the factor of the second	1911999 (1919) - Alexandre (1919) (1919) (1919) (1919) (1919) (1919) (1919) (1919) (1919) (1919) (1919) (1919)	a na an a tanan garata (di tan hasin) ni i		
Actuated Cycle Length (s)			76.4	S	um of los	time (s)		8.0	
Intersection Capacity Utilization	, 1		49.1%			of Service	nanga na katang kang kang kang kang kang kang kang k	A	n na
Analysis Period (min)			15						
c Critical Lane Group		,	nin den den den den de la grande br>La grande de la grand			an a		and a second	

1		~	A	1					
EBL	EBT	WBT	WBR	SBL	SBR	ø8			
 k	Å	Å	1	*	オ				

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø8		
Lane Configurations	ካ	†	ት	7	፞፟ኻ	7			
Volume (vph)	177	230	637	146	249	219			
Turn Type	pm+pt			Perm	In terrory page of page 11	custom		norma men el de compani a company fel est interna a la company da com	ale standa berinteratura eta karalarin dara dari dari dari dari dari dari dari
Protected Phases	5	2	6		4	4	8		
Permitted Phases	2	and the first second second become second	man Administrative served the barran	6	une i vere tette à la la la data	4	an a		
Detector Phase	5	2	6	6	4	4			
Switch Phase				1				an isin baran dini ka Milian.	i de se de la completa de la complet
Minimum Initial (s)	1.0	6.0	6.0	6.0	6.0	6.0	4,0		
Minimum Split (s)	5.0	20.0	20.0	20.0	16.0	16.0	20.0	i na suga kuyangi kuya	
Total Split (s)	18.0	94.0	76.0	76.0	34.0	34.0	22.0		
Total Split (%)	12.0%	62.7%	50.7%	50.7%	22.7%	22.7%	15%	na de la compañía de	
Yellow Time (s)	3.0	4.0	4,0	4.0	4.0	4.0	2.0		
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	an an ing sa katalara	
Lost Time Adjust (s)	1.0	0.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.0	6.0	er sog se sant en alger er en angel er er er	NET CONTRACTOR OF CONTRACTOR	a na seriesta de la compañía de la c
Lead/Lag	Lead		Lag	Lag					
Lead-Lag Optimize?	Yes		Yes	Yes		eren fan Raamanerer	e e constant a subarra de la constant de la constan		
Recall Mode	Max	Max	Max	Max	Max	Max	Max		
Act Effct Green (s)	90.0	88.0	70.0	70.0	28.0	28.0			www.encomerce.com/articles/antical/articles/articles/articles/articles/articles/articles/articles/articles/arti
Actuated g/C Ratio	0.60	0.59	0.47	0.47	0.19	0,19			
v/c Ratio	1.19	0.30	1.11	0.29	0.96	1.15			e in des manufactures and the second statement of the second statement of the second statement of the second st
Control Delay	155.3	16.6	105.0	26.4	104.6	158.9			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	155.3	16.6	105.0	26.4	104.6	158.9			
LOS	F	В	F	С	F	F	-	en factoria por loculario de la factoria da com	na na manana ka
Approach Delay		82.5	90.7		132.0				
Approach LOS		F	F		F				
Intersection Summary									
Cycle Length: 150								,,, <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	
Actuated Cycle Length: 150)								
Offset: 0 (0%), Referenced	to nhase 2	•FRTI ar	nd 6∙WBT	Start of	Green			e realize to size i pentre fazzet et transferente	ani në ndër 19 dese të
Natural Cycle: 150									
Control Type: Pretimed		GUERNENNENNENNE	IN REPORTED	NINGGROUNDIG		erenteko kontra eta eta eta eta eta eta eta eta eta et	a na se	eperation of 2007 2022 2022 2020 2020 2020 2020 202	ng na kanan ng meneri ng Kinong
Maximum v/c Ratio: 1.19									
Intersection Signal Delay: §	00 0			1 (1993) 	ntersectio	on LOS: F			
Intersection Capacity Utiliz	ation 82 2º	6				of Service	E		
Analysis Period (min) 15	2.191 YE.F.	*********	an tur etsi 2012)			sating Kribo Ra	an an an dha maada ah		an a
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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	ኣ	ት	个	ሾ	ሻ	7
Volume (vph)	477	230	637	146	249	219
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4,0	6.0	6.0	6.0	6,0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Ett.	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd, Flow (prot)	1467	1500	1486	1256	1481	1251
Flt Permitted	0.08	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	124	1500	1486	1256	1481	1251
Peak-hour factor, PHF	0.75	0.88	0.83	0.86	0.94	0.81
Adj. Flow (vph)	236	261	767	170	265	270
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	236	261	767	170	265	270
Confl. Peds. (#/hr)	20		whytiate is a second	20	148	700
Confl. Bikes (#/hr)				3		
Heavy Vehicles (%)	2%	5%	6%	2%	1%	7%
Tum Type	pm+pt			Perm		custom
Protected Phases	5	2	6		4	4
Permitted Phases	2			6		4
Actuated Green, G (s)	88.0	88.0	70.0	70.0	28.0	28.0
Effective Green, g (s)	87.0	88.0	70.0	70.0	28.0	28.0
Actuated g/C Ratio	0.58	0.59	0.47	0.47	0.19	0.19
Clearance Time (s)	3.0	6.0	6.0	6.0	6.0	6.0
Lane Grp Cap (vph)	197	880	693	586	276	234
v/s Ratio Prot	c0.11	0,17	0.52		0.18	c0.22
v/s Ratio Perm	c0.58			0.14		
v/c Ratio	1.20	0.30	1,11	0.29	0.96	1.15
Uniform Delay, d1	44.2	15.5	40.0	24.7	60.4	61.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	127.7	0.9	67.3	1.3	44.9	106.7
Delay (s)	171.9	16.4	107.3	25.9	105.3	167.7
Level of Service	F	В	F		F	F
Approach Delay (s)		90.2	92.5		136.8	
Approach LOS		F	F		F	
Intersection Summary						
HCM Average Control Del	av		104.0	Ц	CMLeve	I of Service
HCM Volume to Capacity	WANTER TRANSPORTATION AND A CONSTRUCTION OF		1,14	יח המתחקקים		
Actuated Cycle Length (s)		u na	150.0	Ci	insisterinansi Im of los	t time (s)
THE ADDRESS OF ADDRESS OF ADDRESS ADDRE	a second a bag hash been been been been been been a		82.2%	sector and a sector of a secto	to one to be an an attack on the second second	of Service
Intersection Capacity Utiliz Analysis Period (min)	COUNTER		oz.z % 15		U LCAGI	UI UCI VIUC
c Critical Lane Group			ij I		dalam kasi kabula ka Manangga kasi kasi kasi	

	#	>	<u>x</u> -	4	×	6	K				
Lane Group	EBL	EBT	WBL	WBT	NET	SWL	SWT	ø9			
Lane Configurations	ሻ	٩ ٩	ሻ	Â	4 3		a }>				
Volume (vph)	53	301	62	567	1	74	29				
Turn Type	D.P+P		Perm	tal and a local sector of the sector	and of the second state.	Perm					
Protected Phases		21		2	4		4	9			
Permitted Phases	2		2			4					
Detector Phase		21	2	2	4	4	- 4				
Switch Phase	1019416320152107010101010101		and a sensitive and the relationship	NANAN CARACTERISTICS (CLUB)	-1941-1912-1914		and particularly independent of the				
Vinimum Initial (s)	4,0		4.0	4.0	4.0	4.0	4.0	1.5			
Vinimum Split (s)	8.0	të tën dete në serie e dë	39.0	39.0	27.0	27.0	27.0	4.0			
Fotal Split (s)	8.0	53.0	45.0	45.0	31.0	31.0	31.0	4.0			
Total Split (%)	9.1%	60.2%	51.1%	51.1%	35.2%	35.2%	35.2%	5%	ng ng pagang ng manang galang sa pang ng sa	overer Anderey free-a Anderey	antygensisiain waarda
Yellow Time (s)	3.5		3.0	3.0	3,0	3.0	3.0	2.0			
All-Red Time (s)	0.5	an a	2.0	2.0	1.0	1.0	1.0	0.5			2011/12/22/2012/22/05/22/22
Lost Time Adjust (s)	0.0	0.5	0.5	0.5	0.5	0.5	0.5				
Total Lost Time (s)	4.0	5.5	5.5	5.5	4.5	4.5	4.5			Madaata da ay kalan da ay d	******
ead/Lag		nte in vicella de la lite Negatione de la company									
_ead-Lag Optimize?	heiste feinde feinzen erste serenen.	nishan marafatari	an kakarangang	(paristina and a second	ande teleformen de entre de la constante de la c	ka gugad casa panjugad ex	in (alian japa) na aser si in	ana selata sebera raéa an	na jeste sa sina se	nacionen hetenaimensi	contrainen eta
Recall Mode	Max		Max	Max	Max	Max	Max	Max			
Act Effct Green (s)	45.0	47.5	39.5	39.5	26.5	an islan nyi biyo (1994-9)	26.5	anana kananananan	contrapping and a set of the set	Studies of Distribution (States St	ndi Merikan di Saki kényi ké
Actuated g/C Ratio	0.51	0.54	0.45	0.45	0.30		0.30				
//c Ratio	0.34	0.42	0.23	0.98	0.01		0.85	an madal in na kital internali	and a second		29194991414590169991
Control Delay	14.1	13.9	17.0	55.1	15,5		40.2				
Queue Delay	0.0	0.0	0.0	0.0	0.0	ni stini ni	0.0	9104465-8093934 Holiyaana k	ng ng ling ng n		ninen sennen son son son son son son son son son so
Total Delay	14.1	13.9	17.0	55.1	15.5		40.2				
LOS	B	B	B	E	B	n an	D		i ni	jerg (Mitalianist) si begejsis	in an
Approach Delay		13.9		50.8	15,5		40.2				
Approach LOS		B	and a second	D	B	na production and the second	D			a sha a ka a sa a sa a sa a sa a sa a sa	
• •	alara da tangan tan kan da kan da tangan tangan da sa	ы. 					••••				
ntersection Summary											
Cycle Length: 88								tananan ka kasaka dananangan jak			No. 11. 11 and 11. 12 mark 12 and
Actuated Cycle Length: 88									u zapanio da		
Offset: 79 (90%), Referenc	ed to phase	2:EBWB	and 6:, 8	Start of Gr	een						
Vatural Cycle: 90											
Control Type: Pretimed							·				
Maximum v/c Ratio: 0.98											
Intersection Signal Delay:	38.3					n LOS: D			- Inneres, In Figure	here a second	
Intersection Capacity Utiliz				K K	U Level	of Service	e D				
Analysis Period (min) 15											
• · · ·											
Splits and Phases: 9: Fo	orbes Ave &	Beeler Si	t								
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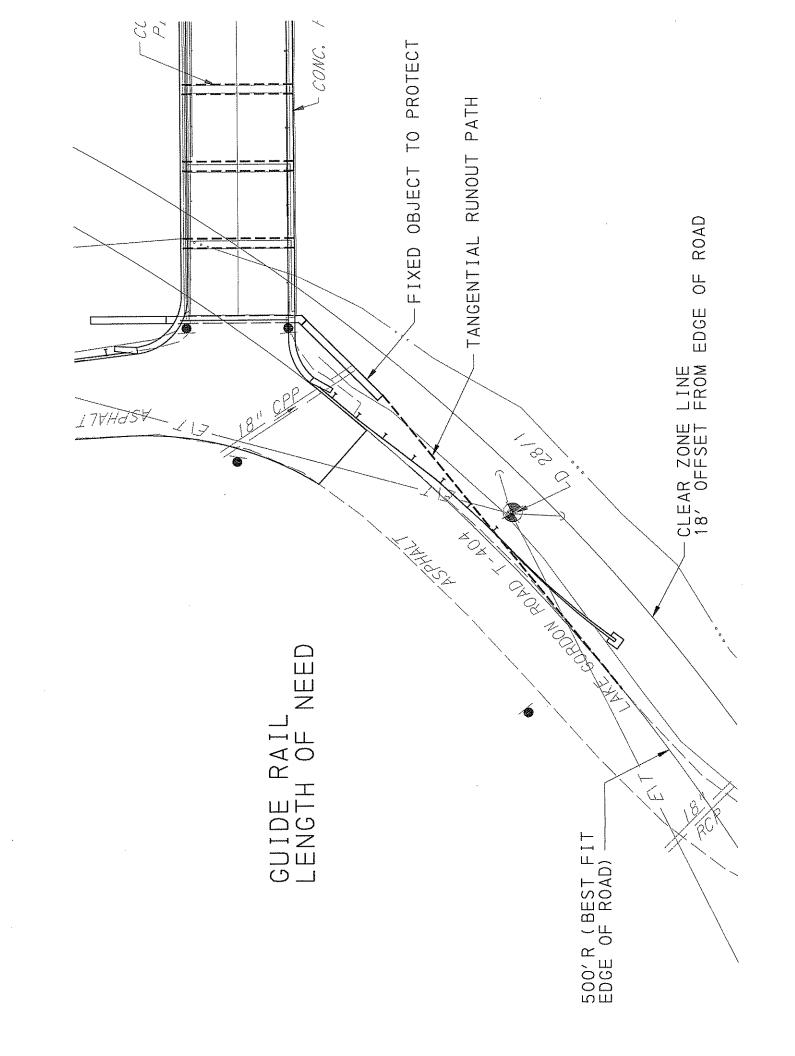
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	ሻ	4Î		۴	ĥ		e ta bar ne october na kar fakter	4 >			4	lah ing saladidi
Volume (vph)	53	301	7 -	62	567	15	0		3	74	29	211
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	5.5		5,5	5.5			4.5			4.5	
Lane Util. Factor	1.00	1.00	M BEING BERING BURGER	1.00	1.00	CONTRACTOR OF STREET, S		1.00	AMAMMAN ANALYSIS	an and a second s	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.87			1.00	
Flpb, ped/bikes	1.00	1.00		0.96	1.00		Signation	1.00			0.97	
Frt	1.00	1.00		1.00	1.00			0.89			0.91	
Flt Protected	0.95	1.00	ta si su dago jalasa se	0.95	1.00		anatan seriatah	1.00	nisiaainkominisi		0.99	enterverstelstation
Satd. Flow (prot)	1436	1518		1422	1505			1216			1340	
Fit Permitted	0.18	1.00	hener and a state of the state	0.56	1.00		ETERSON STREET	1.00		mensionistasi	0.92	
Satd. Flow (perm)	271	1518		831	1505			1216			1246	
Peak-hour factor, PHF	0.83	0.91	0.63	0.74	0.88	0.89	1.00	0.75	0.75	0.76	0.83	0.82
Adj. Flow (vph)	64	331	11	84	644	17	0		4	97	35	257
RTOR Reduction (vph)	0	2	0	0 Internet constrained	1	0	0	3 Statestastiseedikk	0	0	80	0
Lane Group Flow (vph)	64	340	0	84	660	0	0	2	0	0	309	0
Confl. Peds. (#/hr)	42	edanti andorra latotale	34	34	unounde laste during the feature	42	segmentarialia.		83	83	error of the second second	SERVICE STREET
Confl. Bikes (#/hr)			4			8			2			
Heavy Vehicles (%)	4%	3%	1%	1%	4%	3%	1%	1%	1%	6%	0%	1%
Turn Type	D.P+P			Perm			Perm			Perm		
Protected Phases	1	21	l a l ago fanon l og for Kørne Korper		2		were the second state of the second	4	and a state of the		4	paramidian'i
Permitted Phases	2			2			4			4		
Actuated Green, G (s)	44.0	48.0	u bal bau barre barr eta a Arriko erken be	40.0	40.0	and the second secon	e de contacte de la contra de	27.0			27.0	a de la compañía de l
Effective Green, g (s)	44.0	43.0		39.5	39,5			26,5			26.5	
Actuated g/C Ratio	0.50	0.49	arrand asked briefs and	0.45	0.45	nterriterikinik	usion and a state of the	0.30		energe setter state	0.30	derivent der ik
Clearance Time (s)	4,0			5.0	5.0			4.0			4.0	
Lane Grp Cap (vph)	188	742		373	676			366	tolainto ilsensetaste ett kin	veles esseriations	375	2012 01010 1010 010
v/s Ratio Prot	0.02	c0.22			c0.44			0.00				
v/s Ratio Perm	0.15	en ann ann à taoisteachdach	2014 March 1972 Alicentee etc. 1	0.10	them the part hand at the line is the first state of the	de tre set e ferre compress com	in a fa f	terre de la construcción	a cursa nenarar Na nesrestera	STATISTICS OF STREET, STREET, ST	c0.25	http://www.com/com/co
v/c Ratio	0.34	0,46		0.23	0.98			0.01			0.82	
Uniform Delay, d1	14.8	14.8		14.9	23.8		na mana caden isteka	21.5		10/10/01/01/01/01/01/01/01/01/01/01/01/0	28.6	namaganaiaona
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	4.9	2.0	anda dagi sala	1.4	29.3			0.0	Digital Magnada	Konstantinen sin sin sin sin sin sin sin sin sin si	18.3	gradusedas
Delay (s)	19.6	16.9		16.3	53.0			21.6			46.9	
Level of Service	B	B		B	D	ALTERNATION AND AND AND AND AND AND AND AND AND AN	som konstant		tee wide weeten	envirumentation (negative	D	
Approach Delay (s)		17.3			48.9			21.6			46,9	
Approach LOS		В			D			С			D	
Intersection Summary												
HCM Average Control Delay			40.0	Η	CM Leve	of Servic	e.		D	an an ann an an an Arra Araba an Araba		0.0111100000000000000000000000000000000
HCM Volume to Capacity rati	0		0.91	n og de sonder Geologie se se se								
Actuated Cycle Length (s)			88.0		um of los				19.5			
Intersection Capacity Utilizati	on		81.5%	IC	U Level i	of Service			D			
Analysis Period (min)			15									

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Lane Group	EBL	NBL	NBT	SBT	SBR	ø9
Lane Configurations	¥	- 1 a a firsta com a se faste for a sta	र्व	Å	ሾ	
Volume (vph)	122	46	531	188	191	
Turn Type		Perm	mus some primare to shead it.	end a some some bestaden bladtarer	Perm	
Protected Phases	4		2	2		9
Permitted Phases		2	ten finansa merika di sati fina di Martin 2017 di		2	
Detector Phase	4	2	2	2	2	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	1.5
Minimum Split (s)	23.0	58.0	58.0	58.0	58.0	4.0
Total Split (s)	23.0	58.0	58.0	58.0	58.0	4.0
Total Split (%)	27.1%	68.2%	68.2%	68.2%	68.2%	5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	0.5
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1,0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	19.0		54.0	54.0	53.0	
Actuated g/C Ratio	0.22	Notice in the second second	0.64	0.64	0.62	
v/c Ratio	0.56		0.71	0.21	0.31	
Control Delay	34.9		15.7	7.2	8.7	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	34.9		15.7	7.2	8,7	
LOS	С		В	Α	Α	
Approach Delay	34.9		15.7	8.0		
Approach LOS	С		В	A		
Intersection Summary						
And the second s						
Cycle Length: 85	ura constanta a substanta Managemente					
Actuated Cycle Length: 85		NDCD		rt of Croo		
Offset: 0 (0%), Referenced	to phase 2.	NDOD ar	10 0., 318		fl Annaiste heidelete	
Natural Cycle: 85						
Control Type: Pretimed						
Maximum v/c Ratio: 0.71	E O			1.	ntersectior	
Intersection Signal Delay: 1				e e la colorada e la desta desta de la composición de la		of Service F
Intersection Capacity Utiliza	30011 90.9%					
Analysis Period (min) 15						
Online and Diseases 40.14	Insurant \$1-	minon Of	0 Earlier	Aun		
Splits and Phases: 10: M	largaret Mo	mson St	a ruibes	AVE		

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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Ý			र्स	个	1
Volume (vph)	122	22	46	531	188	191
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	
Total Lost time (s)	4.0			4.0	4.0	5.0
Lane Util. Factor	1.00	and the second	u nore tox al nelal mini tou	1.00	1.00	
Frpb, ped/bikes	0.98			1.00	1.00	0.97
Flpb, ped/blkes	1.00	Centring Bringstep	en an fan se keiter herster perte	1.00	1.00	1.00
Entering	0.98			1.00	1.00	0.85
Flt Protected	0.96	rma-coma (produjumin	as de las raine (productore)	0.99	1.00	
Satd, Flow (prot)	1437			1497	1514	1288
Fit Permitted	· 0.96			0.95	1.00	
Satd. Flow (perm)	1437			1430	1514	1288
Peak-hour factor, PHF	0.80	0.69	0.71	0.92	0.95	0.78
Adj. Flow (vph)	152	32	65	577	198	245
RTOR Reduction (vph)	9	0	0	0 אריינייניינייניינייניינייני	0	
Lane Group Flow (vph)	175	0	0	642	198	245
Confl. Peds. (#/hr)	www.expansion.com	34	8	ana manganganganganganganganganganganganganga		
Confl. Bikes (#/hr)		2				
Heavy Vehicles (%)	1%	1%	1%	5%	4%	1%
Tum Type			Perm			Perm
Protected Phases	4	alayulayalgata sagata sa	alajankanangkat <u>i</u> nkanya	2	2	
Permitted Phases and an and an and a second			2			2
Actuated Green, G (s)	18.0		n an	53.0	53.0	
Effective Green, g (s)	19.0			54.0	54.0	53.0
Actuated g/C Ratio	0.22		and a state of the	0.64	0.64	0.62
Clearance Time (s)	5.0			5.0	5.0	5.0
Lane Grp Cap (vph)	321			908	962	
v/s Ratio Protesta de la constance	c0.12				0.13	
v/s Ratio Perm	Seneration and the second	asadarbaikini	Salahi Galakana	c0.45	wikerte operations	
v/c Ratio	0.55			0.71	0.21	0.31
Uniform Delay, d1	29.2	uraja (SJARNA)		10.3	6.5	7.4
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	6.5	norm following and the following state		4.6	0.5	
Delay (s) and the second second	35.7			14.9	7.0	8.4
Level of Service	D			B	A Basel a la casa	A Normani se na seconda da seconda de la se
Approach Delay (s)	35.7			14.9	7.8	
Approach LOS	D			В	A	
Intersection Summary					÷.	
HCM Average Control Delay			15.4	Н	CM Leve	el of Service B
HCM Volume to Capacity rat	io		0.66			
Actuated Cycle Length (s)	· · · · · · · · · · · · · · · · · · ·	*	85.0			st time (s) 12.0
Intersection Capacity Utilizat	ion		95.9%	IC	U Level	of Service
Analysis Period (min)	· //	مى ئىرى ئىرى ئىرى ئۇرىيى يۇ	15	the latest 2004 and other for the first	to the spranged structure provide	
c Critical Lane Group	usawan Notabiya		na sa Palisi da		JANESSA NO	



			1	ê. Î	P	1		
ane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT	
ane Configurations	ŧ	♠ኈ	ሻ	Ъ	ሻ		&	in kongensjogen og bø
/olume (vph)	36	897	262	185	397	175	0	
Furn Type	24414 540 5FT 270 400 100 100 100 100 100 100 100 100 10		Perm		Perm	Perm		the second s
Protected Phases	2	2		8			4	
Permitted Phases	2010,0200000000000000000000000000000000		8		8	4		
Detector Phase	2	2	8	8	8	4	4	
Switch Phase	oning operations and a second second second second	nd not of reformed processing of the						
Vinimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	
Vinimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
Fotal Split (s)	34.0	34.0	46.0	46.0	46.0	46.0	46.0	
Fotal Split (%)	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%	57.5%	
Yellow Time (s)	3.0	3.0	3.0	3,0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1,6	-1.6	-1.6	-1,6	-1.6	-1.6	-1.6	
Total Lost Time (s)	3.4	3.4	3,4	3.4	3.4	3.4	3.4	
Lead/Lag								
Lead-Lag Optimize?	and a second	(arth Mighten Helin (14)+	nienteentententeitie	000 M 0000 0 0 00 0 19 0 00 0	a (a su a construct of Colonal à	11121919191999999999999999999999999999	enn nite enerlitet (n. 1. dav 1. dave nite nære niterenniterendet hjelder i 2000 och de niteren i en en en en e	
Recall Mode	C-Min	C-Min	Min	Min	Min	Min	Min	
Act Effct Green (s)	34.7	34.7	38.5	38.5	38.5	مەربىيە بىر مەربىيە بىر بىر كۈچۈك يەر	38.5	
Actuated g/C Ratio	0.43	0.43	0.48	0.48	0.48		0.48	
v/c Ratio	0.12	0.75	0.87	0.44	0.46		0.81	
Control Delay	17.0	33.8	41.6	14.9	15.5		33.5	
Queue Delay	0.0	0.2	0.0	0.0	0.0		0.0	
Total Delay	17.0	33.9	41.6	14.9	15.5		33.5	
LOS	B second s	C	D	B	B	1010009769000000000000000000000000000000	C	
Approach Delay	17.0	33.9		24.7			33.5	
Approach LOS	B	С	refinitin (dirihi inijir).	С	UND Distances	Addiging sector particular		2.00 Project of a feature of
	_	-		-				
Intersection Summary								
Cycle Length: 80	ana ini ing palating aging ta thi	v i se broch i strategi po (i strategi		ales blagat salkal krivest	virmerrowine filming in [2			
Actuated Cycle Length: 8								
Offset: 35 (44%), Referer	nced to phase	2:EBWB	I, Start of	Green	a and the state of t	THE REPORT OF		
Natural Cycle: 55								
Control Type: Actuated-C		while a company of the ball	na na na na kala (katalago)			anton Generalder		
Maximum v/c Ratio: 0.87								
Intersection Signal Delay		Andre in the origination of the state of the			and an increasing and easy in solution	on LOS: C	wave proved a transfer of the first of the first of the wave based as a part of the first of the	
Intersection Capacity Util					CU Level	of Servic		
Analysis Period (min) 15								
Splits and Phases: 1: I	Fifth Ave & Be	llefield A	ve					
				i k				

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SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, PM 1: Fifth Ave & Bellefield Ave

	A		¥	¥.	4	R.	4	ĥ	p	\$	Ť	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		个		- t	<u></u> ∱∱∌		ሻ	4	۲		æ	adubbintatiral
Volume (vph)	0	36	0	0	897	34	262	185	397	175	0	106
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		3.4			3.4		3.4	3,4	3.4		3.4	
Lane Util. Factor	eren generale de la companya de la c	1.00			0.95		1.00	0.95	0.95		1.00 0.93	
Frpb, ped/blkes		1.00		ANA	0.98		1.00 0.91	0.99	0.97		0.93	
Flpb, ped/bikes		1.00			1.00 0.99		1.00	0.94	0.85		0.95	
Frt Fit Protected		1.00			1.00		0.95	1.00	1.00		0.97	
Satd. Flow (prot)		921			3101		1367	1519	1329		1470	
Flt Permitted		1.00		Selence and the selection of the selecti	1.00		0.57	1.00	1.00	SULTINE LEVELSE	0.56	27233-004-0223-04
Satd. Flow (perm)		921			3101		825	1519	1329		841	
Peak-hour factor, PHF	0.94	0.75	0.25	0.25	0.93	0.73	0.76	0.95	0.95	0.89	0.25	0.80
Adj. Flow (vph)	0.04	48	0	0.20	965	47	345	195	418	197	0	132
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	Ō	48	Ō	Ō	1012	0	345	320	293	0	326	0
Confl. Peds. (#/hr)	240	120202000000000000000000000000000000000	280	280	ni i fi i eret el et et el adago de	240	245	ndarfariset friggta fri billiset d	31	31		245
Confl. Bikes (#/hr)			- 14			9						7
Heavy Vehicles (%)	0%	90%	0%	0%	5%	1%	11%	1%	3%	1%	0%	2%
Tum Type							Perm		Perm	Perm		
Protected Phases		2			2			8			4	watch the standard and a standard at
Permitted Phases							8		8	4		Signaliya Rukon Leina
Actuated Green, G (s)	- h) on h i verster (33.1	was been kultula in a tempeter	movem ni poteta (1969/93/k	33.1	control core o faille in this	36.9	36.9	36.9	Winner warden wier	36.9	
Effective Green, g (s)		34.7			34.7		38.5	38,5	38,5		38.5	
Actuated g/C Ratio		0.43		aparata da	0.43	anay ka dan ka	0.48	0.48	0.48		0.48	
Clearance Time (s)		5.0			5.0		5.0	5.0	5.0		5.0	
Vehicle Extension (s)	and but the observation of the state	3.0		weight weise gespätzen die state	3.0	999941953115331823	3.0	3.0	3.0	Asipalyzauzopia	3.0	
Lane Grp Cap (vph)		399			1345		397	731	640		405	
v/s Ratio Prot	2000-010-010-010-010-010-010-010-010-010	0.05	alenter zustainen der		c0.33	NEWTONED		0.21		osinegadas	0.39	
v/s Ratio Perm					A 75		c0,42	0.44	0.22		0.81	
v/c Ratio		0.12			0.75 19.0		0.87 18.5	0.44 13.6	13,8		17.6	
Uniform Delay, d1		13.5 1.00			19.0 1.46		1.00	13.0 1.00	1.00		1.00	
Progression Factor Incremental Delay, d2		0.6	nyan dari sili. Salah sala		3.3		17.9	0.4	0.5		11.1	
Delay (s)		14.1	NIGENERAL		31.1		36.4	14.1	14.3		28.7	fixang:Tereninke
Level of Service		B			Ċ		D	B	B		C	
Approach Delay (s)		14.1		en een de	31.1	996361943193993	alalyisedeli (<u>FE</u> FERE)	22.2	1991 Hilling States	vide profilization	28.7	ni minera de la del
Approach LOS		B			C			C			C	
Intersection Summary			00.0		CM L and	of Comin			C		nan kan ina ka	
HCM Average Control Delay		oge oge sigt og	26.8		CM Level	OL DELVIC						(lettertettette
HCM Volume to Capacity ratio	J II)IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		0.81		um of losi	time /e\			6,8			
Actuated Cycle Length (s) Intersection Capacity Utilization	SHEERING N		98.3%		Ullioniosi XU Level (n sin se di den e N		o.o F			guayaayaal
Analysis Period (min)	ル 国際部務部		90.370 15									
manyoia - chod (min) - mini	using and a second s	terikeenikeel	angunun (MAG	CARDING STREET	REPORT OF	essis den Sizie 2005	n ya kana kana kana kana kana kana kana	ersisten and disig	aanaayayayayaya	angestiers with party	isi sa mangalakan sa	enternitiene

	Å		F	-4	-	Ŷ	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	
Lane Configurations		ৰ্ধ কি	um fragteneruster taget diest og filler og	क्षी कि	ሻ	Å	
Volume (vph)	15	529	14	813	118	83	
Turn Type	Perm		Perm	1	Perm		
Protected Phases		2		2		4	
Permitted Phases	2		2		4		
Detector Phase	2	2	2	2	4	4	
Switch Phase						د. ان اور بروی می از می و به اور بی اور می اور می و اور می و اور اور اور اور اور اور اور اور اور ا	
Minimum Initial (s)	34.0	34.0	34.0	34.0	15.0	15.0	
Minimum Split (s)	40.0	40.0	40.0	40.0	30.0	30.0	
Total Split (s)	50.0	50.0	50.0	50.0	30.0	30.0	
Total Split (%)	62.5%	62.5%	62.5%	62.5%	37.5%	37.5%	
Yellow Time (s)	4.0	4.0	4,0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.6	-1.6	-1.6	-1.6	-0.8	-0.8	
Total Lost Time (s)	4.4	4.4	4.4	4.4	4.2	4.2	
Lead/Lag							
Lead-Lag Optimize?	and be not and a second of the second se						
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	
Act Effct Green (s)	2016-04121-0-2114-040-1-000-040-040-04	45.6	and an	45.6	25.8	25.8	
Actuated g/C Ratio		0.57		0.57	0.32	0.32	
v/c Ratio	(11) - 20,000 pagangangan specara pangan	0.42		0.59	0.30	0.56	
Control Delay		11.5		20.0	22.4	20.3	
Queue Delay	1	0.0	29.777 A 2 4 5 4 7 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5	0.0	0.0	0.0	
Total Delay		11.5		20.0	22,4	20.3	
LOS	1910-1919-1910-1910-1910-1910-1910-1910	В	, han't dan ship tart soor y ay to t (, t	С	С	С	
Approach Delay		11.5		20.0		21.0	
Approach LOS	ning in a support of the second s	В		С		С	
Intersection Summary							
Cycle Length: 80					naigeoini didakt		
Actuated Cycle Length: 80							
Offset: 46 (58%), Referen	iced to phase		3, Start of	Green		Augusta and a construction of the second	an a
Natural Cycle: 70							
Control Type: Actuated-C	oordinated	ushingan ang ang ang ang ang ang ang ang ang		THE REPORT OF THE	ang dalak katalapan se		
Maximum v/c Ratio: 0.59							
Intersection Signal Delay:		a a sua a sua sua sua sua sua sua sua su	veregeriquisterididid	····· Anno and the form former former fillens	de anne el en recher de la servici de la servi	n LOS: B	
Intersection Capacity Utili	zation 61.0%			anan BeK	CU Level	of Service B	
Analysis Period (min) 15							
Splits and Phases: 2: F	fifth Ave & Di	thridge S	t			f 2	
1						L . A	

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SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, PM 2: Fifth Ave & Dithridge St

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		र्व कि		er a fan fan fan yn gerig faf me faf fan	ৰ 🌬		ሻ	ĥ		ekoles helesteta battetta dalle		
Volume (vph)	15	529	- 24	14	813	24	118	83	154	0	0	0
ldeal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4,4			4,4		4.2	4.2				
Lane Util. Factor	TTOTALIST I STOLEN (STOLEN)	0.95	n ke en sweger ke in staar ke in	la los noticitas de la companya de l	0.95	La colorado máscal das	1.00	1.00	COLUMN PROFESSION			NIX NOTICE DE CASA
Frpb, ped/bikes		0.99			1.00		1.00	0.97				
Flpb, ped/bikes	alexenteringen einer	1.00	sedemansard	transfer til skille i s	1.00		0.93	1.00			Mole Markador da	
		0.99			0.99		1.00	0.91				
Flt Protected	NAN MANAGANA SINT	1.00	haanaaaaaaa	ni ng luga ng kang luga ng kang luga ng kang kang kang kang kang kang kang	1.00		0.95	1.00		Hereferense er se		IIN BUSIN
Satd. Flow (prot)		3008			3136		1512	1512				
Fit Permitted	N HAT THE REPORT OF STREET	0.91			0.94		0.95	1.00			Setter	
Satd. Flow (perm)		2736			2937		1512	1512	0.00	0.05	A 75	0.00
Peak-hour factor, PHF	0.70	0.88	0.72	0.70	0.88	0.64	0.82	0.63	0.88	0.25	0.75	0.25
Adj. Flow (vph)	21	601	33	20	924	38	144	132	175	0	0	0
RTOR Reduction (vph)	0	5	0 0	0 0	3 979	0	0	60 247	0 0	0	0 0	0 0
Lane Group Flow (vph)	470	650	166	166	9/9	173	144 78	24 7	49	u 49		78
Confl. Peds. (#/hr)	173		100	001 1.1.1.1		1/3 2	/ 0 11955-1195	ininseren	43 Errendig	43 Necessien		
Confl. Bikes (#/hr) Heavy Vehicles (%)	5%	9%	29 1%	2%	5%	1%	2%	1888 1884 1884 3%	2%	0%	0%	0%
		5 /0		Perm		1 /0 TANGUN NAM	Perm		o, 1 Senskikske			
Turn Type Protected Phases	Perm	2		гени	<u>energiane</u> 2		rcitti	4				
Protected Phases	2	ل		2			4	rr Hannessensensensen Hannessensensensensensensensensensensensen				
Actuated Green, G (s)		44.0		4	44.0		25.0	25.0			Sellerooding	
Effective Green, g (s)		45.6			45.6		25.8	25.8				
Actuated g/C Ratio		0.57	NERDERENS		0.57		0.32	0.32		an an ann an		umperior.com
Clearance Time (s)		6.0			6.0		5.0	5.0				
Vehicle Extension (s)		3.0		paralates a la sin	3.0		3.0	3.0	1993-1994-1994-1994 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 -	ang kang ang ang ang ang ang ang ang ang ang	an da an	asisisaliem:
Lane Grp Cap (vph)		1560			1674		488	488				
v/s Ratio Prot								c0.16	CONTRACTOR CONTRACTOR		a paga ng paga	aniusidakasi
v/s Ratio Perm	na produkci je poslati Poslati poslati poslati poslati poslati poslati poslati poslati poslati poslati poslati Poslati poslati	0.24			c0.33		0,10					erosensioù Elsesensioù
v/c Ratio	0.0000000000000000000000000000000000000	0.42	ilinid since and	generation and a second	0.58	i el si scelle i o le tra ci o le	0.30	0.51	5-5-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6	ialiti yalili ya ki kita ya	n di mangan kana kana kana kana kana kana kana	*********
Uniform Delay, d1		9.7			11,1		20.3	21.9				
Progression Factor	VABNALI (A FRANK) (A FRANK)	1.11	alaar yaada qada dada dada dada		1.68	leeleeren bevarden van d	1.00	1.00				
Incremental Delay, d2		0.7			1.0		1.5	3.7				
Delay (s)		11.5			19.7		21.8	25.7				
Level of Service		В			В		C	C				
Approach Delay (s)		11.5			19.7			24.4		enter en faite d'arrend d'arrend	0.0	
Approach LOS		В			В			C .			A	
Intersection Summary												
HCM Average Control Delay	aa qaxaa ga kaa		18.1	H	CM Level	of Servic	e		В			Hughige -
HCM Volume to Capacity rati	unidesignete A	SIGNER	0.56	annin kunin katala			and the second second	ana ng kung kung kung kung kung kung kung k		1976-91969-91979-916 1976-91979-91979-916	RATE PROPERTY IN	an de la companya
Actuated Cycle Length (s)			80.0	SI	um of lost	time (s)			8.6			
Intersection Capacity Utilizati			61.0%		U Level o		enterenter en		B	gannetië Siddiji	manatanangelda	an de la constante de la const Constante de la constante de la
Analysis Period (min)			15									

c Critical Lane Group

SIGNAL TIMINGS-- Fifth and Forbes Avenues Existing Conditions, PM

	٨	>	¢*	4	4	Î	\$	Ŷ			
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	ø8		
Lane Configurations		a î îo		ፋዀ	ሻ	₽	ካ	4		۰. 	و الحين والدارية والحيور والحيور معاجز ومسور مع
Volume (vph)	18	647	27	682	59	145	107	121			
Turn Type	Perm		Perm		Perm		Perm			Kundasa minaku u ni mai mina jira	electronic reviewance plantation of the test to
Protected Phases		2		2		4		4	8		
Permitted Phases	2		2		4	ta faite fan te sterfen te fat	4			a francosti finda e dan se da fra frantes d'Alfred	to a procession of a second second sector of the
Detector Phase	2	2	2	2	4	4	4	4			
Switch Phase										وي و و و و و و و و و و و و و و و و و و	
Minimum Initial (s)	24.5	24.5	24.5	24.5	14.5	14.5	14.5	14.5	10.0		
Minimum Split (s)	30.0	30.0	30.0	30.0	20.0	20.0	20.0	20.0	19.0		on to over the term to the second decision was
Total Split (s)	30.0	30.0	30.0	30.0	20.0	20.0	20.0	20.0	30.0		
Total Split (%)	37.5%	37.5%	37.5%	37.5%	25.0%	25.0%	25.0%	25.0%	38%		
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.0		
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5			
_ead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min	Min	Ped		
Act Effct Green (s)		38.5		38.5	14.5	14.5	14.5	14.5			
Actuated g/C Ratio		0.48		0.48	0.18	0.18	0.18	0.18			
v/c Ratio		0.60		0.67	0.84	1.24	1.62	1.17			
Control Delay		15.9		15.7	75.9	157.5	360.9	146.6			
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0			
Total Delay		15.9		15.7	75.9	157.5	360.9	146.6			
LOS		В		В	E	F	F	F			
Approach Delay		15.9		15.7		142.1		211.4			
Approach LOS		В		В		F		F			
ntoreaction Summan											
Intersection Summary											
Cycle Length: 80				erred Freedood in Marine Local Alia General Contractor Contractor	unda i sente un succes i der Tenen i Stern Kunst					noverite i serve i diservi i del Secondo da serve i diservi i dise	
Actuated Cycle Length: 80											
Offset: 20 (25%), Referend	ced to phase		5, 5tart of	Green						REPORT OF THE	
Natural Cycle: 80	and and a d		en ef x San Sen								
Control Type: Actuated-Co	Jordinated		in the second	AN NEW YORK STREET							
Maximum v/c Ratio: 1.62	67 O					n O O · F					
Intersection Signal Delay:				in the first return of the fight wavers may	record or following to the stand to end to the following	n LOS: E	فالمحافظ والمرتب والمراجع والمراجع والمراجع والمراجع				en e
Intersection Capacity Utiliz	cation 90.8%				JU LEVEL	of Servici					
Analysis Period (min) 15											
Oults and De O. T	IAL ALCO O	nia Cé									
	ifth Ave & Cr	aig St	114				1				
							68				

SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, PM 3: Fifth Ave & Craig St

	هر		~	V	4		٩	Î	p	\mathbf{i}	Ť	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		র্ণাঞ			eî î»		ሻ	¢Î		ሻ	۴Î	
Volume (vph)	18	647	18	27	682	55	59	145	135	107	121	110
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.5			5.5		5.5	5.5		5.5	5.5	
Lane Util. Factor	anna far yn fann f y yna fan y fan y fynn y y	0.95	a to the decision of the second		0.95	even started and a second	1.00	1.00		1.00	1.00	and the second states
Frpb, ped/bikes		1.00			0.99		1.00	0.89		1.00	0.87	
Flpb, ped/bikes		1.00	i fonlagny deditor (mityping	adal kapital karana diradira kar	1.00	en se	0.85	1.00		0.88	1.00	-ing to consider graphs
Frt		0.99			0.99		1.00	0.93		1.00	0.93	
Fit Protected	gergergitan ski usin i simist	1.00		and second s	1.00	seeps kan ke varde var tel	0.95	1.00	derbing neuwanisansis	0.95	1.00	
Satd. Flow (prot)		2987			3050		1378	1376		1409	1304	
Flt Permitted	rankasi dalahi	0.88	unalizaminya	in a substantia de la companya de la	0.90		0.33	1.00		0.28	1.00	
Satd. Flow (perm)		2641			2758		477	1376		409	1304	
Peak-hour factor, PHF	0.53	0.93	0.64	0.81	0.88	0.75	0.82	0.88	0.94	0.89	0.84	0.83
Adj. Flow (vph)	34	696	28	33	775	73	72	165	144	120	144	133
RTOR Reduction (vph)	0 Helder retrieventer	0	0 	0 	0 (((())))	0	0	0 Istratuzation	0 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995 - 1995	0	0	
Lane Group Flow (vph)	0	758	0	0	881	0	72	309	0	120	277	0
Confl. Peds. (#/hr)	137	unation maintaine	59	59	terra da la casa da las prefectarses. En esta como da la como da la como da	137	159		138	138		159
Confl. Bikes (#/hr)						10			3		C 0/	1
Heavy Vehicles (%)	33%	9%	5%	3%	6%	6%	3%	7%	3%	4%	5%	12%
Tum Type	Perm			Perm			Perm			Perm		
Protected Phases	errerer as a state	2 parantesiste (debatered)	tuntik/seventers		2 ////////////////////////////////////		NATE OF STREET,	4 181193/1880/201	un anti anti anti anti anti anti anti ant		4 Bimeren Marini	na raj mata kata kan Pana kata kata kan
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		38.5	Filipping		38.5		14.5	14.5		14.5	14.5	
Effective Green, g (s)		38.5			38.5		14.5	14.5		14.5	14.5	
Actuated g/C Ratio	A SHICK SHOW	0.48	n ang santa bi binagi S		0.48		0.18	0.18		0.18 E E	0.18	
Clearance Time (s)		5.5			5,5		5.5	5,5		5.5	5.5	
Vehicle Extension (s)		3.0	rena		3.0		3.0	3.0	19115109370	3.0	3.0	DEGENHARD
Lane Grp Cap (vph)		1271			1327		86	249		74	236	
v/s Ratio Prot	ISPANSES MISLANDARIA		nderstreise	MUMPAGENGEN		DERIGINAR	- Ar	0.22			0.21	uisikain
v/s Ratio Perm		0.29			c0.32		0.15	4 0 4		c0.29	1.17	
v/c Ratio	narovski sosia	0.60			0.66 15.8		0.84	1.24 32.8		1.62 32.8	32.8	
Uniform Delay, d1		15,1 0.90			0.85		31.6 1.11	32.0 1.08		32.0 1.00	32.8 1.00	
Progression Factor					1.9		27.8	124.3		333.0	113.6	
Incremental Delay, d2		1.9		<u>PENNER PENNEN</u>	15.3		62.7	159.6		365.8	146.4	
Delay (s) Level of Service		15.5 B			B		02.1 E	109.0		000.0		
Approach Delay (s)		15.5			15.3			141.3			212.7	
Approach LOS		10.0 B	CINERCE AND		B							
Approach					L.		ang nasabini					
Intersection Summary												
HCM Average Control Delay			67.6	Н	CM Level	of Servic	8		E			
HCM Volume to Capacity ration	D		0.93					a an an ann a' se fir an an ann an				و معرفا الحالية المحالية المحالية الح
Actuated Cycle Length (s)			80.0		um of lost				27.0			
Intersection Capacity Utilization	on	والمحجود المتاريخ المراجع والمحافظ	90.8%	IC	U Level c	of Service	Na sana katalah katalah katalah katala	11.60 (76 BLTC) NEW COLOURS	E	a papang satur wata sa	ana takang sa	
Analysis Period (min)			15									

SIGNAL TIMINGS-- Fifth and Forbes Avenues Existing Conditions, PM

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ane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
ane Configurations	er og som en som er	命命	na caracteris Protocolog	ፈኑ	penny english and so to said	ቆ	ogentyse og stander	ধ	1	
/olume (vph)	135	744	60	577	6	140	92	99	181	
Turn Type	pm+pt		Perm		Perm	former for Communication	Perm		Perm	
Protected Phases		6		2		4		4		
Permitted Phases	6		2		4		4		4	
etector Phase	1	6	2	2	4	4	4	4	4	
witch Phase										
linimum Initial (s)	4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
<i>l</i> inimum Split (s)	8.0	44.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	
otal Split (s)	8.0	44.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	
otal Split (%)	10.0%	55.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	
ellow Time (s)	3.0	4.0	4,0	4,0	4.0	4.0	4.0	4.0	4.0	
JI-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	i a find a stannadore praemati atenden en materi ed menatur (el 2012) (el 2012) (el 2012)
ost Time Adjust (s)	0.8	-1.6	-1.6	-1,6	-1,6	-1.6	-1.6	-1,6	0.8	
otal Lost Time (s)	4.8	4.4	4,4	4.4	4,4	4.4	4,4	4.4	6.8	
ead/Lag	Lead		Lag	Lag						
ead-Lag Optimize?	Yes	olenenieste chaese (sp	Yes	Yes	anero de speciel de la companya de Companya de la companya de la company	ere en	NUSER CONTRACTOR	anna an	a a a a a a a a a a a a a a a a a a a	la (1999) de la grande de la desta de La definita de la desta de l
ecall Mode	Min	C-Max	C-Max	C-Max	Ped	Ped	Ped	Ped	Ped	
ct Effct Green (s)		45.2	- WICA	36.2		26.0		26.0	23.6	
	a nata ki na na pinaka dal	0.56		0.45		0.32		0.32	0.30	
Actuated g/C Ratio		0.94	UKERKERK	0.45		0.69	program and	0.81	0.63	
/c Ratio		30.6		31.0		30.5		44.7	31.6	
Control Delay		9,90 0.0		0.0		0.0		0.0	0.0	
Queue Delay	STRAPHONE AND ADDRESS					30.5		44.7	31.6	
otal Delay		30.6		31.0		V 22 To Do Concretion and and a stress		99.7 D	01.0 C	
.OS	PERCENCIÓN	C		C		C C				
pproach Delay		30.6		31.0		30.5		38.3		
pproach LOS		С		С		С		D		
ntersection Summary										
Cycle Length: 80										
Actuated Cycle Length: 80										
Offset: 6 (8%), Referenced 1	to phace 2		v4 €∙EBTI	Start of	f Green					n in de la serie de la seri La serie de la s
Vatural Cycle: 90	to pridoc 2.								P. Charles and the sector of the sector o	
	rdinatad							den en de ser se		HEAGEN AN
Control Type: Actuated-Coo										
Maximum v/c Ratio: 0.94	0 4		elestrictions Restrictions	1. I	ntersectio	n l Oer C				
ntersection Signal Delay: 3	entimented toda extractatio ractatio				CU Level		G			
ntersection Capacity Utiliza	uun 97.0%				SO Fevel		6.4.9986683		antensi Nila Ig	
Analysis Period (min) 15										
Splits and Phases: 4: Fift	h Ave & Ne	eville St								
4						₩ ø4				
∅ 1 Ϋ ∅2					4	¥1 ø4				
8 s 36 s	And the second second second second		and the second sec	and Kalager and Parks	Albudes al b	-136 e				and the second

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SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, PM 4: Fifth Ave & Neville St

	<u>_</u>		À	F	4	Ł	~	Å	P	\$	å. 	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4 P			ፋዮ			ф»			4	7
Volume (vph)	135	744	10	60	577	39	6	140	155	92	99	181
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.4			4.4			4.4			4.4	6.8
Lane Util. Factor		0.95		RUNIKENSK	0.95			1.00	and a start of the start of the		1.00 1.00	1.00 0.93
Frpb, ped/bikes		1.00			0.99			0.95 1.00			1.00 0.98	1.00
Flpb, ped/bikes		1.00			0.99			0.94			1.00	0.85
Frt Protected		0.99			0.99			1.00			0.98	1.00
Satd. Flow (prot)		3101			3156			1559			1618	1260
Flt Permitted		0.62			0.71	NERVICE STREET	HERIOTERICE	0.99	AND HAD AND AND AND AND AND AND AND AND AND A		0.57	1.00
Satd. Flow (perm)		1935			2265			1540			936	1260
Peak-hour factor, PHF	0.82	0.81	0.88	0.71	0.91	0.75	0.50	0.81	0.97	0.79	0.77	0.77
Adj. Flow (vph)	165	919	11	85	634	52	12	173	160	116	129	235
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	°0
Lane Group Flow (vph)	0	1095	0	0	771	0	0	345	0	0	245	235
Confl. Peds. (#/hr)	103		60	60		103	38	, to an allocate in the try to perform	64	64		38
Confl. Bikes (#/hr)						8			1			5
Heavy Vehicles (%)	17%	4%	0%	0%	3%	2%	0%	0%	0%	8%	0%	10%
	pm+pt			Perm			Perm			Perm		Perm
Protected Phases	1	6		gens Perjoursianen aufereiji	2	terteration		4	delo letar i lescre leta	sina senara senara	4	A plaster fant planter
Permitted Phases	6			2			4			4		4
Actuated Green, G (s)	TANZA MANANA	43.6			34.5		undvær mind	24.4			24.4	24.4
Effective Green, g (s)		45.2			36.1			26.0			26.0 0.32	23.6
Actuated g/C Ratio		0.57	e ostatione		0.45 6.0		Contract single constitute Terretaria constitute si formati	0.32 6.0			6.0	0.30 6.0
Clearance Time (s)		6.0 3.0			0.0 3.0			0.0 3.0			0.0 3.0	0.0 3.0
Vehicle Extension (s)		3.0 1191			1022			501			304	372
Lane Grp Cap (vph)		c0.08			IVZZ			SUI			OU Y	912
v/s Ratio Prot		0.44		anna kur heijar	c0.34	operas said		0.22			c0.26	0.19
v/c Ratio		0.92	husiosistenos		0.75		RESIDENT	0.69	Steleten Miner Steleten Steleten Steleten Ste	1997-9979-9999	0.81	0.63
Uniform Delay, d1		15.8			18.3			23.5			24.7	24.4
Progression Factor		0.97		dologichensten sieden sied	1.42	daga zer den sie		1.00		to the state of the second second	1.00	1.00
Incremental Delay, d2		8.2			2.5			3.9			14.4	3.5
Delay (s)		23.4	n je pozrače kolo da posla i kolo da pozrače i kolo da pozračeni kolo da pozračeni kolo da pozračeni kolo da po		28.3			27.4			39.1	27.9
Level of Service		C			C			С			D	C
Approach Delay (s)		23.4	n fan it fyn ryggermany y 225, 27,191		28.3		other end of the second se	27.4		Construction and an excelor	33.6	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM Average Control Delay			27.1	H	CM Leve	l of Servic	e		С			
HCM Volume to Capacity ratio	aradastistikai)	ann an ann ann an ann an ann ann ann an	0.81	ero esta o Piñi 1997 (19		napana na sa Africa da Afri	ayaadaa da Kanada Kanada Ka	a para anta gina daribiti		n penalek legel di	,	
Actuated Cycle Length (s)			80.0	S	um of los	t time (s)			13.2			
Intersection Capacity Utilizatio	'n		97.8%			of Service			F			terrer and the state of the state
Analysis Period (min)			15									
c Critical Lane Group												

c Critical Lane Group

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SIGNAL TIMINGS-- Fifth and Forbes Avenues Existing Conditions, PM

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ane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	
ane Configurations		á î þ	tenter of a land or a state of a difference of a	ৰ্ণ চি		ৰ্ব	ř	ሻ	Ъ	
/olume (vph)	23	933	79	723	37	248	289	77	257	
Turn Type	pm+pt	An example of the second s	Perm		Perm	-mganologian(mm	Perm	Perm	dan dependikan bermanya playa yang	er wielen wegelen wijselen wie einer en wie einer der beiten wie einer einer einer einer einer einer einer eine
Protected Phases		6		2		4			4	
Permitted Phases	6	en en est an interna internationale	2	laurori componenti la Inst	4	a naka ka wazi kwa kultura da	4	4	ka kenaro tempi kenaro jika a kataki di Jab	elosi telengi beteknon janan bi komuni tahuna palam jangan jangan disebuar da
etector Phase	1	6	2	2	4	4	4	4	4	
Switch Phase		n nerven sodale branan	landes te estadada fa faserra					wheelped Middle wilds	n a selevana a seren a seguri a se	set wet many significant and terminal segmentary to the providence of the second second second second second se
Minimum Initial (s)	5.0	15.0	15.0	15.0	7.0	7,0	7.0	7,0	7.0	
<i>l</i> inimum Split (s)	9.0	35.0	35.0	35.0	23.0	23.0	23.0	23.0	23.0	n. Ha a maan caracagana hahad inconstructioned in despressivel socressister of
fotal Split (s)	9.0	56.0	47.0	47.0	24.0	24.0	24.0	24.0	24.0	
fotal Split (%)	11.3%	70.0%	58.8%	58.8%	30.0%	30.0%	30.0%	30.0%	30.0%	an a
fellow Time (s)	3.0	4.0	4,0	4.0	4.0	4.0	4.0	4.0	4,0	
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
.ost Time Adjust (s)	-1.6	-1.6	0.0	-1,6	-1.6	-1.6	-1.6	-1.6	-1.6	
Total Lost Time (s)	2.4	4.4	6.0	4.4	4.4	4.4	4.4	4.4	4.4	
ead/Lag	Lead		Lag	Lag						
.ead-Lag Optimize?	Yes		Yes	Yes	enderne gender Produktionen ander		u Massauri urran pod skooci		arceptiones are smaplin (histoid area	in colona de la constanti de la constanta de la constanti de la constanti de la constanti de la constanti de la
Recall Mode	Min	C-Max	C-Max	C-Max	Ped	Ped	Ped	Ped	Ped	
Act Effct Green (s)	Analysis and the statistic factor	51.6		42.6	stangentern i staan kaal geweng gester	19.6	19.6	19.6	19.6	
Actuated g/C Ratio		0.64		0.53		0.24	0.24	0.24	0.24	
//c Ratio	STRYSTOLAYA JOHNYA TALONYA JIY	0.66		0.85	a macaphanasinti perditika	1.33	0.83	0.92	0.79	an na kao manjara na
Control Delay		14.0		24.6		199.1	39,7	106.1	43.3	
Queue Delay		0.0		0.0	nizatarzeński i klastki i	0.0	0.0	0.0	0.0	
Fotal Delay		14.0		24.6		199.1	39.7	106.1	43.3	
_OS		В		С	sisterior constraint	F	D	F	D	an kanaga manan kalanan panganan pangana ana sasi si si s
Approach Delay		14.0		24.6		125.0			57.0	
Approach LOS		В		С		F			E	
ntersection Summary										
Cycle Length: 80										
Actuated Cycle Length: 80										
Offset: 71 (89%), Reference	ed to phase	2·WRTI	and 6'FF	RTI Star	of Greer			gga destaten des		
Natural Cycle: 80										
Control Type: Actuated-Cor	ordinated				THE STREET	INTERNET BERNE	SPATES STREET	ailuing luing hogh	enimente en	u na kanadoo ka
Maximum v/c Ratio: 1.33										
ntersection Signal Delay: 4	5.7		(manano di Alaisi A	annan Shididiy t	ntersectio	n LOS: D	ander stadio	uqusuaxiiili	atan dan Bahariki	
Intersection Capacity Utilization		%			I construct to be an an an and the second	of Servic	эĦ			
Analysis Period (min) 15										
	3. A D		Aug.							
Splits and Phases: 5: Fift	ih Ave & Mo	orewood .	AVE							

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98	47 s	24 s
→ ø6		
56 s		

SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, PM 5: Fifth Ave & Morewood Ave

	-	>	~	Sec.	<	Ł	٩		P	\mathbf{b}	Ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ৰ্ণ কি			ર્લ કિ			र्स	ŕ	ሻ	4Î	
Volume (vph)	23	933	78	79	723	111	37	248	289	77	257	40
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.4			4,4			4.4	4.4	4.4	4.4	
Lane Util. Factor	Scottene Alexandrative	0.95	xennalispublishings		0.95	en and a state of the	NINES INTERIOR	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.98			0.99			1.00	0.83	1.00	0.99	
Flpb, ped/bikes		1.00			1.00			1.00	1.00 0.85	0.94	1.00 0.98	
Eft Protocted		0.98			0.98			0.99	1.00	0.95	1.00	
Fit Protected Satd. Flow (prot)		3095	Nanda, and Dive adaption Nanda and Dive adaption		3125			1698	1228	1541	1670	
Flt Permitted		0.88		NUS NUMBER	0.67			0.64	1.00	0.25	1.00	
Satd. Flow (perm)	ernevie der	2727			2114			1100	1228	408	1670	
Peak-hour factor, PHF	0.48	0.92	0.65	0.71	0.98	0.93	0.84	0.79	0.93	0.84	0.92	0.77
Adj. Flow (voh)	48	1014	120	111	738	119	44	314	311	92	279	52
RTOR Reduction (vph)	0		0	0	14		0 0	0	76	0	8	0
Lane Group Flow (vph)	0	1171	0	0	954	0	0	358	236	92	323	0
Confl. Peds. (#/hr)	34	ini dala manda	72	72		34	59		115	115		59
Confl. Bikes (#/hr)						6			17			10
Heavy Vehicles (%)	3%	2%	13%	2%	2%	1%	2%	2%	1%	1%	1%	0%
Tum Type	pm+pt			Perm			Perm		Perm	Perm		
Protected Phases	1	6	eventer sources and the color	nin management and the field of the	2	alasiasi gani gani galaya	ad data data data data data data data d	4	neue la constant ingegi na argantz	ay septemental de parte profesio	4	
Permitted Phases	6			2			4		4	4		
Actuated Green, G (s)	THE REPORT OF THE PARTY OF THE	50.0	leka (wangi kinana ka	mustaideideidei	41.0		Service and the service of the ser	18.0	18.0	18.0	18.0	
Effective Green, g (s)		51.6			42.6			19.6	19.6	19.6	19.6	
Actuated g/C Ratio		0.65			0.53			0.25	0.25	0.25	0.25	
Clearance Time (s)		6.0 3.0			6.0 3.0			6.0 3.0	6.0 3.0	6.0 3.0	6.0 3.0	
Vehicle Extension (s)		1789			1126			270	301	100	409	Paris Harra VI Life I. I. The Harra VI Life I. I.
Lane Grp Cap (vph) v/s Ratio Prot		c0.05			1120			210	- OUI	I UU	0 <i>.</i> 19	
v/s Ratio Perm		0.37			c0.45			c0.33	0.19	0.23		
v/c Ratio	energersen Beergersen	0.65		eren en e	0.85	141190337423332		1.33	0.78	0.92	0.79	REAL PROPERTY OF STREET, STREET
Uniform Delay, d1		8.7			15.9			30.2	28.2	29,4	28.3	
Progression Factor	uuunosiineene	1.53		sjeletet kindel electros	1.00		·(()	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4			8.0			170.1	12.4	64.6	9.7	
Delay (s)		13.7	ionolinikana melokozaki		23.9			200.3	40.6	94.0	38.0	
Level of Service		В			C				D	F	D	
Approach Delay (s)		13.7		souto-metazionea da	23.9		www.encorport.clastic.clast	126.1	ndasen status testama tendenas		50.2	
Approach LOS		B			С			Barrie Fran			D	
Intersection Summary												
HCM Average Control Delay			44.7	H	CM Level	of Servic	e		D			
HCM Volume to Capacity ratio	amenadi Ahilih)	ana ng	0.99	rausense on Addi		पुरुष विद्यालय के स्थिति स्थिति । इ.स. १९४४ विद्यालय के स्थिति ।	a perovisti Methel	no a Million Albin (Schie	naamenen sterrigistele	i na	(1) (1) (1) (1) (1) (1) (1) (1) (1)	da tergia et l'ecceller
Actuated Cycle Length (s)			80.0	Si	im of lost	time (s)			13,2			
Intersection Capacity Utilization	ท		109.2%		U Level o				Н			
Analysis Period (min)			15									

SIGNAL TIMINGS-- Fifth and Forbes Avenues Existing Conditions, PM

	*		ser.			Å	5	Å.			
.ane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	ø3		
ane Configurations		ፋኈ		A Po	ካ	€ Î		4	a histori mana ini menjal sevel za 200	or. and search to control of the public straight to come of the	na manaka sa ka
/olume (vph)	165	685	4	179	34	70	164	10			
Furn Type	pm+pt		Perm		Perm	ten felomoranovaten forgas a 200	Perm	enertettettettettettettettet	Industry of the West of States	en he ko ko dan bi den ki gerrada (en seren rej	en kolej micel
Protected Phases		6		2		. 4		4	3		
Permitted Phases	6		2		4	mention of the transmitted by A2	4	vinter Power and rates in far and inde	14 12 12 17 14 12 12 14 14 16 16 16 16 16 16 16 16 16 16 16 16 16	n waatay indan maani yeeroo in Sina i 1	15 K LEWIS
Detector Phase	1	6	2	2	4	- 4	4	4			
Switch Phase					1		-141-141-1		yeeyeeeyee aaaaaa ahaa ahaha	ingining and start strength and start at the	
Vinimum Initial (s)	5.0	18.0	14.0	14.0	7.0	7.0	7.0	7.0	4.0		
Vinimum Split (s)	9.0	28.0	19.0	19.0	20.0	20.0	20.0	20.0	24.0		admenters
Total Split (s)	9.0	32.0	23.0	23.0	24.0	24.0	24.0	24.0	24.0		
Total Split (%)	11.3%	40.0%	28.8%	28.8%	30.0%	30.0%	30.0%	30.0%	30%		rural evenaños (eve los de
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0		
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0		
Lost Time Adjust (s)	0.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	and a second		
.ead/Lag	Lead		Lag	Lag	Lag	Lag	Lag	Lag	Lead		
_ead-Lag Optimize?	n by ny here of the 1 2 20 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				Yes	Yes	Yes	Yes	Yes		
Recall Mode	Min	C-Min	C-Min	C-Min	Min	Min	Min	Min	None		
Act Effct Green (s)	harden harden fan de	28.0		19.0	29.6	29.6		29.6			
Actuated g/C Ratio		0.35		0.24	0.37	0.37		0.37			
v/c Ratio	999 (2007) (1997) - Harrison (1997)	1.22		0.60	0.14	0.39		0.89			
Control Delay		137.7		32.7	24.0	18.2		57.8			
Queue Delay	an ya kata kata kata kata kata kata kata k	0.0		0.0	0.0	0.0		0.0			
Total Delay		137.7		32.7	24.0	18.2		57.8			
LOS	et by defaulting die Linde aan daar	F	al constitut persona a paramata	С	С	В		E			
Approach Delay		137.7		32.7		19.3		57.8			
Approach LOS	(Carding and Apple of	F		С		В		Ε			
· ·											
Intersection Summary											
Cycle Length: 80		en de des des di ingla i di di secondo de la contra di anti-							N DES CONTRACTORISTICS		
Actuated Cycle Length: 80		ALLOTI									
Offset: 75 (94%), Reference	ed to phase	SZ:WBIT	and o.ct	SIL, Star		L Horisonal Main H					
Natural Cycle: 130						earen and older a	GRANN FA				CONTRACT, SERVICE
Control Type: Actuated-Coc	ordinated				TING AND ADD ADD						
Maximum v/c Ratio: 1.22											
Intersection Signal Delay: 9	en la stangest out la Stat V and ing Constitu	a and a state of the	uyakahosoo	· · · · · · · · · · · · · · · · · · ·	ntersectio	to pitte to testerary test provident	and the second se				
Intersection Capacity Utiliza	ition 81.3%				CU Level	of Servic	en				Tatilitati
Analysis Period (min) 15											
		Craig St									
Splits and Phases: 6: For											

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SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, PM 6: Forbes Ave & Craig St

	<u></u>	 >		«	4		*	Î	P	\$	Ŷ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ብ ጉ			eî î»	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	ሻ	1 >			4 >	cherry in the last formation in
Volume (vph)	165	685	13	- 4	179	84	34	70	81	164	10	41
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor		0.95	NUMBER		0.95		1.00	1.00			1.00	
Frpb, ped/blkes		1.00			0.83		1.00	0.89			0,97 0.90	
Flpb, ped/bikes	an shi wari ma an an	0.97			1.00		0.92	1.00 0.92			0.90	
Frt		1.00			0.95		1.00 0.95	0.92 1.00			0.97 0.97	
Fit Protected		0.99 3033		strategie (statut i stativi Strategie (statut i stativi Strategie (stativi	2399		1514	1419		u kimi kesi babu pulan siy Manga babu pulan siya Manga babu pulan siya siya	1387	
Satd. Flow (prot) Flt Permitted		0.71			0.92		0.62	1.00			0.60	HEREF
Satd. Flow (perm)		2162			2214		994	1419			869	
Peak-hour factor, PHF	0.86	0.88	0.65	0.50	0.86	0.84	0.65	0.73	0.72	0.82	0.50	0.68
Adj. Flow (vph)	192	778	20	0.00	208	100	52	96	112	200	20	60
RTOR Reduction (vph)	1 <i>52</i> 0	0	20 0	0	0 0	, 00		44	0	0	<u>1</u> 0	0
Lane Group Flow (vph)	Ŏ	990	ŏ	Ő	316	Ō	52	164	Ō	Ō	270	Ō
Confl. Peds. (#/hr)	260		144	144		260	170		235	235	dependent for de la fertier. Le pendent for de la fertier for de la fertier for de la fertier de la fertier de la fertier de la fertier de l	170
Confl. Bikes (#/hr)						8			10			
Heavy Vehicles (%)	3%	5%	1%	1%	14%	1%	1%	1%	1%	1%	1%	12%
Tum Type	pm+pt			Perm			Perm			Perm		
Protected Phases	eel sant personal maanter 1	6			2	, de la constante de la constant de		4			4	*******
Permitted Phases	6			2			4			4		
Actuated Green, G (s)		26.2			17.2		28.6	28.6			28.6	***
Effective Green, g (s)		27.2			18.2		29.6	29.6			29.6	
Actuated g/C Ratio		0.34	an a surface of the last	·	0.23	or and a local block marked in the	0.37	0.37	na kaominina ang sa		0.37	interprotecting/sprop
Clearance Time (s)		5.0			5.0		5.0	5.0			5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		A Contract State of the Unit of the second state	3.0	
Lane Grp Cap (vph)		800			504		368	525			322	
v/s Ratio Prot	AG BAG BAGASTAN ALM	c0.09			a kana (Denarda Circla)		tomonen inner in timbe seite	0.12				
v/s Ratio Perm		c0.33			0.14		0.05				c0.31	
v/c Ratio		1.24		suunatuutieli	0.63		0.14	0.31			0.84	
Uniform Delay, d1		26.4			27.8		16.8	17.9			23.0 1.26	SET MARKAGENER
Progression Factor		1.00			1.00 5.8		1.00 0.2	1.00 0.3			1.20 11.8	
Incremental Delay, d2		117.5			33.6		0.2 16.9	0.0 18.3			40.9	Secondaria (
Delay (s)		143.9		NURREPOSIS	აა.ი C		10.9 B	B			40.3 D	
Level of Service Approach Delay (s)		143.9	egeniäridet		33.6		NEXSEL ROOM	18.0	order of the second		40.9	
Approach LOS		140.0 E			Č.		Mile Avenue of the state	B			D	
Intersection Summary												
HCM Average Control Dela	A Share Service requirements are service		91.7	H	CM Level	of Servic	æ		F.			
HCM Volume to Capacity ra	itio	001010100310204csture**	1.03	166669-106-22×				randraatio			n marta ana an	SCHORDERSE.
Actuated Cycle Length (s)			80.0		um of los				23.2			
Intersection Capacity Utiliza	ition	-	81.3%	IC Designation	JU Level (of Service) Nijela sou constantin		D SINGESSEN			PARSKIPPOR
Analysis Period (min)			15									

	٨		4	1	
Lane Group	EBL	EBT	WBT	SBL	ø8
Lane Configurations		ፈት	个	፞፞ጞ	
Volume (vph)	1	943	252	64	
Turn Type	Perm				
Protected Phases		2	6.	4	8
Permitted Phases	2	e e se la decara primera productione de la compacta		net of the second s	andra independente
Detector Phase	2	2	6	4	
Switch Phase		000	200.0		
Minimum Initial (s)	30.0	30.0 38.0	30.0 38.0	7.0 21.0	9.0 20.0
Minimum Split (s)	38.0 38.0	38.0	38.0 38.0	21.0 21.0	20.0
Total Split (s) Total Split (%)	48.1%	48.1%	48.1%	26.6%	20.0 25%
Yellow Time (s)	3.0	40.17	40.170 3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	
Lead/Lag					
Lead-Lag Optimize?	ilini (meretari and anni ata		a la de la factoria de la seconda de la s	eta (tabler) a table (d. t. f. a. t.	22/22/22/22/2017/04
Recall Mode	Max	Max	None	None	None
Act Effct Green (s)		39.8	39.8	12.0	
Actuated g/C Ratio		0.56	0.56	0.17	
v/c Ratio		0.62	0.17	0.46	
Control Delay		17.9	12.2	33.5	
Queue Delay		0.0	0.0	0.0	
Total Delay		17.9	12.2	33.5	
LOS		B	B	C	
Approach Delay		17.9	12.2	33.5	
Approach LOS		В	В	С	
Intersection Summary					
Cycle Length: 79					
Actuated Cycle Length: 70.8	3				
Natural Cycle: 80	www.com/sitestationalization	n ha a sharan a shara ku ayan kwan ar		and peaks been a minimum providence	
Control Type: Semi Act-Unc	poord				
Maximum v/c Ratio: 0.62					your tagatukeya
Intersection Signal Delay: 1				Constant and the second second second	tersectio
Intersection Capacity Utiliza	ition 44.9%	o Manada analar) L	U Level
Analysis Period (min) 15					

Splits and Phases: 7: Forbes Ave & Hamburg Hall

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	21 s - 2 s - 2	0\$
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Movement	EBL	EBT	WBT	WBR	SBL	SBR				
Lane Configurations		邻个	^		` \#					- and (AT
Volume (vph)	1.5	943	252	0	64	36				
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750			n foton en foton e a canada de la	1212100
Total Lost time (s)		4.0	4.0		4.0					
Lane Util. Factor		0.95	0.95		1.00					
Frpb, ped/bikes		1.00	1.00	holden minsel sinder si States gezigensrigter för	0.99					
Flpb, ped/bikes		1.00	1.00		1.00					
Frt.		1.00	1.00		0.95					980
Flt Protected	1	1.00	1.00		0.97		an far fan st fan tillening mennen geraamst op he			
Satd. Flow (prot)		3166	3050		1590					
Flt Permitted		0.95	1.00		0.97				(11) 100 100 100 100 100 100 100 100 100	
Satd. Flow (perm)		3021	3050		1590					
Peak-hour factor, PHF	0.25	0.90	0.89	0.25	0.80	0.82			1,1,1mm1,1,1,1,,1,1,	
Adj. Flow (vph)	4	1048	283	0	80	44				
RTOR Reduction (vph)	0	0	0	0	0	0				nigerte
Lane Group Flow (vph)	0	1052	283	0	124	0				
Confl. Peds. (#/hr)	139			139	156	14	e en la versión a superior de la versión	e Nelsi (gereredeserve		
Confl. Bikes (#/hr)				1				s again shi hirrid. Shirile Hardana		
Heavy Vehicles (%)	0%	5%	9%	0%	0%	0%				
Turn Type	Perm									
Protected Phases	re i wat-tao bee bare i bia out	2	6	four Mars portrains follow from 0.04	4	and the last by feeling to be the recorded to be trace or barrows		n av sekser verken seren stade		atatata
Permitted Phases	2									
Actuated Green, G (s)		37.7	37.7		9.1	en provinsi na contra e territo del contra contr	unereni ofalta babasku telisérse	Non-Josef Research and Anna motion from		taslana
Effective Green, g (s)		38.7	38.7		10.1					
Actuated g/C Ratio		0.53	0.53		0.14		in saadalig is based in such as			20270
Clearance Time (s)		5.0	5.0		5.0					
Vehicle Extension (s)	ing that inglicit ing adapt from the state	3.0	3.0		3.0	1			 C. C. S. Manual and S. Marine, Nucl. Phys. 11, 121 (1997). 	
Lane Grp Cap (vph)		1610	1626		221					
v/s Ratio Prot		es de la constanción de la	0.09	e na katelo dej deleta veze de este estado	c0.08		in a cara pagay sustaina bagay s		n productel all part de producte de la constante de la constante de la constante de la constante de la constant	3202703:
v/s Ratio Perm		c0.35								
v/c Ratio		0.65	0.17		0.56			anting (Come) Allo Marc	0490/20040404	11.729 G75
Uniform Delay, d1		12.1	8.7	n ang Kangara Mibira Mi Nganggang Kangara Nganggang Kangara	29.2					
Progression Factor		1.00	1.00		1.00	androdan jugi na kusini si sa		u	en sim by internet in the second in the second s	adan
Incremental Delay, d2		2.1	0.1		3.2					
Delay (s)		14.2	8.8		32.4					gjateli
Level of Service		B	A		0 20 4					
Approach Delay (s)		14.2 P	8.8 A		32.4					
Approach LOS		В	A		C					
Intersection Summary										
HCM Average Control Delay			14.7	HC	M Level	of Service		В		10
HCM Volume to Capacity ratio) (Instanting and Andrews)		0.63	an an tara da bardina.					na ann an seann an 1970 an 1970 ann 197	201201
Actuated Cycle Length (s)			72.6	Su	m of lost	ime (s)		23.8		
Intersection Capacity Utilizatio	n		44.9%		J Level o			A		
Analysis Period (min)			15							
	and the second						 	a la contra di Contra		

	_			\$	4	
Lane Group	EBL	EBT	WBT	SBL	SBR	Ø8
Lane Configurations	ĥ	샦楕	朴	ሻ	7	
Volume (vph)	292	630	265	419	79	
	pm+pt	Type I and the state of the state of the			Perm	
Protected Phases	1	6	2	4		8
Permitted Phases	6				4	an bernanna bernalagen () verser bernar av
Detector Phase	1	6	2	4	4	
Switch Phase						named as for early set in the ball of the form
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	4.0
Minimum Split (s)	20.0	70.0	50.0	30.0	30.0	8.0
Total Split (s)	20.0	70.0	50.0	30.0	30.0	24.0
	16.1%	56.5%	40.3%	24.2%	24.2%	19%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	1.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.0	the second s
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes	der regennigen i föd ocher God for Uni-	Yes	and a construction of the second		n wind nivelige data data and a second
Recall Mode	None	Min	Min	None	None	None
Act Effct Green (s)	39.1	37.1	19.0	24.1	24.1	agaisha kagamalan daarees '''''''''''
Actuated g/C Ratio	0.53	0.51	0.26	0.33	0.33	
v/c Ratio	0.69	0.43	0.68	0.85	0.42	Terran di La Terran di Panto Manadas Janas
Control Delay	17.8	12.2	29.8	41.6	27.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	n aanse aan aan aan taa aan gaga gaadaa da da ah dha.
Total Delay	17.8	12.2	29.8	41.6	27.9	
LOS	В	В	С	D	С	s versie de manif de failles a talasse transfer
Approach Delay		14.0	29.8	39.2		
Approach LOS		В	С	D		
Intersection Summary						
Cycle Length: 124				enineli intervisione della in Nel el contra della d	i porpi a despisoleren bi prot Granda despisoleren bi prot	
Actuated Cycle Length: 73.3					NEWSBOR	
Natural Cycle: 110	rdinates			ni se koludir na maka ndhari Maria se koludir na maka ndhari Maria se koludir na maka na maka		
Control Type: Actuated-Uncoo Maximum v/c Ratio: 0.85	rumatec		sidden of the			
					ntersectior	108.0
Intersection Signal Delay: 24.5				the state of the second st	Margaren arten an tel se interiore	of Service C
Intersection Capacity Utilization Analysis Period (min) 15	11 / I. 5 %	D Hansen statutet dat		٦١ الانتخابة		
	THE REPORT OF THE OWNER	useral ling page pairies	SPICESCE MILLINGS STATE	saugisigis saudisis;	anganga kangang bi	dependences successions

Splits and Phases: 8: Forbes Ave & Morewood Ave

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20.3	50 s	30:	24 since the second second
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70 s			

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	ሻ	个个	<u>ት</u> ጉ		ሻ	7
Volume (vph)	292	630	265	161	419	79
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.95		1.00	0.62
Fipb, ped/bikes	0.99	1.00	1.00	and discontraction of the second	1.00	1.00
Fre	1.00	1.00	0.95		1.00	0.85
Flt Protected	0.95	1.00	1.00	ng ng Sgrad ang ang ang ang ang ang	0.95	1.00
Satd. Flow (prot)	1616	3167	2845		1646	856
Fit Permitted	0.31	1.00	1.00		0.95	1.00
Satd. Flow (perm)	520	3167	2845		1646	856
Peak-hour factor, PHF	0.87	0.91	0.81	0.88	0.91	0.79
Adj. Flow (vph)	336	692	327	183	460	100
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	336	692	510	Ō	460	100
Confl. Peds. (#/hr)	69			69	174	763
Confl. Bikes (#/hr)						3
Heavy Vehicles (%)	2%	5%	6%	2%	1%	7%
	pm+pt			u/ Nigo en le sol	1 /0	Perm
Tum Type	151-1 of the off the off parts of the second states states states of the second states of the second states of the	6	2 2		4	3 5991
Protected Phases Permitted Phases	1 6		ک 1921 (1921		+ 	4
Construction in the second	0 37.1	37.1	19.0		24.1	24.1
Actuated Green, G (s)		37.1 37,1	19.0		24.1	24.1
Effective Green, g (s)	36.1	122700100000000000000000000000000000000	ACT OF REAL PROPERTY AND ADDRESS OF		0144601056695555556050	24.1
Actuated g/C Ratio	0.49	0.51	0.26		0.33	6.0
Clearance Time (s)	3.0	6.0	6.0		17 Martin Color	this electric criticity calef.
Vehicle Extension (s)	4.0	4.0	4.0	4.003030303030303000000	3.0	3.0
Lane Grp Cap (vph)	468	1605	738		542	282
v/s Ratio Prot	c0.14	0.22	0.18		c0.28	
v/s Ratio Perm	c0.22					0.12
v/c Ratio	0.72	0.43	0.69		0.85	0.35
Uniform Delay, d1	12.5	11,4	24.5		22.9	18.6
Progression Factor	1.00	1.00	1.00	tana kana kaka mangan karang serangan serang	1.00	1.00
Incremental Delay, d2	5.6	0.3	3.0		11.8	0.8
Delay (s)	18.1	11.6	27.5		34.7	19.4
Level of Service	В	В	C		С	В
Approach Delay (s)		13.8	27.5		31.9	
Approach LOS		B	C		С	
Intersection Summary						
and the second se			04.0	n a sha	OM 1	of Servic
HCM Average Control Dela			21.9		OW Leve	el OL Selvic
HCM Volume to Capacity r	alio	ALE STREET STREET	0.72	-		1 21
Actuated Cycle Length (s)			73.2			st time (s)
Intersection Capacity Utiliza	ation	NER CONTRACTOR	71.5%	IC Constantion	U Level	of Service
Analysis Period (min)			15			

	_#		A		3	×	6	×	
Lane Group	EBL	EBT	WBL	WBT	NEL	NET	SWL	SWT	
Lane Configurations	ሻ	朴诤		ብጉ		<u>م</u> ه		¢\$>	
Volume (vph)	185	829	1	340	16	33	38	0	
Turn Type	D.P+P	In a number of the state of the	Perm		Perm		Perm		
Protected Phases	5	2.5		2		4		4	
Permitted Phases	2		2		4		4		
Detector Phase	5	25	2	2	- 4	4	4	- 4	
Switch Phase	oogo, indend kaara ta mining hindi.								
Minimum Initial (s)	15.0		10.0	10.0	9.0	9.0	9.0	9.0	
Minimum Split (s)	19.0		32.0	32.0	14.0	14.0	14.0	14.0	
Total Split (s)	19.0	51.0	32.0	32.0	29.0	29.0	29.0	29.0	
Total Split (%)	23.8%	63.8%	40.0%	40.0%	36.3%	36.3%	36.3%	36.3%	
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	the inclusion of a fight of a fig	2.0	2.0	2.0	2.0	2.0	2.0	n her
Lost Time Adjust (s)	0.0	0,5	0.5	0.5	0.5	0.5	0.5	0.5	
Total Lost Time (s)	4.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
Lead/Lag		oracegi osebra nacional Processo elegan deservo							
Lead-Lag Optimize?	ala fa si		1	andorografic (12 mil 1 - 1 1 0 0 mil	2010-2010-2010-2010-2010-2				a walakon zonakon tenden anten na kun na kun kun kun anten kun anten kun kun kun kun kun kun kun kun kun ku
Recall Mode	Max		C-Max	C-Max	None	None	None	None	
Act Effct Green (s)	55.9	58.4	elos los las las las las las las las las	26.5		10.6	en Releva (to polyce () ()	10.6	u (el el 11 adoure) a talé el radiación el anticipador el anticipador el anticipador el anticipador el anticip
Actuated g/C Ratio	0.70	0.73		0.33		0.13		0.13	
v/c Ratio	0.30	0.38		0.48		0.55		0.63	
Control Delay	4.6	4.9	in pia distanti il Stati distanti si d	15.7		24.8		26.3	
Queue Delay	0.0	0.0	1979 Service and the service of the	0.0		0.0		0.0	
Total Delay	4.6	4.9		15.7		24.8		26.3	
LOS	A	A	, 9 alaan (, 9 , 9) Araan gaalaa aa ah	В		С		С	
Approach Delay		4.9		15,7		24.8		26.3	
Approach LOS	ind the loss of panels (panel of panels)	A		В	o (1779-1997) en partir a sera	С	aya kash yi kupi ya kash ya kupi ng mjang s	С	i 1995 - Yuli 1997 - Yuli 1
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length: 80			nonus de la						
Offset: 78 (98%), Reference	od to obooc	0.ED\A/D	Ctort of	Groop					
Natural Cycle: 65									
Control Type: Actuated-Co	linesses rdiactad					e de la companya de La companya de la comp			
Maximum v/c Ratio: 0.63	n un lateu								
The second se	Λ7			ilensister I	tercostic	n LOS: B			
Intersection Signal Delay: 1						of Service	'n	en an	
Intersection Capacity Utiliza	11011 00.0%			and and a start of the start of	ou revel		; U - 100 - 10	General States	nerachaeachael (chinaidh an
Analysis Period (min) 15									

Splits and Phases: 9: Forbes Ave & Beeler St



SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, PM 9: Forbes Ave & Beeler St

	Я		Z	<u></u>	4	Ľ	٩	×	12	4	×	-
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	ሻ	ትኈ			ፋኈ			4			4	
Volume (vph)	185	829	0	1	340	54	16	33	59	38	0	66
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	5.5			5.5			5.5			5.5	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			0.98			0.87			0.99	
Flpb, ped/bikes	0.98	1.00			1.00			1.00			0.94	
Ent	1.00	1.00			0.98			0.93			0.92	
Fit Protected	0.95	1.00			1.00		ny or factory fragment for factory one for factory	0.99			0.98	
Satd. Flow (prot)	1574	3228			3074			1386			1425	
FIt Permitted	0.42	1.00			0.95		- 1 1 1	0.93			0.78	
Satd. Flow (perm)	703	3228			2915			1294			1132	
Peak-hour factor, PHF	0.78	0.92	0.25	0.25	0.86	0.71	0.80	0.75	0.82	0.68	0.25	0.72
Adj. Flow (vph)	237	901	0	4	395	76	20	44	72	56	0	92
RTOR Reduction (vph)	0	0	0	0	19	0	0	62	0	0	80	0
Lane Group Flow (vph)	237	901	0	0	456	0.0	0	74	0	0	68	0
Confl. Peds. (#/hr)	63		63	63		63	1		106	106		1
Confl. Bikes (#/hr)			1			3			2			ningen sen fi Singer State Singer State
Heavy Vehicles (%)	4%	3%	1%	1%	4%	3%	1%	1%	1%	6%	0%	1%
Turn Type	D.P+P			Perm			Perm			Perm		
Protected Phases	5	25			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)	54.9	58.9			27.0			11.1			11.1	
Effective Green, g (s)	54.9	53.9			26.5			10.6			10.6	
Actuated g/C Ratio	0.69	0.67			0.33			0.13			0.13	
Clearance Time (s)	4.0				5.0			5.0			5.0	
Vehicle Extension (s)	3.0				3.0			3.0			3.0	
Lane Grp Cap (vph)	786	2175			966			171			150	
v/s Ratio Prot	0.11	c0.28										
v/s Ratio Perm	0.10				c0.16			0.06	na en de		c0.06	
v/c Ratio	0.30	0.41			0.47			0.43			0.45	
Uniform Delay, d1	4,7	5.9			21.2			31.9			32.0	
Progression Factor	1.00	1.00			0.70			1.00			1.00	
Incremental Delay, d2	1.0	0.6			1.6			1.7			2.2	
Delay (s)	5.7	6.5			16.4		a and a state of the second	33.7			34.2	
Level of Service	A	A			В			С			С	
Approach Delay (s)		6.3	ana	and was relative to the second	16.4			33.7			34.2	-1-11,10,111-,
Approach LOS		A			В			i sola Co			С	
Intersection Summary												
HCM Average Control Delay			13.0	Щ	CM Level	of Servic	<u>م</u>		В			
HCM Volume to Capacity rat			0.45					io Addition di Stato	en na mana in the second s Second second	HALLING AND	unication and a second	şkaştançıştanı,
Actuated Cycle Length (s)			80.0	<u>s</u>	um of lost	time /s\			16.5			
Intersection Capacity Utilizat	ion		80.5%		U Level c		ngersanden de		10.3 D	Harrentförtig		909409999
Analysis Period (min)	ruii Mariation Mariation		15									
And your chod (unity			MBRISE I Y S UD			ning on the state of the state		REPRESENT	austrativati	aannasanna	HOURDER	anteniten

	٨	-	Ŷ	₽ ₽	1	
Lane Group	EBL	NBL	NBT	SBT	SBR	
Lane Configurations	۲		4 ۴	个	ሾ	
Volume (vph)	127	17	280	715	219	
Furn Type		Perm		n man tanan kara menjanga tanaga t	Perm	
Protected Phases	4		2.	2		
Permitted Phases		2	The second state of the second state of	ment og terener som statet statet statet	2	
Detector Phase	- 4	. 2	2	2	2	
Switch Phase	the summer langest of start 11, 11, 1, 19, 19, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10					
Minimum Initial (s)	20.0	50.0	50,0	50.0	50.0	
/linimum Split (s)	25.0	55.0	55.0	55.0	55.0	
Fotal Split (s)	25.0	55.0	55.0	55.0	55.0	
Fotal Split (%)	31.3%	68.8%	68.8%	68.8%	68.8%	na se o vise o vise o la sector de la construction de sector se la construction de la construction (de la const
Yellow Time (s)	3.0	3.0	3.0	3.0	3,0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1,0	0,0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	
.ead/Lag						
_ead-Lag Optimize?			. And a second state in the second state	end a contraction of the state		
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	21.0	testores tais trajactor	51.0	51.0	50.0	
Actuated g/C Ratio	0.26		0.64	0.64	0.62	
v/c Ratio	0.51	2. In contraction of the second states	0.19	0.72	0.31	
Control Delay	27.6		6.3	16.7	8.5	
Queue Delay	0.0		0.0	0.7	0.0	
Total Delay	27.6		6.3	17,4	8.5	
LOS	С	ومرز والمعرفة والمستعرفة والمسري والم	A	B	A	
Approach Delay	27.6		6.3	15.2		
Approach LOS	С		А	В		
Intersection Summary						
Cycle Length: 80						
Actuated Cycle Length: 8	A MARKA					
Offset: 79 (99%), Referen	ced to phase	2 NRSP	Start of I	Green		anay ng kang sa kanang kanang kang kang kang kang kang
Natural Cycle: 80						
Control Type: Actuated-C	oordinated		INNER CONTRACTOR	CTANLE NUMBER		a da per
Maximum v/c Ratio: 0.72						
muamum no raio. 0.12	15 0	orskýskičku	CAN BEREFER	muqandilikiliji 	ntersectio	n LOS: B
Intersection Signal Delay:	10.0		işikili destubili	and a state of the second s	weat an an an an arrange and an inclusion	
Intersection Signal Delay: Intersection Canacity Utili		.			UULEVEI	
Intersection Signal Delay: Intersection Capacity Utili Analysis Period (min) 15		0			CO Level	of Service E

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SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, PM 10: Margaret Morrison St & Forbes Ave

		\mathbf{i}	٩,	Î	Ļ	
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥			4th	个	1
Volume (vph)	127	26	17	280	715	219
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0			4.0	4.0	5.0
Lane Util. Factor	1.00			0.95	1.00	1.00
Frpb, ped/bikes	0.99			1.00	1.00	0.90
Flpb, ped/bikes	1.00		ومرجع والمرجع والمرجع والمرجع	1.00	1.00	1.00
Frt	0.97			1.00	1.00	0.85
Fit Protected	0.96		ty order of the second sector by second	1.00	1.00	
Satd. Flow (prot)	1591			3164	1683	1319
Flt Permitted	0.96	nand of Coloring to Industry		0.89	1.00	
Satd. Flow (perm)	1591			2831	1683	1319
Peak-hour factor, PHF	0.77	0.46	0.71	0.86	0.93	0.87
Adj, Flow (vph)	165	57	24	326	769	252
RTOR Reduction (vph)	15	0	0	0	0	0
Lane Group Flow (vph)	207	0	0	350	769	252
Confl. Peds. (#/hr)	36	13	34			34
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	1%	1%	1%	5%	4%	1%
Turn Type			Perm			Perm
Protected Phases	4		Ulassi Mulleri Verseere	2	2	
Permitted Phases			2			2
Actuated Green, G (s)	20.0			50.0	50.0	50.0
Effective Green, g (s)	21.0			51.0	51,0	50.0
Actuated g/C Ratio	0.26			0.64	0.64	0.62
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)	418			1805	1073	824
v/s Ratio Prot	c0.13				c0.46	
v/s Ratio Perm				0.12		0.19
v/c Ratio	0.49			0.19	0.72	0.31
Uniform Delay, d1	25.0			6.0	9,7	7.0 .
Progression Factor	1.00			1.00	1.23	1.05
Incremental Delay, d2	0,9			0.2	3.9	0.9
Delay (s)	25.9			6.2	15.8	8.2
Level of Service	C			- A -	В	Α
Approach Delay (s)	25.9	The second of the		6.2	13.9	
Approach LOS	C .			A	B	
Intersection Summary	and the second second		40.0		OM 1	
HCM Average Control Delay			13.9	H	JVI LEVE	el of Service B
HCM Volume to Capacity rat	io Representation	Generations	0.65			
Actuated Cycle Length (s)			80.0			st time (s) 8.0
Intersection Capacity Utilizati	on Essenation	-	90.8%	IC Marketer	U Level	l of Service E
Analysis Period (min)			15			

c Critical Lane Group

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		4	4	Â	p	\mathbf{i}	Ļ	
Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT	
Lane Configurations	<u></u>	<u> </u>	ሻ	þ	۴		4	in a second and a second s
Volume (vph)	26	1152	370	210	184	61	0	
Turn Type	et a presidenti da antica da a	internet in the ball of the off the	Perm	sum engenerated to solv	Perm	Perm	uer referiet et son det totel kopilesten is	
Protected Phases	2	2		8			4	
Permitted Phases	n ma paraopha ing og para aragai ing targaning	The second state of the se	8	ora national science in the second science of the second science of the second science of the second science of	8	4		
Detector Phase	2	2	8		8	4	4	
Switch Phase	en son and the second	agedescripturabilitie		ensident en andere a				
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	i na mining kapang mangang kapang mangang pang mangang manang mangang mangang mangang mangang mangang mangang m
Total Split (s)	34.0	34.0	46.0	46.0	46.0	46.0	46.0	
Total Split (%)	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%	57.5%	n in a stand with the second secon
Yellow Time (s)	3.0	3.0	3.0	3.0	3,0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	
Total Lost Time (s)	3.4	3.4	3.4	3.4	3,4	3.4	3,4	narrana la kan panana kana pala kata panana na kana na ka
Lead/Lag								
Lead-Lag Optimize?	a i has de la brazer renerar erekedan i desiki i	a na mang tanggin (daglahawing)	an a	na an inter to the target		ersen ander ander ander	and the state of the	
Recall Mode	C-Min	C-Min	Min	Min	Min	Min	Min	
Act Effct Green (s)	32.3	32.3	40.9	40.9	40.9		40.9	
Actuated g/C Ratio	0.40	0.40	0.51	0.51	0.51		0.51	
v/c Ratio	0.10	1.03	0.94	0.32	0.29	HORFENERALDAR	0.46	
Control Delay	16.9	48.8	50.9	12.2	12.0		14.7	
Queue Delay	0.0	2.5	0.0	0.0	0.0		0.0	
Total Delay	16.9	51.3	50.9	12.2	12.0		14,7	
LOS	B	D	D	В	B		В	ikin guanta siyan pasanan sanasan tanasan sanasan di kasara
Approach Delay	16.9 B	51.3 D		30.5 C			14.7 B	
Approach LOS	D	U		C			U	
Intersection Summary								
Cycle Length: 80								
Actuated Cycle Length: 80								
Offset: 51 (64%), Reference	ced to phase		s, Start of	Green				
Natural Cycle: 50								
Control Type: Actuated-Co	ordinated							
Maximum v/c Ratio: 1.03								
Intersection Signal Delay:			SHERNER ER	and the state of the second state of the secon	enanded to the second to be presented as the second to	n LOS: D	entration states where the sector sector	
Intersection Capacity Utiliz Analysis Period (min) 15	22/2011/222	/0			JU Level	of Servic		
maiyaa renou (min) 10								
Splits and Phases: 1: Fi	ifth Ave & Be	ellefield A	ve					

← ø2	• ø4
34 s	46 s
	αβ
	46 s

SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, AM 1: Fifth Ave & Bellefield Ave

	<u>_</u>		>	F		Â.	4	Î	P	\$	Ê	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		个	an tan tanan a ta fan ta cananan ta ba		个际	a han service water and the factor of the service o	ሻ	þ	1		\$	Manada da
Volume (vph)	0	- 26	0	0	1152	21	370	210	184	61	0	201
ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		3.4			3.4		3.4	3.4	3.4		3,4	
Lane Util. Factor		1.00	a colory principles in the transverse	ne testados hadrado i como bros	0.95	esteri di decisi a para da la decisi	1.00	0.95	0.95		1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00	0.98		0.97	
Flpb, ped/bikes		1.00	winter and the sectors		1.00	and and a second se	0.98	1.00	1.00	a de la compañía de l	1.00	
Frt		1.00			1.00		1,00	0.99	0.85		0.90	
Flt Protected		1.00		nin inputitive type (64) with	1.00	standentigernalisticie	0.95	1.00	1.00		0.99	
Satd. Flow (prot)		921			3136		1468	1619	1340		1479	
Flt Permitted	terrenewate of the OPTO Processory	1.00	rretato estato da la dala	terre of energies (rejust 45, 150 km/s);	1.00	Service and the service of the servi	0.55	1.00	1.00	ada aktorida	0.85	
Satd. Flow (perm)		921			3136		856	1619	1340		1269	
Peak-hour factor, PHF	0.25	0.72	0.25	0.25	0.91	0.58	0.90	0.88	0.84	0.73	0.25	0.93
Adj. Flow (vph)	0	- 36	0	0	1266	36	411	239	219	84	0	216
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	1	
Lane Group Flow (vph)	0	36	0	0	1302	0	411	261	197	0	299	0
Confl. Peds. (#/hr)	160	1	91	91		160	52		19	19	Redensions	52
Confl. Bikes (#/hr)			9			10					00/	2
Heavy Vehicles (%)	0%	90%	0%	0%	5%	1%	11%	1%	3%	1%	0%	2%
Turn Type							Perm		Perm	Perm		
Protected Phases		2		dan managan kara da sa bara da sa	2	e hadde sint sont op over stade i sek bie	Last management and sold and the	8		resultation providents	4	THE REPORT
Permitted Phases							8		8	4		
Actuated Green, G (s)		30.7	an at many of the second second second		30.7	terring by beyond the first state	39.3	39.3	39.3		39.3	
Effective Green, g (s)		32.3			32.3		40.9	40.9	40.9		40.9	
Actuated g/C Ratio		0.40		sens-social televalui hiberre	0.40		0.51	0.51	0.51		0.51	
Clearance Time (s)		5.0			5,0		5.0	5.0	5.0		5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	ing first constitution of word sold as	3.0	
Lane Grp Cap (vph)		372			1266		438	828	685		649	
v/s Ratio Prot		0.04			c0.42	a and the first of the structure of the	in en susseen men nemen de liefe	0.16	AAN AN	crea crustus 22463 1939 (******	nono accadia 86	
v/s Ratio Perm							c0.48		0.15		0.24	
v/c Ratio		0.10		·	1.03		0.94	0.32	0.29	energi desta (ta sua paga	0.46	e e e e e e e e e e e e e e e e e e e
Uniform Delay, d1		14.8			23.9		18.4	11.4	11.2		12.5	
Progression Factor		1.00		la ful concertente este per l	0.67	was horded in the second second	1.00	1.00	1.00	TENTING	1.00	Gundense
Incremental Delay, d2		0.5			29.2		27.8	0.2	0.2		0.5	
Delay (s)	m fed moneau call (14) in the sec	15.3	transvedki i kali la	Manufacture of the local loc	45.2	NAMPANIN'N NAMES SA	46.1	11.6	11.4		13.0	
Level of Service		В			D		D	B	B		B	
Approach Delay (s)		15.3	enter a substantia a	eren and a second state	45.2			27.9	ing and a second se	udulatiograph:	13.0	
Approach LOS		B			D			C			В	
Intersection Summary												
HCM Average Control Delay		mundel Heferein	34.9		ICM Leve	of Servi	ce		С			
HCM Volume to Capacity rat	in In	250033793993993	0.98	antaista sing sing si	AND	14175520ThTtliff5	anti internet i i i i		an a			ana ana ana ana ana ang ang ang ang ang
Actuated Cycle Length (s)			80.0	SIGNAL SE S	Sum of los	st time (s)			6.8			
Intersection Capacity Utilizat	inn		102.2%		CU Level				G			
Analysis Period (min)			15								an a	

	گر		F	4	4	1
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT
Lane Configurations		đ þ		ፋኈ	ሻ	4
Volume (vph)	13	231	18	1124	49	98
Furn Type	Perm		Perm		Perm	
Protected Phases		2		2		4
Permitted Phases	2		2		4	
Detector Phase	2	2	2	2	4	4.
Switch Phase				ulum alar	y sangendarmaderniya sadagi	a digend yet and the state in the state
Minimum Initial (s)	34.0	34.0	34.0	34,0	15.0	15.0
Minimum Split (s)	40.0	40.0	40.0	40.0	30.0	30.0
Total Split (s)	50.0	50.0	50.0	50.0	30.0	30.0
Total Split (%)	62.5%	62.5%	62.5%	62.5%	37.5%	37.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1,6	-1.6	-1.6	-1.6	-0.8	-0.8
Total Lost Time (s)	4,4	4.4	4.4	4.4	5.2	5.2
Lead/Lag						
Lead-Lag Optimize?				ing the state		
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)		45.6		45.6	24.8	24.8
Actuated g/C Ratio		0.57		0.57	0.31	0.31
v/c Ratio		0.22	errestated filter	0.73	0.13	0.33
Control Delay		21.2		24.8	20.9	18.4
Queue Delay		0.0		3.2	0.0	0.0
Total Delay		21.2		28.0	20.9	18.4
LOS		C	CALCULAR STRATEGY	C o oc	С	B
Approach Delay		21.2		28.0	agenega gaa	19,1
Approach LOS		С		С		В
Intersection Summary						
Cycle Length: 80						
Actuated Cycle Length: 8	0					
Offset: 48 (60%), Referen	ced to phase	2:EBWE	3, Start of	Green		
Natural Cycle: 70						
Control Type: Pretimed						
Maximum v/c Ratio: 0.73						
Intersection Signal Delay:	25.6			· · · · · · · · · · · · · · · · · · ·		on LOS; C
Intersection Capacity Utili	zation 69.9%				CU Level	of Service
Analysis Period (min) 15						
	106 A 0 P	a				
Splits and Phases: 2: F	ifth Ave & Di	innage S)[
1 02						
1 12° 12 12						

1/6/2011

SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, AM 2: Fifth Ave & Dithridge St

	<u>_</u>	>	N	F	4	A_	٩	Î	P	1	Å	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		416	100 (1.0 101 a) (1.0 101 a)		ፍ		``	Ъ	ingen konten (<u>in</u> dergregensen	aganataon <u>t</u> udah		
Volume (vph)	13	231	27	18	1124	28	49	98	4750	4750	0	4750
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.4			4.4		5,2	5.2 1.00				
Lane Util. Factor	PARTICIPATION	0.95			0.95 1.00		1.00 1.00	0,98				
Frpb, ped/bikes		0.98			1.00		0.95	1.00				
Flpb, ped/bikes		0.98			1.00		1.00	0.94				
Frt Flt Protected		1.00			1.00		0.95	0.0 4 1.00				
Satd. Flow (prot)		2953			3151		1557	1573				
Flt Permitted		0.86			0.95		0.95	1.00		ademisistrationens	4962596222105214	suusemmendie
Satd. Flow (perm)		2559			2987		1557	1573				
Peak-hour factor, PHF	0.70	0.88	0.68	0.96	0.94	0.98	0.77	0.91	0.80	0.25	0.25	0.25
Adj. Flow (vph)	19	262	40	19	1196	29	64	108	64	0	0	0
RTOR Reduction (vph)	0 0	14	0	0	2	0	0	27	0	0	0	0
Lane Group Flow (vph)	Ó	307	0	0	1242	0	64	145	0	0	0	0
Confl. Peds. (#/hr)	10		61	61	12621242123312559449-24	10	30		34	34		30
Confl. Bikes (#/hr)			11			2						2
Heavy Vehicles (%)	5%	9%	1%	2%	5%	1%	2%	3%	2%	0%	0%	0%
Turn Type	Perm			Perm			Perm					
Protected Phases		2		en stadae terres filmen terrepresented	2	11 c a fra cal da stancia de majo portan	evenue and a school of the	4	we were the net-cauged backing		na is intersection we will be a	gegen i mer og sterndy finde
Permitted Phases	2			2			4					
Actuated Green, G (s)	meter manufactual of the 101	44.0	contraction of a later where	d s Annales Incompation - Polity:	44.0	- Andre Constant of Party of Constant	24.0	24.0	terre biologicalitation		unstation and a state of the	
Effective Green; g (s)		45.6			45.6		24.8	24.8				
Actuated g/C Ratio	ed y a set of a firmer of particular	0.57	esteristikaiselistik		0.57		0.31	0.31		na an ann an Air an		
Clearance Time (s)		6.0			6.0		6.0	6.0				
Lane Grp Cap (vph)		1459	, egosto variati (anato tan		1703	anararan bili din	483	488		oppinising king biog		
v/s Ratio Prot								c0.09				
v/s Ratio Perm	indifference and the second	0.12		Namkasaker	c0.42		0.04	0.00	oskerkerkel			ietersterindek Antopisco
v/c Ratio		0.21			0.73		0.13 19.9	0.30 21.0			NIMPS CONTRACTOR	
Uniform Delay, d1		8.4 2.72			12.7 1.88	MERCENSION	19.9	21.0 1.00				
Progression Factor		2.72 0.3			1.00 0.3		0.6	1.6				
Incremental Delay, d2		23.2		produce Electricity Electricity of the second	24.1		20.4	22.5				
Delay (s) Level of Service		202 C		NGABABBRAR	eseπ x ees C		<u>со.</u> С	C	SISWIELEN PROVINSIO	NCOLONIARIO (CO		1202203428262
Approach Delay (s)		23.2			24.1			22.0			0.0	
Approach LOS	Délaisistérinén	C	(Sinaaskuse	113255512[15]4[15]4[15]692[3]	C	degelentieren	el sign is per care ra	C	ersi en la	1444 PARIS CONTRACTOR (1973)	A	ngin on spiritual nimetra tatif
Intersection Summary												
HCM Average Control Delay			23.7	H	CM Leve	l of Servi	ce		С			
HCM Volume to Capacity rati	o	nengreber	0.58			MARGER						
Actuated Cycle Length (s)		agilgigiddada	80.0	sonatoronaleisedal S	um of los	t time (s)	n nafalalaan ili (di 1999) ili	-eet-amma-4057652383)	9.6			
Intersection Capacity Utilizati	on		69.9%			of Service			C			
Analysis Period (min)	sets dia 1958		15		an dinanistri (Br	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -	**************************************			n an marainn a saintaiseacha		
c Critical Lane Group												

SIGNAL TIMINGS-- Fifth and Forbes Avenues Existing Conditions, AM

	٨		*		4	1	* >>>	Ļ			
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	ø8		
Lane Configurations		đ î þ		4î î»	ሻ	€	ሻ	Ъ	unter Halma Alabert Malaba 2017		
Volume (vph)	16	249	14	972	37	138	51	135			
Turn Type	Perm		Perm		Perm		Perm	na fasanna dan adir Jina (dika) (d		n (o b) ang by ang in (yananang ingka	alamin by any systems, and by see
Protected Phases		2		2		4	inder der die	4	8		
Permitted Phases	2		2		4		4		han a too an talang pita ta Jawa na ta ka ka		eneralizen en e
Detector Phase	- 2	2	2	2	4	4	4	4			
Switch Phase							- 100 - 100				an a
Vinimum Initial (s)	24.5	24.5	24.5	24.5	14.5	14.5	14,5	14.5	4.0		
Vinimum Split (s)	30.0	30.0	30.0	30.0	20.0	20.0	20.0	20.0	30.0		nonana persona na sed ta menere da
Total Split (s)	30.0	30.0	30:0	30.0	20.0	20.0	20.0	20.0	30.0		
Total Split (%)	37.5%	37.5%	37.5%	37.5%	25.0%	25.0%	25.0%	25.0%	38%		
(ellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.0		
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0		
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Fotal Lost Time (s)	5.5	5.5	5,5	5.5	5.5	5.5	5.5	5.5			
.ead/Lag											
.ead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	Ped		
Act Effct Green (s)		26.5		26.5	14.5	14.5	14.5	14.5			والمراجع والمراجع والمحمول والمحمول والمراجع والمراجع
Actuated g/C Ratio		0.33		0.33	0.18	0.18	0.18	0.18			
//c Ratio		0.46		1.12	0.52	0.92	0.67	1.32			
Control Delay		29.8		89.7	50.9	68.1	62.6	201.5			
Queue Delay		0.0		0.0	11.0	0.0	0.0	198.6			
Fotal Delay		29.8		89.7	61.8	68.1	62.6	400.2			
LOS		С		F	E	E	E	F			
Approach Delay		29.8		89.7		67.2		338.2			
Approach LOS		С		F		E		, F			
ntersection Summary	in the second										
Cycle Length: 80											
Actuated Cycle Length: 80											
Offset: 13 (16%), Reference	d ta nhaca		Start of	Green	A CALLER AND A CONTRACT OF A CALLER AND A CA						REASSERVENCERS
Vatural Cycle: 100							PIERSKIPE				
	rdinated	WINNERSTREET					enne mense			haan ahaa ahaa ahaa ahaa ahaa ahaa ahaa	
Control Type: Actuated-Coo		And a second sec									
Maximum v/c Ratio: 1.32	008800-000 74 4				ntoreactio	n LOS: F					
Intersection Signal Delay: 12				and the local data set of the schedule states and the set of	and as one can be deadly a dealer to be the first of the	of Service					
Intersection Capacity Utilizat	uun 07.7%								ISPANIC CONTRACTOR		
Analysis Period (min) 15											
Splits and Phases: 3: Fifth	n Ave & Cr	aia Ct									
	HAVE & U	αιύ Οί									

 φ2
 φ4
 Ak σ8

 30 s
 20 s
 30 s

SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, AM 3: Fifth Ave & Craig St

	A	>	~	K		Ł	*	Å	P	\$	f	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		र्स कि			eî î»		ሻ	1≯		ሻ	4Î	
Volume (vph)	16	249	17	. 14	972	22	37	138	76	51	135	151
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost fime (s)		5.5			5.5		5.5	5.5		5.5	5.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00		1.00	0.94		1.00	0.90	
Fipb, ped/bikes		1.00	New Sciences and		1.00		0.90	1.00 0.95		0.89	1.00 0.92	
Frt Frotected		0.99			1.00		1.00 0.95	0.95 1.00		1.00 0.95	0.92 1.00	
Satd. Flow (prot)	repair e maisocrant la lagrad b	2927			3105		1459	1483		1419	1335	
Flt Permitted		0.70			0.95	USAGARAG	0.28	1.00		0.40	1.00	
Satd. Flow (perm)		2058			2944		424	1483		594	1335	
Peak-hour factor, PHF	0.61	0.96	0.68	0.88	0.93	0.69	0.93	0.86	0.86	0.71	0.89	0.90
Adj. Flow (vph)	26	259	25	16	1045	32	40	160	88	72	152	168
RTOR Reduction (vph)	0	0	0	, u 0	0	0	0	0	0	, - 0	0	0
Lane Group Flow (vph)	Ō	310	Ŏ	Ō	1093	Ō	40	248	Ō	72	320	Ō
Confl. Peds. (#/hr)	82	anter 20192 al la com	54	54	ind all held of the second states	82	110		88	88	Sixintiana dell'in	110
Confl. Bikes (#/hr)			1			17			1			
Heavy Vehicles (%)	33%	9%	5%	3%	6%	6%	3%	7%	3%	4%	5%	12%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2	telefol el secolo de esta de la		2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		26.5		allan fa fanafa fa Bandard (1979) (1970)	26.5		14.5	14.5	the particular second second second	14.5	14.5	nese sumiratedabiler
Effective Green, g (s)		26.5			26.5		14.5	14.5	ler köri sör söld. And sört sört sört.	14.5	14.5	
Actuated g/C Ratio		0.33	n of spatia page (s) 200 a 688	. beine stand auf auf der	0.33		0.18	0.18	a superior and the state	0.18	0.18	alaha salah bigapi pipi pipi
Clearance Time (s)		5.5			5.5		5.5	5,5		5.5	5.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0	ályek pegyint vezővé tre 407	3.0	3.0	
Lane Grp Cap (vph)		682			975		77	269		108	242	
v/s Ratio Prot	nga sabutni senjin	insi ini ini ini ini ini ini ini ini ini	ARGANARANINA	omenonen		nan oku ékerének intér		0.17		URAN HOUS	c0.24	SERVERALSEN AN
v/s Ratio Perm		0.15		n shi ke shi k Nan ka shi k	c0.37	SBANESKED HE	0.09	Λ 00		0.12	1.32	
v/c Ratio		0.45		Connanada	1.12 26.8		0.52 29.6	0.92		0.67 30.5	1.3Z	
Uniform Delay, d1 Progression Factor		21.1 1.28			20.0 0.95		29.0 0.93	0.97		1.00	ے۔∞ 1.00	
Incremental Delay, d2		1.20			63.0		19.4	33.7		28.1		
Delay (s)		29.2		HARSEN HARRINGER	88.4	NEEDERIGENEE	46.9	64.9		58.6	203.7	
Level of Service		20.2 C			F		D	CT.C		E	200.1 F	
Approach Delay (s)	iner des register	29.2	Standalisteri		88.4			62.4	endergender of the second s		177.0	namennahimi
Approach LOS		C C						Ē				
		uren an										
Intersection Summary					0100					Interaction in the last		
HCM Average Control Delay			92.7	H	CM Level	of Servic	e					
HCM Volume to Capacity rati	0 Mariana		1.19		um of lost	time (a)			39.0			
Actuated Cycle Length (s)	on		80.0 87.7%		um oriosi 20 Level c	second			39.U E			
Intersection Capacity Utilizati Analysis Period (min)			07.7% 15				A robal da data se sera 60 5. Di 2000 a data se sera 60 5.		E.			
Culdivola i culou (IIIII)						KRACONTRACT	NARA BUREAU	ensenselselt		isisinan di sini kig		agradent fan (

SIGNAL TIMINGS-- Fifth and Forbes Avenues Existing Conditions, AM

	À		1	4	4	ħ	1	Ŷ	4	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations		ፈ ት		ፈት	et poerset reporte reporte and and and	4		ب ه	1	in a superior of the second
Volume (vph)	40	327	66	613	8	87	60	196	387	
Turn Type	pm+pt	, A sheet at easi a scanning it.	Perm	eren genr-nagdalskill	Perm	integins compagnetics (des	Perm	gyedining iniginitani	Perm	n to contrart protocol and to be allowed a life of a local de la life i be all
Protected Phases		6		2		4		4		
Permitted Phases	6	a termina provincia da tanga da com	2	unio tra materia in la logita in	4	with the second second second second	4	n ad um ang kanal na ng marang	4	errezent jutejtete di etek nagid på normal neder nämend.
Detector Phase		6	2	2	- 4	4	4	4	. 4	
Switch Phase	19-19-19-19-19-19-19-19-19-19-19-19-19-1			economic de la constante de			ate for a product of the		enceded between the bold of the	ne (non equip pression exercite a training equip to the factor of the factor of the factor of the factor of the
Minimum Initial (s)	4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	8.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	w is a land a final a loging of grant (splat a fid regular) is there exists
Total Split (s)	8.0	44.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	
Total Split (%)	10.0%	55.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	د. مراجع در مراجع میروند و مراجع میروند و میروند و میروند و میروند از میروند و میروند از میروند و میروند از میروند میروند و میروند و می
Lost Time Adjust (s)	0.8	-1.6	-1.6	-1,6	-1.6	-1.6	-1,6	-1.6	0,8	
Total Lost Time (s)	4.8	4.4	4.4	4.4	4,4	4.4	4,4	4.4	6.8	1191 - 415 - 15 - 19 - 19 - 19 - 19 - 19 - 19 -
Lead/Lag	Lead		Lag	Lag						
Lead-Lag Optimize?	Yes		Yes	Yes						والمراجع
Recall Mode	Min	C-Max	C-Max	C-Max	Ped	Ped	Ped	Ped	Ped	
Act Effct Green (s)		39.6		31.6		31.6		31.6	29.2	t of the total termination by considering to take, Jacobian second systems
Actuated g/C Ratio		0.50		0.40		0.40		0.40	0.36	
v/c Ratio		0.37		0.73		0.39		0.60	0.92	
Control Delay		11.6		30.1		19.8		24.4	52.2	
Queue Delay		0.0		0.0		0.0		0.0	0.0	5.5
Total Delay		11.6		30,1		19.8		24.4	52.2	
LOS		В		С		В		С	D	
Approach Delay		11.6		30,1		19.8		40.1		
Approach LOS		В		С		В		D		
Intersection Summary										
Cycle Length: 80	en staat van de staa	awabalaanta		eccia			STRANGA -	-		
Actuated Cycle Length: 80										
Offset: 5 (6%), Referenced	to phase 2	:WBTL ar	Id 6:EBTI	_, Start of	Green	gionera anisigio qui jur	(and the second s	HUMBRIDGIANS		ssanda araa ka
Natural Cycle: 80										
Control Type: Actuated-Co	ordinated		ter dista finale (base of a	Mental President State	THE REPORT OF THE PARTY OF THE		Jetieletaeliikutukka		orization and a second state	
Maximum v/c Ratio: 0.92										
Intersection Signal Delay: 2		<u>e de la president de la presi</u>		demonstration of the property density	over a second processing and the second second	n LOS: C		entatudi y kuppi i 1955		
Intersection Capacity Utiliz	ation 104.9	%		1 (i i i i i i i i i i i i i i i i i i	CU Level	of Service	e Galeria			
Analysis Period (min) 15										
Splits and Phases: 4: Fif	fth Ave & Ne	eville St				114				

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8 s - 36 s	BES
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44 s	

SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, AM 4: Fifth Ave & Neville St

	A	>	V	¢~	4	Ł	*	Å	P	*	↓ ₩	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ፋት			ৰ কি			4 >			র্শ	ř
Volume (vph)	40	327	9	66	613	18	8	87	48	60	196	387
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.4			4.4			4.4			4,4	6.8
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		0.99			0.99			0.98			1.00	0.98
Flpb, ped/bikes		1.00			0.99	11.10.11.10.10		1.00	nd to construct induces for entry.	ne jen saneste for 16 junior for th	0.99	1.00
Frt		1.00			1.00			0.95			1.00	0.85
Fit Protected		0.99	s i na contron la bitacha ar as		1.00	and the event block of the events	and spectrospice property as 3-	1.00	contrata contrata contra	walfstall (Mail Involution for the first	0.99	1.00
Satd. Flow (prot)		3079			3162			1619			1683	1324
Fit Permitted	a a a a a a a a a a a a a a a a a a a	0.75		n na ministra i na mino a meno sec	0.86	2012202.0150.01000000	antiples clause sciences and	0.95	nige falle weiter og in to store over	eren heren in heren der eren	0.86	1.00
Satd. Flow (perm)		2324			2736			1540			1465	1324
Peak-hour factor, PHF	0.66	0.91	0.67	0.92	0.89	0.75	0.33	0.73	0.50	0.66	0.77	0.87
Adj. Flow (vph)	61	359	13	72	689	24	24	119	96	- 91	255	445
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	433	0	0	785	0	0	239	0	0	346	445
Confl. Peds. (#/hr)	92		73	73	num versioned auf the former the title of	92	16	- to a to a fact to estimation encoded a fac	51	51		16
Heavy Vehicles (%)	17%	4%	0%	0%	3%	2%	0%	0%	0%	8%	0%	10%
Turn Type	pm+pt			Perm			Perm			Perm		Perm
Protected Phases	1	6			2			4			4	
Permitted Phases	6			2	phase for a pair on a consequence polynomy of the	electron to the second progress prime to the	4	s manus and Seco Geologica		4	والمحتفظ ومستعمل والمحتمد	4
Actuated Green, G (s)		38.0			30.0			30.0			30.0	30.0
Effective Green, g (s)	Ja di si su lan la ta la su su sitan la dar	39.6			31.6	etteta foto tata tata foto tata i	s di Sio-tanggi da bila kuni	31.6			31.6	29.2
Actuated g/C Ratio		0.50			0,40			0.40			0.40	0.36
Clearance Time (s)		6.0	a baba bini - ya Libi si a	Principal Sector Principal	6.0	ine in containing spild).	a kasihan karangip dapi balan (ndaping	6.0		angena hannan Martanan	6.0	6.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1203			1081			608	مدينة المراجع والمراجع والمراجع والمراجع والمراجع		579	483
v/s Ratio Prot		c0.03										
v/s Ratio Perm		0.15			c0.29			0.16	nama) and many turned out to make		0.24	c0.34
v/c Ratio		0.36			0.73			0.39			0.60	0.92
Uniform Delay, d1		12.4			20.5			17.3		an a	19.2	24.3
Progression Factor		0.89			1.32			1.00			1.00	1.00
Incremental Delay, d2	werden of the state of the late	0.2	unaninista majaga ja ja	at the production of t	2.2		in external construction of each order	0.4	under die der die	one and the second states of the	1.7	23.0
Delay (s)		11.2			29,4			17.8			20.8	47,4
Level of Service	uaechisticaluuctustisselinta	B		PRINT ADDRESS TO DE	C	CERTIFICATION -	into a constante de la constant	B			C	D
Approach Delay (s)		11.2			29.4			17.8			35.7	
Approach LOS		В			С			В			D	
Intersection Summary												
HCM Average Control Delay			26.9)H גערונגע געריינט ולווידע לוו	CM Level	of Servic	e Maaaaaaaaaaa		С			
HCM Volume to Capacity rati	0		0.80									
Actuated Cycle Length (s)			80.0		um of lost				15.6			
Intersection Capacity Utilizati	on		104.9%	IC IC	U Level c	of Service			G			
Analysis Period (min)	(c) etas (pps/marses faciliera a	arolyayikaddik	15					el gane d'antério a mérico	2011 political constructions with			is pizzeri z dorat
c Critical Lane Group												

SIGNAL TIMINGS-- Fifth and Forbes Avenues Existing Conditions, AM

	کر		*	4	٩	Â	p		Å	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	
Lane Configurations		র্ণ 🖡		ፈኑ		4	<u>ť</u>	ሻ	ĵ a	
Volume (vph)	15	327	158	645	17	192	126	60	238	
Turn Type	pm+pt	and the second second	Perm	secolation and states	Perm	nanandy fan hays fays annag	Perm	Perm	ad wite Alfade with country is were wrent to see	en wê estere new bits for the private reference in the private for \$20 to \$20 to \$20 to \$20 to \$20 to \$20 to \$20
Protected Phases	1	6		2		4			4	
Permitted Phases	6		2		4		4	4		and a second state of the second
Detector Phase		6	2	2	4	4	4	4	- 4	
Switch Phase										
Minimum Initial (s)	4,0	15.0	15.0	15.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.0	45.0	41.0	41.0	23.0	23.0	23.0	23.0	23.0	
Total Split (s)	9.0	56.0	47.0	47.0	24.0	24.0	24.0	24.0	24.0	
Total Split (%)	11.3%	70.0%	58.8%	58.8%	30.0%	30.0%	30.0%	30.0%	30.0%	
Yellow Time (s)	3.5	· 4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.6	-1.6	0.0	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	
Total Lost Time (s)	2.4	4.4	6.0	4.4	4.4	4.4	4.4	4.4	4.4	
_ead/Lag	Lead		Lag	Lag						
_ead-Lag Optimize?	Yes		Yes	Yes						
Recall Mode	Min	Max	C-Max	C-Max	Ped	Ped	Ped	Ped	Ped	
Act Effct Green (s)	and house to be and that along one of	51.6		42.6		19.6	19.6	19.6	19.6	
Actuated g/C Ratio		0.64		0.53		0.24	0.24	0.24	0.24	
v/c Ratio		0.29		0.87		0.82	0.37	0.42	0.74	
Control Delay		7.8		25.5		50.1	7.7	35.7	39.8	
Queue Delay		0.0		0.0		0.0	0.0	0.0	0.0	
Total Delay		7.8		25.5		50.1	7.7	35.7	39.8	
LOS		A		С		D	A	D	D	
Approach Delay		7.8		25.5		35.1			39,1	
Approach LOS		A		С		D			D	
Intersection Summary										
Cycle Length: 80									www.com.com.com.com	
Actuated Cycle Length: 80										
Offset: 68 (85%), Reference	ed to phase	2:WBTL	, Start of	Green						
Natural Cycle: 75			a Mari Mari Mari k Mari Mari Mari M							
Control Type: Actuated-Co	ordinated									
Maximum v/c Ratio: 0.87										
Intersection Signal Delay: 2				Ir	ntersectio	n LOS: C				
Intersection Capacity Utiliz				J(CU Level	of Service	e F			
Analysis Period (min) 15										
Splits and Phases: 5: Fil	fth Ave & Mo	rewood	Δνα							
opnisanu Fildses. 0. Fil	IN AVE O WI	newood /						114		

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SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, AM 5: Fifth Ave & Morewood Ave

<u> </u>	×	>	\mathbf{i}	4	<u> </u>	Ł	4	Â	p	\$	Å	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		đ ĥ			ৰকি			Ŕ	ሻ	ካ	1 >	
Volume (vph)	15	327	45	158	645	150	17	192	126	60	238	29
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.4			4.4			4.4	4.4	4.4	4.4	
Lane Util. Factor	HASIN DATA INDIA M PUBL	0.95	rendes of succession has been deter	in memilin neus	0.95		Verstere en	1.00	1.00	1.00	1.00	UTERIZENNEDIA
Frpb, ped/bikes		0.99			0.97	ita ian salan		1.00	0.79	1.00	0.98	
Flpb, ped/bikes	inerangen sen	1.00			0.99			0.99	1.00	0.88	1.00	
EU		0.98			0.98			1.00	0.85	1.00	0.98	
Flt Protected		1.00			0.99			0.99	1.00 1158	0.95	1.00 1676	
Satd. Flow (prot)		3097			3047			1697 0.79	1.00	1454 0.40	1.00	
Fit Permitted		0.90 2781	CARLEND AND A		0.73 2259			1355	1158	0.40 615	1676	la colorado a clivas tos Refo Directos del La constantes Refo Directos del La constantes
Satd. Flow (perm)	0.60		0 60	0.70	فستتحفظ فتنقط وأعلم فأعاده	0 00	0.61	0.79	0.85	0.94	0.88	0.73
Peak-hour factor, PHF	0.63 24	0.76 430	0.63 71	0.79 200	0.93 694	0.89 169	28	243	148	0.94	270	0.73 40
Adj. Flow (vph) RTOR Reduction (vph)	2222020202020202020202020202020202020202	450 16	/1 0	200 0	094 20	109	20 0	243 0	140 112	04 0	210 7	40 0
Lane Group Flow (vph)	0	509	Ŭ O	0	1043	0	0	271	36	64	303	0
Confl. Peds. (#/hr)	75	903	35	35		75	83	41	161	161		83
Confl. Bikes (#/hr)					in na haire sea	7			4			3
Heavy Vehicles (%)	3%	2%	13%	2%	2%	1%	2%	2%	1%	1%	1%	0%
Turn Type	pm+pt			Perm			Perm		Perm	Perm		
Protected Phases		6		Stational Lands	2	HERRICAL STREET, STREET		4 Addition		nder Statensen	4	
Permitted Phases				2			4		4	4		
Actuated Green, G (s)		50.0			41.0		******	18.0	18.0	18.0	18.0	initial and a first a first
Effective Green, g (s)		51.6			42.6			19.6	19.6	19.6	19.6	
Actuated g/C Ratio	an al tarà al Waline de Barderes	0.65	a na		0.53	COCONCERSION OF A CONTRACTOR	or point point of and the	0.25	0.25	0.25	0.25	1010/00/2020/010
Clearance Time (s)		6.0			6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0			3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1820			1203			332	284	151	411	
v/s Ratio Prot		c0.02									0.18	
v/s Ratio Perm		0.16			c0.46			c0.20	0.03	0.10		
v/c Ratio		0.28			0.87			0.82	0.13	0.42	0.74	
Uniform Delay, d1		6.2			16.2			28.5	23.5	25.4	27.8	
Progression Factor	jaha kaoni ku neuropi kurepu k	1.33	g o grend ju jedne krystat sju	-bog canalisati inter recenting	1.00	or the second	reserventabili	1.00	1.00	1.00	1.00	20123152109121915008
Incremental Delay, d2		0.1			8.6			14.3	0.2	1.9	6.8	
Delay (s)	en e	8.3			24.8	ugunakolookos		42.8	23.7	27.4	34.6	VESSEMMUER
Level of Service		A			C			D	C	C	C	quillippe and
Approach Delay (s)		8.3			24.8			36.1			33.4	
Approach LOS		A			C			D			C	generation Seneration
Intersection Summary												
HCM Average Control Delay			24.5	H	CM Level	of Servic	e		С			na consense
HCM Volume to Capacity ratio)		0.82		an the second second second							
Actuated Cycle Length (s)			80.0		im of lost				13,2			
Intersection Capacity Utilization	วท		92.8%	IC.	U Level a	of Service	In the films to ments the entroise	-inconstants	F		steaceptontain	anti dalla Conta er
Analysis Period (min)			15									

SIGNAL TIMINGS-- Fifth and Forbes Avenues Existing Conditions, AM

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	ø3		
Lane Configurations		લે 🖡		ন্দি	ሻ	₽		\$	a had too be been a weat proved a source of a solar of	personal colonical and avoid a graphic	undintegra opposiseite
Volume (vph)	148	372	45	337	2	5	81	60			
Turn Type	pm+pt		Perm	and again the structure set of the set	Perm	magenta de la companya de la company	Perm	no esta mentaladata terteder	na mana manganga manang mangangan	en des johnergijen bjenda.	e de companye possible de la de l
Protected Phases	1	6		2		4			3		
Permitted Phases	6		2		4		4		ry ná zverezpáltet a ták is to köyős; ki akt	Internet internet in the second	terretación in a distilita antidada
Detector Phase	1	6	2	2	4	4	4	4			
Switch Phase						1	teachers and says in the local difference in the				eren er en samen er en sen er
Minimum Initial (s)	5.0	18.0	9.0	9.0	7.0	7.0	7.0	7.0	7.0		
Minimum Split (s)	9.0	28.0	19.0	19.0	22.0	22.0	22.0	22.0	21.0	conversion of the second s	n maan rang buldhidhu com si
Total Split (s)	9.0	32.0	23.0	23.0	24.0	24.0	24.0	24.0	24.0		
Total Split (%)	11.3%	40.0%	28.8%	28.8%	30.0%	30.0%	30.0%	30.0%	30%	a se sta a constanta a consta	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		
Lost Time Adjust (s)	0.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	and an an an and the second second	or factors for the generative processing we appropriate	en en en este de la charles de la charles de
Lead/Lag	Lead		Lag	Lag							
Lead-Lag Optimize?											
Recall Mode	Min	C-Min	C-Min	C-Min	Min	Min	Min	Min	None		
Act Effct Green (s)	aloonal on the second	54.1		44.6	17.9	17.9		17.9	n hann y fan han dies fan hannen fan y helen by ar ong ong	www.commiss.com/	
Actuated g/C Ratio		0.68		0.56	0.22	0.22		0.22			
v/c Ratio		0.52		0.60	0.02	0.03		0.78	an name na na statut na statut na statut na statut na statut		e prinsk peterpenisk († 1560) 1777 1777
Control Delay		7.6		14.9	23.0	19.6		39.4			
Queue Delay		0.0		0.0	0.0	0.0		0.0			
Total Delay		7.6		14.9	23.0	19.6		39,4			
LOS		A		В	С	В		D		n onen Galant alter at the Parts	
Approach Delay		7.6		14.9		20.4		39.4			
Approach LOS		Α		В		С		D			
Intersection Summary											
Cycle Length: 80											
Actuated Cycle Length: 80											
Offset: 3 (4%), Referenced	to pnase 2		no o:cbii Masaalaka	., Start of	i Green						
Natural Cycle: 90						Nationalista					
Control Type: Actuated-Co	ordinated				GROOM						
Maximum v/c Ratio: 0.78											
Intersection Signal Delay:						n LOS: B	and the descent company and a second of			a sind maging so da big pi biga in Antonio antonio	
Intersection Capacity Utiliz	ation 65.1%				UU Levei	of Servic	eu				
Analysis Period (min) 15											
Splits and Phases: 6: Fo	orbes Ave &	Proto St									

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<u>9s</u>	24 s	24 s Contractor and Contractor and Contractor
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SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, AM 6: Forbes Ave & Craig St

	A		X	F	~	Ł	٩	Å	p	\$	Å	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	223104.740111111111111111111111	ৰ্ণ কি			≪î î≽		ሻ	4		er bestangen bester en bergege byere	\$ }	
Volume (vph)	148	372	87	45	337	160	2	5	2	81	60	24
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor		0.95		and a set for some diversity of some of some A set of the source of the	0.95	namena batte la processo da la fac	1.00	1.00		enderer da stod at rebit 44	1.00	
Frpb, ped/bikes		0.99			0.97		1.00	0.95			0.99	
Flpb, ped/bikes		1.00			1.00	representation in the state of	0.95	1.00	Seguences and the second s		0.94	aptractic back
Frt		0.98			0.95		1.00	0.95			0.98	
Flt Protected	unavesta (res) (citati	0.99			1.00	enaleda reja (rejalara harra	0.95	1.00	alla alla alla alla alla alla alla all		0.98	SAMBLE INT
Satd. Flow (prot)		3061			2807		1566	1569			1525	
	usunadian Jarda Day	0.61	urrencisti destiti		0.84		0.55	1.00			0.84	staanse Meditel Suidense Meditel
Satd. Flow (perm)		1877			2368		914	1569			1315	
Peak-hour factor, PHF	0.86	0.89	0.84	0.70	0.79	0.57	0.50	0.63	0.50	0.72	0.63	0.86
Adj. Flow (vph)	172	418	104	64	427	281	4	8	4	112	95	28
RTOR Reduction (vph)	0	0	0	0 A state getain	0	0	0	3	0 	0	6	
Lane Group Flow (vph)	0	694	0	0	772	0	4	9	0	0	229	0
Confl. Peds. (#/hr)	68	SINGARCHARMAN	36	36		68	68	enesuosinten	97 	97		68 2
Confl. Bikes (#/hr)			2		4.49/	A D/	40/	40/		40/	1%	∠ 12%
Heavy Vehicles (%)	3%	5%	1%	1%	14%	1%	1%	1%	1%	1%	I 70	1 2 70
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	1 1	6	kreine ebendeide		2		4	4 availabeling	ra prése Andrias, poi si investi a l'al 18. November 1995 de la constante d	4	· 4	energing parkets a set
Permitted Phases	6			2			CONCRETE: NON-DECOMPOSITION	46.0		4	16.9	
Actuated Green, G (s)	THE REPORT OF THE PARTY OF THE PA	53.1			43.6		16.9	16.9 17.9			17.9	
Effective Green, g (s)		54.1			44.6		17.9 0.22	0.22			0.22	
Actuated g/C Ratio		0.68	NURSENSE		0.56		5.0	0.22 5.0		n ki shoro sh Dirin ki n ki na	5.0	
Clearance Time (s)		5.0 3.0			3.0 3.0		3.0 3.0	3.0 3.0			3.0 3.0	
Vehicle Extension (s)				haden sige	1320		205	351		- Angle Angle Ang Angle Angle Ang	294	
Lane Grp Cap (vph)		1366			1320		203	0.01			234	
v/s Ratio Prot	MARRARHIBD:	c0.04		TTOSANGOST	-0.90		0.00	U.U I INTERNET			c0.17	
v/s Ratio Perm		0.30		Saliga (Skaliga)	c0.33 0.58		0.00	0.03			0.78	
v/c Ratio		6,4			11,6		24.2	24.2			29.2	
Uniform Delay, d1		0.4 1.00			1.00		1.00	1.00			1.21	ser service and the
Progression Factor		0.3			1.9		0.0	0.0			3.5	
Incremental Delay, d2		6.7			13.5	REPERING	24.2	24.3	eenesidatiinata	uznisiensegiji	38.7	andexanonel
Level of Service		Ŭ./			B		Ē	Ċ			D	
Approach Delay (s)		6.7	n de andre de la composition de la comp		13.5	une server		24.3	DUNCER CONSIGN		38.7	(d)))ergelaar
Approach LOS		Ă			B			Ċ			D	
Intersection Summary												
HCM Average Control Delay			14.3	H H	CM Leve	l of Servic	;e		B			
HCM Volume to Capacity rati	0	Identificant Manie Ave	0.64	1910,000 v. n. j. ok. (* 1915)				nasiantiitiitii		-		onseren:
Actuated Cycle Length (s)	tard to me you so which all had		80.0		um of loc	t time (s)	HERE AND		12.0			
Internetion Consolity 1 Itilizati			ate & information for an option, fault () in						ويتكرين فيتقيدهم فرزاهم معاهية ومتر	MANUNARY (MARINE		and the form form where
Intersection Capacity Utilizati Analysis Period (min)	on		65.1% 15			of Service) 	na de contracta Sente de la sectore	C C			shighted ù

		«	4
Lane Group	EBT	WBT	SBL
Lane Configurations	4 争	<u></u> ትኈ	۲
Volume (vph)	449	557	2
Tum Type	sovensi kaleningin meginteringi	to resumption of the strength of the	regelege den konstantigt for si
Protected Phases	2	6	4
Permitted Phases			
Detector Phase Switch Phase	2	6	4
Minimum Initial (s)	30.0	30.0	7.0
Minimum Split (s)	38.0	38.0	21.0
Total Split (s)	38.0	38.0	21.0
Total Split (%)	48.1%	48.1%	26.6%
Yellow Time (s)	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize? Recall Mode	Max	None	None
Act Effct Green (s)	50.2	50.2	8.2
Actuated g/C Ratio	0.83	0.83	0.14
v/c Ratio	0.19	0.27	0.05
Control Delay	4.8	5.2	27.7
Queue Delay	0.0	0.0	0.0
Total Delay	4.8	5.2	27.7
LOS	A	A	C
Approach Delay	4.8	5.2	27.7
Approach LOS	A	А	С
Intersection Summary			
Cycle Length: 79			10-24-1-2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-
Actuated Cycle Length: 60.4			
Natural Cycle: 80		555205200200000000000000000000000000000	an gang kung bergang der
Control Type: Semi Act-Unco	DIC		
Maximum v/c Ratio: 0.27	3		
Intersection Signal Delay. 5. Intersection Capacity Utilizat			
Analysis Period (min) 15			
	uren erenden 1983	useneste	HEISHEWACHENTERICT

Splits and Phases: 7: Forbes Ave & Hamburg Hall

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	EBL	EBT	WBT	WBR	SBL	SBR				
Movement Lane Configurations	LDL	<u>्ट</u> ठा दीर्म	<u>ቀ</u> ት	EXENTS	<u>301</u> \{#					
Volume (vph)	0	₩11 449	557		1					
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750			Sining and chapterin.	
Total Lost fime (s)		4.0	4.0		4.0					
Lane Util. Factor	4NPANGUNANNA	0.95	0.95	un an	1.00	aldi de biana en		30.56570	an a	0.0101012100101000101000000000
Empb, ped/bikes		1.00	1.00		0.98					
Flpb, ped/bikes	at a nan shekara sa bina n	1.00	1.00		1.00					
Free		1.00	1.00	a negota postu	0.95					
Flt Protected		1.00	1.00	والمراجع والمراجع والمراجع والمراجع	0.97		andra na service a statuta da 1908	no porte los las fos fos no libro Posterio	ini ili contanta en steats i	Areasian and a construction of the second
Satd. Flow (prot)		3167	3048		1587					
Flt Permitted	n per statuta et caract	1.00	1.00	a her bestern helter vå statsstand	0.97		enteleste laste also teles		sonan an tai ka sa	NEW ACTIVISION AND A STATUS
Satd. Flow (perm)		3167	3048		1587					
Peak-hour factor, PHF	0.25	0.89	0.82	0.25	0.25	0.25				provide a static s
Adj. Flow (vph)	<u>0</u>	504	679	4	8	4				
RTOR Reduction (vph)		0	0	0 National Contractor	0 1000/150000000	0	Goyaquukliski		i en antistation	
Lane Group Flow (vph)	0	504	683	0	12 83	0 5		KAN HER HER HE		
Confl. Peds. (#/hr)	59			59	83 1991	C All the second second			nicial and distances in Congratures Magnetics	
Confl. Bikes (#/hr)	0%	5%	9%	0%	0%	0%				nak den den ten ber Nes etternisteligen gering
Heavy Vehicles (%)		07C	970 31999	0 %	U /0	V /0				
Turn Type Protected Phases	Perm	2	6		4					
Permitted Phases	2				T" Singer States Singer States					
Actuated Green, G (s)	Hannar k -Upp	46.5	46.5		0813924983035 1.2			HEREPERSION	ALAN AND AND AND AND AND AND AND AND AND A	14910440104110904990
Effective Green, g (s)		47.5	47.5		2.2					
Actuated g/C Ratio	ining distriction of the	0.72	0.72	any sing see been for the set	0.03				lidiliti da de color de color de	
Clearance Time (s)		5.0	5.0		5.0					
Vehicle Extension (s)		3.0	3.0		3.0					
Lane Grp Cap (vph)		2266	2180		53					
v/s Ratio Prot		0.16	c0.22		c0.01					name tand as the stand of the line of the stand of the line of the stand of the stand of the stand of the stand
v/s Ratio Perm										
v/c Ratio		0.22	0.31	-/	0.23	****				
Uniform Delay, d1		3.2	3.5		31.3					
Progression Factor	i a la l	1.00	1.00		1.00					RENERATION
Incremental Delay, d2		0.2	0.1		2,2					
Delay (s)	SNEEDLONGER B	3.4	3.5		33.4					
Level of Service		A 3.4	A 3.5		C 33.4					
Approach Delay (s) Approach LOS		3.4 A	з.э А		აა.4 С					
	ngganningsi	sannlet i m S			vii Vii		FELERILASINESSIS		NIGTATION AND ADD	BELIGHERNERN Contraction
Intersection Summary					011	of Operation			Δ	
HCM Average Control Delay			3.8		UM Leve	of Service			na sana ng k	
HCM Volume to Capacity ratio) 21029/06222921		0.31 66.4	c.	um of los	time (a)		16	7	
Actuated Cycle Length (s)			38.7%		um of los	time (s)		ende former doet ward oorde de	A	
Intersection Capacity Utilizatio Analysis Period (min)		ine parti i figuei (30.1% 15						Seugenseuge	
Analysis Penou (min)		sex examples				CREASE AND			nissisten sem som som som som som som som som som so	upulenterkid

	٨		~	s and the second se	4	
Lane Group	EBL	EBT	WBT	SBL	SBR	8 8
Lane Configurations	ħ	个个	个孙	ሻ	ሻ	
Volume (vph)	177	230	637	249	219	
Turn Type	pm+pt				Perm	
Protected Phases		6	2	4		8
Permitted Phases	6	e fe fest over fantenen over efter over			4	
Detector Phase	1	6	2	4	4	
Switch Phase	14.9.4. 1 .4.9.4.	hontontene en lesso el avest o ADP	-e-iosomiressia tollesso		engelalfing behalld blake	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	70.0	50.0	30.0	30.0	
Total Split (s)	20.0	70.0	50.0	30.0	30.0	24.0
Total Split (%)	16.1%	56.5%	40.3%	24.2%	24.2%	19%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	1.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes	entra esta de la facta de la	Yes			
Recall Mode	None	Min	Min	None	None	None
Act Effct Green (s)	62.1	60.1	41.8	24.0	24.0	Cara de la la secto de la companya e
Actuated g/C Ratio	0.51	0.49	0.34	0.20	0.20	
v/c Ratio	0.83	0.17	0.93	0.82	2.03	
Control Delay	52.3	17.3	55.1	68.6	513.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.3	17.3	55.1	68.6	513,1	
LOS	D	B	E	E	F	
Approach Delay		33.0	55.1	304.6		
Approach LOS		С	Е	F		
Intersection Summary						
Cycle Length: 124						
Actuated Cycle Length: 122	22					
Natural Cycle: 145				and displaying with	nina di sentena di secondo di	n i ser i slavjel od del and de la del de del del de de del de del del del
Control Type: Actuated-Un	coordinated					
Maximum v/c Ratio: 2.03	म्बद्धाः स्वतंत्र विद्यालय क्रिस्टि विद्यालय क्रि	59:5:52:53:53:03:03:04	anan na maraka kata k	ananan mensikili	10452403131353376523	alan na manana manana na kanang manang mang mang mang manang mang m
Intersection Signal Delay:	120.1				ntersection	on LOS: F
Intersection Capacity Utiliza	Cardy it; and in product the same second	asseenseene))	- agar silaitii i	Acta Carnetice Providence	the second second water first being of	of Service B
Analysis Period (min) 15						
	Sami yan si zin zan 1910 ili	annini ganta na	un and an	9999 (1999) 1997	narana kuten persektaan	an na ang ang ang ang ang ang ang ang an

Splits and Phases: 8: Forbes Ave & Morewood Ave

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20 s	50 s and a second s	30 s - 10 - 10 - 10 - 10 - 10 - 10	24 s
→ ø6			
70 s			

Movement EBL EBT WBT WBR SBL SBR Lane Configurations 1	
Volume (vph) 177 230 637 146 249 219 Ideal Flow (vphpl) 1750 1750 1750 1750 1750 1750 Total Lost time (s) 4.0 6.0 6.0 6.0 6.0 100 Lane Util. Factor 1.00 0.95 0.95 1.00 1.00 1.00 Frpb, ped/bikes 1.00 1.00 0.99 1.00 0.54 Fipb, ped/bikes 1.00 1.00 1.00 1.00 1.00 Frt 1.00 1.00 0.97 1.00 0.85 Flt Protected 0.95 1.00 1.00 0.95 1.00	
Ideal Flow (vphpl) 1750 1750 1750 1750 1750 1750 Total Lost time (s) 4.0 6.0 6.0 6.0 6.0 6.0 Lane Util. Factor 1.00 0.95 0.95 1.00 1.00 1.00 Frpb, ped/bikes 1.00 1.00 0.99 1.00 0.54 Flpb, ped/bikes 1.00 1.00 1.00 1.00 1.00 Frt 1.00 1.00 0.97 1.00 0.85 Flt Protected 0.95 1.00 1.00 0.95 1.00	
Ideal Flow (vphpl) 1750 1750 1750 1750 1750 Total Lost time (s) 4.0 6.0 6.0 6.0 6.0 6.0 Lane Util. Factor 1.00 0.95 0.95 1.00 1.00 1.00 Frpb, ped/bikes 1.00 1.00 0.99 1.00 0.54 Fipb, ped/bikes 1.00 1.00 0.97 1.00 0.85 Fit 1.00 1.00 0.95 1.00 0.95 1.00	
Total Lost time (s) 4.0 6.0 6.0 6.0 6.0 Lane Util. Factor 1.00 0.95 0.95 1.00 1.00 Frpb, ped/bikes 1.00 1.00 0.99 1.00 0.54 Fipb, ped/bikes 1.00 1.00 1.00 1.00 1.00 Frt 1.00 1.00 0.97 1.00 0.85 Fit Protected 0.95 1.00 1.00 0.95 1.00	
Frpb, ped/bikes 1.00 1.00 0.99 1.00 0.54 Fipb, ped/bikes 1.00 1.00 1.00 1.00 1.00 Fit 1.00 1.00 0.97 1.00 0.85 Fit 0.95 1.00 1.00 0.95 1.00	
Fipb, ped/bikes 1.00 1.00 1.00 1.00 1.00 Frt 1.00 1.00 0.97 1.00 0.85 Fit Protected 0.95 1.00 1.00 0.95 1.00	
Frit 1.00 1.00 0.97 1.00 0.85 Fit Protected 0.95 1.00 1.00 0.95 1.00	
Fit Protected 0.95 1.00 1.00 0.95 1.00	
Cald Flaw (moth) 1620 2167 2025 16/6 756	and the second
Fit Permitted 0.10 1.00 1.00 0.95 1.00	terre and the second
Satd. Flow (perm) 171 3167 3035 1646 756	
Peak-hour factor, PHF 0.83 0.88 0.82 0.76 0.94 0.73	
Adj. Flow (vph) 213 261 777 192 265 300	
RTOR Reduction (vph) 0 0 0 0 0 0 0	
Lane Group Flow (vph) 213 261 969 0 265 300	
Confl. Peds. (#/hr) 20 20 148 700	
Confl. Bikes (#/hr) 3-	
Heavy Vehicles (%) 2% 5% 6% 2% 1% 7%	
Tum Type pm+pt Perm	
Protected Phases 1 6 2 4	
Permitted Phases 6	
Actuated Green, G (s) 60.1 60.1 41.9 24.1 24.1	
Effective Green, g (s) 59.1 60.1 41.9 24.1 24.1	
Actuated g/C Ratio 0.48 0.49 0.34 0.20 0.20	
Clearance Time (s) 3.0 6.0 6.0 6.0 6.0	
Vehicle Extension (s) 4.0 4.0 4.0 4.0 4.0	
Lane Grp Cap (vph) 252 1558 1041 325 149	
v/s Ratio Prot c0.10 0.08 c0.32 0.16	
V/s Ratio Perm 0.31 c0.40	
v/c Ratio 0.85 0.17 0.93 0.82 2.01	1
Uniform Delay, d1 30.0 17.2 38.8 46.9 49.0	
Progression Factor 1.00 1.00 1.00 1.00 1.00	annan fan en ser en
Incremental Delay, d2 22.8 0:1 14.4 15.2 478.9	
Delay (s) 52.9 17.3 53.1 62.1 527.9	
Level of Service D B D E F	
Approach Delay (s) 33.3 53.1 309.5	
Approach LOS C D F	
Intersection Summary	
HCM Average control delay 120.0 Them Lever of Bavice	
HCM Volume to Capacity ratio 1.24	
Actuated Cycle Length (s) 122.2 Sum of lost time (s) 42.0	
Intersection Capacity Utilization 63.5% ICU Level of Service B	
Analysis Period (min) 15	

	X	>	×-	«	×	6	×			
Lane Group	EBL	EBT	WBL	WBT	NET	SWL	SWT			
Lane Configurations	ካ	ትኈ		ፈት>	ର୍ଶ୍ୱର		4 >	21212-1221 - 1-1-1-1-1-1-1-1-1-1-1-1-1-1	terrent of the black of a device of the second s	
Volume (vph)	53	301	62	567	1	74	29			
Turn Type	D.P+P		Perm	to for to too to see the		Perm	more emolected and the backet of \$200 bit 12	a to body that a dashaga kara araat la bear newsyntres	th A summer strategies as the two proposed as it to be and its	the last sector for the local state of the last state of the local sta
Protected Phases	5	25		2	4		4			
Permitted Phases	2		2		a to any to measure with furly prove	4		en la real monta l'actival regent bornes principaes) e pri	erneted of entropy to the second statement of the	
Detector Phase	5	25	2	2	4	4	4			
Switch Phase									n iersen negettengine nie givin sympt	hina malakan kaja terretara
Minimum Initial (s)	15.0		10.0	10.0	9.0	9.0	9.0			
/linimum Split (s)	19.0		32.0	32.0	14.0	14.0	14.0	en proposition de la constituit de la const		n han interfacion di nate del potenza tent
Fotal Split (s)	19.0	51.0	32.0	32.0	29.0	29.0	29,0	an a		
Fotal Split (%)	23.8%	63.8%	40.0%	40.0%	36.3%	36.3%	36.3%	en er en men er generer efter het het te de Marten bijge		ang
fellow Time (s)	3.0		3.0	3.0	3.0	3.0	3.0			
All-Red Time (s)	1.0		2.0	2.0	2.0	2.0	2.0		1 *** ********************************	
.ost Time Adjust (s)	0.0	0.5	0.5	0.5	0.5	0.5	0.5			noquasi Koʻqin sayna Mgʻlasha kisto ason m
Total Lost Time (s)	4.0	5.5	5.5	5.5	5.5	5.5	5.5	a la la trace cana sa la tao manazar en so se en cofet	A Martin and a state of the sta	
.ead/Lag	in de la contra co Region de contra contra						de de las estas. Estas de las secondos			
ead-Lag Optimize?		1 aures - 1 a Green an an Anna an	المراجع والمراجع المراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والم	nama haana ta ta ang sa mata 200	en lange for Longe La francessora	utara ba stetas debito.		the state of the	neede waa kaaleedaa ja maalee ay waa	
Recall Mode	None		C-Max	C-Max	None	None	None			
Act Effct Green (s)	45.6	48.1	transmission interesting for particular and and a second	29.1	20.9	enderstereren disservic	20.9	et ve popet source i unactive sufficielli pun ender		weet over when our shaped as
Actuated g/C Ratio	0.57	0.60		0.36	0.26		0.26			
//c Ratio	0.16	0.19	ana ku mina amerikan mere	0.76	0.03		0.91	nar arayan Arayan ya manararan a sa sa sa sa sa	n kozárot hatekéténő és törtettő tartat	anto and a stan atom t
Control Delay	8.0	7.8		23.9	14.2		45,9			
Queue Delay	0.0	0.0		0.0	0.0		0.0	والموارية والمراجع والمتعار المستحد والمتعار والمتعار والمتعار		
Fotal Delay	8.0	7.8		23.9	14.2		45.9			
_OS	A	A		С	В	es encommentaristica es dá dá da	D		a və fərfatta tarəsin araqışını taraşı sanışı.	na tanàna mandra
Approach Delay		7.8		23.9	14.3		45.9			
Approach LOS		A		С	В		D			
ntersection Summary										
Cycle Length: 80										
Actuated Cycle Length: 8	30									
Offset: 79 (99%), Referei		2:EBWE	3. Start of	Green					and a second	ente el ciper versi a ramana a
Natural Cycle: 75		THE REPORT OF A PARTY								
Control Type: Actuated-C	Coordinated		Superior and a second	n han se san	Angleten en son se provinsi Angleten en son se provinsi	RISSIFARESIA	Ya Konistan ya Ula Ula Kutata	Stid Of Manager and Anti-Anti-Anti-Anti-Anti-Anti-Anti-Anti-	al director of the second system of the second system of the second system of the second system of the second s	
Maximum v/c Ratio: 0.91										
ntersection Signal Delay	<i>r</i> : 25.1		antikenti 1927. jäht	Eknerensen I	ntersectio	n LOS: C			aasaa aa ahaa waxaa ku	anata antestatos en estatos
Intersection Capacity Util Analysis Period (min) 15	lization 93.9%				containing a canar in dath of 1 and	of Servic	many modern to preserve de presidents de la			
		.								
Splits and Phases: 9: I	Forbes Ave &	Beeler S		*				ř		
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SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, AM 9: Forbes Ave & Beeler St

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	ሻ	<u>∳</u> ↑≯			ብ ት			¢\$>			фэ	
Volume (vph)	53	301	7	62	567	15	0	1	3	74	29	211
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4,0	5.5			5.5			5.5			5.5	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			1.00			0.93			1.00	
Flpb, ped/bikes	1.00	1.00	1		1.00			1.00			0.98	
Frt	1.00	0.99			1.00			0.91		ENGRACIES	0.91	
Flt Protected	0.95	1.00			0.99			1.00			0.99	
Satd. Flow (prot)	1593	3200			3158			1464			1507	Cardenal Antonna Millional Antonna December 1991 htt
Flt Permitted	0.26	1.00			0.85			1.00			0.91	
Satd. Flow (perm)	431	3200			2702			1464			1387	
Peak-hour factor, PHF	0.74	0.88	0.44	0.74	0.88	0.63	0.25	0.25	0.38	0.71	0.73	0.80
Adj. Flow (vph)	72	342	16	84	644	24	0	4	8	104	40	264
RTOR Reduction (vph)	0	5	0	0	3	0	0	6	0	0	86	0
Lane Group Flow (vph)	72	353	0	0	749	0	0	6	0	0	322	0
Confl. Peds. (#/hr)	42		34	34		42			83	83		
Confl. Bikes (#/hr)			4			8			2			
Heavy Vehicles (%)	4%	3%	1%	1%	4%	3%	1%	1%	1%	6%	0%	1%
Turn Type	D,P+P			Perm			Perm			Perm		
Protected Phases	5	25			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)	44.6	48.6			29.6			21.4			21.4	
Effective Green, g (s)	44.6	43.6			29.1			20.9			20.9	
Actuated g/C Ratio	0.56	0.55			0.36			0.26			0.26	******
Clearance Time (s)	4.0				5.0			5.0			5.0	
Vehicle Extension (s)	3.0				3.0			3.0			3.0	
Lane Grp Cap (vph)	458	1744			983			382			362	
v/s Ratio Prot	0.03	c0.11						0.00	ter el leg el la esercel de la l			
v/s Ratio Perm	0.06				c0.28						c0.23	
v/c Ratio	0.16	0.20			0.76			0.02	1		0.89	
Uniform Delay, d1	8.8	9.3			22.4			21.9			28.4	
Progression Factor	1.00	1.00			0.76			1.00		•	1.00	
Incremental Delay, d2	0,2	0.1			5.2			0.0			22.2	
Delay (s)	8.9	9.4			22.2			21.9			50.6	
Level of Service	A	Α			C			C			D	
Approach Delay (s)		9.3			22.2			21.9			50.6	
Approach LOS		A			C			C			D	
Intersection Summary												
HCM Average Control Delay	,		26.0	н	CM Leve	of Servic	e		C		ungengen og so	e newski je n
HCM Volume to Capacity ra		STRAINS NO.	0.69	inderser nit. V			MARINIZISI ASSESS	31.52842.264415646				eminan
Actuated Cycle Length (s)			80.0	1 2	um of losi	time (s)			16.5			
Intersection Capacity Utiliza	tion		93.9%			of Service	xus dasaşışışı				ngaraquandis	ana ana ang ang ang ang ang ang ang ang
Analysis Period (min)			15									
HARACE CONTRACTOR OF THE OWNER OF	nasiasensiiniii			DESCRIPTION ALLOW	an Man Manuela	маларынар бор	opiijand gaad his	teineleitikkasikk	ene leter del si de L'eter leter del si d	antenne i de fallege	erenjuji (orenjuji (na i i skrivitski kar

c Critical Lane Group

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	×	4	Ť	Ļ	1		
Lane Group	EBL	NBL	NBT	SBT	SBR		
Lane Configurations	۲		٩Ŷ	个	۴		
Volume (vph)	122	46	531	188	191		Contraction of
Turn Type	maninigadahan kalencipika katal	Perm	and a large second s	imetazzentezet-szerzete	Perm	ng hann de da ble maar en sen kennen her min	or.
Protected Phases	4		2	2			
Permitted Phases		2	ing georgia privacia kracita	an a gana a sa a sa a sa a sa a sa a sa	2	an bana in station and a station of a station	ei P
Detector Phase	4	2	2	2	2		
Switch Phase						n eg siger i s	aka
Minimum Initial (s)	20.0	50.0	50.0	50.0	50.0		
Minimum Split (s)	25.0	55.0	55.0	55.0	55.0		adaşı
Total Split (s)	25.0 31.3%	55.0 68.8%	55.0 68.8%	55.0 68.8%	55.0		
Total Split (%) Yellow Time (s)	31.3%	68.8% 3.0	68.8% 3.0	68.8% 3.0	68.8% 3.0	Ling i Strange in the second	almışı) Simişi
All-Red Time (s)	3.0 2.0	3.0 2.0	3.0 2.0	3.0 2.0	2.0		
Lost Time Adjust (s)	2.0 -1.0	2.0 -1,0	2.0 -1.0	2.0 -1.0	2.0 0.0		
Total Lost Time (s)	-1.0 4.0	4.0	-1.0 4.0	4.0	5.0	an line of a contract of the line of a contract of the line of the	
Lead/Lag		л. т . И Пара	V.T IIIIII	т.V -		korenin på annal er og en barnen i parage Malein bland i Santa Santa Santa Santa Santa Malein som	
Lead-Lag Optimize?	understeinier 19	anten stal de Ali	osubuccinciii	centanianide.	nagaci singani ji		
Recall Mode	Max	C-Max	C-Max	C-Max	C-Max		
Act Effct Green (s)	21.0	interenteinin ja paraisisteinin ja paraisisteinin ja paraisisteinin ja paraisisteinin ja paraisisteinin ja para La terretteinin ja paraisisteinin ja paraisisteinin ja paraisisteinin ja paraisisteinin ja paraisisteinin ja par	51.0	51.0	50.0	na ini na ini na ini ini ini ini na ini n	0198 ¹
Actuated g/C Ratio	0.26		0.64	0.64	0.62		
v/c Ratio	0.54	- y - y - y - y - y - y - y - y - y - y	0.36	0.19	0.28	**************************************	ن يوه م
Control Delay	29.1		7.5	3.7	4.8		
Queue Delay	0.0		0.0	0.0	0.0		
Total Delay	29.1		7.5	3.7	4.8		
LOS	С	19 0 1 2 2 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Α	Α	Α		
Approach Delay	29.1		7.5	4.3			
Approach LOS	С		A	А			
Intersection Summary							
Cycle Length: 80							
Actuated Cycle Length: 80							
Offset: 70 (88%), Reference		2:NBSB	. Start of	Green			
Natural Cycle: 80							
Control Type: Actuated-Co	ordinated	911912160132293722515756	293022932222323232323		na se sa se	in the state of the second in the state of t	121111201
Maximum v/c Ratio: 0.54							
Intersection Signal Delay:	10.2			1	ntersectio	n LOS: B	
Intersection Capacity Utiliz	ation 90.8%	NA ASA SA SA S		1	CU Level	of Service E	
Analysis Period (min) 15							
			. . .				

Splits and Phases: 10: Margaret Morrison St & Forbes Ave

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SIGNAL TIMINGS-- Fifth and Forbes Avenues HCM Signalized Intersection Capacity Analysis Existing Conditions, AM 10: Margaret Morrison St & Forbes Ave

	A		*	Î	Ļ	d
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Ŵ	unice in the second	ucional contester de la Carlo	44	^	
Volume (vph)	122	4750	46	531	188	energy and an energy and a second
Ideal Flow (vphpl)	1750	1750	1750	1750 4.0	1750	
Total Lost time (s)	4.0 1.00			0.95	1.00	and an add to be a set of the first of the first of the set of the
Frpb, ped/bikes	0.98	nda ing mga ng Managang katala		1.00	1.00	the second s
Flpb, ped/bikes	1.00	eneriosentententen.	101.7190324715994090090	1.00	1.00	
Fit.	0.97			1.00	1.00	
Flt Protected	0.96		epersperiolector	0.99	1.00	
Satd. Flow (prot)	1590 0.96			3161 0.90	1683 1.00	
Flt Permitted Satd. Flow (perm)	1590			2850	1683	
Peak-hour factor, PHF	0.66	0.46	0.67	0.92	0.92	
Adj. Flow (vph)	185	48	69	577	204	
RTOR Reduction (vph)	12	0	0	0	0	
Lane Group Flow (vph)	221	0	0	646	204	
Confl. Peds. (#/hr)	-	34	8 1991/1991/1991		(isecrisystal)	
Confl. Bikes (#/hr)		10/	1%	E0/	4%	5 1%
Heavy Vehicles (%)	1%	1%	Perm	<u>5%</u>	470	Perm
Tum Type Protected Phases	#Banala 4		гени	2 2	2	
Permitted Phases			2			-
Actuated Green, G (s)	20.0	ander der sienenen	an ceren sina fi Senna	50.0	50.0	
Effective Green, g (s)	21.0			51.0	51.0	
Actuated g/C Ratio	0.26		a da compositiva de la compositiva de l	0.64	0.64	
Clearance Time (s)	5.0			5.0	5.0	
Vehicle Extension (s)	3.0	nasa Assus		3.0	3.0	
Lane Grp Cap (vph)	417 c0.14			1817	1073 0.12	
v/s Ratio Prot				c0.23	V. 12	0.18
v/c Ratio	0.53		NY SERVICE OF LEVEL	0.36	0.19	
Uniform Delay, d1	25.3			6.8	6.0	
Progression Factor	1.00			1.00	0.54	
Incremental Delay, d2	4.8			0,5	0.4	
Delay (s)	30.0			7.3	3.6	
Level of Service	C 30.0			A 7.3	A 4.2	
Approach Delay (s) Approach LOS	30.0			,., A		
						A na se anna ann an ann an ann ann an ann ann
Intersection Summary			40.0	11		vel of Service B
HCM Average Control Delay HCM Volume to Capacity rati			10.2 0.41	BARRE C	UNLLEY	vel of Service B
Actuated Cycle Length (s)			80.0	Ś	um of Ir	ost time (s) 8.0
Intersection Capacity Utilizati	oranasaaaaaaaaa ON	anarqayahtenar	90.8%			el of Service E
Analysis Period (min)			15			
c Critical Lane Group	en yn de fan de fan de fan ferster fan ferster fan ferster fan de fan de fan de ferster ferster fan de ferster General	A 1999				