## PROJECT REPORT帠 <br> ( ${ }^{\text {B }}$

## Project Number 14106

## Thurston Road Revitalization



## January 10, 2014



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The purpose of this memorandum is to summarize the subject project scope for the proposed improvements along Thurston Road.

This project originated utilizing the City's 4 -step planning process for the development of revitalization plans for the City's neighborhood commercial areas. This comprehensive community planning approach includes extensive community and stakeholder participation, the development of a vision, an economic overview, a community design plan, and an action/implementation strategy. The process is flexible, community-based, and action oriented. A modified version of the 4 -step process was used to develop the Thurston Village Revitalization Plan.

The project consists of improvements to a 0.5 mile section of Thurston Road between Brooks Avenue and Ravenwood Avenue in the southwest quadrant of the City of Rochester's 19th Ward.

The proposed project consists of replacement of sidewalks and curbs, new pedestrian-scale lighting, new furnishings and other streetscape amenities, street trees and other landscaping, and traffic signal upgrades. The proposed project will include contemporary urban design ("complete streets") principles as a means to re-establish the commercial area as an attractive and pedestrian-friendly neighborhood street. Enhancements will improve safety and aesthetics, and make the corridor more inviting to pedestrians and bicyclists, while still maintaining functionality as a vehicular corridor.

The existing street geometry is 39 feet wide, and consists of two 12 foot wide travel lanes and two 7.5 foot wide parking lanes ( 39 feet curb-to-curb). The right-of-way width is 66 feet throughout the corridor. The street corridor is currently owned and maintained by the City of Rochester.


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## A. Conditions and Needs

Pavement: This project is a streetscape enhancement project and does not include evaluation of the existing pavement system.

Geometry: The alignment along Thurston Road is generally straight with no issues with current geometry. The 4 -step planning process suggested that their may be a need for a left turn lane at the Brooks Avenue intersection. It also identified the desire to install additional curb bump-outs along the corridor.

On-Street Parking: On-street parking is permitted along the entire project length. Review of existing parking trends indicate that parking along the corridor is actively used. On-street parking spaces available along Thurston Road (located within parking signs) are summarized in the following table:

| Parking along Thurston Road |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Street | Street | Side | Spaces | Street | Street | Side | Spaces |  |
| Brooks | Ernestine | W | 2 | Brooks | Sheldon | E | 6 |  |
| Ernestine | Margaret | W | 6 | Sheldon | Dunbar | E | 6 |  |
| Margaret | Rosalind | W | 4 | Dunbar | Ellicott | E | 4 |  |
| Rosalind | Midvale | W | 6 | Ellicott | Enterprise | E | 2 |  |
| Midvale | Hillendale | W | 6 | Enterprise | Sawyer | E | 7 |  |
| Hillendale | W. Sawyer | W | 3 | Sawyer | Flanders | E | 8 |  |
| W. Sawyer | Flanders | W | 13 | Flanders | Anthony | E | 8 |  |
| Flanders | Raeburn | W | 0 | Anthony | Milton | E | 9 |  |
| Raeburn | Lehigh | W | 3 | Milton | Ravenwood | E | 8 |  |
| Lehigh | Penhurst | W | 6 |  |  |  |  |  |
| Penhurst | Ravenwood | W | 5 |  |  |  |  |  |
| TOTAL SPACES |  |  |  |  |  |  |  | 54 |
| TOTAL SPACES -112 |  |  |  |  |  |  |  |  |

There are approximately 6 on-street parking spaces along Brooks Avenue within the project limits, as summarized in the following table:

| Parking along Brooks Avenue |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Street | Street | Side | Spaces | Street | Street | Side | Spaces |
| Thurston | Brookdale | S | 4 | Thurston | Brookdale | N | 2 |
| TOTAL SPACES |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |

Convenient parking along the corridor was identified as an issue along the corridor. Several instances of vehicles parked on the sidewalk have been noted, as well as many cars parking illegally - particularly at the intersections.

Drainage: There are no known drainage issues on the corridor. This project does not propose changes to the drainage system along the corridor.

Curb Bump-Outs: There is one curb bump-out located at the south side of the intersection of Thurston Road and Brooks Avenue.

Traffic Control Devices: Existing regulatory and guide signs were investigated for condition, location, completeness, and applicability. The majority of the signs along the corridor are related to parking enforcement, street name signs or stop signs. School crossing signs with advanced warning beacons are present along Thurston Road to accommodate the Ravenwood Avenue crossing. These signs do not meet the Manual on Uniform Traffic Control Devices standards. Pavement markings are provided throughout the project limits.

There are two intersections within the project limits that are controlled by traffic signals: Thurston Road @ Brooks Avenue (Signal No: S-501) and Thurston Road @ Lehigh Avenue / Anthony Street (Signal No: S-350). Both are two phase semi-actuated four-way intersections that are owned by the City of Rochester and maintained by Monroe County Department of Transportation (MCDOT).

Streetscape / Landscape: The current streetscape along the corridor consists of concrete sidewalks, street trees, vehicular-scale "cobra-head" lighting, and some site furnishings including bike racks, trash receptacles and two bus shelters. There are no benches located along the corridor and there are no pedestrian-scale lights on the street. Brick pavers have been installed between the sidewalk and the curb in a few locations. (\#689-\#685, \#547-\#543 \& \#447) Street trees are located either in individual planting pits in the walkway or within a grassy tree lawn area between the curb and sidewalk. Shrubs and mature trees are located behind the sidewalk in several locations, particularly in residential areas.

The sidewalks are extremely wide on the west side of the street between Brooks Avenue and Sawyer Street, primarily because the buildings are set back substantially behind the street right-of-way, and the entire area between the curb and the building has been paved. In some instances the sidewalks are up to 28 ' wide. This wide expanse of paving between the buildings and the curbs frequently invites vehicles to be parked in what should be a pedestrians-only zone.

There are two vacant lots and several surface parking lots along the corridor. The two vacant lots occur are located at the southwest corner of the Margaret/Thurston intersection and at the southwest corner of the Midvail/Thurston intersection. Most of the surface parking lots are adjacent to and used by civic or commercial facilities. Opportunities to screen these surface lots will be sought.

A small community park is located on the east side of Thurston Road at the intersection of Ravenwood Avenue.

## Areaways: Review of the City of Rochester Department of Environmental Services Permit

 office records did not reveal and records of areaways. A door-to-door search revealed several areaways under the west sidewalk and do not extend into the city right of way.A cursory inspection of the vault revealed the following information for each areaway:

| Areaways along Thurston Road |  |  |
| :--- | :---: | :---: |
| Street Address | Side | Comments |
| \#663 - \#659 Thurston Road | W | Renter states access has not been used in 3 years |
| \#525 Thurston Road | W | Used for deliveries |
| \#521 Thurston Road | W | Used for deliveries |

Lighting: Streetlights exist within the tree lawn area or sidewalk area along both sides of the street. This lighting (galvanized steel davit arm poles with cobra head luminaries) is the maintenance responsibility of the City of Rochester. Twenty Five (25) light poles illuminate the corridor between Brooks Avenue and Ravenwood Avenue. Lighting is provided on standalone light poles, as well as on the traffic signal poles at the intersections of Brooks Avenue and Lehigh Avenue / Anthony Street. Mounting height of the 150 or 250 watt luminaries is 30 foot above the street surface, with poles spaced approximately every 100-150 feet (124 feet average).

The davit arm light poles were installed in 1987 and are generally in fair condition. There is no pedestrian-scale lighting within the corridor. Lighting for pedestrian sidewalk areas is provided by light spill from the davit arm poles

Lighting levels were compared to the standards of the AASHTO Roadway Lighting Design Guide - October 2005, as shown in the following table:

| AASHTO Roadway Lighting Design Criteria |  |  |  |
| :--- | :---: | :---: | :---: |
| Minor Arterials |  |  |  |

Both street corridor and pedestrian areas were calculated using the Lite-Pro lighting software program using a light loss factor of 0.73 and a Type 2 lighting distribution. Average illumination level for the existing street corridor is 1.74 foot-candles with an average / minimum uniformity ratio of 5.66:1. Average illumination levels for existing pedestrian areas (as a whole) is 0.75 foot-candles with an average / minimum uniformity ratio of 5.36:1. The roadway and sidewalk uniformity ratio and the sidewalk illuminance levels in the commercial areas, do not meet the recommended values established by AASHTO.

Police Cameras: Digital surveillance cameras used by The City of Rochester's Police Department are located along the corridor at the following locations:

- northeast quadrant of Brooks Avenue intersection (mounted on signal pole)
- east side of Thurston Road opposite Rosalind Street (mounted on light pole)
- west side of Thurston Road opposite of Anthony Street (mounted on signal pole)

Sidewalks / Pedestrians / Bicyclists: Pedestrians are generally accommodated along both sides of Thurston Road on concrete sidewalks that very in width from 5 feet to 13.5 feet. Additional concrete surface between the back edge of sidewalk and the building face exists along several blocks of the corridor.

Existing sidewalk widths within the City Street Right-of-way are generally as follows:

| Sidewalk widths along Thurston Road (West Side) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Street | Street | Sidewalk <br> Width <br> (Concrete) | Tree Lawn <br> Width <br> (Grass) | Tree Lawn <br> Width <br> (Concrete) |  |
| Brooks | Ernestine | $5^{\prime}$ | - | $8.5^{\prime}$ |  |
| Ernestine | Margaret | $5^{\prime}$ | $6.5^{\prime}$ | $6.5^{\prime}$ |  |
| Margaret | Rosalind | $5^{\prime}$ | - | $8.5^{\prime}$ |  |
| Rosalind | Midvale | $5^{\prime}$ | - | $8.5^{\prime}$ |  |
| Midvale | Hillendale | $5^{\prime}$ | $8.5^{\prime}$ | $8.5^{\prime}$ |  |
| Hillendale | W. Sawyer | $5^{\prime}$ | - | $8.5^{\prime}$ |  |
| W. Sawyer | Flanders | $5^{\prime}$ | $8.5^{\prime}$ | - |  |
| Flanders | Raeburn | $5^{\prime}$ | $7.5^{\prime}$ | - |  |
| Raeburn | Lehigh | $5^{\prime}$ | $7.5^{\prime}$ | $7.5^{\prime}$ |  |
| Lehigh | Penhurst | $5^{\prime}$ | $7.5^{\prime}$ | - |  |
| Penhurst | Ravenwood | $5^{\prime}$ | $8.0^{\prime}$ | - |  |


| Sidewalk widths along Thurston Road (East Side) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Street | Street | Sidewalk <br> Width <br> (Concrete) | Tree Lawn <br> Width <br> (Grass) | Tree Lawn <br> Width <br> (Concrete) |
| Brooks | Sheldon | $5^{\prime}$ | $6.5^{\prime}$ | - |
| Sheldon | Dunbar | $5^{\prime}$ | $6.5^{\prime}$ | - |
| Dunbar | Ellicott | $5^{\prime}$ | $8.5^{\prime}$ | - |
| Ellicott | Enterprise | $5^{\prime}$ | - | $8.5^{\prime}$ |
| Enterprise | Sawyer | $5^{\prime}$ | $6.5^{\prime}$ | - |
| Sawyer | Flanders | $5^{\prime}$ | - | $8.5^{\prime}$ |
| Flanders | Anthony | $5^{\prime}$ | $7.5^{\prime}$ | - |
| Anthony | Milton | $5^{\prime}$ | - | $8.5^{\prime}$ |
| Milton | Ravenwood | $5^{\prime}$ | - | $8.5^{\prime}$ |

Pedestrian mobility across Thurston Road is hindered by the 39 foot pavement width. Marked crossings of Thurston Road exist at the following locations: Brook Avenue (signalized), Anthony Street / Lehigh Avenue (signalized) and Ravenwood Avenue (unsignalized).

The sidewalks in the corridor are in fair condition. In many locations where the area between the main sidewalk and the curb has been paved, tree roots have lifted the, concrete creating tripping hazards and uneven walking surfaces. Locations of poor sidewalks are shown in the corridor plans. The entrances to several commercial buildings contain an approximate 6 " step between the sidewalk and the building, and thus are not ADA accessible. However, these instances occur outside the street right-of-way and outside the scope of this project.

Detectable warning devices are present at all crosswalk ramps along the project corridor.
There are no designated bicycle routes or separate provisions for bicyclists in the project limits. Bicyclists may legally use the travel way. Bicycle racks are present at several locations along the corridor including several in the block between Midvale Terrace and Hillendale Street (west side) and the block between Anthony Street and Milton Street (east side).

Transit: A public transportation service for the City of Rochester is provided by Rochester-Genesee Regional Transportation Authority (RGRTA). The RTS bus operates weekdays and weekends along several routes along the corridor. (Note: RTS Route 12 does not operate on weekends)


There are twelve (12) RTS bus stops located along Thurston Road with stops at the following locations:

- INBOUND (6): Ernestine St., Dunbar St., Enterprise St., Flanders St., Milton St. and Ravenwood Ave.
- OUTBOUND (6): Ravenwood Ave., Lehigh Ave., Flanders Pl., Midvale Ter., Margaret St., and Brooks Ave.

Bus shelters are provided at the Margaret Street (outbound) RTS stop and the Ravenwood Avenue (inbound) RTS locations. Advertisements on the north side of the Ravenwood Avenue bus stop have presented local concerns with sight distance and the ability to see northbound vehicles when trying to exit Ravenwood Avenue westbound.

Traffic: Review of Monroe County Traffic Summary 2013 traffic data indicates the following data for the corridor:

| Existing Traffic Volumes - Thurston Road |  |  |  |
| :---: | :---: | :---: | :---: |
| Year | ADT | DDHV <br> (1-way) | DHV <br> (2-way) |
| Existing (1990): N of Brooks Ave. | 6,888 | 307 | 575 |
| Existing (2008): S of Arnett Blvd. | 9,020 | 396 | 741 |

Accidents: Accident data was provided by the City of Rochester for Thurston Road from Brooks Avenue to Ravenwood Avenue for the 36-month period from March 2010 through February 2013. Roadway segment and intersections within the limits were investigated to identify high incident areas, possible accident clusters and potential causal factors. Accident rates were calculated (segment and intersections) and compared to the critical accident rate as provide by Monroe County Department of Transportation. A summary of accidents along the corridor, as well as those at intersection is as follows:

| Thurston Road Accident Summary (reportable / unknown) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Location | No. of Accidents | ARact Acc / MEV (a) | ARcr Acc / MEV <br> (b) | ARcr <br> Exceeded ? | Ratio <br> (a/b) |
| Thurston Road Segment: |  |  |  |  |  |
| Brooks to Ravenwood | 30 | 5.73 | 2.63 | yes | 2.2 |
| Thurston Road Intersection @ : |  |  |  |  |  |
| Brooks Avenue | 14 | 0.81 | 0.98 | no | NA |
| Ernestine Street | 0 | 0.00 | 0.62 | no | NA |
| Sheldon Terrace | 3 | 0.30 | 0.62 | no | NA |
| Margaret Street | 1 | 0.10 | 0.62 | no | NA |
| Dunbar Street | 2 | 0.20 | 0.62 | no | NA |
| Rosalind Street | 5 | 0.49 | 0.62 | no | NA |
| Ellicott Street | 1 | 0.10 | 0.62 | no | NA |
| Midvale Terrace | 0 | 0.00 | 0.62 | no | NA |
| Enterprise Street | 0 | 0.00 | 0.62 | no | NA |
| Hillendale Street | 5 | 0.49 | 0.62 | no | NA |
| Sawyer Street | 4 | 0.39 | 0.62 | no | NA |
| Flanders Place | 1 | 0.10 | 0.63 | no | NA |
| Flanders Street | 1 | 0.10 | 0.62 | no | NA |
| Raeburn Avenue | 0 | 0.00 | 0.62 | no | NA |
| Anthony Street | 1 | 0.10 | 1.04 | no | NA |
| Lehigh Avenue | 2 | 0.20 | 1.04 | no | NA |
| Penhurst Street | 1 | 0.10 | 0.62 | no | NA |
| Milton Street | 6 | 0.59 | 0.62 | no | NA |
| Ravenwood Avenue | 3 | 0.29 | 0.61 | no | NA |
| Total | 80 |  |  |  |  |

The results of the analysis indicate that the accident rate for the overall study segment of Thurston Road was 2.2 times higher than the critical accident rate. Accident composition of the 30 reportable / unknown incidents was as follows: 17 sideswipe incidents, 6 rear end incidents, 3 right angle incidents, 1 right turn incident, 2 left turn incidents and 1 other incidents.

There are several intersections along Thurston Road with more than 5 accidents (ARact / ARcr > $70 \%$ ) at the intersection. A brief synopsis of these accidents is as follows:

## Brooks Avenue

- 5 rear end incidents, 3 left turn incidents, 2 head on incidents, 1 sideswipe incident, 2 right angle incidents, 1 right turn incident
- 5 incidents involved vehicles in the eastbound direction on Brooks. 3 involved vehicles stopped at the traffic signal, one of which involved a vehicle being struck from behind while attempting a left turn.


## Rosalind Street

- 5 right angle incidents.
- 3 involved vehicles turning left, including one that involved poor sight distance due to a parked vehicle.


## Hillendale Street

- 1 left turn incident, 2 right turn, 1 right angle incidents, 1 other incident.
- 2 incidents involved poor sight distance due to parked vehicles.


## Milton Street

- 3 right angle incidents, 3 rear end incidents.
- 1incident involved striking a bicyclist crossing the street.
- Most accidents were caused by driver error.

Coordination with the Public: Three (3) meetings with the public have been conducted for the project to date. This includes two (2) Steering Committee meetings and one (1) Public Information Meeting. These meetings provided the design team with opportunities to interact with the stakeholders who live and work along Thurston Road. Several issues related to parking, light and general corridor safety were brought forth through these meetings. They also served as a means to present concepts for the project, and solicit opinions on them. Minutes of these meetings are contained in an appendix of this report.

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## B. Corridor recommendations

Pavement: This project does not include pavement improvements.
Geometry: The existing street alignment along a majority of the corridor will remain. A possible left turn lane at the intersection of Brooks Avenue was investigated. Studies for this additional lane will be based upon existing traffic volumes, accident history and capacity at the signalized intersection. Studies have determined that an exclusive left turn lane on Brooks Avenue is not warranted. The capacity analysis of the intersection does not show a need for the lane, nor does the accident analysis show that accident patterns could be changed with inclusion of the lane. In addition, the installation of the lane does not significantly improve the capacity at the intersection and would require removal of all parking in the area. Left turn lanes are not warranted at the intersection of Thurston Road and Lehigh Avenue / Anthony Street.

On-Street Parking: Recessed on-street parking is generally proposed in the same locations as it presently exists. Proposed curb bump-outs will better delineate parking areas. Inclusion of these curb bump-outs will have minor impacts to existing parking, reducing the number of on-street parking spaces by 7 spaces ( 112 existing spaces vs. 105 proposed). Concurrence of the City Traffic Control Board is required during final design to approve the final on-street parking limits and street geometry.

Drainage: Installation of a drainage inlets are recommended in conjunction with the new curb bump-outs. All other drainage along the corridor will remain. Opportunities to install porous paving and/or rain gardens will be analyzed.

Curb Bump-Outs: Installation of curb bump-outs at key intersections along the Thurston Road corridor was investigated. These bump-outs will: 1) act as traffic calming measure for the corridor; 2) reduce the crossing distance at select locations, allowing pedestrians to cross the road safely; and 3 ) control parking near intersections, thereby reducing accident potential when vehicles parked too close to the intersection block visibility.

Several locations were investigated to improve safety of pedestrian crossings of Thurston Road, as well as their ability to better delineate parking areas. Existing crossings of Thurston Road include: Brooks Avenue (signalized crossing), Lehigh Avenue / Anthony Street (signalized crossing) and Ravenwood Avenue (unsignalized crossing).

Curb bump-out locations are recommended within the three block segment of Thurston Road between Margaret Street and Hillendale Street. These features will be designed in conformance with Monroe County's bump-out guidelines that provide guidance as to the suitability based upon evaluations of parking, traffic and utility impacts at each location. Drainage improvements at these locations are recommended to maintain proper street drainage at these bump-out locations. Curb bump-outs are also recommended at the intersections of Flanders Street, Raeburn Avenue, Anthony Street, Lehigh Avenue and Ravenwood Avenue.

Traffic Control Devices: It is recommended that the existing traffic signals at Brooks Avenue and Lehigh Avenue / Anthony Street be maintained and replaced in accordance with MCDOT recommendations. Signal equipment upgrades are proposed with this project and include cabinet and cabinet base, conduit, pullboxes, LED signal heads, signal loops, poles \& mast arms,
and pedestrian signal LED signals.
Streetscape / Landscaping: Streetscape enhancements in this project will include pedestrian-scale lighting, new street tree plantings, specialty paving (such as unit pavers or colored, exposed aggregate concrete), furnishings (including benches, bike racks and trash receptacles), gateways, and potentially other amenities such as banners. A centrally located kiosk for posting neighborhood information is being considered.

The design team will work with the neighborhood to select site amenities that blend with the overall "village" neighborhood character envisioned in the 2009 Thurston Road Revitalization Plan.

A thorough street tree assessment has been conducted. (See Appendix) There is a mix of tree sizes and species along the corridor. The majority are large, mature trees, although there are a few very small trees that have been recently planted. Approximately eight existing trees are in very poor condition and are recommended to be removed and replaced. The project will install additional street trees. Because the corridor does not contain any overhead utility lines, and the tree lawn spaces are sufficiently wide, large tree species will be recommended.

Areaways: All existing areaways are located outside the street right-of-way and do not extend into the City right-of-way. As such, they will remain in place and the project will have no impact on these facilities.

Lighting: It is recommended that existing lighting be replaced with new light poles that provide illumination for both roadway and pedestrian level lighting. In order to achieve adequate pedestrian scale lighting, it is recommended to install new light fixtures on the existing light pole bases. In addition, it is recommended to install supplemental pedestrian level light poles opposite the existing davit arm poles.

Police Cameras: Existing police cameras are to remain in their current location and will be relocated onto new light and/or traffic signal poles.

Sidewalks / Pedestrians / Bicyclists: Existing sidewalks will be maintained or replaced depending on condition. Proposed sidewalk facilities and curb ramps would be handicap accessible in accordance with the requirements of the American with Disabilities Act Accessibility Guidelines. It is proposed to replace broken and misaligned sidewalks as needed within the project limits. Special sidewalk treatments such as utilizing exposed aggregate concrete and/or decorative scoring is recommended to enhance the visual environment for these pedestrian features.

It is recommended that unsignalized street crossings of Thurston Road be provided near Midvale Terrace / Enterprise Street, Flanders Street and Ravenwood Avenue. Midvale Terrace / Enterprise Street is located midway between existing signalized pedestrian crossings and is convenient to pedestrian generators including the US Post Office at \#525 Thurston Road and the YMCA at \#603 Thurston Road. There are several apartment units in the vicinity of the Flanders Street area and considerable pedestrian crossing activity has been observed during project site visits. The Ravenwood Avenue crossing in an existing school crossing and is located at a City park on the corner of Thurston Road and Ravenwood Avenue.

A gap study was performed at Midvale Terrace / Enterprise Street as a means to justify the
installation of crosswalks at non-signalized intersections within the project limits and to verify there are enough gaps in traffic to allow pedestrians enough time to cross the street. The gap study was conducted during the Midday (12:00PM-1:00PM) and PM peak hours (4:00PM-5:00PM) on November 6, 2013 to determine the number of acceptable gaps. Only these peak hour travel times were investigated, as the traffic volumes in the PM peak are more than double those found in the AM peak hour.

The acceptable gaps at this location were computed using the following formula:

$$
\mathrm{G}=\mathrm{W} / \mathrm{S}+\mathrm{R}
$$

Where
$\mathrm{G}=$ acceptable gap (s)
$\mathrm{W}=$ length of crossing (ft)
$\mathrm{S}=$ pedestrian walking speed (ft/s)
$\mathrm{R}=$ pedestrian reaction time (s)
According to the Highway Capacity Manual (HCM) the average pedestrian walking speed is 4.0 $\mathrm{ft} / \mathrm{s}$ and the average walking speed for children and the elderly is $3.5 \mathrm{ft} / \mathrm{s}$. For this analysis, the slower speed of $3.5 \mathrm{ft} / \mathrm{s}$ shall be used. According to the ITE Traffic Engineering Handbook, $4^{\text {th }}$ Edition, the average pedestrian reaction time is 3 seconds. Using these default values and a crossing width of 28 feet, the number of acceptable gaps at this location was determined. The numbers of acceptable gaps were determined using the calculated acceptable gaps and the gap data from the field. The below table summarizes the acceptable gaps and the number of acceptable gaps at this location.

| Acceptable Gaps |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Walking <br> Speed <br> (ft/sec) | Acceptable Gap (sec) | Midday Peak |  | PM Peak |  |
|  |  |  | Number of Acceptable Gaps | Frequency of Gaps (sec) | Number of Acceptable Gaps | Frequency of Gaps (sec) |
| Average Pedestrian | 3.5 | 11 | 104 | 35 | 81 | 44 |
|  |  |  |  |  |  |  |

The acceptable gap time to cross Thurston Road is 11.0 seconds for the average pedestrian. The total acceptable gaps available at the crosswalk located at the intersection of Thurston Road and Enterprise Street is 104 and 81 during the Midday and PM peak periods for the average pedestrian, respectively. Although not included in the analysis, additional gaps are also recognized along the corridor, as any gap greater than 22 seconds for the average pedestrian would provide two acceptable gaps, not one.

A gap study at Flanders Street was not performed, as the traffic volumes there are very similar to those found at Enterprise Street. A gap study at Ravenwood Avenue was not performed, as this is an school crossing that is an existing approved unsignalized crossing.

Bicyclists currently share the travel way with vehicles. The project will not include any dedicated bicycle provisions within in the project limits.

Transit: RGRTA was contacted to determine if the existing bus stop locations are adequate; if consolidation of bus stops is appropriate; and to determine the ideal locations of potential bus shelters. A formal response from RGRTA is pending.

Traffic: A capacity analysis was completed as part of the left turn lane justification at the signalized intersection of Thurston Road and Brooks Avenue. The analysis was based upon traffic data from the Monroe County SYNCHRO model that includes City intersections. Existing phasings and timings were used to compare the existing conditions ( 2 phase, no left turn lanes) with the conditions proposed for the project ( 2 phase, left turn lanes on Brooks).

Summary of our analysis is as follows:

| Intersection Level of Service |  |  |  |  |
| :---: | :--- | :---: | :---: | :---: |
| INTERSECTION | DIRECTION | PERIOD | EXISTING <br> LOS / DELAY | PROPOSED <br> LOS / DELAY |
|  | Eastbound | AM | $\mathrm{A} / 6.8$ | $\mathrm{~A} / 5.8$ |
|  | Westbound | AM | $\mathrm{A} / 5.4$ | $\mathrm{~A} / 5.4$ |
|  | Southbound | AM | $\mathrm{B} / 14.1$ | $\mathrm{~B} / 14.1$ |
|  | Northbound | AM | $\mathrm{B} / 15.2$ | $\mathrm{~B} / 15.2$ |
|  | Intersection |  | $\mathrm{A} / \mathbf{8 . 9}$ | $\mathrm{A} / \mathbf{8 . 5}$ |
|  | Eastbound | PM | $\mathrm{A} / 9.2$ | $\mathrm{~A} / 6.5$ |
|  | Westbound | PM | $\mathrm{A} / 7.2$ | $\mathrm{~A} / 7.0$ |
|  | Southbound | PM | $\mathrm{B} / 14.9$ | $\mathrm{~B} / 14.9$ |
|  | Northbound | PM | $\mathrm{B} / 12.9$ | $\mathrm{~B} / 12.9$ |
|  | Intersection |  | $\mathrm{A} / \mathbf{9 . 6}$ | $\mathrm{A} / \mathbf{8 . 6}$ |

The addition of the left turn lanes result in a slight reduction in approach delays in the eastbound (both AM and PM peak) and westbound (PM peak) directions. Northbound and southbound direction approach delays remain the same. There is also a slight reduction in delays for the overall intersection.

Copies of the LOS calculations are attached.
Accidents: Project amenities are included in the project as a means to reduce future accident trends. Curb bump-outs at several locations are proposed as features will control parking near intersections and will increase sight distances for vehicles entering Thurston Road from the sidestreet. The proposed bump-outs at Midvale Terrace / Enterprise Street, Flanders Street and Ravenwood Avenue will shorten crossing distances and provide the ability for pedestrians to view traffic before they cross the street. These features will improve safety on the corridor.

Signage and Striping: It is recommended to update existing regulatory signs and street name signs as part of the project. The existing pavement markings shall be evaluated for the appropriate striping treatments and signage improvements and prepare signage and striping plans. Double piano key crosswalks are recommended for all crossings of Thurston Road, at both signalized intersections and proposed bump-out locations. Standard crosswalk markings are recommended for crossing of sidestreets along the corridor. This proposed striping is in conformance with Monroe County's crosswalk policy. Street signs along the corridor will be replaced with new signs that contain a decorative logo panel to depict the Thurston Village theme for the corridor.

## C. Work Zone Traffic Control (WZTC)

A three phase construction staging scheme is proposed. All work activities must be performed in accordance with standards of the National Manual on Uniform Traffic Control Devices (MUTCD).

## Phase 1 - West Side Improvements

- Work to be completed:
- All west side of Thurston Road to be completed. Work elements to include: sidewalks, bump-outs, lighting and streetscape improvements.
- Work Zone Traffic Control:
- Establish west side work zone and continuous two-way traffic plan with minimum 11 foot travel lanes, 7 foot parking lane (east curb line only) and 2 foot clear zone ( 31 feet width).
- A continuous sidewalk system and pedestrian route, bus stops, etc. shall be maintained on the east side of the road at all times. The west side sidewalk areas under construction will be closed with appropriate signage that safely redirects pedestrian to the active sidewalk routes.
- Temporary bus stops shall be coordinated with RGRTA and provided on the west side.
- Access to all intersection side streets and driveways must be maintained at all times.


## Phase 2 - East Side Improvements

- Work to be completed:
- All east side of Thurston Road to be completed. Work elements to include: sidewalks, bump-outs, lighting and streetscape improvements.
- Work Zone Traffic Control:
- Establish east side work zone and continuous two-way traffic plan with minimum 11 foot travel lanes, 7 foot parking lane (west curb line only) and 2 foot clear zone ( 31 feet width).
- A continuous sidewalk system and pedestrian route, bus stops, etc. shall be maintained on the west side of the road at all times. The east side sidewalk areas under construction will be closed with appropriate signage that safely redirects pedestrian to the active sidewalk routes.
- Temporary bus stops shall be coordinated with RGRTA and provided on the east side.
- Access to all intersection side streets and driveways must be maintained at all times.


## Phase 3 - Intersection Improvements

- Work to be completed:
- All intersection work along Thurston Road to be completed. Work elements include: traffic signals, crosswalks, landscape and intersection signage.
- Work Zone Traffic Control:
- Construct remaining project elements with short-term lane closures and flagging operations.
- Pedestrian sidewalks will be maintained on at least one side of the street at all times.
- Contractor shall turn off traffic signal while flaggers are in the intersection, where applicable.


## D. Utility/Agency Involvement

This report and associated preliminary plans showing the proposed curb lines will be submitted to the applicable utilities and agencies. It is anticipated that no new work is planned for any of the utilities along the corridor, other than those relocations necessary to accommodate the street improvements.

Utilities to be affected by the project are those located within the intersections Brooks Avenue and Avenue / Anthony Street where new traffic signals are proposed. Potential conflicts may also be encountered in areas where curb bump-outs may be located. These will be identified during final design.

## E. Cost Estimate

The costs for this project are summarized below.

| Construction: |  |
| :--- | :--- |
| City - Street | $\$ 596,300$ |
| City - Streetscape | $\$ 265,235$ |
| City - Sewer | $\$ 45,025$ |
| City - Lighting | $\$ 198,190$ |
| County - Traffic | $\$ 17,300$ |
| County - Traffic Signals | $\$ 259,000$ |
|  | Mobilization $(4 \%)$ |
| Contingency $(15 \%)$ | $\$ 55,200$ |
| Total | $\underline{\$ 215,400}$ |

A cost estimate breakdown is enclosed in the attached appendix.

## F. Additional Information

The Plans, Specifications, and Estimate package is scheduled to be let for bid in March 2014.
The project site is not affected by known wetlands, significant habitats, or threatened or endangered species as filed with the NYSDEC.

This project has been advanced as a SEQR Type II project in accordance with the Class II process of the NYSDOT Environmental Action Plan. The SEQR checklist is enclosed in the attached appendix.

## APPENDIX

# Scope Summary Memorandum <br> Thurston Road Revitalization (Brooks to Ravenwood) 

City of Rochester, Monroe County Project ID\#

January 10, 2014

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## PROPOSED PLANS

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## COST ESTIMATE

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## GTYOFROCHESTER <br> THURSTON ROADREVTAUZATION - CONGPTESTIMATE

BY: $\frac{\mathrm{JZ}}{\text { DATE } 12 / 23 / 2013}$
GFECEDBY
DATE

ENGINER'SESTIMATE


| ITEM NUMBER | DESCRIPTION | UNIT | UNIT PRICE | ESTIMATED QUANTITY |  | COST |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 203.02 | UNCLASSIFIED EXCAVATION AND DISPOSAL: FOR TYPICAL TREE IN PAVEMENT | CY | \$42.00 | 75.00 |  | \$3,150.00 |
| 611.010165 | PLANTING MAJOR DECIDUOUS TREE SPECIES | EA. | \$550.00 | 28.00 |  | \$15,400.00 |
| 613.0101001 | TOPSOIL, URBAN PLANTING MIX | CY | \$91.50 | 100.00 |  | \$9,150.00 |
| 615.04020008 | TREE/VEGETATION PROTECTION BARRIER | LF | \$5.00 | 2000.00 |  | \$10,000.00 |
| 615.08010001 | BENCH | EA. | \$3,000.00 | 15.00 |  | \$45,000.00 |
| 615.XXXXXXXX | BIKE RACK | EA. | \$450.00 | 15.00 |  | \$6,750.00 |
| 690.01000105 | GATEWAY FEATURES (assume 4 gateways) |  |  |  |  | \$82,600.00 |
| 203.07 | SELECT GRANULAR FILL (BACKFILL) | CY | \$45.00 | 40.00 | \$1,800.00 |  |
| 206.01 | STRUCTURE EXCAVATION | CY | \$45.00 | 60.00 | \$2,700.00 |  |
| 555.0104 | FOOTING CONCRETE CLASS A | CY | \$600.00 | 25.00 | \$15,000.00 |  |
|  | BRICK MASONRY | SF | \$27.00 | 500.00 | \$13,500.00 |  |
|  | GRANITE COPE | LF | \$160.00 | 60.00 | \$9,600.00 |  |
| 645.45xxxxx | TILE INSERT IN COLUMN | EA. | \$10,000.00 | 4.00 | \$40,000.00 |  |
| 690.xxxxxxxxxx | KIOSK | EA. | \$20,000.00 | 3.00 |  | \$60,000.00 |
|  |  |  |  |  |  |  |
| SUBTOTALS |  |  |  |  |  | \$232,050.00 |
|  | Contingency |  |  | 5.00\% |  | \$11,610.00 |
| TOTAL |  |  |  | \$243,660.00 |  |  |
|  |  |  |  |  | SAY | \$244,000.00 |


| ITEM NO. | DESCRIPTION | UNIT | $\begin{aligned} & \hline \text { UNIT } \\ & \text { COST } \end{aligned}$ | Brooks |  | Anthony / Lehigh |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | UNIT | COST | UNIT | COST |
| C206.0818 | CONDUIT EXCAVATION AND RESTORATION IN CONCRETE SIDEWALK AND DRIVEWAYS | LF | \$65.00 | 288 | \$ 18,720.00 | 367 | \$ 23,855.00 |
| C206.0820 | CONDUIT EXCAVATION AND RESTORATION IN GRASS AND UNPAVED AREAS | LF | \$12.00 | 70 | \$ 840.00 |  | \$ |
|  |  |  |  |  |  |  |  |
| 680.5001 | POLE EXCAVATION AND CONCRETE FOUNDATION | CY | \$850.00 | 19 | \$ 16,118.52 | 12 | \$ 10,577.78 |
| 680.5002 | CONCRETE BASE FOR CONTROLLER CABINET | EA | \$1,100.00 | 1 | \$ 1,100.00 | 1 | \$ 1,100.00 |
| 680.510401 | PULLBOX, CIRCULAR, 30 INCH DIA. REINFORCED CONCRETE | EA | \$1,000.00 | 4 | \$ 4,000.00 | 4 | \$ 4,000.00 |
| 680.520108 | CONDUIT - METAL STEEL ZINC-COATED, 3 NPS | LF | \$15.00 | 645 | \$ 9,675.00 | 547 | \$ 8,205.00 |
| 680.520703 | CONDUIT - RIGID PLASTIC- CLASS 1, 1 NPS | LF | \$5.00 | 11 | \$ 55.00 | 30 | \$ 150.00 |
|  |  |  |  |  |  |  |  |
| 680.730714 | SIGNAL CABLE - 07 CONDUCTOR - 14 AWG | LF | \$3.75 | 988 | \$ 3,705.00 | 889 | \$ 3,333.75 |
| 680.730914 | SIGNAL CABLE - 09 CONDUCTOR - 14 AWG | LF | \$4.00 | 624 | \$ 2,496.00 | 676 | \$ 2,704.00 |
|  |  |  |  |  |  |  |  |
| 680.813108 | PEDESTRIAN SIGNAL SECTION, POLYCARBONATE, TYPE I - FOR 16 INCH X 18 INCH LED MODULE | EA | \$275.00 | 8 | \$ 2,200.00 | 6 | \$ 1,650.00 |
| 680.8141 | PEDESTRIAN SIGNAL BRACKET MOUNT ASSEMBLY | EA | \$200.00 | 8 | \$ 1,600.00 | 6 | \$ 1,200.00 |
| 680.8205 | OVERHEAD SIGN ASSEMBLY - TYPE E | EA | \$600.00 | 5 | \$ 3,000.00 | 6 | \$ 3,600.00 |
| 680.82270010 | ADA COMPLIANT PEDESTRIAN PUSHBUTTON WITH LATCHING LED INDICATION | EA | \$175.00 | 8 | \$ 1,400.00 | 8 | \$ 1,400.00 |
|  |  |  |  |  |  |  |  |
| C686.1611 | MAINTAIN TRAFFIC SIGNAL EQUIPMENT | INT. MO. | \$300.00 | 9 | \$ 2,700.00 | 6 | \$ 1,800.00 |
|  |  |  |  |  | \$ |  | \$ |
| C686.61 | ADJUST FRAMES AND COVER (PULLBOXES) | EA | \$500.00 | 1 | \$ 500.00 | 1 | \$ 500.00 |
|  |  |  |  |  |  |  |  |
| C686.71 | SHIELDED LEAD-IN CABLE | LF | \$2.00 | 580 | \$ 1,160.00 | 294 | \$ 588.00 |
| C686.72 | INDUCTANCE LOOP INSTALLATION AND SEALING | LF | \$8.00 | 218 | \$ 1,744.00 | 184 | \$ 1,472.00 |
| C686.7201 | INDUCTANCE LOOP WIRE | LF | \$0.50 | 676 | \$ 338.00 | 648 | \$ 324.00 |
| C686.77 | MODIFY TRAFFIC SIGNAL EQUIPMENT | LS | \$5,000.00 | 1 | \$ 5,000.00 | 1 | \$ 5,000.00 |
| C686.7901 | SIGNAL EQUIPMENT REMOVAL | LS | \$7,000.00 | 1 | \$ 7,000.00 | 1 | \$ 7,000.00 |
|  |  |  |  |  |  |  |  |
| C686.808128 | TRAFFIC CONTROL CABINET, NEMA T2-2, TYPE 2 SIZE P - EIGHT PHASE, SIXTEEN (16) POSITION, FULLY TRAFFIC | EA | \$8,000.00 | 1 | \$ 8,000.00 | 1 | \$ 8,000.00 |
| C686.810101 | LED TRAFFIC SIGNAL MODULES, 12" RED BALL | EA | \$140.00 | 8 | \$ 1,120.00 | 8 | \$ 1,120.00 |
| C686.810103 | LED TRAFFIC SIGNAL MODULES, 12" YELLOW BALL | EA | \$160.00 | 8 | \$ 1,280.00 | 8 | \$ 1,280.00 |
| C686.810105 | LED TRAFFIC SIGNAL MODULES, 12" GREEN BALL | EA | \$190.00 | 8 | \$ 1,520.00 | 8 | \$ 1,520.00 |
| C686.810601 | TRAFFIC SIGNAL SECTION - POLYCARBONATE, TYPE I, 12 IN . | EA | \$160.00 | 24 | \$ 3,840.00 | 24 | \$ 3,840.00 |
| C686.8116 | RIGID MOUNT SIGNAL BRACKET ASSEMBLY | EA | \$230.00 | 2 | \$ 460.00 | 8 | \$ 1,840.00 |
| C686.813104 | INSTALL LED PEDESTRIAN SIGNAL MODULE | EA | \$250.00 | 8 | \$ 2,000.00 | 6 | \$ 1,500.00 |
| C686.813107 | LED TRAFFIC SIGNAL MODULES, 16"X18" BI-MODAL PEDESTRIAN SIGNAL HAND (FULL) / MAN (FULL) OVERLAY WITH COUNTDOWN - 2 DIGIT TIMER MODULE | EA | \$500.00 | 8 | \$ 4,000.00 | 6 | \$ 3,000.00 |
|  |  |  |  |  |  |  |  |
| C686.820031 | MAST ARM TRAFFIC SIGNAL POLE COMBINATION ANCHOR BASE (30') | EA | \$5,000.00 | 4 | \$ 20,000.00 | 2 | \$ 10,000.00 |
| C686.8516 | TRAFFIC SIGNAL POLE - MAST ARM, 16 FT LENGTH | EA | \$2,100.00 |  | \$ | 2 | \$ 4,200.00 |
| C686.8518 | TRAFFIC SIGNAL POLE - MAST ARM, 18 FT LENGTH | EA | \$2,100.00 | 1 | \$ 2,100.00 |  | \$ |
| C686.8520 | TRAFFIC SIGNAL POLE - MAST ARM, 20 FT LENGTH | EA | \$2,100.00 | 1 | \$ 2,100.00 |  | \$ |
| C686.8522 | TRAFFIC SIGNAL POLE - MAST ARM, 22 FT LENGTH | EA | \$2,300.00 | 1 | \$ 2,300.00 | 2 | \$ 4,600.00 |
| C686.8528 | TRAFFIC SIGNAL POLE - MAST ARM, 28 FT LENGTH | EA | \$2,300.00 | 1 | \$ 2,300.00 |  | \$ |
|  |  |  |  |  |  |  |  |
| C686.9941 | GALVANIZED STEEL PEDESTIAN SIGNAL POLE | EA | \$1,000.00 |  | \$ | 5 | \$ 5,000.00 |
|  |  |  |  |  |  |  | \$ |
|  |  |  | TOTAL |  | \$ 134,371.52 |  | \$ 124,359.53 |
|  |  |  | SAY |  | \$ 134,500.00 |  | \$ 124,500.00 |

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## SEQR SHORT FORM EAF

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## Appendix B

Short Environmental Assessment Form

## Instructions for Completing

Part 1 - Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.



| 18. Does the proposed action include construction or other activities that result in the impoundment of <br> water or other liquids (e.g. retention pond, waste lagoon, dam)? <br> If Yes, explain purpose and size: | NO | YES |  |
| :--- | :--- | :--- | :--- |
|  |  |  |  |

Part 2 - Impact Assessment. The Lead Agency is responsible for the completion of Part 2. Answer all of the following questions in Part 2 using the information contained in Part 1 and other materials submitted by the project sponsor or otherwise available to the reviewer. When answering the questions the reviewer should be guided by the concept "Have my responses been reasonable considering the scale and context of the proposed action?"
$\left.\begin{array}{|ll|l|l|l|}\hline & & \begin{array}{l}\text { No, or } \\ \text { small } \\ \text { impact } \\ \text { may } \\ \text { occur }\end{array} \\ \text { to large } \\ \text { impact } \\ \text { may } \\ \text { occur }\end{array}\right]$

|  | No, or small impact may occur | Moderate to large impact may occur |
| :---: | :---: | :---: |
| 10. Will the proposed action result in an increase in the potential for erosion, flooding or drainage problems? | $\checkmark$ |  |
| 11. Will the proposed action create a hazard to environmental resources or human health? | $\checkmark$ |  |

Part 3 - Determination of significance. The Lead Agency is responsible for the completion of Part 3. For every question in Part 2 that was answered "moderate to large impact may occur", or if there is a need to explain why a particular element of the proposed action may or will not result in a significant adverse environmental impact, please complete Part 3. Part 3 should, in sufficient detail, identify the impact, including any measures or design elements that have been included by the project sponsor to avoid or reduce impacts. Part 3 should also explain how the lead agency determined that the impact may or will not be significant. Each potential impact should be assessed considering its setting, probability of occurring, duration, irreversibility, geographic scope and magnitude. Also consider the potential for short-term, long-term and cumulative impacts.

Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action may result in one or more potentially large or significant adverse impacts and an environmental impact statement is required.
Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action will not result in any significant adverse environmental impacts.

## City of Rochester

Name of Lead Agency

Print or Type Name of Responsible Officer in Lead Agency

Signature of Responsible Officer in Lead Agency

Date

Title of Responsible Officer

Signature of Preparer (if different from Responsible Officer)

## LEVEL OF SERVICE CALCULATIONS

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|  | 4 |  |  | 7 |  |  | 4 | $\uparrow$ |  |  | $\downarrow$ | $\checkmark$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  | $\uparrow$ |  |  | $\uparrow$ |  |  | $\uparrow$ |  |  | * | F |
| Volume (vph) | 77 | 276 | 8 | 2 | 222 | 35 | 8 | 52 | 6 | 76 | 75 | 58 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Utill. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt |  | 0.997 |  |  | 0.982 |  |  | 0.987 |  |  |  | 0.850 |
| Flt Protected |  | 0.989 |  |  |  |  |  | 0.994 |  |  | 0.975 |  |
| Satd. Flow (prot) | 0 | 1837 | 0 | 0 | 1829 | 0 | 0 | 1827 | 0 | 0 | 1816 | 1583 |
| Flt Permitted |  | 0.883 |  |  | 0.998 |  |  | 0.956 |  |  | 0.839 |  |
| Satd. Flow (perm) | 0 | 1640 | 0 | 0 | 1826 | 0 | 0 | 1758 | 0 | 0 | 1563 | 1583 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd. Flow (RTOR) |  | 2 |  |  | 17 |  |  | 7 |  |  |  | 64 |
| Link Speed (mph) |  | 30 |  |  | 30 |  |  | 30 |  |  | 30 |  |
| Link Distance (t) |  | 773 |  |  | 360 |  |  | 312 |  |  | 2209 |  |
| Travel Time (s) |  | 17.6 |  |  | 8.2 |  |  | 7.1 |  |  | 50.2 |  |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 86 | 307 | 9 | 2 | 247 | 39 | 9 | 58 | 7 | 84 | 83 | 64 |
| Shared Lane Traffic (\%) |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane Group Flow (vph) | 0 | 402 | 0 | 0 | 288 | 0 | 0 | 74 | 0 | 0 | 167 | 64 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(t) |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Link Offset(ft) |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width(tt) |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |
| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 1 |  | 1 | 1 |  | 1 | 1 |  | 1 | 1 | 1 |
| Detector Template |  |  |  |  |  |  |  |  |  |  |  |  |
| Leading Detector (tt) | 50 | 50 |  | 50 | 50 |  | 50 | 50 |  | 50 | 50 | 50 |
| Trailing Detector (tt) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 | 0 |
| Detector 1 Position(tt) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 | 0 |
| Detector 1 Size(ft) | 50 | 50 |  | 50 | 50 |  | 50 | 50 |  | 50 | 50 | 50 |
| Detector 1 Type | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex | $\mathrm{Cl}+\mathrm{Ex}$ |
| Detector 1 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 1 Extend (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 |
| Turn Type | Perm | NA |  | Perm | NA |  | Perm | NA |  | Perm | NA | Perm |
| Protected Phases |  | 2 |  |  | 2 |  |  | 4 |  |  | 4 |  |
| Permitted Phases | 2 |  |  | 2 |  |  | 4 |  |  | 4 |  | 4 |
| Detector Phase | 2 | 2 |  | 2 | 2 |  | 4 | 4 |  | 4 | 4 | 4 |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 18.0 | 18.0 |  | 18.0 | 18.0 |  | 6.0 | 6.0 |  | 6.0 | 6.0 | 6.0 |
| Minimum Split (s) | 36.0 | 36.0 |  | 36.0 | 36.0 |  | 25.5 | 25.5 |  | 25.5 | 25.5 | 25.5 |
| Total Split (s) | 36.0 | 36.0 |  | 36.0 | 36.0 |  | 30.5 | 30.5 |  | 30.5 | 30.5 | 30.5 |
| Total Split (\%) | 54.1\% | 54.1\% |  | 54.1\% | 54.1\% |  | 45.9\% | 45.9\% |  | 45.9\% | 45.9\% | 45.9\% |
| Maximum Green (s) | 30.0 | 30.0 |  | 30.0 | 30.0 |  | 25.0 | 25.0 |  | 25.0 | 25.0 | 25.0 |
| Yellow Time (s) | 3.5 | 3.5 |  | 3.5 | 3.5 |  | 3.5 | 3.5 |  | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 2.5 | 2.5 |  | 2.5 | 2.5 |  | 2.0 | 2.0 |  | 2.0 | 2.0 | 2.0 |

EXISTING

|  | $\stackrel{ }{*}$ | $\rightarrow$ |  | 7 | 4 | 4 | 4 | 4 | 7 | $\checkmark$ | $\downarrow$ | $\checkmark$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lost Time Adjust (s) |  | -3.0 |  |  | -3.0 |  |  | -2.5 |  |  | -2.5 | -1.0 |
| Total Lost Time (s) |  | 3.0 |  |  | 3.0 |  |  | 3.0 |  |  | 3.0 | 4.5 |
| Lead/Lag |  |  |  |  |  |  |  |  |  |  |  |  |
| Lead-Lag Optimize? |  |  |  |  |  |  |  |  |  |  |  |  |
| Vehicle Extension (s) | 2.0 | 2.0 |  | 2.0 | 2.0 |  | 4.0 | 4.0 |  | 4.0 | 4.0 | 4.0 |
| Recall Mode | Max | Max |  | Max | Max |  | None | None |  | None | None | None |
| Walk Time (s) | 18.0 | 18.0 |  | 18.0 | 18.0 |  | 10.0 | 10.0 |  | 10.0 | 10.0 | 10.0 |
| Flash Dont Walk (s) | 12.0 | 12.0 |  | 12.0 | 12.0 |  | 10.0 | 10.0 |  | 10.0 | 10.0 | 10.0 |
| Pedestrian Calls (\#/hr) | 0 | 0 |  | 0 | 0 |  | 0 | - |  | 0 | 0 | 0 |
| Act Effct Green (s) |  | 36.9 |  |  | 36.9 |  |  | 14.4 |  |  | 14.4 | 12.9 |
| Actuated g/C Ratio |  | 0.68 |  |  | 0.68 |  |  | 0.27 |  |  | 0.27 | 0.24 |
| v/c Ratio |  | 0.36 |  |  | 0.23 |  |  | 0.16 |  |  | 0.40 | 0.15 |
| Control Delay |  | 6.8 |  |  | 5.4 |  |  | 14.1 |  |  | 18.8 | 5.8 |
| Queue Delay |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 | 0.0 |
| Total Delay |  | 6.8 |  |  | 5.4 |  |  | 14.1 |  |  | 18.8 | 5.8 |
| LOS |  | A |  |  | A |  |  | B |  |  | B | A |
| Approach Delay |  | 6.8 |  |  | 5.4 |  |  | 14.1 |  |  | 15.2 |  |
| Approach LOS |  | A |  |  | A |  |  | B |  |  | B |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |

Area Type: Other
Cycle Length: 66.5
Actuated Cycle Length: 53.9
Natural Cycle: 65
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 8.9 Intersection LOS: A

Intersection Capacity Utilization 59.1\% ICU Level of Service B
Analysis Period (min) 15
Splits and Phases: 501: Thurston \& Brooks


|  | 4 |  |  |  |  |  | 4 |  |  |  | $\downarrow$ | $\downarrow$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  | $\uparrow$ |  |  | ¢ |  |  | $\uparrow$ |  |  | $\uparrow$ | F |
| Volume (vph) | 123 | 286 | 10 | 10 | 346 | 91 | 8 | 72 | 5 | 71 | 68 | 108 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt |  | 0.997 |  |  | 0.973 |  |  | 0.991 |  |  |  | 0.850 |
| Flt Protected |  | 0.986 |  |  | 0.999 |  |  | 0.995 |  |  | 0.975 |  |
| Satd. Flow (prot) | 0 | 1831 | 0 | 0 | 1811 | 0 | 0 | 1837 | 0 | 0 | 1816 | 1583 |
| Flt Permitted |  | 0.765 |  |  | 0.990 |  |  | 0.969 |  |  | 0.832 |  |
| Satd. Flow (perm) | 0 | 1421 | 0 | 0 | 1794 | 0 | 0 | 1789 | 0 | 0 | 1550 | 1583 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd. Flow (RTOR) |  | 3 |  |  | 27 |  |  | 6 |  |  |  | 120 |
| Link Speed (mph) |  | 30 |  |  | 30 |  |  | 30 |  |  | 30 |  |
| Link Distance (ft) |  | 773 |  |  | 360 |  |  | 312 |  |  | 2209 |  |
| Travel Time (s) |  | 17.6 |  |  | 8.2 |  |  | 7.1 |  |  | 50.2 |  |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 137 | 318 | 11 | 11 | 384 | 101 | 9 | 80 | 6 | 79 | 76 | 120 |
| Shared Lane Traffic (\%) |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane Group Flow (vph) | 0 | 466 | 0 | 0 | 496 | 0 | 0 | 95 | 0 | 0 | 155 | 120 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(t) |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Link Offset(ft) |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width(tt) |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |
| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 1 |  | 1 | 1 |  | 1 | 1 |  | 1 | 1 | 1 |
| Detector Template |  |  |  |  |  |  |  |  |  |  |  |  |
| Leading Detector (tt) | 50 | 50 |  | 50 | 50 |  | 50 | 50 |  | 50 | 50 | 50 |
| Trailing Detector (tt) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 | 0 |
| Detector 1 Position(tt) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 | 0 |
| Detector 1 Size(t) | 50 | 50 |  | 50 | 50 |  | 50 | 50 |  | 50 | 50 | 50 |
| Detector 1 Type | Cl+Ex | $\mathrm{Cl}+\mathrm{Ex}$ |  | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex | $\mathrm{Cl}+\mathrm{Ex}$ |
| Detector 1 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 1 Extend (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 |
| Turn Type | Perm | NA |  | Perm | NA |  | Perm | NA |  | Perm | NA | Perm |
| Protected Phases |  | 2 |  |  | 2 |  |  | 4 |  |  | 4 |  |
| Permitted Phases | 2 |  |  | 2 |  |  | 4 |  |  | 4 |  | 4 |
| Detector Phase | 2 | 2 |  | 2 | 2 |  | 4 | 4 |  | 4 | 4 | 4 |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 18.0 | 18.0 |  | 18.0 | 18.0 |  | 6.0 | 6.0 |  | 6.0 | 6.0 | 6.0 |
| Minimum Split (s) | 36.0 | 36.0 |  | 36.0 | 36.0 |  | 25.5 | 25.5 |  | 25.5 | 25.5 | 25.5 |
| Total Split (s) | 36.0 | 36.0 |  | 36.0 | 36.0 |  | 30.5 | 30.5 |  | 30.5 | 30.5 | 30.5 |
| Total Split (\%) | 54.1\% | 54.1\% |  | 54.1\% | 54.1\% |  | 45.9\% | 45.9\% |  | 45.9\% | 45.9\% | 45.9\% |
| Maximum Green (s) | 30.0 | 30.0 |  | 30.0 | 30.0 |  | 25.0 | 25.0 |  | 25.0 | 25.0 | 25.0 |
| Yellow Time (s) | 3.5 | 3.5 |  | 3.5 | 3.5 |  | 3.5 | 3.5 |  | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 2.5 | 2.5 |  | 2.5 | 2.5 |  | 2.0 | 2.0 |  | 2.0 | 2.0 | 2.0 |


|  | $\stackrel{ }{*}$ | $\rightarrow$ |  | 7 | 4 | 4 | 4 | $\dagger$ | 7 | $\checkmark$ | $\downarrow$ | $\checkmark$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lost Time Adjust (s) |  | -3.0 |  |  | -3.0 |  |  | -2.5 |  |  | -2.5 | -1.0 |
| Total Lost Time (s) |  | 3.0 |  |  | 3.0 |  |  | 3.0 |  |  | 3.0 | 4.5 |
| Lead/Lag |  |  |  |  |  |  |  |  |  |  |  |  |
| Lead-Lag Optimize? |  |  |  |  |  |  |  |  |  |  |  |  |
| Vehicle Extension (s) | 2.0 | 2.0 |  | 2.0 | 2.0 |  | 4.0 | 4.0 |  | 4.0 | 4.0 | 4.0 |
| Recall Mode | Max | Max |  | Max | Max |  | None | None |  | None | None | None |
| Walk Time (s) | 18.0 | 18.0 |  | 18.0 | 18.0 |  | 10.0 | 10.0 |  | 10.0 | 10.0 | 10.0 |
| Flash Dont Walk (s) | 12.0 | 12.0 |  | 12.0 | 12.0 |  | 10.0 | 10.0 |  | 10.0 | 10.0 | 10.0 |
| Pedestrian Calls (\#/hr) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 | 0 |
| Act Effct Green (s) |  | 35.9 |  |  | 35.9 |  |  | 14.7 |  |  | 14.7 | 13.2 |
| Actuated g/C Ratio |  | 0.63 |  |  | 0.63 |  |  | 0.26 |  |  | 0.26 | 0.23 |
| v/c Ratio |  | 0.52 |  |  | 0.43 |  |  | 0.20 |  |  | 0.39 | 0.26 |
| Control Delay |  | 9.2 |  |  | 7.2 |  |  | 14.9 |  |  | 18.9 | 5.2 |
| Queue Delay |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 | 0.0 |
| Total Delay |  | 9.2 |  |  | 7.2 |  |  | 14.9 |  |  | 18.9 | 5.2 |
| LOS |  | A |  |  | A |  |  | B |  |  | B | A |
| Approach Delay |  | 9.2 |  |  | 7.2 |  |  | 14.9 |  |  | 12.9 |  |
| Approach LOS |  | A |  |  | A |  |  | B |  |  | B |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |

```
Area Type: Other
```

Cycle Length: 66.5

Actuated Cycle Length: 56.6
Natural Cycle: 65
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.52

| Intersection Signal Delay: 9.6 | Intersection LOS: A |
| :--- | :--- |
| Intersection Capacity Utilization 70.9\% | ICU Level of Service C |
| Analysis Period (min) 15 |  |

Splits and Phases: 501: Thurston \& Brooks



|  | 4 | $\rightarrow$ |  | 7 |  |  | 4 | $\dagger$ | $p$ | - | $\frac{1}{\dagger}$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Maximum Green (s) | 30.0 | 30.0 |  | 30.0 | 30.0 |  | 25.0 | 25.0 |  | 25.0 | 25.0 | 25.0 |
| Yellow Time (s) | 3.5 | 3.5 |  | 3.5 | 3.5 |  | 3.5 | 3.5 |  | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 2.5 | 2.5 |  | 2.5 | 2.5 |  | 2.0 | 2.0 |  | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -3.0 | -3.0 |  | -3.0 | -3.0 |  |  | -2.5 |  |  | -2.5 | -1.0 |
| Total Lost Time (s) | 3.0 | 3.0 |  | 3.0 | 3.0 |  |  | 3.0 |  |  | 3.0 | 4.5 |
| Lead/Lag |  |  |  |  |  |  |  |  |  |  |  |  |
| Lead-Lag Optimize? |  |  |  |  |  |  |  |  |  |  |  |  |
| Vehicle Extension (s) | 2.0 | 2.0 |  | 2.0 | 2.0 |  | 4.0 | 4.0 |  | 4.0 | 4.0 | 4.0 |
| Recall Mode | Max | Max |  | Max | Max |  | None | None |  | None | None | None |
| Walk Time (s) | 18.0 | 18.0 |  | 18.0 | 18.0 |  | 10.0 | 10.0 |  | 10.0 | 10.0 | 10.0 |
| Flash Dont Walk (s) | 12.0 | 12.0 |  | 12.0 | 12.0 |  | 10.0 | 10.0 |  | 10.0 | 10.0 | 10.0 |
| Pedestrian Calls (\#/hr) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 | 0 |
| Act Effct Green (s) | 36.9 | 36.9 |  | 36.9 | 36.9 |  |  | 14.4 |  |  | 14.4 | 12.9 |
| Actuated g/C Ratio | 0.68 | 0.68 |  | 0.68 | 0.68 |  |  | 0.27 |  |  | 0.27 | 0.24 |
| v/c Ratio | 0.12 | 0.25 |  | 0.00 | 0.23 |  |  | 0.16 |  |  | 0.40 | 0.15 |
| Control Delay | 5.7 | 5.8 |  | 5.0 | 5.4 |  |  | 14.1 |  |  | 18.8 | 5.8 |
| Queue Delay | 0.0 | 0.0 |  | 0.0 | 0.0 |  |  | 0.0 |  |  | 0.0 | 0.0 |
| Total Delay | 5.7 | 5.8 |  | 5.0 | 5.4 |  |  | 14.1 |  |  | 18.8 | 5.8 |
| LOS | A | A |  | A | A |  |  | B |  |  | B | A |
| Approach Delay |  | 5.8 |  |  | 5.4 |  |  | 14.1 |  |  | 15.2 |  |
| Approach LOS |  | A |  |  | A |  |  | B |  |  | B |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 66.5 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 53.9 |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 65 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Semi Act-Uncoord |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum v/c Ratio: 0.40 |  |  |  |  |  |  |  |  |  |  |  |  |
| Intersection Signal Delay: 8.5 |  |  |  | Intersection LOS: A |  |  |  |  |  |  |  |  |
| Intersection Capacity Utilization 54.8\% |  |  |  | ICU Level of Service A |  |  |  |  |  |  |  |  |
| Analysis Period (min) 15 |  |  |  |  |  |  |  |  |  |  |  |  |

Splits and Phases: 501: Thurston \& Brooks


|  | 4 |  |  | 7 |  |  |  | $\uparrow$ |  |  | $\downarrow$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | \% | $\hat{\beta}$ |  | ${ }^{7}$ | 今 |  |  | ¢ |  |  | $\uparrow$ | F |
| Volume (vph) | 123 | 286 | 10 | 10 | 346 | 91 | 8 | 72 | 5 | 71 | 68 | 108 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (t) | 100 |  | 0 | 50 |  | 0 | 0 |  | 0 | 0 |  | 0 |
| Storage Lanes | 1 |  | 0 | 1 |  | 0 | 0 |  | 0 | 0 |  | 1 |
| Taper Length (t) | 25 |  |  | 25 |  |  | 25 |  |  | 25 |  |  |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt |  | 0.995 |  |  | 0.969 |  |  | 0.991 |  |  |  | 0.850 |
| Flt Protected | 0.950 |  |  | 0.950 |  |  |  | 0.995 |  |  | 0.975 |  |
| Satd. Flow (prot) | 1770 | 1853 | 0 | 1770 | 1805 | 0 | 0 | 1837 | 0 | 0 | 1816 | 1583 |
| Flt Permitted | 0.424 |  |  | 0.536 |  |  |  | 0.969 |  |  | 0.832 |  |
| Satd. Flow (perm) | 790 | 1853 | 0 | 998 | 1805 | 0 | 0 | 1789 | 0 | 0 | 1550 | 1583 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd. Flow (RTOR) |  | 4 |  |  | 28 |  |  | , |  |  |  | 120 |
| Link Speed (mph) |  | 30 |  |  | 30 |  |  | 30 |  |  | 30 |  |
| Link Distance (t) |  | 773 |  |  | 360 |  |  | 312 |  |  | 2209 |  |
| Travel Time (s) |  | 17.6 |  |  | 8.2 |  |  | 7.1 |  |  | 50.2 |  |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 137 | 318 | 11 | 11 | 384 | 101 | 9 | 80 | 6 | 79 | 76 | 120 |
| Shared Lane Traffic (\%) |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane Group Flow (vph) | 137 | 329 | 0 | 11 | 485 | 0 | 0 | 95 | 0 | 0 | 155 | 120 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(t) |  | 12 |  |  | 12 |  |  | 0 |  |  | 0 |  |
| Link Offset(ft) |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width(tt) |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |
| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 1 |  | 1 | 1 |  | 1 | 1 |  | 1 | 1 | 1 |
| Detector Template |  |  |  |  |  |  |  |  |  |  |  |  |
| Leading Detector (t) | 50 | 50 |  | 50 | 50 |  | 50 | 50 |  | 50 | 50 | 50 |
| Trailing Detector (tt) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 | 0 |
| Detector 1 Size(ft) | 50 | 50 |  | 50 | 50 |  | 50 | 50 |  | 50 | 50 | 50 |
| Detector 1 Type | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex |  | Cl+Ex | $\mathrm{Cl}+\mathrm{Ex}$ | Cl+Ex |
| Detector 1 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 1 Extend (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 |
| Turn Type | Perm | NA |  | Perm | NA |  | Perm | NA |  | Perm | NA | Perm |
| Protected Phases |  | 2 |  |  | 2 |  |  | 4 |  |  | 4 |  |
| Permitted Phases | 2 |  |  | 2 |  |  | 4 |  |  | 4 |  | 4 |
| Detector Phase | 2 | 2 |  | 2 | 2 |  | 4 | 4 |  | 4 | 4 | 4 |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 18.0 | 18.0 |  | 18.0 | 18.0 |  | 6.0 | 6.0 |  | 6.0 | 6.0 | 6.0 |
| Minimum Split (s) | 36.0 | 36.0 |  | 36.0 | 36.0 |  | 25.5 | 25.5 |  | 25.5 | 25.5 | 25.5 |
| Total Split (s) | 36.0 | 36.0 |  | 36.0 | 36.0 |  | 30.5 | 30.5 |  | 30.5 | 30.5 | 30.5 |
| Total Split (\%) | 54.1\% | 54.1\% |  | 54.1\% | 54.1\% |  | 45.9\% | 45.9\% |  | 45.9\% | 45.9\% | 45.9\% |
| Left Turn Lanes 5:00 pm 10/15/2013 Baseline PROPOSED |  |  |  |  |  |  |  |  |  |  | Synchro 8 ReportPage 1 |  |


|  | $\rangle$ | $\rightarrow$ |  | 7 | 4 |  | 4 | $\uparrow$ | 7 |  | $\downarrow$ | $\checkmark$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Maximum Green (s) | 30.0 | 30.0 |  | 30.0 | 30.0 |  | 25.0 | 25.0 |  | 25.0 | 25.0 | 25.0 |
| Yellow Time (s) | 3.5 | 3.5 |  | 3.5 | 3.5 |  | 3.5 | 3.5 |  | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 2.5 | 2.5 |  | 2.5 | 2.5 |  | 2.0 | 2.0 |  | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -3.0 | -3.0 |  | -3.0 | -3.0 |  |  | -2.5 |  |  | -2.5 | -1.0 |
| Total Lost Time (s) | 3.0 | 3.0 |  | 3.0 | 3.0 |  |  | 3.0 |  |  | 3.0 | 4.5 |
| Lead/Lag |  |  |  |  |  |  |  |  |  |  |  |  |
| Lead-Lag Optimize? |  |  |  |  |  |  |  |  |  |  |  |  |
| Vehicle Extension (s) | 2.0 | 2.0 |  | 2.0 | 2.0 |  | 4.0 | 4.0 |  | 4.0 | 4.0 | 4.0 |
| Recall Mode | Max | Max |  | Max | Max |  | None | None |  | None | None | None |
| Walk Time (s) | 18.0 | 18.0 |  | 18.0 | 18.0 |  | 10.0 | 10.0 |  | 10.0 | 10.0 | 10.0 |
| Flash Dont Walk (s) | 12.0 | 12.0 |  | 12.0 | 12.0 |  | 10.0 | 10.0 |  | 10.0 | 10.0 | 10.0 |
| Pedestrian Calls (\#/hr) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 | 0 |
| Act Effct Green (s) | 35.9 | 35.9 |  | 35.9 | 35.9 |  |  | 14.7 |  |  | 14.7 | 13.2 |
| Actuated g/C Ratio | 0.63 | 0.63 |  | 0.63 | 0.63 |  |  | 0.26 |  |  | 0.26 | 0.23 |
| $\mathrm{v} / \mathrm{C}$ Ratio | 0.27 | 0.28 |  | 0.02 | 0.42 |  |  | 0.20 |  |  | 0.39 | 0.26 |
| Control Delay | 7.6 | 6.1 |  | 5.4 | 7.0 |  |  | 14.9 |  |  | 18.9 | 5.2 |
| Queue Delay | 0.0 | 0.0 |  | 0.0 | 0.0 |  |  | 0.0 |  |  | 0.0 | 0.0 |
| Total Delay | 7.6 | 6.1 |  | 5.4 | 7.0 |  |  | 14.9 |  |  | 18.9 | 5.2 |
| LOS | A | A |  | A | A |  |  | B |  |  | B | A |
| Approach Delay |  | 6.5 |  |  | 7.0 |  |  | 14.9 |  |  | 12.9 |  |
| Approach LOS |  | A |  |  | A |  |  | B |  |  | B |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 66.5 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 56.6 |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 65 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Semi Act-Uncoord |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum v/c Ratio: 0.42 |  |  |  |  |  |  |  |  |  |  |  |  |
| Intersection Signal Delay: 8.6 |  |  |  | Intersection LOS: A |  |  |  |  |  |  |  |  |
| Intersection Capacity Utilization 62.9\% |  |  |  | ICU Level of Service B |  |  |  |  |  |  |  |  |
| Analysis Period (min) 15 |  |  |  |  |  |  |  |  |  |  |  |  |

Splits and Phases: 501: Thurston \& Brooks


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## STREET TREE ASSESSMENT

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## PUBLIC MEETINGS

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| Date: | Octo |  | Location: | Southwest Neighborhood Service Center - 923 Genesee Street |
| :---: | :---: | :---: | :---: | :---: |
| Project Name: | Thur | d Revitalization | Project No.: | 19425.00 |
| Subject: | Stee | mittee Meeting \#1 | Scribe: | McCormick |
| Attendees: |  | Representing: | E-mail A | ess: |
| Jason Nabeaniec |  | City of Rochester | Nabewan | CityofRochester.gov |
| Al Giglio |  | City of Rochester | AGiglio | tyofRochester.gov |
| David Hawkes |  | City of Rochester | hawkesd@ | tyofrochester.gov |
| Don Hanks |  | Thurston Road Street Manager | sector4cde | yahoo.com |
| Jimmy Crowley |  | Crowley Plumbing | jcrowley | mbing @ frontiernet.net |
| John DeMott |  | Sector 4 Community <br> Development <br> Corporation | jnj_demot | juno.com |
| Colleen Gordon |  | Dr .Colleen Gordon DDS | cmgordon | rochester.rr.com |
| Henrene Brown |  | Urban League of Rochester | hbrown@ | .org |
| Annette Marchess | eault | Trowbridge Wolf Michaels | arm@twm |  |
| Matt Ingalls |  | Ingalls Planning | mingalls @ | gallsplanning.com |
| Paul Presutti |  | Erdman Anthony | presuttipj | rdmananthony.com |
| Bill McCormick |  | Erdman Anthony | mccormic | p@erdmananthony.com |

This is the first meeting with the neighborhood group for the City of Rochester's Thurston Road Revitalization project. The meeting opened with a brief discussion of the project history, including discussion about the 4 -step process that concluded with the Thurston Village Revitalization Plan dated May 2009.

Since that time, the City of Rochester has selected the team of Erdman Anthony, Trowbridge Wolf Michaels Landscape Architects and Ingalls Planning \& Design for the project. Project schedule was summarized. The project is slightly behind schedule at this point. Design plans for contractor bid will be finalized by February 2014 with construction starting in April 2014 thru October / November 2014. Construction must be complete by 2014.

Base mapping for the corridor was presented for discussion. Potential features to be considered for the project include High Visibility Crosswalks, Curb Bump-outs, Traffic Improvements, Turning Lanes, Signage \& Striping, Additional Streetscape, Sidewalks, Landscaping, Lighting and Bus Shelters.

Specific comments / notes transcribed at the meeting include:

1. The hub of the neighborhood changes throughout the day and night.
2. Lighting for the street and pedestrian is the number one concern along the corridor.
3. Speed humps along this type of corridor cannot be used.
4. Convenient parking is an issue. Use of diagonal parking was suggested. This is not an option due to width of the street.
5. The US Post Office and YMCA are popular pedestrian crossing locations of Thurston Road.
6. The neighborhood is seeking better looking trash receptacles.
7. Would like some type of signage to create identity for the corridor.
8. The 'Village' thought is more community than commercial - YMCA, Post Office, churches, school close by - self-sustaining.
9. Missing trees along the corridor need to be replaced. Larger trees ( 2 " $-3 "$ caliper) are requested.
10. A left turn at Brooks Avenue is a good idea.
11. There are no additional areaways except the 3 identified. These are currently used by the property owners mainly for deliveries.
12. Use of raised planters along the corridor is a good idea. They should be as maintenance free as possible and shouldn't be placed near corner stores, bars or barber shops. The design should be made high or low enough to not be a bench to sit on flowers. Location from the curbline should be a consideration so they do not hinder opening of doors for parked vehicles.
13. If there is something that requires maintenance, look to get a signed agreement with community group prior to installing it.
14. Annette will look to gather information about corridor heritage. It was discussed that there was a trolley in the 60's that used Thurston, with a turn-around in the Rite Aid parking lot.
15. Street starting to see a reverse migration from the suburbs. The businesses that are present have roots in the community. This needs to be preserved.
16. The $7-11$ convenient store at Flanders is missed by the community.
17. There are several issues with the bus shelters. The shelter at Ravenwood has an advertisement board that hinders sight distance. Consideration should be made to move this shelter from Ravenwood to Flanders. The Margaret Street shelter serves no purpose other than for seating of patrons of the nearby Laundromat.
18. See additional notes prepared by Matt Ingalls (attached).

This is the writer's interpretation of the above meeting. If there are any issues that need to be revised or discussed, please inform the author within five days of receiving the minutes.
Next Meeting: November 6, 2013 @ 1:00 pm
Southwest Neighborhood
Service Center
923 Genesee Street
Copies: attendees


William P. McCormick, PE

# City of Rochester Thurston Road Revitalization Project 

## Steering Committee Meeting \#1

October 9, 2013-1:00 PM
Southeast Neighborhood Service Center

## - Pedestrian Crossings

- The Ravenwood intersection has been approved for a midblock pedestrian crossing
- Consider a pedestrian refuge/island
- A crossing is needed near the Post Office and maybe near the $Y$
- Pedestrian lights do not appear to be effective
- People do not obey them
- Lighting
- Is the highest priority
- Perception is reality!
- Pedestrian level lighting is needed
- Style should be part of public input process
- City will likely consider a lighting district if wattage is too high
- Traffic Calming
- Speeds are too high
- Must develop safe pedestrian crossings
- Bump-outs should be considered but not at the expense of parking
- Parking
- Available parking is an issue, especially after 4:00 PM
- Bars generate a lot of demand for parking but have very few off-street spaces
- John DeMott has parking counts
- Potential public lot at the corner of Midvale (City vacant lot)
- RGRTA owns the Rite Aid lot near Brooks
- Other
- Neighborhood has an "integrated population"
- Use to have a trolley on Thurston
- Need street trees
- Need furniture
- A community kiosk would be useful
- The Y is a great community asset
- Bus shelter at Ravenwood is an issue
- Undesirable activity at night
- Poor site lines from adjacent properties
- Advertising panels block views
- Flanders Street would be better location
- Bus shelter at Margaret Street does not appear to be used much
- More of a bench for smokers


## Steering Committee Meeting Minutes

| $\begin{array}{l}\text { Date: } \\ \text { Project Name: } \\ \text { Location: }\end{array}$ N <br>   <br>  S <br>   | November 6, 2013 | Time: <br> Project No.: <br> Scribe: | 1:00 PM |
| :---: | :---: | :---: | :---: |
|  | Road |  |  |
|  | est Neighborhood Service 923 Genesee Street |  | Paul Presutti |
| Subject: Stee | Steering Committee Meeting \#2 |  |  |
| Attendees: | Representing: |  | Phon | Fax Number: |
| Jason Nabewaniec | City of Rochester | nabew | j@cityofrochester.gov |
| Al Giglio | City of Rochester | AGig | @CityofRochester.gov |
| Don Hanks | Thurston Road Street Manager | er sector | dc@yahoo.com |
| Jimmy Crowley | Crowley Plumbing | jcrow | yplumbing @frontiernet.net |
| John DeMott | Sector 4 CDC | jnj_de | ott@juno.com |
| Colleen Gordon | Dr .Colleen Gordon DDS | cmgo | @@rochester.rr.com |
| Henrene Brown | Urban League of Rochester | hbrow | @ulr.org |
| Sharon Conheady | Councilmember Conklin | conhe | @ @ cityofrochester.gov |
| Annette Marchesseault | Trowbridge Wolf Michaels | arm@ | m.la |
| Matt Ingalls | Ingalls Planning | minga | @ingallsplanning.com |
| Paul Presutti | Erdman Anthony | presut | j@erdmananthony.com |
| Bill McCormick | Erdman Anthony | mecor | ickwp@erdmananthony.com |

Steering committee meeting \#2 was held to discuss potential treatments and alternatives for the Thurston Road Revitalization project. The following issues were discussed:

### 1.0 Sidewalks and Bump-outs

1.1 Erdman Anthony completed an inventory of the existing sidewalks and determined the locations for replacement of the concrete sidewalks due to heaving, cracking or settlement. Those locations were identified in the scroll drawing presented at the meeting.
1.2 Curb / Sidewalk bump-outs, also shown on the scroll plot, are proposed to define the parking areas, provide a shorter pedestrian crossing distance, increase sidestreet sight distance and add an aesthetic component. Looking at the accident reports, there were several instances of improper sight distance due to vehicles being parked too close to the intersection.
1.3 According to steering committee members, Rosalind and Hillendale Streets have high traffic volumes with potential for vehicle conflicts. Bump-outs should be considered there.
1.4 A bump-out should be proposed at Raeburn Ave, as there are two apartment complexes in the vicinity and the grass in the tree lawn is gone, identifying significant pedestrian activity.
1.5 Utility conflicts with the proposed bump-outs should be identified and coordinated during final design.
1.6 The design team should forward the proposed bump-outs to Monroe County DOT for their review prior to the public meeting.
1.7 Specialty paving may be an alternative between the curb and sidewalk. Their inclusion in the project may come down to costs and priorities.

### 2.0 Lighting

2.1 Current lighting levels are adequate in the roadway, but the sidewalk opposite of the existing cobra lights has illumination levels less than recommended.
2.2 Historic photos of gas lanterns used in the $19^{\text {th }}$ Ward were presented. One alternative for lighting is to provide a fixture similar to the look of the historic lights. The use of "City Standard" residential fixtures was encouraged to make future maintenance easier.
2.3 It may be feasible to replace the existing cobra head lighting with decorative tall poles and supplement that with shorter pedestrian scale poles on the opposite side of the street. This should provide the required illumination levels and add an aesthetic component.
2.4 Re-using the existing pole foundations may be feasible, but special attention must be made to match the existing bolt pattern.

### 3.0 Sidewalk Appurtenances and Gateway Treatment

3.1 It is recommended to place benches next to any proposed planters. In the past, planters have been used as benches and people end up sitting on the flowers.
3.2 The project is likely limited to using the city standard trash receptacles. The possibility of using a black version of the receptacles will be investigated.
3.3 The existing bike racks are nice, but the project should use black versions. The existing racks could be used elsewhere throughout the city.
3.4 It was recommended to include a kiosk in three locations; in the center core, near Brooks and near Ravenwood.
3.5 The kiosk or any sidewalk appurtenance should be located at least $3^{\prime}$ from the curb.
3.6 To discourage parking on the sidewalk, benches or planters may be feasible, but a 5 ' sidewalk within the ROW must be provided.
3.7 While planters are encouraged by the committee there is a concern about maintenance of them.
3.8 The gateway features and banners should have something that captures the neighborhood. In the committee's opinion, the people of the community should be the focus. This would reinforce the village setting.

### 4.0 Street Trees

4.1 Trowbridge Wolf Michaels completed a tree inventory that identified trees that should be removed due to their condition. In addition, other areas should have trees but none exist. The Rite Aid lot is a good example of this.
4.2 There are some trees along the corridor that restrict lighting. These trees should be trimmed and care should be taken to locate new lights to avoid trees.
4.3 Care should be taken to coordinate the proposed trees with the police cameras. In addition, the design team should coordinate with the Police, i.e. Lt. Hill.
4.4 The design team should coordinate with the City Forestry Division.

### 5.0 Public Meeting

5.1 Subsequent to the meeting, the public meeting was scheduled for December $17^{\text {th }}$ at the Arnett Public Library.
5.2 The public meeting will be an open house format. A project representative will welcome people at the door and direct them to talk with someone from the team. Handouts and comment sheets will also be provided.

### 6.0 Miscellaneous Items

6.1 If a parking lot is desired in an empty lot, a formal site plan would need to be submitted. A separate assessment district may be necessary. If a plan is not "in the system," it is likely the curb cut on the vacant lots would be removed as part of the project. The committee asked for coordination between City Departments when necessary to stop the curb cut from being removed.
6.2 In some locations, the removal of one of multiple curb cuts may increase the number of onstreet parking spaces. This should be identified in the plans shown at the public meeting. A letter needs to be sent to the property owner notifying them of the change.
6.3 Photos of the corridor will be added to the project website. As the public meeting gets closer, drawings and images can also be posted.
6.4 Street print or other special crosswalks may be an option depending on costs and priorities. These are usually installed on new pavement, so mill and overlay of the existing pavement may be required.


Paul Presutti
Erdman Anthony

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City of Rochester, New York

Informational Meeting Sign-In

Date: December 17, 2013
Project Name: $\qquad$

Location: Armet Public library
310 Armet Blvd.


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## Public Comments on Thurston Road Project

1. NE Corner Enterprise St/Thurston - More lighting at crosswalks. For example, at Enterprise St, move light across the street closer to the crosswalk.
2. NW Corner Margaret St/Thurston - Try to get one or two more parking spaces in block front of YMCA. Large number of seniors compete for parking spaces near YMCA.
3. NE Corner Anthony St/Thurston - Needs recessed parking on Anthony's north curb due to traffic snarls.
4. North of Anthony St/South of Milton St/Thurston - New brick sounds great! I recommend a bike rack outside of Hunt's Hardware to invite cyclists to this popular neighborhood shop.
5. Intersection of Ravenwood/Thurston - Pedestrian-controlled stop lights, particularly at Ravenwood for school kids crossing.
6. SW Corner of Rosalind St/Thurston - Prefer vertical drainage structures.
7. SW of Rosalind St./Thurston - Is it possible to remove tree, as it blocks our sign?
8. North of Raeburn Ave. - Snowplowing concern with the brick sidewalk.
9. SE of Anthony St/Thurston - Lighting white, not yellow
10. SW of Midvale Terrace - Use bumpouts to prevent cars from parking too close to the intersection (improve safety for turning cars and pedestrians). Please keep 55 Thurston open green space, not parking.
11. NE Corner of Brooks/Thurston - Is it possible to add another Community Board?
12. SE Corner Brooks/Thurston - Keep crosswalks tight to the intersection to improve pedestrian safety.
13. Bumpout improves pedestrian safety, and prevents cars from parking too close to the intersection (increases visibility for turning cars).
14. SE Raeburn Ave/Thurston - Concern with bumpout @447 Thurston. There is much pickup and drop off at this address (few occupants have cars).
15. SE Corner of Dunbar/Thurston - Need concrete (or brick) pads at each bus stop for waiting passengers. Add shelters where possible.
16. Add more benches at bus stops. This is where the benches are most needed.
17. Place benches near bus stops.
18. Some bus stops do not have a concrete/brick pad for waiting passengers.
19. Suggest tree-lawns all concrete aggregate; no grass in commercial areas (it doesn't get cut).
20. Urban garden at 555 Thurston - planned and maintained by students - perhaps the ones who sell produce at SW market during the growing season.
21. Thank you for all the trees!
22. Love the bumpouts to make visibility better!
23. GENERAL COMMENT: A mailbox (several either in neighborhood) and definitely outside the Post Office. You can only mail letters at Post Office when it opens.
24. Backless benches - Not as attractive, but one will only sit for a couple of minutes compared to being comfortable in backed benches and sitting for an hour!
25. Keep sidewalks as tight to the intersection to improve pedestrian safety (increase visibility, especially to turning cars).
26. Love the use of the streetcars in the graphics. It is a critical part of our neighborhood history that is often ignored.
27. Bumpout is a great idea, like decorative brick and lights also.
28. Please put gateways at Chili and Thurston. Could put larger gateways at Brooks and at Chili, the use of smaller gateways at Ravenwood and Arnett.
29. Use striping at bus stops (that are not at bump outs) to clearly indicate that parking is not allowed.

- 612 Thurston In front of Dr Colleen Gordon (Dentist)- reduce bumpout, allow 1-2 more cars to park (no parking 60 ft beyond bus stop only applies when bus has to pull to the curb)
- 555 Thurston (vacant grass lot) Reduce Bumpout for parking
- 555 Thurston (vacant grass lot) add parking lot (out of our scope)
- 447 Thurston (apartment buildings) add crosswalk
- 447 Thurston reduce bumpout to allow for pick up / drop offs, may not be desirable with crosswalk
- 330 Thurston (community garden at Ravenwood) add bumpout to improve sight distant around shelter and kiosk
- Anthony Street add bump out for parking near Thurston - out of scope


## Potential Site Furnishings

| ITEM | LIKES | DISLIKES | COMMENTS |
| :---: | :---: | :---: | :---: |
| Light Fixtures | 5 | 0 |  |
| Bike Racks | 7 | 0 | Are you considering inviting $19^{\text {th }}$ Ward artists to create designs and actually make the bike racks, etc.? ArtWalk on University Ave. is an exciting street and a treat to drive down in good part because of the artists' works. |
| Backed Benches | 6 | 0 | -- |
| Backless Benches | 5 | 0 | Backless benches preferred because they allow people to face either direction. <br> Backless benches are less aesthetic, but more practical. Perhaps backed benches in non-loitered areas would be good. |
| Modified Standard Community Board | 0 | 0 | -- |
| Custom-designed Community Bulletin Board | 7 | 0 | Dominant Trolley symbol on title plate - with smaller title? <br> Light up the kiosk. <br> This would work well in smaller graphics. A good compromise would be to have a graphic with the trolley and one building. |

## VOTE FOR YOUR PREFERENCE - Potential Neighborhood Identity

| OPTION | LIKES | DISLIKES | COMMENTS |
| :--- | :--- | :--- | :--- |
| Option 1 | 12 | 1 | This would be good for LARGE graphics, but not for smaller graphics. |
| Option 2 | 2 | 3 | This ties young people with Thurston's past and arouses curiosity. A bold border <br> around Thurston Village would give impact to the title. <br> At Hunt's Hardware, it is the image of the trolley photo that grabs the most <br> attention with our photo gallery. Because of that, I think we need a "Central <br> Image" for the Thurston Village"...something that is easily seen and recognized, <br> while tying today's residents to a symbol of our past...a unique symbol that isn't <br> being used elsewhere. |
| Option 3 | -- | -- | I like the clarity of this - but the trolley symbol is a mystery to me uninitiated (and <br> doesn't look like a trolley to me). Perhaps a graphic of hands clasping would create <br> a positive image. |

## Potential Gateways

| OPTION | LIKES | DISLIKES | COMMENTS |
| :---: | :---: | :---: | :--- |
| Option 1 | 1 | 0 | None |
| Opton 2 | 2 | 0 | Incorporate lighting, <br> uplight, or wash. |

## Comments from Public Comment Sheets

Desperate need for recessed parking on Anthony Street next to grocery store. Traffic snarls are frequent and a safety issue. - David Hunt, 390 Thurston Rd.

I love the idea of new brick sidewalks. I would love to see more trees - perhaps some coniferous species to keep the street attractive during the winter. I would recommend as much bicycle parking as possible to invite cyclists into the $19^{\text {th }}$ Ward to coast over to their local businesses rather than drive to Walmart. This would also help prepare for the increasing student population, who often don't drive for practical reasons. A bike lane would be great too, but only if it can fit while holding onto the street parking. I would also love to see tax incentives for businesses, so we can reduce the commercial vacancy eye sores and increase neighborhood jobs. - Ethan Borshansky, 383-385 Thurston Rd representing Aronia Realty, LLC

