Oak Park

DRAFT RECOMMENDATION MEMO AND CONCEPT PLANS FOR

TRAFFIC CALMING MASTER PLAN

JACKSON BOULEVARD, WASHINGTON BOULEVARD, AND NORTH-SOUTH ROADS AT MADISON STREET

NOVEMBER 2018

Christopher B. Burke Engineering, Ltd.

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

CHRISTOPHER B. BURKE ENGINEERING LTD.
9575 West Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

--- Draft Recommendation Memo and Concept Plans ---
for
Traffic Calming Master Plan: Jackson Boulevard, Washington Boulevard, and North-South Roads at Madison Street

OVERVIEW

As part of the Madison Street road diet project, the Village of Oak Park has authorized additional studies to examine ways to calm multiple roads and to mitigate the impact of the potential diversion of Madison Street traffic onto Washington Boulevard, Jackson Boulevard, and the north-south roads at Madison Street.

This study provides draft recommendations (1) to enhance the flow of traffic, (2) to better calm the traffic along these roads, and/or (3) to improve pedestrian and bicycle safety. This document should be considered a living document – with recommendations to be updated and reconsidered as each calming measure is implemented and takes effect and as traffic demand shifts resultant of adjacent property developments.

The report focuses on Jackson Boulevard from Harlem Avenue to Austin Boulevard, on Washington Boulevard from Harlem Avenue to Austin Boulevard, and on the first block of the north-south roads crossing Madison Street from Harlem Avenue to Austin Boulevard.

Summary of Jackson Boulevard Draft Recommendations. As part of the study, traffic counts, and speed surveys were performed on Jackson Boulevard which show it currently has an average daily traffic of 7000 to 7,800 vehicles with an average speed of about 25 mph and an 85% speed of 30 mph. Based upon CMAP's projections of traffic diverting from Madison, Jackson Boulevard is estimated to have an additional 400-600 vehicles per day due to the proposed road diet. The additional of 400-600 cars per day represents an increase in traffic on Jackson of roughly 5% to 8%. In order to help ensure that drivers on Jackson drive in a calm and safe way and improve pedestrian safety the study is recommending some traffic calming improvements focused primarily in the middle 1/3 of Jackson between Oak Park Avenue and Ridgeland.

The study recommends installing additional speed limit signage and improving unprotected crosswalks in the western 1/3 of Jackson from Harlem to Oak Park Avenue since this section already includes bump outs at the corners, bike lanes sharing space at intersections, and the jogs at Harlem and Oak Park. In the middle 1/3 of Jackson the recommendations include the use of bump outs at 3 intersections, using green bike lane markings to highlight conflict areas, changing street pavements at the Euclid intersection adjacent to Fox Park, and the installation of additional speed limit signage. In the eastern 1/3 of Jackson from Ridgeland to Austin there are already median islands which limit the road width and opportunities for additional calming, so the study includes recommendations for additional speed limit signage, improving crosswalk visibility at Lombard, and bump outs and changing street pavements at Cuyler adjacent to Longfellow Park and Longfellow School.

These recommendations are explained in greater detail in the Jackson Boulevard section of the report

Summary of Washington Boulevard Draft Recommendations. Traffic counts and speed surveys were performed on Washington Boulevard which shows it has a current average daily traffic between 7,600 to 9,800 vehicles with an average speed of about 25 mph and an 85% speed of 30.7 mph. Based upon CMAP's projections of traffic diverting from Madison, Washington Boulevard is estimated to have an additional 400-1,300 vehicles per day due to the proposed road diet. The additional of 400-1,300 cars per day represents an increase in traffic on Washington of roughly 5%-14%. In general, the focus of the traffic study on Washington was to make improvements to address safety concerns at crossings near schools and ensure Washington can convey cars efficiently to minimize backups. Washington Boulevard is an unmarked State Highway so any recommendations for changes would have to be approved by IDOT prior to implementing.

Recommended improvements on Washington Boulevard include bump outs, enhanced crosswalks, at the unprotected school crossings at Humphrey, Cuyler, Scoville, and Kenilworth, including pedestrian activated flashing beacons at the official crossings sat Kenilworth and Humphrey. The study recommends geometric improvements to add dedicated left turn bays for Washington at Oak Park Avenue which will require acquiring right-of-way and loss of on-street parking in the immediate vicinity. The study also includes recommendations for improved pavement markings at the bicycle boulevard crossings at Kenilworth, Scoville, and Lombard Avenues as well as evaluating traffic signal timing at Wisconsin and Home Avenues.

These recommendations are explained in greater detail in the Washington Boulevard section of the report.

Summary of North-South Roads at Madison Street Draft Recommendations. The traffic calming study also evaluated traffic on north-south streets that intersect Madison and are not controlled by traffic signals. Traffic data was collected on many of the north-south residential streets near Madison's signalized intersections. The study is focusing on side streets near the Madison traffic signals because this is where drivers may choose to divert from Madison if the queues are too long or they cannot clear a signal in one cycle. The study evaluates a number of treatments to calm traffic, enhance pedestrian safety, and reduce traffic volume on the north-south roads such as intersection curb extensions, additional signage/pavement treatments, hourly no turn restrictions, pinch points or chockers at mid-block or at the alleys, and including potential diverters or cul de sacs.

Following construction of the proposed road diet project and after drivers settle into normal behaviors, traffic data collection should be collected to determine the actual traffic impacts from the road diet. Final selection of traffic calming on side streets should be based on these actual observed conditions.

These recommendations are explained in greater detail in the North-South Roads at Madison Street section of the report.

NEXT STEPS. THIS DRAFT DOCUMENT WILL BE REVIEWED BY VILLAGE THEN SHARED WITH STAKEHOLDERS TO SEEK THEIR INPUT. THE COMMENTS WILL THEN BE ANALYZED BY THE DESIGN TEAM, AND THE REPORT WILL BE SUBMITTED WITH FINALIZE RECOMMENDATION.

GENERAL DISCUSSION

Existing Traffic Daily Traffic Counts and Speed Surveys

To understand the existing traffic conditions and to establish baseline conditions, daily traffic counts and speed surveys were performed as follows:

Daily traffic counts and speed surveys were performed at one location along Washington Boulevard and one location along Jackson Boulevard in October 2016 and at three locations along each road in October 2018.

Daily traffic counts and speed surveys were performed at 12 locations along the local north-south roads that intersect Madison Street. The traffic counts were conducted along the first block north or south of Madison Street.

Figure 1 and Figure 2 illustrate the existing traffic counts.

Purposes and Types of Traffic Calming Measures and Devices

Traffic calming is defined as the installation of measures and/or devices designed to reduce traffic speeds and/or traffic volumes in the interest of road safety, livability, and other public purposes. The primary purposes of traffic calming measures/devices are as follows:

To reduce speed/volume of traffic at key locations by increasing motorist awareness and/or restricting traffic flow.

To enhance overall safety by better organizing the access and circulation of all modes of transportation.

Traffic calming measures/devices have many different forms and can be implemented incrementally from those with lower construction costs and reduced design, coordination, and implementation efforts to those with higher construction costs and greater design, coordination, and implementation efforts. The following summarizes the two general traffic calming categories:

- *Non-Physical Measures/Devices* generally provide a non-invasive form of traffic calming that are inexpensive and easy to implement, and that can also be easily removed if the measure/device is unsuccessful. As such, these measures/devices are typically implemented before physical measures. Non-physical traffic calming measures include education, community involvement, enforcement, and signage and striping.
- *Physical Measures/Devices* consist of physical modifications to the roadway design and are costlier to implement and require more design, coordination, and implementation efforts. As such, physical measures/devices are often only considered after non-physical measures/devices have been determined to be unsuccessful. Physical measures/devices include horizontal deflections and vertical deflections.

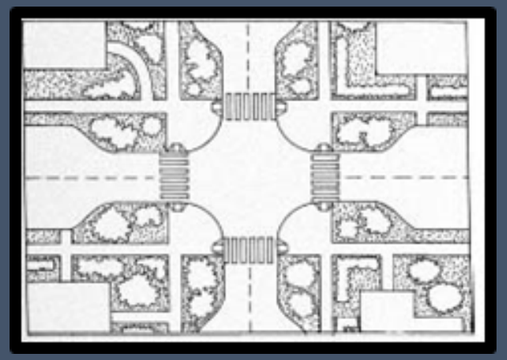
Traffic Calming Toolbox to be Considered for the Study

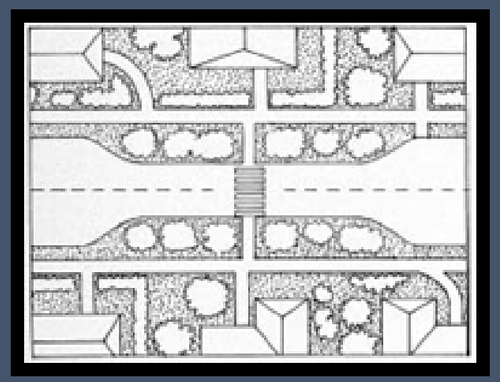
The below tables (**Table 1** and **Table 2**) summarizes the traffic calming devices and measures that will be considered. The measures and devices are similar to those in the Village of Oak Park's Traffic Calming Toolbox.

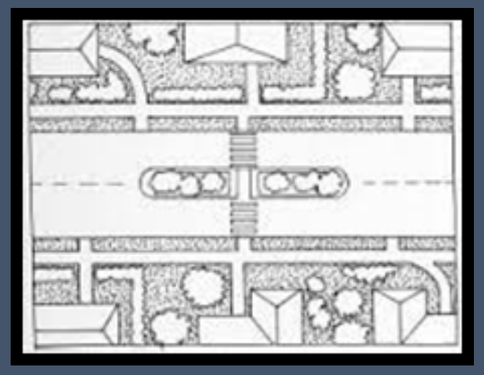
Table 1 NON-PHYSICAL MEASURES/DEVICES

	***Education and Community Involvement Efforts*** include yard sign campaigns, radar gun loan programs, and self-policing that further educate/inform both residents and motorists.
	***Speed Limit Signage/Markings*** include oversized speed limit signs, yellow-framed speed limit signs, optical speed bars, and/or speed limit pavement markings that further reinforce speed limits.
	***Speed Monitors and Enforcement*** includes portable/permanent speed monitors, targeted police enforcement, and patrol decoys that further reinforce/enforce speed limits.
	***Additional and/or Enhanced Signage*** includes in street pedestrian signs, school and park zones, LED enhanced signs, and rapid flashing beacon signs, all of which provide additional warning to motorists and/or further alert motorists.
	***Pavement Markings*** primarily include high visibility crosswalks to enhance pedestrian safety. Edge lines, parking boxes, center lines, and turn lanes lines are also included. These markings provide the perception of a narrower roadway.
	***Sharrow Markings and Bike Lanes*** reinforce the shared-lane environment of posted bicycle routes and provide the perception of a narrower roadway.
	***Traffic Flow Restrictions and Modifications (Signage)*** include time-based turn restrictions, prohibition of specific movements to/from a road, and conversion to one-way operations which help to mitigate traffic volume.

Table 2 PHYSICAL MEASURES/DEVICES



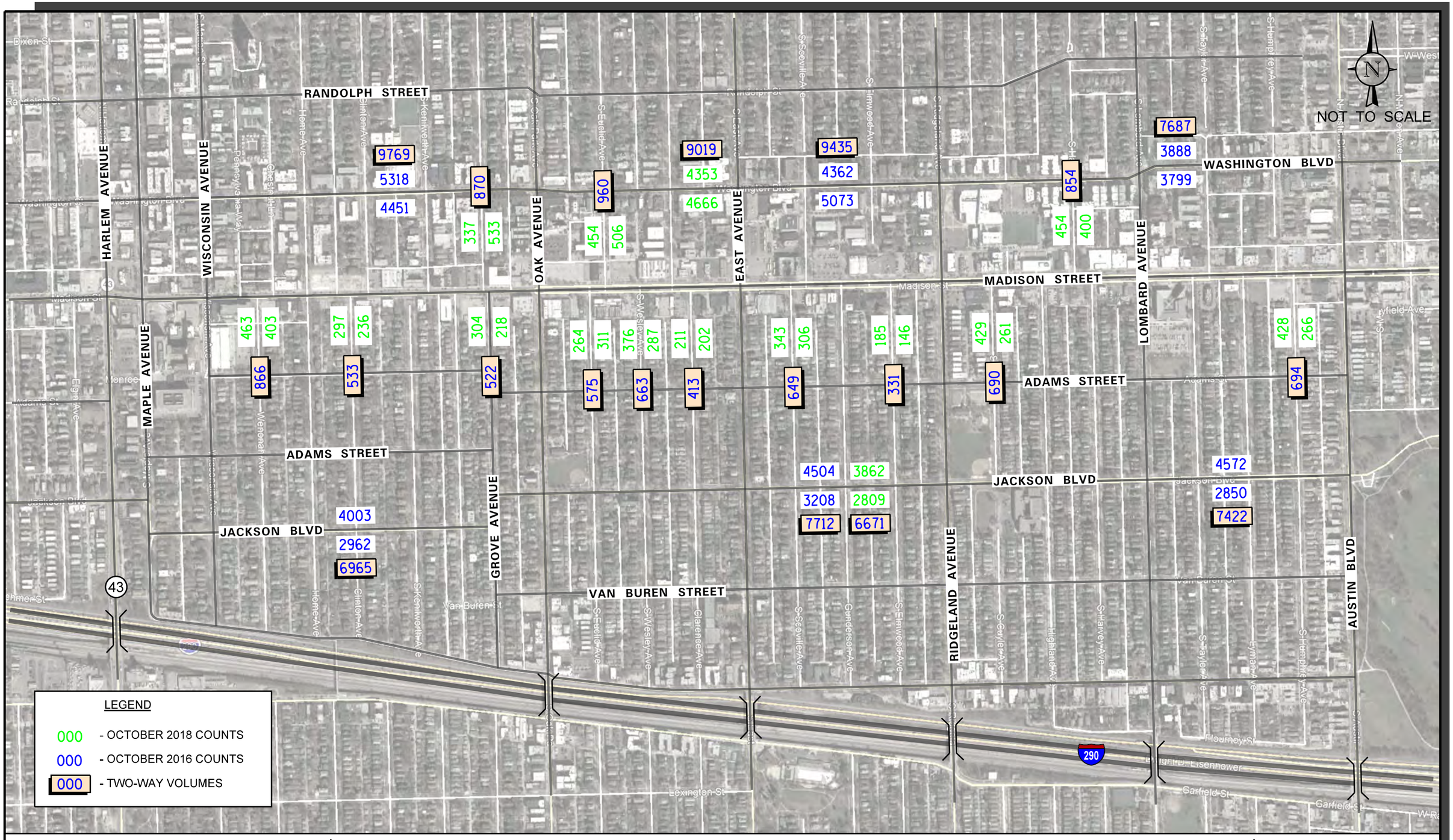




- **Intersection curb extensions**
- **Midblock chockers (curb extensions)**
- **Median islands**

- **Brick intersections**
- **Brick crosswalks**
- **Rumble Strip**

- **Median Barrier**
- **Forced Turn Island**
- **Partial or full cul-de-sacs**



JACKSON, WASHINGTON AND NORTH-SOUTH ROAD EVALUATION
OAK PARK, ILLINOIS

EXISTING DAILY TRAFFIC COUNTS

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 18-227 Figure: 1

FIGURE 1: EXISTING DAILY TRAFFIC COUNTS

JACKSON, WASHINGTON AND NORTH-SOUTH ROAD EVALUATION
OAK PARK, ILLINOIS

AVERAGE AND 85TH PERCENTILE SPEEDS

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 18-227 Figure: 2

FIGURE 2: AVERAGE AND 85TH PERCENTILE SPEEDS

Jackson Boulevard Draft Potential Traffic Calming Improvements

Jackson Boulevard is under the Village's jurisdiction, which would allow for a streamlined design process except at the Harlem Avenue and Ridgeland Avenue intersections, which require coordination/permits from the Illinois Department of Transportation (IDOT). Coordination with Forest Park and Chicago may also be required for improvements at Harlem Avenue and Austin Boulevard.

Jackson Boulevard is the second east-west road south of Madison Street and the first through corridor north of I-290. The corridor contains two parks, one school, many single-family homes, and a few shops/stores and churches. The posted speed limit is 25 mph (with 20 mph school zones) and there is generally one lane of traffic in each direction flanked by parallel parking stalls. The corridor is a shared lane bicycle route. There is no bus route along Jackson Boulevard and it is not a truck route.

The narrow roadway and mature trees provide traffic calming. The west third of the corridor has dedicated bike lanes and bump-outs. The eastern third of the corridor has landscaped medians. This report's recommendation, as seen in **Figure 3**, is to calm the flow of traffic on Jackson Boulevard and improve pedestrian safety. Most signalized intersections should have left-turn lanes/signals, and traffic signal timing should be coordinated through the corridor and with the adjacent signals. The west and east thirds should include non-physical measures/devices such as signage and upgraded crosswalk markings. The middle third (Oak Park Ave to Ridgeland Ave) should include the physical measure of bump-outs into Jackson Boulevard and the side roads as well as signage, bike lane/crosswalk pavement markings, and increased parking setback. Brick intersections could also be installed.

The proposed measures are independent of Madison Street diversions and should be implemented as a single project, incorporated into the next milling/resurfacing project affecting the corridor, or as a standalone traffic calming project. **Figure 4** shows Google images of the corridor.

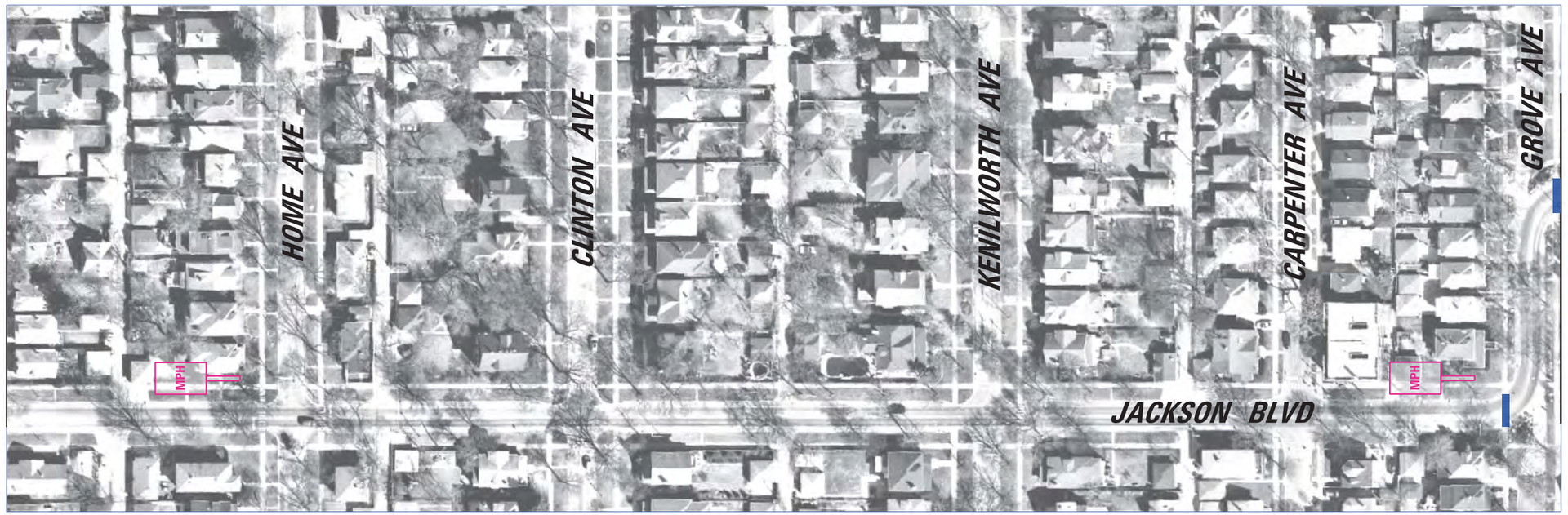
The following Table (Table 3) summarizes recommendation ranking and relative construction costs. Items 1 through 9 are appropriate for consideration along the Jackson Boulevard corridor. Items 10 through "N/A" are too restrictive or not appropriate for consideration. Items 3 and 6 should be considered as additional measures to Item 2 based on Stakeholder input.

Table 3

Calming Measure (per location)	Rank	Benefit	Drawback	Install Cost *	Yearly Maintenance Cost
Crosswalk Markings	1	Clearly understood, cheap to install, reversible.	Maintenance.	$1,300	$260
Signage	2	Clearly understood, cheap to install, reversible.	Over-clutter parkways.	$400	$40
Speed Display Sign	3	Clearly understood, cheap to install, reversible.	Over-clutter parkways.	$2,500	$250
Bump-out	4	Decreased pedestrian crossing distance. Physically highlights intersections. Minimal increased cost over standard corner during mill/resurface projects.	Costly relative to other calming measures. Not easily reversible.	$53,200	$2,660
Provide dedicated bike lanes	5	Narrows lanes, provides dedicated space to bicycles.	Maintenance of markings. May reduce parking.	$2,000	$400
Sign board at CL stripe	6	In driver's direct line of sight	Easily run-over.	$200	$200
Increase Parking Setback	7	Provides increase sight lines.	Loss of parking.	$100	$10
Add Left Turn Lane + signal arrow	8	Provides dedicated space to turners, allowing through traffic easy path of travel.	Reduced parking. May make bike lane into shared lane.	$13,000	$867
Brick Intersection	9	Provides increased audible feedback to drivers/pedestrians while not affecting ADA. Provides tactile feedback to drives.	May become non-ADA compliant if not properly maintained. Requires additional effort during snow removal.	$48,000	$4,800
Add Rt Turn Lane	10	Provides dedicated space to turners, allowing through traffic easy path of travel.	Reduced parking. May make bike lane into shared lane.	$3,000	$200
Brick Crosswalk	11	Provides audible feedback to drivers/pedestrians while not affecting ADA. Provides tactile feedback to drives.	May become non-ADA compliant if not properly maintained. Requires additional effort during snow removal.	$36,000	$3,600
Rapid Flashing Beacon Signs	12	Alerts vehicles to pedestrian presence.	May not be activated by pedestrians. Drives may not look for pedestrians if beacon is not flashing.	$22,000	$1,100
Planted Medians	14	Provides buffer between oncoming vehicles. Physically narrows roadway.	Costly relative to other calming measures. Not easily reversible. Limits access to drives/alleys.	$52,800	$2,640
Pedestrian Refuge Island	13	Allows segmented crossing.	May be precluded by left turn lanes and by truck turning space requirements.	$13,500	$675
Turn Restrictions via Signage	15	Clearly understood, cheap to install, reversible.	Full time invasive solution to peak hour issue.	$1,000	$100
Partial Cul-de-Sac on side road	16	Physically prevents most undesired traffic diversions.	Full time invasive solution to peak hour issue. Parking impacts.	$31,700	$1,585
Full Cul-de-Sac on side road	17	Physically prevents all undesired traffic diversions.	Full time invasive solution to peak hour issue. Increased emergency response time. Parking impacts.	$52,800	$2,640
Brick Street	N/A	Provides audible/tactile feedback to drivers.	Extremely costly to install and maintain relative to other calming measures. May result in diversion.	---	---
Speed Table	N/A	Not allowed on study roadways due to emergency response needs			

* Order-of-Magnitude construction cost for 2019 install. Highly dependent on construction project scale. Does not include construction project ancillary costs (maintenance of traffic, erosion control, etc). Does not include Engineering (Design or Construction). Assumes typical conditions, no drainage improvements, environmental issues, or utility conflicts.

MATCH LINE A



MATCH LINE C

MATCH LINE D

0 60' 120'
1" = 60'

LEGEND

- BUMPOUTS
- BIKE LANE
- CROSSWALK
- MPH — SPEED LIMIT SIGN
- PAVERS
- LEFT TURN LANE
- SIGNALIZED INTERSECTION

TITLE: DRAFT CONCEPT PROPOSED TRAFFIC CALMING OPTIONS JACKSON BLVD.

PROJ. NO.
DATE:
SHEET 1 OF 3
DRAWING NO.

DSGN.
DWN.
CHKD.
SCALE: 60'
PLOT DATE: 11/7/2018
CAD USER: ealdorczuk
FILE: Dir_Jackson_180438.dgn
MODEL: Default

CLIENT: Oak Park

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

ealdorczuk

FILE NAME N:\OAKPARK\180438\Civil\Exhibits\EXH_Jackson_180438_panell.dgn

TITLE: DRAFT CONCEPT PROPOSED TRAFFIC CALMING OPTIONS JACKSON BLVD.

PROJ. NO.
DATE:
SHEET 2 OF 3
DRAWING NO.

DSGN.
DWN.
CHKD.
SCALE: 60'
PLOT DATE: 11/7/2018
CAD USER: ealdorczuk
FILE: [N:\...\Exh_Jackson_180438_panel2.dgn]
MODEL: Default

CLIENT: Oak Park

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

ealdorczuk

FILE NAME N:\OAKPARK\180438\Civil\Exhibits\EXH_Jackson_180438_panel2.dgn

0 60' 120'
1" = 60'

TITLE: DRAFT CONCEPT PROPOSED TRAFFIC CALMING OPTIONS JACKSON BLVD.

PROJ. NO.
DATE:
SHEET 3 OF 3
DRAWING NO.

DSGN.
DWN.
CHKD.
SCALE: 60'
PLOT DATE: 11/7/2018
CAD USER: eaidarczuk
FILE: [N:\...\Jackson_180438.dgn]
MODEL: Default

CLIENT: Oak Park

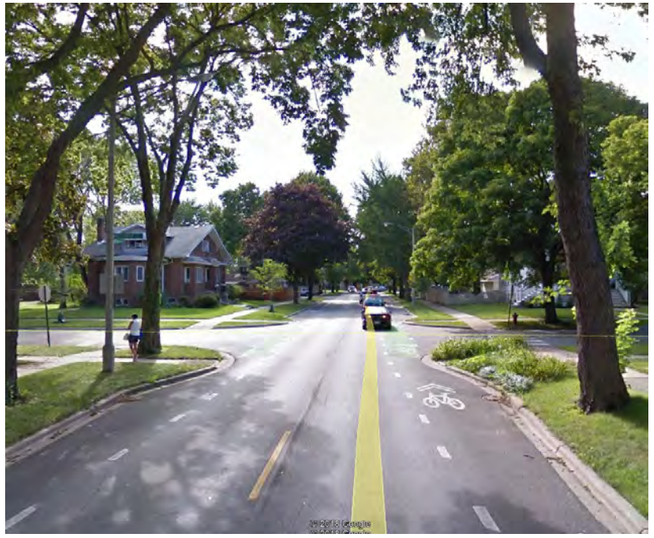
CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

eaidarczuk

FILE NAME N:\OAKPARK\180438\Civil\Exhibits\EXH_Jackson_180438_panel3.dgn

FIGURE 4: GOOGLE PHOTOS OF CORRIDOR

Jackson Boulevard and Maple Avenue (North Leg), looking North



Jackson Boulevard and Wisconsin Avenue, looking West

Jackson Boulevard and Maple Avenue (South Leg), looking South

Jackson Boulevard and Wenonah Avenue, looking West

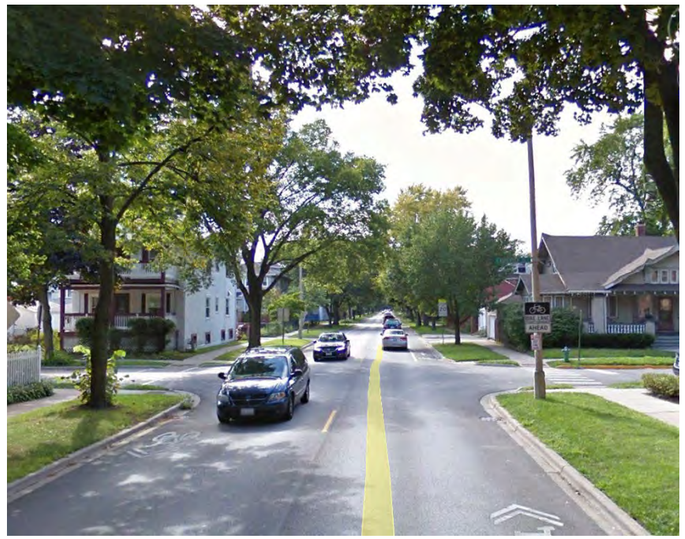
IMAGES: GOOGLE EARTH

FIGURE 4: GOOGLE PHOTOS OF CORRIDOR

Jackson Boulevard and Home Avenue, looking West

Jackson Boulevard and Kenilworth Avenue, looking West

Jackson Boulevard and Clinton Avenue, looking West

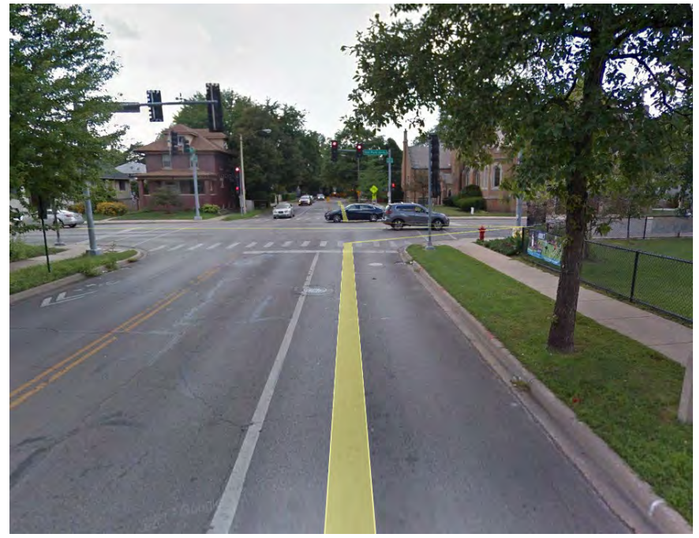


Jackson Boulevard and Carpenter Avenue, looking West

IMAGES: GOOGLE EARTH

FIGURE 4: GOOGLE PHOTOS OF CORRIDOR

Jackson Boulevard and Grove Avenue (South Leg), looking South



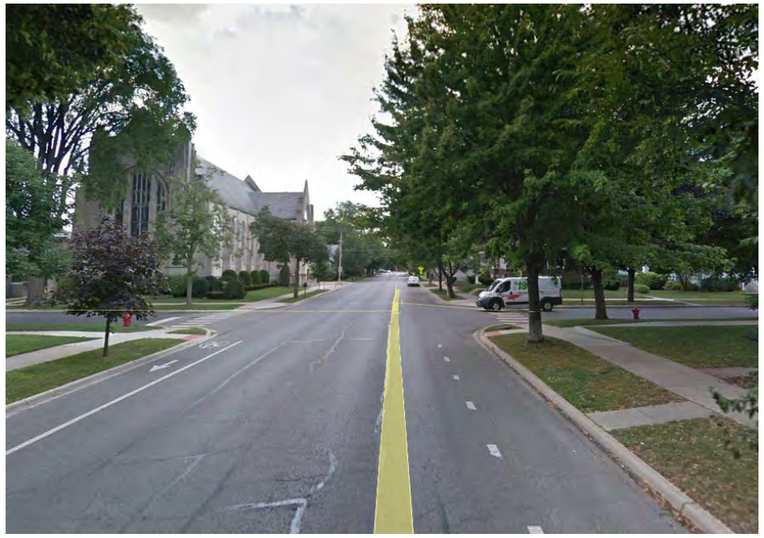
Jackson Boulevard and Grove Avenue, looking West

Jackson Boulevard and Grove Avenue (North Leg), looking North

Jackson Boulevard and Euclid Avenue, looking West

IMAGES: GOOGLE EARTH

FIGURE 4: GOOGLE PHOTOS OF CORRIDOR



Jackson Boulevard and Wesley Avenue, looking West

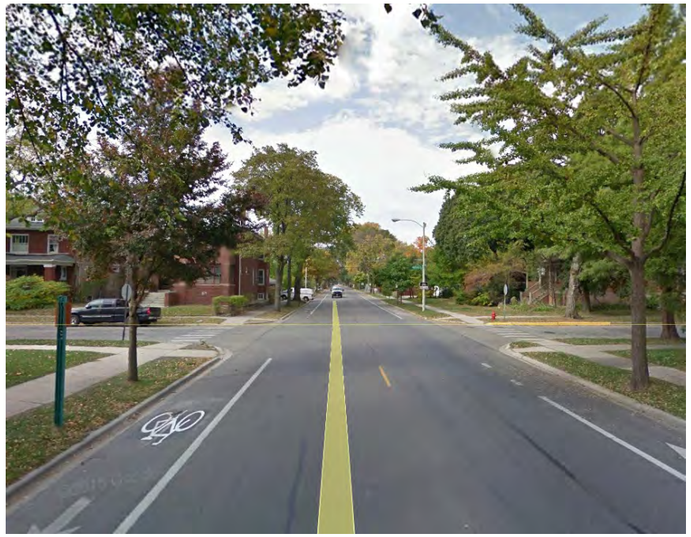
Jackson Boulevard and East Avenue, looking West

Jackson Boulevard and Clarence Avenue, looking West

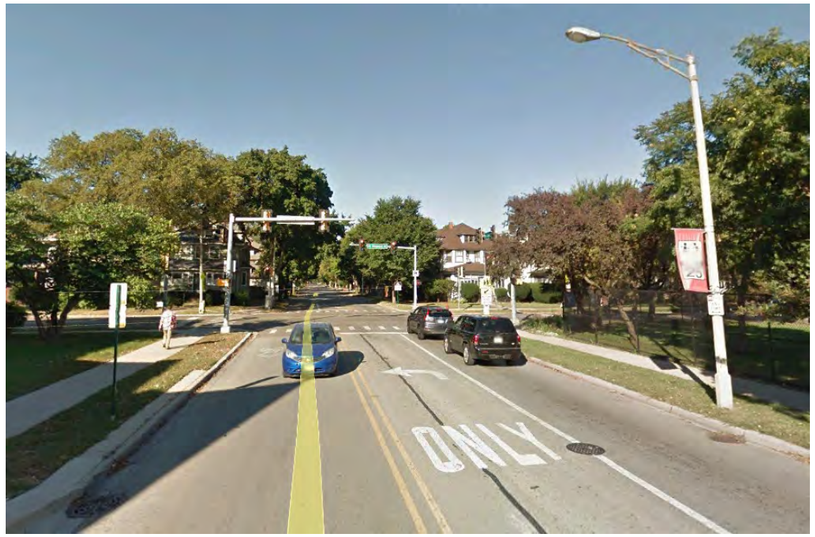
Jackson Boulevard and Scoville Avenue, looking West

IMAGES: GOOGLE EARTH

FIGURE 4: GOOGLE PHOTOS OF CORRIDOR



Jackson Boulevard and Gunderson Avenue, looking West



Jackson Boulevard and Ridgeland Avenue, looking West

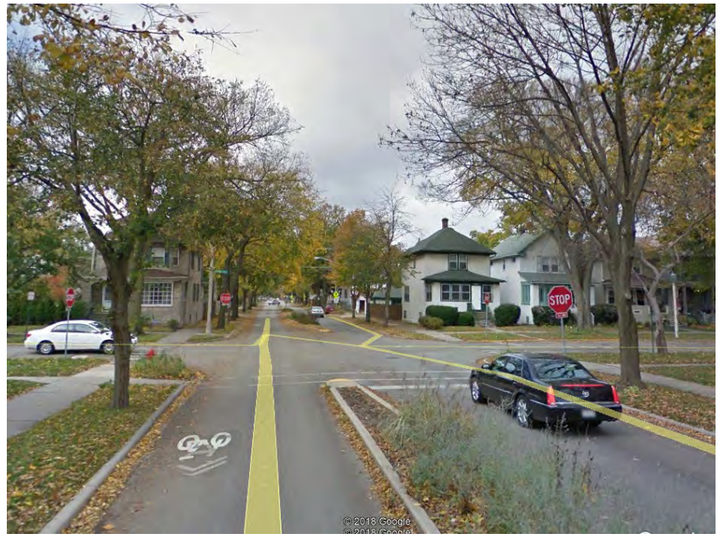
Jackson Boulevard and Elmwood Avenue, looking West

Jackson Boulevard and Cuyler Avenue, looking West

IMAGES: GOOGLE EARTH

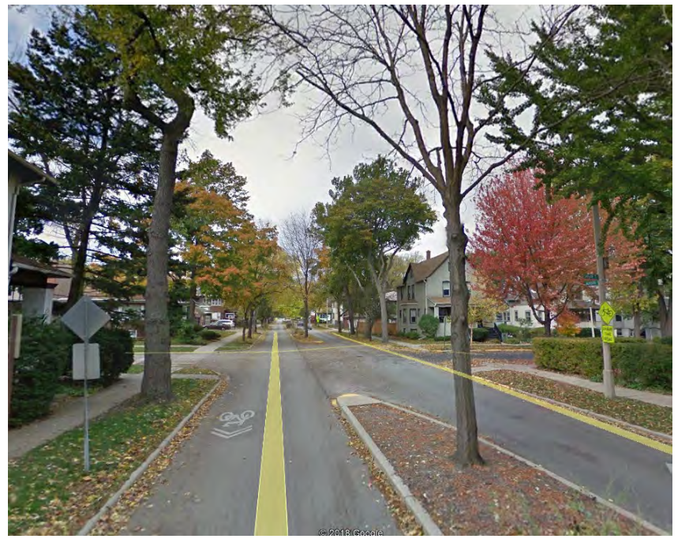
FIGURE 4: GOOGLE PHOTOS OF CORRIDOR

Jackson Boulevard and Highland Avenue, looking West



Jackson Boulevard and Lombard Avenue, looking West

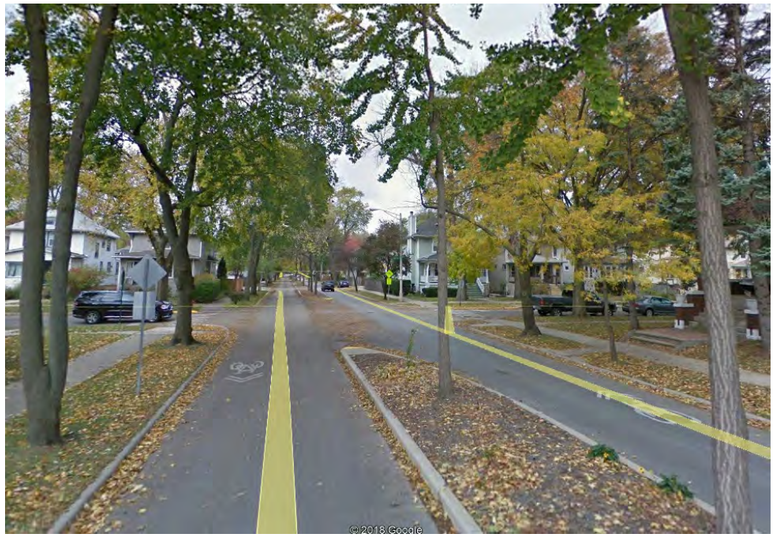
Jackson Boulevard and Harvey Avenue, looking West



Jackson Boulevard and Taylor Avenue, looking West

IMAGES: GOOGLE EARTH

FIGURE 4: GOOGLE PHOTOS OF CORRIDOR



Jackson Boulevard and Lyman Avenue, looking West

Jackson Boulevard and Humphrey Avenue, looking West

IMAGES: GOOGLE EARTH

Washington Boulevard Draft Potential Traffic Calming Improvements

Washington Boulevard is under Illinois Department of Transportation (IDOT) jurisdiction. The Village can request improvements be made, but IDOT must approve the improvements. IDOT generally is more limited than the Village in the type of improvements it will allow. IDOT's process for improvements is more extensive than the Village's. Coordination with Forest Park and Chicago may also be required for improvements at Harlem Avenue and Austin Boulevard.

Washington Boulevard is the first east-west road north of Madison Street. The corridor contains four schools, many apartment buildings, several single-family homes, and a few shops/stores and churches. The posted speed limit is 30 mph (with 20 mph school zones) and there is generally one lane of traffic in each direction flanked by parallel parking stalls. The corridor is a shared lane bicycle route. There is no bus route along Washington Boulevard. It isn't a truck route.

The narrow roadway and mature trees provide traffic calming. Several corners already have traffic calming measures. This report's recommendation, as seen in **Figure 5**, is to improve the flow of traffic on Washington Boulevard and improve pedestrian safety. Signalized intersections should have left-turn lanes/signals, and traffic signal timing should be coordinated through the corridor and with the adjacent signals. Bump-outs into Washington Boulevard and the side roads should be added near the schools. Signage, pavement markings, and increased parking setback are also recommended. Bike Boulevard crossings at Kenilworth, Scoville and Lombard should also be intensified with signage and pavement markings.

The proposed measures are independent of Madison Street diversions and should be implemented as a single project, incorporated into the next milling/resurfacing project, or as a standalone traffic calming project. The recommended improvements at Oak Park Avenue require land acquisition, which will draw out the approval process. **Figure 6** shows Google images of the corridor.

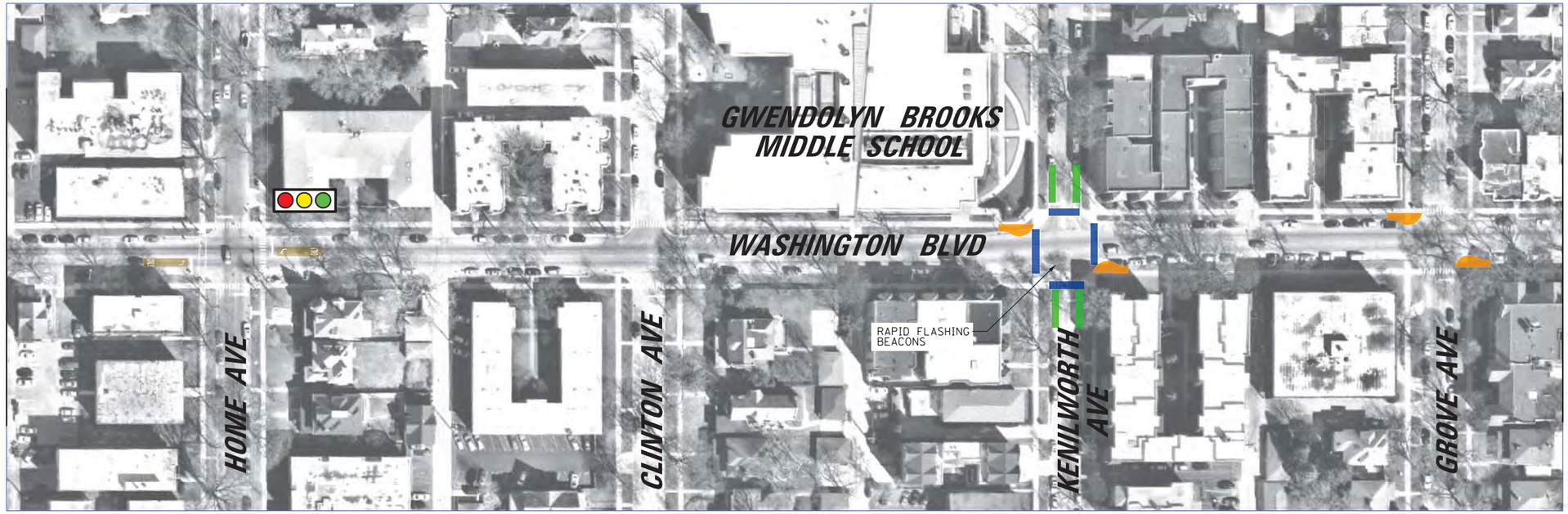
The following Table (Table 4) summarizes recommendation ranking and relative construction costs. Items 1 through 12 are appropriate for consideration along the Washington Boulevard corridor. Items 13through "N/A" are too restrictive or not appropriate for consideration. Items 3 and 6 should be considered as additional measures to Item 2 based on Stakeholder input.

Table 4

Calming Measure (per location)	Rank	Benefit	Drawback	Install Cost *	Yearly Maintenance Cost
Crosswalk Markings	1	Clearly understood, cheap to install, reversible.	Maintenance.	$1,300	$260
Signage	2	Clearly understood, cheap to install, reversible.	Over-clutter parkways.	$400	$40
Speed Display Sign	3	Clearly understood, cheap to install, reversible.	Over-clutter parkways.	$2,500	$250
Bump-out	4	Decreased pedestrian crossing distance. Physically highlights intersections. Minimal increased cost over standard corner during mill/resurface projects.	Costly relative to other calming measures. Not easily reversible.	$53,200	$2,660
Provide dedicated bike lanes	5	Narrows lanes, provides dedicated space to bicycles.	Maintenance of markings. May reduce parking.	$2,000	$400
Sign board at CL stripe	6	In driver's direct line of sight	Easily run-over.	$200	$200
Increase Parking Setback	7	Provides increase sight lines.	Loss of parking.	$100	$10
Add Left Turn Lane + signal arrow	8	Provides dedicated space to turners, allowing through traffic easy path of travel.	Reduced parking. May make bike lane into shared lane.	$13,000	$867
Brick Intersection	9	Provides increased audible feedback to drivers/pedestrians while not affecting ADA. Provides tactile feedback to drives.	May become non-ADA compliant if not properly maintained. Requires additional effort during snow removal.	$48,000	$4,800
Add Rt Turn Lane	10	Provides dedicated space to turners, allowing through traffic easy path of travel.	Reduced parking. May make bike lane into shared lane.	$3,000	$200
Brick Crosswalk	11	Provides audible feedback to drivers/pedestrians while not affecting ADA. Provides tactile feedback to drives.	May become non-ADA compliant if not properly maintained. Requires additional effort during snow removal.	$36,000	$3,600
Rapid Flashing Beacon Signs	12	Alerts vehicles to pedestrian presence.	May not be activated by pedestrians. Drives may not look for pedestrians if beacon is not flashing.	$22,000	$1,100
Planted Medians	14	Provides buffer between oncoming vehicles. Physically narrows roadway.	Costly relative to other calming measures. Not easily reversible. Limits access to drives/alleys.	$52,800	$2,640
Pedestrian Refuge Island	13	Allows segmented crossing.	May be precluded by left turn lanes and by truck turning space requirements.	$13,500	$675
Turn Restrictions via Signage	15	Clearly understood, cheap to install, reversible.	Full time invasive solution to peak hour issue.	$1,000	$100
Partial Cul-de-Sac on side road	16	Physically prevents most undesired traffic diversions.	Full time invasive solution to peak hour issue. Parking impacts.	$31,700	$1,585
Full Cul-de-Sac on side road	17	Physically prevents all undesired traffic diversions.	Full time invasive solution to peak hour issue. Increased emergency response time. Parking impacts.	$52,800	$2,640
Speed Limit Reduced 25 mph	18	Increased distance to accommodate reactions to hazards.	Speed survey does not indicate speed is generally an issue.	$400	$40
Brick Street	N/A	Provides audible/tactile feedback to drivers.	Extremely costly to install and maintain relative to other calming measures. May result in diversion.	---	---
Speed Table	N/A	Not allowed on study roadways due to emergency response needs			

* Order-of-Magnitude construction cost for 2019 install. Highly dependent on construction project scale. Does not include construction project ancillary costs (maintenance of traffic, erosion control, etc). Does not include Engineering (Design or Construction). Assumes typical conditions, no drainage improvements, environmental issues, or utility conflicts.

MATCH LINE A



MATCH LINE C

MATCH LINE D

N

0 60' 120'

1" = 60'

LEGEND

- BUMPOUTS
- BIKE LANE
- CROSSWALK
- PARKING SPACES REMOVAL
- LEFT TURN LANE
- RIGHT TURN LANE
- SIGNALIZED INTERSECTION

TITLE: DRAFT CONCEPT
PROPOSED TRAFFIC CALMING OPTIONS
WASHINGTON BLVD.

PROJ. NO.
DATE:
SHEET 1 OF 3
DRAWING NO.

DSGN.
DWN.
CHKD.
SCALE: 60'
PLOT DATE: 11/7/2018
CAD USER: eskorczuk
FILE: I:\Washington_180438_panel1.dgn
MODEL: Default

CLIENT: Oak Park

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

eskorczuk

FILE NAME N:\OAKPARK\180438\Civil\Exhibits\EXH_Washington_180438_panel1.dgn

DESIGN:
DWN.
CHKD.
SCALE: 60'
PLOT DATE: 11/7/2018
CAD USER: eaidarczuk
FILE: EXH_Washington_180438_panel2
MODEL: Default

TITLE:

DRAFT CONCEPT
PROPOSED TRAFFIC CALMING OPTIONS
WASHINGTON BLVD.

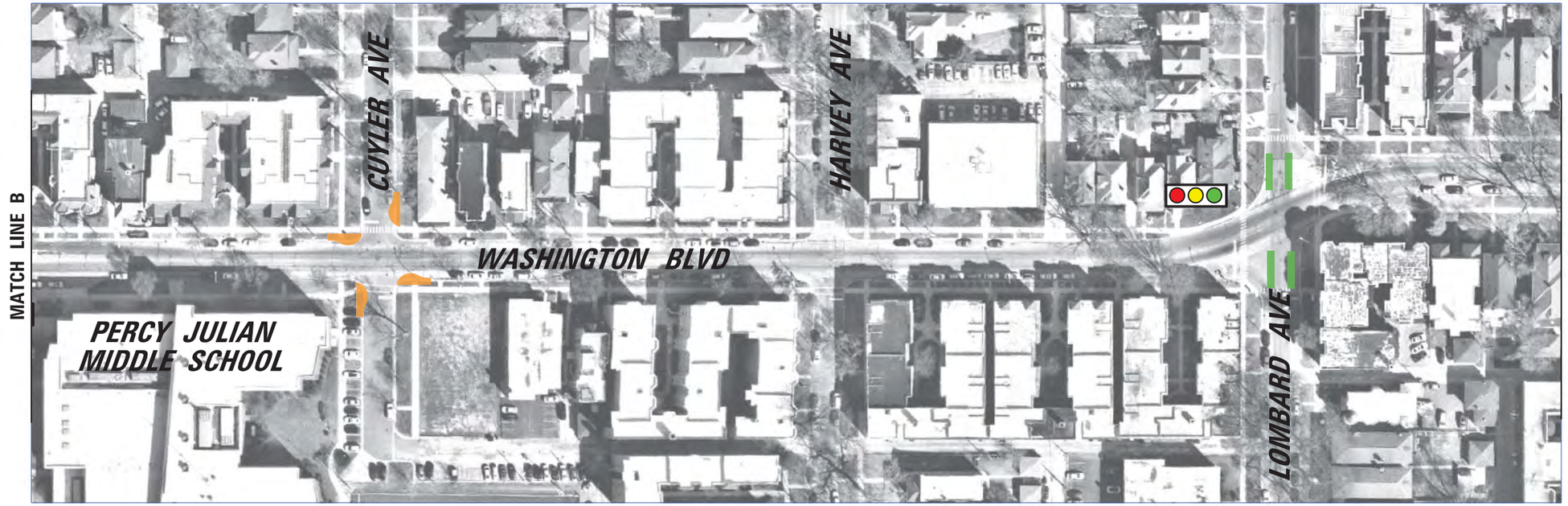
PROJ. NO.
DATE:
SHEET 2 OF 3
DRAWING NO.

CLIENT: Oak Park

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

eaidarczuk

FILE NAME N:\OAKPARK\180438\Civil\Exhibits\EXH_Washington_180438_panel2.dgn



0 60' 120'
1" = 60'

LEGEND
- BUMPOUTS
- BIKE LANE
- CROSSWALK
- PARKING SPACES REMOVAL
- LEFT TURN LANE
- RIGHT TURN LANE
- SIGNALIZED INTERSECTION

TITLE: DRAFT CONCEPT
PROPOSED TRAFFIC CALMING OPTIONS
WASHINGTON BLVD.

PROJ. NO.
DATE:
SHEET 3 OF 3
DRAWING NO.

DSGN.
DWN.
CHKD.
SCALE: 60'
PLOT DATE: 11/7/2018
CAD USER: eslorczuk
FILE: EXH_Washington_I80438_panel3
MODEL: Default

CLIENT: Oak Park

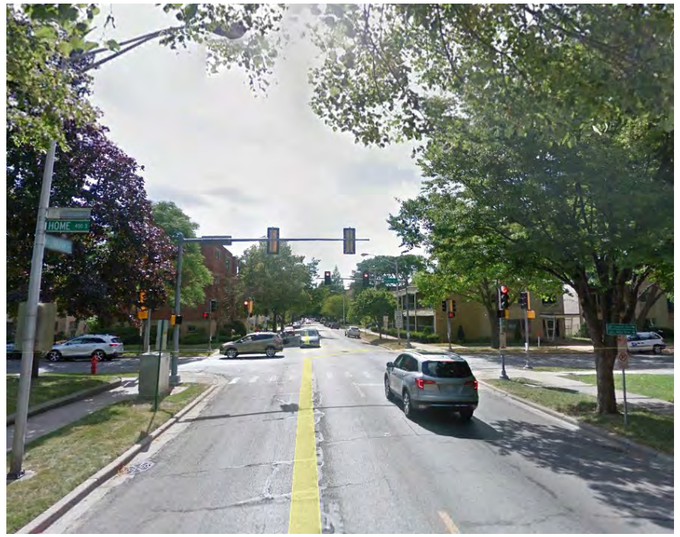
CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

eslorczuk

FILE NAME N:\OAKPARK\180438\Civil\Exhibits\EXH_Washington_180438_panel3.dgn

FIGURE 6: GOOGLE PHOTOS OF CORRIDOR

Washington Boulevard At Maple Avenue, Looking West



Washington Boulevard At Home Avenue, Looking West

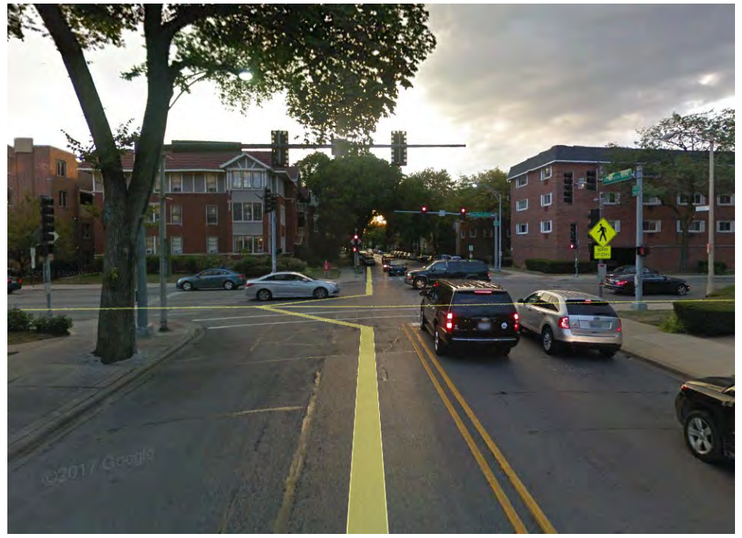
Washington Boulevard At Wisconsin Avenue, Looking West

Washington Boulevard At Clinton Avenue, Looking West

IMAGES: GOOGLE EARTH

FIGURE 6: GOOGLE PHOTOS OF CORRIDOR

Washington Boulevard At Kenilworth Avenue, Looking West



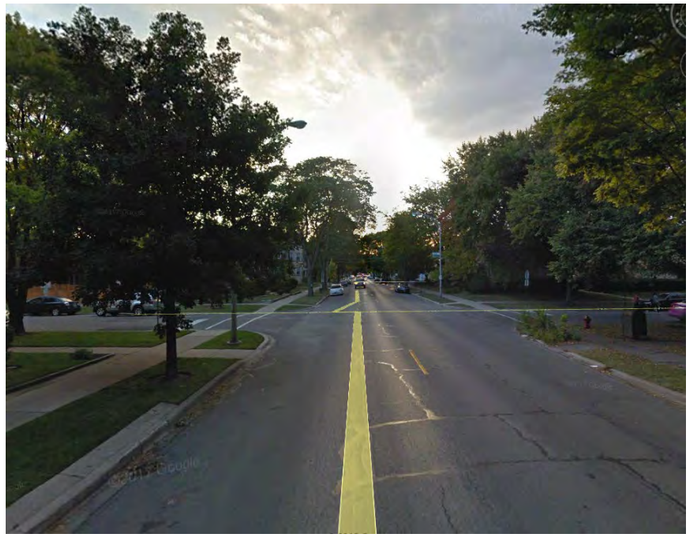
Washington Boulevard At Oak Park Avenue, Looking West

Washington Boulevard At Grove Avenue, Looking West

Washington Boulevard At Euclid Avenue, Looking West

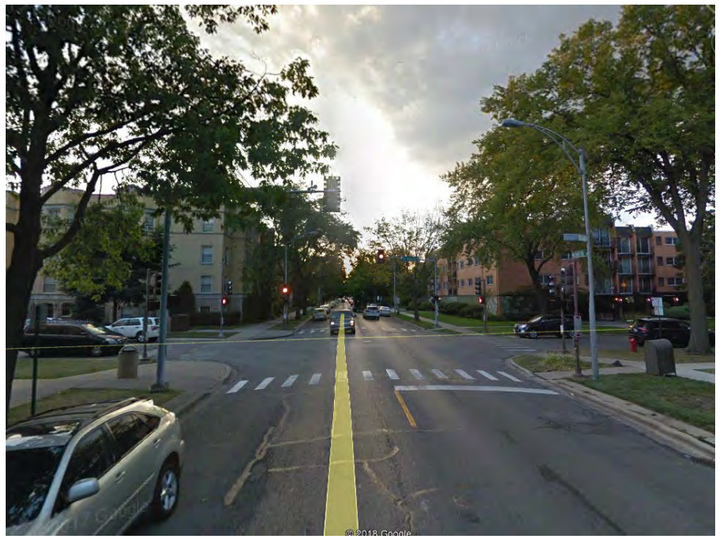
IMAGES: GOOGLE EARTH

FIGURE 6: GOOGLE PHOTOS OF CORRIDOR

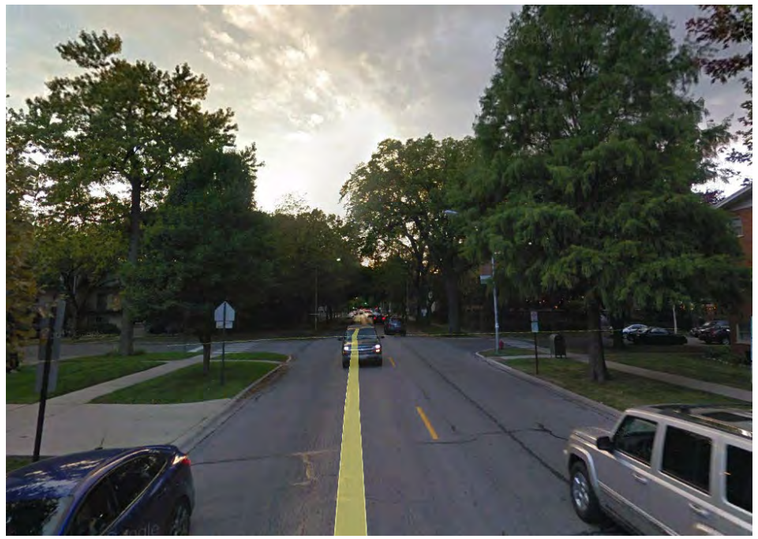


Washington Boulevard At Wesley Avenue, Looking West

Washington Boulevard At Scoville Avenue, Looking West



Washington Boulevard At East Avenue, Looking West



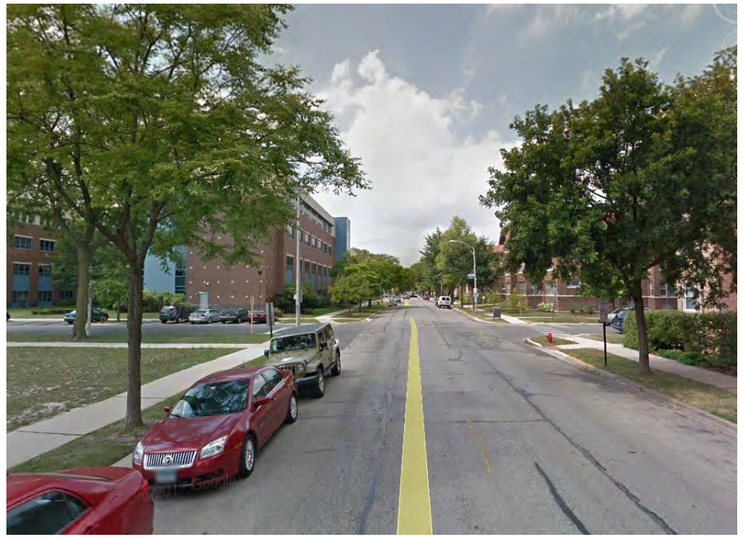
Washington Boulevard At Elmwood Avenue, Looking West

IMAGES: GOOGLE EARTH

FIGURE 6: GOOGLE PHOTOS OF CORRIDOR

Washington Boulevard At Ridgeland Avenue, Looking West

Washington Boulevard At Harvey Avenue, Looking West



Washington Boulevard At Cuyler Avenue, Looking West

Washington Boulevard At Lombard Avenue, Looking West

IMAGES: GOOGLE EARTH

FIGURE 6: GOOGLE PHOTOS OF CORRIDOR

Washington Blvd at Taylor Ave. Looking West.

Washington Blvd at Humphrey Avenue, looking West.

IMAGES: GOOGLE EARTH

North-South Roads at Madison Street Draft Potential Traffic Calming Improvements

Madison Street and all side roads, except Harlem Avenue and Ridgeland Avenue, are under the Village's jurisdiction, which would allow for a streamlined design process. Improvements at the Harlem Avenue and Ridgeland Avenue intersections will require coordination/permits from IDOT.

Madison Street is poised for dramatic change. The Village Board has approved a road diet and bike lane improvement project that will increase the walkability and bikeability of the corridor. Several recent and anticipated developments will aid in the creation of a more vibrant corridor. As these changes will affect the north-south side roads, it is vital that this report's recommendations are revisited as each development and each calming measure occurs along the corridor.

The local north-south roads that will most likely require traffic calming measures and devices will be the north-south roads closest to the signalized intersections, particularly the signalized intersections of Ridgeland Avenue, East Avenue, and Oak Park Avenue. This is due to the fact that these intersections are anticipated to have the greatest amount of queueing. Further, the north-south roads closest to the signalized intersections will likely require both non-physical and physical measures/devices. Depending on the length of the projected queues along Madison Street and the type of traffic calming measures implemented on adjacent north-south roads, it is anticipated that the other north-south roads will be candidates for traffic calming measures and devices, particularly non-physical measures/devices.

As Washington Boulevard is the first east-west road north of Madison Street, the calming measures on the north-south roads between Madison Street and Washington Boulevard must be reflective of the Washington Boulevard calming measures. Adams Street is the first road south of Madison Street (and the first road north of Jackson Boulevard); as such, it is anticipated that physical traffic calming measures could extend to the Adams Street intersections, and the non-physical measures could extend south of Adams Street (and be reflexive of the Jackson Boulevard calming measures).

The Madison Street traffic study and projections from the Chicago Metropolitan Area for Planning (CMAP) have indicated that the road diet may result in the diversion of Madison Street traffic to other east-west roads and potentially the north-south local, residential roads. As such, this section of the report examines the existing conditions along the north-south roads (those roads that do not have a signalized intersection with Madison Street) and develops traffic calming improvements to (1) better calm the traffic along these roads and/or (2) to enhance pedestrian and bicycle safety.

The need for the traffic calming improvements will be dependent on the extent of the Madison Street traffic diversion. Before any of these improvements are considered, follow-up traffic counts and speed surveys should be conducted a minimum of six months after the completion of the road diet to (1) quantify the impacts of the road diet and (2) determine the potential ramifications that the traffic calming improvements will have on the area roadway system and local access and circulation. Given the significant changes to the area roadway system and future development proposals, it is vital that the traffic calming improvements are revisited as each roadway improvement and development occurs along the corridor and in the area. The improvements can be incorporated into the next milling/resurfacing project affecting the north-south roads or as a standalone traffic calming project. Impacts to the next two roads should also be considered whenever a road is up for consideration for improvement.

North-South Roads Existing Conditions

The north-south roads are generally local, residential roads that have one lane in each direction with parking generally provided on both sides of the roads. At their respective intersections with Madison Street and Washington Boulevard, the north-south roads are under stop sign control. The intersections of the north-south roads with Adams Street are either under all-way stop sign control or under two-way stop sign control. All the north-south roads have a speed limit of 25 mph and are under the jurisdiction of the Village of Oak Park. Limited traffic calming is currently installed along the north-south roads for the north leg of Humphrey Avenue, the south leg of Kenilworth Avenue, and the north leg of Clinton Avenue all of which have full cul-de-sacs at Madison Street or at the public alleys.

Figure 1 illustrates the existing daily traffic volumes on 12 of the north-south roads and **Figure 2** illustrates the average and 85th percentile speeds on 12 of the north-south roads.

Evaluation of the Traffic Volumes and Speeds

A review of Figure 1 shows that the north-south roads have the following existing daily, two-way volumes:

- South of Madison Street, the north-south roads have daily, two-way traffic volumes that range between 331 and 866 vehicles with an average of 450 to 550 vehicles.
- North of Madison Street, the north-south roads have daily, two-way traffic volumes that range between 854 and 960 vehicles with an average of approximately 875 vehicles.

The traffic volumes along the north-south roads north of Madison Street are higher due to (1) the reduced number of through north-south roads north of Madison Street compared to south of Madison Street and (2) the fact that the north-south roads north of Madison Street generally serve higher density uses compare to the north-south roads south of Madison Street.

According to *Residential Streets*[1], local residential roads typically have a daily volume between 400 and 1,500 vehicles while residential collector roads typically have a daily volume exceeding 1,500 vehicles. All of the north-south roads have daily traffic volumes that are well within the local, residential road traffic volume range. The daily traffic volumes south of Madison Street are generally at the lower end of the local, residential road traffic volume range and the daily traffic volumes north of Madison Street are generally with the middle of the local, residential road traffic volume range. Therefore, the north-south roads are operating well within the capacity of a local, residential road.

As indicated previously, the north-south roads have a speed limit of 25 mph. A review of Figure 2 shows that the average speeds are generally several miles per hour below the 25-mph speed limit and the 85th percentile speeds are at or only one to two miles per hour over the 25-mph speed limit. As such, the current speeds along the north-south roads are very reasonable and generally within the 25-mph speed limit.

[1] Residential Streets, Third Edition, 2001 was developed by the National Association of Home Builders (NAHB), the American Society of Civil Engineers (ASCE), the Institute of Transportation Engineers (ITE), and the Urban Land Institute (ULI)

Traffic Calming Improvements

As each North-South option impacts the adjacent streets, the following is in lieu of a recommendation ranking and relative construction cost matrix.

As indicated above the traffic volumes on the north-south roads are well within the range of typical local, residential roads and the current travel speeds are very reasonable for the 25-mph speed limit. While any increase in traffic will have an incremental impact on the north-south roads, the existing traffic volumes indicate that the north-south roads have additional capacity to safely and efficiently accommodate additional traffic. As such, the primary purpose of the traffic calming improvements is to continue to calm the traffic along the north-south roads and to further enhance the pedestrian and bicycle safety along these roads. Secondarily, the traffic calming improvements will also serve to mitigate any increase in traffic by slowing down traffic and making the routes less convenient to travel and/or prohibiting certain movements at certain times.

Based on the existing conditions of the north-south roads, the results of the Madison Street traffic study, the Village's traffic calming program, and coordination with Village staff, traffic calming improvements were developed for the north-south roads. For the purpose of this study, three levels of traffic calming improvements have been developed, depending on the anticipated level of traffic calming that will be required. Level 1 represents the highest level of traffic calming improvements and Level 3 represents the lowest level of traffic calming improvements. The following summarizes each of the traffic calming levels and the traffic calming improvements recommended for each.

Level 1 Traffic Calming Improvements

Level 1 is the highest level of traffic calming improvements and is typically required on those north-south roads that are adjacent to signalized intersections, particularly Ridgeland Avenue and Oak Park Avenue, as these roads will likely experience the greatest impact from the delay and queuing along Madison Street. Motorists are more likely to use these north-south roads to avoid the congestion and/or if they do not clear the signalized intersections in one traffic signal cycle. The traffic calming improvements for this level includes both physical measures/devices and non-physical measures/devices which are illustrated in **Figure 7** and summarized below.

- Install ***intersection curb extensions*** at the intersections of the north-south roads with Adams Street and Washington Boulevard. In addition, curb extensions should be installed on Adams Street to calm the traffic along this road. Curb extensions are (1) effective in reducing speeds and, to a lesser extent, traffic volume as they physically reduce the width of the travel lanes and (2) enhance pedestrian safety as they reduce the width of the pedestrian crossing and improve the sight lines between pedestrians and motorists. Jackson Boulevard and Roosevelt Road are examples of roads that have intersection curb extensions.
- Install ***midblock curb extensions (chokers)*** along (1) the residential side of the alleys or at the first residential home north or south of Madison Street and (2) midblock at the location of the fire hydrants. Midblock curb extensions are also effective in reducing speeds and, to a lesser extent, traffic volumes at they reduce the width of the travel lanes. With the intersection curb extensions, the roadway width will physically be reduced at both ends and the middle of the block. The 1200 block of Woodbine Avenue is an example of a midblock curb extension at the start of a residential area.
- Consideration should be given to supplementing the curb extensions with ***brick pavers or textured pavement*** within the intersections or along the roadway sections where the curb extensions are located. Brick pavers or textured pavement will further calm the traffic through the intersections and along the roadway sections and are installed on multiple Village roads.
- Install ***yellow framed*** speed limit signs at each end of the blocks along the north-south roads to further reinforce speed limits.
- If not already provided, install ***high visibility ladder style crosswalks*** on all approaches at the intersection of Adams Street with the north-south roads and along the north-south roads at their intersection with Washington Street to further enhance the pedestrian crossings.
- Other measures/devices to be considered include ***portable/permanent speed monitors*** and ***targeted police enforcement*** that further reinforce/enforce speed limits.
- Most of the north-south roads recommended for Level 1 traffic calming improvements are under stop sign control at their intersections with Adams Street or Washington Boulevard. The stop sign control function as a defacto traffic calming measure/device as traffic must stop before proceeding through the intersection.

More stringent traffic calming measures/devices that can be considered for installation include ***turning movement restrictions (via signage or medians), median barriers, partial or full cul-de-sacs, and/or one-way roads.*** All of these measures restrict some or all traffic flow and, as such, are excellent at reducing traffic volumes. However, these measures/devices can have the following significant ramifications to the operation of the area roadway system as well as local access and circulation:

- The measures/devices also restrict access to the residents who live on the road.
- The measures/devices may also restrict emergency access.
- The measures/devices may restrict access to/from commercial parcels along Madison Street and/or on-street parking used by the commercial parcels.
- The measure/devices will divert traffic to other local, residential roads, particularly the adjacent roads.

As such, the need for these traffic calming measures/devices are dependent on the extent of the Madison Street traffic diversion and the success of the other traffic calming measures/devices. Before any of these measures/devices are considered, follow-up traffic counts and speed surveys should be conducted to quantify the impacts of the road diet and determine the potential ramifications that the measure/device will have on the area roadway system and local access and circulation.

Taking into consideration the ramifications summarized above, potential locations for peak-hour turning restrictions include the south leg of Euclid Avenue, Elmwood Avenue, and Humphrey Avenue.

Level 2 Traffic Calming Improvements

Level 2 is the middle level of traffic calming improvements and is generally required on those north-south roads that are typically two to three roads from the signalized intersections, particularly Ridgeland Avenue and Oak Park Avenue, or located upstream of the signalized intersections. While some traffic diversion is

anticipated, the traffic diversion is likely to be less than that for the Level 1 roads as these roads are located further from the signalized intersections and resulting queues along Madison Street. The traffic calming improvements for this level primarily consists of non-physical measures/devices and some limited physical measures/devices which are illustrated in **Figure 7** and summarized below.

- Install ***midblock curb extensions (chokers)*** along the residential side of the alleys or at the first residential home north or south of Madison Street.
- Consideration should be given to supplementing the curb extensions with ***brick pavers or textured pavement*** along the roadway sections.
- Install ***yellow framed*** speed limit signs at each end of the blocks along the north-south roads to further reinforce speed limits.
- If not already provided, install ***high visibility ladder style crosswalks*** on all approaches at the intersection of Adams Street with the north-south roads and along the north-south roads at their intersection with Washington Street to further enhance the pedestrian crossings.
- Other measures/devices to be considered include ***portable/permanent speed monitors*** and ***targeted police enforcement*** that further reinforce/enforce speed limits.

As discussed previously, additional and more stringent traffic calming measures/devices can be considered for installation on these north-south roads. However, the need for these additional traffic calming measures/devices is dependent on the extent of the Madison Street traffic diversion and the success of the other traffic calming measures/devices. Before any of these additional measures/devices are considered, follow-up traffic counts and speed surveys should be conducted to quantify the impacts of the road diet and the potential ramifications that the measure/device will have on the area roadway system.

Level 3 Traffic Calming Improvements

Level 3 is the lowest level of traffic calming and is generally required on those north-south roads located furthest from the signalized intersections and/or upstream of the signalized intersections. The traffic calming improvements for this level consists of non-physical measures/devices which are illustrated in **Figure 8** and summarized below.

- Install ***yellow framed*** speed limit signs at each end of the blocks along the north-south roads to further reinforce speed limits.
- If not already provided, install ***high visibility ladder style crosswalks*** on all approaches at the intersection of Adams Street with the north-south roads and along the north-south roads at their intersection with Washington Street to further enhance the pedestrian crossings.
- Other measures/devices to be considered include ***portable/permanent speed monitors*** and ***targeted police enforcement*** that further reinforce/enforce speed limits.

As discussed previously, additional and more stringent traffic calming measures/devices can be considered for installation on these north-south roads. However, the need for these additional traffic calming measures/devices is dependent on the extent of the Madison Street traffic diversion and the success of the other traffic calming measures/devices. Before any of these additional measures/devices are considered, follow-up traffic counts and speed surveys should be conducted to quantify the impacts of the road diet and the potential ramifications that the measure/device will have on the area of the roadway system.

Figure 9 shows Google images of the corridor.

Traffic Calming Level for Each Roadway

Figure 8 illustrates and **Table 5** lists the traffic calming level required for each of the north-south roads.

Table 5 TRAFFIC CALMING LEVEL REQUIRED FOR EACH ROADWAY

Level 1 Traffic Calming	**Level 2 Traffic Calming**	**Level 3 Traffic Calming**
• Humphrey Avenue • Taylor Avenue (north leg) • Harvey Avenue (south leg) • Harvey Avenue (north leg) • Elmwood Avenue • Clarence Avenue • Euclid Avenue (both legs) • Grove Avenue (both legs) • Wenonah Avenue • Carpenter Avenue	• Lyman Avenue • Highland Avenue • Cuyler Avenue • Gunderson Avenue • Wesley Avenue (both legs) • Clinton Avenue	• Taylor Avenue (south leg) • Scoville Avenue (both legs) • Kenilworth Avenue (north leg) • Maple Avenue (both legs)

JACKSON, WASHINGTON AND NORTH-SOUTH ROAD EVALUATION
OAK PARK, ILLINOIS

PROPOSED ROADWAY TRAFFIC CALMING LEVELS

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 18-227 Figure: 3

FIGURE 7:

N

0 100′ 200′

LEGEND

BUMPOUTS

CROSSWALK

20 MPH SPEED LIMIT SIGN

PAVERS

SIGNALIZED INTERSECTION

BUMP OUT TYPICAL SECTION

BUMP OUT PLAN VIEW DETAIL

LEVEL 1 LEVEL 2 LEVEL 3

FIGURE 8

esidorczuk

FILE NAME N:\OAKPARK\180438\Civil\Exhibits\EXH_SIDESTREET_180438.dgn

TITLE: **DRAFT CONCEPT PROPOSED TRAFFIC CALMING OPTIONS**

PROJ. NO. | DATE: | SHEET OF | DRAWING NO.

DSGN. | DWN. | CHKD. | SCALE: 50′ | PLOT DATE: 11/21/2018 | CAD USER: esidorczuk | FILE: EXH_SIDESTREET_180438 | MODEL: Default

CLIENT: Oak Park

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

FIGURE 9: GOOGLE PHOTOS OF CORRIDOR

Madison Street and Maple Avenue, Looking South

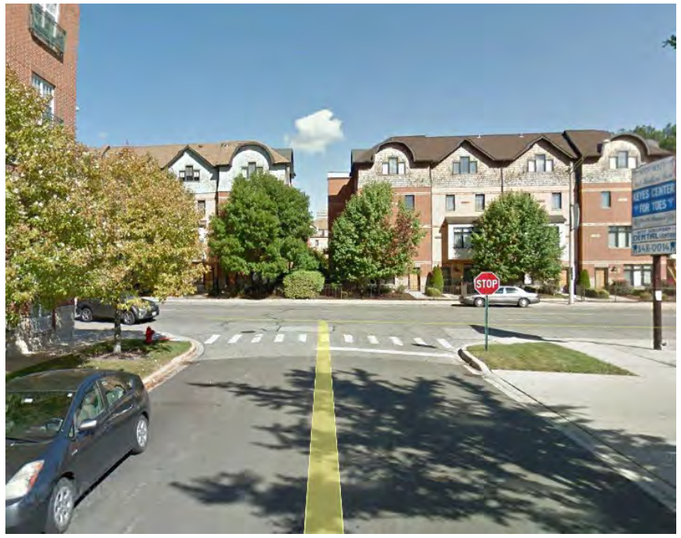
Madison Street and Wisconsin Avenue, Looking South

Madison Street and Maple Avenue, Looking North

Madison Street and Wisconsin Avenue, Looking North

IMAGES: GOOGLE EARTH

FIGURE 9: GOOGLE PHOTOS OF CORRIDOR



Madison Street and Wenonah Avenue, Looking North

Madison Street and Home Avenue, Looking North

Madison Street and Home Avenue, Looking South

Madison Street and Clinton Avenue (South Leg), Looking North

IMAGES: GOOGLE EARTH

FIGURE 9: GOOGLE PHOTOS OF CORRIDOR

Madison Street and Clinton Avenue (North Leg), Looking South

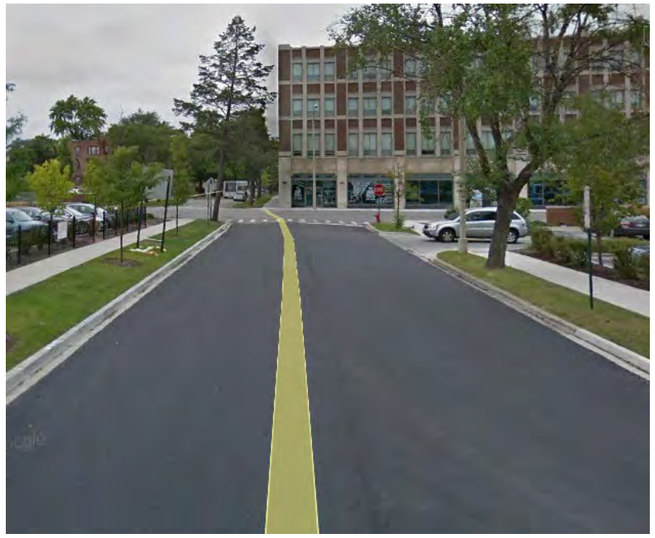
Madison Street and Carpenter Avenue (South Leg), Looking North

Madison Street and Kenilworth Avenue (North Leg), Looking South

Madison Street and Grove Avenue, Looking South

IMAGES: GOOGLE EARTH

FIGURE 9: GOOGLE PHOTOS OF CORRIDOR



Madison Street and Grove Avenue, Looking North

Madison Street and Oak Park Avenue, Looking North

Madison Street and Oak Park Avenue, Looking South

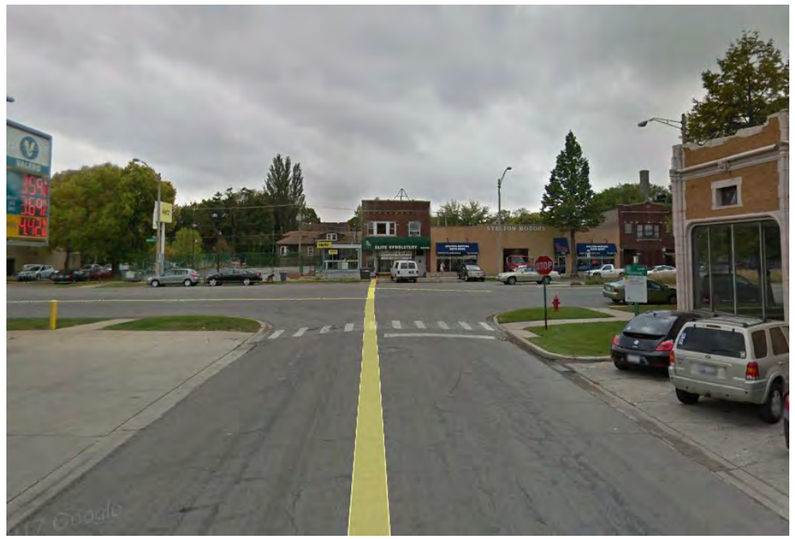
Madison Street and Euclid Avenue, Looking North

IMAGES: GOOGLE EARTH

FIGURE 9: GOOGLE PHOTOS OF CORRIDOR

Madison Street and Wesley Avenue, Looking North

Madison Street and Clarence Avenue, Looking North



Madison Street and Wesley Avenue, Looking South

Madison Street and East Avenue, Looking South

IMAGES: GOOGLE EARTH

FIGURE 9: GOOGLE PHOTOS OF CORRIDOR

Madison Street and East Avenue, Looking North

Madison Street and Scoville Avenue, Looking South

Madison Street and Scoville Avenue, Looking North

Madison Street and Gunderson Avenue, Looking North

IMAGES: GOOGLE EARTH

FIGURE 9: GOOGLE PHOTOS OF CORRIDOR

Madison Street and Elmwood Avenue, Looking North

Madison Street and Ridgeland Avenue, Looking North

Madison Street and Ridgeland Avenue, Looking South

Madison Street and Cuyler Avenue, Looking North

IMAGES: GOOGLE EARTH

FIGURE 9: GOOGLE PHOTOS OF CORRIDOR

Madison Street and Cuyler Avenue, Looking South

Madison Street and Harvey Avenue, Looking South

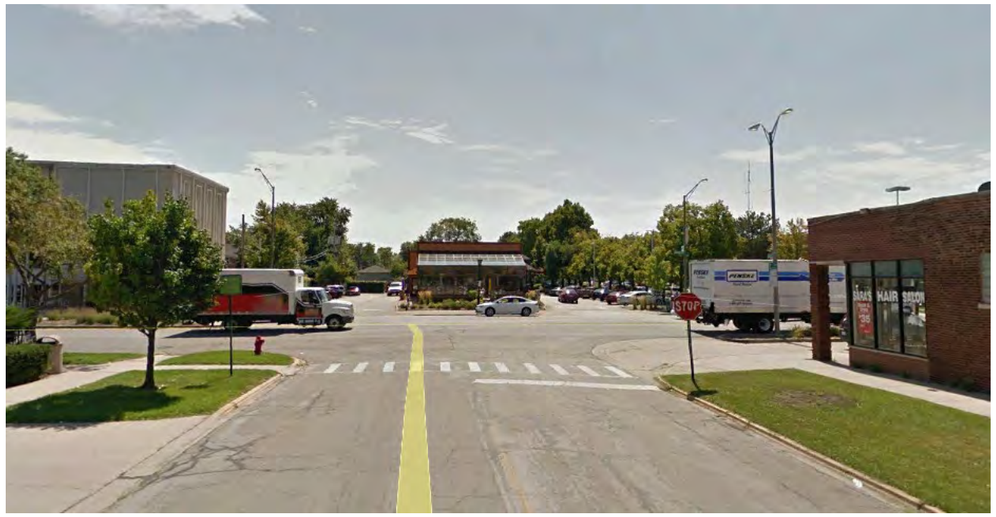
Madison Street and Highland Avenue, Looking North

Madison Street and Lombard Avenue, Looking South

IMAGES: GOOGLE EARTH

FIGURE 9: GOOGLE PHOTOS OF CORRIDOR

Madison Street and Lombard Avenue, Looking North



Madison Street and Taylor Avenue, Looking South

Madison Street and Taylor Avenue, Looking North

Madison Street and Lyman Avenue, Looking North

IMAGES: GOOGLE EARTH

FIGURE 9: GOOGLE PHOTOS OF CORRIDOR

Madison Street and Humphrey Avenue, Looking South

Madison Street and Humphrey Avenue, Looking North

IMAGES: GOOGLE EARTH