

PUBLIC INFORMATION MEETING

Two-Way Conversion Study

**North/South Clinton Avenue
St. Paul Street/South Avenue**

PRELIMINARY FEASIBILITY ASSESSMENT

May 17, 2012

Presented by:

Laberge
ENGINEERING
ARCHITECTURE



Group
SURVEYING
PLANNING



City of Rochester, NY

Introductions

- ▶ City of Rochester

- ▶ Erik Frisch
Transportation Specialist

- ▶ Laberge Group

- ▶ Michael Wieszchowski, P.E., PTOE
Professional Traffic Operations Engineer
- ▶ Ben Syden, AICP
Director of Planning & Community Development

Presentation Outline

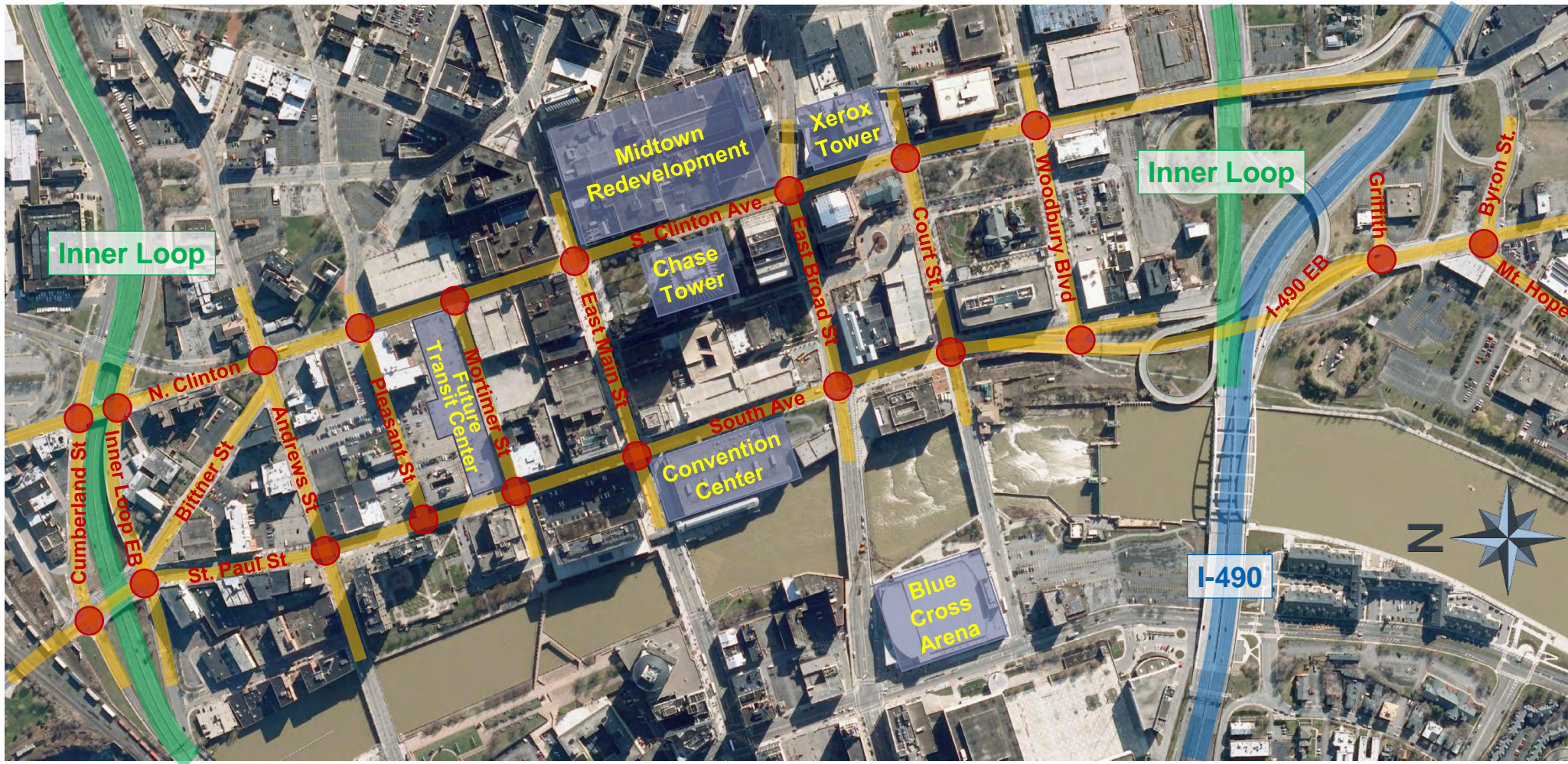
- ▶ Project Background
- ▶ Study Process
- ▶ Existing Conditions Summary
- ▶ Traffic Forecasting
- ▶ Future Condition Summary
- ▶ Alternate-1 Analysis
- ▶ Recommendations and Conclusions
- ▶ Questions & Answers / Public Comment

Project Background

- ▶ One-way roadways efficiently process traffic in and out of City
- ▶ Desirable in the past when downtown was populated with mostly industrial & office land uses
- ▶ Downtown now seeing increase of residential and commercial uses
- ▶ Roadway goals changing from just moving traffic to a “Complete Streets” approach which also considers pedestrians, bicycles & transit



Study Area



Study Process

- ▶ **Three (3) Report Process**
 - ▶ Existing Conditions Analysis Report
 - ▶ Future Conditions Forecast Report
 - ▶ Feasibility Assessment Report
- ▶ **Public Involvement**
 - ▶ Public Meeting & Comment after Initial Feasibility Assessment
 - ▶ Public Meeting to Discuss Final Recommendations
- ▶ **Project Advisory Committee (PAC) Oversight**
 - ▶ Provide input before each report is developed
 - ▶ Provide comments on each draft report before finalization

Project Advisory Committee (PAC)



City of Rochester, NY



NYS Department
of Transportation



Rochester Downtown
Development Corp.

LIVE WORK
REALTY



Monroe County
Department
of Transportation



BUSINESS
ASSOCIATION
OF THE SOUTH
WEDGE AREA

GENESEE TRANSPORTATION COUNCIL

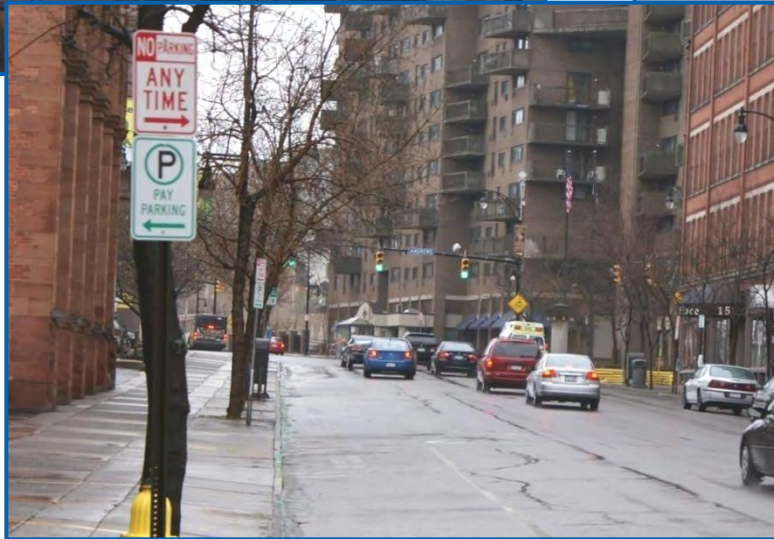
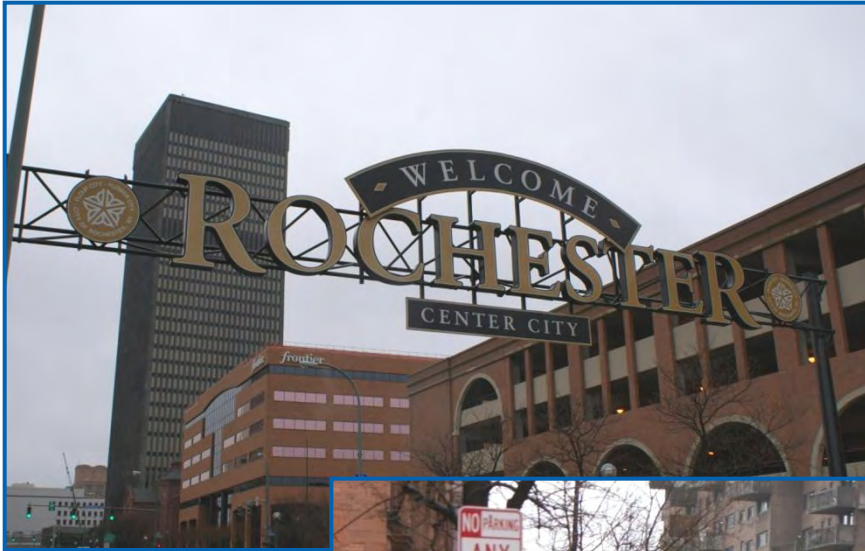


2-Way Conversion Study
North/South Clinton & St. Paul/South
Initial Feasibility Assessment



May 17, 2012

Existing Conditions Summary



Data Gathering

▶ Previous Studies

- ▶ Midtown Redevelopment Traffic Assessment, 2008
- ▶ Broad Street Aqueduct Traffic Impact Study, 2009
- ▶ Renaissance Square Traffic Analysis, 2006
- ▶ Erie Harbor Park Master Plan, 2010
- ▶ Comprehensive Downtown Parking Study, 2008

▶ Other Data Received

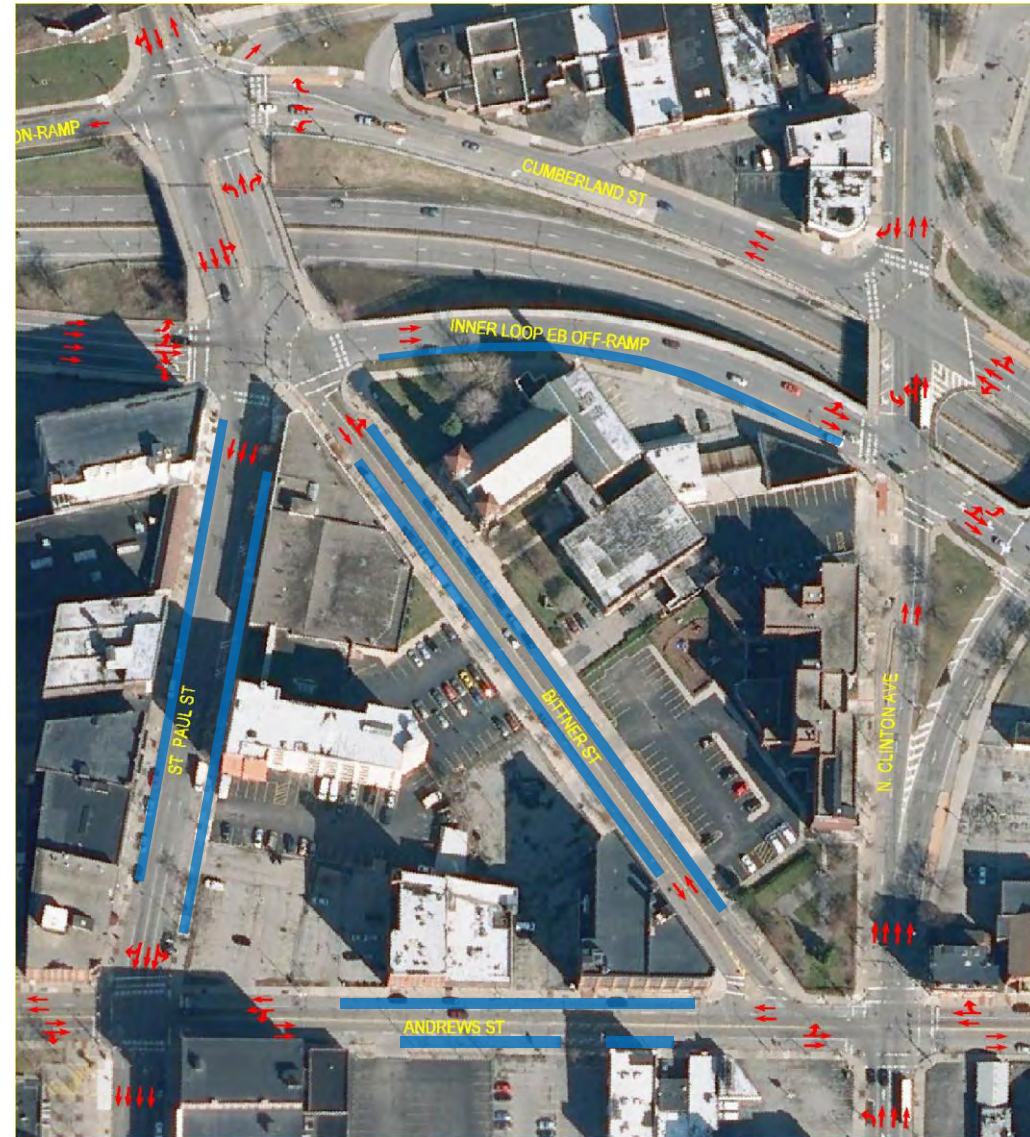
- ▶ Historic Traffic Count Data & Traffic Signal Timings, MCDOT
- ▶ Accident History Data, City of Rochester
- ▶ Land Development & Market Summary Information, RDDC
- ▶ Transit Ridership and RTS Transit Center Information, RGRTA

Additional Data Collection

- ▶ **AM & PM Peak Hour Turn Movement Counts**
 - ▶ South Clinton Ave & Woodbury Blvd
 - ▶ North Clinton Ave & Andrews St
 - ▶ South Ave & East Broad St
 - ▶ St. Paul St & East Main St
- ▶ **Pedestrian & Bicycle Observations**
- ▶ **Verification of Geometry & Traffic Control**
- ▶ **Review of Parking Locations**

Roadway Network

- ▶ **Cumberland St. to Andrews Street**
 - ▶ Signals at Cumberland and Inner Loop on same controller
 - ▶ 3 lanes southbound on St. Paul
 - ▶ Northbound, 2 lanes on Clinton, 2 lanes to Joseph Ave
 - ▶ Bittner serves as northbound shortcut to the west
 - ▶ On-Street Parking along both sides of St. Paul, Bittner & Andrews



Roadway Network

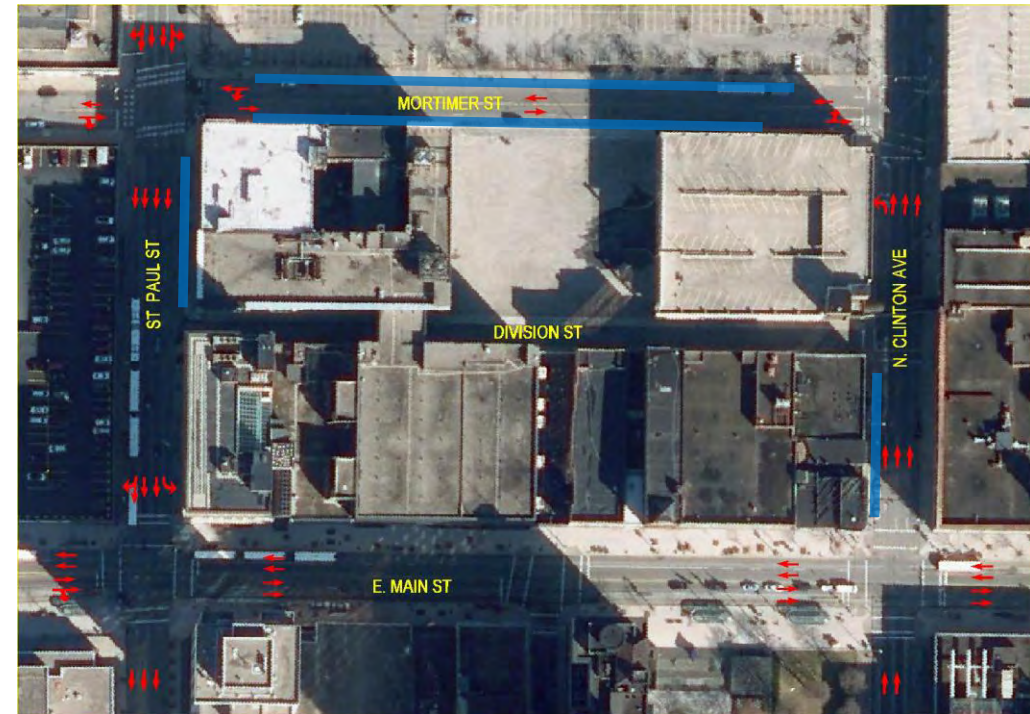
- ▶ **Andrews Street to Mortimer Street**
 - ▶ 3 northbound lanes on Clinton with short left turn lanes at intersections
 - ▶ 4 southbound lanes on St. Paul
 - ▶ On-street parking, one side on Clinton and St. Paul, both sides on Mortimer.
 - ▶ Large public parking lot and Portion of Mortimer St. to be replaced by Transit Center



Roadway Network

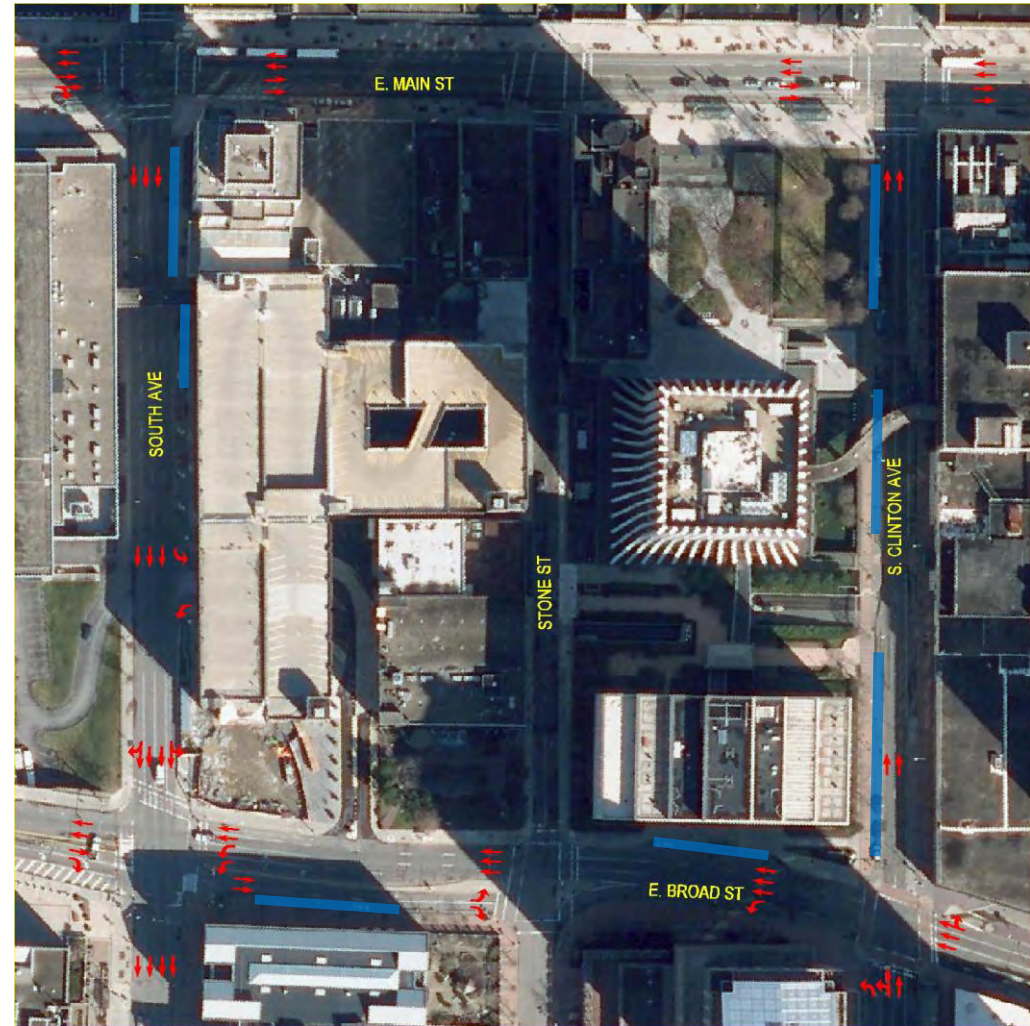
► Mortimer Street to East Main Street

- 3 northbound lanes on Clinton with short left turn lane added at Mortimer
- 4 southbound lanes on St Paul
- West-most southbound lane principally for buses
- Bus lanes both sides of Main St



Roadway Network

- ▶ East Main Street to East Broad Street
 - ▶ 2 northbound travel lanes on Clinton with west side bulbout protected parking
 - ▶ Midtown Redevelopment construction east side of Clinton
 - ▶ 3 lanes southbound on St. Paul expand to 4 lanes at South Ave Garage
 - ▶ Broad St partially one-way



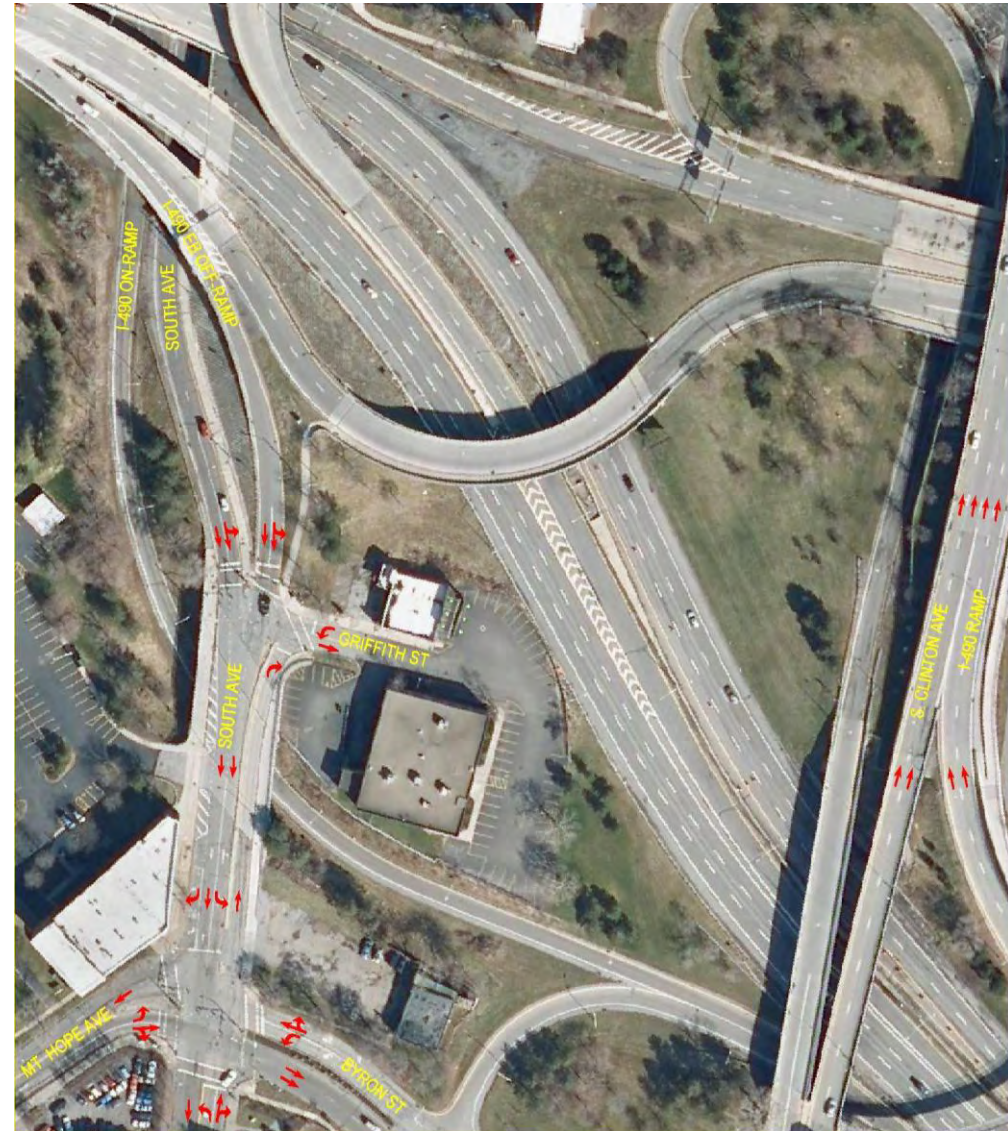
Roadway Network

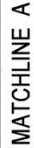
- ▶ East Broad Street to Woodbury Blvd
 - ▶ Northbound lanes vary from 4 entering Woodbury to 2 exiting East Broad
 - ▶ 4 southbound lanes between East Broad and Woodbury Split to 6 lanes at Woodbury



Roadway Network

- ▶ Woodbury Blvd to Mt. Hope/Byron Street
 - ▶ Two way traffic south of Griffith on South Ave
 - ▶ Two way traffic at Clinton and Byron Intersection
 - ▶ Only 2 lanes northbound and 2 lanes southbound running to/from Downtown from Byron Street area





Parking Summary

- ▶ Approximately 4,700 existing parking spaces within the area. Midtown Development and other planned parking expansions will add 2,000+ more
- ▶ 225 (approx.) short term (2 hours or less) on-street parking spaces
- ▶ Other spaces combination of private and public parking in off-street lots and garages
- ▶ Though some areas over 80% capacity and some garages full, overall area parking occupancy is around 60%.

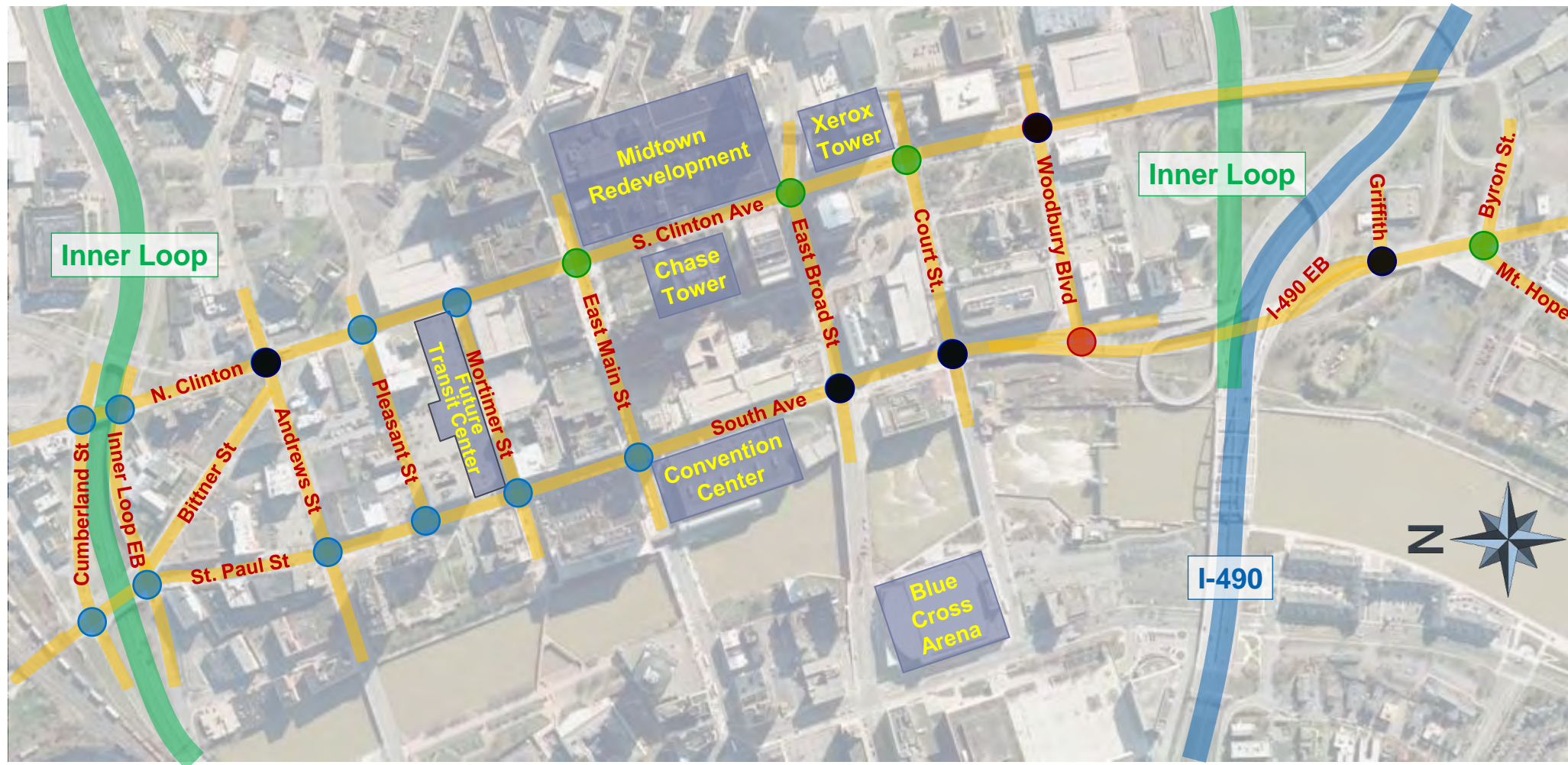


-
- Transit Routing Map**

Transit Operations

Stop Name	Stop ID	Average Daily Boardings	Average Daily Alightings
Clinton & Cumberland	624	1	4
Clinton & Andrews	555	14	6
Clinton & Pleasant	591	40	27
Clinton & Main Northbound (Shelter)	585	unk	unk
Clinton & Broad	563	0	1
Clinton & Court	569	43	242
Bittner & Andrews	4367	8	8
Bittner & Cumberland	4368	1	1
St Paul & Cumberland	3667	2	7
St Paul & Plaza Apts (Shelter)	4366	57	94
St Paul & Main (Shelter)	3697	1886	1473
South & Broad	3542	238	20
South & Court (Shelter)	3548	160	45
Main & South (Shelter)	2490	800	1867
Main & Clinton Eastbound (Shelter)	2426	2520	2864
Main & Clinton Westbound (Shelter)	2463	2261	1121
Main & St Paul (Shelter)	2491	1495	774
Broad & Stone (Shelter)	194	55	30
Court & Saint Marys	685	18	8
Court & Clinton	684	22	2

Traffic Count Data (AM & PM Peak Hours)



Most Recent Count Year: ● - 2011 ● - 2010 ● - 2006 ● - Older

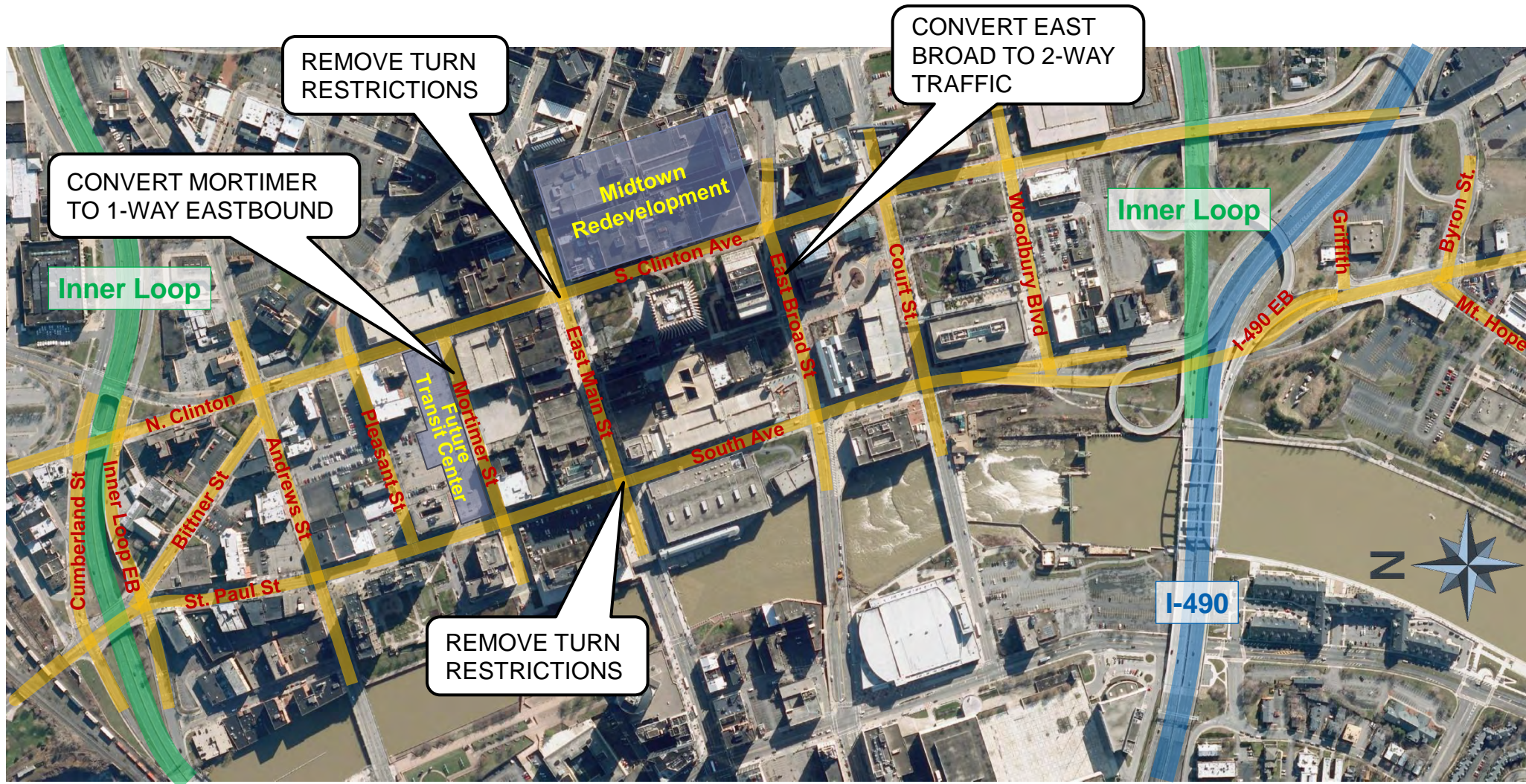
Existing Traffic Volume Development

- ▶ Traffic growth data from GTC suggests background traffic will increase by only 0.2% per year
- ▶ Traffic between intersections should generally balance unless significant mid-block generator (i.e. parking lot or garage) is present
- ▶ More weight given to most recent traffic counts when balancing
- ▶ Analysis of AM and PM Peak Hours Only

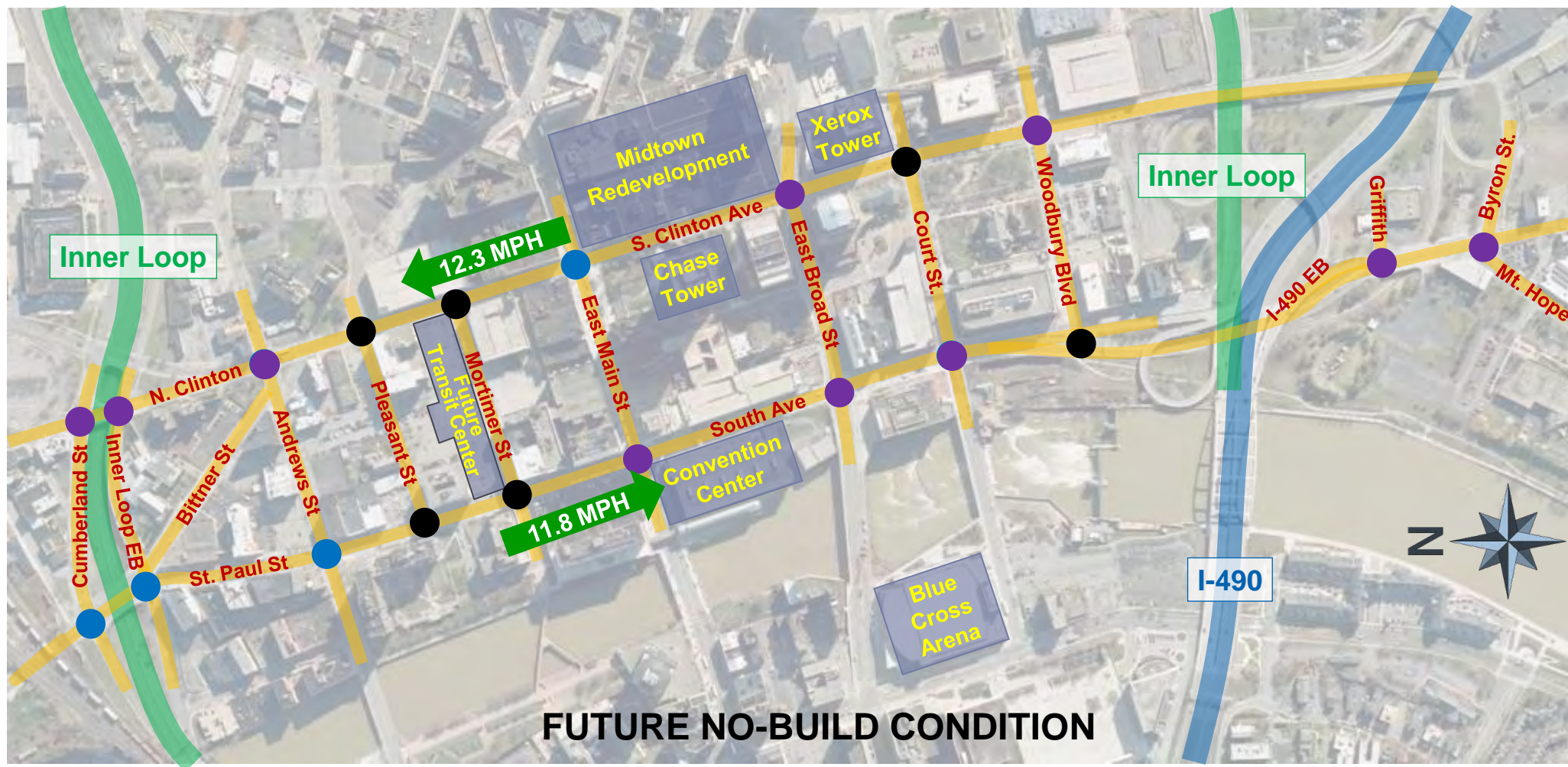
Traffic Forecasting

- ▶ **Develop Future No-Build Traffic Volumes**
 - ▶ 20 Year Design Horizon
 - ▶ Account for Near Term Geometric/Operational Changes
 - ▶ Apply Background Traffic Growth Rate
 - ▶ Account for Traffic from Known Proposed Development
 - ▶ RTS Transit Center
 - ▶ Midtown Redevelopment
 - ▶ Basis for Future 2-Way Conversion Traffic Volumes

Near-Term Operational Changes

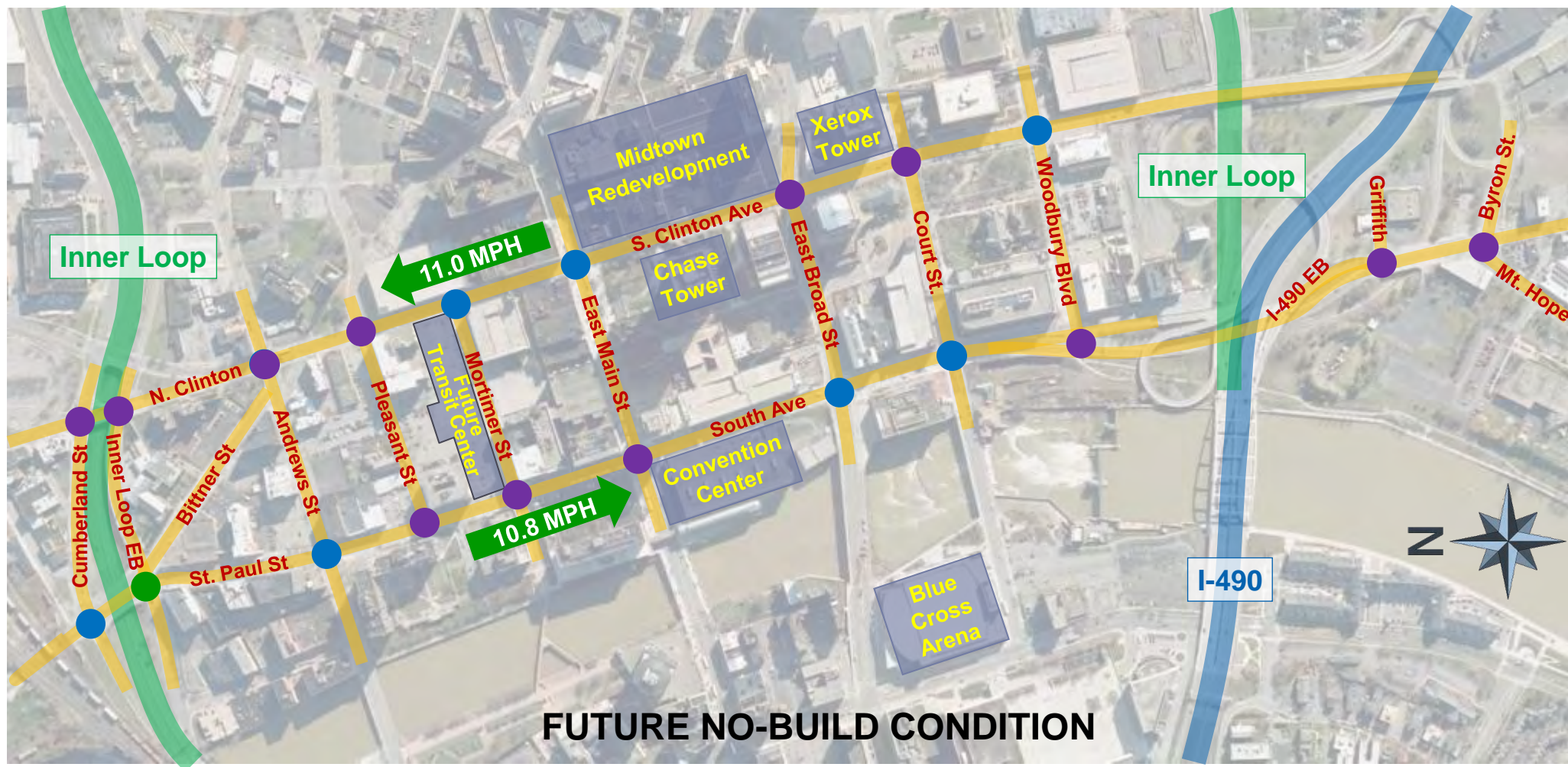


Level of Service Analysis – AM Peak Hour



LEGEND: ● - LOS A ● - LOS B ● - LOS C ● - LOS D ● - LOS E ● - LOS F

Level of Service Analysis – PM Peak Hour

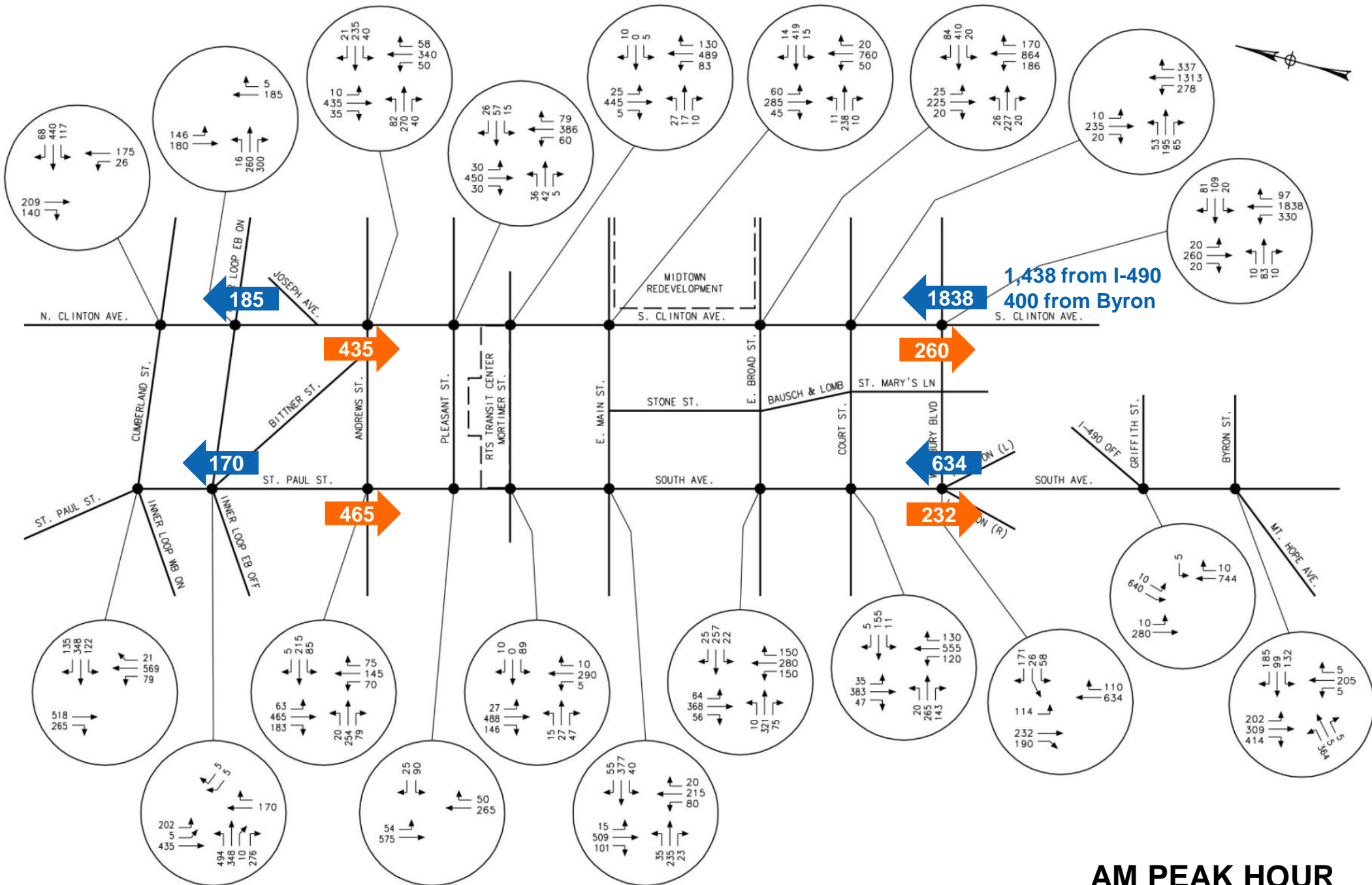


LEGEND: ● - LOS A ● - LOS B ● - LOS C ● - LOS D ● - LOS E ● - LOS F

Traffic Forecasting (continued)

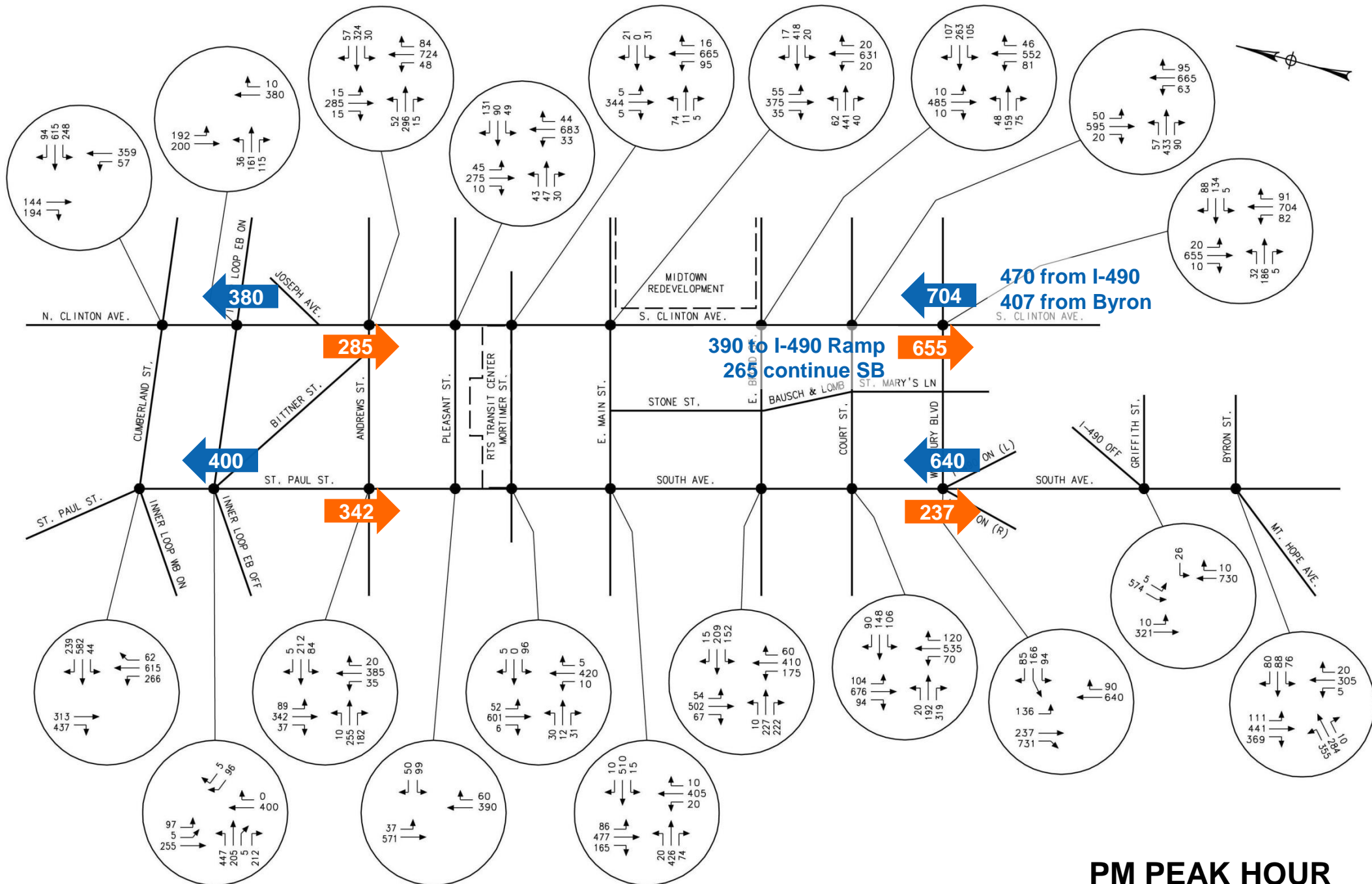
- ▶ **Develop Future 2-Way Conversion Traffic Volumes**
 - ▶ Equalized Northbound and Southbound Inflow & Outflow Traffic between the Two Roadways to the Greatest Extent Possible.
 - ▶ Traffic In & Out on Side Streets was Kept Same as No-Build
 - ▶ Turn Movement Volumes Based on Assumed Destinations (ex. Parking Garages) and Route Choices that Minimize Delay
 - ▶ Traffic Adjusted to Accommodate Geometric Changes

Future 2-Way Traffic Volumes



AM PEAK HOUR

Future 2-Way Traffic Volumes



PM PEAK HOUR

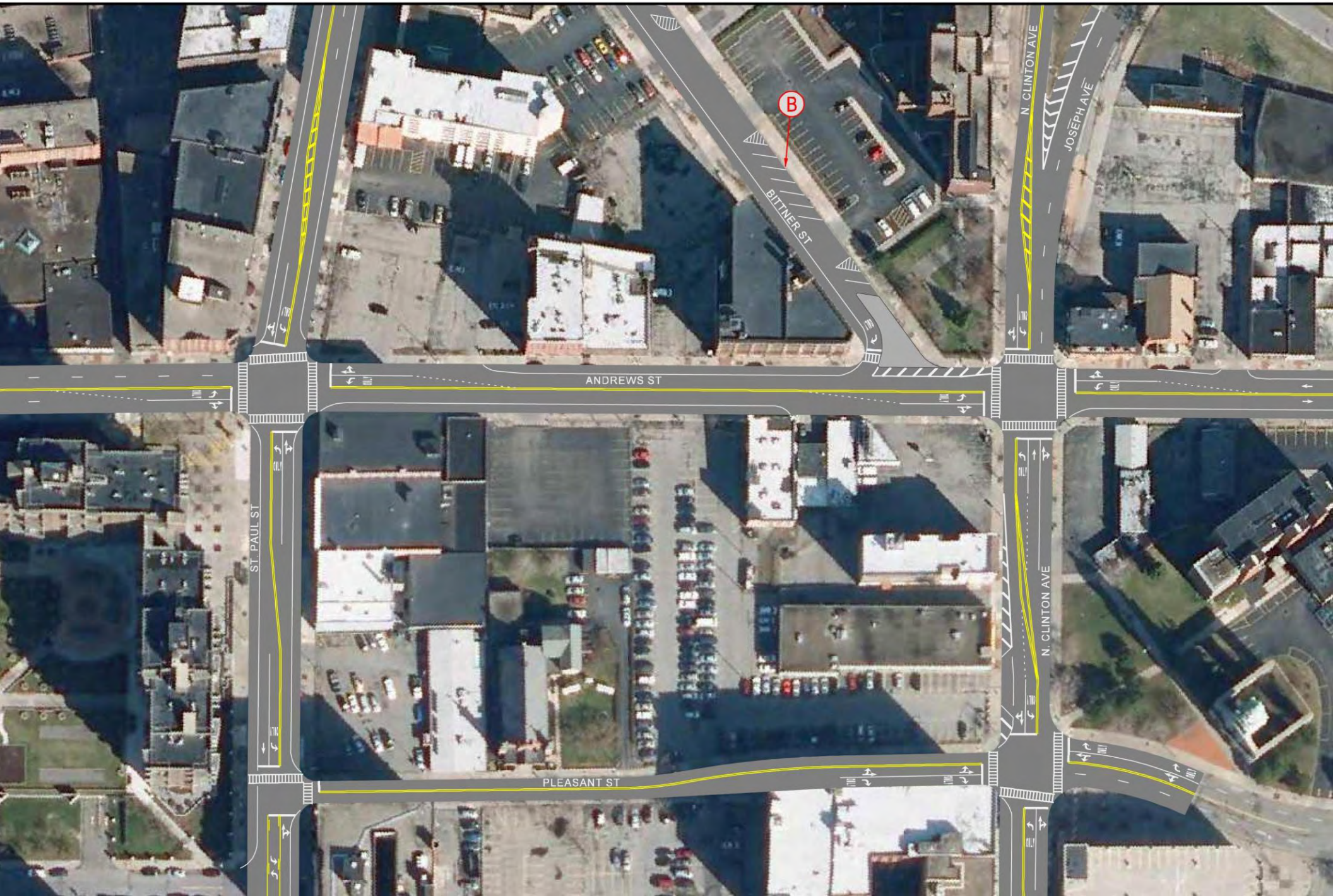
Two-Way Conversion Considerations

- ▶ Stay Within Existing Pavement Width as Much as Possible
- ▶ Maximize Parking Opportunities
- ▶ Provide Turn Lanes Where Feasible
- ▶ Improve Pedestrian/Bicycle Facilities Where Possible
- ▶ Consider Transit Operations in Concept
- ▶ Provide Reasonable Levels of Service

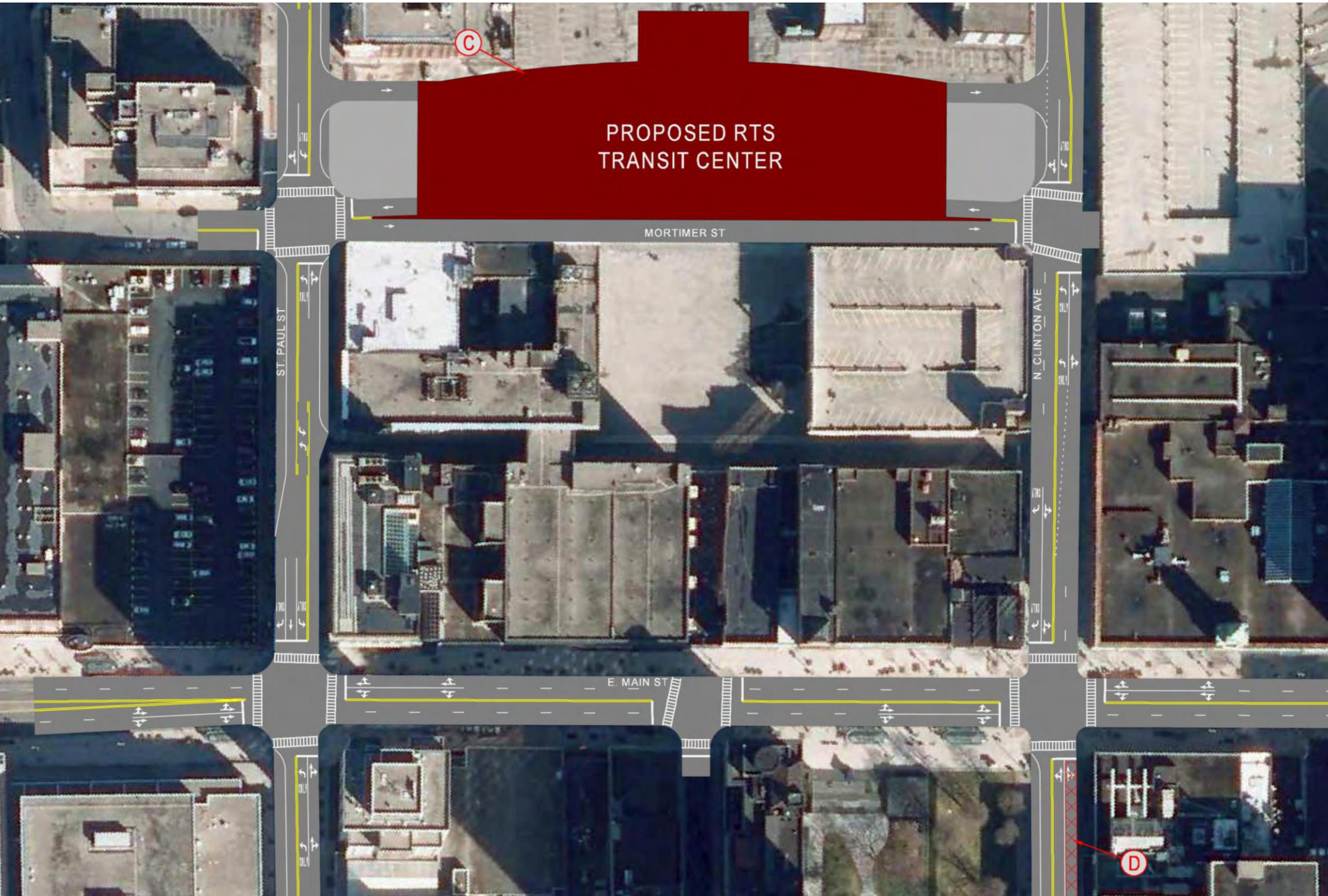
Roadway Improvements



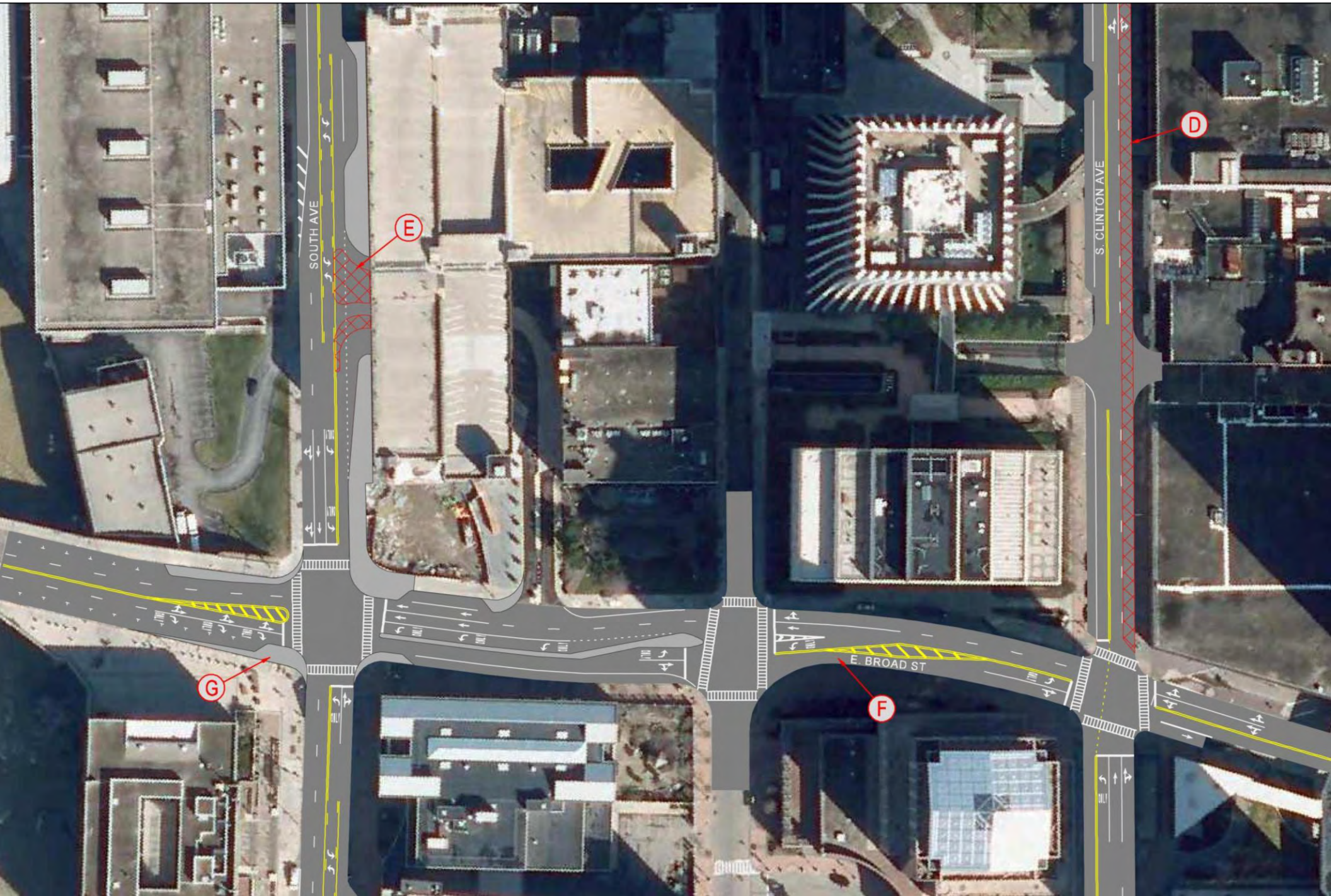
Roadway Improvements



Roadway Improvements



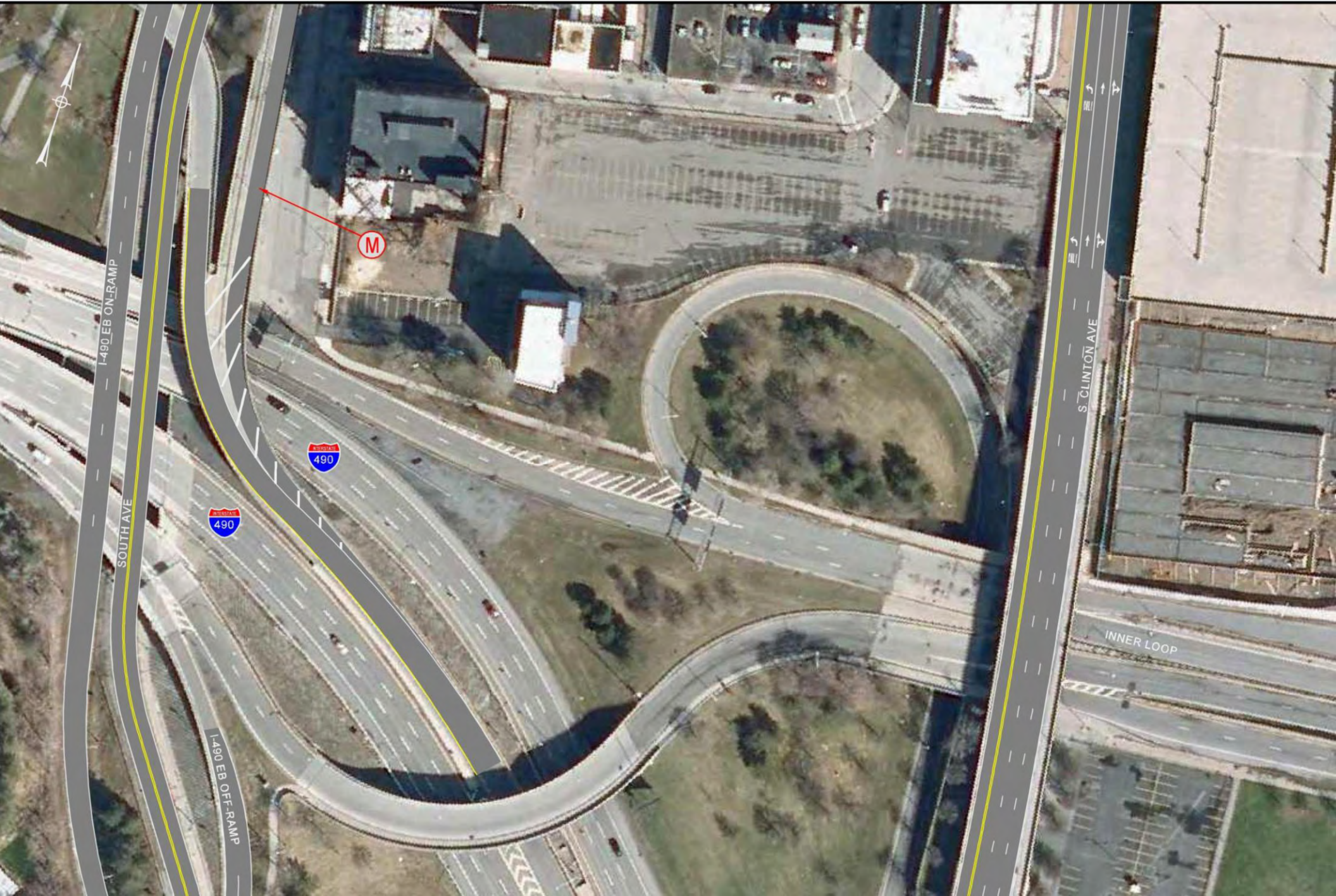
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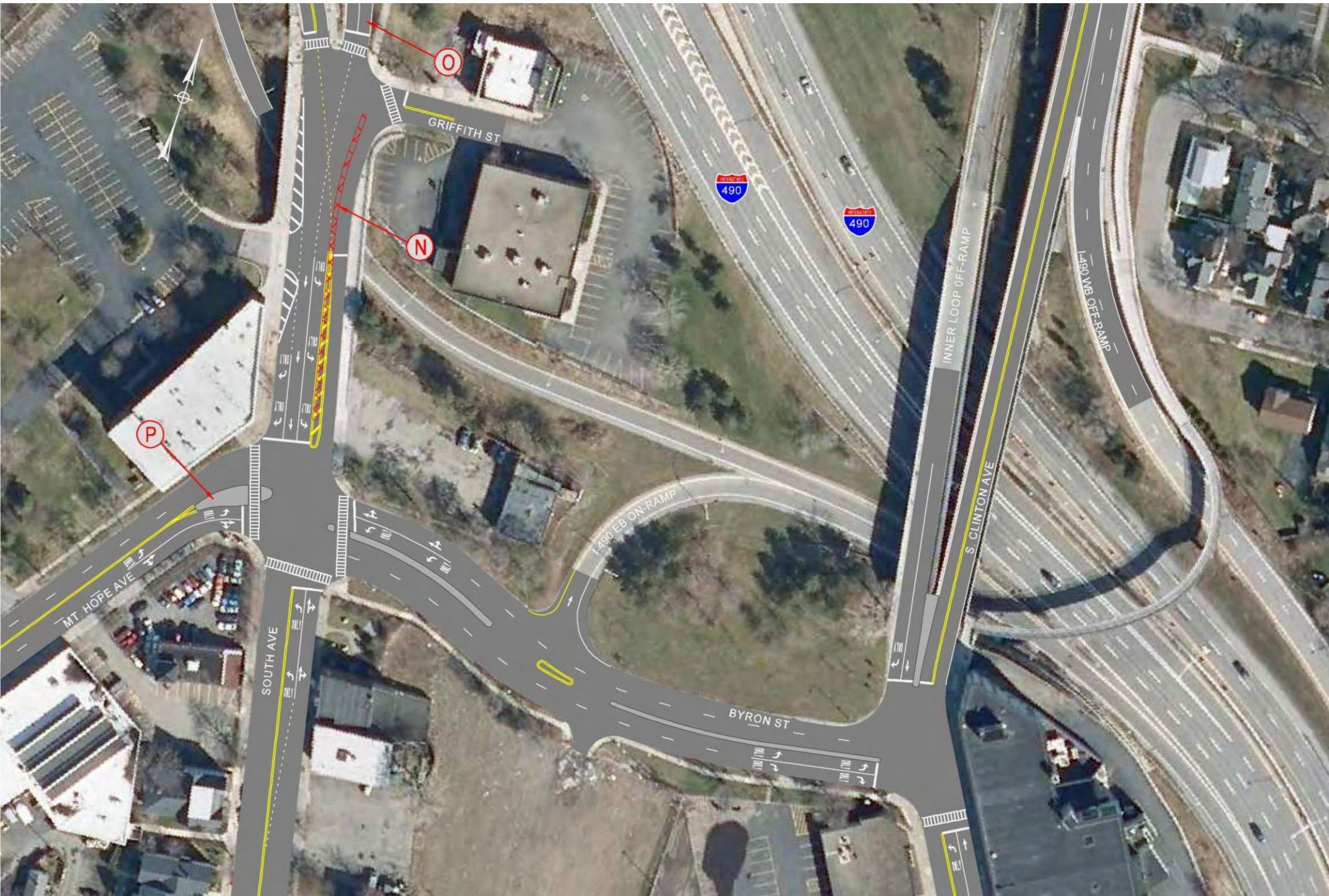
Roadway Improvements

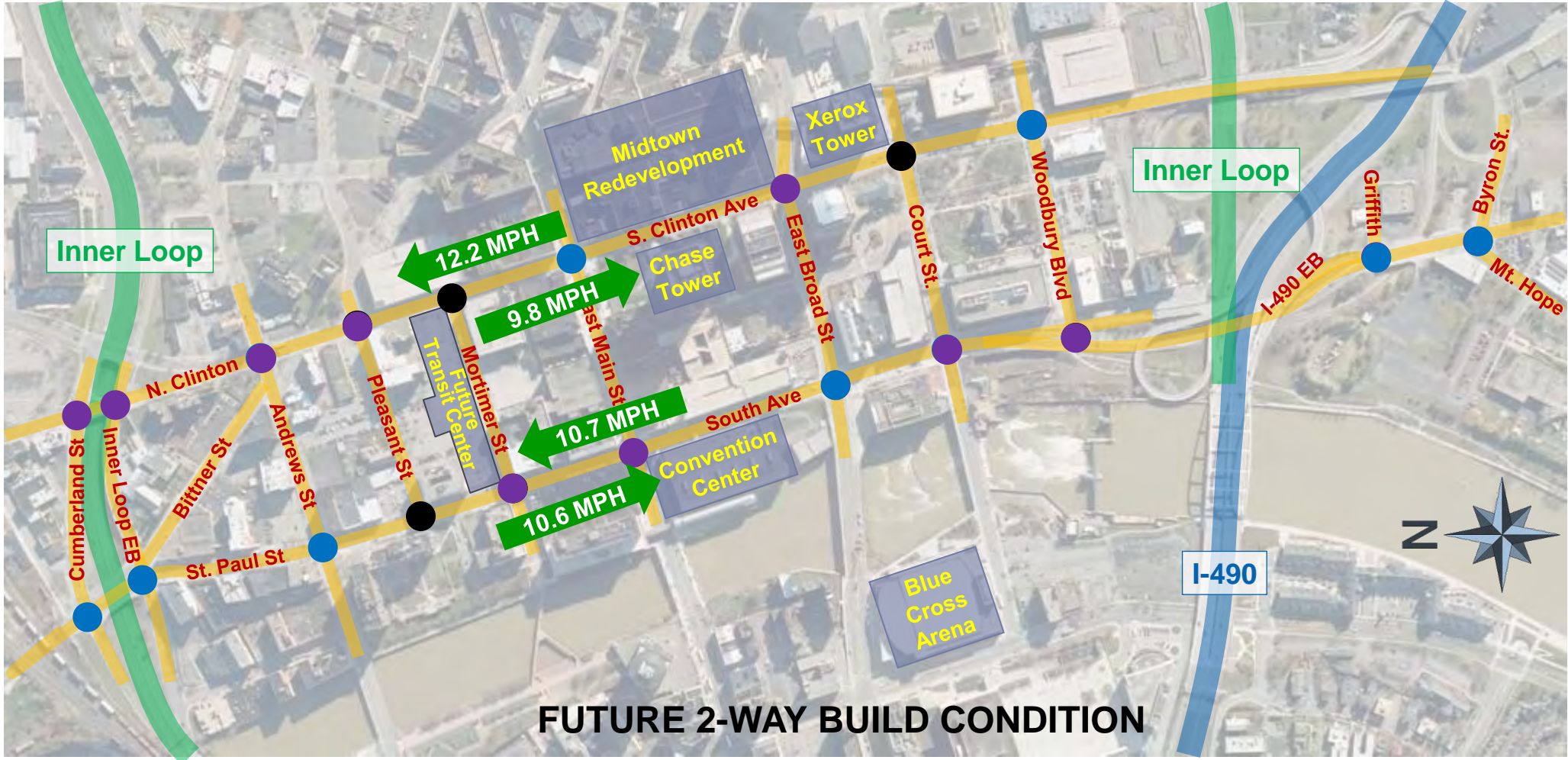


Roadway Improvements



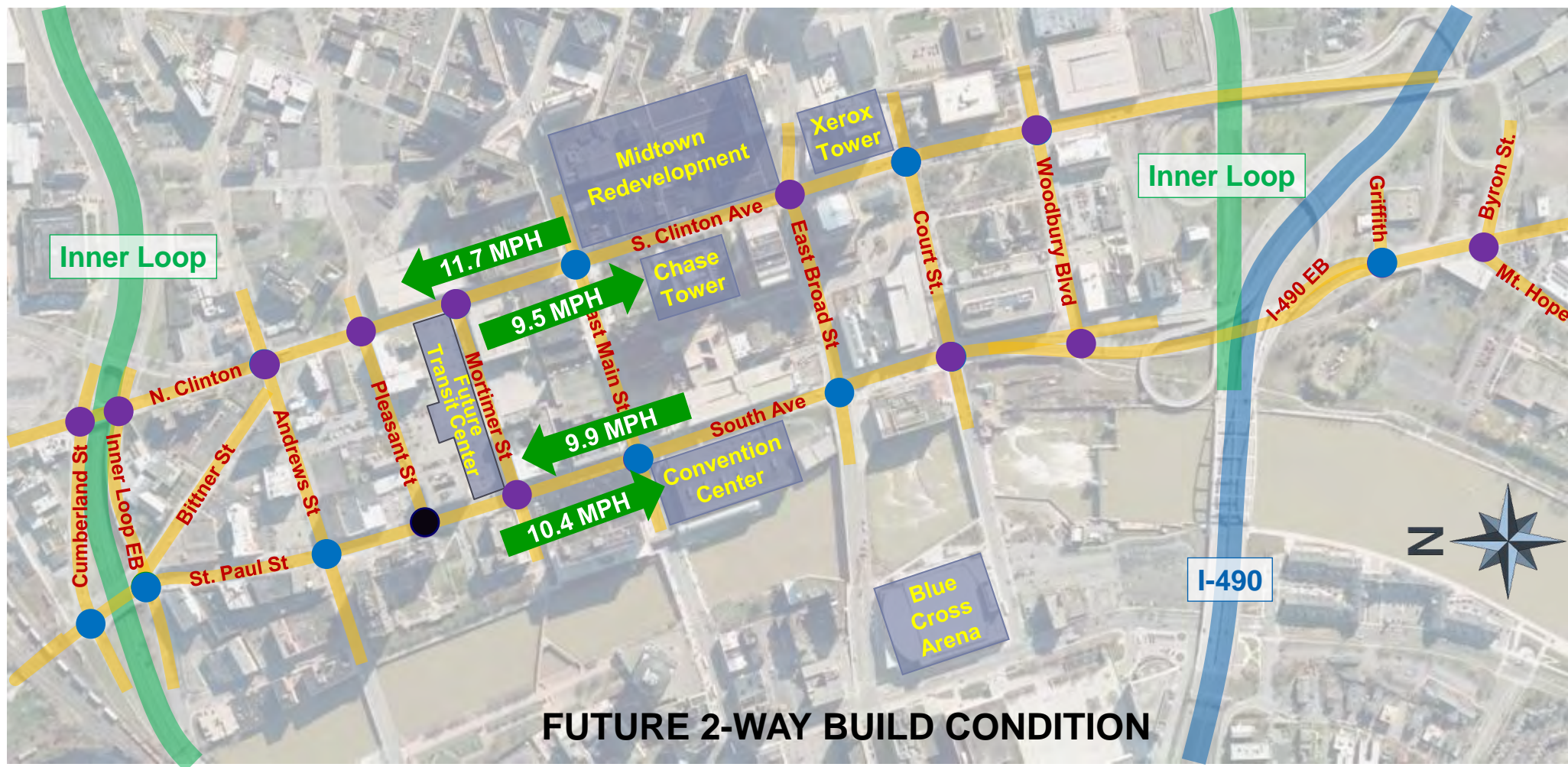
Roadway Improvements





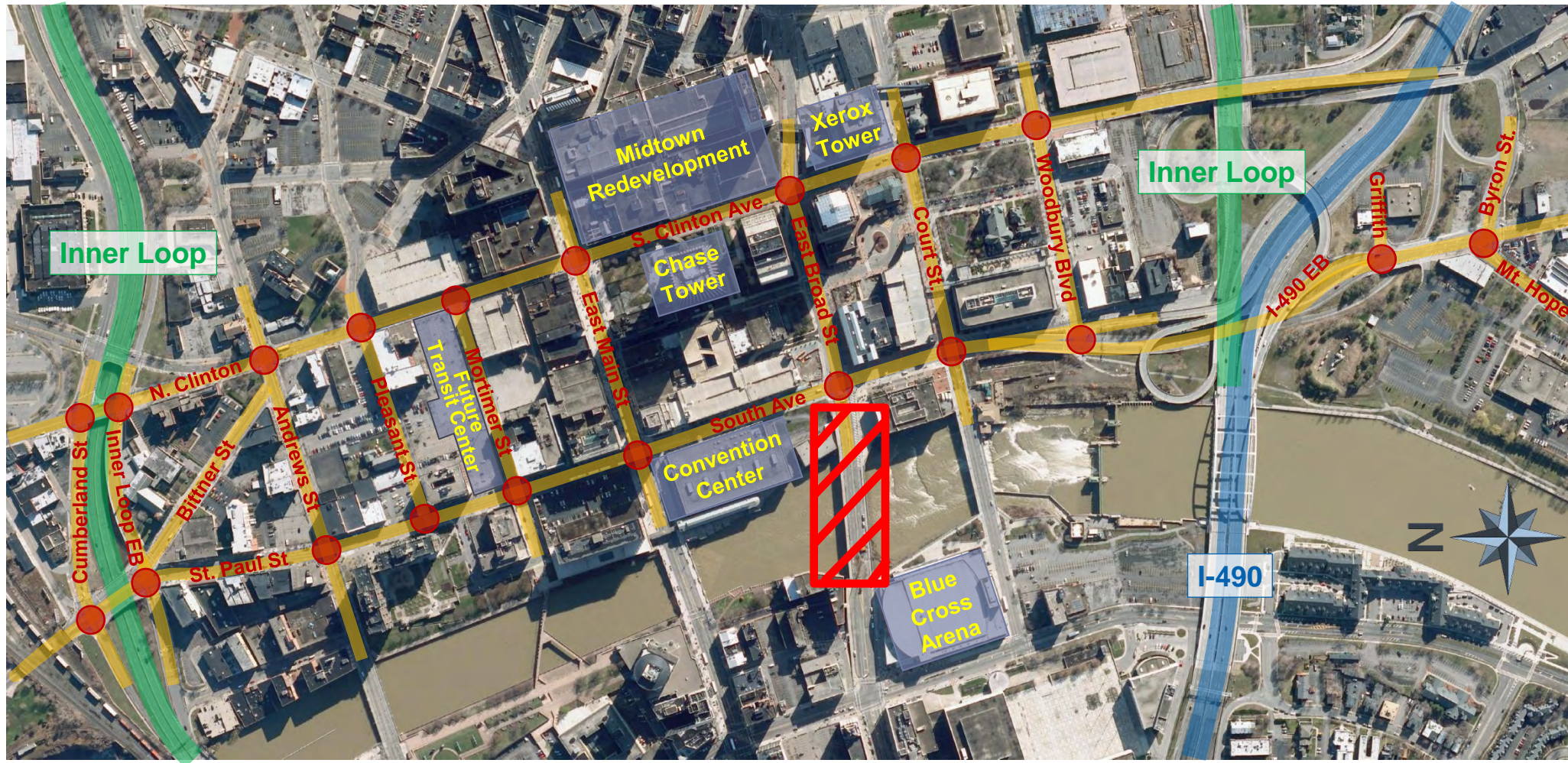
LEGEND: ● - LOS A ● - LOS B ● - LOS C ● - LOS D ● - LOS E ● - LOS F

Level of Service Analysis – PM Peak Hour

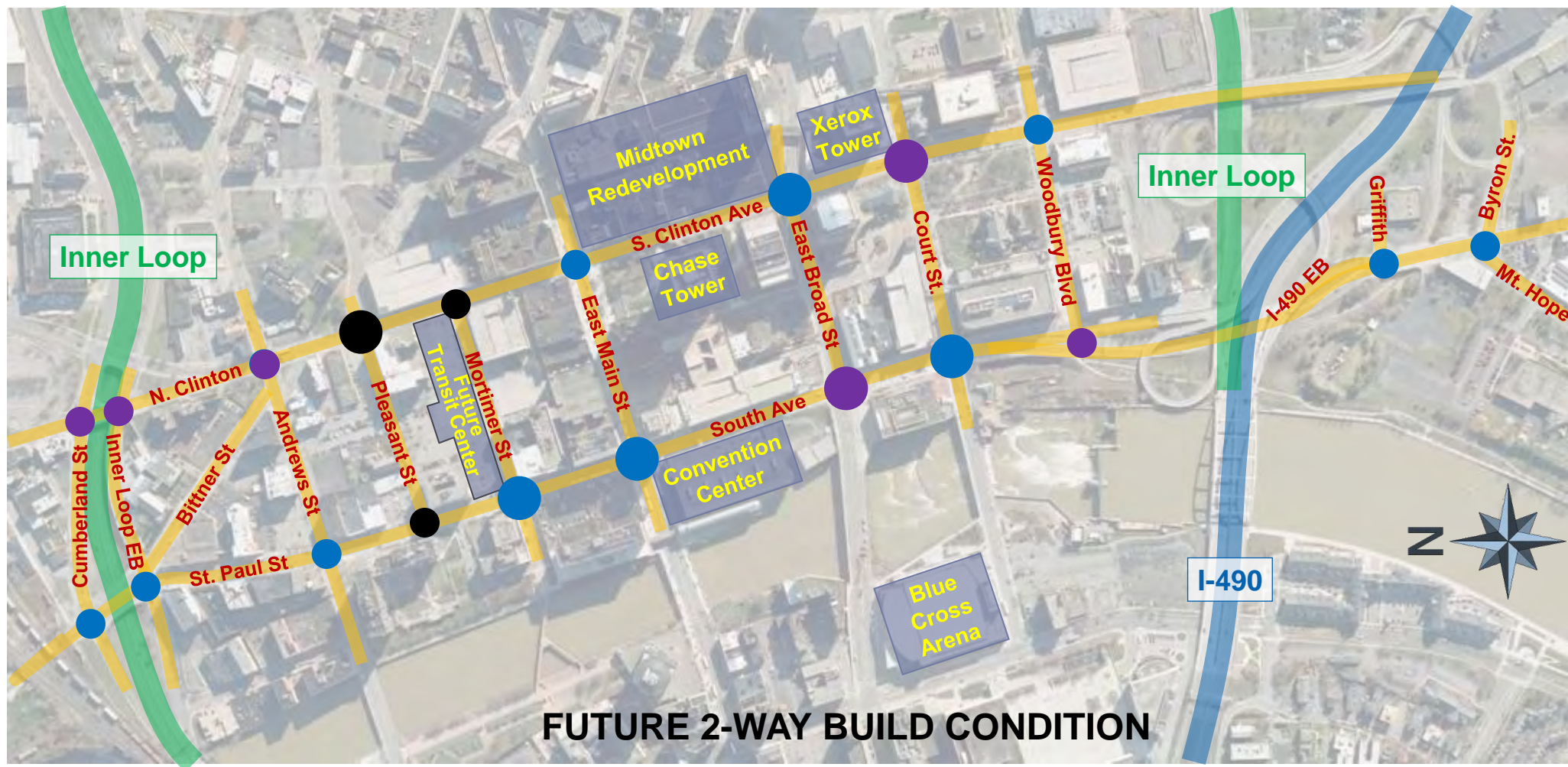


LEGEND: ● - LOS A ● - LOS B ● - LOS C ● - LOS D ● - LOS E ● - LOS F

Alternate-1 Analysis

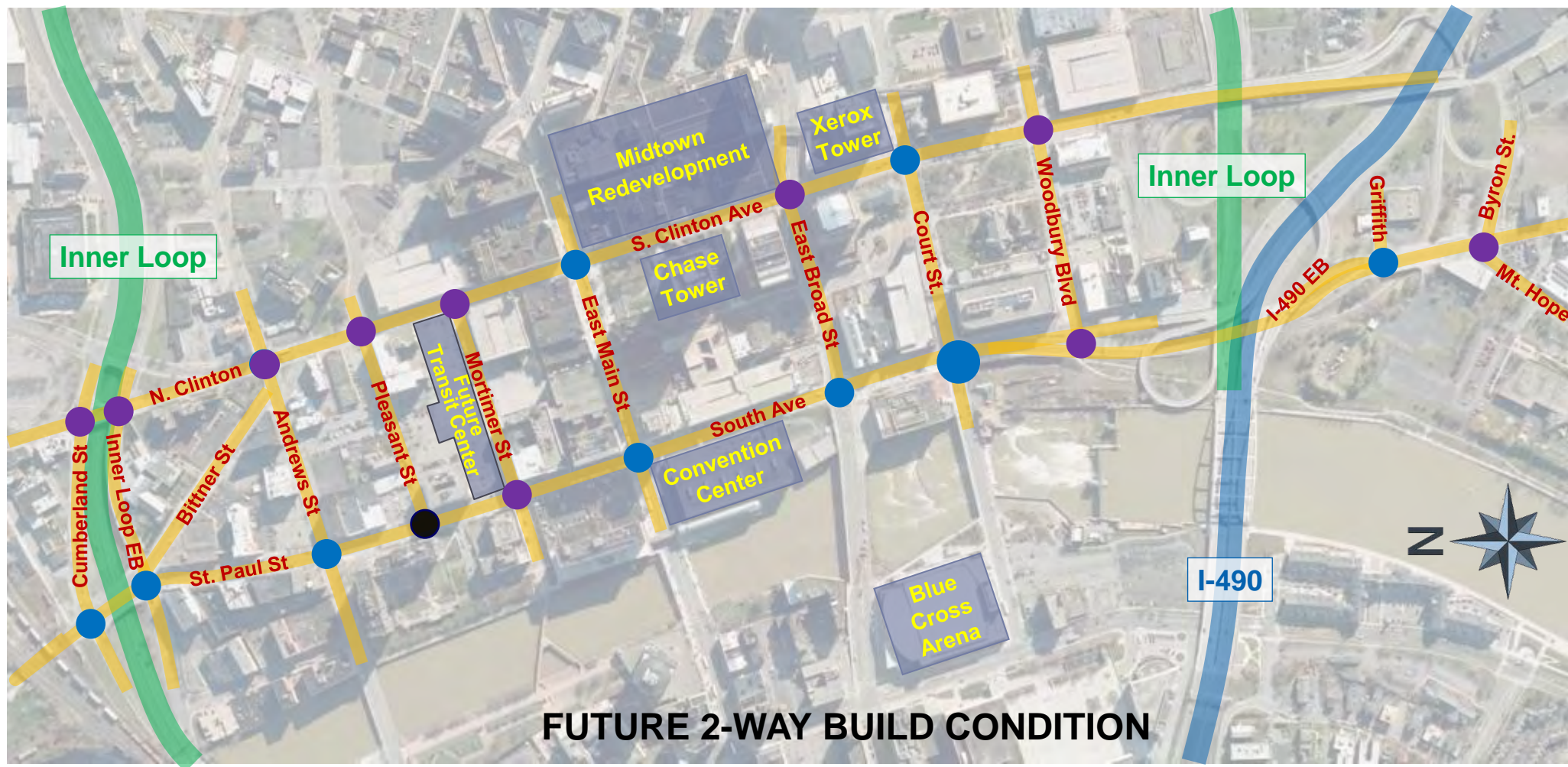


Alt.1 LOS Analysis – AM Peak Hour



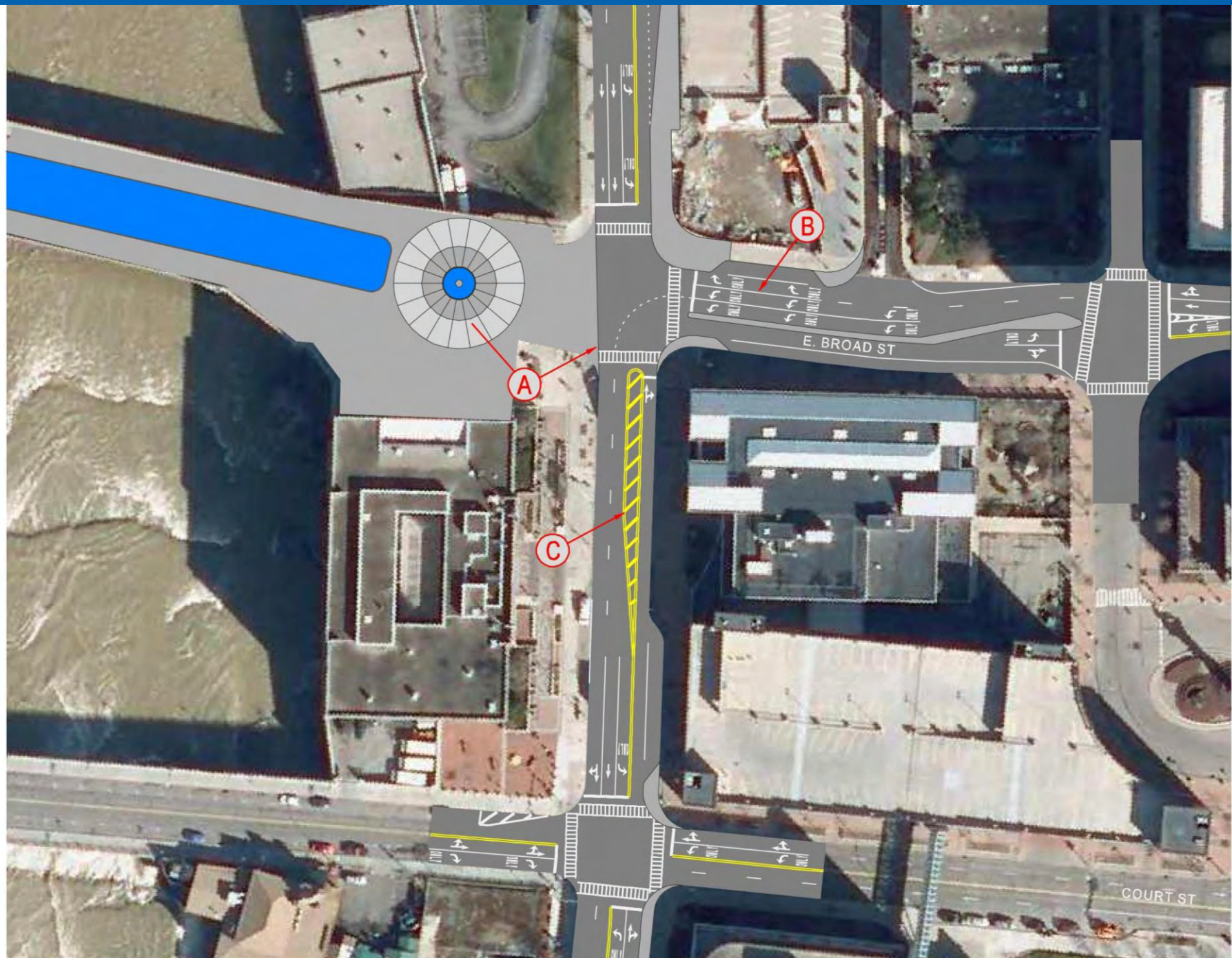
LEGEND: ● - LOS A ● - LOS B ● - LOS C ● - LOS D ● - LOS E ● - LOS F

Alt.1 LOS Analysis – PM Peak Hour



LEGEND: ● - LOS A ● - LOS B ● - LOS C ● - LOS D ● - LOS E ● - LOS F

Alt.1 Roadway Improvements



Future Pedestrians Operations

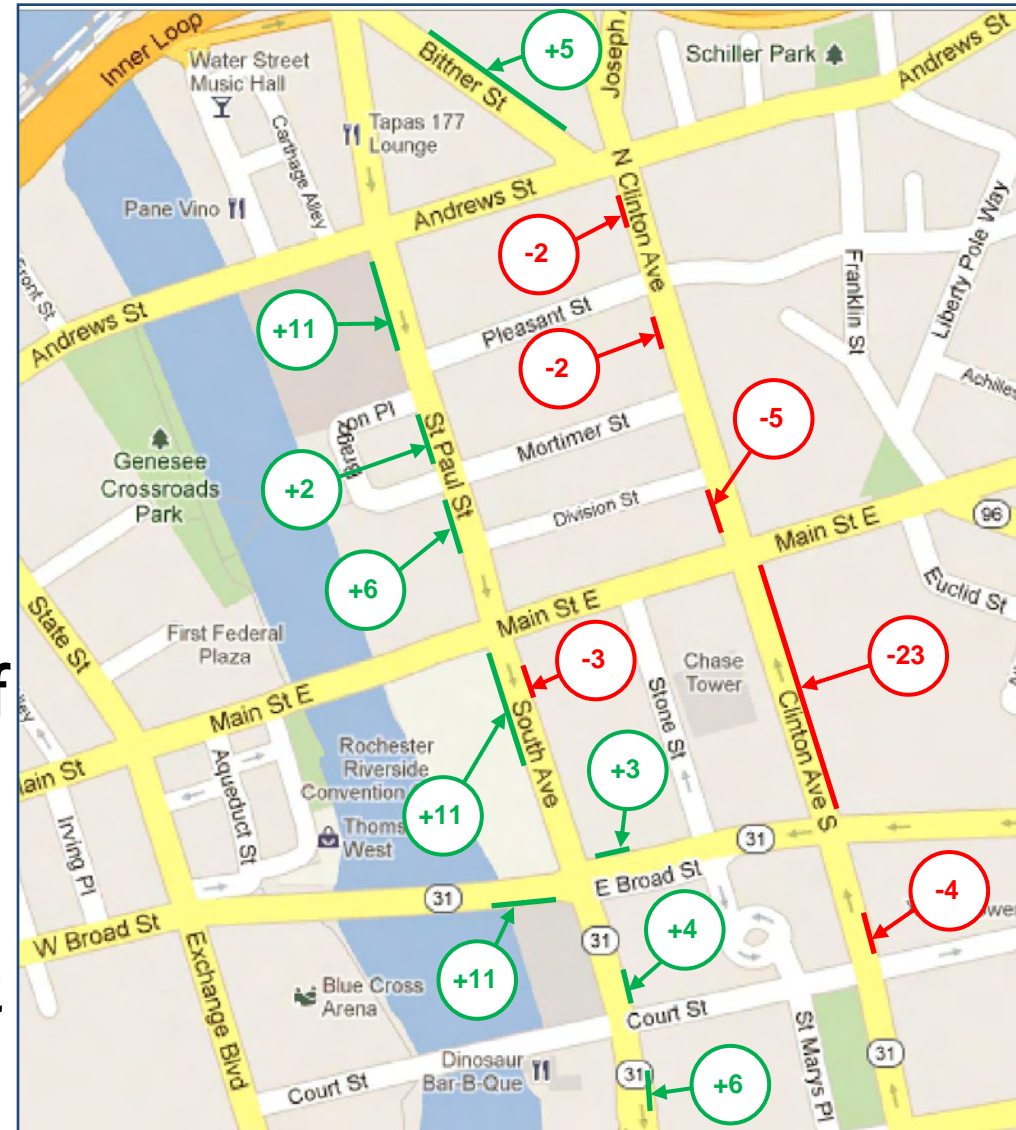
- ▶ Bulbouts Added at Bittner, Broad, Court, Woodbury to Shorten Pedestrian Crossing Distances
- ▶ Leading Pedestrian Interval (LPI) at:
 - ▶ Clinton Avenue / Main Street
 - ▶ Clinton Avenue / Mortimer Street
 - ▶ South Avenue / Court Street
 - ▶ South Avenue / Broad Street
 - ▶ South Avenue / Main Street
- ▶ Construction of Regional Transit Center Will Eliminate Need for Bus Transfers on Main Street and Greatly Reduce Number of Pedestrians Crossing at the Intersections

Bicycle & Transit Operations

- ▶ Potential for Bike Lanes on St. Paul Street North of Main Street, but at Cost of Parking
- ▶ Any other Bike Improvements would Require Widening and Reduction of Sidewalk Width
- ▶ Major Transit Improvement from Consolidation of Services with Addition of RTS Transit Center
 - ▶ Removal of on Street Transfers
 - ▶ Reduced Pedestrian Crossings at Main Street
 - ▶ Two-way Conversion Will Reduce Travel Times and Save Fuel
 - ▶ Left Turns at Transit Center remove buses from Travelway

Parking Operations

- ▶ 36 Parking Spaces Removed along Clinton Ave, but will be offset by additions from the Midtown Development
- ▶ 54 Parking Spaces Added Along St. Paul/South
- ▶ 5 Spaces Added on Bittner if Converted to One-Way
- ▶ Overall, Current 2-Way Concept Adds 23 On-Street Parking Spaces



Roadway Improvement Costs

DESCRIPTION OF IMPROVEMENTS	APPROXIMATE COST ¹
<u>Striping Modifications (if removal of existing by grinding)</u>	
North of Main Street	\$150,000
South of Main Street	\$180,000
TOTAL	\$330,000
<u>Striping Modifications (if removal of existing by mill & overlay)</u>	
North of Main Street	\$720,000
South of Main Street	\$730,000
TOTAL	\$1,450,000
<u>Signing Modifications</u>	
Regulatory Sign Removal/Replacement	\$15,000
St. Paul Mast Arm and Lane Designation Signs at Inner Loop	\$15,000
Clinton Mast Arm and Lane Designation Signs at Andrews	\$15,000
Guide Sign Panel Replacements at South and Woodbury	\$5,000
Wayfinding/Street Name Sign Additions and Replacements	\$10,000
TOTAL	\$60,000
Roadway Improvements	
A - Inner Loop at Clinton Radius Improvement	\$15,000
B - Bittner Street 1-Way Conversion	\$40,000
D - Clinton Ave: Main to Broad Parking Lane Removal	\$50,000
E - South Avenue Garage Area Improvements	\$40,000
G - Bulbout Additions at Broad Street and Court Street	\$40,000
H - Bulbout Removal at the Clinton and Court Intersection	\$15,000
I/J/K - South at Woodbury Intersection Improvements and Ramp Closure	\$85,000
N/O/P-Byron Street to Griffith Street Island Improvements	\$25,000
TOTAL	\$310,000

Roadway Improvement Costs

DESCRIPTION OF IMPROVEMENTS	APPROXIMATE COST ¹
<u>Traffic Signal Modifications</u>	
St. Paul and Cumberland (See Section 5.1.1)	\$10,000
St. Paul and Inner Loop (See Section 5.1.1)	\$10,000
St. Paul and Andrews (See Section 5.1.5)	\$25,000
St. Paul and Pleasant (See Section 5.1.5)	\$25,000
St. Paul and Mortimer (See Section 5.1.5)	\$25,000
St Paul/South and Main (See Section 5.1.5)	\$25,000
South and Broad (See Section 5.1.5)	\$25,000
South and Court (See Section 5.1.5)	\$25,000
South and Woodbury (See Section 5.1.4)	\$120,000
South and Griffith (See Section 5.1.3)	\$25,000
South and Byron/Mt. Hope (See Section 5.1.2)	\$100,000
Clinton and Cumberland (See Section 5.1.1)	\$10,000
Clinton and Inner Loop (See Section 5.1.1)	\$10,000
Clinton and Andrews (See Section 5.1.5)	\$25,000
Clinton and Pleasant (See Section 5.1.5)	\$25,000
Clinton and Mortimer (See Section 5.1.5)	\$25,000
Clinton and Main (See Section 5.1.5)	\$25,000
Clinton and Broad (See Section 5.1.5)	\$25,000
Clinton and Court (See Section 5.1.5)	\$25,000
Clinton and Woodbury (See Section 5.1.5)	\$25,000
Clinton and Byron (See Section 5.1.2)	\$100,000
TOTAL	\$710,000

¹ Note: Approximate costs listed are “order of magnitude” costs for planning purposes only and do not include mobilization & contingencies. Costs shown are for construction only, design and inspection would be additional. Actual costs may differ once designed and implemented.

Roadway Improvement Costs

- ▶ **Conversion Costs for North of Main Street**
 - ▶ \$550,000 if Pavement Markings Ground Off
 - ▶ \$1.2M if Roadway is Milled and Pavement Overlay Applied
- ▶ **Conversion Costs for South of Main Street**
 - ▶ \$1.05M with Grinding
 - ▶ \$1.6M with Mill and Overlay
- ▶ **Overall Costs**
 - ▶ \$1.6M with Grinding
 - ▶ \$2.8M with Mill and Overlay

Summary

- ▶ Overall Levels of Service at the Intersections and Speeds Through the Corridors Remain Generally the Same Between the No-Build and 2-Way Build Conditions
- ▶ Levels of Service are LOS D or Better
- ▶ Pedestrian Improvements Include Bulbouts to Reduce Crossing Distances and LPI's to Move Pedestrians into the Lane before Vehicles
- ▶ Future Transit Center will Consolidate Operations, Eliminate the Need for On-street Bus Transfers and Reduce Pedestrian Crossing Movements at Intersections

Summary (continued)

- ▶ Limited Ability to Improve Bike Facilities without Widening and Reducing Sidewalk Width. Possibility of Bike Lanes on St. Paul North of Main Street if a Parking Lane is Removed.
- ▶ Proposed Concept Includes Conversion of Bittner to One-way to Allow for Angled Parking to Increase Number of Spaces
- ▶ Concept Requires Removal of East Side Parking Lane on Clinton between Broad and Main being Proposed as Part of the Midtown Redevelopment

Summary (continued)

- ▶ **Proposed Concept also includes:**
 - ▶ Major Reconfiguration of South Ave Garage Operations
 - ▶ Conversion of Broad Street between South and Clinton to Two-way Traffic as Proposed by Midtown Redevelopment
 - ▶ Major Reconfiguration of South/Woodbury Intersection
 - ▶ Closing of I-490 left Side On-Ramp
 - ▶ Major Reconfiguration of South/Griffith/I-490 Off-Ramp Intersection

Summary (continued)

► Possible Concerns:

- Queuing – 2-Way Traffic Will Increase Queue Lengths, Some May Queue Back to Adjacent Intersection (typical for CBD's)
- Atypical Geometry at South/Griffith and Byron/Clinton
- No Left Turn Lanes on Main Street
- Grinding of Pavement Markings Will Cause Rutting and Mirage Markings at Night or when Rainy. Highly Recommend Mill & Overlay Option

Conclusion

- ▶ Two-Way Conversion is Feasible with Minimal Change In Level of Service or Travel Speeds
- ▶ Conversion Can Occur Mostly Within the Existing Pavement Width, but will Require Minor Roadway Improvements
- ▶ Approximate Cost to Implements = \$2.8M
(\$1.2 North of Main Street/\$1.6M South of Main Street)

Summary & Conclusions (continued)

PUBLIC COMMENT