

EASTMAN AVENUE CORRIDOR STUDY

City of Midland Council Meeting

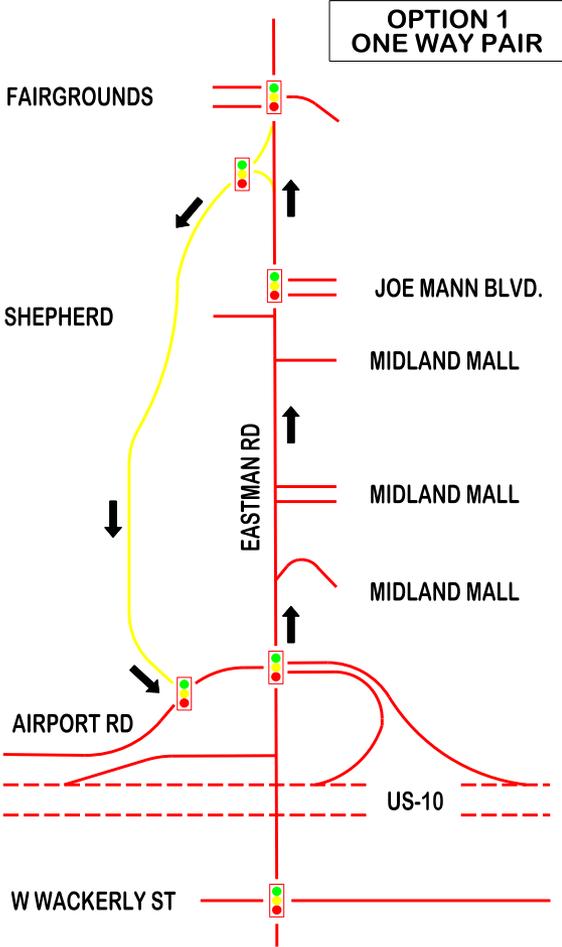
March 27, 2017

Background

- US-10 BR/US-10 Interchange to Joe Mann Boulevard
- Previous Studies
 - Eastman Avenue Traffic Study (EATS) (2005)
 - One-Way Pair
 - Narrow Boulevard with Signals
 - Narrow Boulevard with Roundabouts
 - Eastman Avenue Interim Alternatives Study (2006)

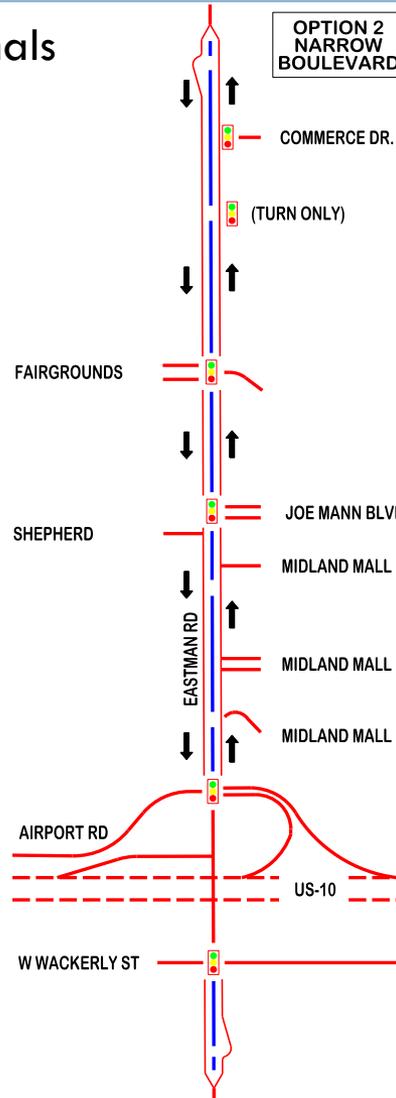
Background- 2005 Study

One Way Pairs
\$12.7 M



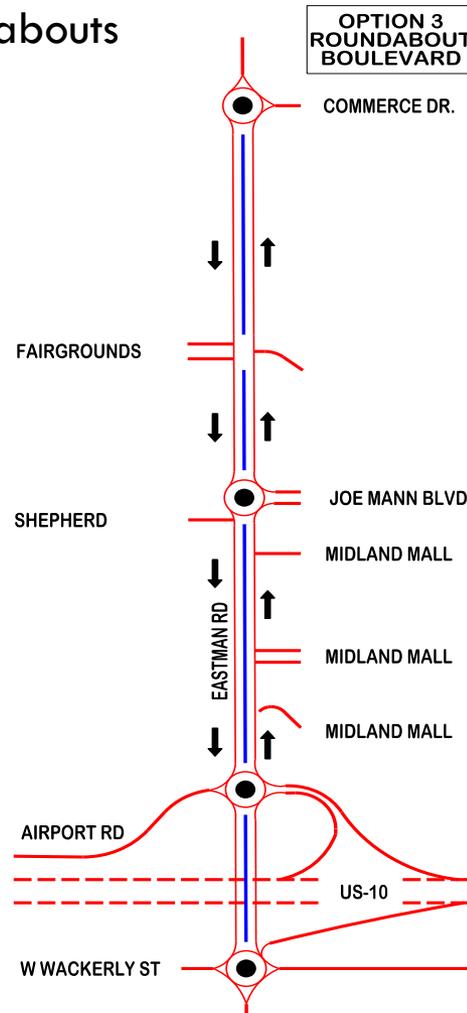
Background- 2005 Study

Narrow Boulevard with traffic signals
\$11.8M

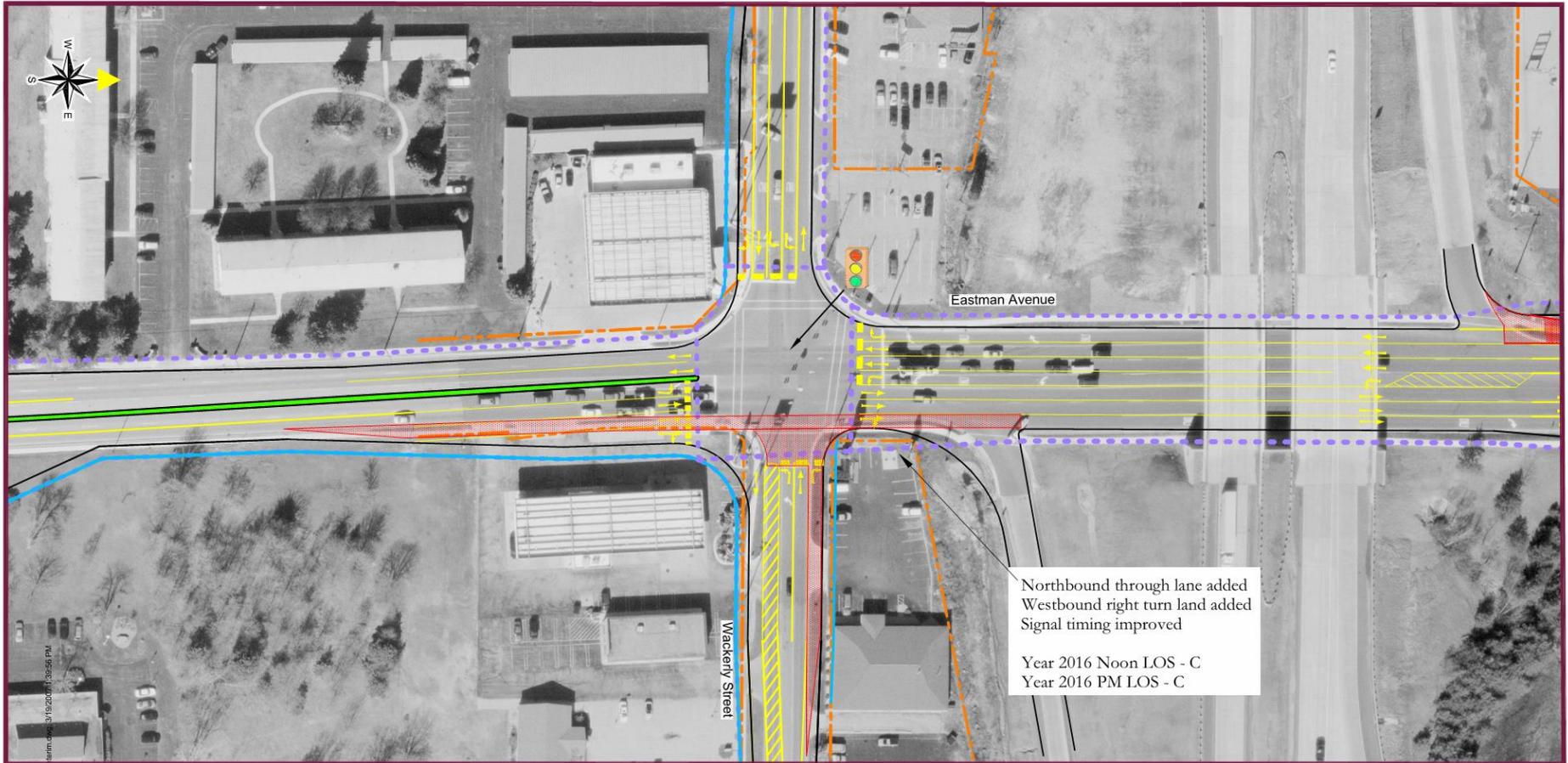


Background- 2005 Study

Narrow Boulevard with Roundabouts
\$10.4 M



Background – 2006 Interim Alternative



GRAPHIC SCALE
1"=50'

Legend

Existing Conditions

- 10 US Route
- Existing Right of Way

Proposed Ultimate Improvements (Year 2026)

- Proposed Right of Way (2026)
- Proposed Curb Line (2026)
- Proposed Pavement Marking (2026)
- Proposed Median Island (2026)
- Proposed Pedestrian Route
- Proposed Traffic Signal

Proposed Interim Improvements (Year 2016)

- Proposed Interim Geometry

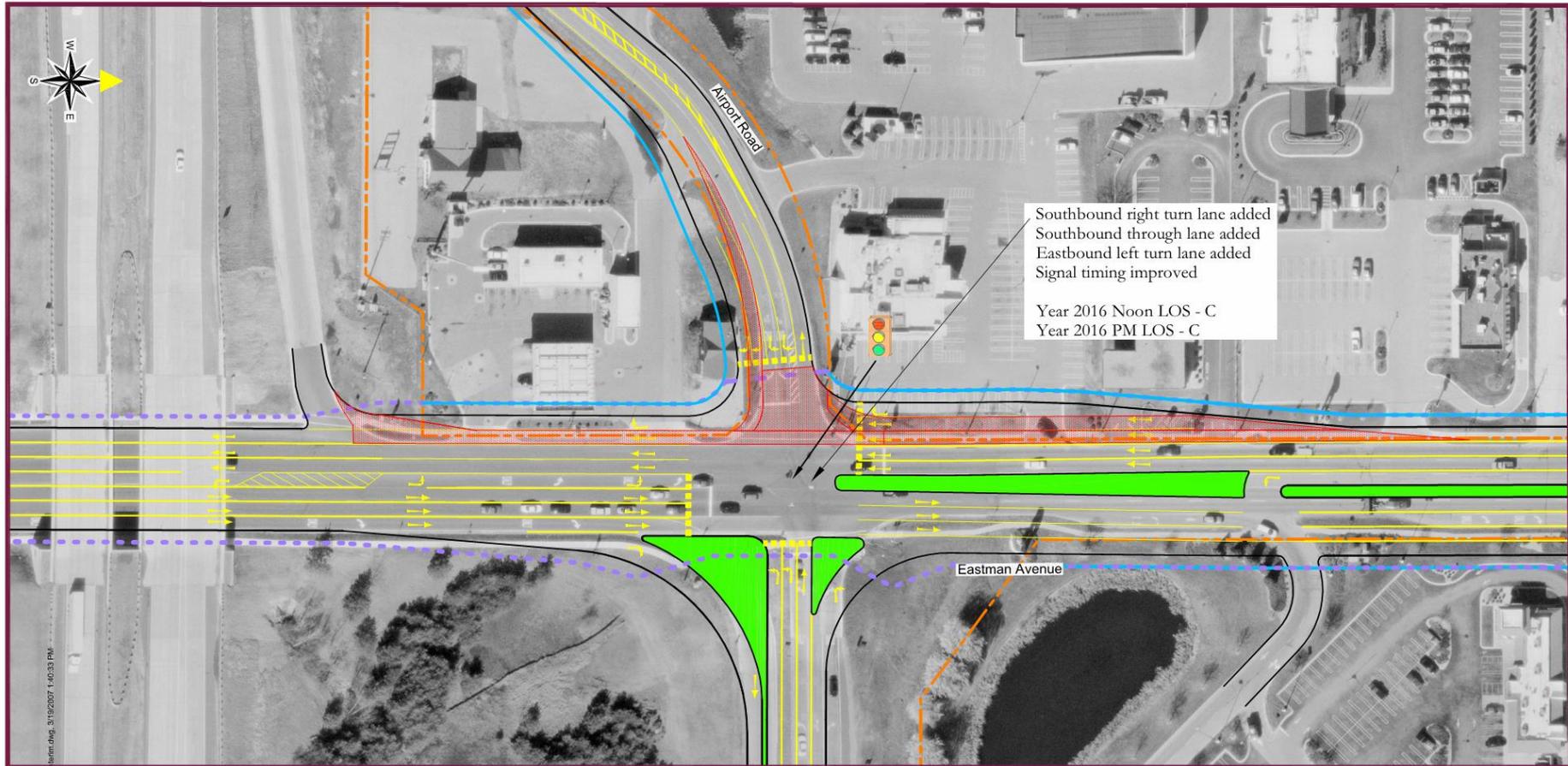
Figure 1A

Interim Alternative 1

Eastman/Wackerly Intersection

Eastman Avenue Interim Alternatives
City of Midland, Michigan

Background – 2006 Interim Alternative



Legend

<p>Existing Conditions</p> <ul style="list-style-type: none"> US Route Existing Right of Way 	<p>Proposed Ultimate Improvements (Year 2026)</p> <ul style="list-style-type: none"> Proposed Right of Way (2026) Proposed Curb Line (2026) Proposed Pavement Marking (2026) Proposed Median Island (2026) Proposed Pedestrian Route Proposed Traffic Signal 	<p>Proposed Interim Improvements (Year 2016)</p> <ul style="list-style-type: none"> Proposed Interim Geometry
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Figure 1B
 Interim Alternative 1
 Eastman/Airport Intersection

Eastman Avenue Interim Alternatives
 City of Midland, Michigan

Study Process

- Re-evaluation of previous 2006 preferred alternative
- Updated traffic volumes
- Updated traffic forecast
- Traffic Analysis
 - ▣ Existing Conditions
 - ▣ No Build (2040)
 - ▣ Alternatives
- Transportation Improvement Alternatives
 - ▣ Preferred Alternative from 2006 Study
 - ▣ Updated Preferred Alternative

Development Since 2005





Legend

-  State Route
-  Approximate Location of Proposed Commercial Development
-  Approximate Location of Proposed Light Industrial Development
-  Approximate Location of Proposed Residential
-  Approximate Location of Proposed Quasi-Public

-  New Development Since 2005
-  New Road Since 2005

Figure 3
Potential Future Developments

Eastman Avenue/Joe Mann Boulevard
Traffic Study
City of Midland, Michigan

Project Goals

- Re-evaluate the 2006 Preferred Alternative
- Determine if preferred alternative accommodates updated traffic
- Determine if preferred alternative is still viable/needed
- Develop improvements needed to accommodate updated traffic
- Evaluate right-of-way impacts

Alternative 1



<p>Eastman Avenue Corridor Study</p>  	<p>Figure 1 Alternative 1 Recommended Improvements from 2006 Interim Study</p> <p>Sheet 1 of 2 March 2017</p>	<p>Proposed Curb <small>*Curb cuts not shown for minor side streets or driveways.</small></p> <p>Proposed Pavement Markings</p> <p>Proposed Sidewalk</p>	<p>Legend</p> <p>Proposed Signalized Intersection</p> 	<p>Matchline</p> <p>Parcel Line</p>
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Alternative 1

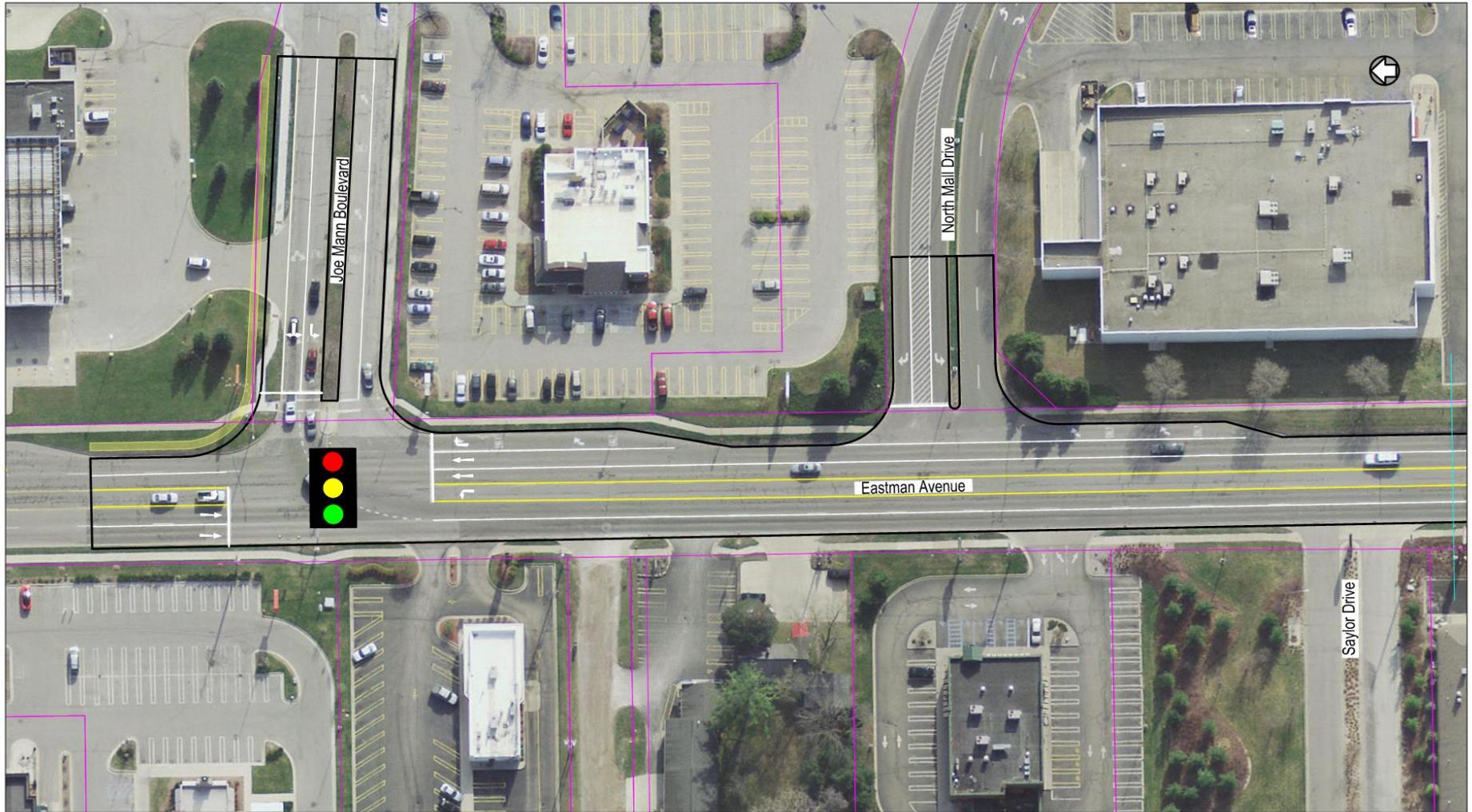


Figure 1
Alternative 1
Recommended Improvements from
2006 Interim Study

Sheet 2 of 2

March 2017

Legend

- Proposed Curb
*Curb cuts not shown for minor side streets or driveways.
- Proposed Pavement Markings
- Proposed Sidewalk

Proposed Signalized Intersection



Matchline
Parcel Line



Eastman Avenue
Corridor Study



Updated Preferred Alternative



<p>Eastman Avenue Corridor Study</p>  	<p>Figure 3 Updated Preferred Alternative Sheet 1 of 2 March 2017</p>	<p>Proposed Curb <small>*Curb cuts not shown for minor side streets or driveways.</small></p> <p>Proposed Pavement Markings</p> <p>Proposed Sidewalk</p>	<p>Legend</p> <p>Proposed Signalized Intersection</p> 	<p>Matchline</p> <p>Parcel Line</p>
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Updated Preferred Alternative

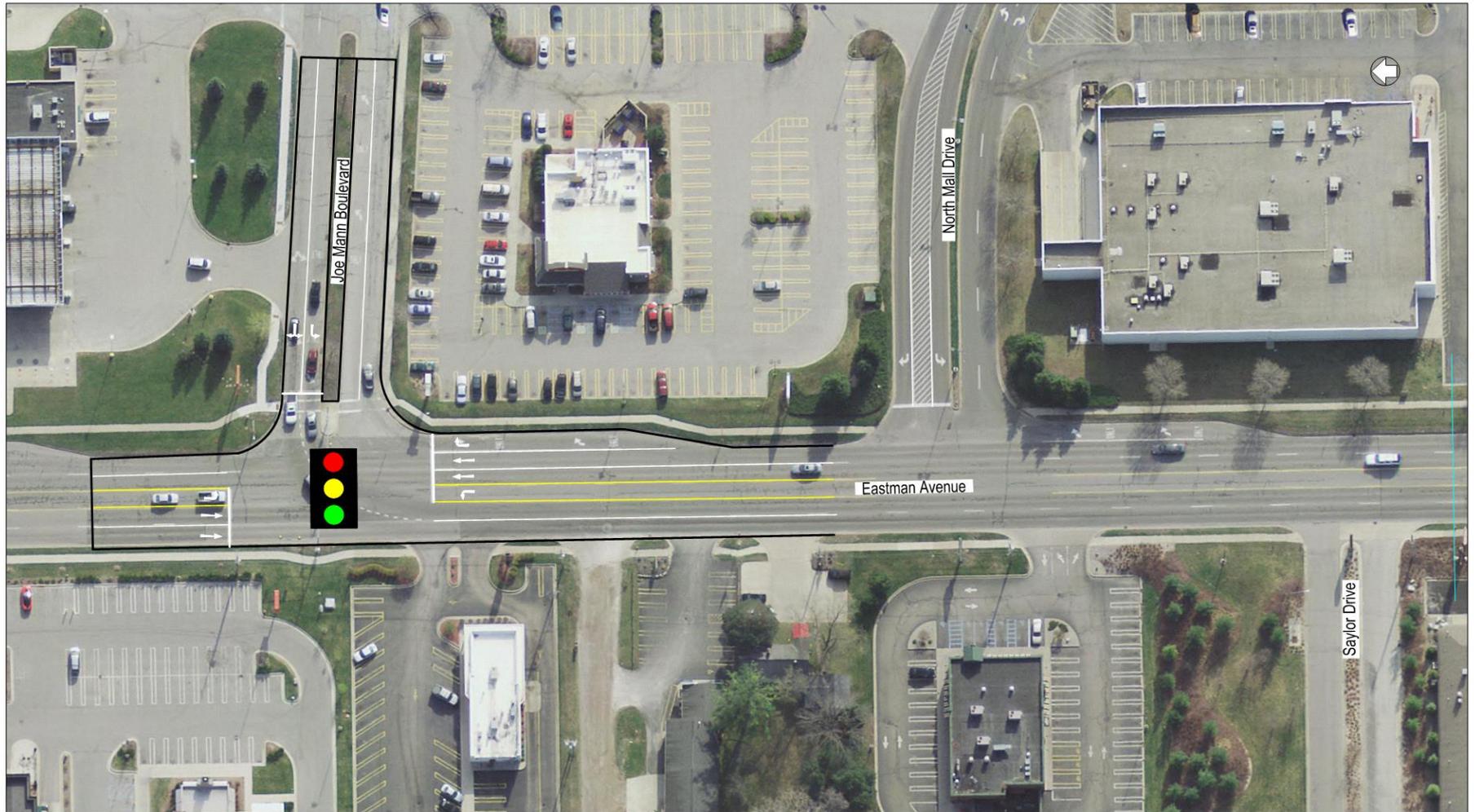


Figure 3

Updated Preferred Alternative

Sheet 2 of 2

March 2017

Legend

Proposed Curb
*Curb cuts not shown for minor side streets or driveways.



Proposed Pavement Markings



Proposed Sidewalk



Proposed Signalized Intersection



Matchline



Parcel Line



Eastman Avenue
Corridor Study



Interchange Area

- Wackerly to Airport/US-10 ramps
- Proposed improvements
- Wackerly intersection
 - ▣ Add northbound and westbound right turn lanes
- Shift US-10 BR/Eastman to the east from Wackerly to Airport
- Airport intersection
 - ▣ Add south bound right turn lane

Conclusion

- Preferred Alternative from 2006 study should be implemented from Cinema Drive to Airport Road
- No road improvements are required north of Cinema Drive
- Additional westbound right-turn lane at Joe Mann Boulevard no longer recommended
- Updated Preferred Alternative accommodates updated 20-year traffic projections
- Long-term improvement (Three-Lane Boulevard) from EATS no longer needed

Next Steps

- City & MDOT resurfacing plans scheduled for 2018
- City also plans for short right turn lane next to Bennigans
- DLZ assisting City with centerline shift idea
 - ▣ Specific & detailed MDOT geometric requirements at interchanges
- Once shift potential is determined
 - ▣ Final Right-of-Way Impacts can be determined
 - ▣ Project costs for the interim/20 year fix updated
- Important that resurfacing work is not detrimental to future capacity incremental improvements that may be forthcoming
- City will report back to City Council this fall

US-10 BUSINESS ROUTE CORRIDOR STUDY

City of Midland Council Meeting

March 27, 2017



Topics

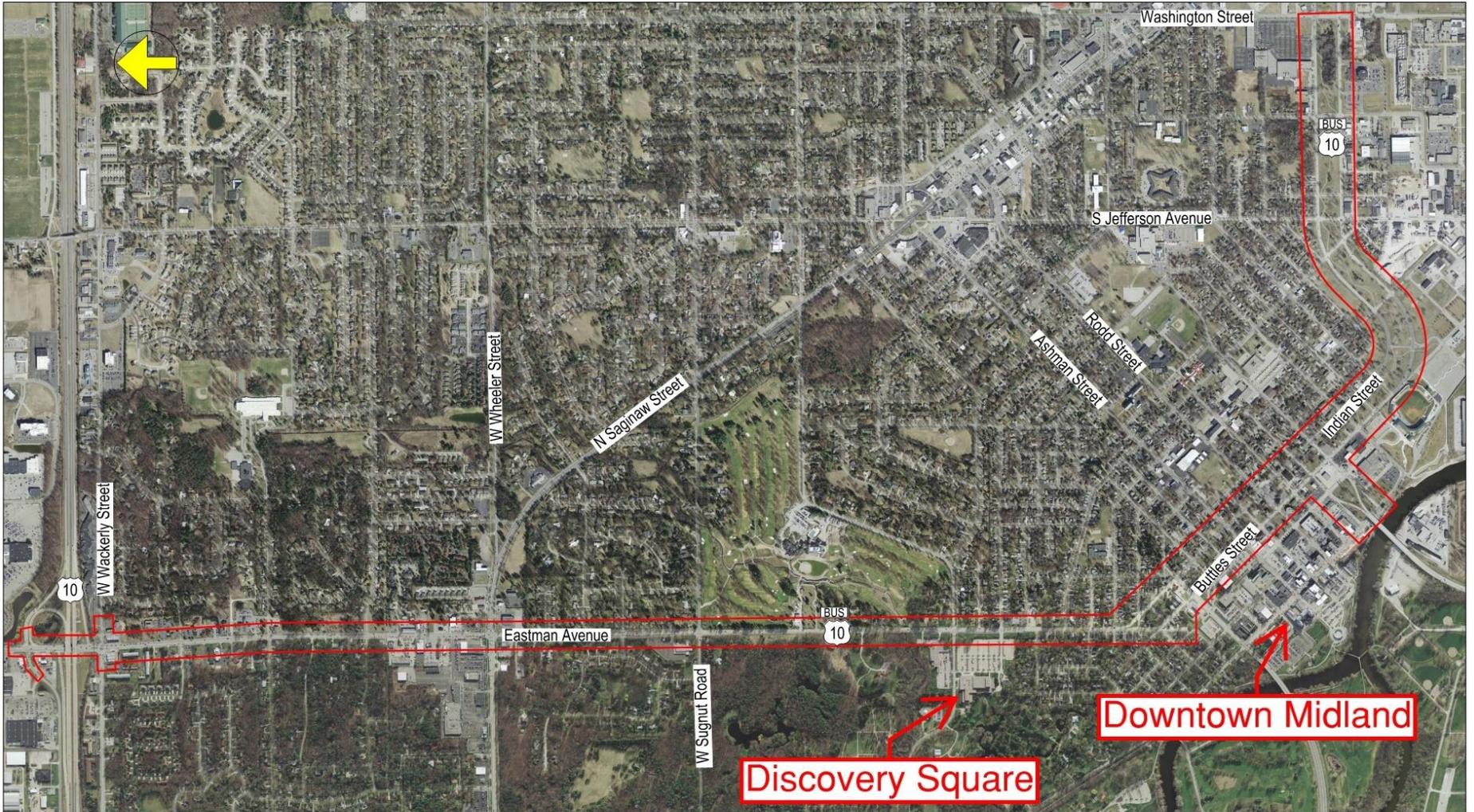
- Project Goals
- Study Process
- Recommended Improvements
- Project Schedule & Next Steps

Background

- Study Commissioned by MDOT
 - ▣ Based on public & city interest
- Partnership with the City
- Other Recent Studies
 - ▣ Main Street Streetscape Study (City of Midland)
 - ▣ Downtown Midland Study (Momentum Midland)
- US-10 BR through City of Midland
 - ▣ Washington Street to US-10 BR/US-10 Interchange

Background

- Three Unique Segments
 - Segment 1 – Washington Street to West Hines Street
 - One-Way Pair – Three westbound and three eastbound travel lanes
 - Segment 2 – West Hines Street to East Wackerly Street
 - 4/5-Lane Cross Section
 - Segment 3 – East Wackerly Street to Airport Road
 - US-10/US-10 BR Interchange Area – 7-Lane Cross Section



US-10 Business Route
Corridor Study



FIGURE 1
STUDY AREA

September 2016

DRAFT

Study Area



Study Process

- Development of Project Goals
- Public Engagement
 - Steering Committee – 8/30/16
 - Stakeholder Committee – 12/2/15, 10/31/16
 - Public Information Meeting – 12/14/16
- Traffic Analysis
 - Existing Conditions
 - No Build (2040)
 - Crashes
- Transportation Improvement Alternatives Development & Analysis
 - Three alternatives
 - Comparison of Alternatives
 - Conversion to two-way traffic not feasible
- Selection of Preferred Alternative

Project Goals

- Developed based on Stakeholder input
 1. Accommodate the design year (2040) traffic volumes
 2. Alleviate current and anticipated traffic congestion at intersections and along road segments
 3. Enhance safety and reduce crashes for all modes of transportation
 4. Increase connectivity to Downtown Midland & Discovery Square
 5. Improve non-motorized mobility and eliminate barriers for bicyclist/pedestrians with minimal impacts to traffic flow
 6. Context Sensitive Design
 7. Support economic development within the corridor

Alternative 1

□ Road Diet



Alternative 2

- Conversion to Two-Way Traffic
 - ▣ Five-Lane Cross Section – Indian & Buttlles
 - ▣ Three-Lane Cross Section Not Feasible



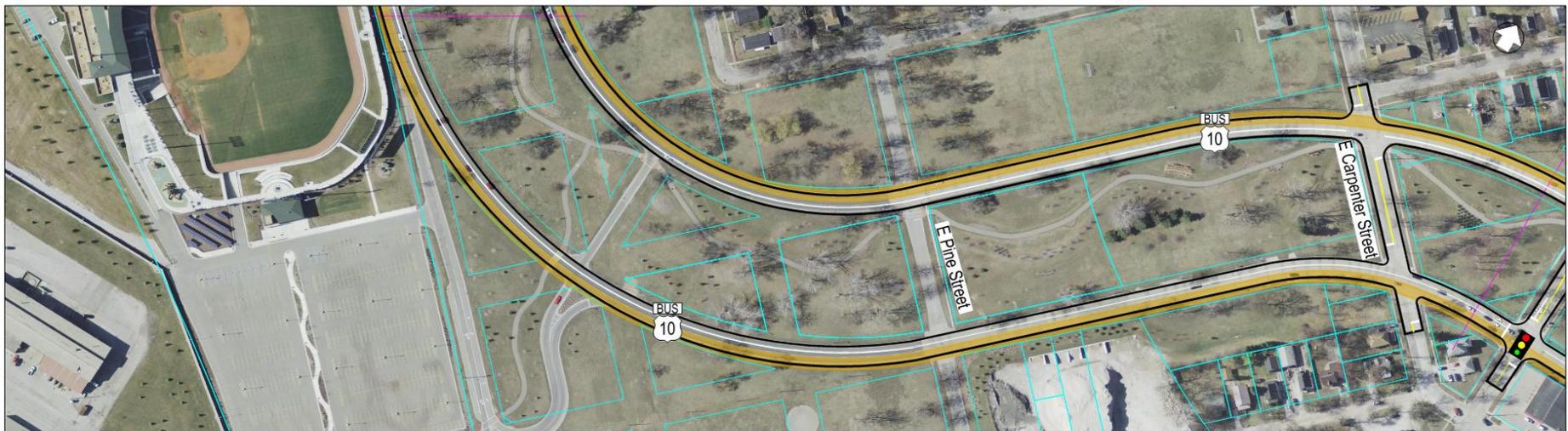
Alternative 3

- Conversion to Two-Way Traffic
 - ▣ Five-Lane Cross Section – Indian Street
 - ▣ Three-Lane Cross Section – Buttles Street (local street)



Preferred Alternative

- Options for Segments 2 & 3 limited
- Improvements focused on Segment 1
 - ▣ Reduction in number of travel lanes
 - ▣ Non-motorized zone (discussed below)
 - ▣ Signal upgrades, retiming
 - ▣ Sidewalk connections
 - ▣ Access Management
 - ▣ Connection to Downtown Midland (Streetscape Study)



US-10 Business Route
Corridor Study



FIGURE 2
ALTERNATIVE 1

Sheet 1 of 5

December 2016

Proposed Curb
*Curb cuts not shown for minor side streets or driveways.

Proposed Pavement Markings

Proposed Sidewalk



Legend

Non-Motorized Facility

Proposed Signalized Intersection



Matchline

Existing Right-of-way





<p>US-10 Business Route Corridor Study</p>   	<p>FIGURE 2 ALTERNATIVE 1 Sheet 2 of 5 December 2016</p>	<p>Proposed Curb <small>*Curb cuts not shown for minor side streets or driveways.</small></p> <p>Proposed Pavement Markings</p> <p>Proposed Sidewalk</p>	<p>Legend</p> <p>Non-Motorized Facility</p> <p>Proposed Signalized Intersection</p>	<p>Matchline</p> <p>Existing Right-of-way</p>
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Non-Motorized Zone Options

- 22 - 26' Corridor Available
 - Current Use – travel lane, green strip, sidewalk, additional ROW
- Sufficient room for bike lanes, non-motorized paths, sidewalks, and/or green/buffer strips
- Option 1
 - One-way, on-street bike lanes with sidewalks
 - Outside travel lane converted to on-street bike lane w/ barrier
- Option 2
 - Bi-directional, bike lane (Buttles Street) w/ barrier & sidewalk
 - Indian non-motorized type TBD
- Option 3
 - On-street bike lanes - Indian Street & Buttles w/ non-motorized path along Buttles
- To be determined during next phase of project
 - Based on coordination with Stakeholders & Public

Non-Motorized Zone Options

BIKE LANE ALTERNATIVES

US-10 CORRIDOR PLAN MIDLAND, MICHIGAN

BUFFERED BIKE LANE - PLANTED SEPARATOR



BUFFERED BIKE LANE - PHYSICAL SEPARATOR



Non-Motorized Zone Options



BIKE LANE ALTERNATIVES

US-10 CORRIDOR PLAN MIDLAND, MICHIGAN

BUFFERED BIKE LANE - PAINTED SEPARATOR



BUFFERED BIKE LANE - PAINTED PAVEMENT



Implementation & Next Steps

- Phased Implementation
- Additional Public Involvement – MDOT & City
- City Resolution
- MDOT/City develop design details for implementation of non-motorized facilities
- US-10 interchange area discussed in subsequent presentation