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Route 9 Corridor Parkville

Board of Alderman Meeting

August 4, 2015

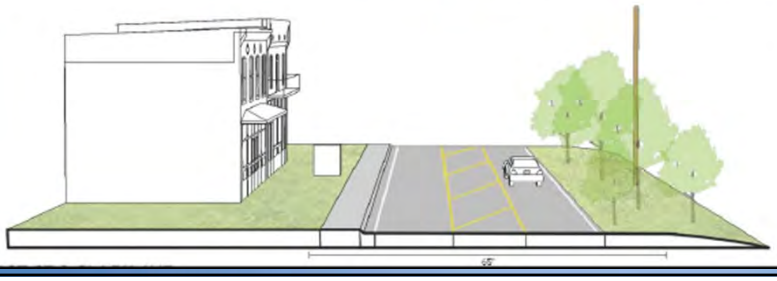
Route 9 Corridor

Contents:
Existing Conditions
Unique Challenges
Traffic Analysis
Road Cross Section Templates
Schedule

Existing Conditions

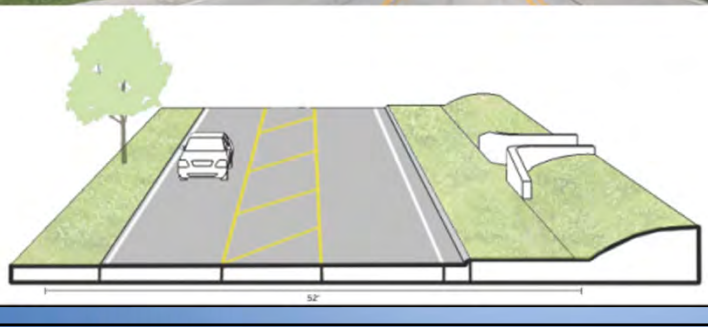
Existing Conditions

1 East St & Clark Ave



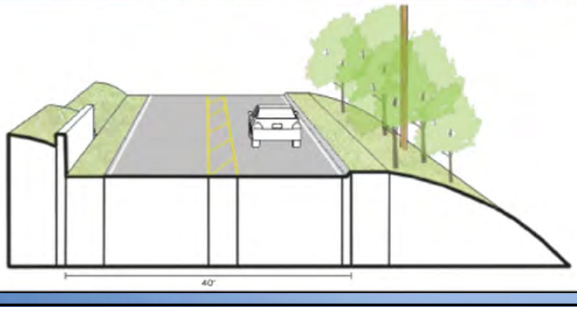
Existing Conditions

② Walnut Grove Cemetery



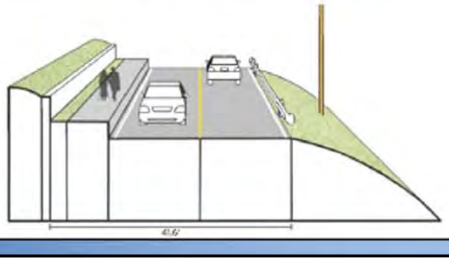
Existing Conditions

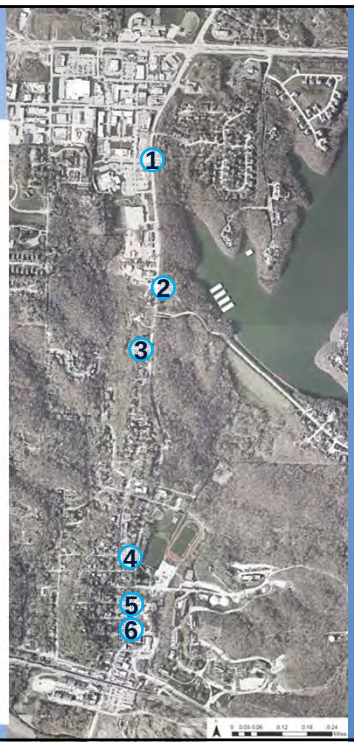
③ Old Park Cemetery



Existing Conditions

④ East St & 7th St



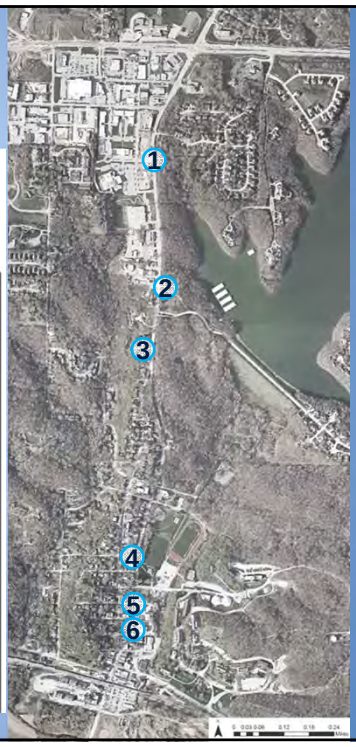


Existing Conditions

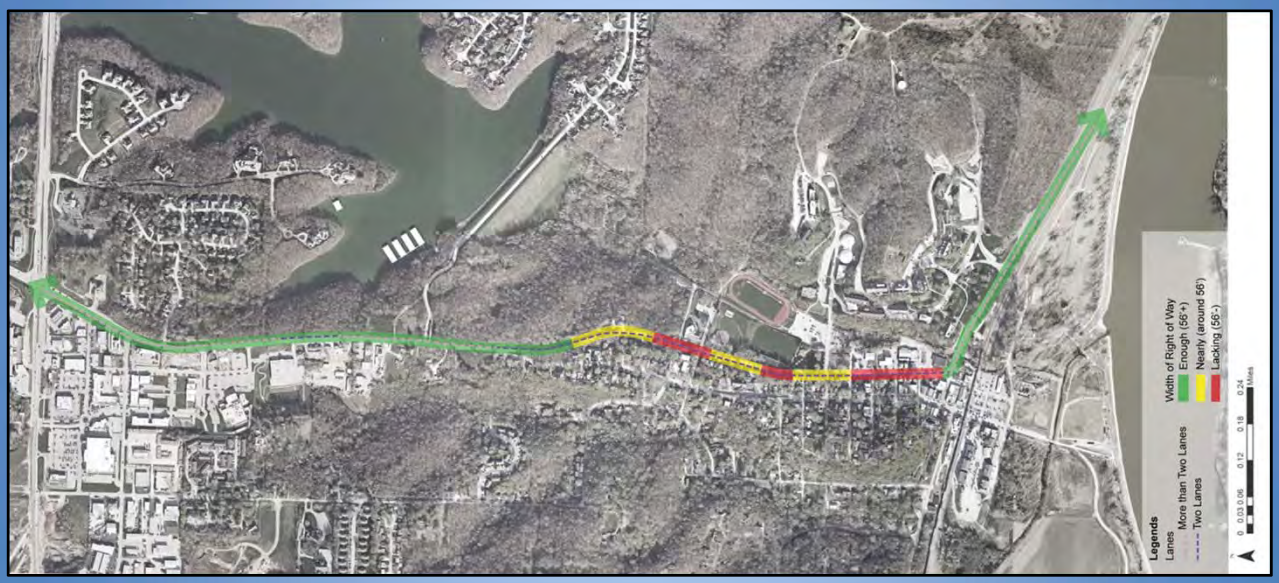
⑤ East St & 4th St

Existing Conditions

⑥ East St & 3rd St



Existing Conditions



Unique Challenges

Unique Challenges

1 Drainage Issue

[Photo facing South]

- Historical drainage challenges could be addressed through improvements to Route 9

Unique Challenges

② Traffic Signal Location

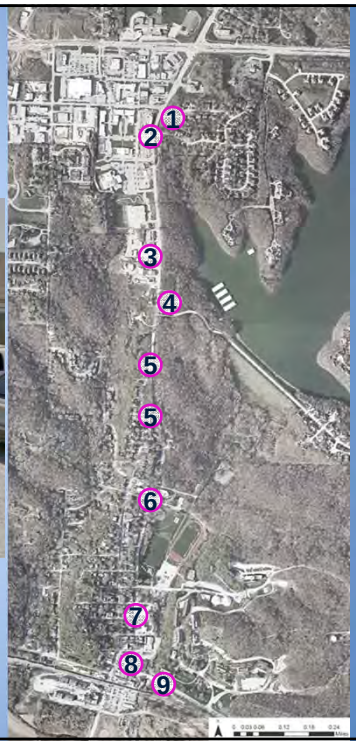
[Photo facing North]

- Traffic volumes make turns from side streets difficult. Analysis is necessary to determine if/where a new signal or intersection modifications would help

Unique Challenges

3 – Uncontrolled Access

Over 700' of uncontrolled access creates potential conflicts between pedestrians and automobiles
(Photo facing south)



Unique Challenges

④ Walnut Grove Cemetery

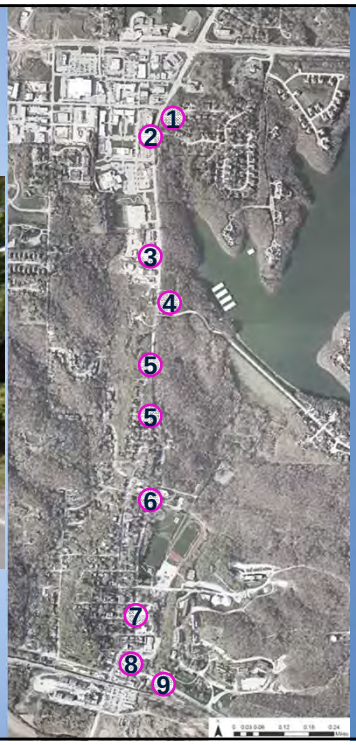
[Photo facing East]

- Walnut Grove Cemetery is located close to the existing roadway

Unique Challenges

5 – Main Street Intersection

Shallow angle at East Street (Route 9) will cause multiple traffic safety issues
(Photo facing south)



Unique Challenges

6 – 12th Street Intersection

Existing retaining wall creates visibility challenges
(Photo facing south)

Unique Challenges

7 Narrow Right-of-Way

[Photo facing East]

- As Route 9 travels through Downtown Parkville, the Right-of-Way narrows. In many cases, existing yards and parking are located within the Right-of-Way

Unique Challenges

8 1st Street Intersection

[Photo facing Northwest]

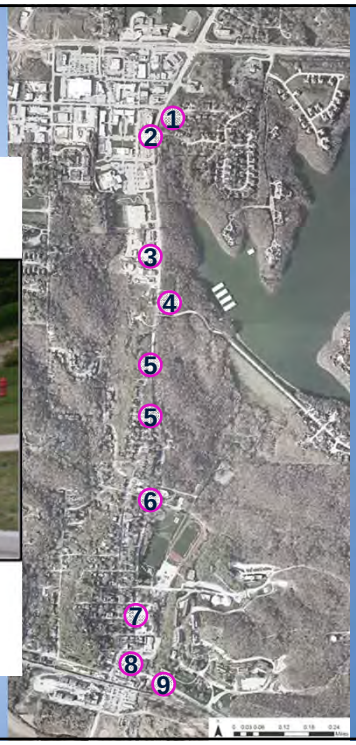
- The unusual configuration of the 1st Street Intersection functions but does result in traffic back ups in multiple directions at peak times

Unique Challenges

9 Access to English Landing and Existing Trail

[Photo facing West]

- The railroad and other barriers prevent a clear connection to English Landing and the existing trail



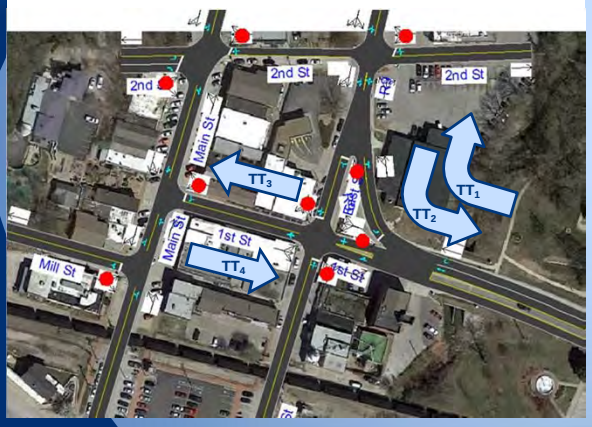
Traffic Analysis

Route 9 Downtown
Route 9 to the North
Route 9 & Mattox Rd

Route 9 Downtown

Current Traffic Conditions

Current Layout



Objectives for Analysis:

- Use TEAP traffic counts
- Determine Travel Time using Synchro
  - o $TT_1+TT_2+TT_3+TT_4$
- Address future growth
- Evaluate costs
- Address pedestrian safety

Alternatives

- Option 1 - Signal at Route 9 & 2nd St
- Option 2 - Signal at East St & 1st St
- Option 3 - Roundabout North of R9

1% Growth Rate used
Permitted/Protected Left-turns if 1 left lane
East St & 1st St warranted for a signal
Unknown traffic counts on 2nd St

Option 1 Conditions

Signal at Route 9 & 2nd St

	Travel Time (TT_{TOT})	Change from Current (TT_{TOT}-TT_{CUR}= TT_{DIFF})
AM (2010)	1.3 min	1.3-2.6 = -1.3 min
AM (2035)	1.3 min	1.3-6.9 = -5.6 min
PM (2010)	1.5 min	1.5-1.8 = -0.3 min
PM (2035)	1.8 min	1.8-3.9 = -2.1 min

-Change Stops at Main & 2nd
-Pedestrian Crossing at 2nd St
Costs: Signal installation and additional lanes

Option 2 Conditions

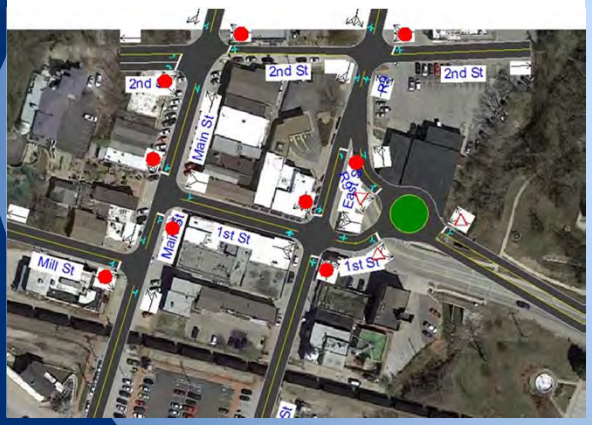
Signal at East St & 1st St

	Travel Time (TT_{TOT})	Change from Current (TT_{TOT}-TT_{CUR}= TT_{DIFF})
AM (2010)	1.4 min	1.4-2.6 = -1.2 min
AM (2035)	1.7 min	1.7-6.9 = -5.2 min
PM (2010)	1.3 min	1.3-1.8 = -0.5 min
PM (2035)	1.6 min	1.6-3.9 = -2.3 min

-Change Stops at Main & 1st
-Pedestrian Crossing at 1st St
Costs: Signal installation and additional lanes

Option 3 Conditions

Roundabout North of R9



	Travel Time (TT_{TOT})	Change from Current (TT_{TOT}-TT_{CUR}= TT_{DIFF})
AM (2010)	1.6 min	1.6-2.6 = -1.0 min
AM (2035)	2.6 min	2.6-6.9 = -4.3 min
PM (2010)	3.6 min	3.6-1.8 = +1.8 min
PM (2035)	7.9 min	7.9-3.9 = +4.0 min

-Change Stops at Main & 1st
-Pedestrian Crossing at Round.
Costs: Roundabout installation and additional lanes

TT Analysis

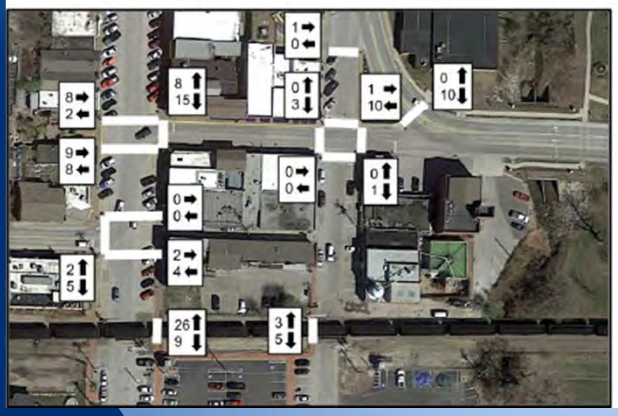
Best options for reducing travel time:

- o Options 1 or 2, not 3

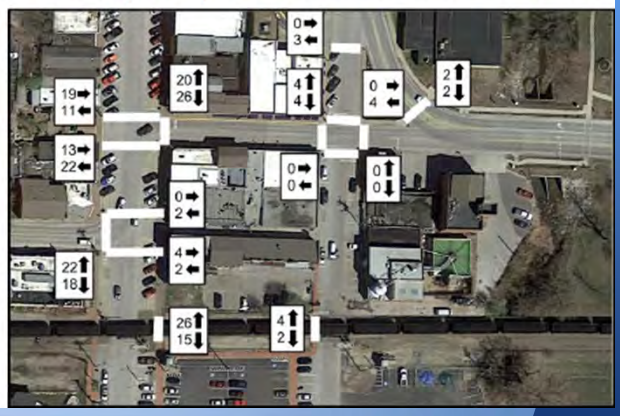
- Option 1 - More traffic on Main St
- Option 2 - Same travel time as Option 1 but requires 2 SB left turn lanes and therefore protected phase for lefts
- Option 3 - Increases total travel time for PM

Ped Crossing Counts

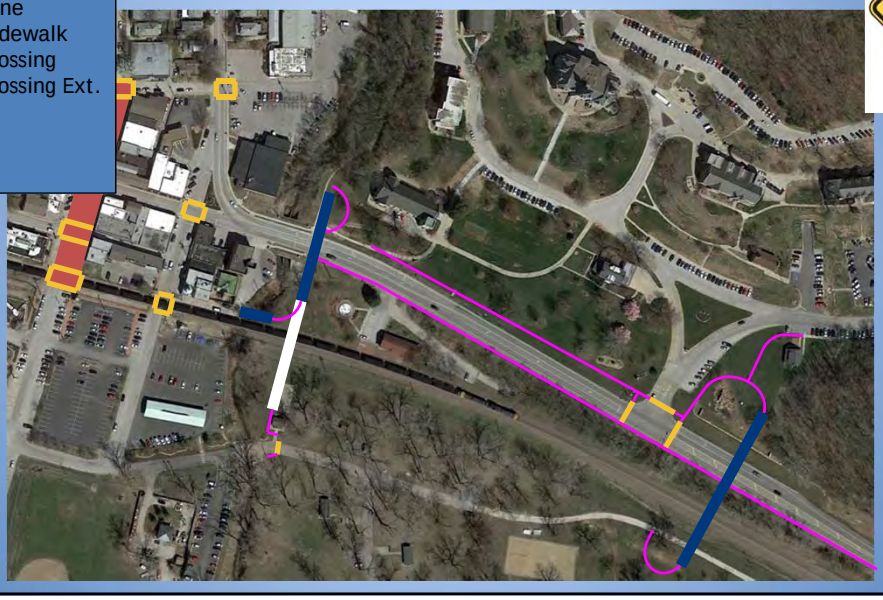
Fri. Sept 28, 2012 11:30AM to 12:30PM



Sat. Sept 29, 2012 11:00AM to 12:00PM



Ped Crossing Options



Ped Crossing Options

Best options for Pedestrian Safety:

- Ped only cross R9 with signal
- Stopping NB-SB traffic on Main at 2nd may reduce speeds, Ped Zone Warning
- Keep stop sign at Main and Mill due to restricted view
- Add ADA colored truncated domes on ramps
- Add curb turnouts to increase ped visibility
- Remove trail crossing
  - 280 ft < 660 ft min distance to signal, 35 mph speeds in 25 mph speed limit, > 12,000 ADT, added lane eastbound on Route 9 increases crossing distance, no space for central island refuge

Downtown Summary

Use Option 2

- Add signal at East St and 1st St
- Add left-turn lane at R9 & 2nd for NB
- Add EB lane along R9
- Switch stop signs at Main & 2nd
- Add truncated domes and curb turnouts
- Remove trail crossing

R9 to the North

Placement of Signal

Objectives for Analysis:

- Use Traffic Volume from Previous Studies
- Check Signal Warrants
- Identify Signal Alternatives

Traffic Volume

Future 2035	R9 & Lewis	R9 & 63rd	R9 & 62nd	R9 & Clark
AM				
Major Street - Total of Both Approaches, vph	1200	1173	1131	1106
Minor Street - High Volume Approach, vph	89	59	13	95
PM				
Major Street - Total of Both Approaches, vph	1806	1832	1810	1716
Minor Street - High Volume Approach, vph	106	63	5	149

Signal Warrants

- Use only provided traffic counts
- 1% Growth Rate, 2035 Traffic Conditions
- QT Traffic Study stated
  - R9 & Lewis and R9 & 63rd were on threshold of warrant criteria
- Warrant 1 - Eight-Hour Vehicular Volume
- Warrant 3 - Peak Hour
- Warrant 7 - Crash Experience

Signal Warrants

Crash Records		2010	2011	2012	2013	2014	Total
Property-Damage Only	R9 & Lewis St		3		2		5
	R9 & 63rd St			1	1	2	4
	R9 & 62nd St			1			1
	R9 & Clark Ave		1		1	1	3
Injury	R9 & Lewis St						0
	R9 & 63rd St			2			2
	R9 & 62nd St		1				1
	R9 & Clark Ave						0
Total		0	5	4	4	3	16

Alternatives

- Option 1 - Signal at Route 9 & Lewis
- Option 2 - Signal at Route 9 & 63rd
- Option 3 - Signal at Route 9 & 62nd
- Option 4 - Signal at Route 9 & Clark
- Option 5 - Signal at Route 9 & 63rd with Signal at Route 9 & 62nd
- Option 6 - Signal at Route 9 & Clark with Signal at Route 9 & 62nd

Alternatives

- Option 1 - Signal at Route 9 & Lewis
  - Spaced 530 ft from Route 9 & Route 45 Intersection
  - Required 660 ft spacing not met
  - Warranted for signal using 2035 traffic

Alternatives

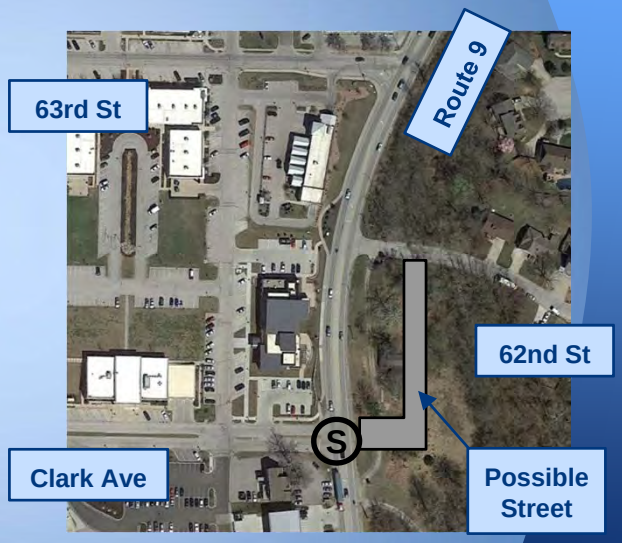
- Option 2 - Signal at Route 9 & 63rd
  - Required 660 ft spacing met
  - Warranted for signal according to QT Study
  - Connected to many businesses/houses

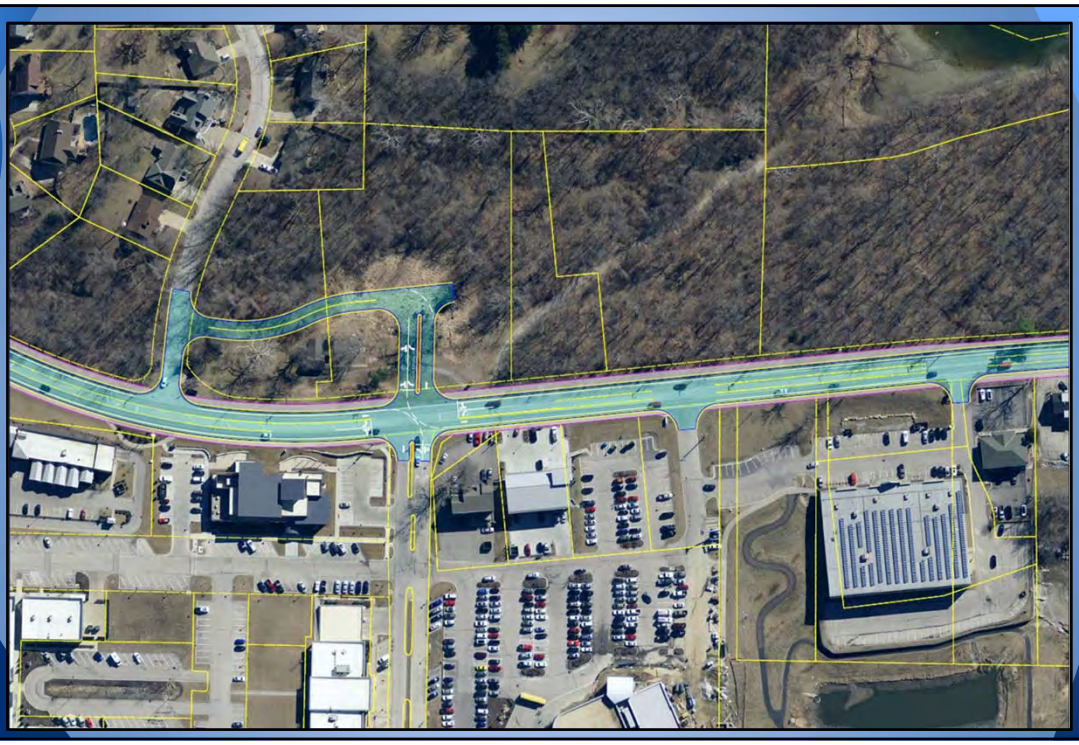
Alternatives

- Option 3 - Signal at Route 9 & 62nd
  - Required 660 ft spacing met
  - Not warranted for signal
  - Only connection for 69 houses

Alternatives

- Option 4 - Signal at Route 9 & Clark
  - Required 660 ft spacing met
  - Not warranted for signal
  - Connected to City Hall and Community Center



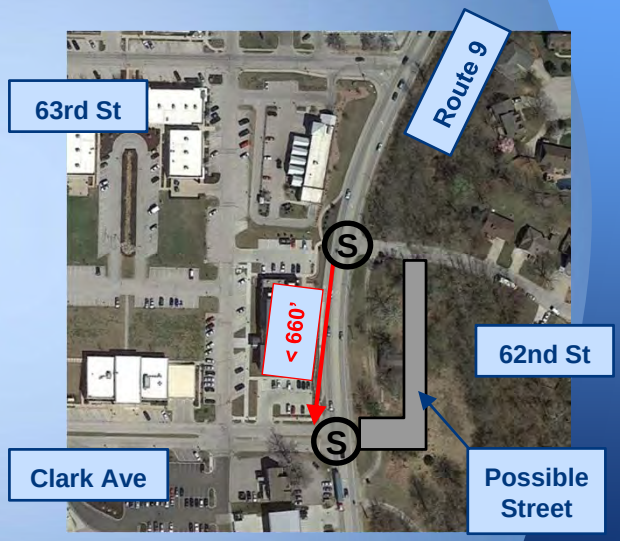


Alternatives

- Option 5 - Signal at Route 9 & 63rd with Signal at Route 9 & 62nd
  - Coordination between Signals
  - Required 660 ft spacing not met

Alternatives

- Option 6 - Signal at Route 9 & Clark with Signal at Route 9 & 62nd
  - Coordination between Signals
  - Required 660 ft spacing not met



R9 to the North Summary

Use Option 4

- Add signal at R9 & Clark Ave
- Warranted
- Connected to City Hall and YMCA
- Can combine with possible Clark Ave to 62nd St connection

Route 9 East of Downtown

Route 9 East of Downtown

- Additional Turn Lanes to Improve Safety and Flow
- Benefits to overall Corridor Conditions

Route 9 & Mattox Rd

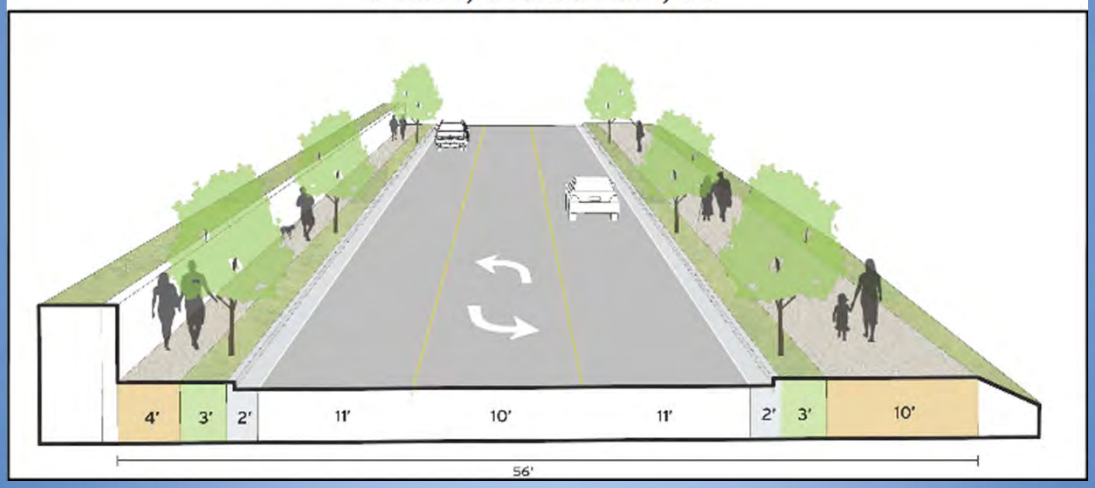
Route 9 & Mattox Rd Summary

- Evaluation of AADT underway
- Route 9 & Mattox Rd is warranted for a signal

Road Cross Section Templates

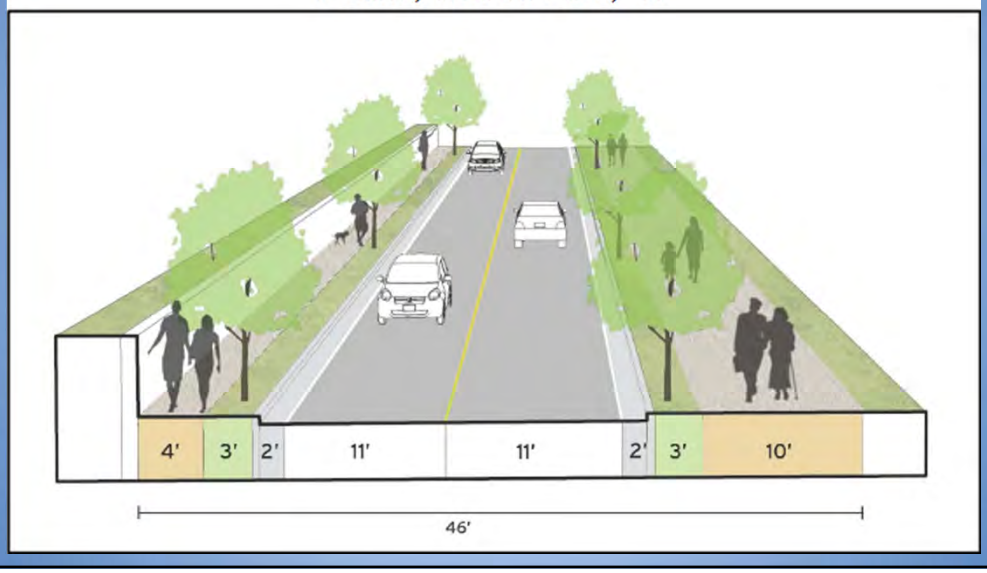
Road Cross Section Templates

3 Lane, Shared Path, 56'



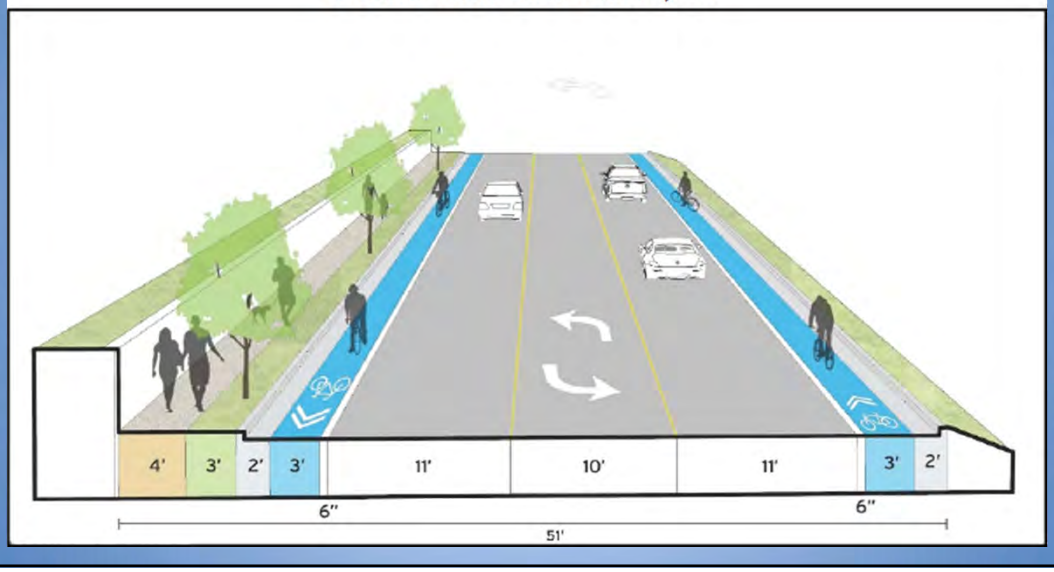
Road Cross Section Templates

2 Lane, Shared Path, 46'



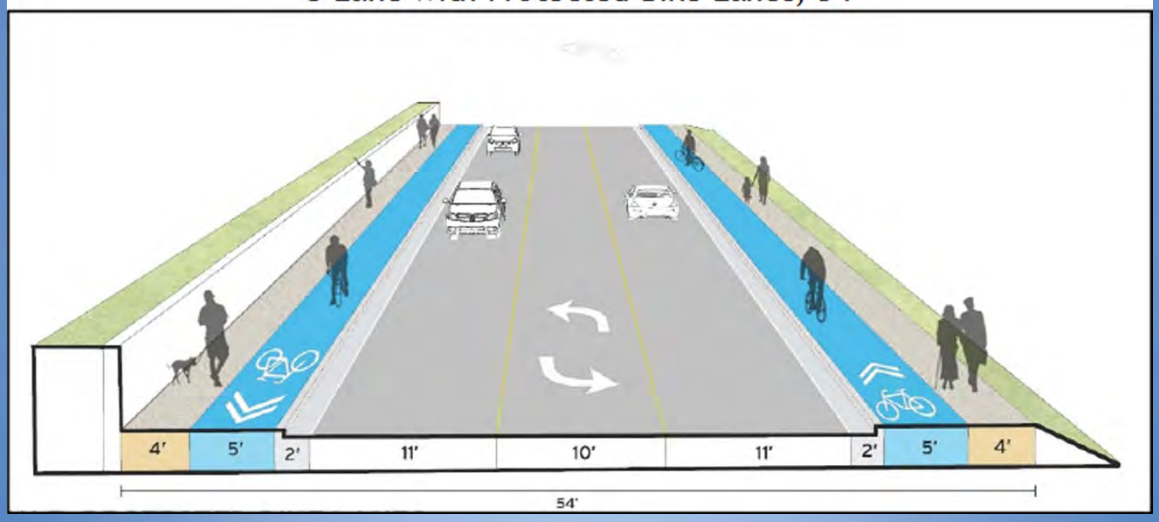
Road Cross Section Templates

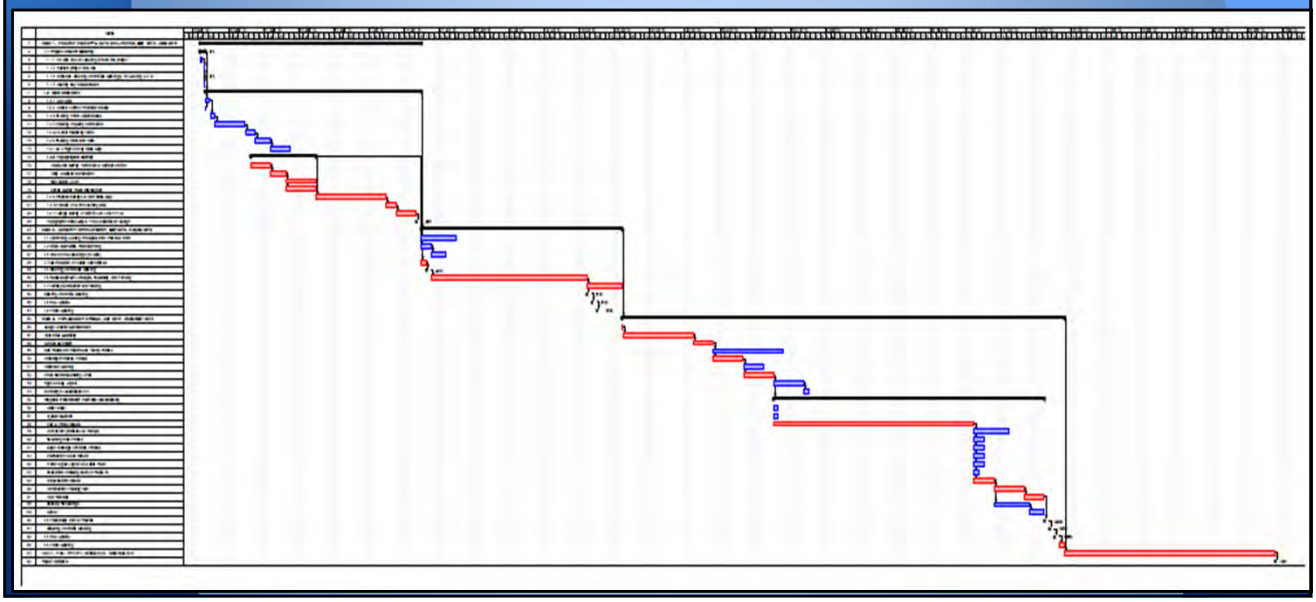
3 Lane with Bike Lanes, 51'



Road Cross Section Templates

3 Lane with Protected Bike Lanes, 54'



Schedule

Schedule