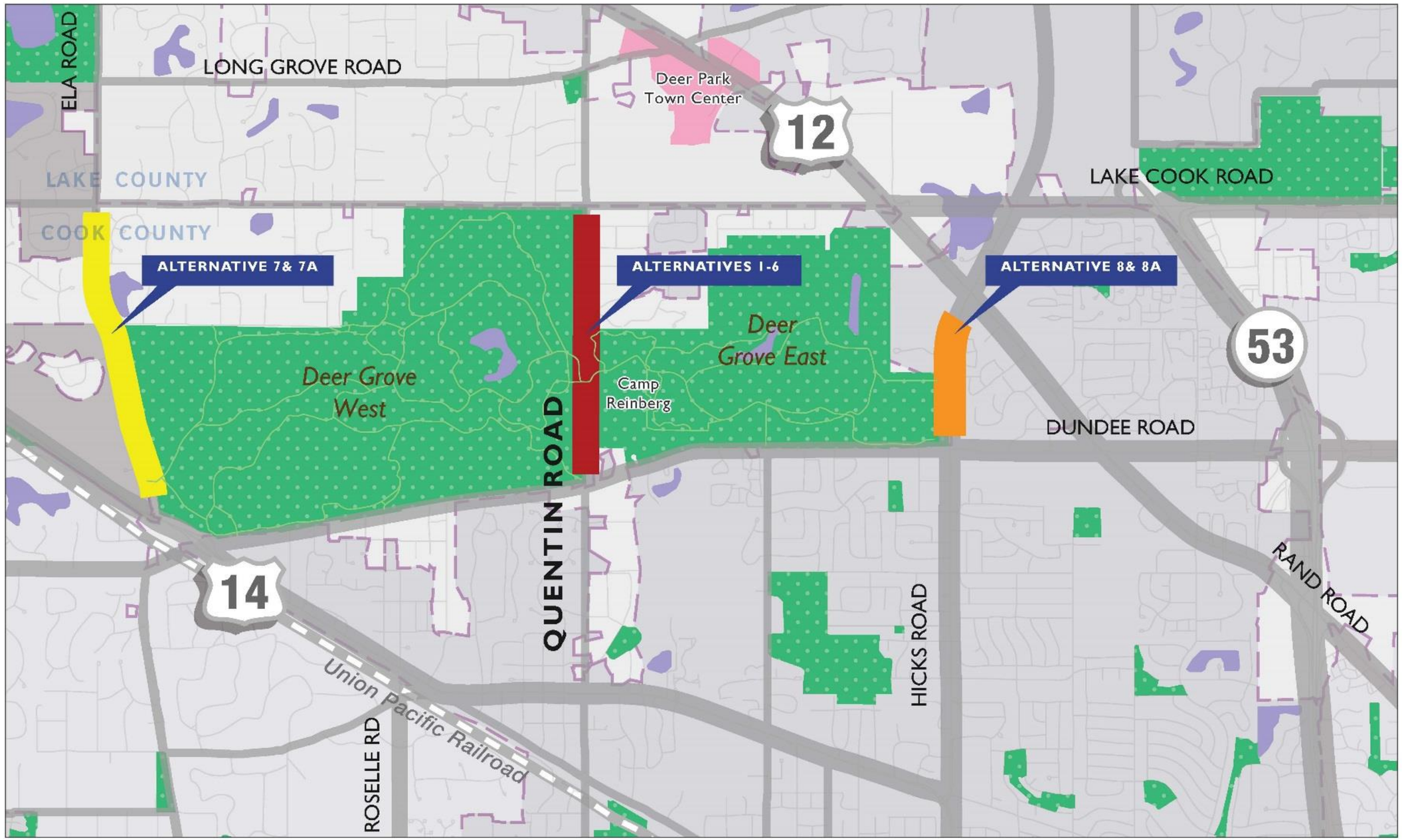
Evaluation Round 1
Alternatives Considered



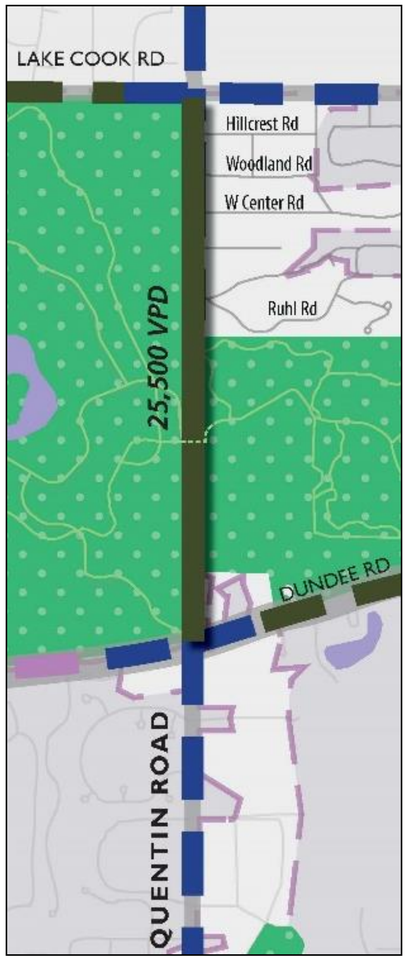
Evaluation Round 1
Alternatives Considered

- Quentin Road Alternatives
  - Alternative 1 - Two-lanes
  - Alternative 2 - Two-lanes with left turn lanes
  - Alternative 3 - Three-lanes
  - Alternative 4 - Four-lanes
  - Alternative 5 - Four-lanes with left turn lanes
  - Alternative 6 - Five-lanes

- Other Parallel Route Alternatives
  - Alternative 7 - Five-lane Ela Road (centered)
  - Alternative 7a - Five-lane Ela Road (asymmetric)
  - Alternative 8 - Seven-lane Hicks Road (centered)
  - Alternative 8a - Seven-lane Hicks Road (asymmetric)

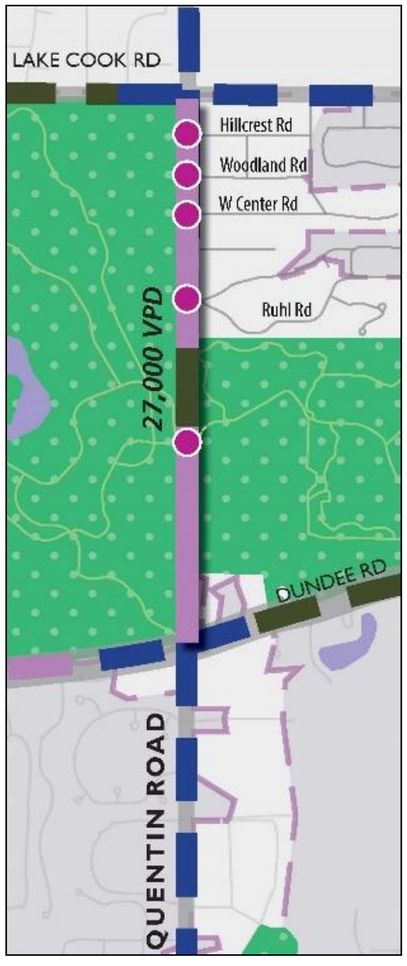
Evaluation Round 1
Quentin Road Alternatives

Alternative 1



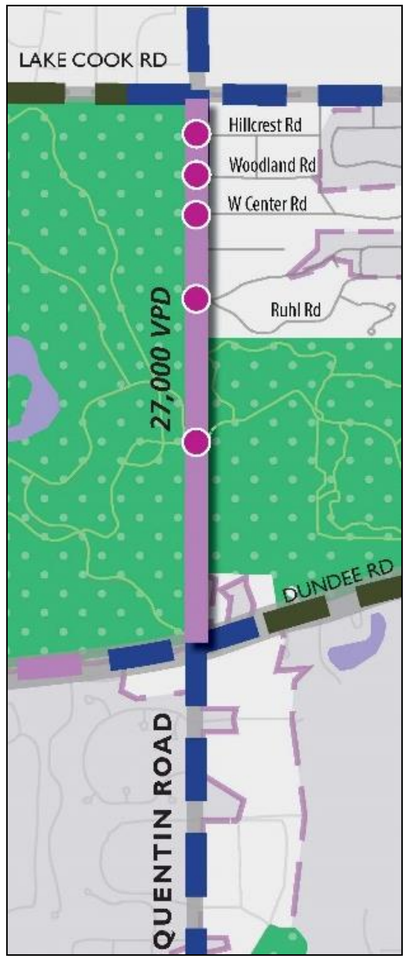
Two Lanes on Quentin Rd
- One lane in each direction
- No left turn lane
- Same as existing

Alternative 2



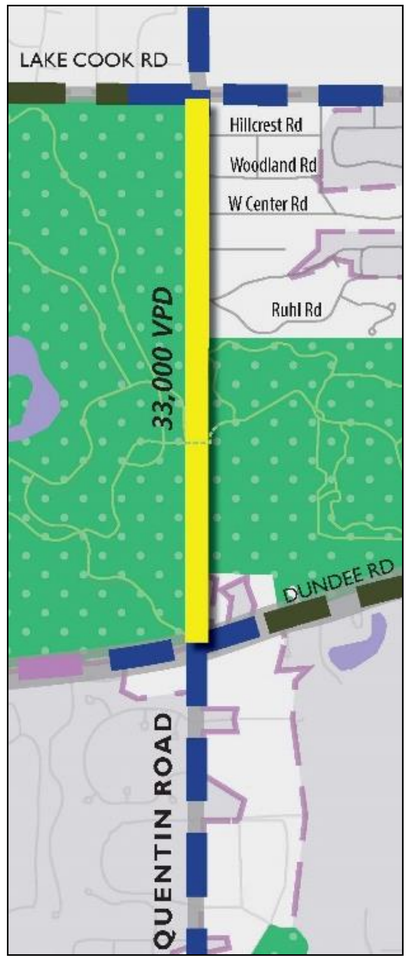
Two Lanes on Quentin Rd with Left Turn Lanes
- One lane in each direction
- Left turn lane at side streets

Alternative 3



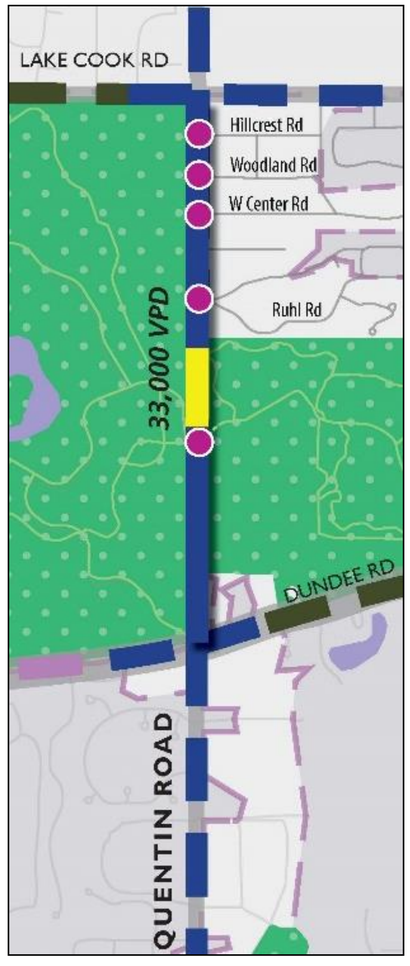
Three Lanes on Quentin Rd
- One lane in each direction
- Continuous median with left turn lane at side streets

Alternative 4



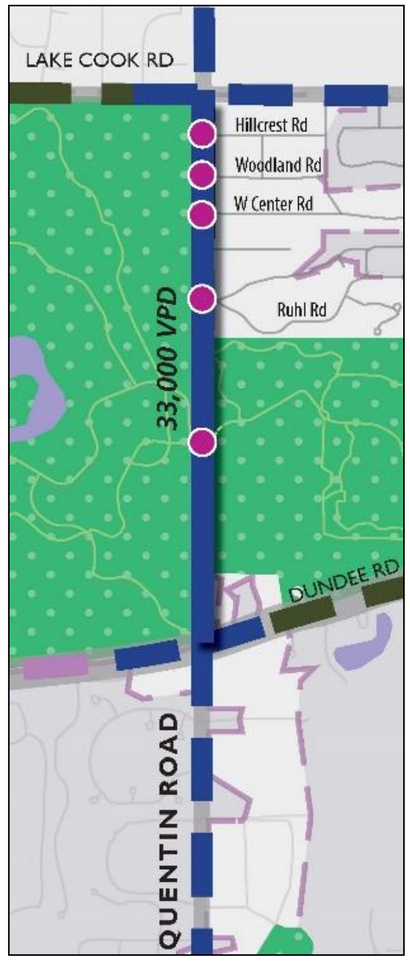
Four Lanes on Quentin Rd
- Two lanes in each direction
- No left turn lane

Alternative 5



Four Lanes on Quentin Rd with Left Turn Lanes
- Two lanes in each direction
- Left turn lane at side streets

Alternative 6

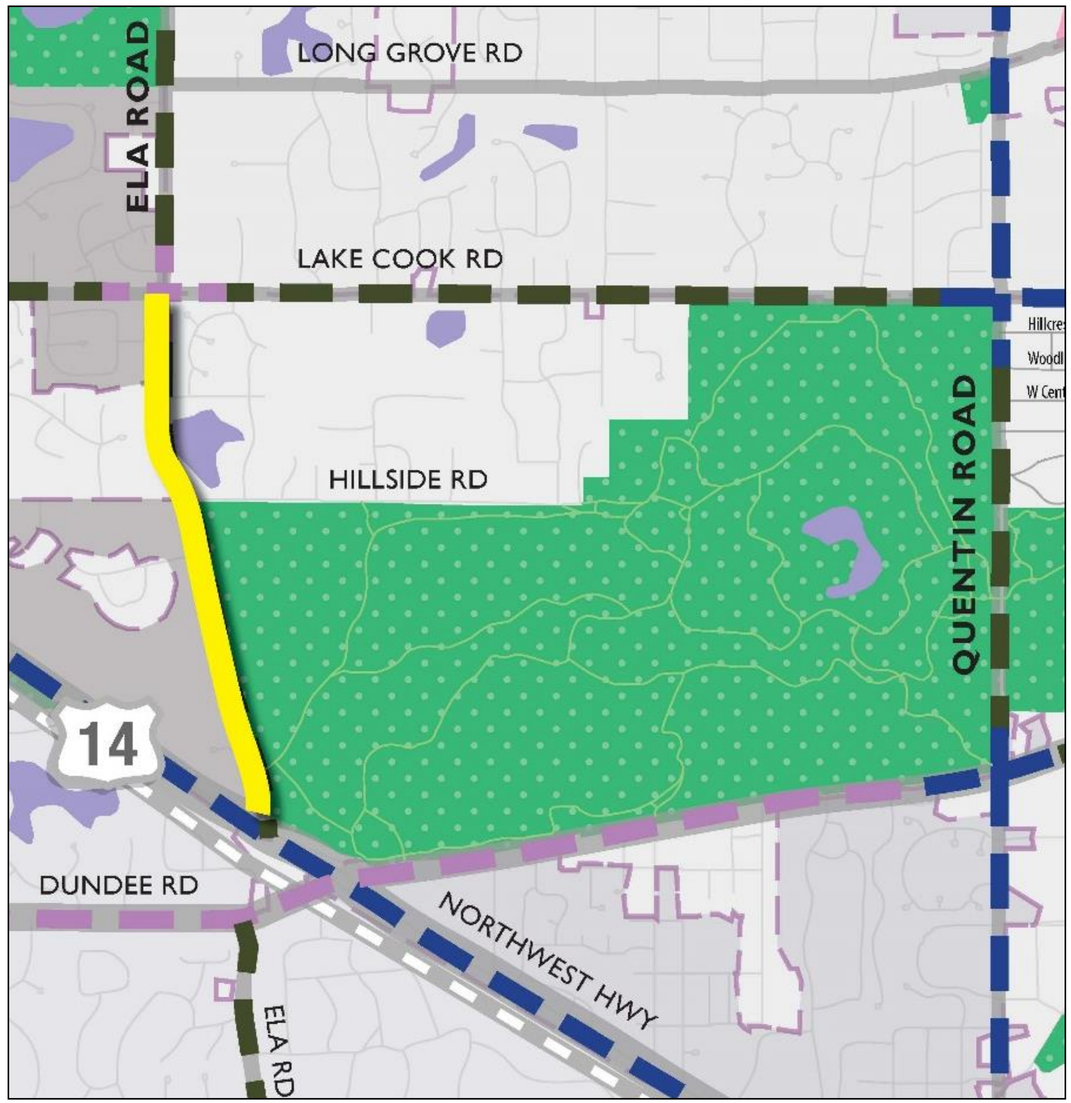


Five Lanes on Quentin Rd
- Two lanes in each direction
- Continuous median with left turn lane at side streets

Evaluation Round 1
Parallel Route Alternatives

Alternative 7
(Centered)

Alternative 7A
(Asymmetric)



Five Lanes on Ela Rd

- Two lanes in each direction
- Continuous median with left turn lane at side streets
- Alt 7A widens to the west to avoid the Deer Grove Forest Preserve

Alternative 8
(Centered)

Alternative 8A
(Asymmetric)

Seven Lanes on Hicks Rd

- Three lanes in each direction
- Continuous median with left turn lane at side streets
- Alt 8A widens to the east to avoid the Deer Grove Forest Preserve

Evaluation Round 1 Criteria

- Improve Facility Condition and Design:
  - Replace the 100 year old failing bridge
  - Reconstruct the poor pavement
  - Correct the steep roadway grades
  - Add medians or left turn lanes
  - Add bicycle and pedestrian facilities

- Improve Safety for Vehicles:
  - Reduce congestion related crashes by adding through lanes
  - Reduce intersection related crashes by adding left-turn lanes and correct the steep roadway grades

- Improve Safety for Non-motorized Traffic:
  - Provide pedestrian and bicycle facilities along Quentin Road

- Effect on the Natural Environment:
  - Loss of Deer Grove Forest Preserve acreage
  - Direct impacts to wetlands

- Improve Mobility:
  - Provide additional through lane capacity to the roadway to ensure safe operations and to meet future traffic needs
  - Provide left-turn lanes to move left turning vehicles out of the through lanes

- Enhance System Linkage for Vehicles:
  - Match the cross section of the roadway to the north and south (number of through lanes and center median for left turn lanes)
  - Provide most direct connection for regional and local traffic

- Enhance System Linkage for Non-motorized Traffic:
  - Provide connection to the existing surrounding trail systems

Evaluation Round 1 Results

Alternatives	QUENTIN ROAD ROW WIDTH	PURPOSE AND NEED CRITERIA[1]						ENVIRONMENTAL IMPACTS			
		Facility Condition and Design	Safety		Mobility	System Linkage		Natural Environment			
			Vehicle	Non-motorized		Vehicle	Non-motorized	Loss of Deer Grove Forest Preserve Acreage (Acres)		Impacts to Wetlands (Acres)	
No-Build	66' - 83'								0.0		0.00
Quentin Road											
1 - Two-lanes	90'								1.9		0.88
2 - Two-lanes with left turn lanes	90' - 100'								2.6		1.20
3 - Three-lanes	100'								2.9		1.34
4 - Four-lanes	110'								4.0		1.60
5 - Four-lanes with left turn lanes	110' - 120'								4.4		1.76
6 - Five-lanes	120'								4.9		1.96
Parallel Routes											
7 - Five-lane Ela Road (centered)	66' - 83'								1.9		0.0
7a - Five-lane Ela Road (asymmetric)	66' - 83'								0.0		0.0
8 - Seven-lane Hicks Road (centered)	66' - 83'								0.5		0.0
8a - Seven-lane Hicks Road (asymmetric)	66' - 83'								0.0		0.0

Notes:

1. Purpose and Need criteria are only rated as Best, Average, or Relatively Lowest Performance.

LEGEND

- Best Performance
- Good Performance
- Average Performance
- Poor Performance
- Relatively Lowest Performance

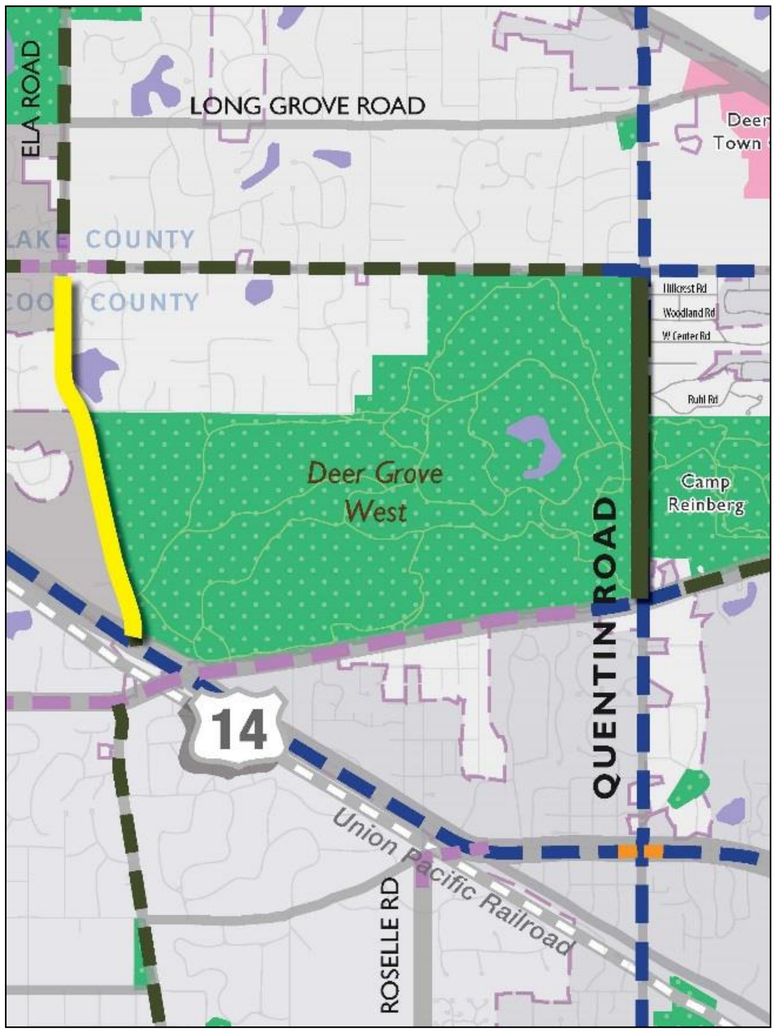
Evaluation Round 2
Alternatives Considered

- Quentin Road Alternatives (Continue on from Round 1)
  - Alternative 2 - Two-lane with left turn lanes
  - Alternative 3 - Three-lane
  - Alternative 4 - Four-lane
  - Alternative 5 - Four-lane with left turn lanes
  - Alternative 6 - Five-lane

- Combination Alternatives (Added based on stakeholder input)
  - Alternative 9 - Two-lane Quentin Road and Five-lane Ela Road
  - Alternative 10 - Two-lane with left turn lane Quentin Road and Five-lane Ela Road
  - Alternative 11 - Three-lane Quentin Road and Five-lane Ela Road
  - Alternative 12 - Two-lane Quentin Road and Seven-lane Hicks Road
  - Alternative 13 - Two-lane with left turn lanes Quentin Road and Seven-lane Hicks Road
  - Alternative 14 - Three-lane Quentin Road and Seven-lane Hicks Road

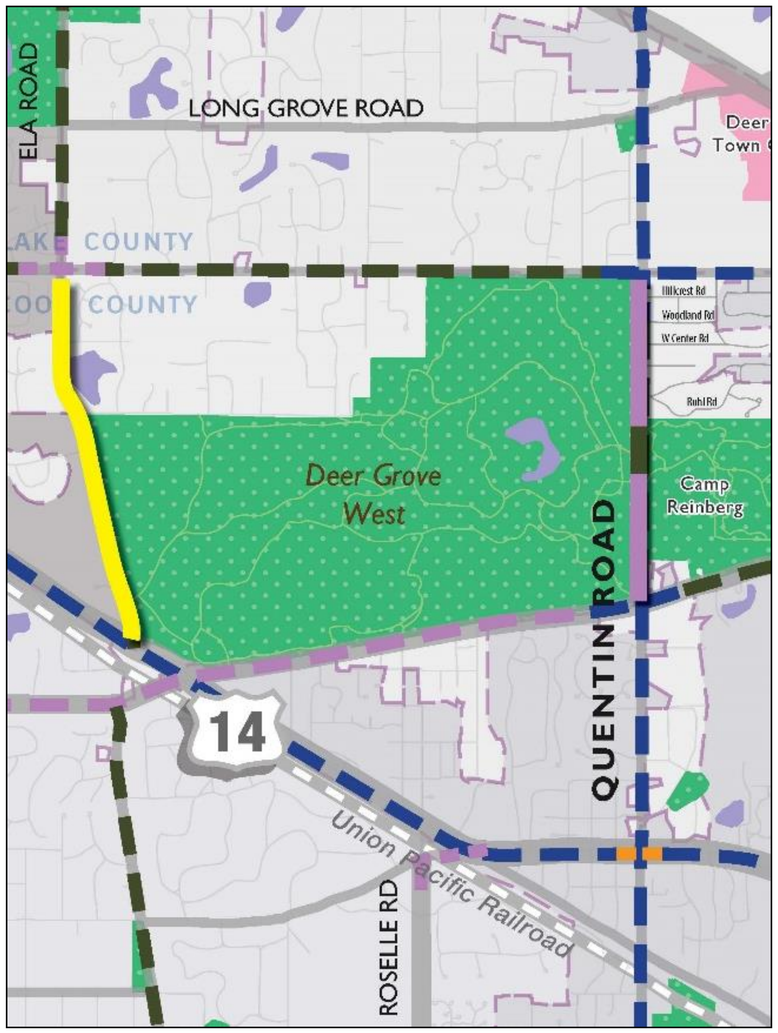
Evaluation Round 2
Combination Alternatives (Ela Road)

Alternative 9
Two-Lane Quentin Road and Four-Lane Ela Road



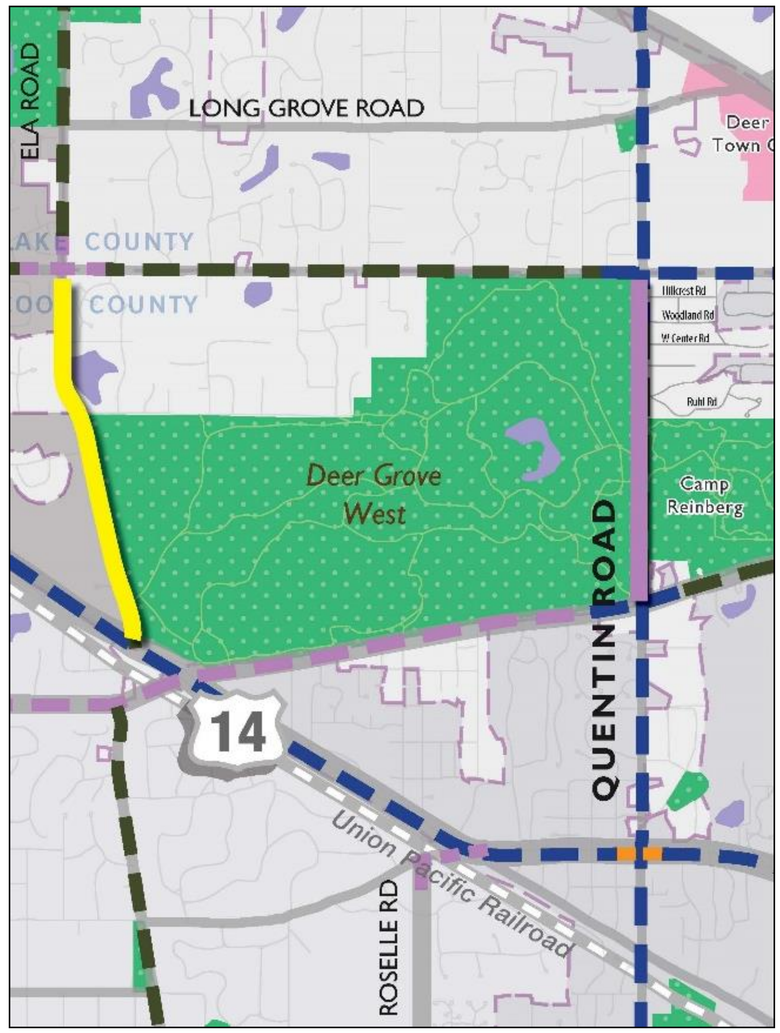
- Combines Alternative 1 and Alternative 7A
- Two-lane Quentin Road with Four-lane Ela Road

Alternative 10
Two-Lane with Left Turn Lane Quentin Road and Four-Lane Ela Road



- Combines Alternative 2 and Alternative 7A
- Two-lane with left turn lanes Quentin Road and Four-lane Ela Road

Alternative 11
Three-Lane Quentin Road and Four-Lane Ela Road



- Combines Alternative 3 and Alternative 7A
- Three-lane Quentin Road with Four-lane Ela Road

Evaluation Round 2
Combination Alternatives (Hicks Road)

Alternative 12
Two-Lane Quentin Road and Six-Lane Hicks Road

- Combines Alternative 1 and Alternative 8A
- Two-lane Quentin Road with Six-lane Hicks Road

Alternative 13
Two-Lane with Left Turn Lane Quentin Road and Six-Lane Hicks Road

- Combines Alternative 2 and Alternative 8A
- Two-lane with left turn lanes Quentin Road and Six-lane Hicks Road

Alternative 14
Three-Lane Quentin Road and Six-Lane Hicks Road

- Combines Alternative 3 and Alternative 8A
- Three-lane Quentin Road with Six-lane Hicks Road

Evaluation Round 2 Criteria

- Improve Facility Condition and Design:
  - Replace the 100 year old failing bridge
  - Reconstruct the poor pavement
  - Correct the steep roadway grades
  - Add medians or left turn lanes
  - Add bicycle and pedestrian facilities

- Improve Safety for Vehicles:
  - Reduce congestion related crashes by adding through lanes
  - Reduce intersection related crashes by adding left-turn lanes and correct the steep roadway grades

- Improve Safety for Non-motorized Traffic:
  - Provide pedestrian and bicycle facilities along Quentin Road

- Effect on the Natural Environment:
  - Loss of Deer Grove Forest Preserve acreage
  - Direct impacts to wetlands

- Improve Mobility:
  - Provide additional through lane capacity to the roadway to ensure safe operations and to meet future traffic needs
  - Provide left-turn lanes to move left turning vehicles out of the through lanes

- Enhance System Linkage for Vehicles:
  - Match the cross section of the roadway to the north and south (number of through lanes and center median for left turn lanes)
  - Provide most direct connection for regional and local traffic

- Enhance System Linkage for Non-motorized Traffic:
  - Provide connection to the existing surrounding trail systems

- Effect on the Human Environment
  - Potential displacements of residential property
  - Changes in travel patterns and access on Quentin Road

Evaluation Round 2 Results

Alternatives	QUENTIN ROAD ROW WIDTH	PURPOSE AND NEED CRITERIA[1]						ENVIRONMENTAL IMPACTS					
		Facility Condition and Design	Safety		Mobility	System Linkage		Natural Environment				Human Environment	
			Vehicle	Non-motorized		Vehicle	Non-motorized	Loss of Deer Grove Forest Preserve Acreage (Acres)		Impacts to Wetlands (Acres)		Potential Displacements	Change in Travel Patterns and Access on Quentin Road
No-Build	66' - 83'								0.0		0.00		
Quentin Road													
2 - Two-lanes with left turn lanes	90' - 100'								2.6		1.20		
3 - Three-lanes	100'								2.9		1.34		
4 - Four-lanes	110'								4.0		1.60		
5 - Four-lanes with left turn lanes	110' - 120'								4.4		1.76		
6 - Five-lanes	120'								4.9		1.96		
Combination Alternatives [2]													
9 - Two-lane Quentin Road & Five-lane Ela Road	66' - 83'								1.9		0.88		
10 - Two-lanes with left turn lanes Quentin Road & Five-lane Ela Road	90' - 100'								2.6		1.20		
11 - Three-lane Quentin Road & Five-lane Ela Road	100'								2.9		1.34		
12 - Two-lane Quentin Road & Seven-lane Hicks Road	66' - 83'								1.9		0.88		
13 - Two-lanes with left turn lanes Quentin Road & Seven-lane Hicks Road	90' - 100'								2.6		1.20		
14 - Three-lane Quentin Road & Seven-lane Hicks Road	100'								2.9		1.34		

Notes:

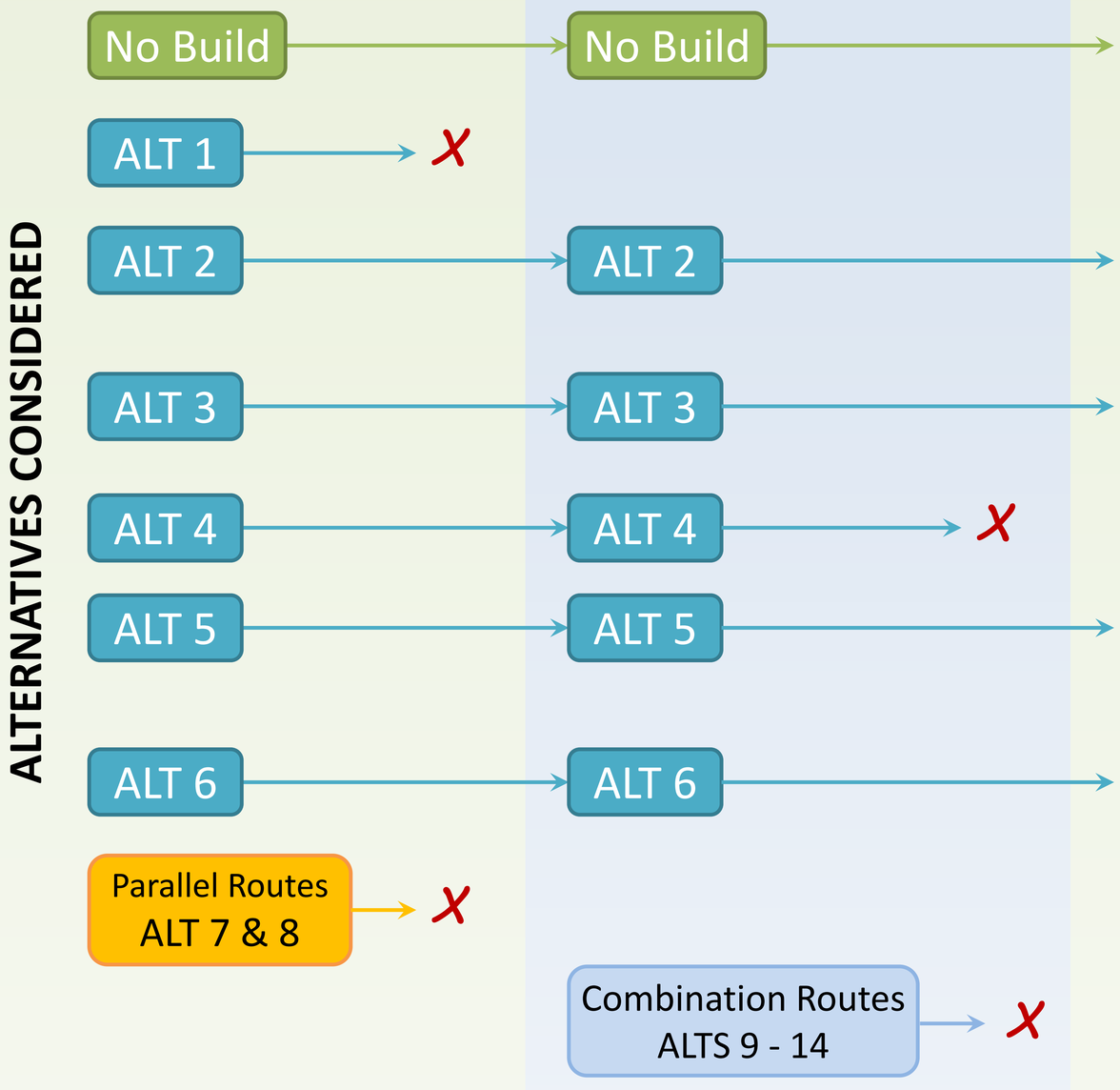
1. Purpose and Need criteria are only rated as Best, Average, or Relatively Lowest Performance.
2. Parallel Route Alternatives considered for evaluation as combination alternatives were those which were shifted away from the forest preserve (Alternatives 7a and 8a) to minimize/avoid impacts to the forest preserve property and resources to the greatest extent possible.

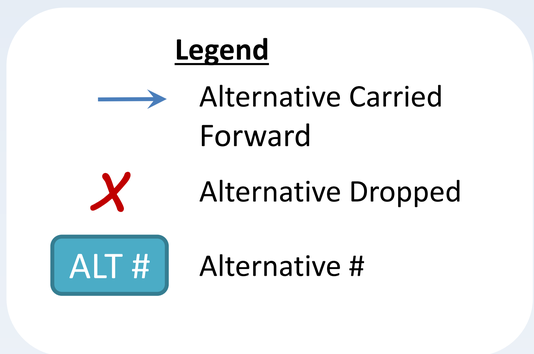
LEGEND

- Best Performance
- Good Performance
- Average Performance
- Poor Performance
- Relatively Lowest Performance

Evaluation Round 2 Flowchart

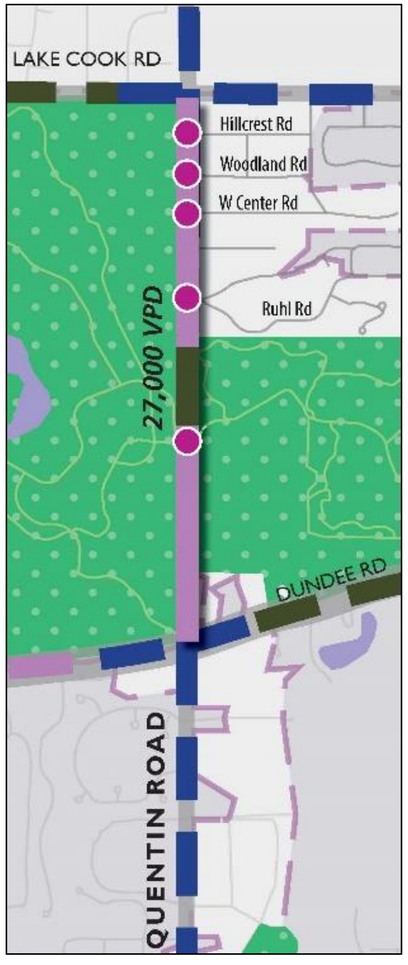
Evaluation Round 1: Purpose and Need Screening	Evaluation Round 2: Refined Purpose and Need Screening	Evaluation Round 3: Performance and Impacts Evaluation	Evaluation Round 4: Refined Performance and Impacts Evaluation





Evaluation Round 3
Quentin Road Alternatives

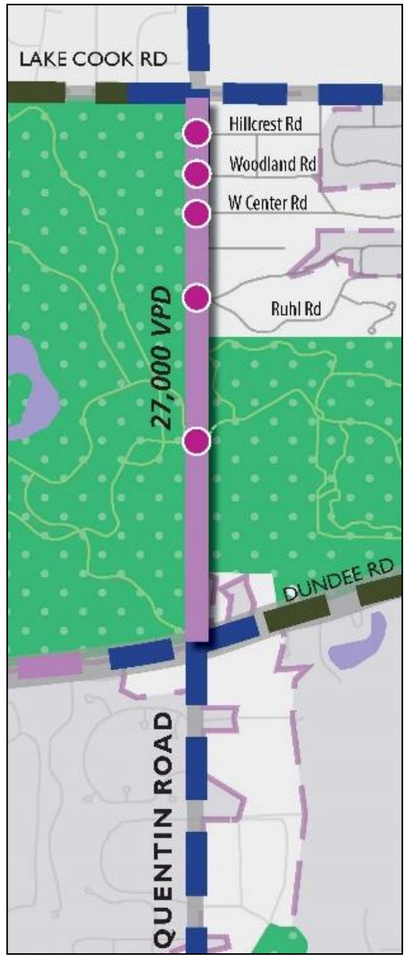
Alternative 2 (A-D)



Two Lanes on Quentin Rd with Left Turn Lanes

- One lane in each direction
- Left turn lane at side streets

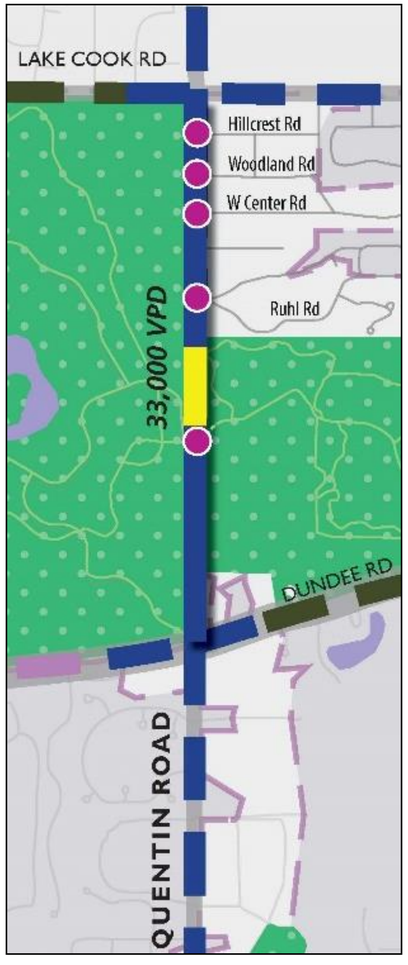
Alternative 3 (A-D)



Three Lanes on Quentin Rd

- One lane in each direction
- Continuous median with left turn lane at side streets

Alternative 5 (A-D)



Four Lanes on Quentin Rd with Left Turn Lanes

- Two lanes in each direction
- Left turn lane at side streets

Alternative 6 (A-D)

Five Lanes on Quentin Rd

- Two lanes in each direction
- Continuous median with left turn lane at side streets

Sub Alternative Descriptions

A – 12’ lanes with curb and gutter

B – 12’ lanes with shoulders

C – 11’ lanes with curb and gutter

D – 11’ lanes with shoulders

Evaluation Round 3
Alternatives Considered

- Quentin Road Alternatives (Continue on from Round 2)
  - Alternative 2 - Two-lane with left turn lanes
  - Alternative 3 - Three-lane
  - Alternative 5 - Four-lane with left turn lanes
  - Alternative 6 - Five-lane

- Sub Alternative Descriptions
  - A - 12’ lanes with curb and gutter
  - B - 12’ lanes with shoulders
  - C - 11’ lanes with curb and gutter
  - D - 11’ lanes with shoulders

Evaluation Round 3 Criteria

- Improve Facility Condition and Design:
  - (Same as Evaluation Rounds 1 & 2)
- Improve Safety for Vehicles:
  - (Same as Evaluation Rounds 1 & 2)
- Improve Safety for Non-motorized Traffic:
  - (Same as Evaluation Rounds 1 & 2)
- Improve Mobility:
  - (Same as Evaluation Rounds 1 & 2)
- Enhance System Linkage for Vehicles:
  - (Same as Evaluation Rounds 1 & 2)
- Enhance System Linkage for Non-motorized Traffic:
  - (Same as Evaluation Rounds 1 & 2)
- Effect on the Natural Environment:
  - Property impacts
    - FPCC Property and Non-FPCC property
  - Tree removal
  - Direct impacts to wetlands
    - All wetlands
    - High-quality wetlands (Floristic Quality Index > 20)
  - Floodplain impacts
- Environmental Components
  - Noise levels
  - Water quality
  - Detention

Evaluation Round 3 Results

Alternatives	PURPOSE AND NEED CRITERIA						DESIGN INFORMATION		NATURAL ENVIRONMENT										ENVIRONMENTAL COMPONENTS		
	Facility Condition and Design	Safety		Mobility	System Linkage		Cross Section	ROW Width[1]	Property Acquisition		Tree Removal (Each)	Impacts to Wetlands		Impacts to Floodplain (Acres)					Noise Level[2] (dBA)	Water Quality[3]	Detention[4]
		Vehicle	Non-motorized		Vehicle	Non-motorized			FPCC Property (Acres)	Non-FPCC Property (Acres)		Total (Acres)	High-Quality FQI > 20 (Acres)								
No-Build								66' - 83'											62		
Quentin Road																					
2 - Two-lanes with left turn lanes[5]							2A - 12' C&G	90' - 100'		2.6		0.5		954		1.20		0.68		0.09	63		
							2B - 12' Shoulder	129' - 139'		5.9		1.4		1,682		2.24		1.34		0.45	63		
							2C - 11' C&G	90' - 96'		2.3		0.4		885		1.08		0.61		0.07	63		
							2D - 11' Shoulder	129' - 136'		5.6		1.3		1,626		2.14		1.26		0.40	63		
3 - Three lanes[5]							3A - 12' C&G	100'		2.9		0.5		1,066		1.34		0.76		0.10	63		
							3B - 12' Shoulder	139'		6.2		1.4		1,769		2.36		1.40		0.47	63		
							3C - 11' C&G	96'		2.6		0.4		1,003		1.23		0.69		0.08	63		
							3D - 11' Shoulder	136'		5.9		1.3		1,715		2.25		1.33		0.42	63		
5 - Four lanes with left turn lanes							5A - 12' C&G	110' - 120'		4.4		1.0		1,354		1.76		1.02		0.25	64		
							5B - 12' Shoulder	155' - 163'		8.0		2.0		2,067		2.85		1.75		0.77	64		
							5C - 11' C&G	108' - 114'		3.9		0.8		1,229		1.60		0.91		0.20	64		
							5D - 11' Shoulder	151' - 157'		7.5		1.8		1,965		2.71		1.65		0.68	64		
6 - Five lanes							6A - 12' C&G	120'		4.9		1.2		1,508		1.96		1.13		0.28	64		
							6B - 12' Shoulder	163'		8.5		2.2		2,196		3.03		1.86		0.81	64		
							6C - 11' C&G	114'		4.4		1.1		1,387		1.80		1.03		0.22	64		
							6D - 11' Shoulder	157'		8.0		2.1		2,096		2.89		1.76		0.73	64		

Notes:

1. Right-of-way width is based on a typical cross section outside of the curb & gutter or shoulder.
2. Preliminary predicted noise levels are for Camp Reinberg. Per the IDOT *Traffic Noise Assessment Manual; June 2011* , "A change of 3 dBA is barely perceivable change in noise.".
3. Shoulder sections provide a greater water quality benefit than those with curb and gutter, while 3-lane sections require less water quality measures than those with 5 lanes.
4. Detention performance is related to the proposed roadway footprint and the volume of stormwater runoff that would need to be detained due to the increase in impervious area.
5. Alternative does not fully meet the project Purpose and Need.

LEGEND

- Best Performance
- Good Performance
- Average Performance
- Poor Performance
- Relatively Lowest Performance
- No discernable difference between alternatives

Evaluation Round 3 Flowchart

Evaluation Round 1: Purpose and Need Screening

Evaluation Round 2: Refined Purpose and Need Screening

Evaluation Round 3: Performance and Impacts Evaluation

Evaluation Round 4: Refined Performance and Impacts Evaluation

ALTERNATIVES CONSIDERED

- No Build → No Build → No Build
- ALT 1 → X
- ALT 2 → ALT 2 → ALT 2A thru 2D → X
  - 2-lanes with left turn lanes
- ALT 3 → ALT 3 → ALT 3A thru 3D
  - 3-lanes (center median with left turn lanes)
- ALT 4 → ALT 4 → X
- ALT 5 → ALT 5 → ALT 5A thru 5D
  - 4-lanes with left turn lanes
- ALT 6 → ALT 6 → ALT 6A thru 6D → X
  - 5-lanes (center median with left turn lanes)
- Parallel Routes ALT 7 & 8 → X
- Combination Routes ALTS 9 - 14 → X

Legend

- → Alternative Carried Forward
- X Alternative Dropped
- ALT # Alternative #

Evaluation Round 4
Quentin Road Alternatives

Alternative 3C

Three Lanes on Quentin Rd

- One lane in each direction
- Continuous median with left turn lane at side streets
- 11’ lanes with curb and gutter

Alternative 5C

Four Lanes on Quentin Rd with Left Turn Lanes

- Two lanes in each direction
- Left turn lane at side streets
- 11’ lanes with curb and gutter

Evaluation Round 4 Criteria

- Purpose and Need Criteria
  - Same as Evaluation Rounds 1, 2 & 3:
    - Improve Facility Condition and Design
    - Improve Mobility
    - Enhance System Linkage for Vehicles
    - Enhance System Linkage for Non-motorized Traffic
  - Highway Safety Manual Analysis:
    - Improve Safety for Vehicles
    - Improve Safety for Non-motorized Traffic:
- Environment Assessment Criteria:
  - Property acquisition
    - FPCC Property - Temporary and Permanent Easement
    - Non-FPCC Property - Temporary Easement and Proposed Right-of-Way
  - Tree removal
    - Broken down be FPCC Index-value (value ranges from 0 to 1)
    - Dead/invasive, low, moderate, high, highest quality
  - Direct impacts to wetlands
    - High-quality (Floristic Quality Index (FQI) > 20 of C-value >3.5)
    - Moderate quality (10 < FQI < 20)
    - Low quality (FQI < 10)
- Environment Assessment Criteria (continued):
  - Direct impacts to floodways and floodplain
    - Fill within floodway
    - Fill within floodplain
  - Environmental Components
    - Preliminary predicted noise levels at Camp Reinberg
    - Salt Splash and Spray
    - Chlorides – Arlington Heights Branch of Salt Creek and Unnamed Tributary to Buffalo Creek
    - Metals (Copper, Lead & Zinc) – Arlington Heights Branch of Salt Creek and Unnamed Tributary to Buffalo Creek
    - Total Suspended Solids – Arlington Heights Branch of Salt Creek and Unnamed Tributary to Buffalo Creek

Evaluation Round 4 Results

CRITERIA/IMPACTS	ALTERNATIVES			
	3C - Three 11' lanes with curb and gutter		5C - Four 11' lanes with left turn lanes and curb and gutter	
	Open Detention	Closed Detention	Open Detention	Closed Detention
PURPOSE AND NEED CRITERIA				
Fully Meets the Purpose and Need[1]				
Improve Facility Condition and Design	Yes		Yes	
Safety: Vehicle	Yes		Yes	
Safety: Non-Motorized	Yes		Yes	
Mobility	No		Yes	
System Linkage: Vehicle	No		Yes	
System Linkage: Non-Motorized	Yes		Yes	
ENVIRONMENTAL ASSESSMENT CRITERIA				
Property Acquisition				
FPCC Property (Acres)	7.67	4.72	8.54	6.00
Temporary Easement	3.56	4.03	3.81	4.55
Permanent Easement	4.11	0.69	4.74	1.45
Non-FPCC Property (Acres)	0.98	0.98	1.10	1.10
Temporary Easement	0.69	0.69	0.63	0.63
Right-of-Way	0.29	0.29	0.47	0.47
Trees[2]				
Total (Each)	1,564	1,003	1,813	1,335
Highest Quality (Index = 1)	531	321	643	464
High Quality (Index = 0.75)	269	179	295	219
Moderate Quality (Index = 0.5)	66	39	78	54
Low Quality (Index = 0.20)	90	76	105	91
Dead/Invasive (Index = 0)	608	388	692	507
Wetlands				
Total (Acres)	2.16	1.23	2.36	1.65
High Quality (FQI > 20 or C-value > 3.5)[3]	0.72	0.72	0.93	0.93
Moderate Quality (10 < FQI < 20)	1.14	0.28	1.14	0.46
Low Quality (FQI < 10)	0.29	0.23	0.29	0.26
Floodways / Floodplains				
Total (Acres)	0.48		0.72	
Fill within Floodway	0.33		0.45	
Fill within Floodplain	0.16		0.28	

CRITERIA/IMPACTS	Existing Conditions	ALTERNATIVES	
		3C - Three 11' lanes with curb and gutter	5C - Four 11' lanes with left turn lanes and curb and gutter
ENVIRONMENTAL ASSESSMENT CRITERIA (CONTINUED)			
Environmental Components			
Noise Level (dBA)[4]	61	63	64
Salt Splash and Spray[5]	No change	5.5 feet beyond existing condition	13 feet to 16.5 feet beyond existing condition
Chlorides (mg/L)[6]			
Arlington Heights Branch of Salt Creek	29	30	32
Unnamed Tributary to Buffalo Creek	86	108	142
Metals (mg/L)[7]			
Copper			
Arlington Heights Branch of Salt Creek	0.012	0.013	0.015
Unnamed Tributary to Buffalo Creek	0.0047	0.0047	0.0047
Lead			
Arlington Heights Branch of Salt Creek	0.011	0.012	0.013
Unnamed Tributary to Buffalo Creek	0.0076	0.0076	0.0077
Zinc			
Arlington Heights Branch of Salt Creek	0.043	0.048	0.053
Unnamed Tributary to Buffalo Creek	0.0615	0.0615	0.0615
Total Suspended Solids (mg/L)[7]			
Arlington Heights Branch of Salt Creek	55	61	68
Unnamed Tributary to Buffalo Creek	107	106.89	106.68

Notes:

1. The No Build Alternative does not fully meet the purpose and need nor provide any water quality/storm water detention volume benefit.
2. Tree quality is based on the index value for each species as identified in the approved FPCC Tree Mitigation Plan as amended.
3. High-quality wetlands as defined by the United States Army Corps of Engineers.
4. Preliminary predicted noise levels are for Camp Reinberg. Per the IDOT Traffic Noise Assessment Manual; June 2011, "A change of 3 dBA is barely perceivable change in noise.".
5. Distance is influenced by a number of factors including velocity of vehicles, roadside slope, drainage, traffic levels, wind/weather conditions, and intensity/frequency of salt application.
6. Levels for both alternatives are under the regulatory requirements for aquatic life.
7. No net change to pollutants with Best Management Practices (BMPs).

Evaluation Round 4 Flowchart

ALTERNATIVES CONSIDERED

Evaluation Round 1: Purpose and Need Screening	Evaluation Round 2: Refined Purpose and Need Screening	Evaluation Round 3: Performance and Impacts Evaluation	Evaluation Round 4: Refined Performance and Impacts Evaluation
No Build →	No Build →	No Build →	No Build → X
ALT 1 → X			
ALT 2 →	ALT 2 →	ALT 2A thru 2D → X 2-lanes with left turn lanes	
ALT 3 →	ALT 3 →	ALT 3A thru 3D →	ALT 3C → ? 3-lanes (center median with left turn lanes)
ALT 4 →	ALT 4 → X		
ALT 5 →	ALT 5 →	ALT 5A thru 5D →	ALT 5C → ? 4-lanes with left turn lanes
ALT 6 →	ALT 6 →	ALT 6A thru 6D → X 5-lanes (center median with left turn lanes)	
Parallel Routes ALT 7 & 8 → X			
	Combination Routes ALTS 9 - 14 → X		

Legend

- → Alternative Carried Forward
- X Alternative Dropped
- ALT # Alternative #