Item # 55

SEMINOLE COUNTY GOVERNMENT
AGENDA MEMORANDUM
PUBLIC HEARING

SUBJECT: State Road 436 and Red Bug Lake Road Intersection Project

DEPARTMENT: Public Works **DIVISION:** Engineering

AUTHORIZED BY: W. Gary Johnson, P.E., Director **CONTACT:** Co-Co Wu, P.E. **EXT.** 5707
Jerry McCollum, P.E., County Engineer

Agenda Date 04/26/05 **Regular** ☐ **Consent** ☐ **Work Session** ☐ **Briefing** ☐
Public Hearing – 1:30 ☐ **Public Hearing – 7:00** ☒

MOTION/RECOMMENDATION:

Approve the adoption of Alternative 1 for the proposed intersection improvement at State Road 436 and Red Bug Lake Road.

District 1 – Commissioner Bob Dallari
District 2 – Commissioner Randy Morris
District 4 – Commissioner Carlton Henley

(Jerry McCollum, P.E., County Engineer)

BACKGROUND:

As part of the 2nd Generation Sales Tax Program, the intersection of State Road 436 and Red Bug Lake Road was identified for a major transportation improvement. The proposed project is currently in the Project Development and Environment (PD&E) study phase. The PD&E study has identified five proposed alternatives (sketches attached), which are discussed in the following narrative:

Reviewed by:
Co Atty: NA
DFS: N/A
Other: N/A
DCM:
CM:
File No.
ph700PWE01

Alternative 1 – Partial Interchange

Alternative 1 provides a two-lane flyover ramp for the heavy left-turn traffic from southbound State Road 436 to eastbound Red Bug Lake Road. This ramp eliminates the delays currently experienced by the left turn traffic at the State Road 436 and Red Bug Lake Road intersection. It also allows more green time for other movements through the at-grade intersection by removing this left turn movement from the intersection. The flyover ramp will touch down on Red Bug Lake Road just west of the access to Casselberry Fire Station #25 and an emergency signal will be installed with warning lights on the ramp to warn motorists of exiting emergency vehicles. A left-turn lane from southbound State Road 436 to eastbound Red Bug Lake Road will also be provided at the surface to allow for local access to and from businesses and communities within the project limits.

Alternative 2 – Full Interchange

Alternative 2 provides a four-lane overpass for State Road 436 through traffic over the State Road 436 and Red Bug Lake Road intersection, and two through lanes in each direction along State Road 436 at the surface to allow for local access. All turning movements from the three intersecting roadways are accommodated at the signalized intersection. The overpass provides a free flow and reduces the delays for the State Road 436 through traffic. It also allows more green time for other movements through the at-grade intersection by removing the through movement from the intersection.

Alternative 3 – Winter Park Drive Realignment

Alternative 3 realigns Winter Park Drive through the former Casselberry Square shopping center property to State Road 436 at Kewannee Trail. Southbound Winter Park Drive to southbound State Road 436 traffic will be routed to the signalized intersection at Kewannee Trail, thereby removing this movement from the existing State Road 436/Red Bug Lake Road intersection and allowing more green time for other movements. In addition, triple left-turn lanes will be provided for southbound State Road 436 to eastbound Red Bug Lake Road traffic. Access from southbound Winter Park Drive to eastbound Red Bug Lake Road will be maintained along the existing Winter Park Drive alignment.

Alternative 4 – Dual Flyover

Alternative 4 is a dual-flyover concept. It combines a one-lane southbound State Road 436 to eastbound Red Bug Lake Road flyover ramp with a one-lane flyover ramp for westbound Red Bug Lake Road to southbound State Road 436 traffic. This alternative eliminates the two movements from the intersection and allows more green time for other movements through the at-grade intersection. Although the ramp movements are conflicting, the constrained urban nature of the project area is not conducive to a three level interchange; therefore, the flyover ramps will intersect and be controlled by a traffic signal on the structure.

Alternative 5 – Partial Interchange / Winter Park Drive Realignment Combination

Alternative 5 is a combination of Alternatives 1 and 3. It provides a two-lane flyover ramp for the left-turn movement from southbound State Road 436 to eastbound Red Bug Lake Road and a realignment of Winter Park Drive through the former Casselberry Square shopping center to the State Road 436/Kewannee Trail intersection.

Other Improvements in All Five Alternatives

All five alternatives include the following improvements on Red Bug Lake Road and State Road 436:

From State Road 436, three eastbound lanes will be provided on Red Bug Lake Road and the inside lane will drop as a left-turn lane at Eagle Circle.

Along westbound Red Bug Lake Road, a third lane will be added at Mark David Court. These three lanes will continue west to northbound State Road 436. Two left-turn lanes will provide access to southbound State Road 436. Additional, right-of-way will be required along the north side of Red Bug Lake Road to accommodate the improvements.

State Road 436 will be widened to four lanes in each direction. Northbound, a fifth lane will be added at the entrance to the Lake Howell Arms community and a sixth lane will be added at Sausalito Boulevard. This will provide the lane balance required to drop three lanes at the intersection with Red Bug Lake Road and Winter Park Drive; two right turn lanes to eastbound Red Bug Lake Road and one through lane to northbound Winter Park Drive.

Preferred Alternative

Based on the attached Alternative Evaluation Matrix, the County's consultant identified Alternative 1 as the preferred alternative to be presented at the public hearing. Alternative 1 will provide the greatest reduction in travel time through the intersection area and the total estimated cost is relatively close to the alternative with the lowest total cost. Environmental impacts will be minimal and are similar among all five alternatives.

Public Involvement

During the Conceptual Feasibility Study Phase, two Public Workshops were held at South Seminole Middle School on February 13, 2001 and August 14, 2001. Three other small group meetings were also held with a homeowner association and two business owners.

During this PD&E Study Phase, one Public Information Meeting was held at the South Seminole Middle School on December 2, 2004. Two other small group meetings were held with homeowner associations. At the Public Information Meeting, all five alternatives were presented. Based on the Evaluation Matrix, Alternative 1 was identified as the preferred alternative.

Agency Coordination

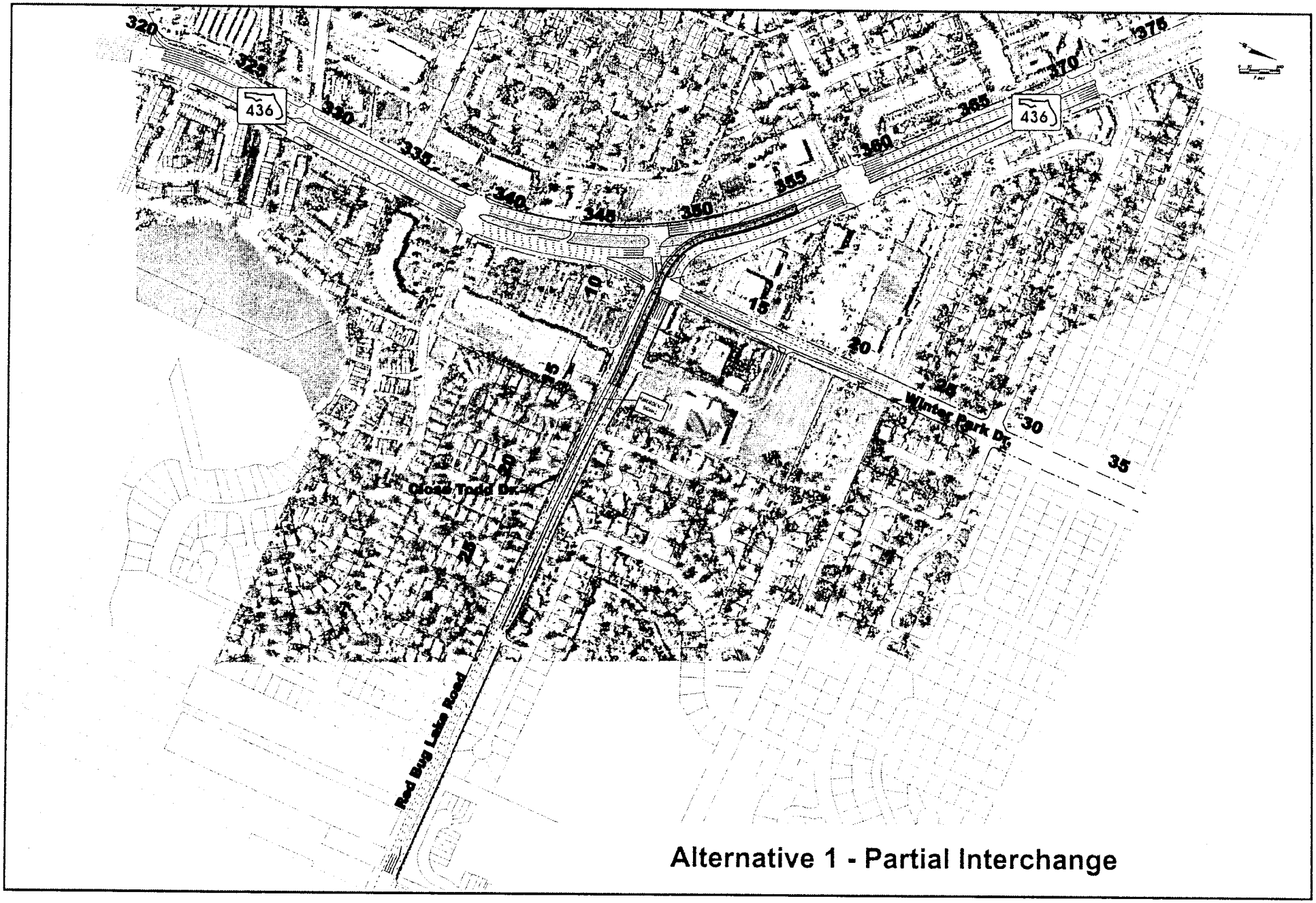
Staff and the County's consultant have closely coordinated throughout the study with the Federal Highway Administration, the Florida Department of Transportation and the City of Casselberry. The County's consultant made two presentations to the City Commission on January 24, 2005 and February 24, 2005. All of the agencies supported the preferred Alternative 1.

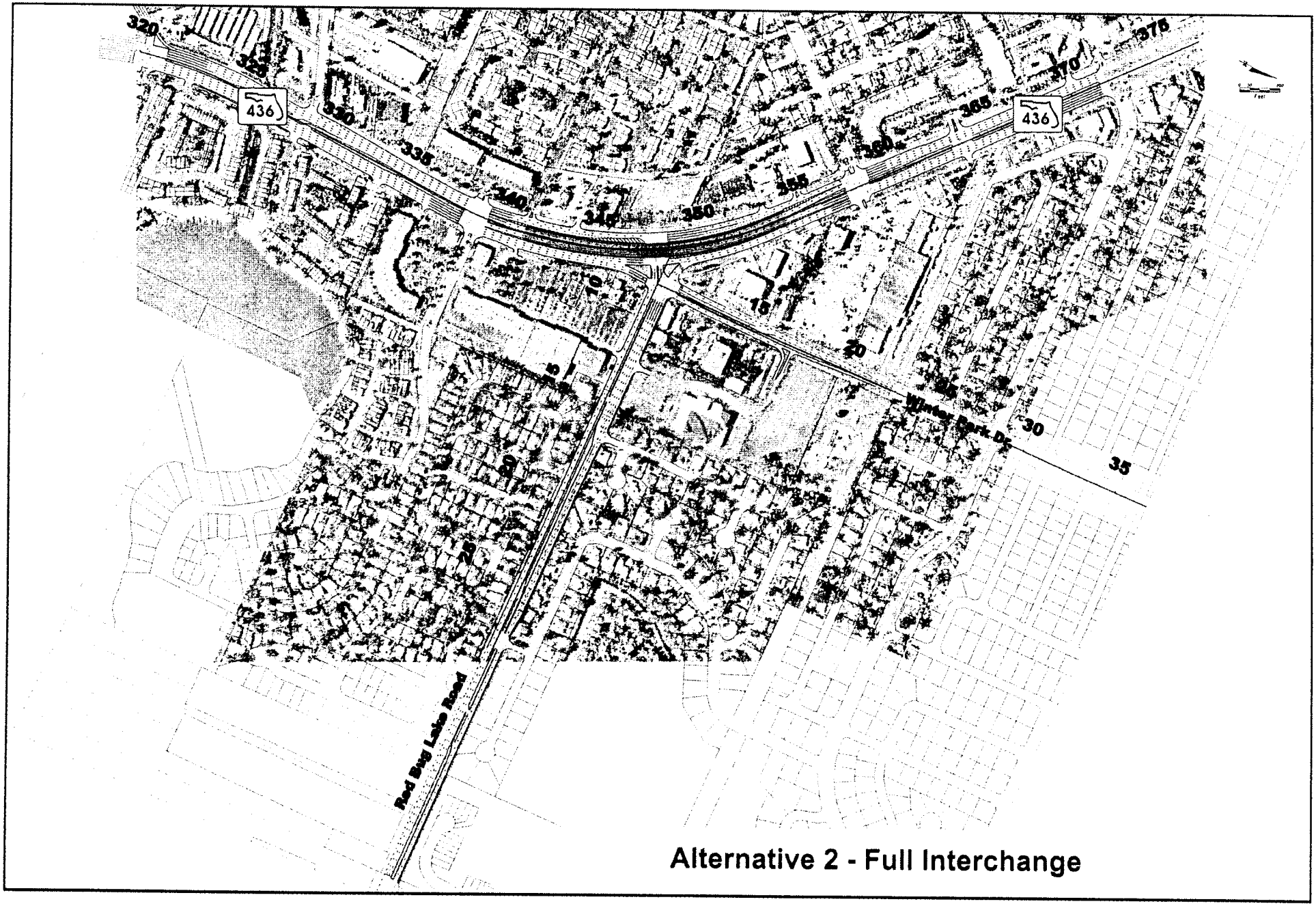
Recommendation

Based on the engineering study, public input and support from all agencies involved, the County's consultant recommends **Alternative 1** for improving the intersection of State Road 436 and Red Bug Lake Road.

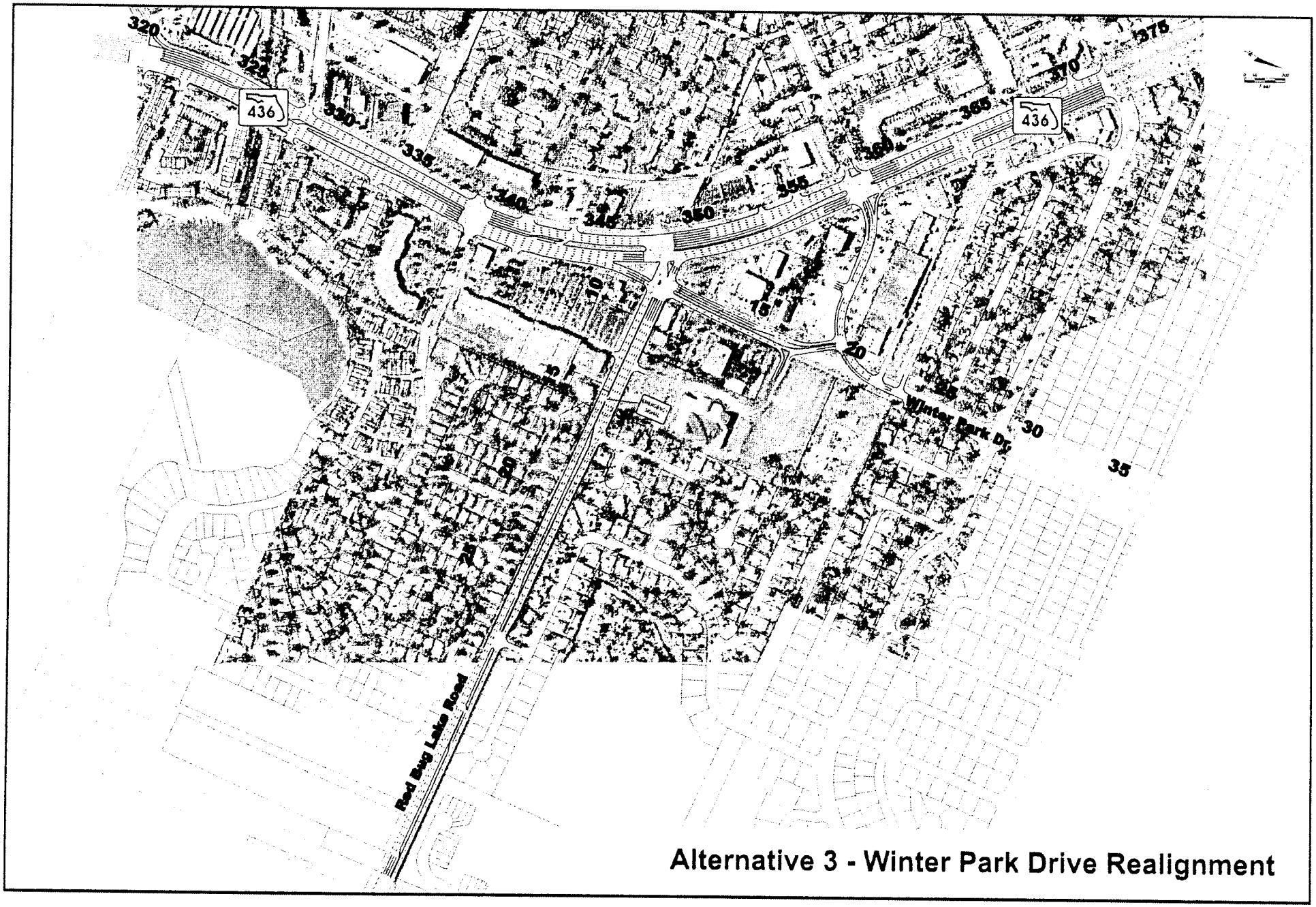
The Engineering Division concurs with the consultant's recommendation.

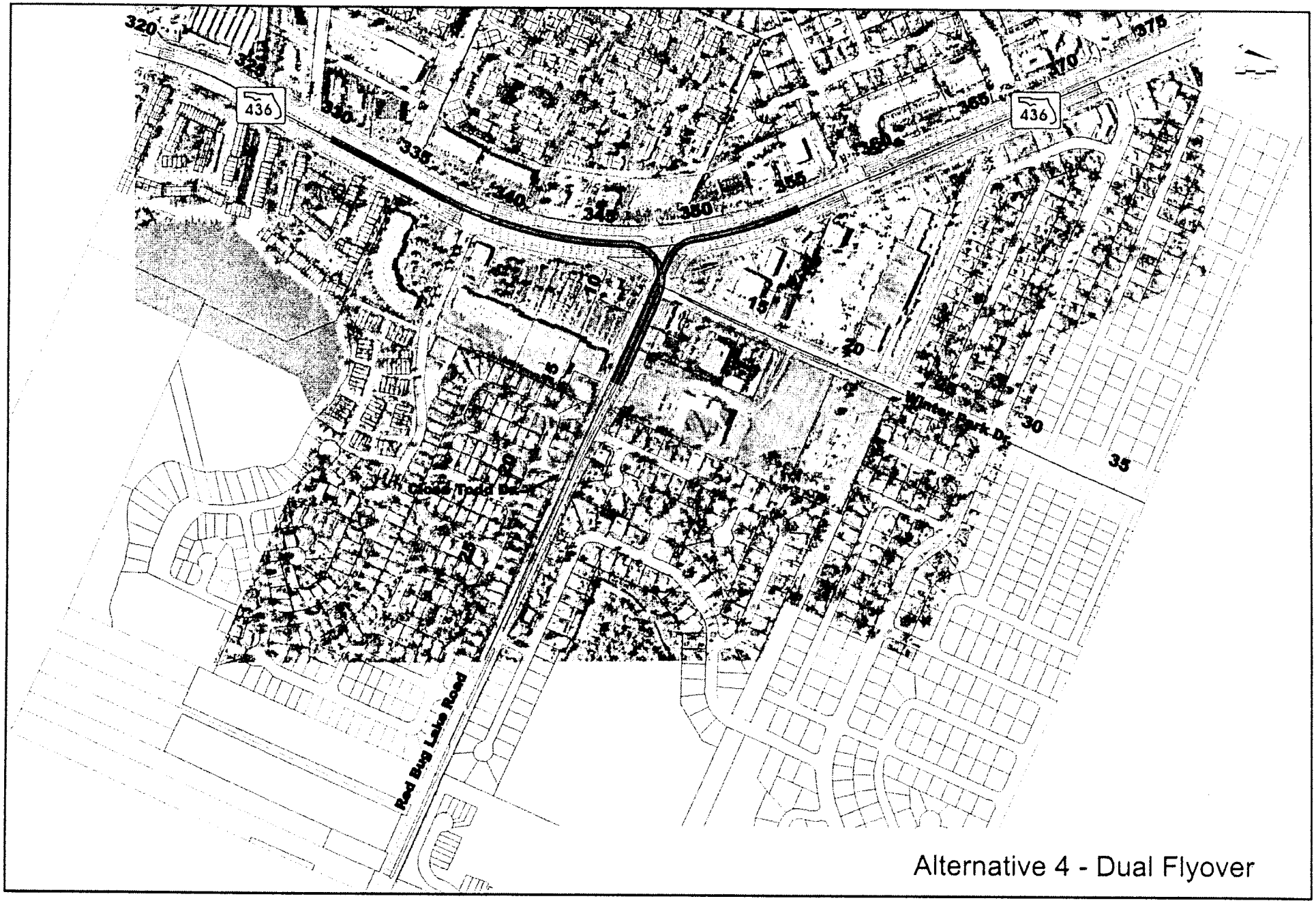
Attachments: Proposed Alternatives
Alternative Evaluation Matrix


436
436
Red Bug Lake Road
Winter Park Dr
Alternative 1 - Partial Interchange

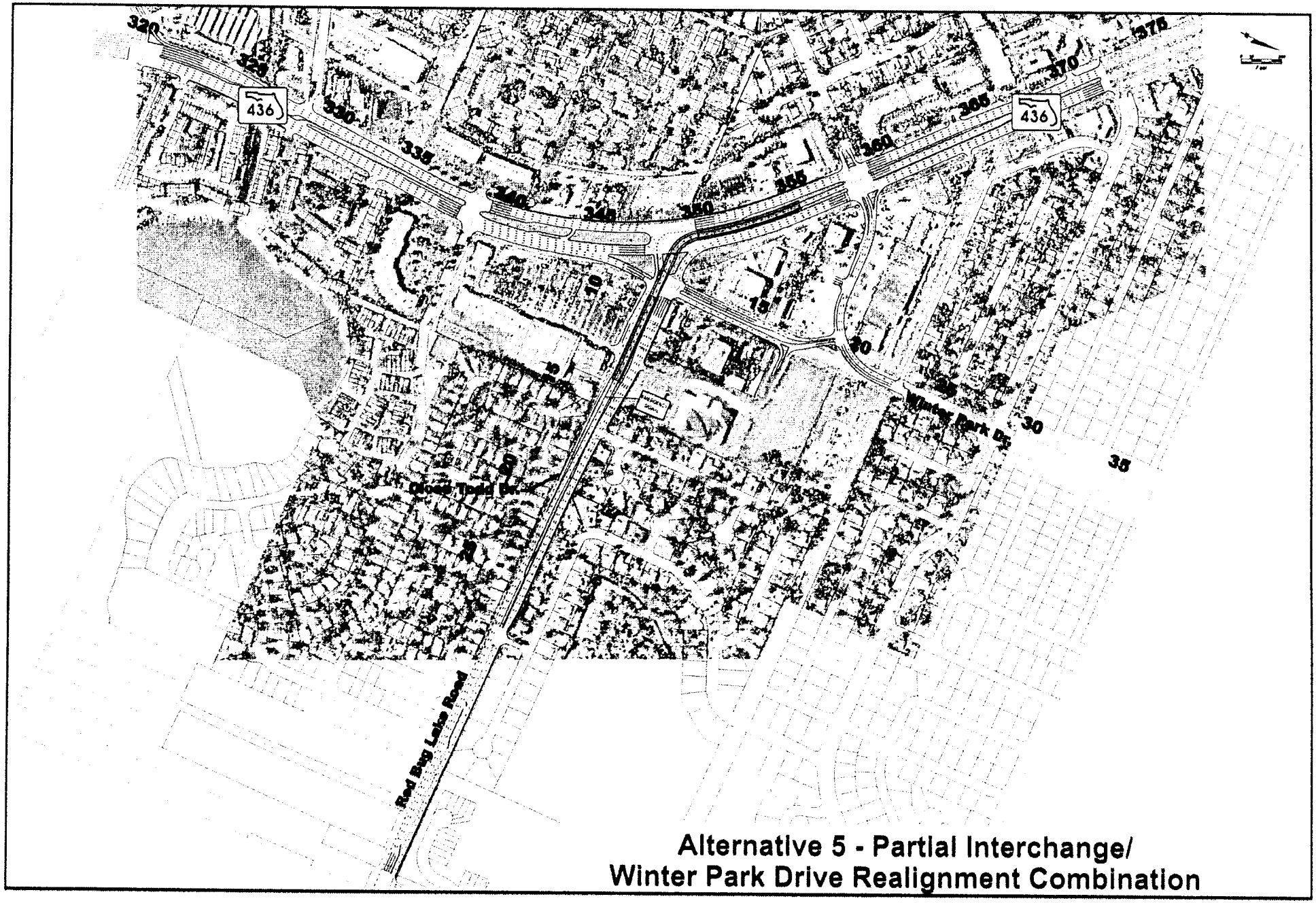


Alternative 2 - Full Interchange


436
436
Red Bug Lake Road
Winter Park Dr
Alternative 3 - Winter Park Drive Realignment



Alternative 4 - Dual Flyover



Alternative 5 - Partial Interchange/
Winter Park Drive Realignment Combination

Alternative Evaluation Matrix

	No-Build	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
R/W Impacts						
R/W Acquisition (acres)	0.00	8.13	7.54	14.56	8.03	14.91
Parcels Impacted	0	36	32	34	33	37
Traffic Operations						
Travel Time Reduction						
a.m. Peak Hour	0%	54%	58%	53%	53%	54%
p.m. Peak Hour	0%	59%	52%	55%	47%	58%
a.m.& p.m. Peak Hours	0%	57%	55%	54%	50%	56%
Traffic Operations Ranking (1=best)	6	1	3	4	5	2
Environmental Impacts						
Potential Wetland Impacts	None	Low	Low	Low	Low	Low
Potential Impact to Wildlife Habitat	None	Low	Low	Low	Low	Low
Potential Change in Noise Levels	None	Minimal	Minimal	Minimal	Minimal	Minimal
Potential Air Quality Impact	Medium	Low	Low	Low	Low	Low
Number of Potential Contamination Sites rated Medium or High	0	8	8	8	8	8
Estimated Construction Cost	$ 0.00	$ 22,120,000	$20,650,000	$ 17,550,000	$ 27,500,000	$ 23,010,000
Engineering, CEI, Admin (27%)	$ 0.00	$ 5,970,000	$ 5,580,000	$ 4,740,000	$ 7,430,000	$ 6,210,000
Right-of-Way	$ 0.00	$ 8,715,000	$ 8,060,000	$ 14,321,000	$ 8,476,000	$ 14,375,000
Total	$ 0.00	$ 36,805,000	$34,290,000	$ 36,611,000	$ 43,406,000	$ 43,595,000