

#M.1.

MEMORANDUM

To: Mayor and City Council

From: Michael Smith, Public Works Director

Date: 10/15/2012

Subject: Discussion of Womack at Vermack Intersection Improvement

ITEM DESCRIPTION

Discussion of Womack at Vermack Intersection Improvement Project

BACKGROUND

In March 2011, Dunwoody adopted its first Comprehensive Transportation Plan (CTP) to guide policy decisions and prioritize future investments in the City's transportation system. Through a community survey and a series of public meetings, congestion relief and intersection improvements were identified as important priorities in the plan. The CTP prioritized improvements at the intersection of Womack Road and Vermack Road based on the current and predicted future delay and the accident history at the intersection.

Earlier this year the City partnered with the design consultant, Michael Baker (formerly the LPA Group) to provide construction plans for the project. Baker completed the land survey and traffic study and presented conceptual plans at a public information meeting held at Dunwoody High School on September 20[,] 2012. Two alternatives to the existing condition were presented at the public meeting: 1)install a traffic light with turn lanes or 2)construct a single lane roundabout. The roundabout was proposed as the recommended alternative based on increased safety, lower cost and less impact to adjacent property.

An outline of the presentation of the engineering and design work completed to date is attached.

RECOMMENDED ACTION

The next step after completing the concept design is to complete final design followed by right of way acquisition and construction. The final design phase will include detailed construction drawings for the improvement. The FY 2012 Budget includes funding for this work.

The preliminary cost estimate for right of way and construction is \$800,000. Funding for right of way and construction is anticipated to be considered as part of the 2013 budget process.

October 15, 2012

Womack Road at Vermack Road Intersection Improvement Project







Michael Baker Jr., Inc.

Baker

Background/Experience

- Founded in 1940 by Michael Baker Jr. Today publicly-traded consulting firm
- Merged with The LPA Group, May 1, 2010; 3,270 employees in 107 offices
- 3 Georgia Offices:
 - Norcross
 - Kennessaw
 - Atlanta
- Designed nearly 50 intersection improvement projects in Georgia; 4 of which included a roundabout

Current ENR Top 500 Design Firm Rankings				
26*	Top 500 Design Firms			
12	Transportation			
5"	Bridges			
16 *	Highways			
14 *	Airports			
24*	CB			

-98

Existing Conditions



Existing Conditions – Traffic Volumes

Vehicular Traffic Balanced

- Equal Volumes on Each Approach
- High Ratio of Turning Volume
- Ideal Distribution for Roundabout



Existing Conditions – Pedestrian Counts

Pedestrian Traffic Concentrated

 Crossings Primarily on North and East legs of the Intersection due to location of existing sidewalk



Crash History



Roundabout Concept



Option	Level of Service	Total Project Cost	Property Impacts
			0.26 Ac. Right-of-way
			0.36 Ac. Temporary Easement
Roundabout	А	\$900,000	8 property owners

Signal Option



Option	Level of Service	Total Project Cost	Property Impacts
			0.28 Ac. Right-of-Way
			0.57 Ac. Temporary Easement
Signal	A/B	\$1,000,000	12 property owners

Operational and Cost Comparison

	No Improvements	Roundabout	Traffic Signal
Traffic "Level of			
Service" Peak	3 rd	1 st	2 nd
Periods-Year 2037			
Safety	3 rd	1 st	2 nd
Cost	1 ^{st*}	2 nd	3 rd
Pedestrian Accommodations	3 rd	1 st	2 nd
Right of Way Impacts	1 st	2 nd	3 rd
Bike Accommodations	3 rd	2 nd	1 st

* Only considers cost impact to City budget, does not consider cost of delay.

Recommendation: Roundabout

Benefit Cost Analysis

	Proposed Roundabout		
	Benefit	Cost	B/C Ratio
1 Year	\$626,957	\$900,000	0.70
5 Years	\$3,134,786	\$900,000	3.48
10 Years	\$6,269,573	\$900,000	6.97

Benefits derive from reduced delay time, fuel and accidents

Roundabouts: Safer for Vehicles

- Slower vehicle speeds (under 30 mph) means less severe crashes
- 90% reduction in fatalities, 76% reduction in injury crashes
- 75% fewer vehicle conflict points
- Elimination of crossing conflicts prevents right-angle and left turn crashes



U.S. Department of Transportation, Federal Highway Administration

-107-

LEVEL OF SERVICE

- Intersections are classified using a term known as 'Level of Service'.
- 'Level of Service' defines the amount of delay the average vehicle will encounter during peak hour travel time through the intersection

Roundabout will reduce delay by 91% compared to the existing configuration





Summary of Public Involvement

- 2010-2011 Project Need Identified in City's Comprehensive Transportation Plan through
 - Advisory Committee Meetings
 - Community Workshops
- August/September 2012
 - Notification and meetings with owners of affected properties
- September 2012 Public Meeting at Dunwoody High School
 - Over 100 attendees

Common Concerns Voiced at Public Meeting

Pedestrian Safety

Effect on and Safety of School Driveways

Speeding and Traffic

Roundabouts: Safer for Pedestrians

- Slower vehicle speeds (under 30 mph) reduce fatalities in pedestrian crashes
- 30-40% reduction in pedestrian crashes
- Pedestrians cross only one lane of traffic at a time
- Gap identification is easier as conflicting vehicles arrive from only one direction



U.S. Department of Transportation, Federal Highway Administration

Additional Pedestrian Treatments to Consider

- Rapid Flashing Signs
- Raised cross-walks
- Roundabout Lighting
- Other

Pedestrian Treatments

Rectangular Rapid Flashing Beacon

Pedestrian Treatments

"Look Smart" Loveland, CO



- P Point and look
- E *E*ye contact
- D Decide



Stenciled on pavement

Womack at Vermack Intersection Improvement

Next Steps

- 2012- Complete Final Design
- 2013- Right of Way Acquisition
- 2013-2014 Construction contingent on funding