

968-17



Division of Transportation
System Development
Southeast Regional Office
141 N.W. Barstow Street
P.O. Box 798
Waukesha, WI 53187-0798

Scott Walker, Governor
Dave Ross, Secretary
Internet: wisconsindot.gov
Telephone: (262) 548-5903
Facsimile (FAX): (262) 548-5662
E-Mail: ser.dtsd@dot.wi.gov

September 20th, 2017

RECEIVED

SEP 22 2017

Dept. of Public Works

John Rooney
City of Racine
730 Washington Avenue
City of Racine, WI 53403

Dear Mr. Rooney,

The purpose of project 2260-07-00/70, STH 11 (Durand Avenue), from Kentucky Avenue to Kearney Avenue, in Racine County is to improve safety, address deteriorating pavement and storm sewer, and improve substandard pedestrian and bicycle accommodations. It is a \$2.8 Million, 0.40 mile reconstruction within the City of Racine jurisdiction with Village of Mt. Pleasant on the south side of the roadway. There is a high density of residential properties in this area as well as businesses. Within the project limits, the intersection of Durand Avenue and Memorial Avenue will be improved. A standard signal, single-lane roundabout, and two-lane roundabout have been analyzed at this location. The two-lane roundabout was the least desirable per the ICE Report due to the highest amount of additional right-of-way and excess capacity. Therefore, it is not discussed below.

There is an issue of geometrics for a single-lane roundabout matching existing roadway conditions. STH 11 is a 4-lane roadway and in order for the single lane roundabout to operate, it requires the lanes to merge from two to one which could cause a safety issue approaching the roundabout. Furthermore, the westbound traffic approaching the intersection is 3 lanes existing and modifications will be required at the STH 32 (Sheridan Rd) intersection to properly handle the additional lane-drop in a short distance.

Currently, there is conflicting support for the single-lane roundabout at the municipal-level. The Village of Mt. Pleasant has a resolution on file in support of maintaining a traditional signalized intersection. The City of Racine, who has jurisdiction of STH 11 as a connecting highway, has a resolution on file in support of the roundabout as the preferred alternative.

In the southeast quadrant of Durand Avenue and Memorial Avenue is Floyd's Towing. Floyd's Towing has 50-Ton wrecker trucks that tow full-sized semi-trucks with trailers to and from their business through this intersection. Truck turns were run for the anticipated scenario, but during real-world use, it may be challenging for these drivers to negotiate a single-lane roundabout due to its tighter constraints. Also, they are more familiar with the current signalized intersection. On a single-lane roundabout, these vehicles may or may not easily negotiate the roundabout, which will create a concern to the Wisconsin Department of Transportation (WisDOT).

For the reasons above, WisDOT recommends a standard signalized intersection at this location. The difference in construction cost between the roundabout and signalized intersection, including additional right-of-way, as well as the cost of re-design work due to this decision, will be paid by WisDOT. The re-design cost will be credited in the State Municipal Agreement (SMA).

Thank you,

Robert A. Bellin, P.E.
WisDOT Project Manager

Durand Avenue/S. Memorial Drive Intersection Alternatives		
Category	Upgraded Traffic Signal	Single-Lane Roundabout (Preferred Alternative)
Potential Crash Reductions	Estimated 15% potential reduction in injury crashes*	Estimated 38% potential reduction in injury crashes**
Traffic Conflict Points (number of locations where vehicle paths converge)	32	8
New R/W Anticipated	0.27 acres	0.15 acres
Accommodates Large Semi-Trucks	Yes	Yes
Accommodates Pedestrians and Bicyclists	Yes	Yes
Anticipated Intersection Costs	Initial Construction: \$1,480,000 Annual Maintenance: \$6,250	Initial Construction: \$1,020,000 Annual Maintenance: \$3,400
Restrict Access at Hamilton Avenue and Capital Avenue	Yes (Raised Median on Durand Ave)	Yes (Raised Median on Durand Ave)

Notes:

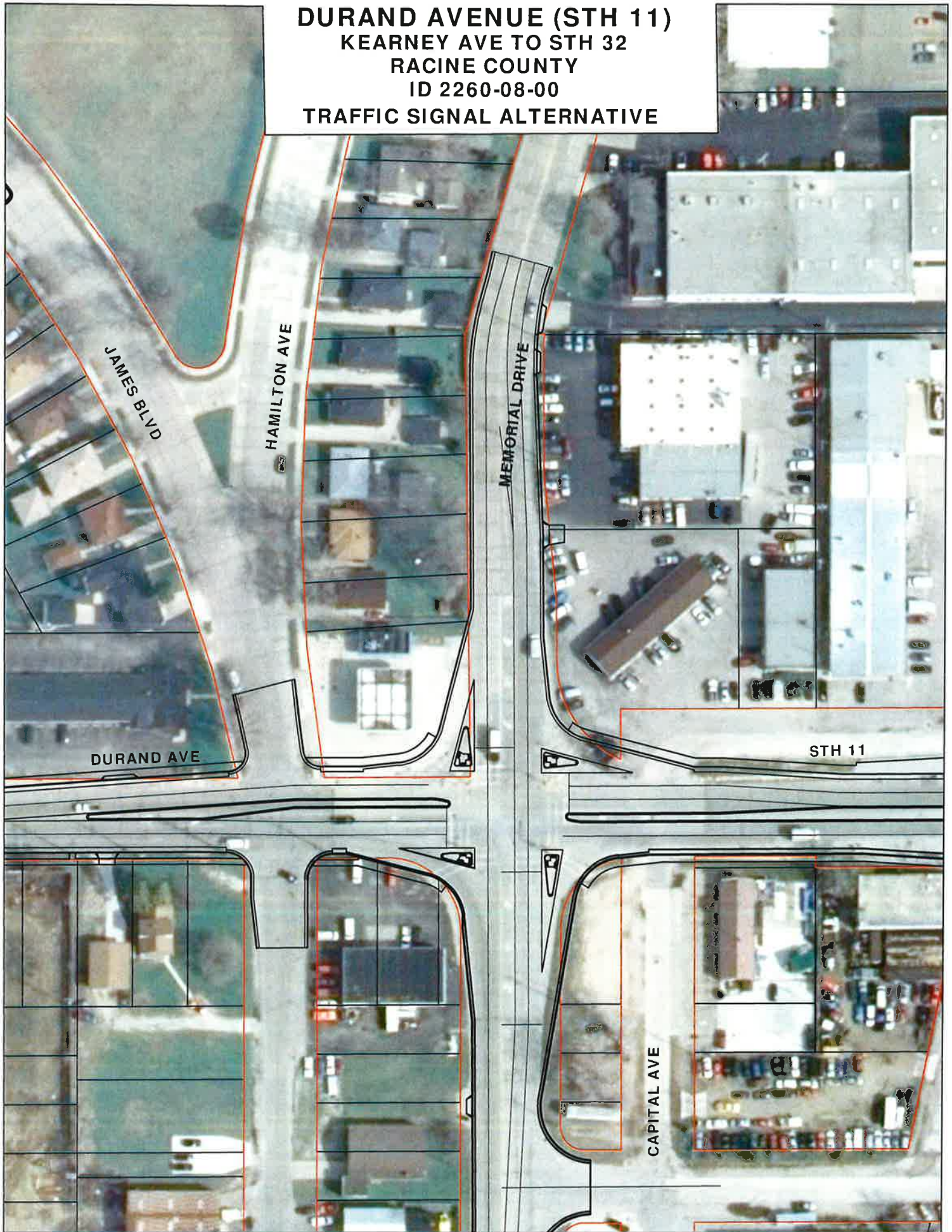
Analysis results are conceptual and subject to further refinement.

Right-of-way and costs are based on the Durand Avenue section from Packard Avenue to the east end of the project, including work on S. Memorial Drive.

**Based on the American Association of State Highway and Transportation Officials' (AASHTO) Highway Safety Manual Crash Modification Factors (CMFs)*

***Based on University of Wisconsin TOPS Laboratory research.*

**DURAND AVENUE (STH 11)
KEARNEY AVE TO STH 32
RACINE COUNTY
ID 2260-08-00
TRAFFIC SIGNAL ALTERNATIVE**



**DURAND AVENUE (STH 11)
KEARNEY AVE TO STH 32
RACINE COUNTY
ID 2260-08-00
SINGLE LANE ROUNDABOUT ALTERNATIVE**

