



Capacity Improvement Projects

City of Jonesboro
Engineering Department
7/11/2013



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Executive Summary

Jonesboro Capacity Improvement Projects

The City of Jonesboro is requesting a partnership with AHTD to fund the six roadway capacity improvement projects described in the following pages. The estimated cost of the projects, which are located primarily on state highways, is \$20 million. The City proposes to use \$10 million of its share of the proceeds of the ½ cent sales tax, to provide 50% of the funding for the projects.

The six projects have been prioritized from the list of critical projects first presented to AHTD staff in Spring 2013. At that time, the emphasis was on three projects: extension of Commerce Drive to Highway 49, construction of a rail grade separation at Highway 18 and Nettleton, and replacement of the existing two lane bridge on South Caraway with a five lane bridge.

Since that time, working with Mayor Harold Perrin, the staff has continued to refine the project list, with one major change: Although the Commerce Drive project is still believed to be important long-term to help relieve traffic on Stadium Boulevard, we are told initial modeling conducted by AHTD staff indicated little relief would occur in the short-term. Also, being caught by the high number of trains crossing on Highway 18 (as many as 25 per day) is a strong deterrent to use of Commerce as an alternate route to prime destinations such as the Mall at Turtle Creek and retail establishments at the Fairgrounds Development. Therefore, the revised project list downgrades the importance of Commerce Drive for now in favor of projects covered in this report that will have a more immediate impact. One such project, which will require the bulk of the funding, is construction of a rail grade separation over the Burlington Northern Santa Fe Railroad near Highway 18 and Nettleton. The overpass will eliminate longstanding problems at the crossing, and have the added benefit of increasing the attractiveness of Commerce Drive as an alternate route to Stadium. We would like to continue to pursue state funding for Commerce Drive.

Improving Caraway Road, south of the Hwy 63 Bypass, is #2 on the current list. The existing two lane bridge over Higginbottom Creek needs to be widened to five lanes, with five lanes extended to Latourette.

The other projects have been chosen to eliminate bottlenecks at four key intersections:

- Addition of southbound lane at Highway 351 and Highway 49 to Highway 91
- Lane additions and improvements at Highway 49 (Southwest Drive) at Parker Road
- Lane additions and improvements at Highway 18 (Highland Drive) at Main Street
- Addition of dual left turn and right turn lanes on all approaches to Highway 18 (Highland Drive)/Caraway Road intersection



1. Highway 18 Railroad Overpass (Estimated Cost \$12 M)

Highway 18 is a principal arterial for the City, carrying over 14,000 vehicles per day with frequent emergency vehicle, transit, and school pedestrian traffic. Highway 18 intersects Burlington Northern Santa Fe (BNSF) railway near Nettleton Avenue as indicated in Figure 1.



Figure 1.

This crossing averages over 25 trains per day, resulting in delays of over 2 hours per day on average for Highway 18. Below are a few examples of recent events for this subject crossing:

- March 11th, 2013 – BNSF Train Stopped for 53 min from 3:19 pm- 4:12 pm (Evening Peak)
- March 22nd, 2013 – BNSF Train Stopped for 58 min from 7:18 am – 8:16 am (Morning Peak)
- June 15th, 2013 – 38 BNSF Train Events resulting in Highland Drive being stopped for 2 hours 38 minutes throughout the day

A joint project between AHTD, BNSF, and the City is proposed to construct a railroad overpass over BNSF railway and Nettleton Avenue. Considering the investment AHTD has made to improve Highway 18, a project of this nature would further enhance this critical arterial, making it a more reliable and safer option for the traveling public. Also, a railroad overpass would be the first step to make an eastern arterial a more viable option.



A preliminary engineering study has identified Cain Street as a possible route to give Nettleton Avenue access to Highway 18, as indicated in Figure 2. This route may reduce the right-of-way acquisition required, making this project less cost prohibitive.



Figure 2.

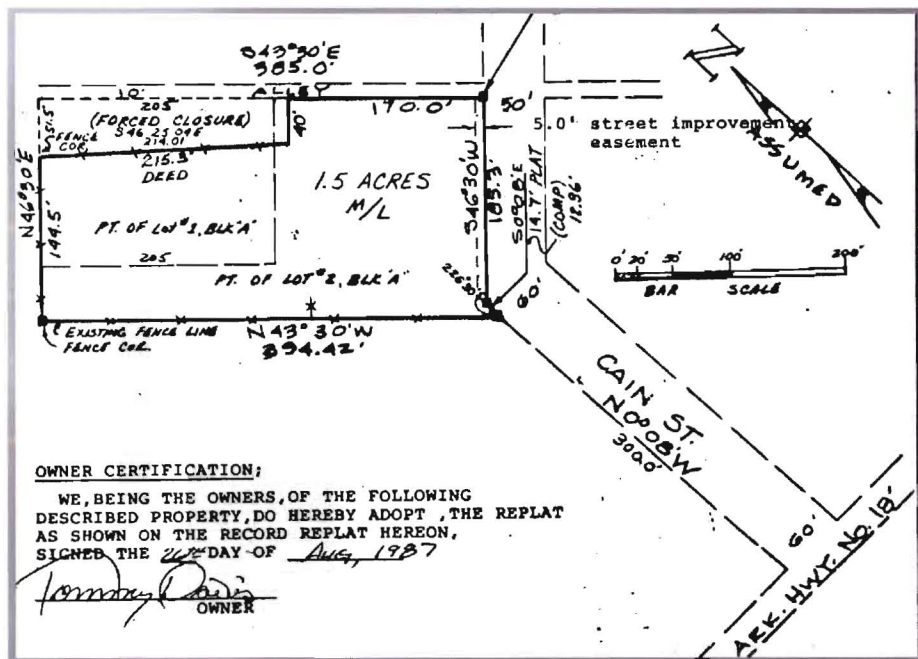


Figure 3.



2. South Caraway Road Improvements (Estimated Cost \$1.75 M)

Traffic volumes on Caraway Road south of Parker Road have increased by 28% the past ten years due to residential and multifamily growth on the south side of town. Caraway Road north of Parker Road consists of a five-lane cross section that is quickly reduced to a two lane cross section south of Parker Road as indicated in Figure 4.

Caraway Road crosses Higginbottom Creek on a two lane simple span bridge seven hundred feet south of Parker Road, limiting the addition of a much needed turning lane on this section of roadway. Currently a single southbound vehicle turning left on Sunny Meadow Drive blocks all southbound traffic. During peak traffic periods, traffic queues extend over the Highway 63 overpass, blocking the intersections of Caraway Road at Parker Road and Caraway Road at the Highway 63 eastbound off ramp.



Figure 4.

A project to replace or add to the existing bridge structure and widen Caraway Road from a two-lane cross section to a five lane cross section is desired. The first phase of widening will extend a five-lane cross section to Latourette Street six hundred feet (600') south of Higginbottom Creek, for a total project length of one thousand three hundred feet (1,300'). Future phases are planned to continue the five-lane cross section to Fox Meadow Drive.



3. Highway 49 Southbound Lane (Estimated Cost \$1.75 M)

Traffic volumes on Highway 49 and Highway 351 North have increased by 35% and 60%, respectively, the past ten years. Also, commercial growth has recently exploded in this area with the construction of the new NEA Baptist Hospital, which is estimated to generate over 15,000 vehicles per day alone.

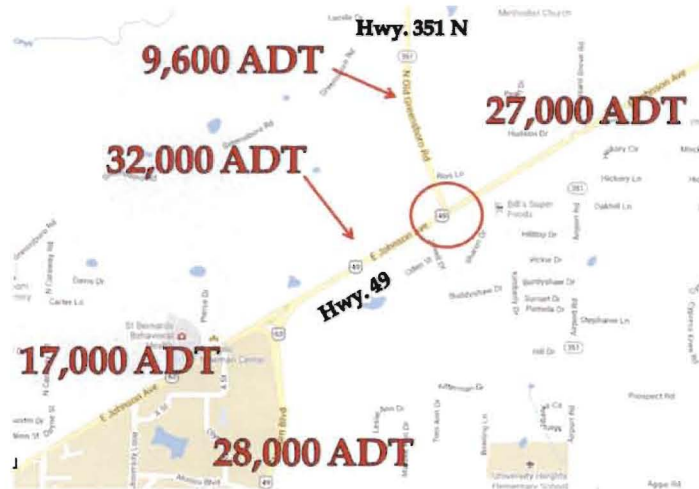


Figure 5.

As a result of the increased traffic volumes, congestion along this section of roadway has steadily increased. Traffic queues frequently extend twenty five hundred feet from the intersection of Highway 49 at Highway 351 North, resulting in extensive delays and driver frustration.



Figure 6.

A large majority of southbound traffic on Highway 351 turns right on Highway 49 continuing on Highway 49 to travel South (Stadium Boulevard) or west on Highway 91



(Johnson Avenue). Taking this into consideration, adding a single southbound lane starting at Highway 351 North and continuing to Highway 91 (Johnson Avenue) will reduce delays for Highway 351 and Highway 49. The total length of the project will be 0.6 miles including improving Highway 351 for 300' as indicated in Figure 8.



Figure 7.



Figure 8.



4. Highway 49 at Parker Road Roadway Improvements (Estimated Cost \$1 M)

Traffic volumes on Highway 49 south of Parker Road have increased by 83% the past ten years due to residential and multifamily growth on the southwest side of town. Traffic queues when school is in session typically extend twenty five hundred feet south of Parker Road. A large percentage of this northbound traffic simply wants to get past Parker Road to enter Joe N Martin Expy. (Highway 63). Continuing the right turn lane that currently ends at Parker Road to the Highway 63 on-ramp will help alleviate this congestion. To maintain the outside northbound lane functionality, maintaining a right turn lane that ends at Parker Road would be beneficial.

Also in conjunction with this improvement, adding a dual left turn movement for eastbound Parker Road is desired. Currently over 300 vehicles per hour make this movement, causing spillback and blocking the through lane on Parker Road.

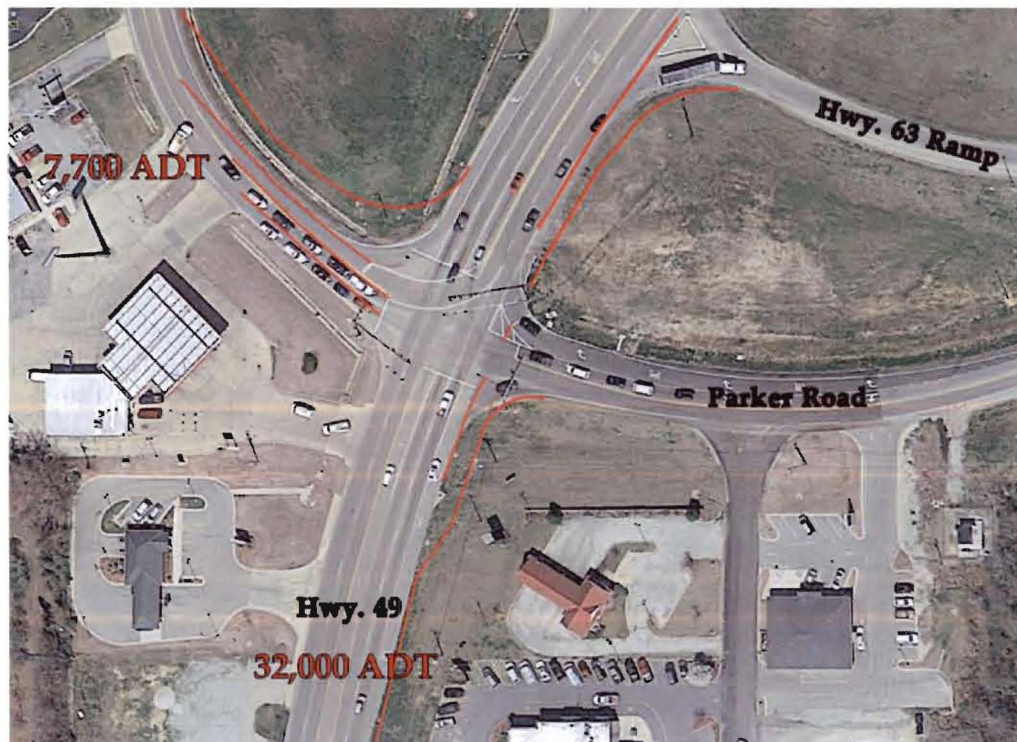


Figure 9.



Figure 10.



5. Hwy. 18 at Main Street Roadway Improvements (Estimated Cost \$1.5 M)

With the revitalization of the Downtown District and the growth on the southwest section of town, traffic conditions have changed significantly at the intersection of Highway 18 and Main Street. The northbound movement of the subject intersection operates at a Level of Service (E). Due to demand, maintaining two northbound lanes while still maintaining a north bound right turn lane is critical for an efficient operation of the intersection. The current configuration allows for the westbound right turn traffic to have a free flowing right turn lane. Due to the number of vehicles making this movement, a yield condition may not be an option, and an additional merge lane may need to be a part of this project.

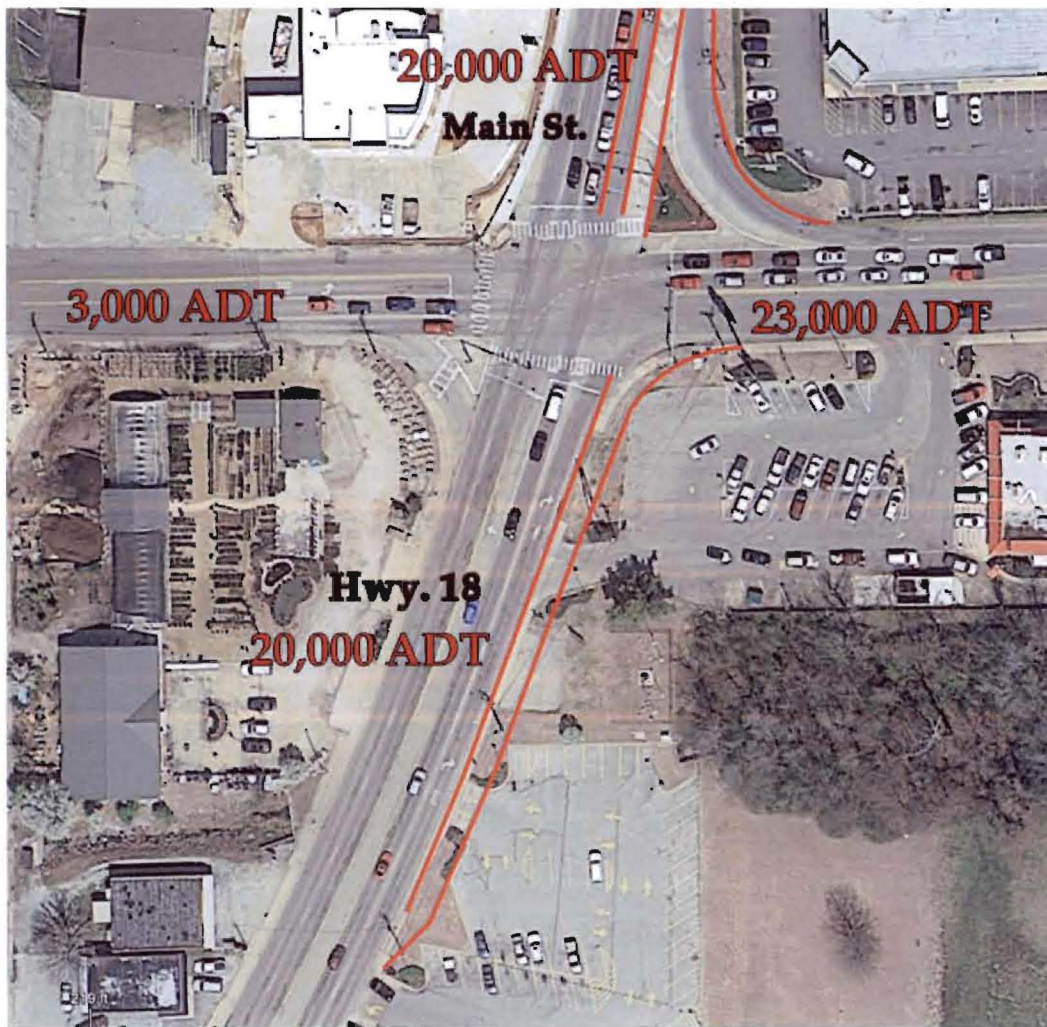


Figure 11.



6. Hwy. 18 at Caraway Rd. Roadway Improvements (Estimated Cost \$2 M)

Highway 18 (Highland Drive) and Caraway Road are both classified as principal arterials each carrying over twenty thousand vehicles per day. Recently, Kroger has announced plans to construct a supercenter with filling station just north of the intersection, which will generate over 700 peak-hour trips. Therefore, traffic is expected to only increase in this area.

Our initial analysis has indicated the left turn movements and many of the right turn movements are currently operating at a Level of Service (F) for several hours each day. Currently four (4) vehicles queued at the stop bar block all right turn traffic, resulting in excessive delay for the traveling public. By adding dual left turn lanes and right turn lanes on all approaches, the intersection Level of Service will increase to (C).

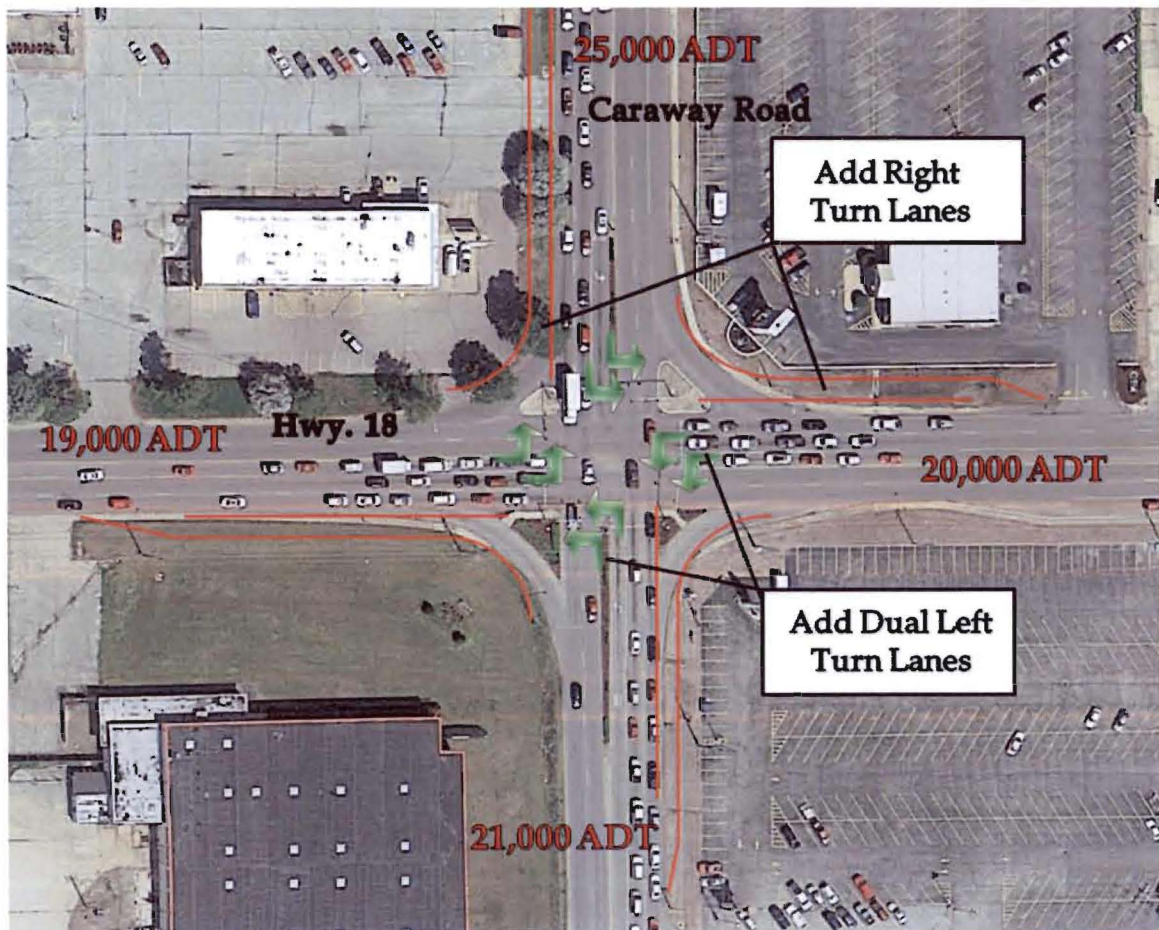
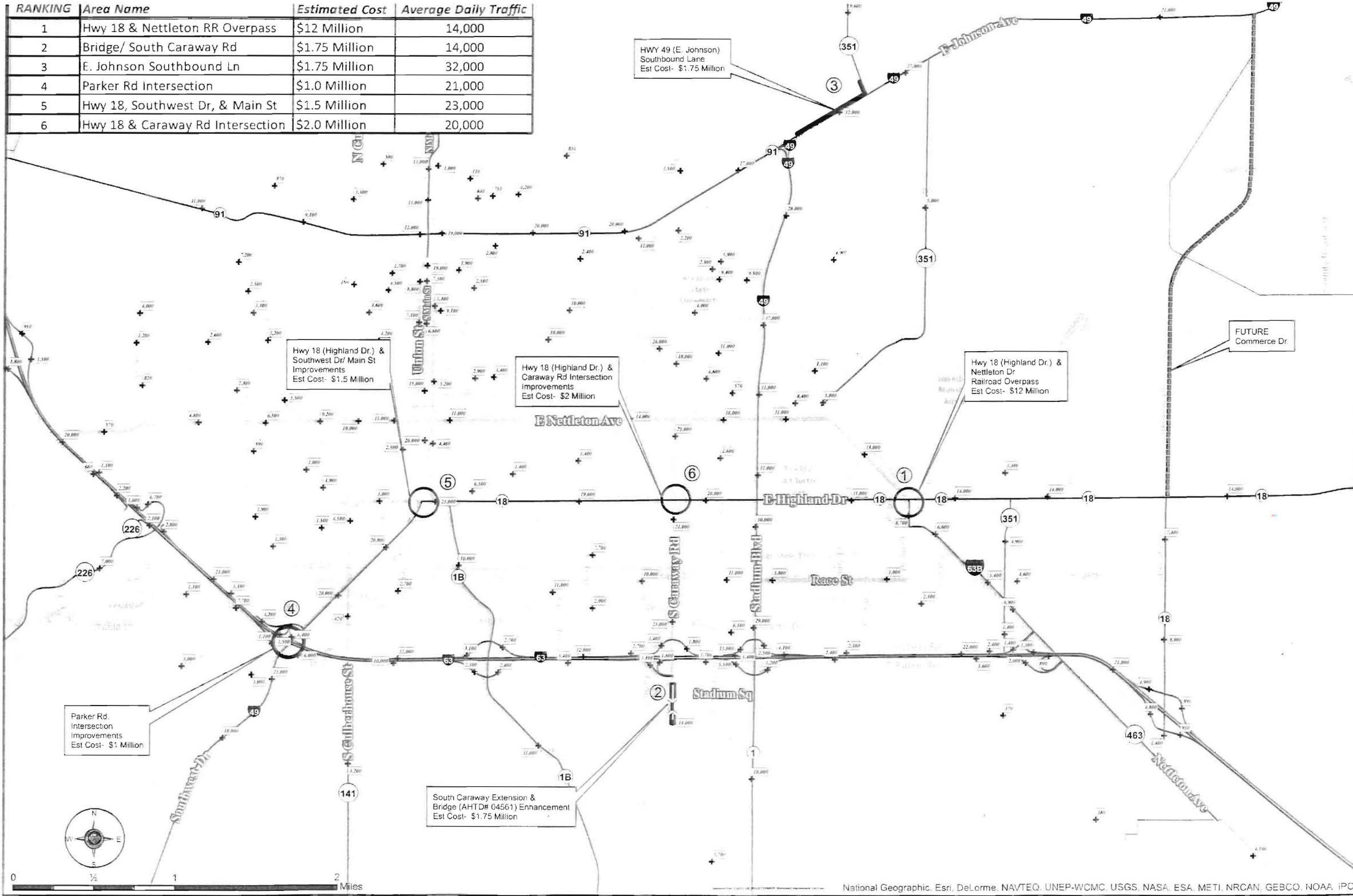


Figure 12.

RANKING	Area Name	Estimated Cost	Average Daily Traffic
1	Hwy 18 & Nettleton RR Overpass	\$12 Million	14,000
2	Bridge/ South Caraway Rd	\$1.75 Million	14,000
3	E. Johnson Southbound Ln	\$1.75 Million	32,000
4	Parker Rd Intersection	\$1.0 Million	21,000
5	Hwy 18, Southwest Dr, & Main St	\$1.5 Million	23,000
6	Hwy 18 & Caraway Rd Intersection	\$2.0 Million	20,000



RANKING	Area Name	Number of Accidents in 2012
1	Hwy 18 & Nettleton RR Overpass	29 Reported
2	Bridge/ South Caraway Rd	54 Reported
3	E. Johnson Southbound Ln	43 Reported
4	Parker Rd Intersection	62 Reported
5	Hwy 18, Southwest Dr, & Main St	68 Reported
6	Hwy 18 & Caraway Rd Intersection	107 Reported

Accidents at Proposed Sites

