

SOUTH JERSEY TRANSPORTATION PLANNING ORGANIZATION

RESOLUTION 1010-32: Approving Consultant Selection for FY 2011 Road Safety Assessment Project Development

WHEREAS, the South Jersey Transportation Planning Organization (SJTPO) is the Metropolitan Planning Organization (MPO) designated under Federal law for the southern region of New Jersey including Atlantic, Cape May, Cumberland, and Salem Counties; and

WHEREAS, the Fiscal Year 2011 SJTPO Unified Planning Work Program includes Federal Highway Administration planning funds for this project; and

WHEREAS, a Selection Committee consisting of representatives of the Atlantic County Regional Planning & Development, Cape May County Engineer's Office, and SJTPO was formed; and

WHEREAS, the SJTPO Technical Advisory Committee vested authority in the Selection Committee to forward a recommendation to the Policy Board; and

WHEREAS, the Selection Committee selected Orth-Rodgers & Associates, Inc. of West Trenton, NJ in association with GTS Consultants, Inc. of Freehold, NJ, a Certified Disadvantaged Business Enterprise firm,

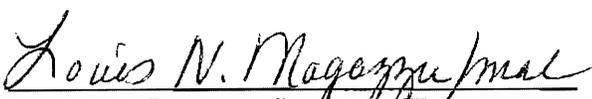
NOW THEREFORE BE IT RESOLVED, that the Policy Board of the South Jersey Transportation Planning Organization hereby approves the above selection for the FY 2011 Road Safety Audit Project Development; and

BE IT FURTHER RESOLVED, that the Policy Board authorizes the Executive Director to execute scope of work and cost modifications to the original contract amount, provided that funding is available and such modifications have been approved by the project sponsor, if applicable.

BE IT FURTHER RESOLVED, that the Policy Board requests that the South Jersey Transportation Authority execute the appropriate contractual arrangements with the consultant on behalf of the SJTPO.

Certification

I hereby certify that the foregoing is a correct and true copy of a resolution adopted by the Policy Board of the South Jersey Transportation Planning Organization at its meeting of October 25, 2010.


Louis N. Magazzu, Secretary/Treasurer

TECHNICAL APPROACH

Understanding of the Project

A Road Safety Assessment (RSA) is a formal examination of an existing or future road traffic project by an independent team of trained specialists. The nature of an RSA should be proactive, not reactive, and should include all road users. This particular project would be classified as a post construction phase Road Safety Assessment, i.e., how does the road user interact with the road facility. In the 2011-2012 proposed project, three (3) roadway sections, two of which are specified and one which will be selected by Cape May County prior to March 2011, are designated for an RSA. The fourth identified assessment involves existing traffic signal installations on federal aid roads in North Wildwood, Wildwood, and Wildwood Crest. It is our understanding that specific intersections or multiple intersections will be selected by the County Engineer prior to the actual RSA of those signalized intersections.

The intent of the road safety assessment process is to conduct a formal examination of highway features and the surrounding environment that increase the potential for crashes or crash severity and identify countermeasures that will reduce (or eliminate) the probability of such crashes and their subsequent severity. Safety Assessment team members that will be selected to assist in the field assessments should have some specific expertise in the area of highway safety and crash prevention. The final report will include low cost improvements that can be implemented immediately, as well as concepts that can serve as the basis for programming short-and medium-term improvements.

At the completion of each safety assessment, a final report will be issued that will identify all aspects of the roadway and its surrounding environment, supplemented by pictures, that may contribute to the occurrence or severity of motor vehicle crashes. The report will also identify, wherever possible, measures that can be taken to reduce the potential for crashes to occur. It will also identify measures that can be taken to minimize the injury risk and severity of crashes. The findings will be organized according to two general categories to assist road managers in the prioritization of mitigation strategies:

- 1) The level of effort required to implement mitigation (low, medium, high), and
- 2) The estimated potential to reduce a crash occurrence or its severity (low, medium, high).

Field Views

As part of the preparation of this submittal, Orth-Rodgers staff has reviewed the data and documentation provided with the request for proposal and has conducted field views of Ventnor Avenue (CR 629), in Ventnor and Margate, the entire length of Brigantine Boulevard (CR 638) as well as numerous potential signalized intersections in the barrier island communities of North Wildwood, Wildwood, and Wildwood Crest.

Although the fourth task, a yet to be named section of roadway in Cape May County, obviously can't be viewed at this time, Mr. Deitch is familiar with most roadways in the county, having worked in all municipalities on many assignments in the county over the last 14 years.

- Traffic signals in North Wildwood, Wildwood, and Wildwood Crest

Within the past 18 months, Orth-Rodgers completed an inventory of all traffic signals and flashing beacons in Cape May County to determine compliance with the latest edition of the MUTCD. The survey covered all county and local signalized intersections, not those on the state highway.

Although we do not know at this time which intersections in the aforementioned municipalities will be picked for this assignment to be looked at in depth, we are aware that many are substandard. There are cone of vision issues, lack of pedestrian walk/don't walk signals in areas where pedestrian activity is high, inadequate pavement marking and signing as well as very old signal equipment, decades old.

- Ventnor Avenue (CR 629)

The RFP describes in some detail the physical features of the portion of Ventnor Avenue to be assessed. During our field views, we observed that:

- Several signals do not have walk/don't walk signal heads, even in the business areas. Most have R/Y/G signals facing the pedestrian.
- There are very few 25 mph signs.
- Random use of "Yield to Pedestrian" signing which should be changed to "STOP" and be more evenly distributed since there are painted crosswalks at many locations.
- Signal coordination could be better to avoid stoppages.
- Drainage issues, especially on the SE corner of the New Haven Avenue intersection, which forces some pedestrian traffic to walk on Ventnor Avenue.

We expect that the RSA will concentrate on the signalized intersections.

- Brigantine Boulevard (CR 638)

CR 638 (Brigantine Boulevard) is designated as a south to north roadway. It starts at the northern terminus of RT 87 and extends north approximately 3.9 miles, where it dead ends. From milepost 0.0 to approximately milepost 1.2, it is a four lane divided roadway with shoulders and left turn slots created in the grass center median. There are no lane use control signs for the left-turn slots. Parking is permitted along both shoulders of the road and the speed limit is 45 MPH. Between milepost 0.3 and Harbor Beach Boulevard, there is a service road along the northbound side of the road.

Just north of Harbor Beach Boulevard (MP 1.0), the roadway becomes undivided and remains undivided for its duration, although its lane configuration varies. Basically, it is a four lane undivided roadway into a traffic circle at milepost 1.53, then transitions to one lane in each direction north of the circle with a 35 MPH speed limit. In the vicinity of 30th Street (MP 1.73), it becomes a four lane undivided roadway with bike lanes along both sides of the road. From 18th Street (MP 2.3), to its northern terminus, it has a three lane configuration consisting of a through lane in each direction, a center left turn lane, bike lanes along both sides of the road adjacent to the through lanes and shoulders along both sides of the road. The speed limit along the three lane section is 30 MPH. There are pedestrian refuge islands in the center of the roadway at its intersection with 24th and 26th Streets. There are three traffic signals along the roadway, at Harbor Beach Boulevard, at 38th Street, and at 14th Street.

The Safety Assessment Process

Data Collection

As part of the RFP, a significant amount of data has already been obtained and summarized for Ventnor Avenue, which includes crash data and analysis and some vehicular and pedestrian counts. The RFP also stated that a crash analysis for Brigantine Boulevard will be completed by the end of the year. ORA will use all of that data and analysis and supplement it if needed.

ORA will collect and organize all available data for use by the Road Safety Assessment Team in the conduct of the Assessment. The purpose of the data collection and assembly is to provide all Stakeholders that are involved in the project, specifically the Road Safety Assessment Team members, the information necessary to review, evaluate, and recommend positive changes that will reduce the probability of crashes to occur, as well as reduce the severity of any potential injury that may occur. The following will describe the anticipated data collection process:

Kick-off Meetings

For the previous safety assessment projects, Orth-Rodgers & Associates, Inc. (ORA) staff conducted kick-off meetings with county and local officials, as well as New Jersey Department of Transportation (NJDOT) and FHWA representatives, in order to give them an overview of what safety assessments were all about, review the process explaining what to look for, review information already collected and set schedules for the field assessments themselves.

Since most of the individuals that participate in the RSAs, especially the key staff at the county level have participated in previous assessments and are familiar with the process, in the 2011-2012 assessment project, in order to save everyone's valuable time, we recommend that a specific kick-off meeting be deleted from the program. In lieu of that meeting, ORA staff will gather key information and send it out to all participants prior to the actual scheduled date of the RSA. Information that will be gathered and sent out in advance includes:

- A line diagram plotting of all crashes which occurred along the corridor, in most cases, for a three-year period.
- Graphic summaries of all crashes by year, month, day of the week, time of day, weather conditions, surface conditions, light conditions, crash severity, and of most importance, location and crash types.
- Count data, if previously requested.

This advance information allows the team members to "get a feel" of the problem areas and issues along the corridor prior to the assessment taking place.

Since municipal officials in the respective municipalities in this project in all likelihood will not have had a previous year's assessment in their municipality, ORA staff will contact via telephone the chief of police or traffic safety officer and municipal engineer to explain the program in detail to them and answer any questions they may have. Should those municipal

officials feel that additional municipal staff should be familiarized with the program, ORA staff will schedule a meeting with them at their offices. A representative from the respective county engineer's office will be advised of the meeting dates in case they wish to attend. ORA will also contact the FHWA and NJDOT and offer to provide the same advance information to them if they are interested in participating in the assessment, since much of their staff has changed since the last assessments took place. This process will save everyone involved valuable time.

Background Information

Upon notice to proceed, ORA staff will contact the appropriate county engineers, or their designees, to discuss the roadway sections to be assessed prior to setting a date for the field view. ORA will seek to obtain background information on the roadways from the counties by asking such questions as:

- Why was the road chosen for the assessment?
- What problems exist on the road?
- What area should be given special attention?
- Has the roadway changed in the last three years?
- Are there any projects pending or anticipated for the roadway and their status?
- Have any of the traffic control devices or regulations been changed in the last three years (i.e., signals, speed limits, etc.)?
- Was there any development on the road in the last three years or any proposed development on the road or in the area that will impact traffic?
- Are any recent traffic counts available? Or, Have any recent traffic studies been conducted on the road?
- Availability of any Management System data.
- What plans, if any, are available for the road?

In addition to the data already collected, we will also seek consensus on which intersections should be counted and general locations for the placement of the Automatic Traffic Recorder (ATR) equipment.

ORA will also attempt to obtain the existing traffic signal plans and signal timings for the signalized intersections within the limits of the roadways being assessed, including any intersections at the end points of the roadway segments. For those intersections counted, the delays (LOS) at the intersections will be calculated and graphically represented for use in the conduct of the assessment. Every signalized intersection does not have to be counted. It is proposed that a total of 10 intersections within the three segments of road identified in the RFP will be analyzed for both AM and PM peak hour conditions. A summary of the information gathered will be included in an information package distributed well in advance of the workshop

and assessment. It will also be used in the assessment process and included in the Appendix of the final report.

Crash Data

In conjunction with SJTPO staff, ORA will analyze the most recent three-year crash data available from the appropriate authorities. To whatever extent is possible, the actual police reports will be utilized in the creation of crash diagrams. The data will be organized into a format best suited for use by the Safety Assessment Team to identify the recent crash history. A line diagram (or diagrams) will be prepared as appropriate to illustrate the most recent crash history of the roadway being assessed. The amount of detail to be included on the diagram will be determined upon receipt of the crash data to maximize the usefulness of the diagram by Team members during the conduct of the assessment. ORA will also prepare crash graphs of three-year trends, crash occurrence by month, crash occurrence by day of week, crash occurrence by time of day, by surface condition, by light condition, by crash severity (killed, injured, property damage only), by crash type, and by closest intersection. A copy of the crash diagram and the crash charts will be included in an information package distributed well in advance of the workshop and assessment. They will also be used in the assessment process and included in the Appendix of the final report. Any crash data not obtained by the SJTPO will be obtained by ORA staff from either the local police department or the NJDOT.

Traffic Counts

Traffic counts will be conducted at intersections recommended by the county or other stakeholders. ORA will utilize their subconsultant, **GTS Consultants, Inc.**, to collect any additional manual turning movement peak hour traffic data, as well as ATR counts. ORA will use the data to calculate peak hour traffic volumes (vehicular and pedestrian) and graphically represent the data on a line diagram for use in the conduct of the audit. It is estimated that a total of 10 intersections within the three road segments identified in the RFP will be counted and analyzed for both the 7:00-9:00 AM and 4:00-6:00 PM peak periods of traffic flow. The exact hours may also be modified based on local comments. On each of the three sections of roadway, ORA will also obtain 24-hour, 7-day automatic traffic recorder (ATR) classification counts for analysis if requested by the team. A copy of the line diagram depicting the peak hour volumes will be included in an information package distributed well in advanced of the workshop and assessment.

Check List

One key element of a Road Safety Assessment is the use of checklists. Safety Assessment checklists are used to prompt thought and raise multi-modal safety concerns for all road users including pedestrians, bicyclists, trucks, buses, emergency vehicles, and railroads. A separate checklist has been developed for each stage of the assessment process – this helps the team focus on issues that are likely to be remedied given the circumstances.

In order to assist team members so that potential safety issues are not missed, ORA will distribute and use the “PROMPT LIST 6” for Existing Road Assessment taken from the FHWA Road Safety Audit (Assessment) Guidelines of 2006.

PROMPT LIST 6 (1 OF 2)

Existing Road Audit

Road Function, Classification, Environment	Road Alignment and Cross Section	Auxiliary Lanes	Intersections	Interchanges	Signs and Lighting	Marking and Delineation	Barriers and Clear Zones	Traffic Signals	Pedestrians and Bicyclists
1 Visibility, sight distance	1 Tapers		1 Location	1 Visibility, sight distance	1 Lighting	1 General issues	1 Clear zones	1 Operations	1 General issues
2 Design speed	2 Shoulders		2 Visibility, sight distance	2 Lanes, shoulders	2 General signs issues	2 Centerlines, edge-lines, lane lines	2 Barriers	2 Visibility	2 Pedestrians
3 Speed limit/speed zoning	3 Signs and markings		3 Signing and marking	3 Signing, marking, delineation	3 Sign legibility	3 Guideposts and reflectors	3 End treatments /Crash cushions	3 Placement of signal heads	3 Bicyclists
4 Passing	4 Turning traffic		4 Layout and 'readability' (perception) by drivers	4 Pedestrians, bicyclists	4 Sign supports	4 Curve warning and delineation	4 Pedestrian railing		4 Public transport
5 'Readability' (perception) of the alignment by drivers			5 Pedestrians, bicyclists	5 Lighting			5 Visibility of barriers and fences		
6 Human factors			6 Lighting						
7 Widths									
8 Shoulders									
9 Cross slopes									
10 Side slopes									
11 Drains									
12 Combinations of features									

PROMPT LIST 6 (2 OF 2)

Existing Road Audit

Older Drivers	Bridges and Culverts	Pavement	Parking	Provision For Heavy Vehicles	Floodways and Causeways	Other Safety Issues
1 Turning operations (receiving lane widths, radii)	1 Design features	1 Pavement defects		1 Design issues	1 Ponding and flooding	1 Landscaping
	2 Barriers	2 Skid resistance		2 Pavement/shoulder quality	2 Safety of devices	2 Temporary works
2 Channelization, opposing left turn lanes	3 Pedestrian and recreational facilities, delineation	3 Ponding/icing/snow accumulation				3 Headlight glare
3 Sight triangles		4 Loose stones/material				4 Roadside activities
4 Signing, marking and delineation		5 Manholes				5 Signs of possible problems (pavement, roadside)
5 Traffic signals						6 Rest areas
						7 Environment
						8 Median curbing

WORKSHOP AND SAFETY ASSESSMENT FIELD VIEW

The Team Leader will schedule a field view and workshop meeting for each of the four assessments. It is anticipated that the workshop will take place at a convenient public office in the respective county to minimize the amount of travel required for all stakeholders. An informational package will be prepared for distribution well in advance of the field view and workshop. The package will at a minimum contain a brief explanation of what a safety assessment is, why safety assessments are conducted, and the process involved. It will also include a summary of the traffic conditions and background information, a line diagram plot showing the crash data; charts of three-year crash trends; crash occurrence by months, by day of week, by time of day, by surface condition, by light condition, by crash severity, by crash type, by closest intersection; peak hour traffic counts; a copy of the line diagram depicting the peak hour volumes line and a copy of a line diagram showing LOS results. All team members will be asked to review the information package prior to attending the workshop assessment. It is anticipated that the workshop and field view will take place on the same day.

The following is a list of members that could be included on each assessment team: George Strathern (ORA), Norman Deitch (ORA), and/or Brian Stankus (ORA), SJTPO representative, township/city traffic safety officer and engineer, county engineer or representative, NJDOT representative responsible for safer highways, (since there are no state highways impacted by the assessments and since they are no longer involved in local traffic issues, they may decline to participate), NJ Division of Highway Traffic Safety representative, and a representative from the FHWA.

Each assessment and workshop is anticipated to take an entire business day to accomplish. The team leader, working with the local officials, will secure a meeting room of sufficient size to accommodate the team, as well as transportation to and from the field views. Traffic protection by a police officer in a marked police vehicle may be requested for some locations. The team leader will ensure that notes are taken, as appropriate, throughout the assessment process to ensure that no idea is lost. The steps listed below describe the process to take place on the day of the assessment

STEP 1 – Introductions: The team leader handles the introductions.

STEP 2 – Document Review: The team leader leads the team in a review and discussion of the information contained in the information package. Each of the documents assembled will be systematically reviewed in their entirety as they relate to the safety performance of the road being assessed

STEP 3 – Checklist Review: The team will systematically review each item on a safety assessment checklist to encourage thought regarding the conditions of the roadway that affect its safety performance.

STEP 4 – Field View: ORA will be responsible for securing a vehicle(s) of sufficient size to transport the entire safety assessment team to the section of road being assessed. The Checklist Review described in STEP 3 above can be accomplished enroute to and from the field. The audit team will be asked to “walk” the entire length of road section being assessed. On a road less than three miles long, to the extent possible, they may walk both directions of the road.

From previous experience, the only way to ensure that all roadway and roadside conditions are taken into consideration during a road safety assessment is to have the multi-disciplinary team walk the entire length of the study area, discussing observations and taking notes (the use of a Dictaphone has been found to be a very efficient tool) for inclusion in the final recommendations. Walking the entire corridor is important because you see things that would be missed with only a drive-through assessment. Examples of issues that could be missed, as found in previous assessments conducted by ORA staff, include: unprotected headwalls, no breakaway sign supports, unraveling pavement surface, fixed objects in and close to the right-of-way, lack of handicap ramps, drainage issues, tripping conditions, etc.

STEP 5 – Recap: The Safety Assessment Team will reconvene at the meeting room at the end of the field view and review the significant findings discussed during the assessment. The team leader will attempt to reach a consensus on each issue and associated recommended action that is raised during the conduct of the assessment.

STEP 6 – Nighttime Safety Audit: In addition to the daytime RSA, ORA feels that a nighttime assessment is a critical, integral component to any RSA. What is visible during the day is not as obvious in most cases during hours of darkness when only lighting and the retroreflectivity of traffic control devices are motorists' guides. A nighttime safety assessment will be conducted by ORA staff and interested team members for all four assignments. The goal of the nighttime assessment will be to:

- Check the retroreflectivity of the street signs, pavement markings, and condition of the raised pavement markers (RPMs).
- Evaluate the effectiveness of existing street lighting.
- Check that lights on private property adjacent to the roadway do not create bright areas that could distract drivers.
- Look for issues that would only be apparent during hours of darkness, such as clearly defined roadway alignment, signal indication visibility conflicts, etc.

DRAFT REPORT

The Team Leader will prepare a draft report that documents the assessment findings and recommended actions. A copy of the draft report will be provided (e-mailed when possible) to all team members for their review and comment. Three (3) copies of the draft report will also be provided to SJTPO stakeholders for their review and comment. Additional copies will be provided if necessary.

FINAL REPORT

The Final Report will be issued upon receipt and incorporation of the draft report comments. The Report will include text describing the process that took place and issues that were identified during the assessment. **The following sample is intended to illustrate the method of presenting the safety issues identified through the conduct of this Road Safety Assessment project.** Ten (10) copies of the Final Reports will be delivered to the SJTPO office in Vineland, New Jersey, unless directed otherwise by the Executive Director, in both paper and CD-ROM formats. The CD-ROM will be in .PDF and/ or Microsoft format as appropriate.

SAMPLE

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
24	Pittsfield Road intersection-corner sight distance across southwest and southeast corners somewhat restricted.	Selectively trim trees and other vegetation on corners to ensure adequate sight distance.	X				X	
25	Swale along the northbound side of road between Pittsfield Road and the Crossroads Community Church. Head wall in same area.	Consideration should be give to installing guiderail.		X				X
26	Type "B" inlet without curb on northwest corner of intersection and another along the southbound side of road approximately 330 feet south of intersection.	Replace with bicycle safe inlet and install curbing.		X			X	
27	Erie Avenue- Stop sign and post worn.	Replace sign and post.	X				X	
28	Empty fence post along the northbound side of road approximately 700 feet south of Beaver Avenue.	Remove post	X			X		
29	Knocker's Crabhouse is on the northeast corner of Beaver Avenue. Angle parking stalls are painted in its' parking lot so that vehicles will park up to the curb along the northbound side of the road. Theses parked vehicles will then restrict the sight distance across that corner of the intersection.	Contact property owner to install parking blocks or otherwise revise parking so that sight distance is not obstructed and the sidewalk area (by statue) is free of parked vehicles.	X				X	

Deliverables

Below is a list of the key deliverables anticipated for the assessment.

Pre-assessment information package for each section of road assessment will be prepared and distributed to team members in advance of the assessment. The package will contain:

- A brief explanation of what a safety assessment is, why it is being conducted, and the process involved.
- A line diagram plot of the crash data.
- A summary of the crash data.
- Charts of three-year crash trends, crash occurrence by month, by day of week, by time of day, by surface condition, by light condition, by crash severity, by crash type, and by closest intersection.
- Assessment checklist.
- Any traffic count data requested and obtained prior to the assessment.

On the day of the workshop and assessment:

- All of the items contained in the pre-assessment information package.
- Any additional traffic count or other data obtained.

A draft report will be prepared in Microsoft Word and distributed for each road being assessed.

- Ten (10) hard copies of the draft reports for each of the four assignments will be prepared in Microsoft Word format.

Upon receipt and addressing of comments,

- Ten (10) hard copies of the final reports for each of the four assignments will be prepared in Microsoft Word format.
- Two (2) CD-ROMs of the final reports in .pdf format.

Final Progress Report

- Upon completion of all four assessments, a final Progress Report containing a summary of all project materials delivered to the sponsors will be submitted.