South Jersey Transportation Planning Organization

2011-12 Road Safety Assessment

Wildwood Traffic Signals
North Wildwood
Wildwood City
Cape May County

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Introduction

Orth-Rodgers & Associates, Inc. (ORA) was selected by the South Jersey Transportation Planning Organization (SJTPO) to conduct their 2011-12 Road Safety Assessment (RSA) project. The sections of roadway to be studied were selected by SJTPO based on a number of factors considered important to the safety and future development of the roadways. Among the factors considered were; crash data, traffic volume growth, recent and planned future development along the roadway, and local cooperation and control. County and local officials cooperated with the SJTPO in identifying roads that meet these parameters.

Three roadway sections and 15 signalized intersections were chosen for the 2011-12 assessments. Two of the roadways are located in Atlantic County, one in Cape May County and 15 signalized intersections located in Cape May County.

The 15 signalized intersections are:

The following locations in the City of Wildwood

1. New York Avenue and Maple Avenue (flashing beacon)
2. Atlantic Avenue and Glenwood Avenue
3. Atlantic Avenue and Magnolia Avenue
4. Atlantic Avenue and 26th Street
5. Atlantic Avenue and Wildwood Avenue
6. Atlantic Avenue and Oak Avenue
7. Atlantic Avenue and Schellenger Avenue
8. Atlantic Avenue and Montgomery Avenue
9. Atlantic Avenue and Taylor Avenue
10. Atlantic Avenue and Hand Avenue

11. Atlantic Avenue and Cresse Avenue

12. Ocean Avenue and Cresse Avenue

13. Pacific Avenue and Baker Avenue

14. Pacific Avenue and Spencer Avenue

15. Central Avenue and 16th Avenue in the City of North Wildwood

The three roadway sections are:

1. Brigantine Avenue (CR 638) entire length, between RT 87 and its northern terminus north of 14th Street in The City of Brigantine, Atlantic County.

2. Ventnor Avenue (CR 629), between Coolidge Avenue (M.P. 0.78) in Margate City and Dorset Avenue (M.P. 3.39) in Ventnor City, Atlantic County.

3. New Jersey Avenue (CR 621) between Rambler Road (MP 4.19) and Cresse Road (MP 5.05) and between Young Avenue (MP 5.70) and 26th Street (MP 6.37) in Wildwood Crest Borough and Wildwood City, Cape May County.

Each study will have a separate report, but will share basically the same introduction, background section, format and some text.

Safety assessments serve to address the safe operation of the roadways and to ensure a high level of safety for all road users. The process of a safety assessment is two-fold: 1) to conduct a formal examination of highway features and the surrounding environment that increases the potential for crashes; and, 2) to identify countermeasures that will reduce or eliminate the probability of such crashes. According to the Federal Highway Administration (FHWA), the formal definition of a road safety audit is as follows:

"A Road Safety Audit is the formal examination of an existing or future roadway or traffic project by an independent team of trained specialists."[1]

1 Federal Highway Administration, Road Safety Audits and Road Safety Audit Reviews, EDL #12345 FHWA XX-03-999

To accomplish these goals, the assessment team assesses the safety performance history as well as the future crash potential of a roadway and prepares a report that documents the safety deficiencies and appropriate countermeasures. The purpose of the 2011-12 assessment is to identify potential safety deficiencies along the selected sections of the three roadways and the 15 signalized intersections.

There are three primary parts of the assessment: 1) the data collection and analysis phase; 2) the field view (conducted by the team); and, 3) the preparation of the report and findings.

The **data collection phase** is performed prior to the assessment team conducting a field view of the entire roadway. The data is intended to assist the team in identifying potential safety issues, as well as to provide a factual and historic component of the study. Traffic count and crash data are collected, and a capacity analysis of major intersections is performed. The traffic counts are used to assist in analyzing solutions for the intersections, as well as aid in identifying the most congested sections of the roads. The crash data assists the team in identifying specific areas and/or conditions that warrant close scrutiny that might have otherwise been overlooked. The capacity analysis of intersections identifies how well the intersections are operating and when and where improvements may be needed. Based on an analysis of all of the data, the team can conduct a productive and comprehensive evaluation of the roads being studied. A multi-disciplinary team conducts the field view. In this case, the team visited each intersection reviewing the signal installation at them, discussing observations and taking notes for inclusion in the report. The team leader then prepared a **draft report** that documented the assessment findings and recommended actions. The draft report was distributed to the team members for their review and comments. A final report was then prepared by the team leader incorporating the agreed upon draft report comments.

BACKGROUND INFORMATION

At the pre-assessment meeting a list of questions were asked of the County and local representatives seeking to gather background information on the fifteen (15) intersections. The following questions usually asked for a section of roadway were modified for the fifteen (15) intersections:

- Why were the intersections chosen?
- What problems exist at the intersections?
- What areas should be given special attention?
- Have the intersections changed in the last three years?
- Are there any projects pending or anticipated for the intersections and their status?
- Have any of the traffic signals been changed in the last three years?
- Are any recent traffic counts available?
- Have any recent traffic studies been conducted at the intersections?
- What plans, if any, are available for the intersections?
- At what intersections should new traffic counts, either turning movement or ATRs, be conducted?

The same questions were again asked at the workshop on the day of the assessment to ensure that no available data was missing. A pre-assessment information package was prepared and distributed at the workshop prior to the field view. The package included a brief explanation of what a safety assessment is, why safety assessments are conducted, and the process involved.

FIFTEEN SIGNALIZED INTERSECTIONS

It was ascertained from local members of the audit team that:

The intersections were chosen to be assessed because:

- The signalized intersections lack pedestrian indications and do not conform to the MUTCD. It should be noted the intersections are located in the summer resort area of the state and pedestrian and bicycle activity at the intersections is substantial during the summer months.
- The signal equipment at the intersections is antiquated and in need of replacement.
- Much of signal equipment (mast arms, vehicular indications, and controllers) is installed on wooden poles.
- Others have signal heads suspended on span wire from wood poles.
- Most have overhead electrical service.
- In some cases one controller is used to control two intersections.
- There are no projects planned for the intersections.
- There have been no changes to the traffic signals in the last three years.

The following sections describe the various tasks undertaken by ORA in partnership with the Safety Assessment Team and summarize the findings from the assessment process in a manner that will allow the responsible agencies and personnel to prioritize implementation of safety enhancements.

Pre-Assessment Data Collection and Analysis

Prior to the assessment activities on site, ORA collected and reviewed traffic related materials in order to assist the team in conducting the assessment. ORA also conducted a pre-assessment field view of the road to familiarize itself with the intersections. A description of the materials reviewed is provided below.

1. **Traffic Volume Data**

   The County did not request any traffic counts for the intersections.

2. **Crash Data**

   SJTPO forwarded to ORA the crash data excel files for the intersections being studied. Crash data for the years 2008, 2009 and 2010 was reviewed. The crash data showed little crash activity at the intersections and it was agreed by the team members a detailed analysis of the crash data would be of little use. Therefore, the detailed analysis would not be necessary.

Assessment

On Tuesday October 4, 2011, the Safety Assessment Team met in the Cape May County Engineers office to formally conduct the assessment. The meeting commenced at 9:30 AM with brief statements by ORA representatives who reiterated the importance of RSAs and outlined the objectives of the safety assessment. There were brief introductions by team members followed by a review and discussion of materials described in the previous section. The team then drove to the intersection of New York Avenue and Maple Avenue to begin the assessment. Team members are listed below.

SAFETY ASSESSMENT TEAM FOR BRIGANTINE AVENUE

Name	**Agency**
Jennifer Marandino	SJTPO
Dale Foster	Cape May County
Tom Brennan	Cape May County
Kim Catrambone	Orth-Rodgers & Associates, Inc.
Norman Deitch	Orth-Rodgers & Associates, Inc.
George Strathern	Orth-Rodgers & Associates, Inc.

The team then walked or drove to each of the fifteen (15) intersections. During the field views, team members identified features at the intersections and their surrounding environment that could contribute to the occurrence or relative severity of crashes. At the intersections the Team identified safety deficiencies in the traffic signal designs, as well as other items that were felt to be inconsistent with effective road function and use. A variety of safety improvement measures were discussed with field notes and digital photographs being taken by team members.

At the completion of the assessment, the team leader recapped the findings of the assessment with the team. The team leader informed the team members on the next step in the assessment process; ORA will prepare a draft report summarizing the findings from the assessment process and forward the report to all team members for their review and comments.

On Thursday January 12, 2012 Dale Foster, Norman Deitch and George Strathern conducted a night assessment. The goal was to check the retroflectivity of the street signs, pavement

markings, and signal visibility. In addition, the need for street lighting was checked and lights adjacent to the roadway on private property were checked to ensure they did not create bright areas that could distract drivers.

The next section of the report summarizes the findings from the daytime and nighttime assessment of the fifteen (15) intersections along with suggested remedial actions to address the noted safety issue. In order to assist in prioritizing the work effort recommended to correct the situation, the level of effort required (low, medium, high) and degree of safety benefit derived (low, medium, high) is also noted for each item.

LEVEL OF EFFORT REQUIRED

For this safety assessment final report the "level of effort" required to address a remedial action recommendation has been divided into three levels-low, medium and high. A correlation of cost and man hour expenditures generally helps to define the level of effort. The following are some examples of the levels of effort:

- Low Level of Effort - Development of general work orders or directives from the engineering department to its maintenance forces to: implement signal timing changes, pavement marking revisions and refurbishing; replace worn sign; installing new signs; replacing a few rigid sign supports with breakaway supports; tree trimming.

- Medium Level of Effort - Minor revisions to traffic signal not requiring any underground work; replacing inlet grates; installing or repairing small sections of sidewalk; signal revisions that require re-wiring for new signal heads; installing pedestrian indications; conducting more detailed in-house traffic studies to address specific issues.

- High Level of Effort - Redesign of roadway features; major signal revisions requiring underground work such as new foundations, conduit, new signal controller; resolving poor drainage issues; development of design plans that would require outside contractors to implement; any road work that would require permits and general capital improvement projects.

POTENTIAL SAFETY BENEFITS

Potential safety benefits are divided into three categories- low, medium and high. This is a subjective breakdown based on engineer's opinion as to the percentage of the road that would be impacted by the improvement along with the degree of impact that the identified safety issue would have on potential crash experience. For example, eliminating a potential tripping safety hazard where there are very few pedestrians could be considered low, however, if the number of pedestrians was high the potential safety benefit would increase. Pavement markings not visible at night could be considered high.

The next section of the report summarizes the findings from the daytime and nighttime assessment of the fifteen (15) signalized intersections.

Findings

The findings from the fifteen (15) signalized intersections, except where repetitious items have been combined into a single comment or general comment, are generally presented on the following pages in the order that they were assessed by the team.

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
A	General comment- there are some handicapped ramps at the intersections but most do not appear to be in compliance with ADA standards. Other locations lack them entirely or the ramps lack the detectable warning surface.	Consideration be given to checking compliance and if non-compliant to installing ADA compatible ramps at the intersections in conjunction with future roadway projects.			X		X	
B	General comment - Sign installations. Many of the signs at the intersections are installed as “bendaway” rather than “breakaway.” Many installed as “breakaway” are installed incorrectly with the stub too far out of the ground or on the wrong side of the post.	Consideration should be given to inventorying the method of sign installation at the intersections and taking steps to properly install all signs as “breakaway” in accordance with the most current NJDOT standards and the MUTCD.			X		X	
C	General comment – Many of the street name signs are worn to a point that they cannot be read.	Contact local officials regarding having new signs installed. It should be noted the current MUTCD indicates mixed case letters be used as well as certain background colors.			X			X
D	General comment – The signal progression along Atlantic Avenue appears to be less than optimum.	Consideration be given to reviewing the signal progression along Atlantic Avenue.			X			X

SAFETY ISSUE		REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
E	General comment – It was noted that many of the signalized intersections have hinged "STOP" signs on the side street approaches to the intersections. It was stated by local team members that theses signs are used to supplement the stop condition when the signals are operated in the flashing mode in the off season or during power outages which we were told occur with some frequency in this area.							
F	General comment – Although some of the signalized intersections investigated are adjacent to one another only the intersections themselves were investigated. The roadway segments between the intersections were not assessed and therefore any non-compliant or less than desirable signs were not captured in the RSA.							

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
1. NEW YORK AVENUE AND MAPLE AVENUE								
1-1	General comment- this is a "T" type intersection with Maple Avenue extending in the east-west direction forming the top of the "T" and New York Avenue intersecting the Maple Avenue northerly curb line forming the stem of the "T". Maple Avenue is one way westbound. The intersection is stop sign controlled with the stop sign facing the New York Avenue approach to the intersection. **(Picture 1)**							
1-2	The stop control is supplemented by a wire span intersection control beacon suspended from wood poles. The beacon has one two section head facing the Maple Avenue approach that flashes yellow and one facing the New York Avenue approach that flashes red. The signal appears to have over head electrical service. Signal equipment is old and as stated above suspended from wooden poles.	Replace existing installation with entire new mast-arm installation.			X	X		
1-3	It appears that statutory parking prohibitions are not enforced at the intersection limiting sight distance.	Statutory parking prohibitions be enforced at the intersection.	X				X	
1-4	There are handicap ramps on the northeast and northwest corners of the intersection but they do not appear to be ADA compatible	When road work is done at the intersection consideration be given to installing ADA compatible handicap ramps at the intersection.		X		X		
1-5	There are inlets grates on the northeast and northwest corners that are not bicycle safe. **(Picture 2)**	Consideration be given to installing bicycle safe inlet grates at the intersection.	X			X		
1-6	"STOP" sign on the New York Avenue approach is worn.	Replace with new sign.	X			X		

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
1-7	County made comment that "DO NOT ENTER" signs may be needed at intersection to prevent New York Avenue traffic from mistakenly turning left onto Maple Avenue.	Install "DO NOT ENTER" signs at intersection.	X			X		
1-8	The existing "ONE WAY" sign at the intersection is worn. **(Picture 3)**	Replace with new sign.	X			X		

PICTURE 1:
MAPLE AVENUE & NEW YORK AVENUE

PICTURE 2:
INLET GRATE

PICTURE 3:
WORN "ONE WAY" SIGN

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
2. ATLANTIC AVENUE AND GLENWOOD AVENUE								
2-1	General comment- this is a cross type intersection with New Jersey Ave. extending in the north-south direction and Glenwood Ave. extending in the east-west direction. Glenwood Ave.e is one way eastbound. The intersection is controlled by a fixed time traffic signal.							
2-2	The traffic signal design at this intersection consists of a near right far left over-the-road display to all approaches. All signal equipment is installed on wood poles. There is a mast arm and pole mounted signal on all four corners of the intersection, The signal facing the easterly approach to the intersection has the potential to draw motorist the wrong way on this one way approach. The signal equipment is old. The traffic controller is mounted on a wood pole on northwest corner of the intersection. The intersection has overhead electrical service. **(Picture 4,5&6)**	Consideration be given to replacing the entire signal installation with a new installation with aluminum poles and pedestrian walk-don't walk signals.			X			X
2-2	There are handicap ramps on all of the corners of the intersection but they lack the detectable warning surface and may not be ADA compatible.	Consideration be given to installing detectable warning surfaces on the handicap ramps and verify compatibility with ADA standards.		X		X		

PICTURES 4, 5&6:
ATLANTIC AVENUE AND GLENWOOD AVENUE

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
2-3	There are no mast arm mounted street name signs at the intersection.	Consideration be given to installing mast arm mounted street name signs.	X			X		
3. ATLANTIC AVENUE AND MAGNOLIA AVENUE								
3-1	General comment- this is a cross type intersection with Atlantic Avenue extending in the north-south direction and Magnolia Avenue extending in the east-west direction. Magnolia Avenue is one way westbound. The intersection is controlled by a fixed time traffic signal.							
3-2	The traffic signal design at this intersection consist of a near right far left over- the- road display to all approaches. Pole mounted vehicular indications are installed on three corners of the intersection which serve as indication for pedestrians. The over-the- roadway signals facing the westerly approach to the intersection has the potential to drawn motorist the wrong way on this one way approach .All of the signal equipment is old and mounted on wood poles. The intersections appears to operate off of the traffic controller located at Glenwood Avenue and Atlantic Avenue located approximately 250 feet south of this intersection The intersection has overhead electrical service.	Consideration be given to replacing the entire signal installation with a new installation with aluminum poles and pedestrian walk-don't walk signals.			X			X
3-3	There are handicap ramps on all of the corners of the intersection but they lack the detectable warning surface and may not be ADA compatible.	Consideration be given to installing detectable warning surfaces on the handicap ramps and verify ADA compatibility.		X		X		
3-4	There are no mast arm mounted street name signs at the intersection.	Consideration be given to installing mast arm mounted street name signs.	X			X		

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
3-5	There is no lane use control sign for the left turn slot on the Atlantic Avenue northbound approach to the intersection.	Install missing lane use control sign.	X			X		
3-6	The crosswalk across the Magnolia Avenue easterly approach does not line up with the handicap ramps.	Reinstall crosswalk to line up with handicap ramps.	X			X		
3-7	Northbound side just north of intersection “SPEED LIMIT 25” sign defaced.	Replace with new sign.	X			X		

PICTURES 7, 8, 9 & 10:
ATLANTIC AVENUE AND MAGNOLIA AVENUE

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
4. ATLANTIC AVENUE AND 26TH STREET								
4-1	General comment- this is a cross type intersection with Atlantic Avenue extending in the north-south direction and 26th Street extending in the east-west direction. The intersection is controlled by a fixed time traffic signal.							
4-2	The traffic signal design at this intersection consists of a near right far left over- the- road display to all approaches. Pole mounted vehicular indications are installed on three corners of the intersection which serve as indications for pedestrians. No indication is readily visible to pedestrians crossing from the northeast to the northwest corner of the intersection. All of the signal equipment is old and mounted on wood poles. The signal controller for this intersection is located at Juniper Avenue approximately 200 feet south of this intersection. The intersection has overhead electrical service.	Consideration be given to replacing the entire signal installation with new aluminum poles and pedestrian walk-don't walk signals.			X			X
4-3	There are no mast arm mounted street name signs at the intersection.	Consideration be given to installing mast arm mounted street name signs.	X			X		
4-4	Crosswalk across the 26th Street approaches does not align with the handicap ramps.	Re-install crosswalks to align with handicap ramp.	X			X		
4-5	There are handicap ramps on all of the corners of the intersection but they lack the detectable warning surface and may not be ADA compatible.	Consideration be given to installing detectable warning surfaces on the handicap ramps and verify ADA compatibility.		X		X		
4-6	Water was observed ponding along the southeast corner of the intersection.	Consideration be given to investigating what can be done to eliminate the ponding.			X	X		

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
4-7	Wood pole supporting the signal equipment on the southeast corner of the intersection is located on the radius of the curb and is leaning inward towards 26th Street.	Consideration be given to investigating what can be done to eliminate or prevent more severe leaning of this pole.		X			X	

PICTURES 11, 12 & 13:
ATLANTIC AVENUE AND 26TH STREET

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
5. ATLANTIC AVENUE AND WILDWOOD AVENUE								
5-1	General comment- this is a cross type intersection with Atlantic Avenue extending in the north-south direction and Wildwood Avenue in the east-west direction. The intersection is controlled by a fixed time traffic signal.							
5-2	The traffic signal design at this intersection consists of a three pole layout with near right, far left over- the-road display to the Atlantic Avenue approaches to the intersection and a near left far right display to the Wildwood Avenue approaches to the intersection. There are two mast arms installed on a wood pole on the northwest corner of the intersection, a pole mounted signal mounted on a wood pole on the northeast corner of the intersection and two mast arms and a pole mounted indication installed on an aluminum pole on the southeast corner of the intersection. No indication is readily visible to pedestrians crossing from the northwest to the southwest corner of the intersection. All of the signal equipment is old. The aluminum pole is leaning as it appears the base has settled. The signal controller for this intersection is mounted on a wood pole on the northeast corner of the intersection. The intersection has overhead electrical service.	Consideration be given to replacing the entire signal installation with new aluminum poles and pedestrian walk-don't walk signals.			X			X
5-3	There are no mast arm mounted street name signs at the intersection.	Consideration be given to installing mast arm mounted street name signs.	X			X		

SAFETY ISSUE		REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
5-4	Crosswalks across the 26th Street approaches do not align with the handicap ramps.	Re-install crosswalks to align with handicap ramps.	X			X		
5-5	There are handicap ramps on all of the corners of the intersection but two lack the detectable warning surface.	Consideration be given to installing detectable warning surfaces on the handicap ramps.	X			X		
5-6	Water was observed ponding along the southeast corner of the intersection.	Consideration be given to investigating what can be done to eliminate the ponding.			X	X		
5-7	There are left turn slots along both of the Atlantic Avenue approaches to the intersection but no lane use control signs.	Install the appropriate lane use control signs.	X			X		

PICTURES 14, 15 & 16:
ATLANTIC AVENUE AND WILDWOOD AVENUE

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
6. ATLANTIC AVENUE AND OAK AVENUE								
6-1	General comment- this is a cross type intersection with Atlantic Avenue extending in the north-south direction and Oak Avenue in the east-west direction. The intersection is controlled by a fixed time traffic signal. The Oak Avenue easterly approach is one way eastbound.							
6-2	The traffic signal design at this intersection consists of a three pole layout with near right far left over- the-road display to the Atlantic Avenue approaches to the intersection and a near left far right display to the Wildwood Avenue approaches to the intersection. There are two mast arms and a pole mounted indication installed on a wood pole on the northwest corner of the intersection, a pole mounted signal mounted on a wood pole on the southwest corner of the intersection and two mast arms installed on an aluminum pole on the southeast corner of the intersection. No indications are readily visible to pedestrians crossing several crosswalks at the intersection. All of the signal equipment is old. The signal controller for this intersection is mounted on a wood pole on the northeast corner of the intersection. The intersection has overhead electrical service.	Consideration be given to replacing the entire signal installation with new aluminum poles and pedestrian walk-don't walk signals.			X			X
6-3	There are no mast arm mounted street name signs at the intersection.	Consideration be given to installing mast arm mounted street name signs.	X			X		

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
6-4	There are handicap ramps on all of the corners of the intersection but they lack the detectable warning surface and may not be ADA compatible. The curb across the handicap ramp on the northeast corner is raised creating a possible tripping hazard.	Consideration be given to installing detectable warning surfaces on the handicap ramps and verify ADA compatibility. Correct height of curb on the northeast corner to eliminate tripping hazard.		X		X		
6-5	There are left turn slots along both of the Atlantic Avenue approaches to the intersection but no lane use control signs.	Install the appropriate lane use control signs.	X			X		
6-6	There are no signs at the intersection indicating that the Oak Avenue easterly approach is one way eastbound.	Install appropriate one way signs at the intersection.	X				X	

PICTURES 17 & 18:
ATLANTIC AVENUE AND OAK AVENUE

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
7. ATLANTIC AVENUE AND SCHELLENGER AVENUE								
7-1	General comment- this is a cross type intersection with Atlantic Avenue extending in the north-south direction and Schellenger Avenue in the east-west direction. The intersection is controlled by a fixed time traffic signal.							
7-2	The traffic signal design at this intersection consists of a four pole layout with near right far left over- the-road display to the Atlantic Avenue approaches to the intersection and a near left far right display to the Schellenger Avenue approaches to the intersection. There are two mast arms and a pole mounted signal installed on a wood pole on the southeast corner of the intersection, pole mounted signals mounted on wood poles on the southwest and northeast corners of the intersection and two mast arms installed on an aluminum pole on the northwest corner of the intersection. No indications are readily visible to pedestrians crossing several crosswalks at the intersection. County representative stated that pedestrian activity at this intersection is very substantial and warrants special attention due to the existence of the splash and water park in the immediate vicinity (high pedestrian attractor). All of the signal equipment is old. The signal controller for this intersection is mounted on a wood pole on the southwest corner of the intersection. The intersection has overhead electrical service.	Consideration be given to replacing the entire signal installation with new aluminum poles and pedestrian walk-don't walk signals.			X			X

SAFETY ISSUE		REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
7-3	Crosswalk across the Schellenger Avenue westerly approach does not align with the handicap ramps.	Re-install crosswalks to align with handicap ramp.	X			X		
7-4	There are no mast arm mounted street name signs at the intersection.	Consideration be given to installing mast arm mounted street name signs.	X			X		
7-5	There are handicap ramps on all of the corners of the intersection but they lack the detectable warning surface and may not be ADA compatible.	Consideration be given to installing detectable warning surfaces on the handicap ramps and verify ADA compatibility.	X			X		
7-6	Left turn slots exist along both Atlantic Avenue approaches to the intersection but no lane use control signs.	Install the appropriate lane use control signs.	X			X		
7-7	The pavement markings along the Schellenger Avenue easterly approach indicate that the right lane is reserved for right turns only and the left lane for through and left turning traffic. There are no lane use control signs along the approach. The right lane lacks the word "ONLY" installed beneath the right turn arrow.	Install the appropriate lane use control signs. Install "ONLY" pavement marking.	X			X		
7-8	The signal indication on the southwest corner of the intersection is missing a visor on one of the indications.	Install missing visor.	X			X		
7-9	Southeast corner of the intersection-inlet which is not bicycle safe.	Consideration be given to installing bicycle safe inlet grate.	X			X		

PICTURES 19, 20 & 21:
ATLANTIC AVENUE AND SCHELLENGER AVENUE

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
8. ATLANTIC AVENUE AND MONTGOMERY AVENUE								
8-1	General comment- this is a cross type intersection with Atlantic Avenue extending in the north-south direction and Montgomery Avenue in the east-west direction. Montgomery Avenue is one way westbound. The intersection is controlled by a fixed time traffic signal.							
8-2	The traffic signal design at this intersection consists of a three pole layout with near left far right over- the-road display to the Atlantic Avenue approaches to the intersection and a near right far left display to the Montgomery Avenue easterly approach to the intersection. There are two mast arms and a pole mounted signal installed on an aluminum pole on the northeast corner of the intersection, a pole mounted signal mounted on a wood pole on the southeast corner of the intersection and two mast arms installed on a wood pole on the southwest corner of the intersection. No indications are readily visible to pedestrians crossing several crosswalks at the intersection. All of the signal equipment is old. The signal controller for this intersection is mounted on an aluminum pole on the northeast corner of the intersection. The intersection has overhead electrical service.	Consideration be given to replacing the entire signal installation with new aluminum poles and pedestrian walk-don't walk signals.			X			X
8-3	Crosswalks at the intersection do not align with the handicap ramps.	Re-install crosswalks to align with handicap ramp. This may require a second handicap ramp be installed on the southwest corner of the intersection.	X			X		

SAFETY ISSUE		REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
8-4	There are no mast arm mounted street name signs at the intersection.	Consideration be given to installing mast arm mounted street name signs.	X			X		
8-5	There are handicap ramps on all of the corners of the intersection but they lack the detectable warning surface.	Consideration be given to installing detectable warning surfaces on the handicap ramps.	X			X		
8-6	Lane use control sign for the left turn lane along the Atlantic Avenue northerly approach to the intersection is worn and obstructed by trees.	Replace with new sign and trim trees to ensure adequate visibility. Continue maintenance of trees or relocate signs.	X			X		
8-7	"DO NOT ENTER," "ONE WAY," and "WRONG WAY" signs at the intersection are not installed on breakaway posts.	Reinstall signs on breakaway posts.	X			X		
8-8	Hinged "STOP" sign on the Montgomery Avenue approach is un-hinged and worn.	Install new hinged "STOP" sign.	X			X		
8-9	Southeast corner of the intersection-inlet which is not bicycle safe.	Consideration be given to installing bicycle safe inlet grate.	X			X		

PICTURES 22 & 23:
ATLANTIC AVENUE AND MONTGOMERY AVENUE

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
9. ATLANTIC AVENUE AND TAYLOR AVENUE								
9-1	General comment- this is a cross type intersection with Atlantic Avenue extending in the north-south direction and Taylor Avenue in the east-west direction. Taylor Avenue is one way westbound. The intersection is controlled by a fixed time traffic signal.							
9-2	The traffic signal design at this intersection consist of a three pole layout with near left far right over-the- road display to the Atlantic Avenue approaches to the intersection and a near right far left display to the Taylor Avenue easterly approach to the intersection. There are two mast arms and a pole mounted signal installed on an aluminum pole on the northeast corner of the intersection, pole mounted signals installed on a wood pole on the southeast corner of the intersection and two mast arms installed on an aluminum pole on the southwest corner of the intersection. No indications are readily visible to pedestrians crossing several crosswalks at the intersection. All of the signal equipment is old. The signal controller for this intersection is mounted on a wood pole on the southwest corner of the intersection. The intersection has overhead electrical service.	Consideration be given to replacing the entire signal installation with new aluminum poles and pedestrian walk-don't walk signals.			X			X
9-3	There is a raised manhole and uneven pavement in the crosswalk across the westerly approach to the intersection causing a possible tripping hazard.	Consideration be given to investigating what can be done to correct this condition.		X		X		

SAFETY ISSUE		REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
9-4	There are no mast arm mounted street name signs at the intersection.	Consideration be given to installing mast arm mounted street name signs.	X			X		
9-5	There are handicap ramps on all of the corners of the intersection but they lack the detectable warning surface and may not be ADA compatible.	Consideration be given to installing detectable warning surfaces on the handicap ramps and verify ADA compatibility.	X			X		
9-6	"DO NOT ENTER" and "ONE WAY" signs at the intersection are not installed on breakaway posts.	Reinstall signs on breakaway posts.	X			X		
9-7	An additional "ONE WAY" sign be installed on the northeast corner of the intersection as the sign on the southeast corner is not readily visible.	Install "ONE WAY" sign.	X			X		

PICTURES 24 & 25:
ATLANTIC AVENUE AND TAYLOR AVENUE

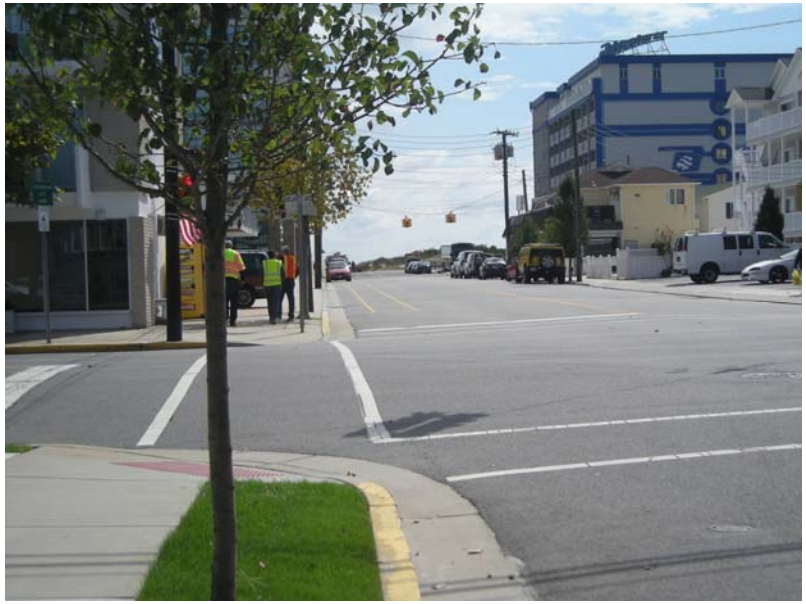
	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
10. ATLANTIC AVENUE AND HAND AVENUE								
10-1	General comment- this is a cross type intersection with Atlantic Avenue extending in the north-south direction and Hand Avenue in the east-west direction. Hand Avenue is one way eastbound. The intersection is controlled by a fixed time traffic signal.							
10-2	The traffic signal design at this intersection consists of a span wire installation suspended from wood poles on the northeast and southwest corners of the intersection and pole mounted signals installed on wood poles on the southeast and northwest corners of the intersection. The signals suspended from the span wires results in a near left far right over- the- road display to the Atlantic Avenue approaches to the intersection and a near right far left display to the Hand Avenue westerly approach to the intersection. No indications are readily visible to pedestrians crossing several crosswalks at the intersection. All of the signal equipment is old. The signal controller for this intersection is mounted on a wood pole on the southwest corner of the intersection. The intersection has overhead electrical service.	Consideration be given to replacing the entire signal installation with new aluminum poles and pedestrian walk-don't walk signals.			X			X
10-3	There are handicap ramps on all of the corners of the intersection but they lack the detectable warning surface and may not be ADA compatible.	Consideration be given to installing detectable warning surfaces on the handicap ramps and verify ADA compatibility.	X			X		
10-4	There are no span wire mounted street name signs at the intersection.	Consideration be given to installing over the road street name signs on the span wire at the intersection.	X			X		

SAFETY ISSUE		REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
10-5	The pavement markings along the Hand Avenue westerly approach indicate that the left lane is reserved for left turns only and the right lane for through and right turning traffic. There are no lane use control signs along the approach.	Install the appropriate lane use control signs.	X			X		
10-6	"DO NOT ENTER" and "ONE WAY" signs at the intersection are not installed on breakaway posts.	Reinstall signs on breakaway posts.	X			X		
10-7	Crosswalks at the intersection do not align with the handicap ramps.	Re-install crosswalks to align with handicap ramp. This may require a second handicap ramp be installed on the southwest corner of the intersection.	X			X		
10-8	The painted left turn lane is less than 9 feet in width.	Evaluate the pavement markings to see if the lane width can be increased.	X			X		

PICTURE 26:
ATLANTIC AVENUE AND HAND AVENUE

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
11. ATLANTIC AVENUE AND CRESSE AVENUE								
11-1	General comment- this is a cross type intersection with Atlantic Avenue extending in the north-south direction and Cresse Avenue in the east-west direction. The intersection is controlled by a fixed time traffic signal.							
11-2	The traffic signal design at this intersection consists of a span wire installation suspended from wood poles on the southeast and northwest corners of the intersection and pole mounted signals installed on wood poles on the northeast and southwest corners of the intersection. The signals suspended from the span wires result in a near right far left over- the- road display to the Atlantic Avenue approaches to the intersection and a near left, far right display to the Cresse Avenue approaches to the intersection. County representative stated that pedestrian activity at this intersection is very substantial and warrants special attention. All of the signal equipment is old. The signal controller for this intersection is mounted on a wood pole on the southeast corner of the intersection. The intersection has overhead electrical service.	Consideration be given to replacing the entire signal installation with new aluminum poles and pedestrian walk-don't walk signals.			X			X
11-3	There are handicap ramps on all of the corners of the intersection. The ramps on the northwest and southeast have detectable warning surfaces but those on the other two corners do not and the ramps may not be ADA compatible.	Consideration be given to installing detectable warning surfaces on the handicap ramps and verify ADA compatibility.	X			X		

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
11-4	There are no span wire mounted street name signs at the intersection.	Consideration be given to installing over the road street name signs on the span wire at the intersection.	X			X		
11-5	Southbound Atlantic Avenue changes from two lanes to one lane at the intersections. There are no warning signs indicating the lane drop.	Install the appropriate transitional lane drop pavement markings and lane drop warning signs along the approach.	X			X		
11-6	The hinged "STOP" signs at the intersection are on non-breakaway posts.	Reinstall signs on breakaway posts.	X			X		
11-7	"Welcome to the Crest" sign on the southwest corner of the intersection is on non-breakaway post.	Reinstall sign on breakaway post.	X			X		



PICTURE 27:
ATLANTIC AVENUE AND CRESSE AVENUE

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
12. OCEAN AVENUE AND CRESSE AVENUE								
12-1	General comment- this is a cross type intersection with Ocean Avenue extending in the north-south direction and Cresse Avenue in the east-west direction. The intersection is controlled by a fixed time traffic signal.							
12-2	The traffic signal design at this intersection consists of a span wire installation suspended from wood poles on the northeast and southwest corners of the intersection. The signals suspended from the span wires result in a near left, far right over- the- road display to the Ocean Avenue approaches to the intersection and a near right, far left display to the Cresse Avenue approaches to the intersection. No indications are readily visible to pedestrians crossing several crosswalks at the intersection. County representative stated that pedestrian activity at this intersection is very substantial and warrants special attention. All of the signal equipment is old. The signal controller for this intersection is mounted on a wood pole on the southwest corner of the intersection. The intersection has overhead electrical service.	Consideration be given to replacing the entire signal installation with new aluminum poles and pedestrian walk-don't walk signals.			X			X
12-3	There are handicap ramps on all of the corners of the intersection. The ramps on the northwest and southwest corner have detectable warning surfaces but those on the other two corners do not and the ramps may not be ADA compatible.	Consideration be given to installing detectable warning surfaces on the handicap ramps and verify ADA compatibility.	X			X		

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
12-4	There are no span wire mounted street name signs at the intersection.	Consideration be given to installing over the road street name signs on the span wire at the intersection.	X			X		
12-5	There is water standing along the curb on the northeast corner of the intersection.	Consideration be given to investigating what can be done to eliminate the standing water.			X	X		
12-6	Southeast and southwest corners of the intersection- inlets which are not bicycle safe.	Consideration be given to installing bicycle safe inlets grates.	X			X		
12-7	The hinged "STOP" signs at the intersection are on non-breakaway posts.	Reinstall signs on breakaway posts.	X			X		

PICTURE 28:
OCEAN AVENUE AND CRESSE AVENUE

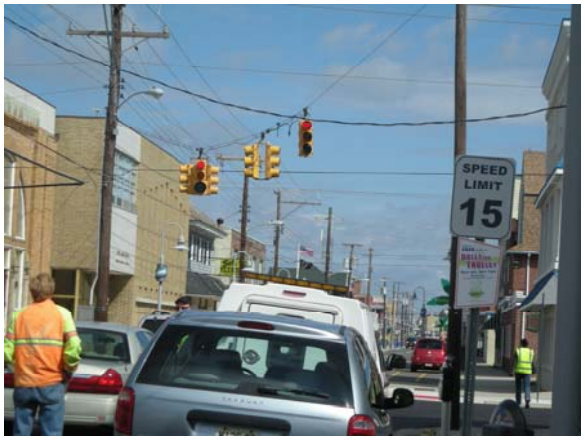
	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
13. PACIFIC AVENUE AND BAKER AVENUE								
13-1	General comment- this is a cross type intersection with Pacific Avenue extending in the north-south direction and Baker Avenue in the east-west direction. Baker Avenue is one way eastbound. The intersection is controlled by a fixed time traffic signal.							
13-2	The traffic signal design at this intersection consists of a span wire installation suspended from wood poles on the northwest and southeast corners of the intersection. The signals suspended from the span wires result in a near right far left over- the- road display to the Pacific Avenue approaches to the intersection and a near left far right display to the Baker Avenue westerly approach to the intersection. There is an over the roadway signal facing the Baker Avenue easterly approach to the intersection which has the potential to draw vehicles the wrong way down the one way street. No indications are readily visible to pedestrians crossing several crosswalks at the intersection. All of the signal equipment is old. The signal controller for this intersection is mounted on a wood pole on the northwest corner of the intersection. The intersection has overhead electrical service. County representative stated that pedestrian activity at this intersection is very substantial and warrants special attention.	Consideration be given to replacing the entire signal installation with new aluminum poles and pedestrian walk-don't walk signals.			X			X

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
13-3	There are no span wire mounted street name signs at the intersection.	Consideration be given to installing over the road street name signs on the span wire at the intersection.	X			X		
13-4	Wildwood high school is located on the southwest corner of the intersection. This is a school crossing that lacks the required school crossing signs.	Install the required school crossing and advance warning signs along all of the approaches to the intersection in the appropriate fluorescent yellow-green.	X				X	
13-5	"NO TURN ON RED" sign on the southeast corner of the intersection is installed on a wood pole and is worn.	Install new sign on a breakaway post.	X			X		
13-6	"ONE WAY" sign on the northeast corner of the intersection and 'ONE WAY" and "DO NOT ENTER" signs on the northwest corner of the intersection are worn and installed on a non-breakaway posts.	Install new signs on breakaway posts.	X			X		
13-7	It was felt that a "ONE WAY" and "DO NOT ENTER" sign should be installed on the southwest corner of the intersection.	Install new signs on southwest corner.	X			X		
13-8	The hinged "STOP" sign on the southwest corner of the intersection is not on a breakaway post.	Reinstall sign on breakaway post.	X			X		

PICTURE 29 & 30:
PACIFIC AVENUE AND BAKER AVENUE

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
14. PACIFIC AVENUE AND SPENCER AVENUE								
14-1	General comment- this is a cross type intersection with Pacific Avenue extending in the north-south direction and Baker Avenue in the east-west direction. The intersection is controlled by a fixed time traffic signal.							
14-2	The traffic signal design at this intersection consists of a span wire installation suspended from wood poles on the northwest and southeast corners of the intersection. The signals suspended from the span wires result in a near right, far left over- the- road display to the Pacific Avenue approaches to the intersection and a near left, far right display to the Spencer Avenue approaches to the intersection. No indications are readily visible to pedestrians crossing several crosswalks at the intersection. All of the signal equipment is old. There is a mix of 8" and 12" indications. The signal controller for this intersection is mounted on a wood pole on the northwest corner of the intersection. The intersection has overhead electrical service. There are handicap ramps on all of the corners of the intersection. All of the ramps have detectable warning surfaces	Consideration be given to replacing the entire signal installation with new aluminum poles and pedestrian walk-don't walk signals. Verify ADA ramp compatibility.			X			X
14-3	There are no span wire mounted street name signs at the intersection.	Consideration be given to installing over the road street name signs on the span wire at the intersection.	X			X		

SAFETY ISSUE		REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
14-4	Intersection appears to have recently been resurfaced so there are no painted crosswalks or stop lines.	Install painted crosswalks and stop lines at intersection.	X				X	
14-5	There is a “15 MPH” speed limit sign facing northbound traffic.	Remove “15 MPH” speed limit sign.	X			X		



PICTURE 31, 32 & 33:
PACIFIC AVENUE AND SPENCER AVENUE

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
15. CENTRAL AVENUE AND 16TH AVENUE								
15-1	General comment- this is a cross type intersection with Central Avenue extending in the north-south direction and 16th Avenue in the east-west direction. The intersection is controlled by a semi- vehicle and pedestrian actuated traffic signal.							
15-2	The traffic signal design at this intersection consists of a four pole layout with mast arms with four way signal heads installed on the northeast and southwest corners of the intersection along with walk-don't walk signals on the same poles. There are walk-don't walk signals on the poles on the southeast and northwest corners of the intersection. There are pedestrian push buttons on all four corners of the intersection. Central Avenue is a wide divided roadway with one over the roadway signal head on each side of the landscaped divider creating a near left far right signal display to the Central Avenue approaches. Due to the width of Central Avenue it is felt that an additional far right signal should be installed for both of the Central Avenue approaches. This may require installing additional mast arms at the intersection. The signals facing the 16th Avenue approaches are in a near right far left display. The signal controller for this intersection is on the northeast corner of the intersection	Consideration be given to revising the signal design to provide two far right signals for both of the Central Avenue approaches to the intersection.		X				X

SAFETY ISSUE		REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
15-3	There is a school on the northwest and northeast corners of the intersection. There are older type school crossing warning signs installed facing 16th Avenue on the same post as hinged stop sign. When the "STOP" sign is open it will obstruct the school crossing warning sign. There is as advance school crossing warning signs along the 16th Avenue easterly approach to the intersection but it lacks the supplemental "AHEAD" plate.	Install new school crossing warning signs and plate on a separate post from the hinged stop signs so as not to block one with the other. Install missing "AHEAD" plate on advance warning sign.	X			X		
15-4	There are handicap ramps on all of the corners of the intersection. The ramps on the southeast and northeast corners have detectable warning surfaces, the other two do not.	Install missing detectable warning surface on the northwest and southwest corners of the intersection.	X			X		
15-5	There are no "KEEP RIGHT" signs on the center median of Central Avenue	Install missing signs.	X			X		
15-6	There are old style (non-compliant with the current MUTCD) school crossing warning signs with diagonal plate on the southeast and northwest corners of the intersection facing the Central Avenue approaches to the intersection.	Replace the old type signs and plates with new signs and plates.	X			X		
15-7	There is an advance school crossing warning sign along the northbound Central Avenue approach just north of 17th Avenue. However the sign is damaged and lacks the required "AHEAD" plate.	Replace with new sign and plate.	X			X		

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
15-8	There is no painted centerline along the 16th Avenue westerly approach to the intersection.	Install missing painted centerline.	X			X		
15-9	There is an inlet grate that is not bicycle safe on the northwest corner of the intersection.	Replace with bicycle safe inlet grate.	X			X		

PICTURE 34 & 35:
CENTRAL AVENUE AND 16TH AVENUE

NIGHTIME SAFETY ASSESSMENT FINDINGS

	No additional items were noted. All issues were addressed during the daytime field assessment.							

Recommendations

As stated earlier, the intent of the road safety assessment process is to conduct a formal examination of highway features (in this case intersection features) and the surrounding environment that increase the potential for crashes and identify countermeasures that will reduce (or eliminate) the probability of such crashes. The safety issues identified during the conduct of this assessment and included in this report have been organized to provide the convenience and flexibility necessary to allow the implementation of the safety improvements as time and budget limitations allow. To the extent possible, the findings have been separated into line items so that the improvements can be implemented independently as appropriate. Clearly, consolidating a number of the safety recommendations will reduce the overall cost of improvements. We recommend that the appropriate management staff review the findings and decide which items can be completed in the immediate future (within one year). Many of the deficiencies can be corrected in the short term if the roadway owners dedicate both the time and financial resources to the task. The Level of Effort (an estimate of expenditures and man hours) indicated on the finding sheets of the report represent the team's best effort at categorizing each item.

The findings of the report with the greatest potential for increasing the safety at any of the intersections for the expenditure necessary to implement the corrective action would be the installation of a second far- right indication to the right of the center median along Central Avenue at its intersection with 16th Avenue (Item 15-2). The other fourteen signal installations are old, have numerous deficiencies and are in need of complete new signal installations. The intersections lack pedestrian amenities and many (if not all) have handicap ramps not in compliance with ADA standards. During the assessment four of the intersections were noted by the County to have very significant pedestrian activity so that if one was to develop a list of the fourteen signals to be replaced perhaps those four should be given priority status. The four intersections were Atlantic Avenue and Schellenger Avenue, Ocean Avenue and Cresse Avenue, Atlantic Avenue and Cresse Avenue and Pacific Avenue and Baker Avenue.

While this safety assessment focuses on the signal installations at the intersection, enforcement is still a crucial component of safety on a road. Enforcement discourages the motorist from becoming lax in obeying or observing the traffic regulations along the road. Just as resources must be allocated to the physical improvements of the road, they must also be allocated to enforcement to maintain the safe operation of the road.

The opinions found in the findings of this Safety Assessment report are those of the Safety Assessment Team, as a whole, and not necessarily the opinions of the SJTPO or the individual team members.