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Introduction

The “Wildwoods” in Cape May County (comprising the City of Wildwood, City of North Wildwood, and the Borough of Wildwood Crest) have requested assistance from NJDOT, Local Transportation Planning Assistance (NJDOT-LTPA) Unit, in developing a comprehensive transportation improvement study. Representatives of the Wildwoods indicated that the study should function as the Transportation Element of the Vision 2015 Plan and consider vehicular, transit, pedestrian and bicycle modes of transportation. Goals for the study include:

- Propose improvements to traffic system to better serve the proposed “Destination Station” - multi-modal transportation center - and alleviate congestion
- Provide recommendations to better accommodate pedestrian and bicycle modes
- Provide way-finding plan for all modes
- Provide recommendations on routing for the Boardwalk Tram and the 5-Mile Trolley
- Evaluate and recommend parking modifications to complement strategies
- Develop concepts to enhance visual connections between Destination Station and the Boardwalk, and between the Boardwalk and Downtown

NJDOT – LTPA has contracted with Michael Baker Jr., Inc. (Baker), to provide assistance to the Wildwoods in preparing the study. The firms Clarke Caton Hintz and TechniQuest Corporation are providing support as sub consultants to Baker on the study.

This document is an “Existing Conditions” memorandum that summarizes the existing state of the transportation system for the following modes: vehicular, transit, pedestrian and bicycle. A summary is also provided of existing conditions for urban design features such as street lighting and entrances to the Boardwalk. A future memorandum as part of this study will propose transportation improvements to address identified issues.

The Wildwoods

The Wildwoods together comprise one of the most popular resort areas in New Jersey, and the economy is heavily dependent upon tourism. According to the 2010 Census, the year-round population in the City of Wildwood was 5,325; North Wildwood was 4,041; and Wildwood Crest was 3,270. Estimates of summer population for the three communities vary, but Wildwood by itself is believed to have a summer population of about 250,000. The Wildwoods are recognized for the quality of their beaches. In the 2008 Top 10 Beaches Contest sponsored by the NJ Marine Sciences Consortium, Wildwood finished first, Wildwood Crest second, and North Wildwood fourth.

The Wildwood Boardwalk.
Wildwood experienced economic decline during the late 1980’s and early 1990’s, leading in turn to sustained economic development efforts. The Wildwood Vision 2015 Plan was agreed to by the municipalities and the major tourism and business development agencies in an effort to continue redevelopment efforts.

**Vehicular**

**Traffic Volumes**

Intersections requiring detailed traffic analysis were selected following coordination with the study Steering Committee. Turning movement traffic counts were conducted at these locations on a summer Saturday, 11:00 AM to 12:30 PM, and 5:00 PM to 8:30 PM. Most were counted on July 30th and August 13th, 2011, (during the peak summer beach season) although the intersections of Park Avenue and 26th Street and New Jersey Avenue and 26th Street were counted on Saturday, September 3rd, 2011. Traffic volumes for the intersections of Rio Grande Avenue and Pacific Avenue, Rio Grande and Atlantic Avenue, and Rio Grande and Ocean Avenue were provided by counts conducted by Stantec on Saturday, July 15th, 2009. Minor modifications to volumes were performed in several locations to “balance” the volumes departing an intersection and entering the adjacent intersection. The peak traffic hour of the roadway network was determined to be from 5:45 PM to 6:45 PM. Although traffic volumes are higher in the eastbound direction on Rio Grande earlier on Saturday, this is more than offset by the higher total network volumes in the hour of 5:45 to 6:45 PM. Figure 1 indicates the volumes for individual turning movements at study area intersections during this hour.

![Saturday traffic volumes on Rio Grande Avenue.](image)
The Wildwoods Transportation Improvement Study

Figure 1: Peak Hour Traffic Volumes
Summer 2011
Saturday 5:45pm-6:45pm

October 2011
Figure 2 indicates the total intersection volumes for the seven highest volume intersections in the study area. As seen, the top six intersections are all along the Rio Grande Avenue corridor, with volumes typically falling from west to east. The intersection of Atlantic and Schellenger Avenues is the only intersection not on Rio Grande Avenue, with a total volume of 1,573.

**Figure 2: Peak Hour Volumes at Intersections**

![Peak Hour Volumes at Intersections](chart)

Expressed in terms of ADT (Average Daily Traffic volume), the highest ADT on any roadway in the study area is found on Rio Grande Avenue at the entrance to Wildwood, at 33,100. The volume on Rio Grande Avenue drops to 22,900 ADT east of Park Boulevard, and further falls to 15,725 ADT east of New Jersey Avenue, and 6,900 ADT by Ocean Avenue. On cross streets, Park Boulevard has the highest volume at 14,525, followed by New Jersey Avenue at 13,575; Atlantic Avenue at 10,675; and Ocean Avenue at 10,475. Volumes on Atlantic Avenue increase closer to Schellenger Avenue, with 12,200 ADT at that intersection. At Schellenger Avenue, volumes on Ocean Avenue are only 4,500 ADT.

Other than Rio Grande Avenue, volumes on east-west roadways are relatively modest. Hand Avenue between Susquehanna Avenue and Park Boulevard has volumes of 6,400 ADT; Schellenger Avenue has volumes of 5,700 ADT; and 26th Street has volumes of 5,900 ADT.

The study team also conducted a preliminary evaluation of traffic conditions in the hour of 11:30 AM to 12:30 PM (the mid-day peak, when inbound volumes are highest) to determine if different traffic volume patterns at that time would make a significant difference in the operations of key intersections. At 11:30 AM to 12:30 PM, there are 1,823 vehicles heading inbound on Rio Grande Avenue at Susquehanna, 317
more than the inbound volume from 5:45 to 6:45 PM. However, the outbound volume on Rio Grande Avenue west of Susquehanna during this mid-day peak is 1,750, 588 less than the outbound volume of 2,338 during the evening peak.

Further, inbound traffic on Rio Grande Avenue follows different travel patterns in the mid-day peak than it does in the evening. Of the traffic entering Wildwood on Rio Grande Avenue in the mid-day peak, 46% splits off to the south by turning right at Susquehanna Avenue. In the evening, just 40% of inbound traffic on Rio Grande Avenue turns right at Susquehanna Avenue. The difference in split may reflect, in part, a greater attraction earlier in the day by inbound traffic towards the hotels and second homes in Wildwood Crest. The effect of this split in the mid-day is that a smaller percentage of traffic inbound on Rio Grande Avenue remains on this roadway through Ocean Avenue. Due in part to the heavier volumes from 5:45 to 6:45 PM, and in part to the greater tendency of motorists to stay on Rio Grande Avenue at this hour, the evening peak hour sees higher delays than the hour from 11:30 AM to 12:30 PM at every intersection along Rio Grande Avenue, with the one exception being the intersection of Rio Grande Avenue and Park Boulevard.

Level of Service
The ‘Level of Service’ (LOS) is used by transportation professionals to “grade” intersections by traffic delay, expressed in terms of average stopped delay per vehicle. At signalized intersections, levels of service range from Level of Service ‘A’ (indicating average delays of 10 seconds or less) to Level of Service ‘F’ (indicating average delays of greater than 80 seconds). Level of Service ‘D’ is generally considered as the desirable upper limit of delay for most drivers (55 seconds), while Levels of Service ‘E’ and ‘F’ are considered undesirable. It should be noted, however, that longer traffic delays are generally considered more acceptable in traditional downtown business areas.

Levels of service classifications are defined in Table 1.

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Signalized Intersection Average Delay per Vehicle (seconds)</th>
<th>Unsignalized Intersection Average Delay per Vehicle (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0 to 10</td>
<td>0 to 10</td>
</tr>
<tr>
<td>B</td>
<td>10.1 to 20</td>
<td>10.1 to 15</td>
</tr>
<tr>
<td>C</td>
<td>20.1 to 35</td>
<td>15.1 to 25</td>
</tr>
<tr>
<td>D</td>
<td>35.1 to 55</td>
<td>25.1 to 35</td>
</tr>
<tr>
<td>E</td>
<td>55.1 to 80</td>
<td>35.1 to 50</td>
</tr>
<tr>
<td>F</td>
<td>Over 80</td>
<td>Over 50</td>
</tr>
</tbody>
</table>

Levels of service for study area intersections are presented in Figure 3. Roadway capacity is sufficient to accommodate traffic volumes on all of the roadways evaluated, with a few exceptions. The Levels of Service for existing conditions were determined for intersections counted in the summer peak period. Three intersections operate at Level of Service ‘F’: Rio Grande Avenue and Susquehanna Avenue; Rio Grande Avenue and Park Boulevard; and Atlantic Avenue and Schellenger Avenue. The intersection of Rio Grande Avenue and Hudson Avenue operates at Level of Service ‘D’. The other 13 intersections operate at
LOS C or above; of these, only one is at LOS C (Rio Grande and New Jersey Avenue), with the rest operating at LOS A or B.

Figure 4 presents the LOS per turning movement. At Rio Grande and Susquehanna Avenue, the westbound approach operates at LOS F, as well as the northbound approach on Susquehanna Avenue. Traffic waiting at the northbound approach regularly backs up around the corner of Hand Avenue, as many motorists leaving Wildwood Crest access Rio Grande Avenue at this intersection to avoid sitting in traffic farther to the east. At the intersection of Rio Grande Avenue and Park Boulevard, the eastbound left turn operates at LOS F, as well as the westbound approach. The eastbound left at 221 vehicles per hour has the heaviest left turn volume along this corridor.

At Atlantic Avenue and Schellenger Avenue, the eastbound approach operates at LOS F, despite the fact that the volumes here are not particularly heavy.

In general, the results depict a transportation system with available capacity, with the exception of the major intersections on Rio Grande Avenue to the west of New Jersey Avenue.
Figure 3: Intersection Levels of Service
Summer 2011
Saturday 5:45pm-6:45pm

Key
- LOS A-C
- LOS D-E
- LOS F

The Wildwoods Transportation Improvement Study
October 2011
The Wildwoods Transportation Improvement Study

Figure 4: Turning Movement Level of Service
Summer 2011
Saturday 5:45pm-6:45pm

*The intersection of Hand Ave and Susquehanna Ave is a 3-way stop. However, the intersection was modeled as a 2-way stop due to software limitations.
Crashes

Vehicular crash reports were provided for key roadways for the period January 1, 2008 through December 31, 2010 by police departments for the three municipalities. Table 2 indicates intersections that had at least eight crashes in this period. Crash locations are illustrated in Figure 5.

Table 2: Crash History 2008 - 2010

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Municipality</th>
<th>Number of Crashes</th>
<th>Predominant Crash Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rio Grande Avenue and Park Boulevard</td>
<td>Wildwood</td>
<td>46</td>
<td>14 rear end (7 WB); 12 angle; 7 left turn (4 WB)</td>
</tr>
<tr>
<td>Rio Grande Avenue and New Jersey Avenue</td>
<td>Wildwood</td>
<td>29</td>
<td>6 rear end; 4 left turn; 3 bicycle; 3 pedestrian</td>
</tr>
<tr>
<td>New Jersey Avenue and 26th Avenue</td>
<td>Wildwood and North Wildwood</td>
<td>17</td>
<td>6 on-street parking (5 at Groom’s Liquor store)</td>
</tr>
<tr>
<td>Rio Grande Avenue and Hudson Avenue</td>
<td>Wildwood</td>
<td>16</td>
<td>7 angle (5 related to vehicles exiting driveway to east of Hudson); 4 rear end</td>
</tr>
<tr>
<td>New Jersey Avenue and Taylor Avenue</td>
<td>Wildwood</td>
<td>16</td>
<td>8 angle (6 NB and WB vehicles; in four of these, NB motorist drove through red signal); 5 on-street parking</td>
</tr>
<tr>
<td>Rio Grande Avenue and Pacific Avenue</td>
<td>Wildwood</td>
<td>16</td>
<td>6 bicycle</td>
</tr>
<tr>
<td>Pacific Avenue and Wildwood Avenue</td>
<td>Wildwood</td>
<td>11</td>
<td>8 angle (3 SB and WB)</td>
</tr>
<tr>
<td>Rio Grande Avenue and Atlantic Avenue</td>
<td>Wildwood</td>
<td>10</td>
<td>No predominant type</td>
</tr>
<tr>
<td>New Jersey Avenue and 3rd Avenue</td>
<td>North Wildwood</td>
<td>10</td>
<td>3 rear end</td>
</tr>
<tr>
<td>Atlantic Avenue and Wildwood Avenue</td>
<td>Wildwood</td>
<td>10</td>
<td>No predominant type</td>
</tr>
<tr>
<td>Pacific Avenue and Cresse Avenue</td>
<td>Wildwood and Wildwood Crest</td>
<td>10</td>
<td>9 angle (5 SB and WB)</td>
</tr>
<tr>
<td>Park Avenue and Hand Avenue</td>
<td>Wildwood</td>
<td>9</td>
<td>3 bicycle</td>
</tr>
<tr>
<td>Pacific Avenue and Bennett Avenue</td>
<td>Wildwood</td>
<td>9</td>
<td>7 on-street parking</td>
</tr>
<tr>
<td>Atlantic Avenue and Schellenger Avenue</td>
<td>Wildwood</td>
<td>8</td>
<td>No predominant type</td>
</tr>
<tr>
<td>New Jersey Avenue and 10th Avenue</td>
<td>North Wildwood</td>
<td>8</td>
<td>3 rear end</td>
</tr>
<tr>
<td>Hudson Avenue and Hand Avenue</td>
<td>Wildwood</td>
<td>8</td>
<td>4 angle</td>
</tr>
</tbody>
</table>
Given the high traffic volumes on Rio Grande Avenue, it was anticipated that intersections along Rio Grande Avenue would also have the highest number of crashes, and they appear in five of the top eight crash sites. The intersection of Rio Grande Avenue and Park Boulevard has the highest number, with 46 in the three-year period. However, the numbers of crashes, and the distribution among the various categories, are not unusual for an intersection with these volumes. Crash patterns are relatively diffuse for most of the intersections, although the crash incidence at several intersections points to the need for addressing problems with adjacent parking and driveway activity; this is the case at Pacific Avenue and Bennett Avenue. The intersections of Rio Grande Avenue and Pacific Avenue, and Park Avenue and Hand Avenue, were unusual in that bicycle and pedestrian crashes were the predominant crash types.
The Wildwoods Transportation Improvement Study

Figure 5: High Crash Locations
Year 2008-2010

LEGEND
- Number of Crashes
- State Roadway
- County Roadway
- Local Roadway
- Municipal Boundary
- Waterways

Middle Township
North Wildwood City
West Wildwood Borough
Wildwood City
Wildwood Crest Borough
Lower Township
Signage
Two signage issues were apparent on field views:

- **General lack of way-finding signage throughout the Wildwoods.** Although an extensive block-by-block survey of way-finding signage was not conducted as part of this study, the study team noted way-finding signs where present along major roadways in Wildwood. Few signs are visible, and the photos below depict two such signs.

![Signage on Pacific Avenue](image)

The sign on the left faces westbound Montgomery Avenue traffic at Park Boulevard, and directs motorists to Rio Grande Avenue. As seen, the sign is small and relatively inconspicuous. The Wildwood Crest sign on the right is on Hand Avenue, facing eastbound traffic at New Jersey Avenue.

- **Signage on Pacific Avenue.** The street signs along Pacific Avenue in Wildwood are designed to look like a palm tree. The street names are harder to read than names on conventional signs. The difficulty in reading the signs has been significantly increased by the physical deterioration over the years, as many of the “palms” have been bent out of position. It is very difficult to read the name of the side street on a number of these signs when traveling along Pacific Avenue.

![“Palm tree” street sign on Pacific Avenue.](image)
Parking

Vehicular parking is an important issue in the Wildwoods. To determine the parking occupancy of on-street parking and major lots in the heart of the study area, a parking count was conducted on Saturday, July 16, 2011, during the mid-day peak at 2 PM, and the evening peak of 8 PM. These two peak periods correspond to the traffic volume peaks of 11:30 AM to 12:30 PM, and 5:45 to 6:45 PM discussed above. The 2 PM peak indicate conditions after visitors heading to the beach for a daytime visit have settled in for the afternoon, and the 8 PM peak indicates conditions after visitors have settled in for an evening visit to the Boardwalk and the restaurants and other attractions. The parking count area was bounded by Morning Glory Road in Wildwood Crest; New Jersey Avenue; 14th Avenue in North Wildwood; and the beach. The parking counts were conducted through the use of aerial flights. The parking count focused on paid parking lots, as opposed to lots ancillary to hotels and motels. A parking lot was only counted if it encompassed 30 or more spaces.

The existing parking conditions are summarized in Figures 6A through 7B. There are over 6,950 parking spaces in the area counted, divided into 4,348 on-street spaces, and 2,614 spaces in off-street lots. Parking occupancy was found to be highest at the 2 PM peak, with 87% of spaces occupied, slightly higher than the system peak of 84% at 8 PM. Off-street lots had an occupancy rate of 90%, versus 86% for on-street parking.

The parking occupancy levels are categorized by three levels: 90% to 100%, 80% to 89%, and less than 80%. On-street parking in the study area is divided into “zones,” of a block in width. Off-street parking lots are depicted by dashed lines. Each zone indicates the total number of spaces available, and the number of spaces occupied. As shown in the figures, at 2 PM, parking is in high demand along the beach, with many lots running at close to 100% occupancy. Demand falls off between Atlantic Avenue and Pacific Avenue in Wildwood, corresponding to lower levels of activity at the Pacific Avenue business district. The lower demand on some blocks also reflects the presence of parking associated with rented or owned housing, as the residents of these units may be gone elsewhere for the afternoon.

At 8 PM, parking demand diminishes adjacent to the beach, although it is still high in many places from visitors congregating on the boardwalk. Conversely, parking demand increases in the “zones” farthest from the beach, as people visit the restaurants along Pacific Avenue, or residents in rental units return home for the evening.

In summary, the parking count indicates very high demand for parking proximate to the major attractions in this area. Even for those lots or blocks not 100% occupied, a very high occupancy can be a problem for people searching for parking, as the few empty spaces may not be readily apparent, or people may end up circling the block in an effort to find an open space. It should further be noted that, according to local stakeholders, parking occupancy is even higher on weekends later in the summer.

In addition, parking operations were viewed at the Convention Center parking lots on a Saturday morning. It was noted that parking operations were not coordinated, in that motorists were permitted to enter the lot north of Rio Grande Avenue that had just filled, at which point the motorists were asked to leave. Simultaneously, the Convention Center parking lot to the south of Rio Grande Avenue had an ample number of parking spaces available.
The daytime parking count revealed high demand in the lots next to Mariner's Landing.
The Wildwoods Transportation Improvement Study
Figure 6A: Parking Occupancy
Summer 2011
Saturday, 2 PM

LEGEND

- Municipal Boundary
- Occupancy
  - On Street Parking: 90%-100%
  - 80%-89%
  - <80%
  - Parking Lot: 90%-100%
  - 80%-89%
  - <80%
- #/## Vehicles/Spaces
- % Percentage Occupied

November 2011
Figure 6B: Parking Occupancy
Summer 2011
Saturday, 2 PM
Figure 7A: Parking Occupancy
Summer 2011
Saturday, 8 PM

The Wildwoods Transportation Improvement Study

The Wildwood City

LEGEND

On Street Parking

Parking Lot

Percentage Occupied

100%-100%
90%-99%
80%-89%
70%-79%
60%-69%
50%-59%
<50%

# / # Vehicles/Spaces
The Wildwoods Transportation Improvement Study
Figure 7B: Parking Occupancy
Summer 2011
Saturday, 8 PM
Transit Service
Visitors and residents to the Wildwoods are served by a variety of transit options, as summarized in Table 3, and illustrated in Figure 8.

Tram Car
The Sightseer Tram Car that runs along the Boardwalk is a very visible symbol of the Wildwoods, and has easily the highest ridership among the local transit services, carrying about 600,000 passengers per year. The Tram Car runs on a 2-mile route on the Boardwalk.

Great American Trolley
The Great American Trolley Company operates three local transit routes, as described below:

- **The North Wildwood – Rio Grande Trolley** is the only one of the three services that runs year-round. The primary ridership is evenly split between senior citizens, and residents traveling to school or work. It does not run on weekends, since the demand by these groups is less at that time. This service averages about 200 to 250 people per day.

- **The Boardwalk Trolley** has varied its schedule over the years. It used to run from Memorial Day to Labor Day, but was curtailed due to lower ridership in early June. This year, the Trolley ran the last two weeks in June, although this extra service was not publicized. Although the Trolley runs at 20-minute headways, the schedule is not publicized, to avoid customer complaints when the trolley is delayed due to congestion.

- **Dolly the Trolley** conducts a loop around the Wildwood downtown every 20 minutes, although this schedule is unpublicized. This service averages about 200 to 250 people per day.

Along with these regular services, Great American Trolley runs a “bar bus” on the weekends to the North Wildwood entertainment district, from 9:00 PM to 3:30 AM on Fridays and Saturdays, for a one-way fare of $5.00.

As indicated in the summary, transit services are somewhat disjointed, with slightly different times of operation for the Boardwalk Trolley and Dolly the Trolley, and different days of service, although both services focus on the weekends. As noted above, the North Wildwood trolley does not run on weekends.
Signs for the trolley services are lacking along much of the routes, although signs have been installed along the Boardwalk trolley route in segments of Wildwood Crest.

**NJ Transit**

According to local stakeholders, NJ Transit routes are used primarily by residents and workers. According to NJ Transit, use of the transit services is heaviest on weekday mornings, as residents leave via transit to jobs in the region. Three of the transit routes are long-distance. Routes 313 and 315 travel between Cape May and Philadelphia, and Route 319 travels between Cape May and New York City. Route 552 is the most heavily used local line, as it stops at Wildwood between Atlantic City and Cape May, and has a more frequent headway than the other NJ Transit services listed. On Route 552, trips are typically 50 minutes to Cape May, and 80 minutes to Atlantic City.

**Charter Buses**

Charter buses are an important aspect of the transit mix in the Wildwoods. During the summer, it is not unusual to see two to three charter buses, along with school buses, along Schellenger Avenue at Atlantic Avenue. Based on several interviews with bus drivers, charter buses typically do not dwell on Schellenger Avenue the entire day. After dropping off passengers, drivers often retreat to Wildwood Crest by several hotels, or to a vacant lot at the intersection of Park Boulevard and Spencer Avenue in Wildwood. There is no designated place for buses to lay over.

![Charter buses along Schellenger Avenue.](image)
## Table 3: Transit Services

<table>
<thead>
<tr>
<th>Provider</th>
<th>Route</th>
<th>Termini</th>
<th>Main Routes</th>
<th>Schedule</th>
<th>Trips Per Day</th>
<th>Peak Headway</th>
<th>Fares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wildwood Business Improvement District</td>
<td>Tram Car</td>
<td>16th Street to Cresse Avenue</td>
<td>Along the boardwalk</td>
<td>Seasonal 11:00 AM – until amusement piers close</td>
<td>Unlisted</td>
<td>N/A</td>
<td>$2.25</td>
</tr>
<tr>
<td>Great American Trolley</td>
<td>North Wildwood Trolley</td>
<td>North Wildwood – Rio Grande &amp; Grande Center</td>
<td>New Jersey Avenue, Rio Grande Avenue,</td>
<td>Year-Round</td>
<td>7</td>
<td>1hr 10min</td>
<td>$1.25 to $2.50</td>
</tr>
<tr>
<td>Great American Trolley</td>
<td>Boardwalk Trolley</td>
<td>Wildwood – Wildwood Crest</td>
<td>Atlantic Avenue, Ocean Avenue,</td>
<td>Memorial Day weekend; July 2 to September 4;  Every day, 4:00 PM - midnight</td>
<td>Unlisted</td>
<td>20 minutes (unpublicized)</td>
<td>$2.50</td>
</tr>
<tr>
<td>Great American Trolley</td>
<td>Dolly the Trolley</td>
<td>26th Avenue to Cresse Avenue</td>
<td>Atlantic Avenue and Pacific Avenue,</td>
<td>All summer Thursday to Sunday, 5:00 - 11:00 PM</td>
<td>Unlisted</td>
<td>20 minutes (unpublicized)</td>
<td>Free</td>
</tr>
<tr>
<td>NJ Transit</td>
<td>313 Daily</td>
<td>Philadelphia – Cape May Transportation Center</td>
<td>New Jersey Avenue, Rio Grande Avenue,</td>
<td>Year-Round</td>
<td>3-4</td>
<td>3hrs 10min</td>
<td>Varies based on zone</td>
</tr>
<tr>
<td>NJ Transit</td>
<td>315 Daily</td>
<td>Philadelphia – Cape May Transportation Center</td>
<td>New Jersey Avenue, Rio Grande Avenue,</td>
<td>Year-Round</td>
<td>2-3</td>
<td>4hrs 30min – 8hrs</td>
<td>Varies based on zone</td>
</tr>
<tr>
<td>NJ Transit</td>
<td>319 Daily</td>
<td>New York City – Cape May Welcome Center</td>
<td>New Jersey Avenue,</td>
<td>Year-Round</td>
<td>2</td>
<td>4hrs</td>
<td>Varies based on zone</td>
</tr>
<tr>
<td>NJ Transit</td>
<td>552 Daily</td>
<td>Cape May Welcome Center – Atlantic City</td>
<td>New Jersey Avenue, Rio Grande Avenue,</td>
<td>Year-Round</td>
<td>21-32</td>
<td>20min – 1hr</td>
<td>Varies based on zone</td>
</tr>
</tbody>
</table>
The Wildwoods Transportation Improvement Study

Figure 8: Transit Facilities

LEGEND

- Municipal Boundary
- Waterways
- Bondwalk Trolley
- Downtown Trolley
- North Wildwood Trolley
- Train Car
- Wildwood Trolley Lines
- Lines 313, 315 and 552
- Wildwood Trolley Lines
- Line 319
- NJ Transit Lines
- 0.5 Mile
- 0.25 Mile
- October, 2011

Middle Township
West Wildwood Borough
Wildwood City
Wildwood Crest Borough
North Wildwood City
Lower Township
Bicycle and Pedestrian

Bicycle Compatibility

State, county and key local roadways in the Wildwoods were evaluated for compatibility with bicycle travel, using NJDOT Bicycle Compatible Roadways and Bikeways guidelines (April 1996). “Bicycle compatible” refers to roadway conditions that, taken together, are considered suitable for a fairly wide range of bicyclists. Criteria used to determine bicycle compatibility are: lane width, shoulder width, traffic volume, speed limit, character of the area (urban or rural), presence or absence of on-street parking, and truck volumes. Traffic volumes and speed are important factors; generally, as either increase on a roadway, it is recommended that a travel lane shared by motorists and bicyclists increase in width, or that shoulders or bike lanes be available for use by bicyclists. Bicycle compatible roadway pavement widths are indicated in Table 4.

Table 4: Bicycle Compatible Pavement Widths

<table>
<thead>
<tr>
<th>Condition</th>
<th>AADT 1,200 – 2,000</th>
<th>AADT 2,000 – 10,000</th>
<th>AADT Over 10,000 or Trucks Over 5%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Urban w/ Parking</td>
<td>Urban w/o Parking</td>
<td>Rural</td>
</tr>
<tr>
<td></td>
<td>SL 12 ft</td>
<td>SL 14 ft</td>
<td>SL 12 ft</td>
</tr>
<tr>
<td>&lt;30 mph</td>
<td>SL 11 ft</td>
<td>SL 14 ft</td>
<td>SL 10 ft</td>
</tr>
<tr>
<td>31-40 mph</td>
<td>SL 14 ft</td>
<td>SL 14 ft</td>
<td>SL 12 ft</td>
</tr>
<tr>
<td>41-50 mph</td>
<td>SL 15 ft</td>
<td>SL 15 ft</td>
<td>SH 3 ft</td>
</tr>
<tr>
<td>50 mph</td>
<td>NA</td>
<td>SH 4 ft</td>
<td>SH 4 ft</td>
</tr>
<tr>
<td></td>
<td>Urban w/ Parking</td>
<td>Urban w/o Parking</td>
<td>Rural</td>
</tr>
<tr>
<td></td>
<td>SL 14 ft</td>
<td>SL 12 ft</td>
<td>SL 12 ft</td>
</tr>
<tr>
<td>&lt;30 mph</td>
<td>SL 14 ft</td>
<td>SL 14 ft</td>
<td>SH 3 ft</td>
</tr>
<tr>
<td>31-40 mph</td>
<td>SL 14 ft</td>
<td>SL 14 ft</td>
<td>SH 4 ft</td>
</tr>
<tr>
<td>41-50 mph</td>
<td>SL 15 ft</td>
<td>SH 6 ft</td>
<td>SH 6 ft</td>
</tr>
<tr>
<td>50 mph</td>
<td>NA</td>
<td>SH 6 ft</td>
<td>SH 6 ft</td>
</tr>
</tbody>
</table>

Roadways that are identified as bicycle compatible are often attractive candidates for incorporating into a planned bicycle network. However, it should be emphasized that roadways are open to bicyclists whether or not the roadway meets compatibility criteria, nor is the compatibility evaluation intended to assess safety.

The results of the bicycle compatibility analysis are depicted in Figure 9. As illustrated, there are several major north-south roadways in North Wildwood and Wildwood Crest that are bicycle compatible. In North Wildwood, Central Avenue is compatible due to wide travel lanes, while Surf Avenue has bike lanes. In Wildwood Crest, Seaview Avenue west of Rambler Road has bike lanes, and Atlantic Avenue is compatible due to wide travel lanes. In Wildwood, none of the north-south roadways evaluated are
bicycle compatible, although several east-west roadways are, particularly those that are one-way. The lack of bicycle compatibility presents issues, given the high bicycle volumes in Wildwood.

The Boardwalk is a very popular place to bicycle; bicycling is permitted until 11 AM. It becomes increasingly difficult to bicycle later in the day, as pedestrian activity increases.

**Bike Parking**

One of the most visible aspects of transportation in the Wildwoods is the significant mismatch between the high volume of bicyclists and the lack of bicycle parking. The lack of bike parking is especially noticeable along the Boardwalk, as many bikes are chained to the signposts and the handrail along the Boardwalk ramps. Bikes can also be found parked or chained to signposts and other objects in front of popular destinations throughout the Wildwoods.

---

Some bicyclists on New Jersey Avenue prefer to ride on the sidewalk, left. The bike lanes on Surf Avenue provide a desirable environment for bicyclists, right.

Ramp to Boardwalk, left; in front of Uncle Bill’s Pancake House, right.
Figure 9: Bicycle Compatibility

LEGEND
- Bicycle Compatible Roadway
- Bicycle Non-Compatible Roadway
- State Roadway
- County Roadway
- Local Roadway
- Waterways
- Municipal Boundary
Pedestrian Activity
Pedestrian volumes are high throughout the Wildwoods. A comprehensive pedestrian count program was not undertaken as part of this study, but some limited field views corroborated the high levels of activity. Figure 10 below indicates the result of a count conducted on Wednesday, August 17, from 11:00 to 11:30 AM at six points along Ocean Avenue. Not surprisingly, volumes were heavier at Spencer and Youngs Avenue, adjacent to Adventure Pier, than further to the south, at Baker and Montgomery Avenues. The numbers of mid-block crossings were low. The short block structure in the Wildwoods funnels pedestrians to crossing roadways at intersections, rather than mid-block locations.

Figure 10: Pedestrian Volumes on Ocean Avenue

Bicycle and Pedestrian Crashes
A categorization of bicycle and pedestrian crashes with vehicles for the period of January 1, 2008 through December 31, 2010 is provided in Tables 5 and 6. As shown in Table 5, there were 85 bicycle crashes in the Wildwoods for this time period. Motorist drive-out crashes occur when a motorist drives through a stop sign or red light at an intersection; there were 16 of these crashes. There were 19 crashes when bicyclists rode through red lights or stop signs. There were 20 crashes involving motorists turning right into bicyclists; 13 of these involved bicyclists riding against traffic (i.e., on the wrong side of the road). Motorists do not anticipate bicyclists riding in this direction, heightening the danger. In total, 26 crashes involved bicyclists riding in the wrong direction. This behavior contributes to the risk of a crash.
Table 5: Bicycle Crashes

<table>
<thead>
<tr>
<th>Bicycle Crash Type</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorist Drive Out - Bicyclist With Traffic</td>
<td>11</td>
<td>13%</td>
</tr>
<tr>
<td>Motorist Drive Out - Bicyclist Against Traffic</td>
<td>5</td>
<td>6%</td>
</tr>
<tr>
<td>Motorist Drive Out - Driveway</td>
<td>5</td>
<td>6%</td>
</tr>
<tr>
<td>Bicyclist Ride Out - Bicyclist With Traffic</td>
<td>15</td>
<td>18%</td>
</tr>
<tr>
<td>Bicyclist Ride Out - Bicyclist Against Traffic</td>
<td>4</td>
<td>5%</td>
</tr>
<tr>
<td>Motorist Right Turn - Bicyclist With Traffic</td>
<td>7</td>
<td>8%</td>
</tr>
<tr>
<td>Motorist Right Turn - Bicyclist Against Traffic</td>
<td>13</td>
<td>15%</td>
</tr>
<tr>
<td>Motorist Left Turn - Bicyclist With Traffic</td>
<td>7</td>
<td>8%</td>
</tr>
<tr>
<td>Motorist Left Turn - Bicyclist Against Traffic</td>
<td>3</td>
<td>4%</td>
</tr>
<tr>
<td>Bicyclist Right Turn - Bicyclist Against Traffic</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Bicyclist Left Turn - Bicyclist With Traffic</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>14%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>85</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

As shown in Table 6, there were 43 pedestrian crashes, or half the number of bicycle crashes. This number indicates the popularity of bicycling in the Wildwoods, since in many urban communities in New Jersey, pedestrian crashes are most common. The highest number of crashes came in the “left turn parallel path” category, with 10. Crashes resulting from left turns routinely outnumber crashes from right turns, which may be due to the more complex maneuvers involved.

Table 6: Pedestrian Crashes

<table>
<thead>
<tr>
<th>Pedestrian Crash Type</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dash or Dart - Out</td>
<td>5</td>
<td>12%</td>
</tr>
<tr>
<td>Motorist Exiting Driveway or Alley</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Motorist Failed to Yield</td>
<td>3</td>
<td>7%</td>
</tr>
<tr>
<td>Motorist Left Turn - Parallel Paths</td>
<td>10</td>
<td>23%</td>
</tr>
<tr>
<td>Motorist Right Turn - Parallel Paths</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Motorist Right Turn - Perpendicular Paths</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Pedestrian Failed to Yield</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Trapped</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Walking Along Roadway with Traffic - From Behind</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Other</td>
<td>14</td>
<td>33%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>43</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Figure 11 depicts pedestrian and bicycle crash locations. Wildwood accounts for the majority of crashes. Within Wildwood, the roadways with the highest number of crashes are New Jersey Avenue, with 28, and Rio Grande Avenue, with 20. The pattern of crashes on the north-south roads within Wildwood is particularly interesting; there are four north-south roads from Ocean Avenue to New Jersey Avenue, and
the number of crashes increases with greater distance from the ocean. Along with the 28 crashes on New Jersey Avenue, there were 17 on Pacific Avenue, 15 on Atlantic Avenue, and 7 on Ocean Avenue. The largest crash clusters are at the intersections of Rio Grande Avenue and Pacific Avenue, and Rio Grande Avenue and New Jersey Avenue, with six each. The high number of crashes on these streets indicates regular bicycling activity away from the Boardwalk.
The Wildwoods Transportation Improvement Study

Figure 11: Bicycle and Pedestrian Crash Locations
Year 2008 - 2010

LEGEND
- Bicycle Crash
- Pedestrian Crash
- State Roadway
- County Roadway
- Local Roadway
- Waterways
- Municipal Boundary

The Wildwoods Transportation Improvement Study
September, 2011
Public Involvement

Public Survey
Although a formal survey was not included in the study scope of work, an unscientific survey was conducted by the study team to better understand transportation issues in the area. Toward this end, a questionnaire survey was distributed in Wildwood hotels in late summer, and was also made available online from August 17, 2011 through October 19, 2011. During that time 68 responses were received. Of these, 67 respondents reported visiting the Wildwoods at least once, and 62 respondents reported going to the Wildwoods for more than five years.

Visits to the Wildwoods
The survey showed that Saturday is the most common day for arriving in the Wildwoods, accounting for 34% of respondents, while 24% arrived on a Friday. The mid-day period is the most common time, accounting for 39% of the respondents, while 26% arrived in the afternoon (2pm to 6pm). Figures 12 and 13 illustrate the results.

Figure 12: Arrival Day in the Wildwood
The large majority of respondents (67%) indicated that they would stay between three and seven nights, with 18% indicating that they would stay more than seven nights.

**Leaving the Wildwoods**

Sunday is the most common day for leaving the Wildwoods, accounting for 32% of the respondents, while 23% planned to leave on Saturday. Regarding the time of departure, 33% said that they left during the morning (6am to 10pm), and 33% left during the mid-day (10am to 2pm). Figures 14 and 15 illustrate the results.
Figure 14: Day of Departure from the Wildwoods

What day of the week did you leave the Wildwoods?

- Sunday: 32%
- Monday: 12%
- Tuesday: 10%
- Wednesday: 7%
- Thursday: 13%
- Friday: 23%
- Saturday: 3%

Figure 15: Time of Departure from the Wildwoods

What time of the day did you leave the Wildwoods?

- Morning (6am-10am): 33%
- Mid-Day (10am-2pm): 19%
- Afternoon (2pm-6pm): 13%
- Evening (6pm-10pm): 33%
- Late Evening (10pm-2am): 2%
- Early Morning (2am-6am): 0%
Traffic
Participants were asked if they experienced any traffic delays entering the Wildwoods on their visits and to specify the locations. Half of the respondents said that they have experienced traffic delays, while 47% said that they had not experienced delays. Some of the respondents indicated locations of delays, shown in Table 7.

Table 7: Locations of Traffic Delays

<table>
<thead>
<tr>
<th>Outside the Wildwoods</th>
<th>Inside the Wildwoods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route 47</td>
<td>Route 47 Bridge</td>
</tr>
<tr>
<td>Garden State Parkway</td>
<td>Atlantic City Expressway</td>
</tr>
<tr>
<td></td>
<td>Rio Grande Avenue</td>
</tr>
<tr>
<td></td>
<td>New Jersey Avenue</td>
</tr>
<tr>
<td>Number</td>
<td>Number</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Fifty-five percent of respondents enter the Wildwoods from Rio Grande Avenue (southern exit 4 off the Parkway) and 37% enter via New Jersey Avenue (northern exit 6 off the Parkway).

Signing
When asked if signing should be improved to help reach various destinations in the Wildwoods, 45% of respondents said “Yes” and 55% said “No”. When asked to provide examples, respondents suggested the signing improvements listed in Table 8.

Table 8: Requested Signing Improvements

<table>
<thead>
<tr>
<th>Better Signs</th>
<th>Signing on the Parkway</th>
<th>Signing to Key Destinations</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>2</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

With reference to key destinations, respondents suggested that signing be provided for Morey’s Pier, the Boardwalk and beach, the restaurant district along Pacific Avenue, and North Wildwood and Wildwood Crest. Two of these respondents said that the signs should be installed along the north-south avenues.

Fifty-two percent of respondents found parking to be a problem when moving around the Wildwoods each day or evening, and specified the locations identified in Table 9.

Table 9: Locations of Parking Issues

<table>
<thead>
<tr>
<th>Beach</th>
<th>Boardwalk</th>
<th>On Streets</th>
<th>Restaurants/ Night Clubs</th>
<th>Motel</th>
<th>Everywhere</th>
<th>None</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>4</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>7</td>
</tr>
</tbody>
</table>
Transportation Modes
Participants were asked to indicate the different modes of transportation used by them in the Wildwoods aside from driving as indicated in Figure 16. As shown, two-thirds of visitors ride on the Tram Car, while 56% bicycle. Another 21% ride on the Trolley.

Figure 16: Transportation Modes

![Transportation Modes Chart]

Besides driving, what other modes of transportation do you use in the Wildwoods?

Visitors were asked if they would visit more areas in the Wildwoods or participate in more resort activities if there were changes in transportation and parking. Of the respondents, 68% said “Yes” and 23% said “No”. Respondents also provided some examples as to what type of improvements they would like to see, as indicated in Table 10. The greatest amount of interest was shown in improving bus and trolley services in the Wildwoods. It should be noted that these were not multiple choice questions, and the respondents needed to draw directly upon their experience in identifying these needs.

Table 10: Types of Improvements

<table>
<thead>
<tr>
<th></th>
<th>Bike Routes</th>
<th>Improve Bus/Trolley Service</th>
<th>Improve Roadway</th>
<th>Parking</th>
<th>Tram Car</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

Finally, participants had the opportunity to add any other suggestions on improving transportation within the Wildwoods or approaching/departing the area. Table 11 summarizes the comments.
Table 11: Other Requested Improvements

<table>
<thead>
<tr>
<th>Number</th>
<th>Information</th>
<th>Parking</th>
<th>Roads</th>
<th>Tram Car</th>
<th>Trolley</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>General</td>
<td>Streets</td>
<td>Boardwalk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Stakeholder Issues

Interviews were conducted with local stakeholders to discuss various topics of interest to this study. These stakeholders included:

- Will Morey, Morey’s Piers
- Jack Morey, Morey’s Piers
- Clark Doran, Morey’s Piers
- Tracey DuFault, Greater Wildwood Chamber of Commerce
- Mark D’Amico, City of Wildwood Public Works Department
- Dan MacElrevey, Wildwoods Hotel & Motel Association
- Dick Adelizzi, Great American Trolley Company
- Patrick Rosenello, Wildwood Business Improvement District and Boardwalk Special Improvement District
- Captain Matthew Gallagher, North Wildwood Police Department
- Tom Bradley, Bradley Bike Rental
- Jessica Inaya, Wildwood School Board Administrative Office
- Steve Long, Wildwood Police Department
- John Siciliano, Wildwoods Convention Center

The following lists a summary of the comments that were received:

Vehicular

1. Address congestion on:
   - Rio Grande Avenue
   - Ocean Avenue
2. Address conflicts at busy driveways along Rio Grande Avenue, including the Wawa driveway
3. Make greater use of Park Boulevard for traffic
4. Signalize:
   - Burk Avenue and Atlantic Avenue, to help people leave after special events
   - New Jersey Avenue and Maple Avenue
   - Pacific Avenue and Schellenger Avenue
   - Pacific Avenue and Wildwood Avenue
5. Direct incoming motorists to Hand Avenue, and exiting to Taylor Avenue
6. Install “No Turn” signage at Rio Grande Avenue and Hudson Avenue
7. Consider making Arctic and Hudson Avenues one-way away from Rio Grande
Wildwoods Transportation Improvement Study
Existing Condition Memo

Parking
1. Provide more parking:
   • By Boardwalk
   • Pacific Avenue
2. Build parking garage
3. Reduce parking costs

Public Transportation
1. Provide more information on Trolley services – stops and schedule
2. Expand Dolly the Trolley hours
3. Provide better trolley service to North Wildwood entertainment district
4. Run tram on street from future parking garage to Fox Park
5. Provide more inter-city bus service
6. Provide dedicated charter bus loading/unloading area

Bicycle and Pedestrian
1. Provide beachside bikeway
2. Provide more bicycling options in Wildwood
3. Provide more bike parking
Urban Design Conditions

Clarke Caton Hintz conducted several field surveys of the Wildwoods to evaluate pedestrian and bicycle facilities from an urban design perspective. In Wildwood there are minimal pedestrian crosswalks from the residential areas to the Boardwalk. Passageways from the street network underneath the Boardwalk to the beach are typically missing signage. Further, these passageways are relatively unappealing, dark even in the daytime or with minimal headroom. In some cases, delivery trucks regularly impede access to the beach. There are no clear connections between the business district and the boardwalk.
Along the some streets parallel to the boardwalk, such as Ocean Avenue, the roads are very wide, and the signalized pedestrian crossings are few. Sidewalks in some areas were in need of repair, and sidewalks in the business district are narrow.

Street lighting was also observed. As revealed in the night-time aerial photograph below, lighting is poor in the business district along Pacific Avenue, as well as some of the streets leading to the Boardwalk. Night lighting in North Wildwood’s entertainment district does not emphasize the distinctness of the area and is generally not attractive.
Street trees are absent in many areas of the Wildwoods, particularly in the business district of Wildwood and adjacent streets, and in the North Wildwood entertainment district.

The North Wildwood entertainment district lacks street trees and vegetation.