



DRAFT TECHNICAL MEMORANDUM

Transit Analysis

Sussex Route 1 Grid Study: Phase 2

July 1999

**Submitted to
Delaware Department of Transportation**

**Submitted by
Urbitran Associates Inc.**

**In association with
KCI Technologies, Inc.**

TABLE OF CONTENTS

	<u>Page</u>
1.0 Introduction	1
2.0 Existing Transit Services in the SR1 Corridor	2
2.1 DART First State	2
2.2 Delaware River and Bay Authority (DRBA)	5
2.3 Jolly Trolley	5
2.4 Seaport Transportation	8
3.0 Proposed Nassau Park & Ride and Related Shuttle Service	8
3.1 Proposed Park and Ride	8
3.2 Proposed Shuttle Service	9

LIST OF TABLES

	<u>Page</u>
Table 1: DART Resort Service Daily Operating Characteristics	4
Table 2: DART Resort Service Performance Measures	6
Table 3: DART Resort Service FY 1997 and Estimated FY 1998 Annual Ridership	7
Table 4: Estimated Timetable for Various Segments of the Proposed SR1 Shuttle Service	11
Table 5: Proposed SR1 Shuttle Characteristics	12

LIST OF FIGURES

	<u>Follows Page</u>
Figure 1: DART Resort Service Map	2
Figure 2: Proposed SR1 Shuttle	9
Figure 3: Proposed Shopping Shuttle	14

SUSSEX ROUTE 1 GRID STUDY PHASE 2

DRAFT TECHNICAL MEMORANDUM

Transit Operations

1.0 Introduction

This memorandum documents the transit operations review component of Task 2 of the Sussex Route 1 Grid Study, Phase 2. It presents a review of the existing transit services in the SR1 corridor including information on route alignments, headways, fares, operating characteristics, ridership, and performance measures for the four providers that operate in the area, and plans for a proposed Park and Ride facility, to be located at Nassau, which is approximately 1 mile north of the Five Points intersection, and related shuttle service.

2.0 Existing Transit Services in the SR1 Corridor

The following section provides a description of the four providers (DART First State, the Delaware River and Bay Authority (DRBA), the Jolly Trolley, and Seaport Transportation) who currently operate in the SR1 corridor. The description includes information on route alignments, headways, fares, operating characteristics, ridership, and performance measures.

2.1 DART First State

DART First State operates a total of seven (numbers 201,202,203,204,205,206,and 207) routes in the SR1 corridor (Figure 1). Each of these routes serve as part of DART's Resort Transit System, providing service to Delaware's resort areas between May 24th and September 6th. Only one of the routes, the 206, provides continuous year round service after Labor Day between Rehoboth and Georgetown.

A brief description of each of these routes is provided below:

- **Route 201 - Rehoboth Beach** - Route 201 provides service between the Rehoboth Beach Park and Ride lot, and Rehoboth Beach. The route operates daily every 10 to 30 minutes from 7:00am to 2:30am. Major stops along the route include Three Seasons Campground¹, and Rehoboth Avenue at the Boardwalk.
- **Route 202 - Dewey Beach** - Route 202 provides service between the Rehoboth Beach Park and Ride lot and Dewey Beach. The route operates daily every 40 minutes from 7:30am to 2:30am. Major stops include Ruddertowne, Rehoboth Outlet Center III², and Rehoboth Outlet Center II³.
- **Route 203 - North/Local** - Route 203 provides service between the Rehoboth Beach Park and Ride lot and Rehoboth Outlet Center. The route operates daily every 25 to 40 minutes from 9:00am to 9:00pm. Major stops include Rehoboth Outlet Center III, Kmart, Big Oak Campground, Midway Shopping Center, Rehoboth Outlet Center I, Rehoboth Mall, Camelot Mobile Homes, SeaAir Mobile Homes, and Rehoboth Outlet Center II.
- **Route 204 - Lewes** - Route 204 provides service between the Rehoboth Beach Park and Ride lot, and Market and Second Street in Lewes. The route operates daily every 60 minutes from 7:00am to 9:00pm. Major stops along the route include Rehoboth Outlet Center III, Kmart, Midway Shopping Center, Rehoboth Outlet Center I, Rehoboth Mall, Rehoboth Outlet Center II.

¹After 9:00pm, service to the campground is by customer request only.

²Served Monday - Saturday from 7:30am to 9:30pm, Sundays from 11:00am to 6:30pm.

³Served Monday - Saturday from 7:30am to 9:30pm, Sundays from 11:00am to 6:30pm.

Service on this route was provided in the 1996 season by the DRBA under a contract with a private operator. DRBA did not want to continue providing service in the corridor and DART therefore took over the provision of service beginning in May of 1997.

- **Route 205 - Late Night/Local** - Route 205 replaces Routes 203 and 204 after 9:00pm, providing service between the Rehoboth Beach Park and Ride lot and Cape Henlopen Drive. The route operates daily every 60 minutes from 10:00pm to 2:00am. Major stops along the route include Sea Air Mobile Homes, Camelot Mobile Homes, Midway Shopping Center, Rehoboth Outlet Center I, Rehoboth Mall, and Rehoboth Outlet Center II.
- **Route 206 - Rehoboth/Lewes/Georgetown** - As noted above, Route 206 provides year round service between Rehoboth and Georgetown. During the summer months the route utilizes different schedules for weekdays and weekends/holidays. After Labor Day, weekend/holiday service is discontinued. On weekdays, the route operates between Rehoboth Boardwalk and Delaware Tech Hub in Georgetown, departing three times daily. On weekends/holidays during the summer, the route operates between the Rehoboth Beach Park and Ride lot and the Delaware Tech Hub, departing twice daily. Major weekday stops include the Georgetown State Service Center, US 9 at DE5 - Harbeson, US 9 at Hwy. 281, US 9 at Sussex East Estates, Savannah Rd. at Coleman Avenue, SR 1 at Rehoboth Outlet I, SR 1 at Rehoboth Mall, and Rehoboth Avenue at Library, Hospital, Savannah Rd at Beebe, SR 1 at Midway Shopping Center, and Rehoboth Ave. at City Hall. Major weekend stops include Rehoboth Outlet Center III, Kmart, Midway Shopping Center, Market Street at 2nd Street, Rehoboth Outlet Center I, Rehoboth Mall, and Rehoboth Outlet Center II.
- **Route 207 - Rehoboth/Long Neck** - Route 207 provides service between the Rehoboth Park and Ride lot and the Shoppes at Long Neck, departing five times daily. Major stops along the route include Rehoboth Outlet Center III and Kmart.

The one-way cash fare for adults on any of the above routes is \$1.00, with seniors and the disabled paying a reduced price of \$0.40. Children under 46" tall ride for free when accompanied by an adult. DART also offers a Daily Pass for \$2.00, which allows the user to ride all day, a weekly pass for \$9.00, and a 10 Ride Fare Card (for use anytime) for \$8.00.⁴ In addition, persons parking at the Rehoboth Beach Park and Ride lot pay only \$5.00 to park for the day and everyone in the car receives a Resort Transit Unlimited Ride Daily Pass.

Table 1 provides a summary of the daily operating characteristics for each of the above routes including information on total buses, platform hours, platform miles, annual ridership, and total trips. The table shows that Route 201 provides the most service in the corridor and carries by far the most passengers. The table also shows that the majority of DART's Resort routes provide more service on weekends and holidays than on weekdays, to handle the increased demand generated by beach goers during weekends in the summer.

⁴Seniors and Disabled 10 Ride Fare Card is \$4.00.

**Table 1
DART Resort Service
Daily Operating Characteristics**

Route	Number of Buses			Platform Hours			Platform Miles			Annual Ridership	Total Number of Trips		
	Sun-Thurs	Fri-Sat	Hol.	Sun-Thurs	Fri-Sat	Hol.	Sun-Thurs	Fri-Sat	Hol.		Sun-Thurs	Fri-Sat	Hol.
201-Rehoboth Beach	3	5	8	46.83	62.15	119.1	404.22	705.16	1358.16	225,356	67	95	180
202-Dewey Beach*	1	1	1	19.23	18.98	19.23	215.02	219.02	215.02	12,680	31	34	31
203-North/Local	1	2	2	12.58	24.5	24.5	169.68	330.44	330.44	24,195	19	37	37
204-Lewes	1	1	2	14.9	26.8	26.8	271.8	489.24	489.24	10,595	15	27	27
205-Late Night	2	2	2	8.73	8.73	8.73	151.96	151.96	151.96	9,745	9	9	9
206-Georgetown/Lewes/Rehoboth - Resort Service Only ** - Weekday Sussex West Service***	- 1	1 -	- -	- 7.58	4.38 -	- -	- 216.1	125.82 -	- -	15,619 N/A	- 3	2 -	- -
207-Rehoboth/Long Neck	1	1	1	3.95	3.95	3.95	107.35	107.35	107.35	1,185	5	5	5

* - For Route 202 Thurs-Sun is Mon.-Sat, and Fri-Sat is Sun.

** - For Route 206, Fri-Sat is Sat & Sun.

*** - For Route 206 Sun-Thurs is Mon-Fri.

Source: DART FY 2000 Service Plan based on FY 97 data..

Table 2 provides a summary of the each route in terms of performance including measures for fare recovery ratio, cost per passenger, and passengers per hour. The table shows that Route 201 is the best performing route in the Resort System, generating the highest fare recovery ratio and passengers per hour, and the lowest cost per passenger. The performance of each of the other routes drops off significantly, especially on the 204, 206 and 207, which carry only between 2 and 3 passengers per hour, respectively.

As for the future demand for service, the DART FY 2000 Service Plan shows that the DART Resort System should experience an increase of 18,615 passenger trips between FY 1997 and FY 1998. Table 3 shows that DART estimates the largest increase in trips on the Route 201, followed by the Route 204, and Route 207. The table also indicates that ridership on three routes, the 202, 203, and 205, is projected to drop, and that no estimates were made for the Route 206.

Given the continued increase in traffic along Route 1 in the summer, overall ridership on the system should continue to increase in the future, and DART should see more people use their services to get around the beach area. The low passengers per hour totals on Routes 202, 203, 204, 205, and 206, indicate that each of these routes should be able to accommodate any increases in demand in the future without adding vehicles. However, if the Route 201, which is projected to gain some 40,156 passengers between FY 97 and FY 98, and currently carries 33 passengers per hour, continues to see an increase in demand in the future, DART may need to add 1 to 2 buses to maintain existing service levels. It should also be noted that some of the demand on the Route 201 may be alleviated if the proposed Nassau Park and Ride lot, which is discussed in the next section, is implemented.

2.2 Delaware River and Bay Authority (DRBA)

DRBA operates two shuttle routes in the study area, each of which provide shore side transportation for passengers utilizing the Cape May-Lewes Ferry. One shuttle route provides service between the Lewes Ferry Terminal and Rehoboth Beach, and serves the outlets on Route 1, while the other route provides service between the Terminal and Cape Henlopen State Park.

Shuttle buses are available seven days a week from June 14th through Labor Day between the hours of 10:00am and 8:00pm. During non-peak months in the spring and fall the service operates only on weekends. Riders may connect with the Delaware Resort Transit System for other destinations.

The fare for the shuttle is included in the price of the Cape May-Lewes Ferry.

DRBA does not keep detailed information on operating characteristics or ridership.

2.3 Jolly Trolley

The Jolly Trolley provides daily shuttle service from 7:00am to 2:00am with numerous stops between the Rehoboth Beach Boardwalk and Dickinson Street in Dewey Beach, along Route 1. The trolley runs approximately every 30 minutes during the entire day.

**Table 2
DART Resort Service
Performance Measures**

Route	Fare Recovery Ratio	Cost per Passenger	Passengers per Hour
201-Rehoboth Beach	44.10%	\$0.93	33.0
202-Dewey Beach	7.59%	\$5.93	6.0
203-North/Local	12.28%	\$3.33	8.0
204-Lewes	2.83%	\$14.46	2.0
205-Late Night	6.86%	\$5.96	5.0
206-Georgetown/Lewes/Rehoboth - Resort Service Only	1.74%	\$23.56	2.0
207-Rehoboth/Long Neck	1.75%	\$23.38	3.0

Source: DART FY 2000 Service Plan based on FY 1997 data.

Table 3
DART Resort Service
FY 1997 and Estimated FY 1998 Annual Ridership

Route	FY 1997 Annual Ridership	Estimated FY 1998 Annual Ridership*	Net Increase/Decrease in Trips
201-Rehoboth Beach	225,356	265,512	40,156
202-Dewey Beach	12,680	11,844	-836
203-North/Local	24,195	18,912	-5,283
204-Lewes	10,595	14,081	3,486
205-Late Night	9,745	5,562	-4,183
206-Georgetown/Lewes/Rehoboth - Resort Service Only	15,619	N/A	N/A
207-Rehoboth/Long Neck	1,185	2,079	889
Total	299,375	317,990	18,615

* Annualized based on FY 98 ridership info thru April.

Source: DART FY 2000 Service Plan

One way fare on the shuttle is \$1.00, until midnight, \$2.00 after midnight.

The Jolly Trolley does not keep detailed information on operating characteristics or ridership.

2.4 Seaport Transportation

Seaport Transportation provides 24 hour taxi and shuttle bus service, utilizing vans and buses, throughout the resort area.

Seaport Transportation does not keep detailed information on operating characteristics or ridership.

3.0 Proposed Nassau Park & Ride and Related Shuttle Service

To alleviate traffic congestion and provide beach-goers and outlet shoppers a transportation alternative, it has been proposed that a Park & Ride facility be constructed at Nassau approximately 1 mile north of the Five Points intersection. In conjunction with the construction of this seasonal and event-related parking facility, a shuttle will begin providing service from the new parking lot primarily along SR1 to Rehoboth and Dewey beaches. Following is a description of the proposed park and ride facility and operating characteristics of the shuttle service which is designed to complement the existing service in the area.

3.1 Proposed Park and Ride

A total of approximately 11,000 vehicles travel between the hours of 9:00 AM and 5:00 PM on Saturdays during the summer on Route 1 (between Five Points and Rehoboth Beach) to reach the beach. To capture 4.5% of the total daily vehicle traffic, which represents a target rate that would ease congestion, particularly during the Saturday peak hour (9:00 AM to 10:00 AM - 1,561), the proposed park and ride should be built to accommodate at least 500 spaces.

In terms of facilities, the proposed park and ride should include a transit shelter, bicycle parking/storage, and a facility which consists of a tourist information center and restrooms with changing areas and showers. The projected cost of a standard metal mesh shelter with shatterproof glass is between \$1,500 and \$3,000, depending on the dimensions and various features chosen for the shelter. The estimated capital cost of a tourist info center and restrooms is between \$400,000 and \$600,000, depending on design and size parameters.

It should also be noted that to ensure safety and security, the proposed park and ride should be provided with adequate lighting, with ample mounting heights of luminaries and proper ratios of spacing to mounting height used to distribute reasonably uniform amounts of light to the entire parking lot. Fencing can also be used at the lot to provide additional security; if necessary a six foot chain link fence is recommended. Openings in the fence should be located carefully with a minimum number of openings allowing cars, bicyclists and pedestrians to enter and leave. A number of emergency phones should also be located within the lot with direct hook up with the nearby state police at Troop 7 south of Five Points.

3.2 Proposed Shuttle Service

Route Description

Originating at the Nassau Park & Ride lot, the shuttle will run south on SR1 providing passengers with access to the two southbound outlet malls along this section of roadway. The shuttle will make a stop at the Rehoboth Park & Ride facility to provide passengers with transfer opportunities. After crossing the Lewes and Rehoboth Canal, the shuttle will make a jughandle right turn on Jefferson to cross over SR1 and continue North on State St. The shuttle will then turn right on Rehoboth Ave where it will make a stop at the Rehoboth Convention Center. Following this stop, the shuttle will head South on 1A (also called Bayard Avenue) towards Dewey Beach where it will rejoin SR1 at the intersection of Clayton and 1A. At this intersection, the shuttle will head south on SR1 before making a stop and turning around at Ruddertowne. At this point, the shuttle will head north along SR1 on its way back to the Park & Ride lot. Figure 2 provides a graphical representation of the proposed shuttle service. Additionally, the proposed shuttle route has been designed to provide passengers with a one seat ride to their desired destination. It is important to provide passengers with a high level of service to their desired destination to entice people to utilize the Nassau Park & Ride lot. However, if this level of service is deemed unnecessary, the SR1 shuttle could operate between the Nassau Park & Ride lot and the Rehoboth Park & Ride at which point passengers could transfer to DART routes 201-207. It should also be noted that while a separate shuttle route from the Nassau Park and Ride lot to Lewes and Cape Henlopen was examined as part of this plan, it was determined that these areas could be served more cost effectively by simply having existing transit services (discussed below under proposed schedule) that operate in these areas stop at the lot.

Days and Hours of Service

The proposed shuttle service will be operated from late May through early September. During this time period, the shuttle will provide service everyday from 7:00 AM to 11:00 PM, including weekends and holidays.

Headway

The proposed shuttle route will operate on 10-30 minute headways throughout the day. Of the sixteen hours of service provided on this shuttle route, 13 hours of service will be provided with 30 minute headways and 6 hours will be provided with 10 minute headways during the peak periods. For the purposes of this shuttle service, peak service is provided between 8:00 AM and 10:00 AM and again between 2:00 PM and 6:00 PM. If necessary, service modifications may certainly be made to better meet the transportation needs of the region. For example, it may be prudent to provide a higher level of service on weekends and holidays as compared to the mid-week service.





Proposed Schedule

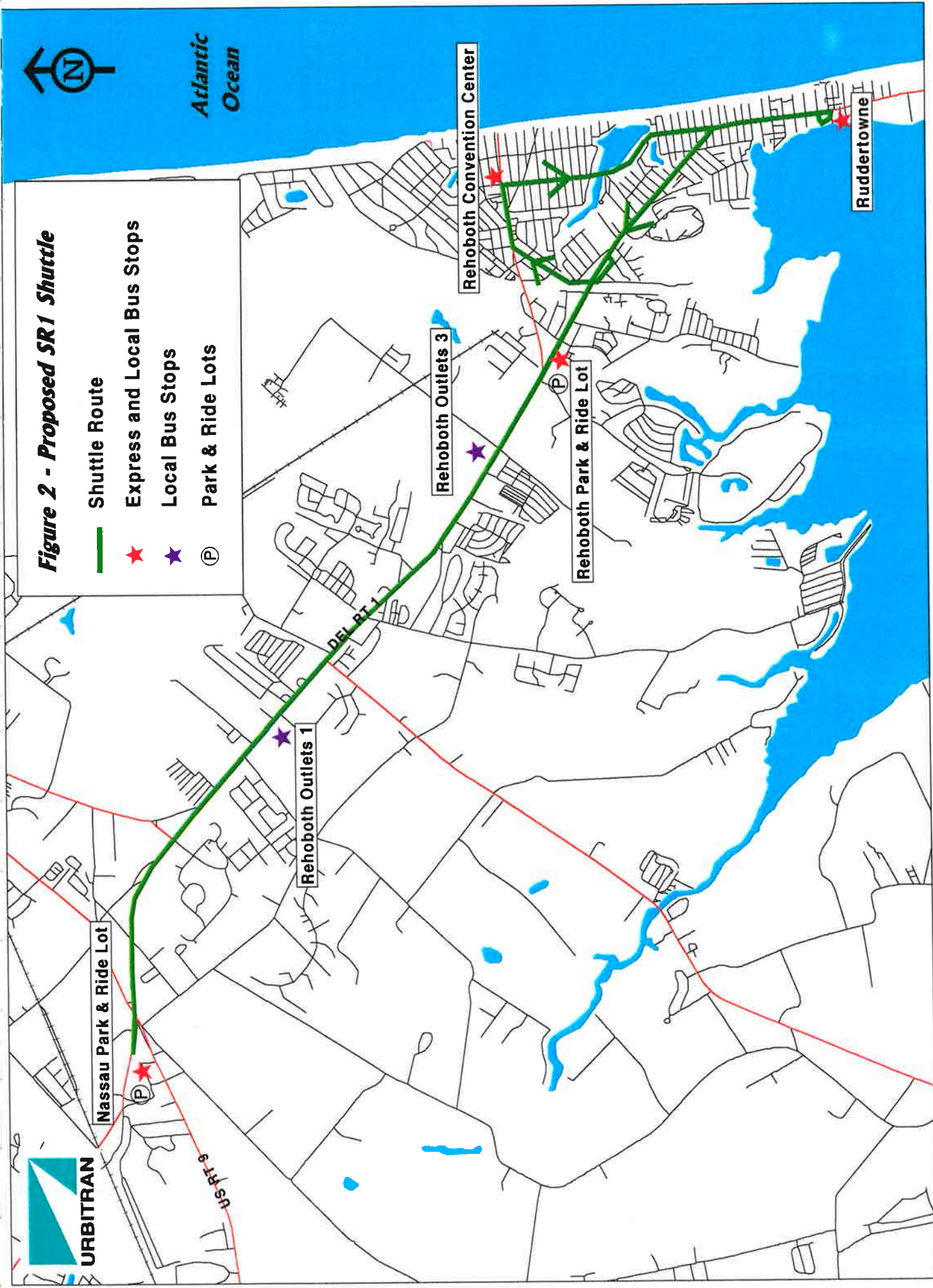
Whenever possible, it is recommended that the schedule for this shuttle be coordinated with other routes operating in the area. Such coordination of routes will provide passengers with improved access to key destinations in the region via public transportation. Due to shared bus stops and



Atlantic Ocean

Figure 2 - Proposed SR1 Shuttle

-  Shuttle Route
-  Express and Local Bus Stops
-  Local Bus Stops
-  Park & Ride Lots



URBITRAN

US RT 9

Nassau Park & Ride Lot

Rehoboth Outlets 1

Rehoboth Outlets 3

Rehoboth Park & Ride Lot

Rehoboth Convention Center

Ruddertowne

similar operating characteristics, there is the potential for transfer opportunities with the following DART routes: 201, 202, 203, 204, 205, 206, and 207, in addition to the DRBA Cape May-Lewes Ferry Shuttle route and the Jolly Trolley. At some point in the future when the Nassau Park & Ride facility is well established, it would be advisable to have several other routes, particularly those serving Lewes (Route 204, 205 and 206 and the DRBA Ferry Shuttle), serve the Nassau Park & Ride lot. Table 4 contains the estimated travel time between key destinations along the new shuttle route.

Proposed Bus Stops

Whenever possible, the proposed shuttle has been designed to serve existing DART bus stops that are on the proposed route. In addition to the Nassau Park & Ride lot, the following sites are recommended as potential bus stops:

- Rehoboth Outlets 1 (southbound)
- Rehoboth Outlets 3 (northbound)
- Rehoboth Park & Ride lot
- Rehoboth Convention Center
- Ruddertowne

Number of Vehicles Required

The number of vehicles required for the provision of this new transit route will vary according to the level of service being provided and the necessary recovery time for the buses. As is indicated in Table 5, it is estimated that 3 vehicles will be required to maintain a 30 minute headway on the route, while 9 vehicles will be required to maintain a 10 minute headway on the route.

Daily Vehicle Miles of Service

The round trip distance of the proposed route is 16.5 miles and it takes approximately 77 minutes to complete the round trip route from the Nassau Park & Ride lot. Based upon the level of service proposed in this section, the daily vehicle miles would amount to approximately 1,134 miles. This figure is based upon the number of buses anticipated for the provision of transit services and the distance and time each bus is expected to be in operation. It should be noted that the projected 1,134 miles is an estimate of the daily service miles; the total daily vehicle miles would likely be higher as buses would have to travel some distance to get between the garage and the route origination.

Estimated Ridership

If the proposed park and ride lot is built to accommodate 500 vehicles and operates at between 75% and 100% capacity during weekends and holidays and between 25% and 50% capacity during the week, the shuttle service should carry between 1,125 and 1,500 passengers a day on weekends (based

Table 4
Estimated Timetable for Various Segments of the Proposed SR1 Shuttle Service

From	To	Travel Time
Nassau Park & Ride	Rehoboth Park & Ride	27 minutes
Nassau Park & Ride	Ruddertowne	38 minutes
Nassau Park & Ride	Rehoboth Convention Center	31 minutes
Nassau Park & Ride	Rehoboth Outlets 1	16 minutes
Rehoboth Convention Center	Rehoboth Outlets 3	24 minutes

**Table 5
Proposed SR1 Shuttle Characteristics**

<u>Time of Day</u>	<u>Headway</u>	<u>Round Trip Run Time</u>	<u>Round Trip Including Layover</u>	<u>Vehicles on Road</u>	<u>Vehicle Hours</u>	<u>V e h i c l e Trips</u>
7:00	30	77	85	3	3	2
8:00	10	77	85	9	9	6
9:00	10	77	85	9	9	6
10:00	30	77	85	3	3	2
11:00	30	77	85	3	3	2
12:00	30	77	85	3	3	2
13:00	30	77	85	3	3	2
14:00	10	77	85	9	9	6
15:00	10	77	85	9	9	6
16:00	10	77	85	9	9	6
17:00	10	77	85	9	9	6
18:00	30	77	85	3	3	2
19:00	30	77	85	3	3	2
20:00	30	77	85	3	3	2
21:00	30	77	85	3	3	2
22:00	30	77	85	3	3	2

Weekday Peak Vehicles 9
Weekday Revenue Hours 84
Weekday Revenue Miles 1134
Daily Vehicle Trips 56

Hourly Operating Cost \$52.91
Daily Operating Cost \$4,444
Weekly Operating Cost \$22,222
Annual Operating Cost \$471,110.64

on an average vehicle occupancy of 3 passengers per auto)⁵, and between 375 and 750 passengers a day during the week. For the entire sixteen week summer season, the shuttle service should carry between 68,250 and 79,750 passengers.

Given that vehicles operating on the route will provide a total of 56 trips each day, average bus occupancy should range between 20 and 27 passengers on weekends and holidays and between 7 and 13 passengers during the week.

In addition, to inform and notify drivers of the Park & Ride facility and its current capacity, it is strongly recommended that signs be installed along major beach routes such as Routes 1, 16, and 113 in Delaware and Routes 50 and 404 in Maryland, and along Routes 1, 9 and 23 in the general proximity to the proposed location of the new Park & Ride facility.

Operating Cost

Based upon the level of service presented above and the contracted rate charged by private transit providers in the area, it is estimated that the shuttle route will cost DART \$4,444 per day to operate. Based upon this daily rate, it would cost DART \$471,111 to operate the shuttle route for the entire Summer. These operating costs were calculated using \$52.91 as an hourly operating cost for the provision of the shuttle service. This particular hourly figure incorporates the hourly rate charged by the private provider, maintenance costs and DART overhead costs. These costs also include a 10% recovery time factored into the round trip run time for the proposed shuttle service. Table 5 provides a more detailed hour by hour breakdown on the operating statistics and costs of the new shuttle service.

Capital Cost

The capital costs associated with the proposed shuttle service will vary depending on the make and model of bus purchased for this particular service. For a larger, longer bus (28 feet+) with a more substantial chassis, DART should expect to pay at least \$100,000 per vehicle. However, due to the seasonal characteristics of the proposed route, DART could operate the shuttle service using smaller cutaway vehicles at substantially less cost. For instance, the Champion Challenger is a 25 foot vehicle built on a cutaway chassis that has a seated capacity of 25 passengers and sells for roughly \$52,000. The Champion Challenger is also more fuel efficient (7.5 miles/gallon) than larger vehicles which will reduce the maintenance/fuel costs associated with the provision of the shuttle service. It would cost DART \$468,000 to purchase 9 Champion Challengers for the provision of the shuttle service proposed in this section.

Fare Structure

Fares on the proposed shuttle service would be collected in the same manner as existing DART

⁵Data for the park and ride facility located further south on SR1 indicated that automobile occupancy is higher at between 4 and 6 passengers per automobile.

routes 201-207. For those passengers paying \$4.00 to park at the Park & Ride lot, the shuttle will be free of charge. Passengers not parking in the Park & Ride lot will be expected to pay \$1.00 in order to board the shuttle and such a fare will entitle the passenger unlimited access to all DART service within the zone. For DART service outside of the fare zone, passengers will have to pay \$2.00 for the service.

Mid-day Shopping Shuttle

To complement the proposed SR1 shuttle service, it may be beneficial to provide a mid-day shuttle (10 AM - 2 PM) from Rehoboth and Dewey Beaches to several of the outlet malls along SR1. It is recommended that the shopping shuttle operate on fifteen minute headways and serve the Rehoboth Mall and Rehoboth Outlets 1, 2 and 3. Figure 3 presents the proposed route for the shopping shuttle. In order to provide this level of service, four vehicles would be required as the round trip run-time with layover would be approximately 60 minutes. The round trip distance for the shopping shuttle would be approximately 12.5 miles. Based upon the level of service presented in this section, the daily vehicle miles for this service would be approximately 200 miles. It is estimated that this service would cost \$847 per day to operate. Based upon this daily rate, this shopping shuttle would cost \$89,782 to operate for the entire Summer. There would be no additional capital cost associated with this shuttle service as vehicles would be available during the mid-day due to the lower level of service provided on the proposed SR1 shuttle. For those passengers with receipts from Park & Ride lots, there would be no fare for this service. Otherwise, passengers would pay \$1.00 to board the shopping shuttle.

As an alternative to this proposed shopping shuttle, DART could slightly modify Route 203 so that it serves beach-goers and provides them with a one-seat ride to the outlet centers along SR1. In addition to changing the route, it is advisable that DART decrease the headway on Route 203 during the mid-day to provide passengers with service every fifteen minutes.



Figure 3 - Proposed Shopping Shuttle

Shuttle Route

★ Beach Bus Stops

★ Shopping Center Bus Stops

Atlantic Ocean

Rehoboth Convention Center

Rehoboth Outlets 3

Rehoboth Outlets 2

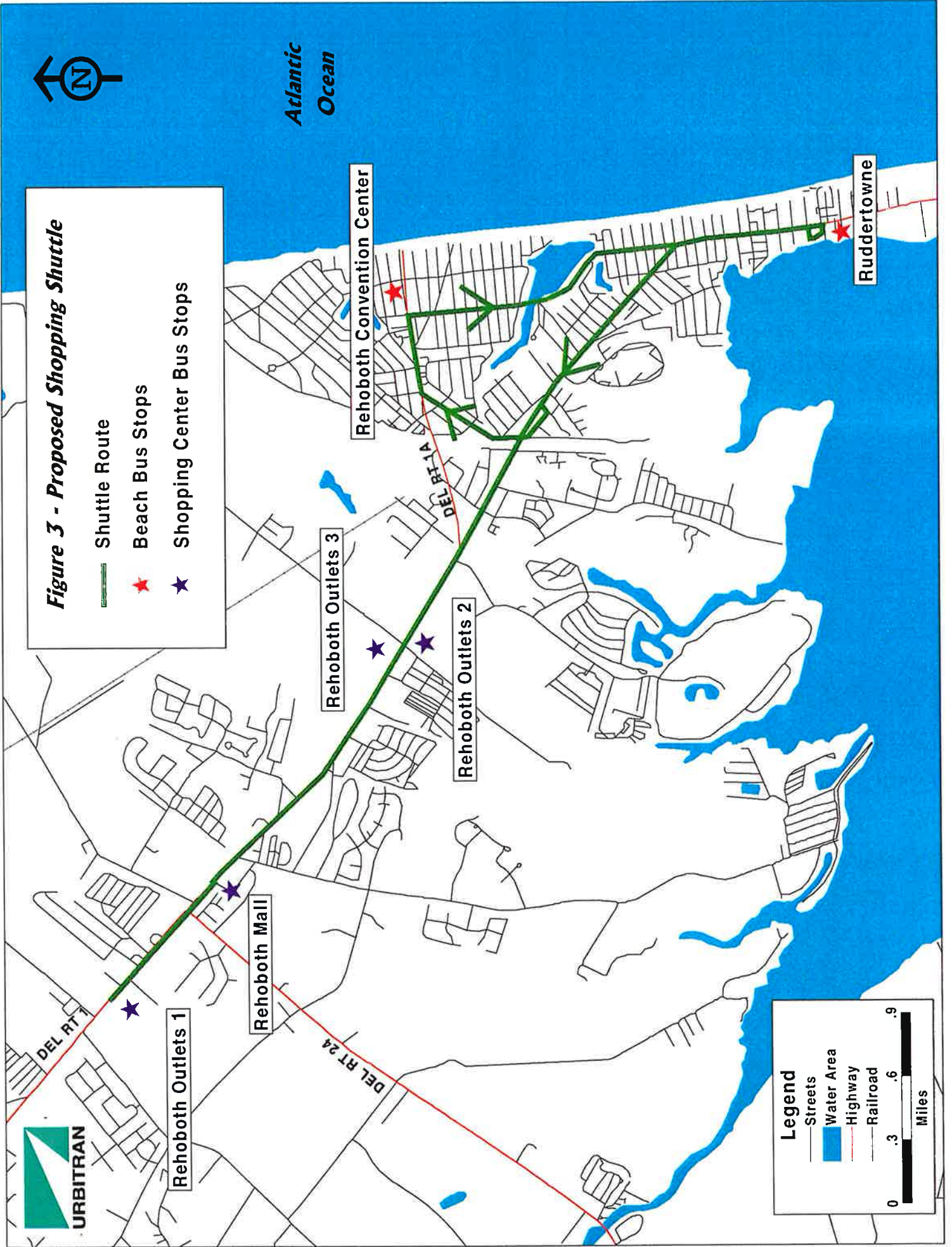
Rehoboth Mall

Rehoboth Outlets 1

Ruddertowne

Legend

- Streets
- Water Area
- Highway
- Railroad





URBITRAN

71 West 23rd Street

New York, NY 10010

212.366.6200

Fax 212.366.6214

New Jersey

2 Ethel Road - Suite 205B

Edison, New Jersey 08817

732.248.5422

Fax 732.248.5424

Connecticut

50 Union Avenue

Union Station, Third Floor East

New Haven, CT 06519

203.789.9977

203.789.8809

Florida

3400 Burns Road Suite 104-B

Palm Beach Gardens, FL 33410

561.776.8533

Fax 561.776.8540

Traffic & Transportation

Parking

Bridges & Highways

Environmental

Structures

Construction Management