UNIVERSITY DRIVE
MOBILITY IMPROVEMENTS PLANNING STUDY
INITIATION PACKAGE

11.27.13 Version for FTA

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metropolitan planning organization

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This document was prepared to provide a brief summary of the University Drive Improvements Planning Study for the Federal Transit Administration (FTA). This document includes an overview of the Study intent and a snapshot of the University Drive Corridor conditions from transportation, transit and land use/demographics perspectives. This Initiation Package will provide information that will help the Federal Transit Administration quickly understand the corridor characteristics, purpose and need, evaluation methods, and initial transit alternatives.

1.0 STUDY BACKGROUND AND DESCRIPTION

The University Drive corridor is identified in the Broward MPO 2035 Long Range Transportation Plan as a premium transit corridor and the Broward County Transit (BCT) 2009 Comprehensive Operational Analysis (COA) as one of the critical north-south transportation corridors in the county. The purpose of the study is to identify and evaluate short- (approximately 5 years) and long-term (approximately 10 or more years) mobility, congestion management, livability and premium transit options for the study area. This study merges the transit planning and the congestion management/livability planning processes into one study. Likewise, this Study will optimize public involvement in developing multi-modal transportation solutions that complement the movement of people and goods and foster livability. As shown in Figure 1 on the following page, the study area is located along University Drive, from Westview Drive in Broward County to just south of the Broward/Miami-Dade County line at NW 215th Street where Miami-Dade County is implementing a transit terminal.

Quick Facts

University Drive Study Area

- 2.7 million trips generated daily
- 547,000 trips use University Drive
- 30 percent begin **and** end within 1 mile of University Drive
- Average trip is less than 5 miles

Study Partners

This Study is being conducted in partnership with the transportation providers in the region, the cities and towns along the corridor, and the federal funding partner, the Federal Transit Administration. Local study partners include Broward County, Miami-Dade County, South Florida Regional Transportation Authority, Florida Department of Transportation, Miami-Dade Transit, South Florida Education Center Transportation Management Association, and the municipalities of Cooper City, Coral Springs, Davie, Hollywood, Lauderhill, Margate, Miami Gardens, Miramar, North Lauderdale, Parkland, Pembroke Pines, Sunrise, and Tamarac.

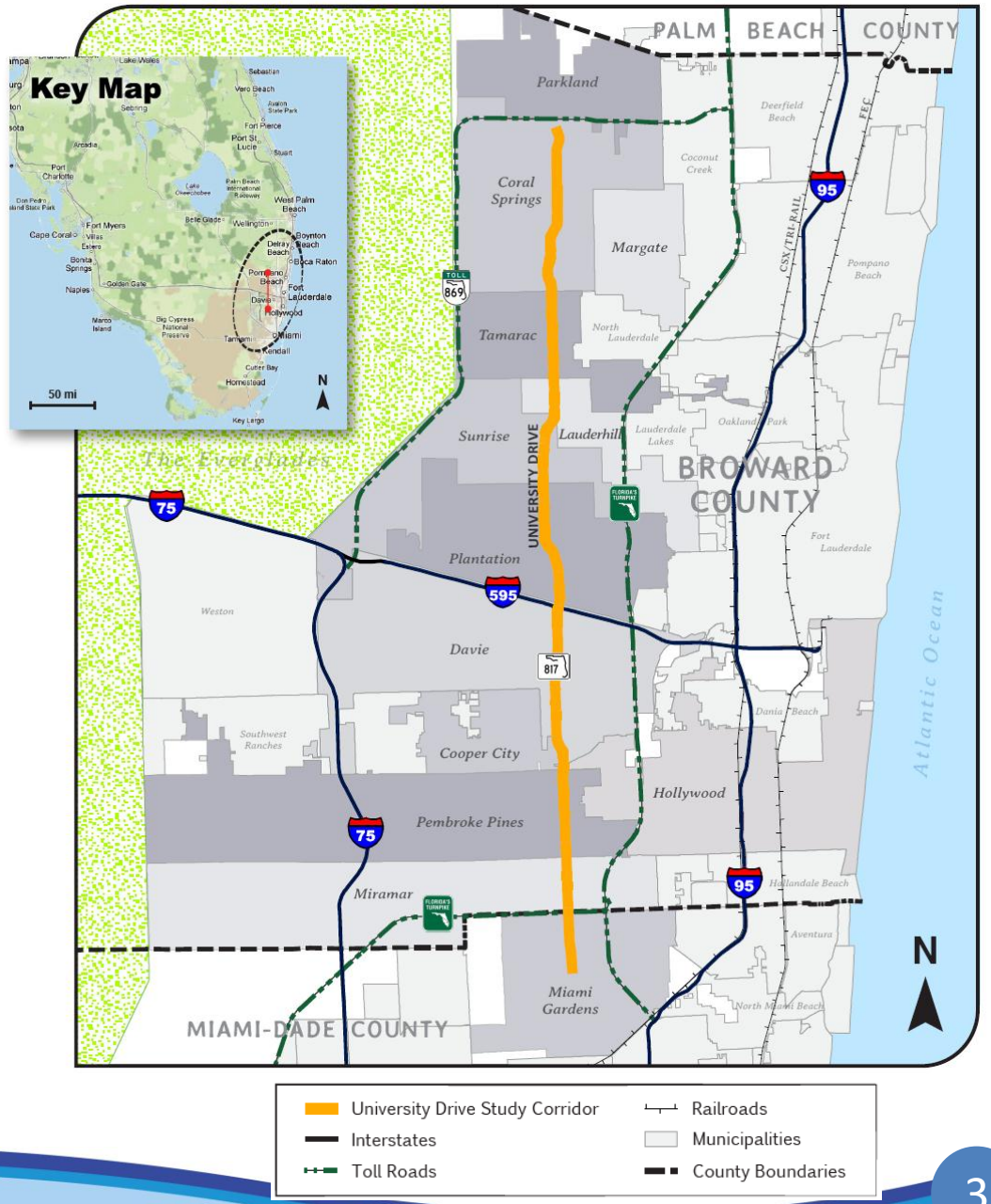
Study Corridor

University Drive is a regionally significant arterial roadway. It spans the full length of Broward County, from County Line Road in Parkland to the County Line Road in Miramar. As University Drive crosses the county line into Miami-Dade County, it becomes NW 27th Avenue and continues south to the shore of Biscayne Bay. The combined length of University Drive/NW 27th Avenue is approximately 42 miles, with University Drive proper accounting for about 26 miles. Three interchanges—at Sawgrass Expressway, I-595, and the Homestead Extension of the Florida Turnpike—connect the two ends and the midpoint of University Drive to highways with direct access to I-75, I-95, and the Florida Turnpike, and subsequently to almost any part of the South Florida urbanized region.

University Drive is primarily served with two (2) transit routes, the local Broward County Transit (BCT) Route 2 and the express BCT Route 102 (known locally as "the Breeze"). Route 2 is one of the best performing transit routes in Broward County. Daily ridership on these two routes is approximately 8,000 today.

A number of facilities in close proximity to University Drive are important community assets for their role as large job centers, public service providers, regional attractions, and revenue generators. They include six

Figure 1 – Study Area



major medical complexes, the South Florida Education Center, North Perry Airport, Calder Casino and Race Course, Sheraton Suites Plantation, and more than a dozen shopping malls and districts. Each of these has a regional reach, drawing users from across South Florida. University Drive also features smaller assets with more local reach, such as public schools, municipal and administrative offices, libraries, health clinics, and

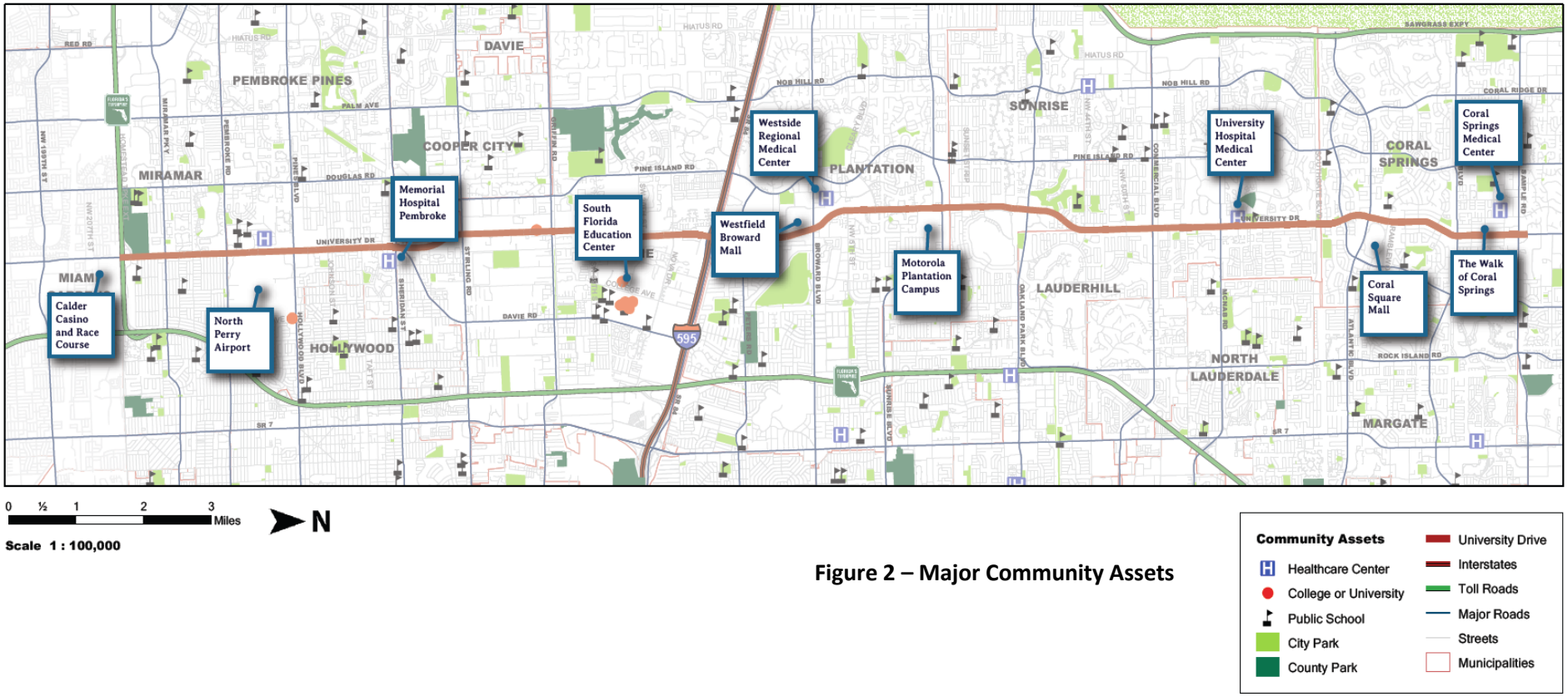


Figure 2 – Major Community Assets

emergency response centers. Figure 2 identifies locations of major community assets throughout the corridor.

Existing Travel Characteristics

The following bullets highlight the corridor's trip making characteristics from both a total and transit only trip making perspective.

Total Trips

- The major activity centers located in the University Drive study area are responsible for generating nearly 2.7 million trips per average weekday.
- About 75% of the trips are home based trips, made up of work and non-work trips. The remaining 25 % are non-home based trips meaning they neither start from home nor end at home.
- On a typical weekday, there are about 547,000 trips that use some portion of University Drive located in the study area.
    - Of these trips, about 339,000 (62 %) begin and end in the study area. These trips are the primary contributors to traffic congestion on University Drive.

Transit Trips

- The study corridor is served by nine north-south transit routes and 19 east – west transit routes.
- Route 2 is one of the best performing transit routes in Broward County. It is in the top 5 percent and carries a daily ridership of approximately 7,100.
- Route 102 performs like a commuter service and carries approximately 1,000 trips a day.
- Based on the origin-destination survey data, most transit trip activity (boardings and alightings) occur between County Line Road and Ramblewood Drive.
- The average trip length on Route 102 is 9.5 miles. The average trip length on Route 2 is 4.9 miles.
- The ridership data for Route 2 and 102 indicate significant transfer activity.
- About 64 % of the riders on Route 2 and 77 % on Route 102 transfer at least once.

Study Approach and Anticipated Timeline

This Study began at the end of 2012/early 2013 and will conclude in the Fall 2014. We are currently at the point of developing and evaluating the first alternative concepts, including premium transit, bicycle, pedestrian, livability and congestion management elements.

Table 1 – Anticipated Study Timeline

Project Activity	Anticipated Timeline
Public Engagement	**Early 2013 – Summer/Fall 2014**
Kickoff workshop and Charrette	Summer 2013
Alternatives Workshop	Spring 2014
Public Hearing	Summer/Fall 2014
Existing Conditions and Conceptual Alternatives*	**January 2013 – January 2014**
Analysis of Conceptual Alternatives	**July 2013 – February 2014**

Detailed Analysis of Alternative and Selection of Preferred Alternative	September 2013 – Summer/Fall 2014

**Alternatives: Potential solutions that address the needs of the existing and future conditions along the University Drive corridor.*

2.0 CORRIDOR PURPOSE AND NEED

The purpose of making multi-modal transportation investments in the University Drive corridor is to enhance the transit passenger, cyclist, pedestrian, and driver experience; increase transit service reliability and improve travel time; encourage transit-oriented development; and emphasize integrated planning and investment for sustainable economic growth.

The needs in the corridor are to:

- Improve North-South mobility for transit, bicycle, pedestrian and automobile users
- Improve safety for all users
- Improve livability and walkability in and adjacent to the University Drive corridor
- Invest in transportation solutions that are cost effective

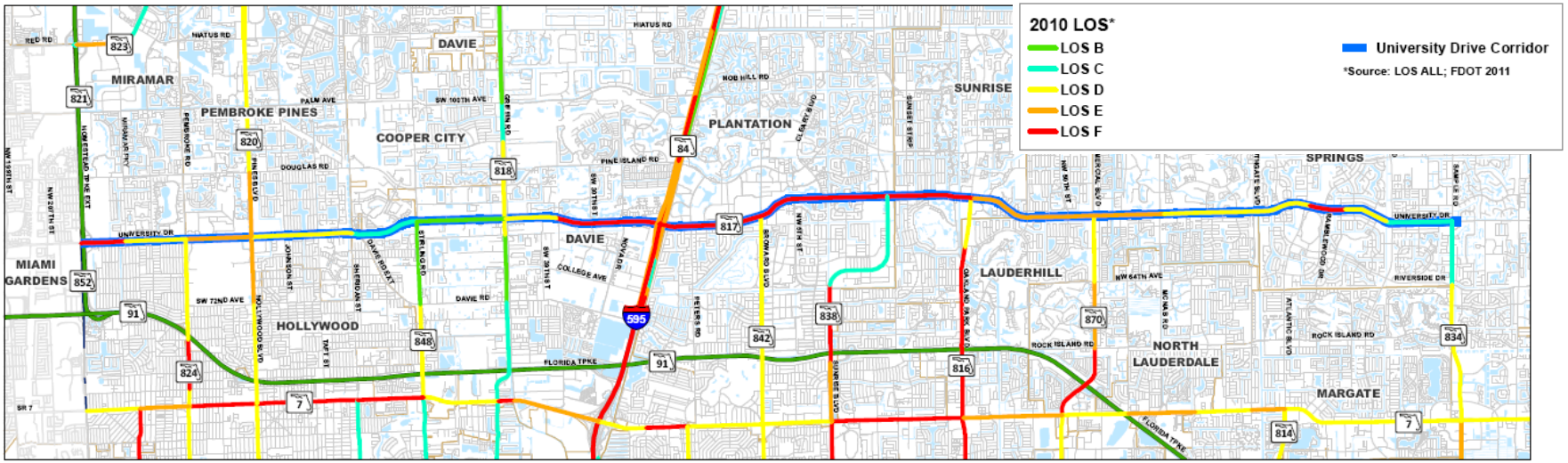
Improve North-South Mobility for all Users

Improving mobility for all users – automobile, transit, pedestrian, and cyclist – is a need based on existing and future conditions.

Automobile Users

University Drive is a regionally significant arterial roadway and is among the busiest roads in Broward County, with annual average daily traffic (AADT) volumes ranging from 40,000 to over 70,000 vehicles per day. Vehicle demand in the University Drive corridor causes congestion from the morning peak through the late afternoon. Certain segments are more congested than others, including the segment from Peters Road south to Nova Drive, which carries up to 70,000 vehicles per day. This section of University Drive provides access to I-595/SR 84, which creates added demand in the area. The figure below summarizes the level of service for State facilities along the corridor and within the study area.

Figure 3 – Year 2010 Level of Service (LOS)



The tables below gives a snapshot of the level-of-service and travel time rankings along the University Drive by a high, medium and low ranking as also described below.

Table 2 – Congestion Rankings Definitions

Table 3 – University Drive Congestion Rankings by Segment

University Drive Segments	Length (mi)	LOS	Travel Time
Wiles Road to Royal Palm Boulevard	1.9	Low	Low
Royal Palm Boulevard to McNab Road	3.6	Low	Low
McNab Road to Oakland Park Boulevard	2.9	Medium	Low
Oakland Park Boulevard to Broward Boulevard	3.2	Medium	Low
Broward Boulevard to Peters Road	1.1	High	High
Peters Road to SW 30th Street	1.5	High	High
SW 30th Street to Griffin Road	1.3	Medium	High
Griffin Road to Sheridan Street	2.3	Low	Low

Sources	Evaluation Measures	Ratings	Segment Analysis
Historical Traffic Models	Level-of-Service (LOS)	High	LOS E/F with AADT ≥ 60K
		Medium	LOS E/F with AADT < 60K
		Low	LOS D or better
Travel Time Study	Travel Speed	High	speed ≤ 20 mph
		Medium	20 mph < speed ≤ 22 mph
		Low	speed > 22 mph

Sheridan Street to Pembroke Road	2.5	Low	Low
Pembroke Road to Florida's Turnpike	1.5	Low	Medium

Transit Users

Transit Route 2 is one of the best performing transit routes in Broward County. It has a ridership of approximately 7,100 passengers per day. Based on 2012-2013 origin-destination survey data and BCT collected automatic passenger from January to May 2012, boardings and alightings for Route 2 are relatively evenly distributed across the route, with increased activity at or near regional attractors (e.g., Broward Health Coral Springs at Sample Road, Coral Square Mall at Atlantic Boulevard, University Hospital at McNab Road, the various shopping and medical centers at Oakland Park Boulevard, Sunrise Boulevard, and Pines Boulevard, etc.). The busiest locations for boardings and alightings, however, are at BCT's West Regional Terminal, where transfers to other BCT routes are possible, and at NW 207th Avenue, where inter-county transfers are made. Route 102 (the Breeze express route) carries approximately 1,000 people per day. The following two maps illustrate the regional transit network provided by BCT and the community shuttle systems.

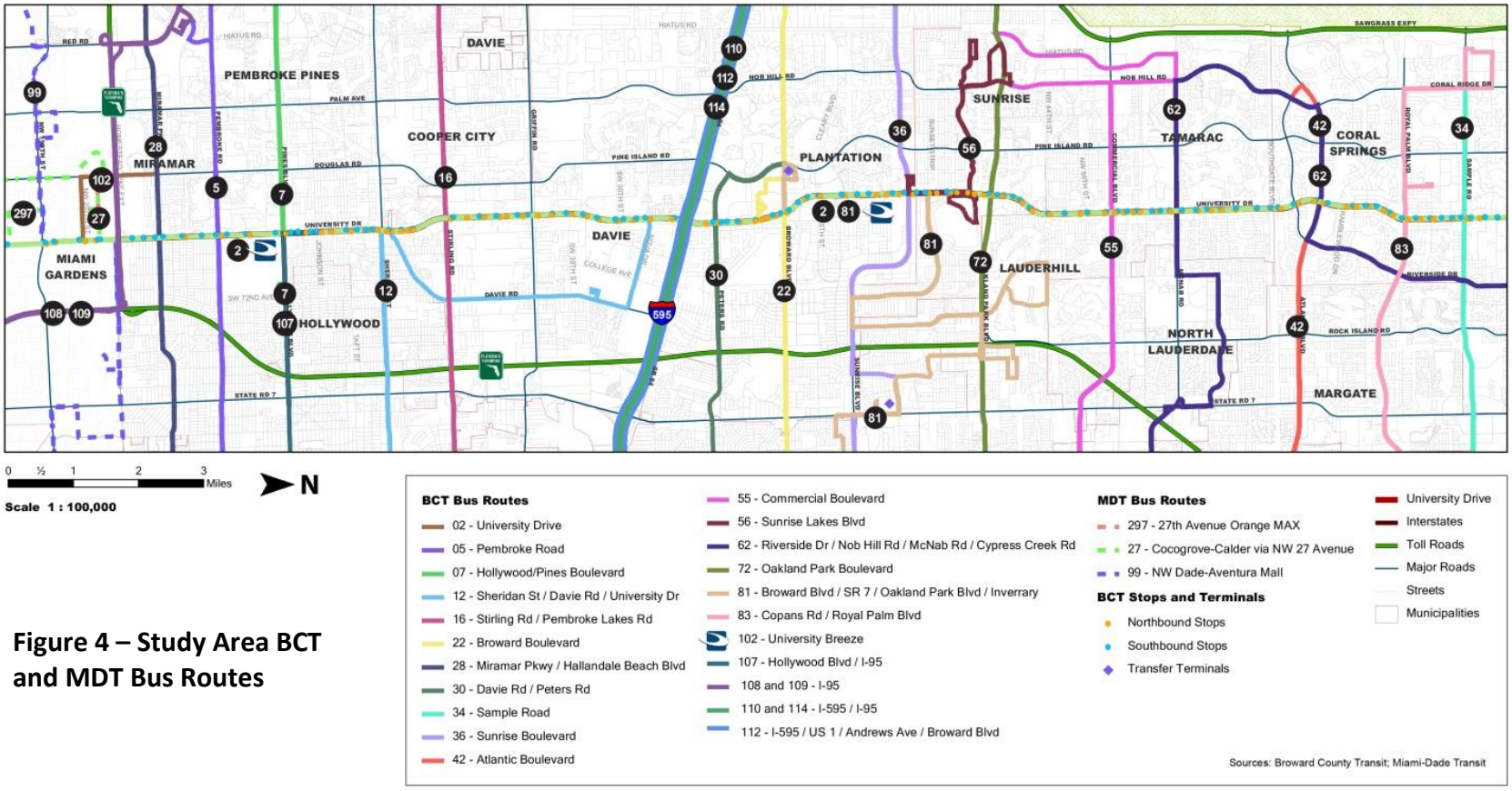
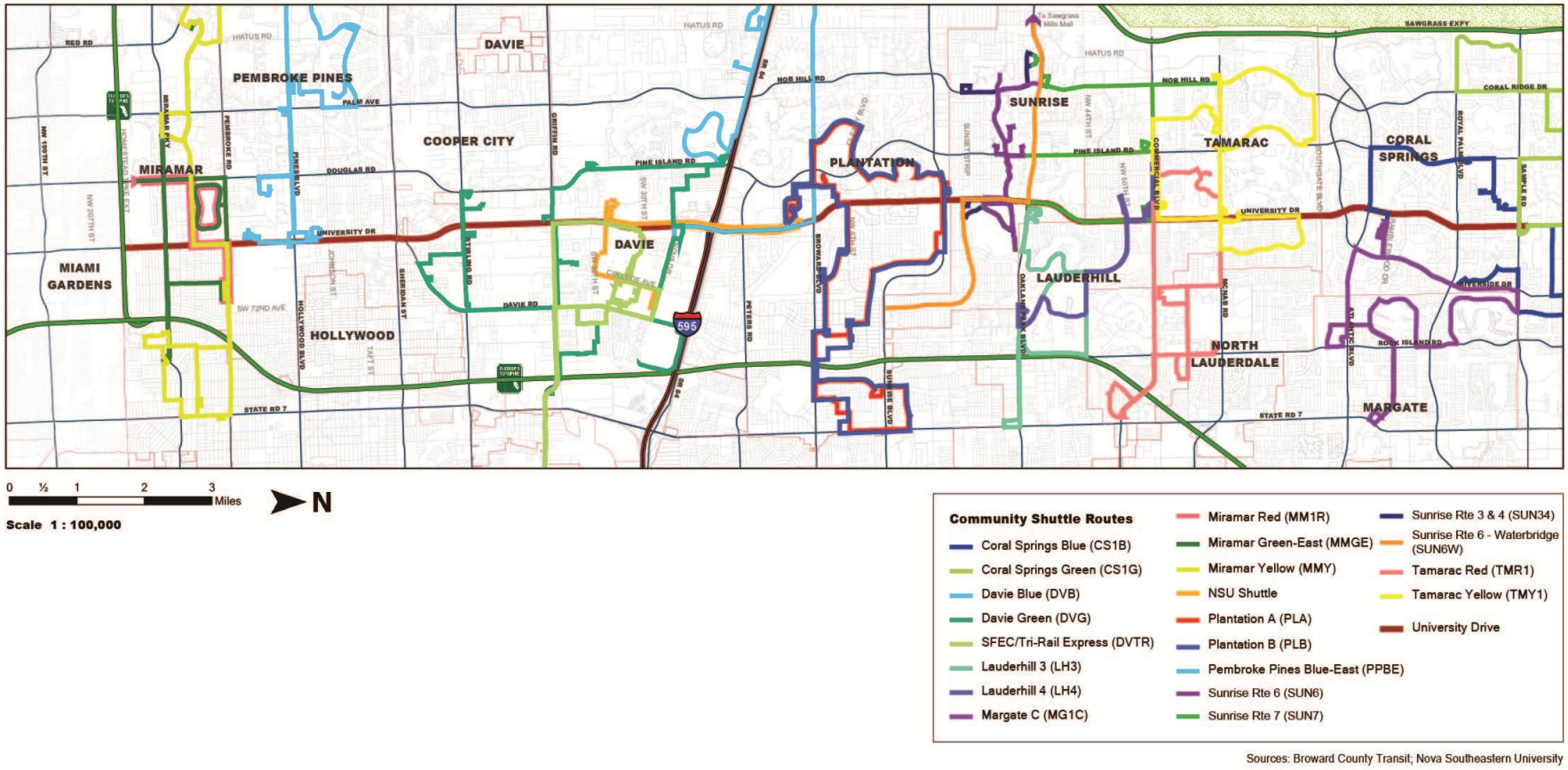


Figure 4 – Study Area BCT and MDT Bus Routes

Figure 5 – Study Area Community Shuttle Routes



Sources: Broward County Transit; Nova Southeastern University

The existing BCT system along the corridor suffers from on-time performance. Currently, one-way travel time on Route 2 is two hours and it has 62% on time performance. Few, if any, passengers ride Route 2 from end-to-end, but it suffers from long travel times and frequent stops as a result of extensive passenger activities (cash payments, transfers, bicycle placement, among other activities) and congestion along the corridor. Further, observed and documented delays at major transfer locations coincide with the high activity roadway intersections within the corridor. One way travel time on Route 102 is 1 hour and 20 minutes while on-time performance is at 40%.

Pedestrian and Cyclist Users

The University Drive corridor is generally not comfortable or inviting for walking or cycling. Although sidewalks and bicycle lanes run adjacent to the roadway for much of its length (as shown in the following figures), their design is inadequate to attract significant numbers of pedestrians and cyclists given the high traffic volumes and travel speeds of the corridor in addition to numerous driveways. Concurrency requirements for sidewalks were fulfilled for the most part as the corridor developed in the 1980s and 1990s, but a physical arrangement of land uses on either side of corridor that favors automobile traffic, coupled with large intersections and wide, frequent curb cuts, contributes to a degraded pedestrian environment.

Figure 6 – Location of Existing Bicycle Lanes along University Drive

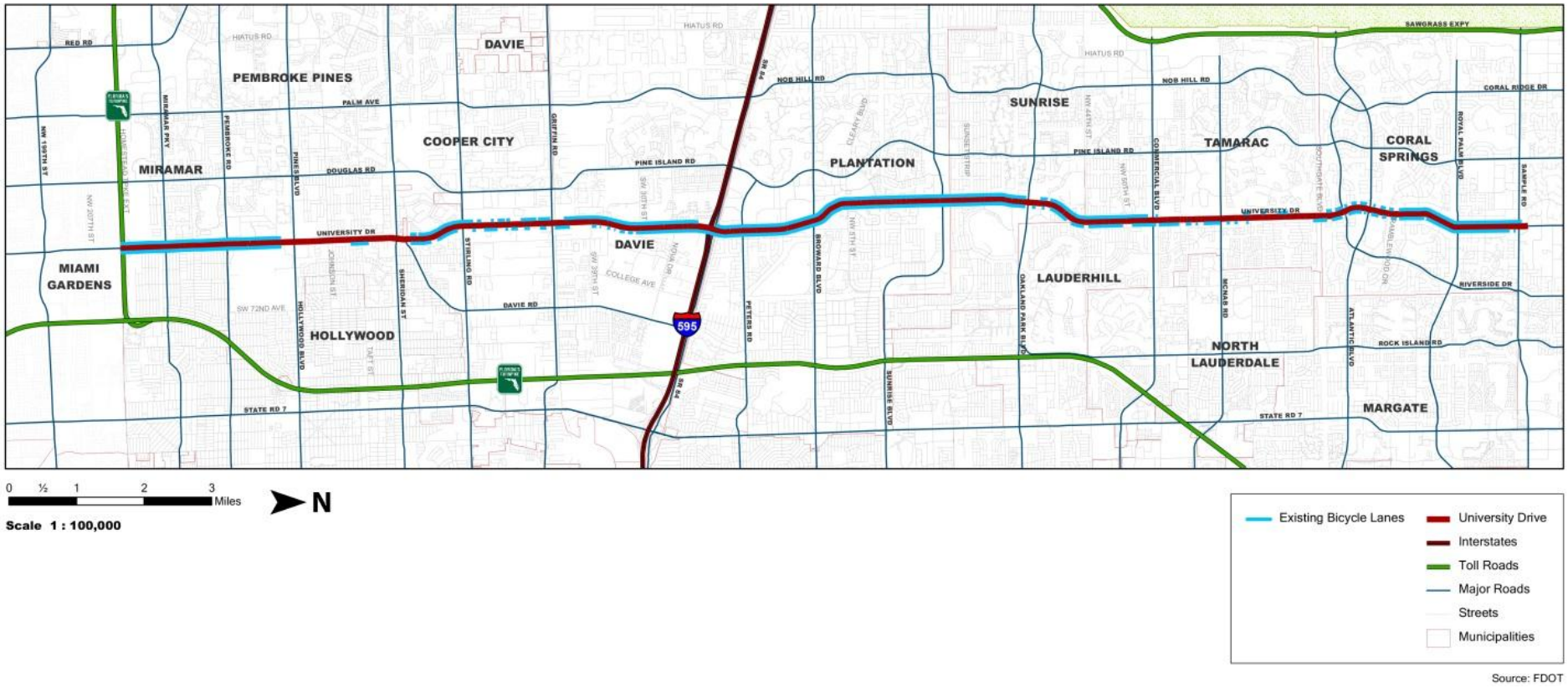


Figure 7 – Location of Existing Sidewalks along University Drive

Source: FDOT

Improve Safety for All Users

In recent years, University Drive has experienced year-over-year increases in the number of collisions involving vehicles, pedestrians, and cyclists. From a 2007 collision total of 1,215, the number of crashes increased 42 percent by 2011, when 1,723 collisions were reported. In total, 6,955 collisions occurred on University Drive in the five years up to and including 2011. Rear-ends comprised the greatest share of this total (51.3 percent). Collisions involving pedestrians made up only 1.6 percent of the figure, but still represented 109 incidents between 2007 and 2011. Collisions involving cyclists were a similarly low fraction (1.5 percent), accounting for 107 incidents.

Collisions involving pedestrians and bicyclists within the University Drive corridor are an important traffic collision subset, since such events are indicators of potentially unsafe conditions for non-vehicular users of the corridor. The following two figures show the locations for collisions and fatalities involving pedestrians and bicycles, respectively, between 2007 and 2011.

Figure 8 – Locations of Pedestrian Fatality and Injury Collisions from 2007 to 2011 along University Drive

Source: FDOT Crash Analysis Reporting System

Figure 9 – Locations of Cyclist Fatality and Injury Collisions from 2007 to 2011 along University Drive

Source: FDOT Crash Analysis Reporting System

A total of 99 collisions involving pedestrians and 96 collisions involving bicycles were reported between 2007 and 2011. Areas of high collision incidence involving pedestrians include the segment between Pines Boulevard/Hollywood Boulevard and Johnson Street, the segment between Sunrise Boulevard and Sunset Strip, the segment just south of Oakland Park Boulevard to NW 39th Street, the vicinity of the University Drive/NW 44th Street intersection, the segment between McNab Road and NW 77th Street, the segment of University Drive alongside Coral Square Mall, and the segment between NW 16th Street and Royal Palm Boulevard. Common between all of these high-incidence locations is the presence of shopping plazas, restaurants, offices, and/or services. Beyond these corridor segments, collisions with pedestrians also occurred at large intersections (*e.g.*, Miramar Parkway, Pembroke Road, Sheridan Street, Stirling Road, Peters Road, Broward Boulevard).

Figure 10 – Cyclist/Pedestrian/Transit Synthesis

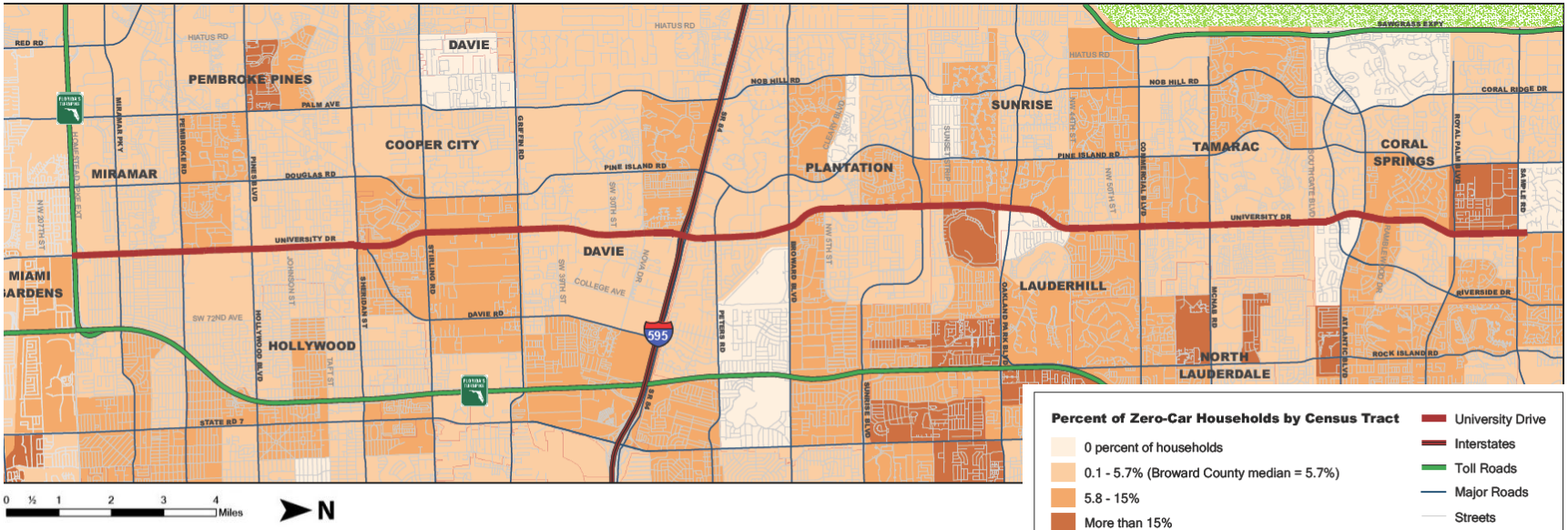
High-incidence areas involving cyclists often overlap with those involving pedestrians. Generally speaking, segments between Pines Boulevard/Hollywood Boulevard and Pasadena Boulevard (just south of Sheridan Street), Commercial Boulevard and NW 61st Street, and along most of University Drive through Coral Springs experienced the largest number of collisions. As with areas of high pedestrian collision incidences, consumer-oriented business locations also had cyclist collisions. Transit transfer locations were also assessed from a collision perspective. Figure 10 shows the high transfer locations in combination with pedestrian/cyclist crash cluster locations. As indicated several of the transfer locations align with the high collision areas.

Twelve pedestrian fatalities occurred on University Drive between 2007 and 2011, with varying contributing causes. Four deaths were caused by an intoxicated driver, two were caused by drivers disregarding traffic controls, and four were the result of unidentified causes. The remaining two deaths, meanwhile, were not the result of driver error and may have been caused by improper pedestrian activity. In the same timeframe, two bicycle fatalities occurred, neither one the result of improper driver activity and both occurring while the cyclist was not using a bicycle lane. Locations of the fatalities were not concentrated in any particular corridor segment. While the two cyclist deaths occurred at major intersections (Griffin Road and Stirling Road), pedestrian fatalities were more likely to occur away from the vicinity of major intersections.

Improve the Livability and Walkability in the Corridor

As indicated above, improvements are needed to make the University Drive a more livable and walkable place. More and more people are seeking livable places to call home, and little of this environment is currently available for residents of Broward County. The median percentage of households in Broward County without access to a vehicle is 5.7 percent (see figure below); a small number that points to a dependence on automobiles characteristic of life in South Florida. In the University Drive corridor, there is a relatively equal mix of areas with zero-car households above and below the county median, although north of Broward Boulevard there is greater likelihood of above average rates than south. For those census tracts with the highest rates of zero-car households (above 15 percent), all but two are found east of University Drive in Sunrise, Lauderhill, Lauderdale Lakes, North Lauderdale, and Margate. In Lauderhill and Lauderdale Lakes especially, such census tracts also exhibit higher rates of poverty. Meanwhile, scattered across the corridor (but not south of Stirling Road) are localized census tracts in which every household reports having access to a vehicle.

Figure 11 – Household Access to a Vehicle (2007-2011 Average)



Source: 2007-2011 American Community Survey 5-Year Estimates

Invest in Transportation Solutions that are Cost-Effective

As with all transportation investments, it is critical that the investments made in the University Drive corridor are cost-effective, both from an initial capital cost and for the long-term operating costs.

3.0 INTRODUCTION OF CONCEPTUAL ALTERNATIVES

The University Drive conceptual alternatives are being developed using a two-tiered screening approach. The alternatives cover all modes – transit, auto, pedestrian and bicycle. The following sections describe in further detail Tier 1 initial conceptual alternatives by mode.

Premium Transit Improvements

Eight alternatives have been developed under Tier 1 conceptual alternative development. The eight alternatives have been divided into three phases – near-term (1 to 2 years), mid-term (2 to 7 years), and long-term (7 years and beyond). Below, each phase and associated alternatives are listed. Table 4 describes in further detail the specific improvements identified per conceptual alternative.

- **Phase 1 Alternatives *(Timeframe – 1 to 2 years)***
  - 1.A. - No Build
  - 1.B. - Future Baseline

- **Phase 2 Alternatives *(Timeframe – 2 to 7 years)***
  - 2.A. - Enhanced Bus Service
  - 2.B. - Enhance Bus on Business & Access Transit (BAT) Lanes

- **Phase 3 Alternatives *(Timeframe – Beyond 7 years)***
  - 3.A. - Bus Rapid Transit (BRT) without BAT Lanes
  - 3.B - Streetcar without BAT Lanes
  - 4.A. - Bus Rapid Transit (BRT) with BAT Lanes
  - 4.B - Streetcar with BAT Lanes

TABLE 4 - PROPOSED PREMIUM TRANSIT-RELATED IMPROVEMENTS		PHASE I (1-2 years)		PHASE II (2-7 years)		PHASE III (Beyond 7 years)			
		1A	1B	2A	2B	3A	3B	4A	4B
		No Build	Future Baseline[1]	Enhanced Bus (Without BAT Lanes)	Enhanced Bus (with BAT Lanes)	Bus Rapid Transit (BRT) (Without BAT Lanes)	Modern Streetcar (Without BAT Lanes)	Bus Rapid Transit (BRT) *(with BAT Lanes)*	Modern Streetcar *(with BAT Lanes)*
INSTALLATION OF TRANSIT SIGNAL PRIORITY (TSP)		----	X	X	X	X	X	X	X
IMPLEMENTATION OF QUEUE JUMP (QJ) LANES		----	----	X	X	X	X	X	X
IMPLEMENTATION OF REGIONAL INTER-OPERABLE FARE SYSTEM (*EASYCARD*)		X	X	X	X	X	X	X	X
OFF-BOARD FARE PAYMENT AT STOPS/STATIONS		----	----	----	----	X	X	X	X
MOBILE TICKETING		----	X	X	X	X	X	X	X
RECONFIGURE ROUTES ALONG UNIVERSITY DRIVE		X	X	X	X	X	X	X	X
BUSINESS AND TRANSIT ACCESS (BAT) LANES		----	----	----	X	----	----	X	X
USE OF LEVEL BOARDING VEHICLES		----	----	----	----	X	X	X	X
SERVICE BRANDING[2]	LOW SCALE	----	X	----	----	----	----	X	X
	MODERATE SCALE	----	----	X	X	----	----	X	X
	FULL SCALE	----	----	----	----	X	X	X	X
IMPROVED FREQUENCIES		----	----	X	X	X	X	X	X
INSTALLATION OF BUS ISLANDS AT KEY INTERSECTIONS		----	----	X	X	X	X	X	X

1. Future Baseline: Defined as what is reasonably assumed to be implemented without major capital investments along the corridor within the next one to two years.
2. *Low scale branding* is limited to vehicle wrapping and branding of service fare cards. *Moderate scale branding* includes BAT Lane stripping (in addition to Low scale branding). *Full scale branding* includes unique vehicle type, station design, system naming, etc. (in addition to low scale and moderate scale branding).

Pedestrian and Bicycle Strategies

Eight general categories of issues were identified for pedestrian and bicycle elements including bike lanes, sidewalks, crosswalks, curb cuts, landscape buffers, signals, turn lanes, and turn radii. Table 5 summarizes strategies being considered for evaluation in the alternatives.

Table 5 – Pedestrian and Bicycle Strategies

Pedestrian and Bicycle Categories of Issues	Strategies Being Considered
Bike lanes	• 6’ bike lanes desirable; 5’ minimum • Bike facilities at intersections (through and turning) • Green paint in potential conflict areas
Sidewalks	• 5’ to 8’ sidewalk (with buffers) • Continuous walkways on both sides of the street • Transit stops, schools, parks, and public buildings highest priority
Crosswalks	• “International” or “Zebra” markings at crosswalks • Median crossing islands • Curb extensions
Curb cuts	• Pedestrian ramps angled into painted crosswalk area • Removal of obstructions
Landscape buffers	• 4’ to 6’ of buffer zone desired • Planted landscape strip
Signals	• Marked crosswalks and signals on all four approach legs • Walk signal every cycle (desired) • Shorter signal cycles • Push-buttons well-positioned and within easy reach ○ Quick response and audible feedback • Countdown timer • Leading pedestrian interval
Turn lanes	• Turn lane entries between 50’ to 100’ • Bike lane conflict areas minimized (and highlighted with green paint) • No channelized right turn lanes where pedestrians are desired
Turn radii	• Reduced curb radii to aid in reducing turning speeds and shorten pedestrian crossing distance

Congestion Management System (CMS) Strategies

Four general categories of issues were identified for Congestion Management System strategies including intersections, roadway links/segments, multi-modal network, and auto safety. Table 6 summarizes strategies being considered for evaluation in the alternatives.

Table 6 – Congestion Management System Strategies

CMS Categories of Issues	Strategies Being Considered
Intersections	• Traffic signal retiming • Signal Central Management software upgrade • Strengthened coordination and planning for emergency response teams across multijurisdictions
Roadway Links/Segments	• Implement Travel Demand Management programs • Provide Traveler Information • Shared driveways and business access • Parallel/reliever network
Multi-modal Network	• Create additional connections between businesses • Shared driveways and business access • Provide Traveler Information • Provide multi-modal options
Auto Safety	• Congestion Management System strategies • Transit options • Shared driveways and business access

4.0 EVALUATION METHODS FOR COMPARING ALTERNATIVES

The alternatives will be evaluated against a comprehensive set of evaluation criteria, each tied back to the corridor needs and objectives. One of the critical elements for which we are seeking advice from FTA is the method for forecasting ridership for the various alternatives. In August, FTA issued final policy guidance that stated that proposed New and Small Starts projects will be evaluated and rated according to the criteria set forth in MAP-21. We should discuss what elements of MAP-21 should be addressed in this Study (since it was awarded prior to this legislation).

According to the FTA MAP-21 guidance, statutory project justification criteria include: **mobility improvements, environmental benefits, congestion relief, economic development effects, land use, and cost-effectiveness**. All of these measures will be used to evaluate and compare the final set of Alternatives. The travel model provides several key inputs to the quantification of these criteria. As such, maintaining internal

consistency in the model data and assumptions is extremely important in the quantification process. For this reason, FTA requires project sponsors to clearly document methods, procedures and assumptions used in their detailed travel modeling methodology report.

For the purpose of developing an analytical tool to forecast ridership, we are proposing that the technical documentation, at a minimum, should include the following information:

- **Last model revision** - when (what year) was the current set of travel models last revised (e.g., new variables, new model algorithms, recalibrated using new data)?
- **Model specification** - description of models used (e.g., gravity vs. destination choice) and interactions between models, specification of key model coefficients, calibration results (e.g., goodness-of-fit measures).
- **Calibration data** - what data was used to calibrate the model set (e.g., local home interview survey, national surveys (e.g., NHTS, CTPP), models "borrowed" from another urban area)? How current is the data source?
- **Local survey** - if a local home interview survey was used to calibrate the model, when (what year) was the survey conducted, how many valid household records were collected?
- **Model validation** - what year and data source was the model validated against? What validation techniques were used?
- **Size of network** - how many links are in the model highway network; what highway functional classes are included as network links; has a compatible transit network been developed?
- **Number of zones** - How many transportation analysis zones (TAZs) are included in the model?
- **Non-home based travel** - How is non-home based travel modeled (e.g., freight, commercial services, through traffic, tourists)?
- **Base year and forecast year** for which ridership results will be generated
- **Annualization factor used** (to convert weekday trips to annual trips).

We believe that most of this information is readily available for the SERPM tool, in the form of standalone technical reports.

There are two more areas that will undergo careful scrutiny by the FTA. They are: demographic and land use assumptions and transportation network assumptions. On demographic and land use assumptions, the documentation, at a minimum, should address the following parameters in the study area:

- **Land use compatibility** - Are the land use forecasts consistent with local jurisdictions' Master Plans? If land use models were employed, these should also be documented under forecasting methods.
- **Population change** - expected change in regional population over the duration of the forecast period. Population assumptions should be compared to past trends, and to statewide demographic control totals, where available.
- **Employment change** - expected change in regional employment over the duration of the forecast period. Employment assumptions should be compared to past trends, and to statewide economic growth control totals, where available.
- **Regional distribution of future population, employment and land use** - the procedures used to allocate future population, employment and other activity generators within the metropolitan area.
- **Demographic changes** - changes in the demographic characteristics of the study area population that would significantly impact aggregate trip making behavior and/or travel patterns. Demographic changes might include, auto ownership, household income, household size, multi-worker households, minority households, etc.

On the transportation network side, it is very important to ensure that the highway and transit projects included in the network are consistent with regionally adopted plans at the local as well as regional levels. If certain projects are excluded in the network, a clear explanation of why it was done should be presented. Our team recommends the University Drive Mobility Study project team develop and agree on internally consistent assumptions regarding demographic and land use forecasts, highway and transit network, annualization factor, horizon year and other factors that are used in ridership, cost and economic analyses.

A clear documentation of such assumptions will help the project team avoid pitfalls and unnecessary delays in the New Starts/Small Starts process. It is our understanding that during the development of SERPM travel model, six (6) face-to-face meetings with FTA in Washington, DC have been held since July 2010. The first four meetings dealt with model improvements and its development, while the last two were concerned with the general forecasts produced by SERPM. It is our understanding that FTA has had a positive reaction to the development and calibration/validation process, and agreed that SERPM 6.7 could be used for multi-modal planning.