Transit Assets and Opportunities Study

Stakeholders Meeting # 2

The Straz Center for the Performing Arts

Maestro's Restaurant

Wednesday, January 22, 2014

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MPO Metropolitan Planning Organization for Transportation

Welcome

Study Sponsors

- Hillsborough County MPO

- The Tampa Downtown Partnership

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Welcome

Project Management Team

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Agenda

- Overview of Stakeholders Meeting #1
- Needs Assessment
- Regional Opportunities

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Overview of Stakeholders Meeting #1

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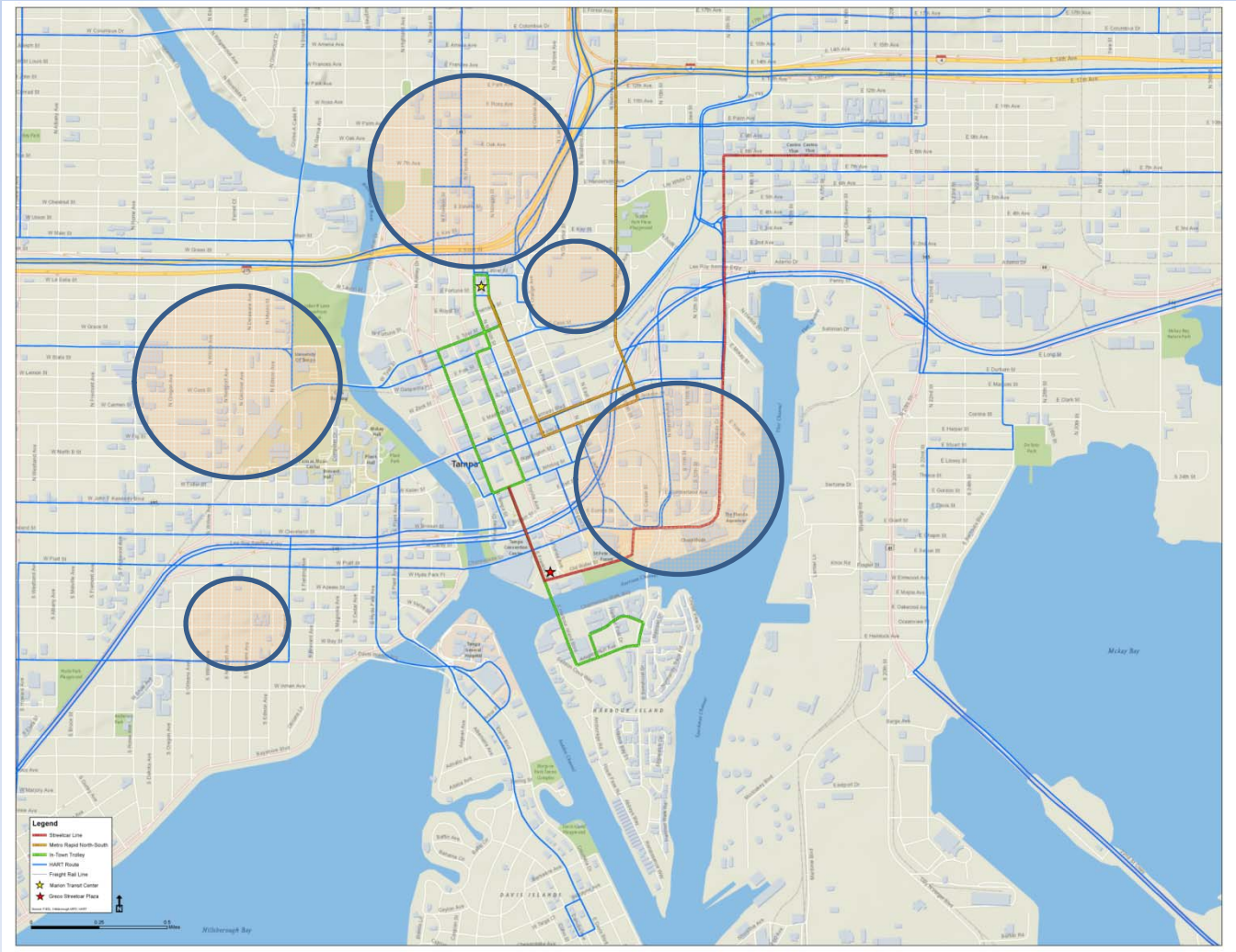
Discussion #1

- Which area(s) of Downtown Tampa is the ***current focus*** of development?



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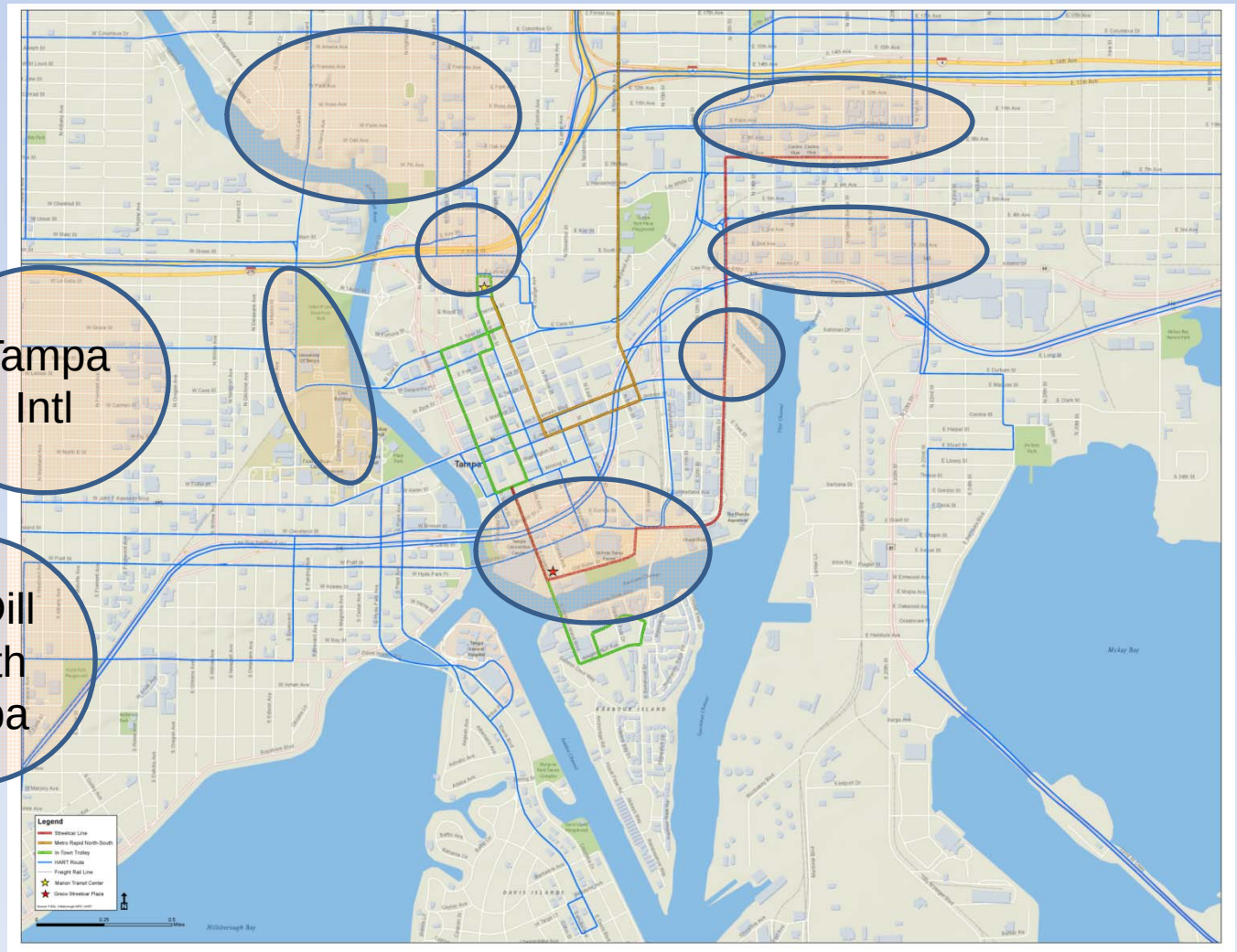
Discussion #1

- Which area(s) of Downtown Tampa is the ***future focus*** of development?



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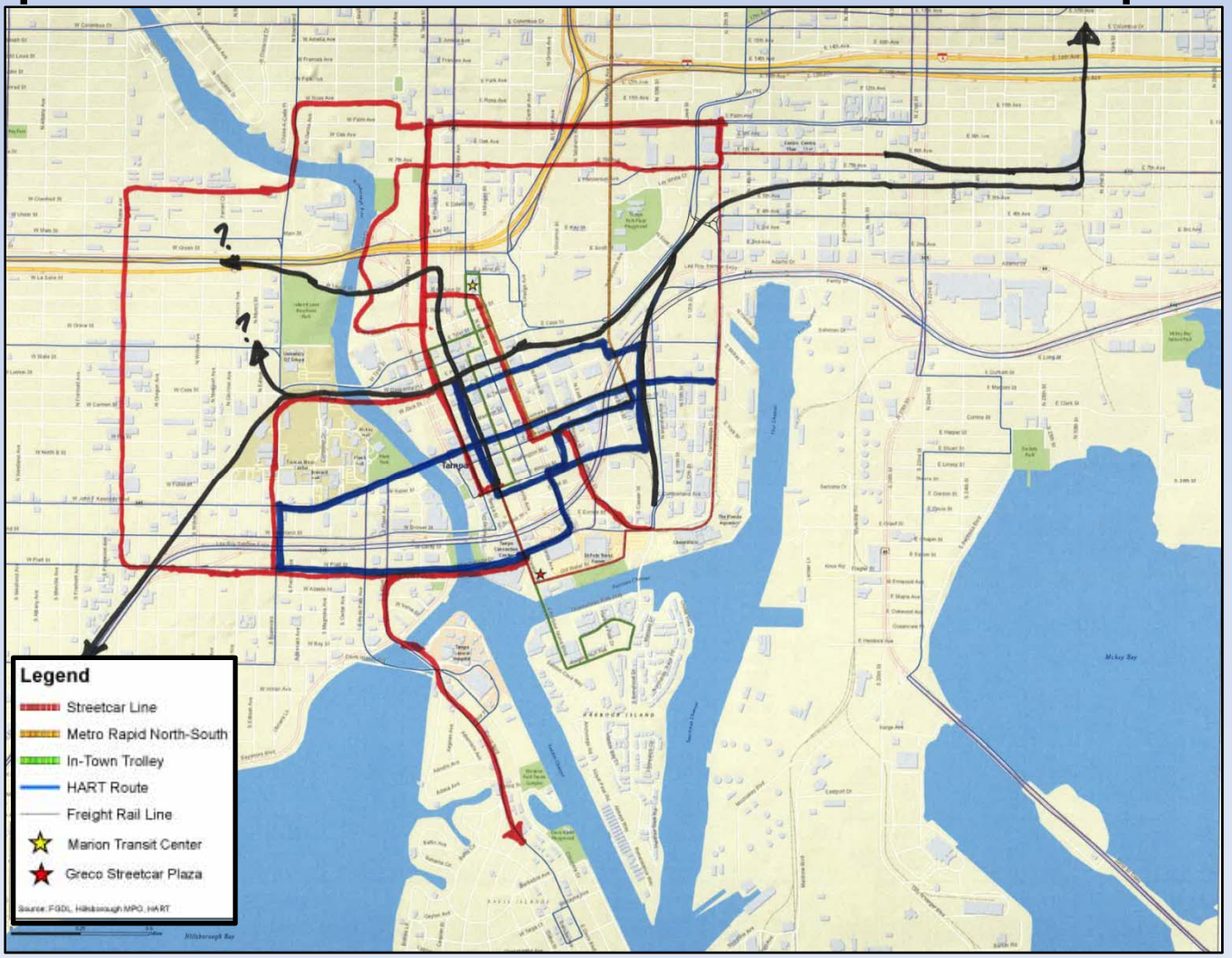
Discussion #1

- How would a more robust transit network improve/accelerate the rate of development?



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Discussion #1

- How do you feel transit best serves development?

- Moves more people
- Low cost transportation option
- Provides service to uses beyond home and work

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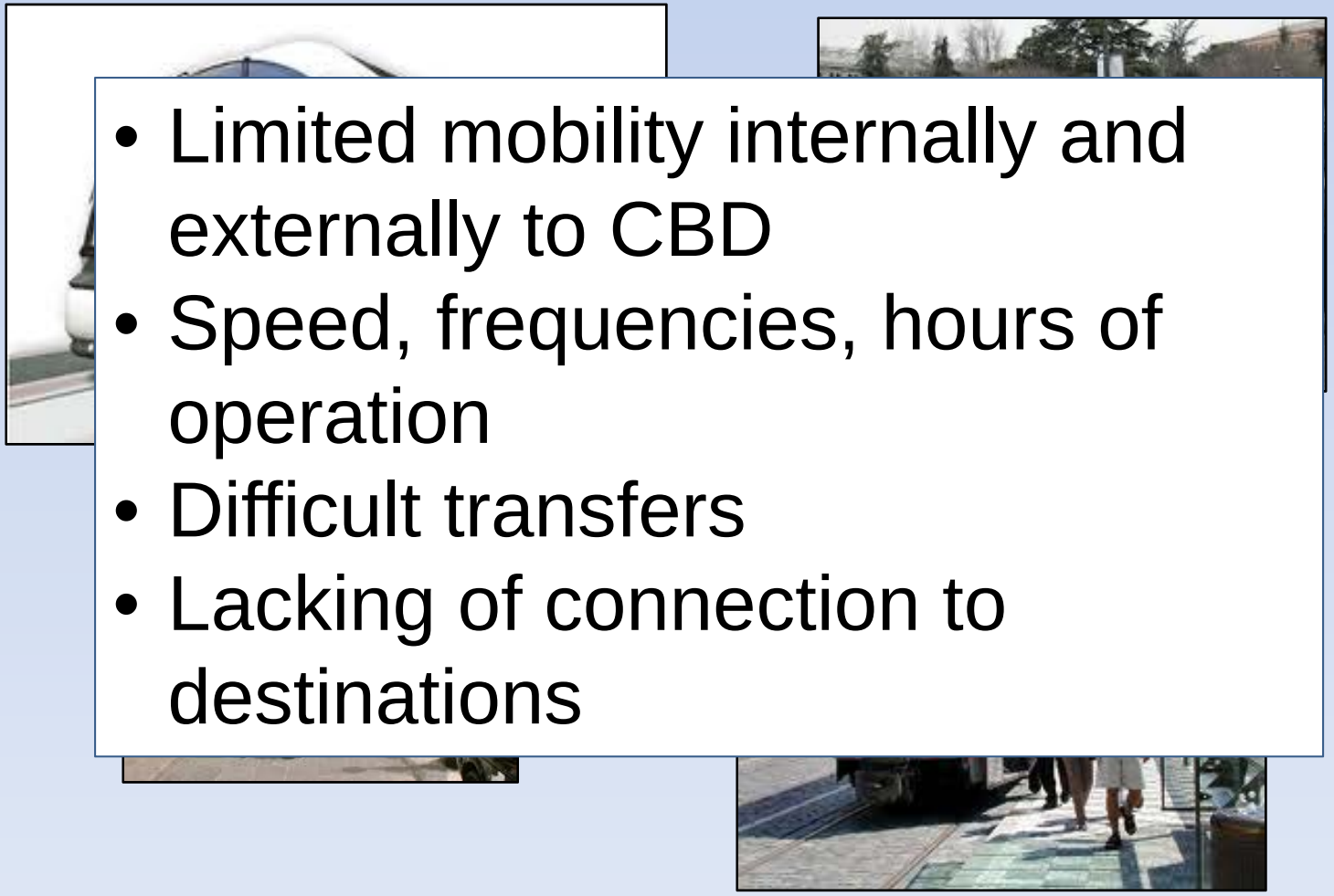
Discussion #2

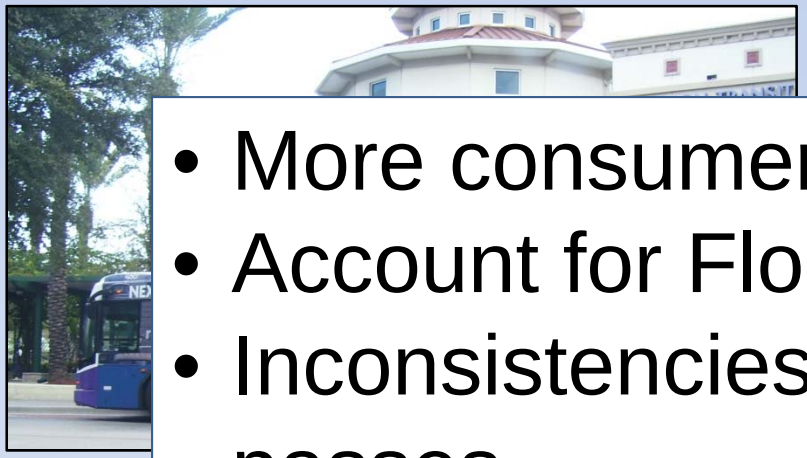
- What is the transit network in Downtown Tampa lacking?

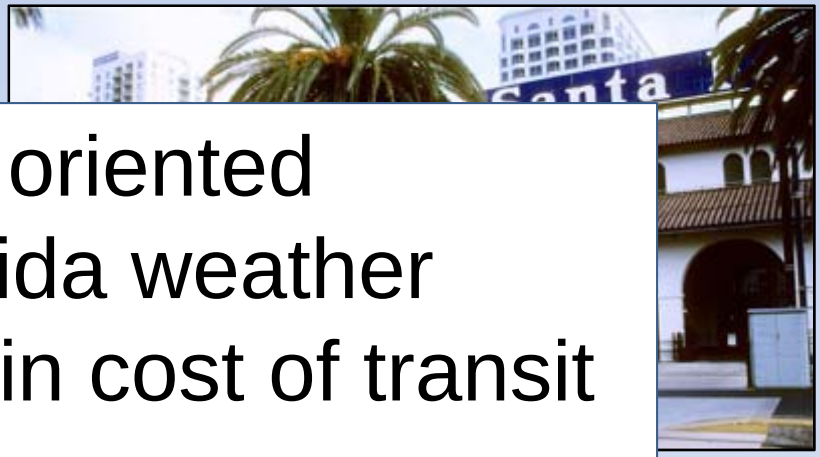


- Limited mobility internally and externally to CBD
- Speed, frequencies, hours of operation
- Difficult transfers
- Lacking of connection to destinations

Discussion #2

- What are the 2 things that could/would make it work better?





- More consumer oriented
- Account for Florida weather
- Inconsistencies in cost of transit passes
- Market as a “mobility” option for all trips/destinations

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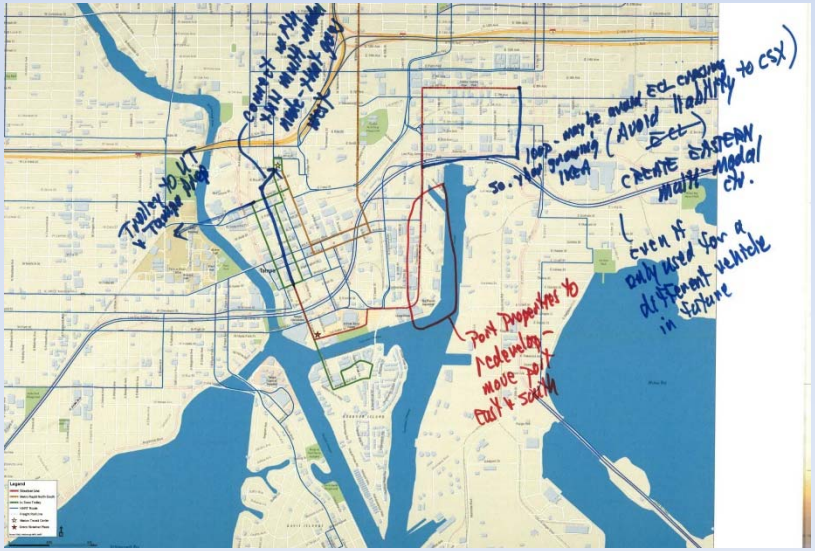
Mapping Exercise



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Mapping Exercise

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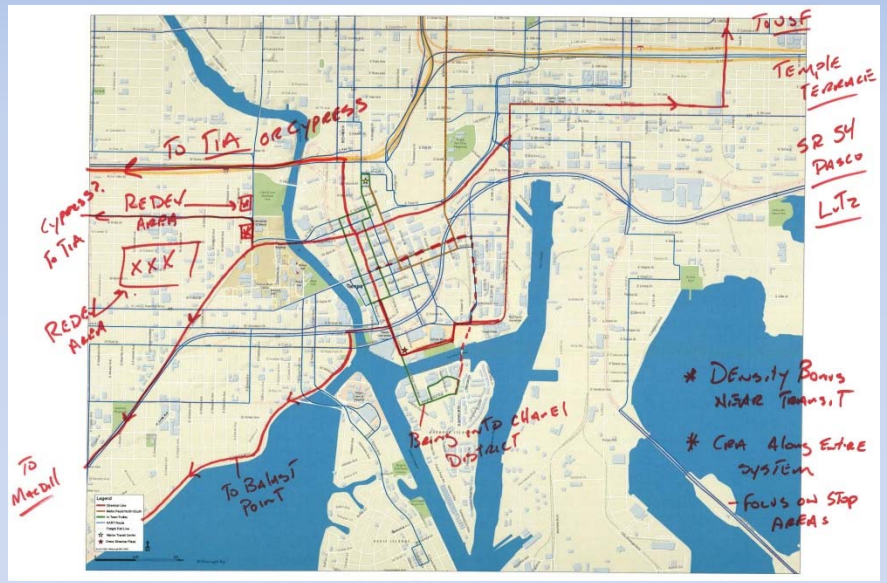
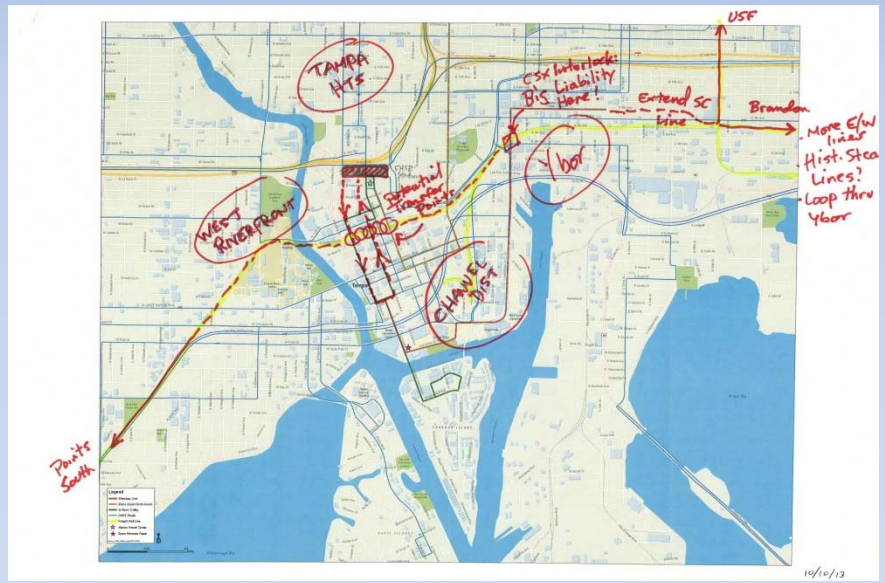
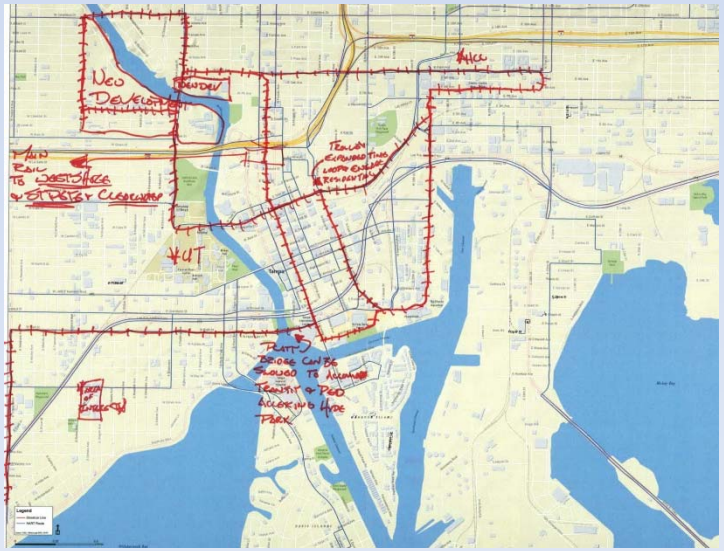
Mapping Exercise







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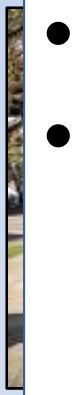
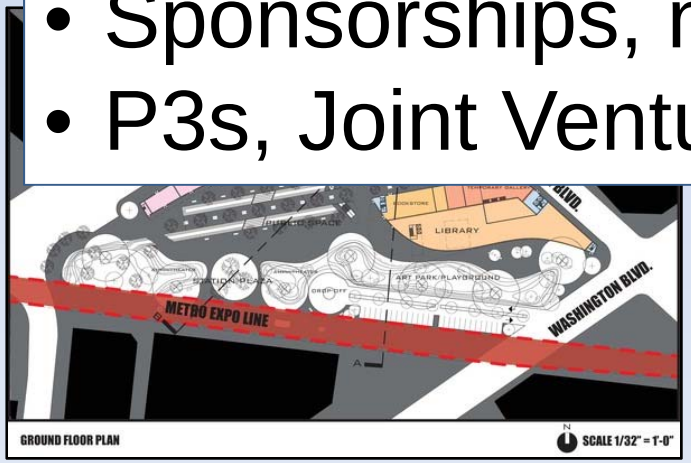
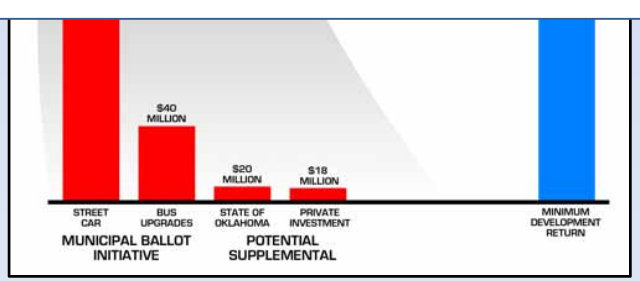
Discussion #3

- What role do you see development opportunities playing in possible revenue streams for the transit network?



- Incentivize mixed-use opportunities
- Changes to parking requirements that allow developers to use funds to support transit
- Sponsorships, naming rights
- P3s, Joint Ventures





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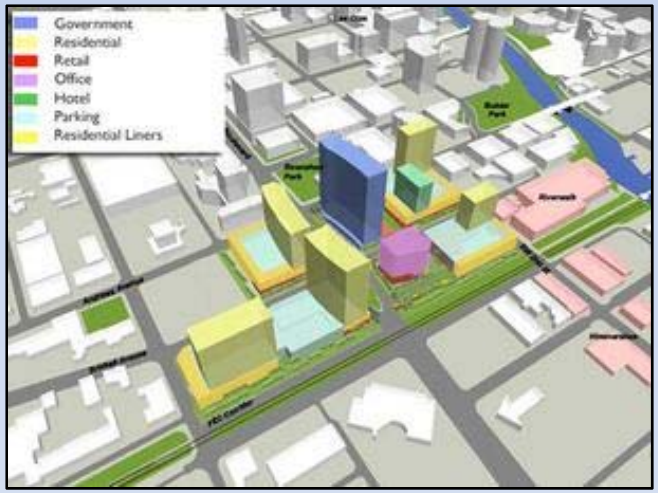
Discussion #3

- In your opinion(s) does transit network enhance the development or does the development enhance the transit network?



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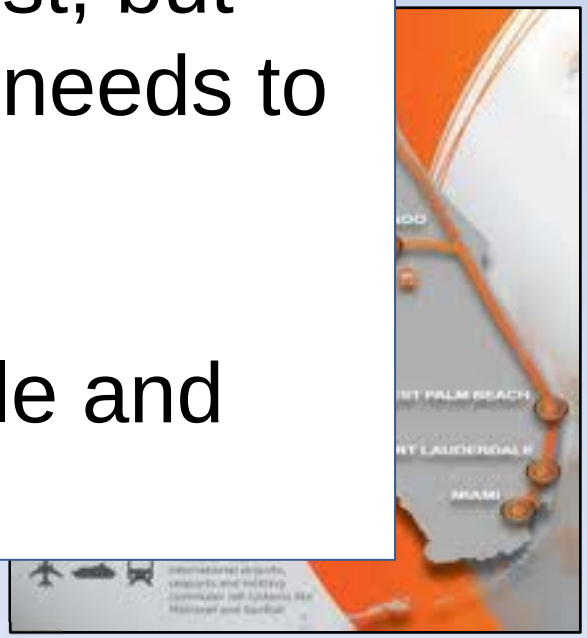
Discussion #3

- Do you think development opportunities should be used to assist in attracting other inter-city systems currently under construction (

- Transit will act as a catalyst, but
  - Pedestrian experience needs to be improved
  - Simplify the system
  - Needs to be comfortable and safe



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Status of the Needs Assessment

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Purpose

- Evaluation of Transit Operations
  - Time of Day
  - Route Structure
- Identification of Under-Served Markets
- Basis for Opportunities Assessment

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Methodology

- Element 1
  - Assessment of Transit Service in the Central City Area of Tampa
    - Movement of Residents, Employees, and Visitors
- Element 2
  - Assessment of Regional Connections
    - Access Between the Central City Area of Tampa and Areas More Distant (County and Regional)

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Element 1
Transit Operations Assessment

- Assessment of Existing Transit Coverage
  - Portion of the Central City Area within a “Reasonable” Transit Trip
- Assessment of Service to Existing Population and Activity Centers Within the Central City
  - Residential, Retail, Employment, Entertainment

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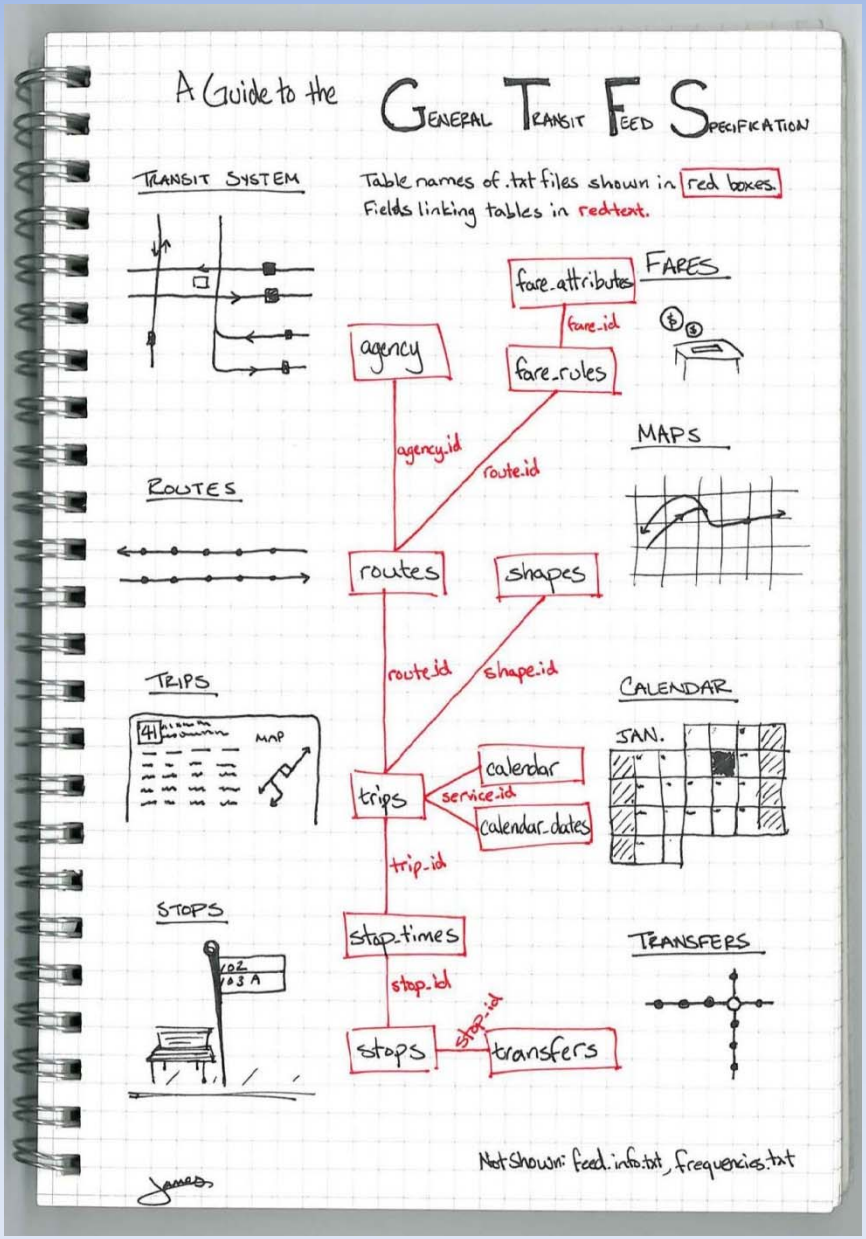

- Need to Model the Transit Network
- GTFS Format Developed By Google in 2007 to Support Web-Based Transit Mapping Applications
  - Includes Current Routes, Stops, Calendars, Schedules, Transfers, Trips
- ESRI is Currently Developing an Extension of their Network Analysis Tool that Uses GTFS Data
  - Create A Map of the Area Accessible by Transit on Any Given Day at Any Given Time

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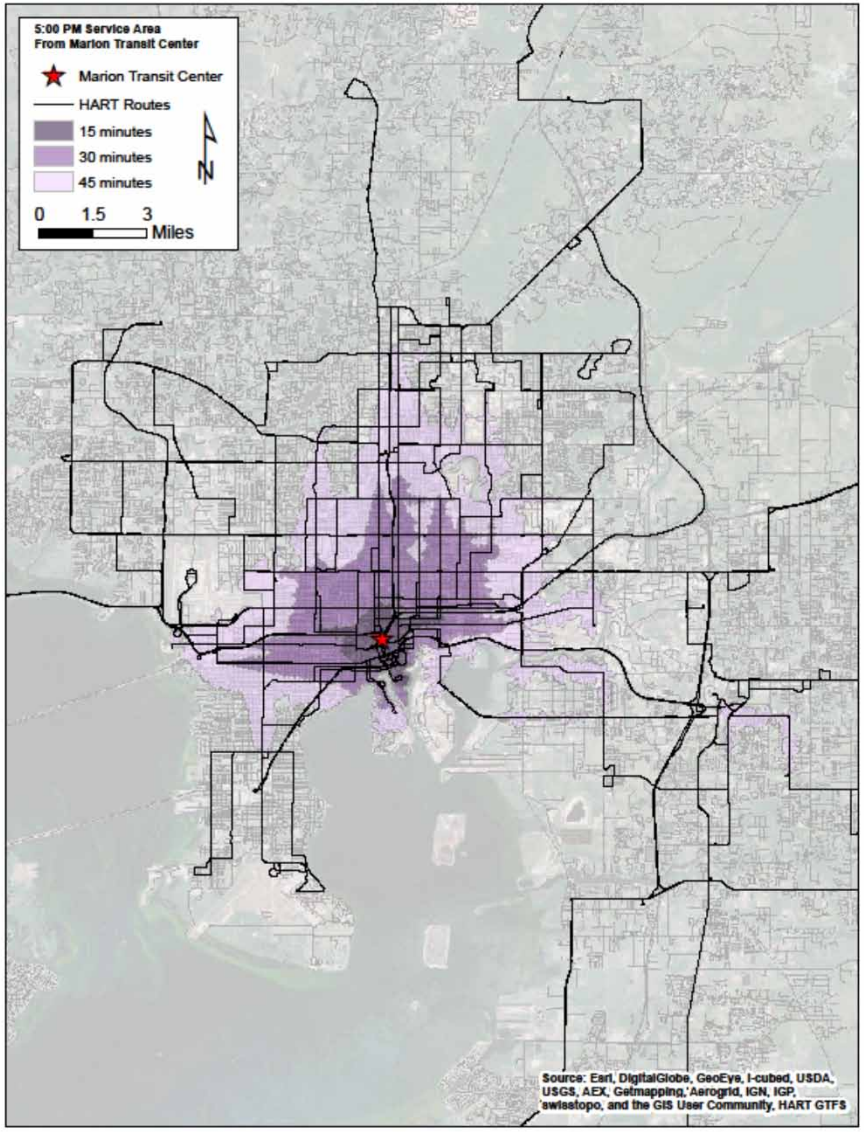

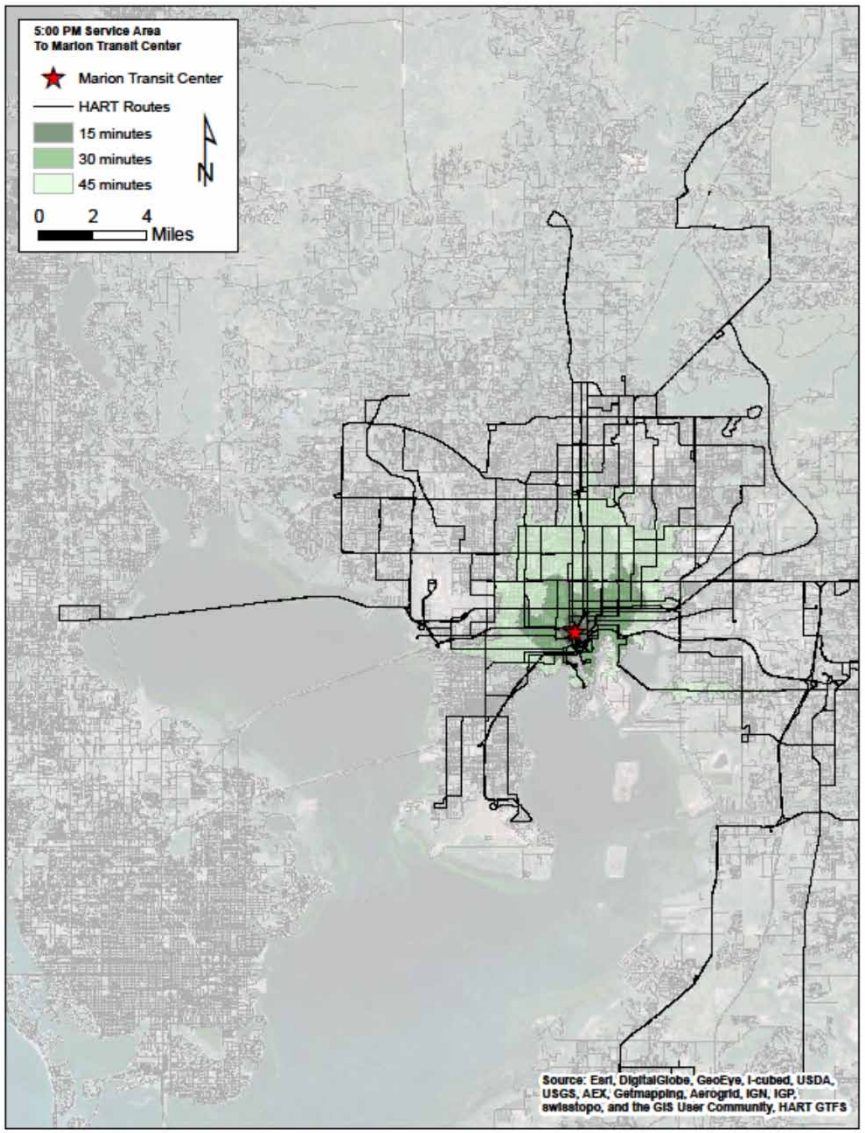

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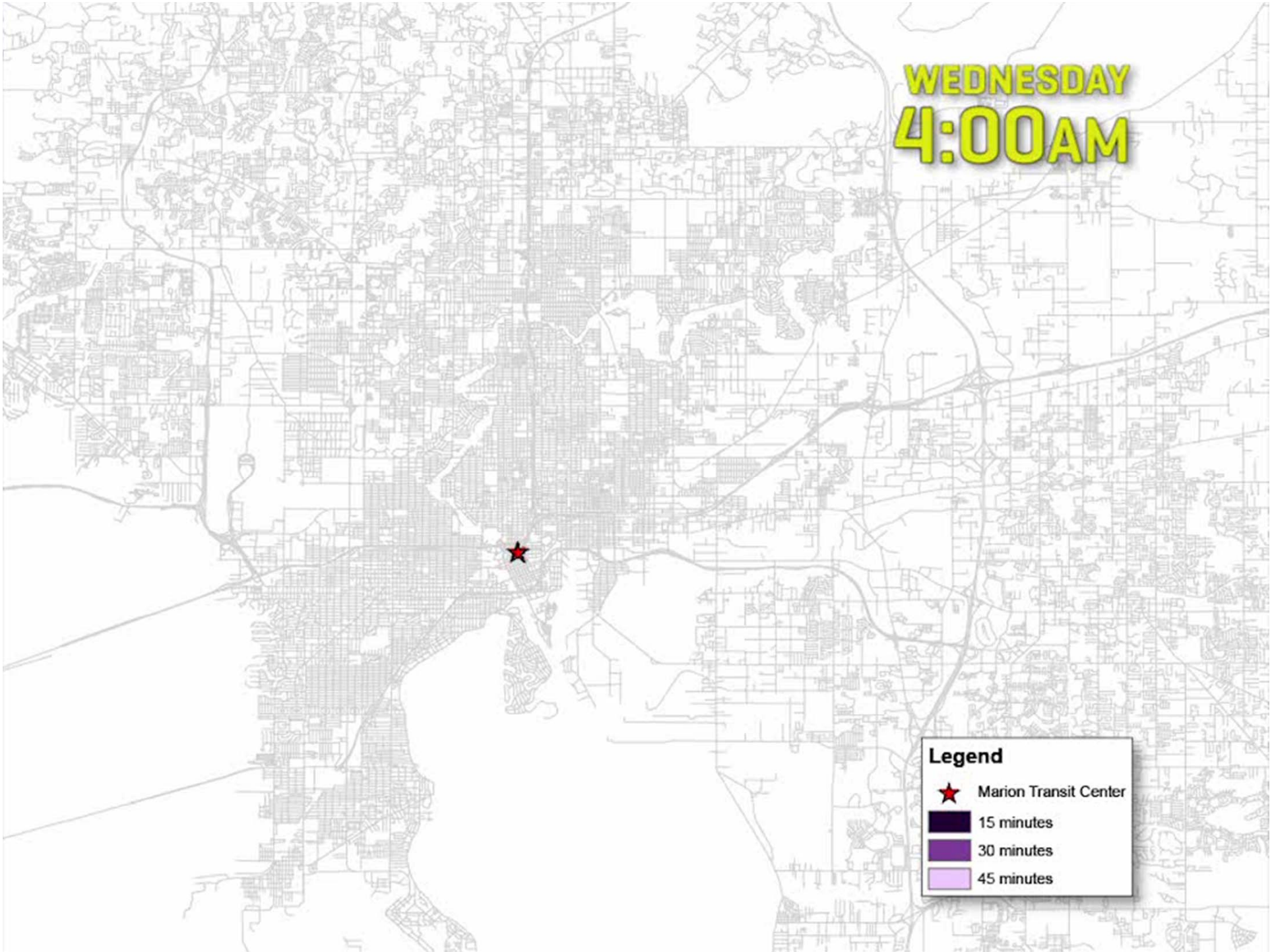
Travel-shed originating FROM the MTC

Wednesday

4:00 am through 12:15 am

- Every 30 minutes
- Walking plus transit

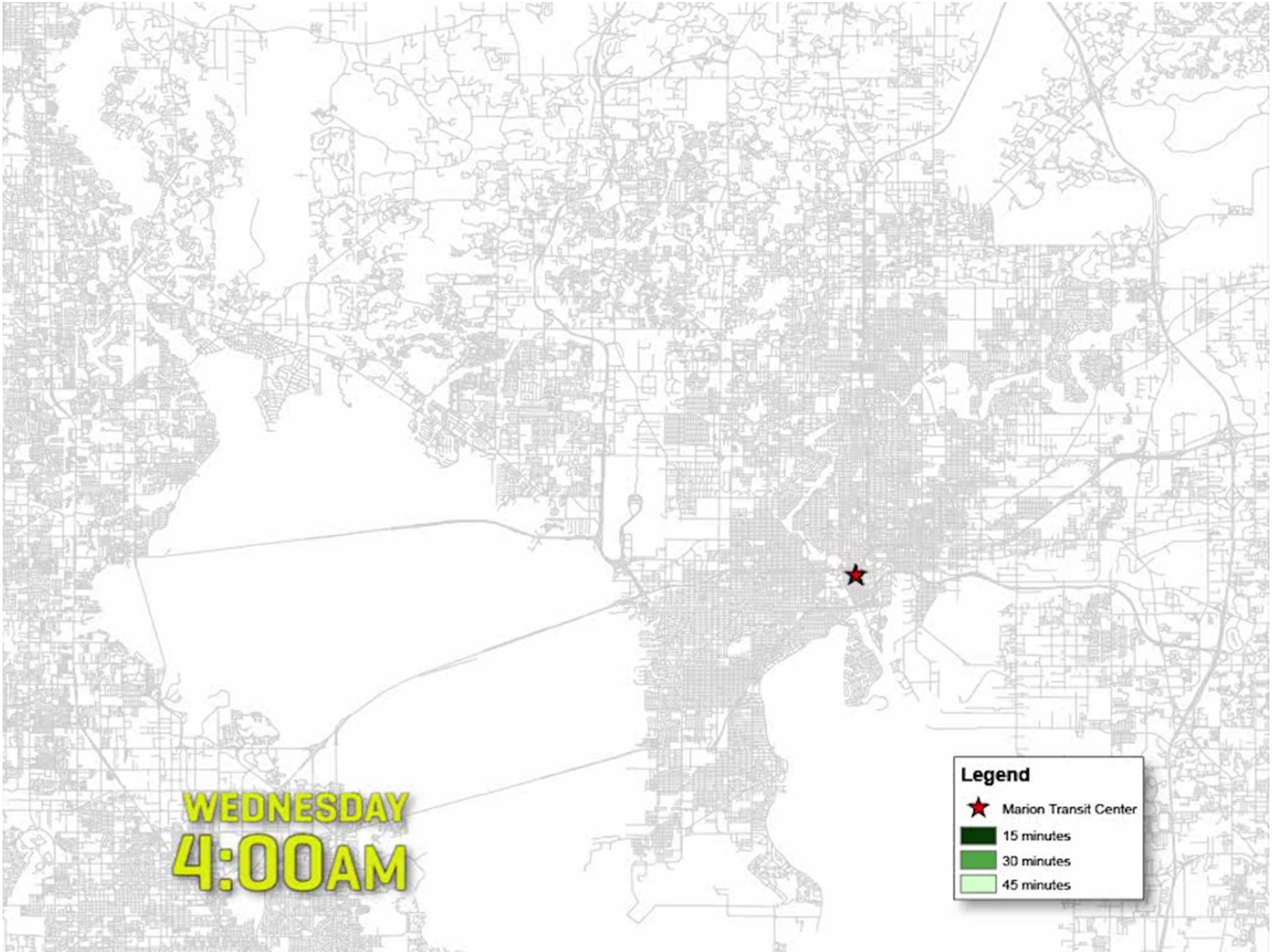

WEDNESDAY
4:00AM
Legend
Marion Transit Center
15 minutes
30 minutes
45 minutes

Travel-shed traveling TO the MTC

Wednesday

4:00 am through 12:15 am

- Every 30 minutes
- Walking plus transit


WEDNESDAY
4:00AM
Legend
Marion Transit Center
15 minutes
30 minutes
45 minutes

Identification of Existing Population and Activity Centers

- Location and Intensity of Use
- Distinct Use in Downtown Serviced by Transit
  - Residential
    - Daily Needs
  - Workers
    - Access In and Out
    - Mid-Day Attractors
  - Tourists
    - Special Events
    - Major Attractors

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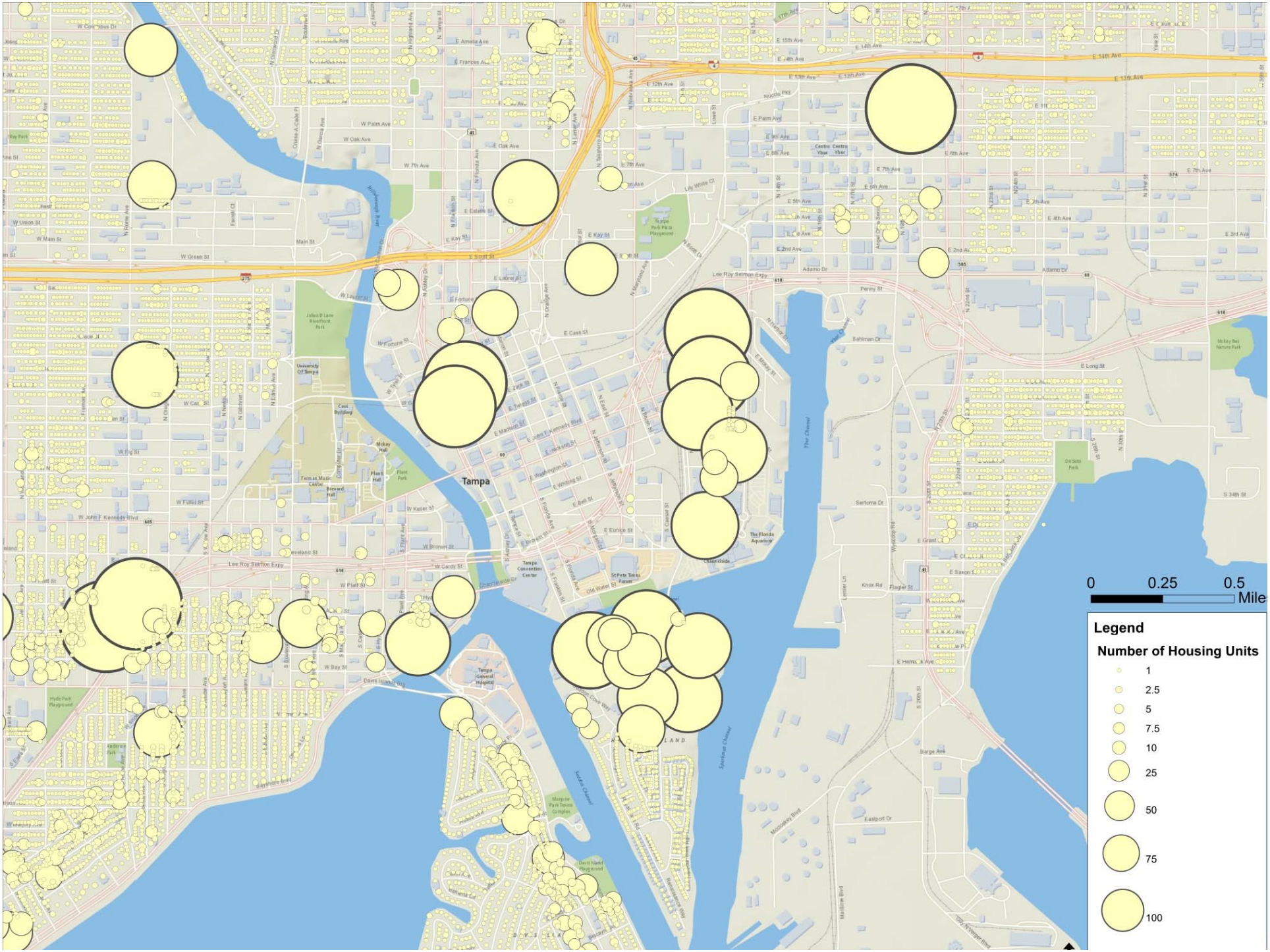
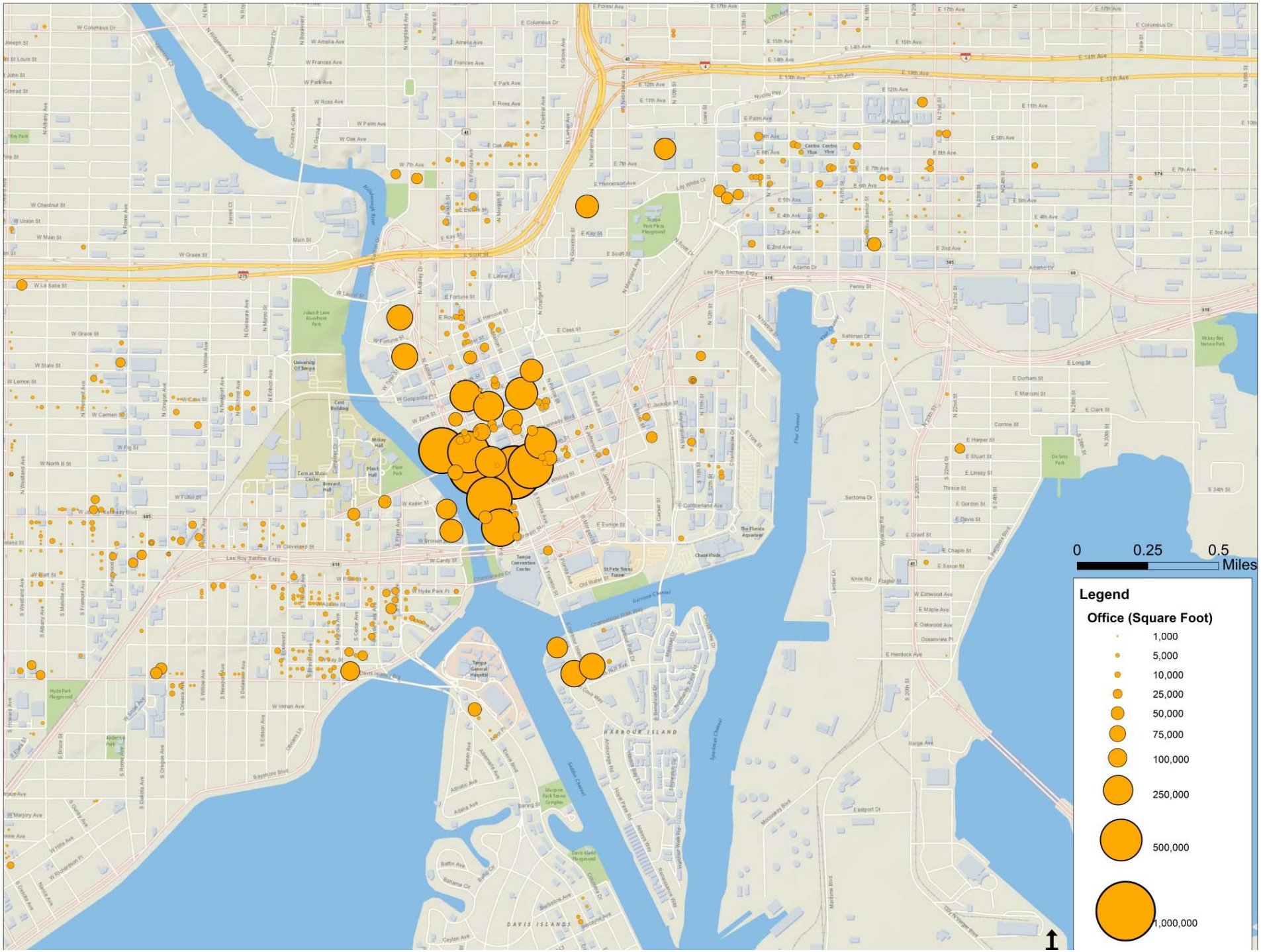
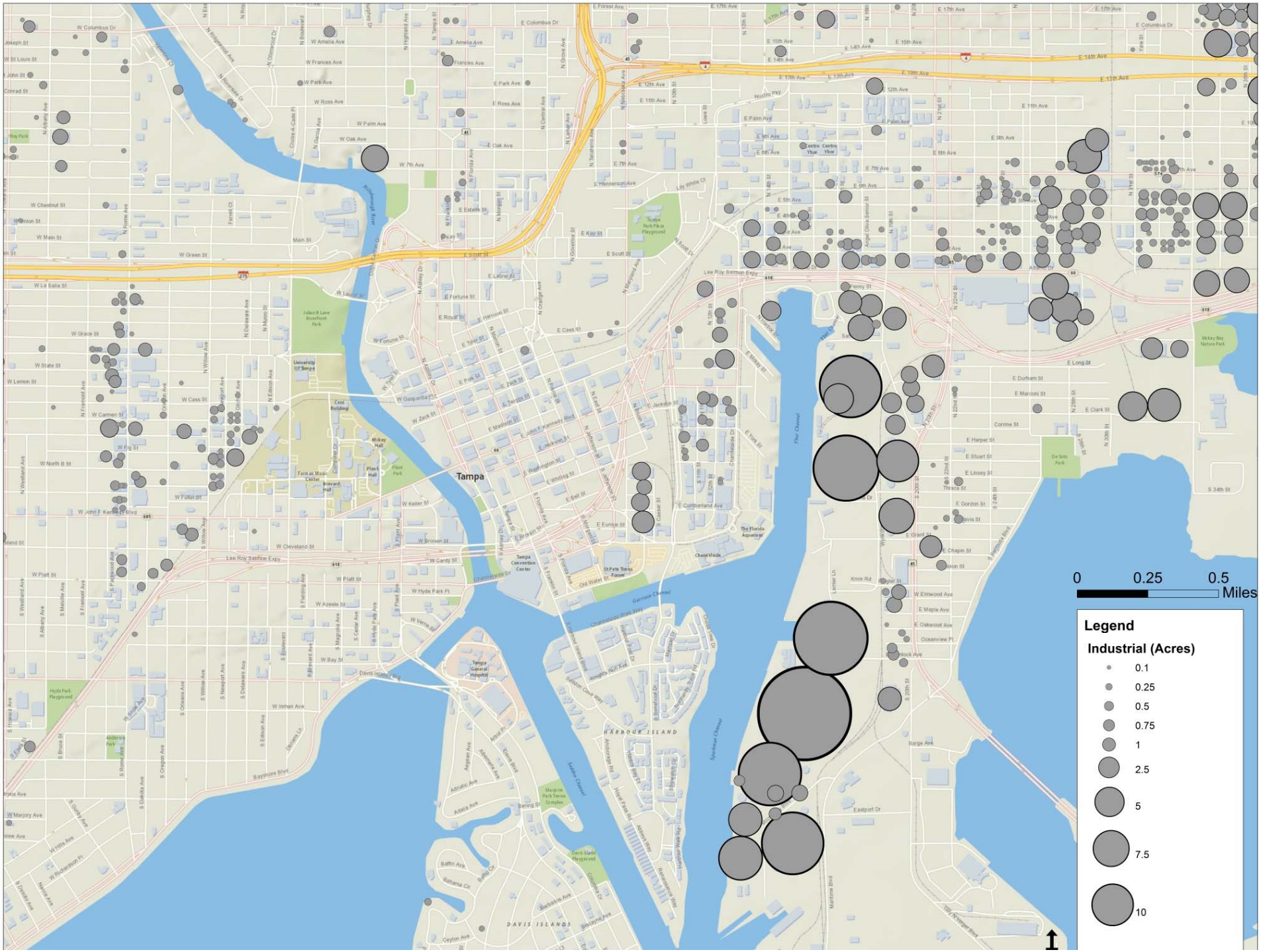
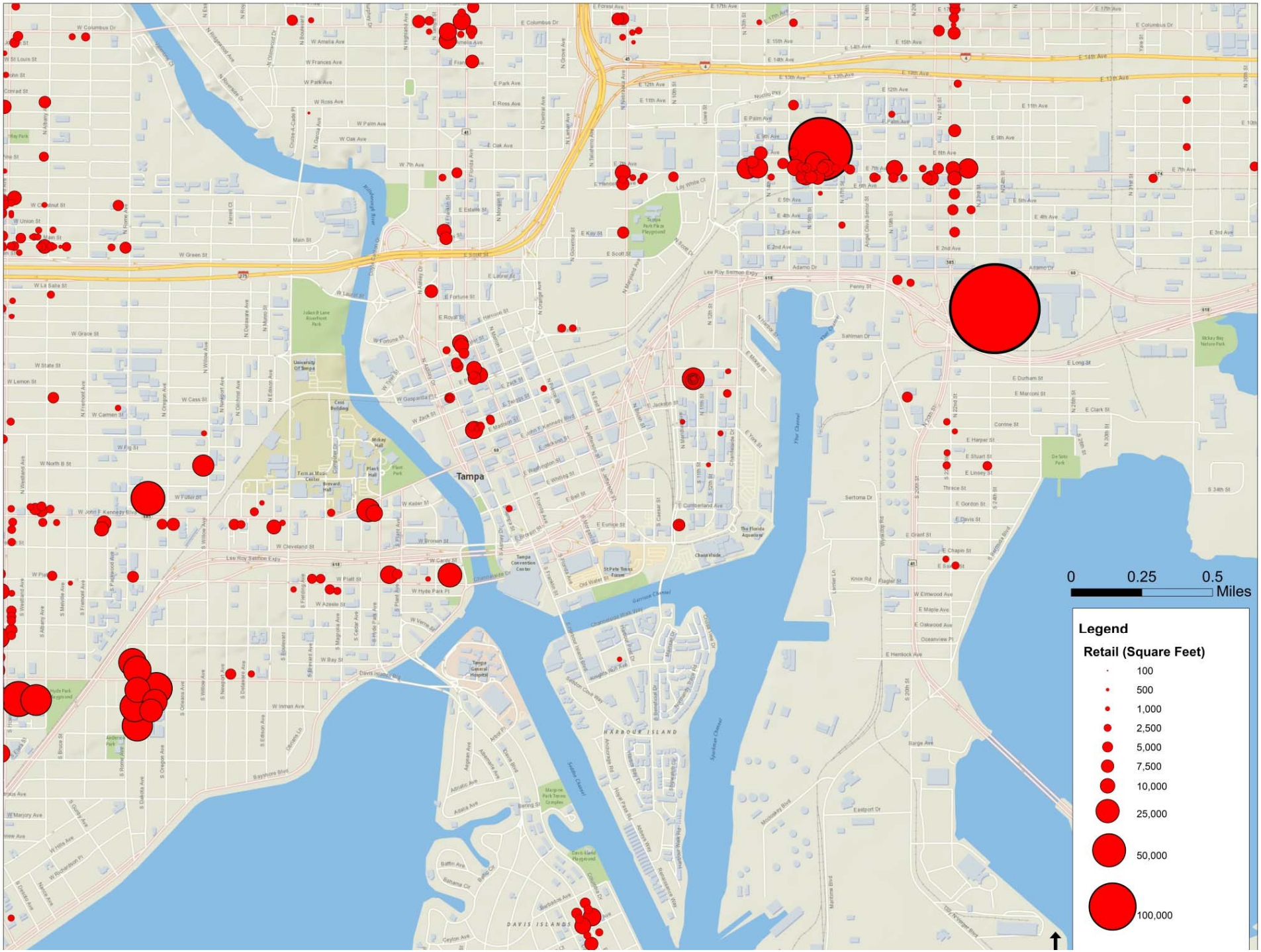
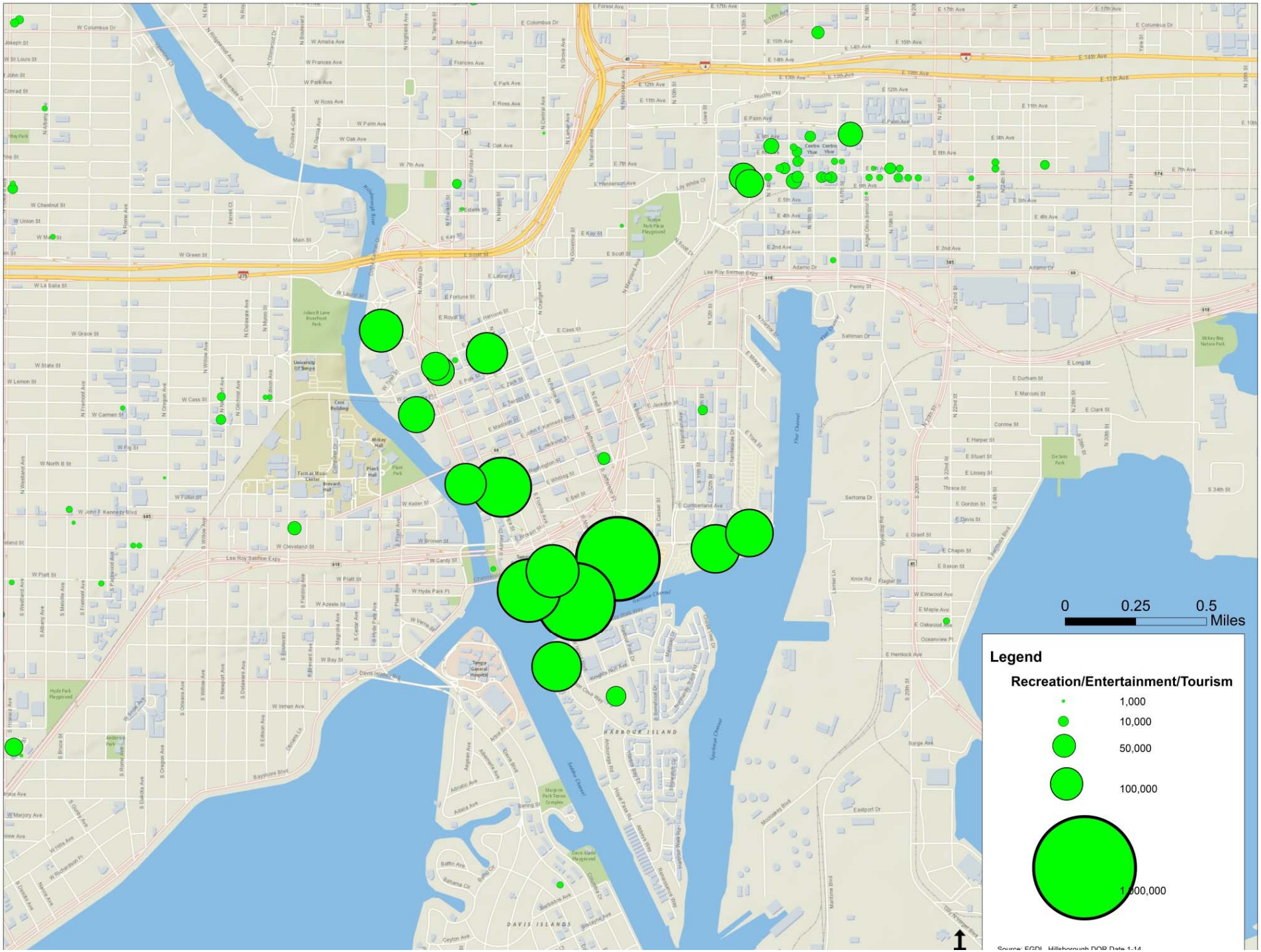
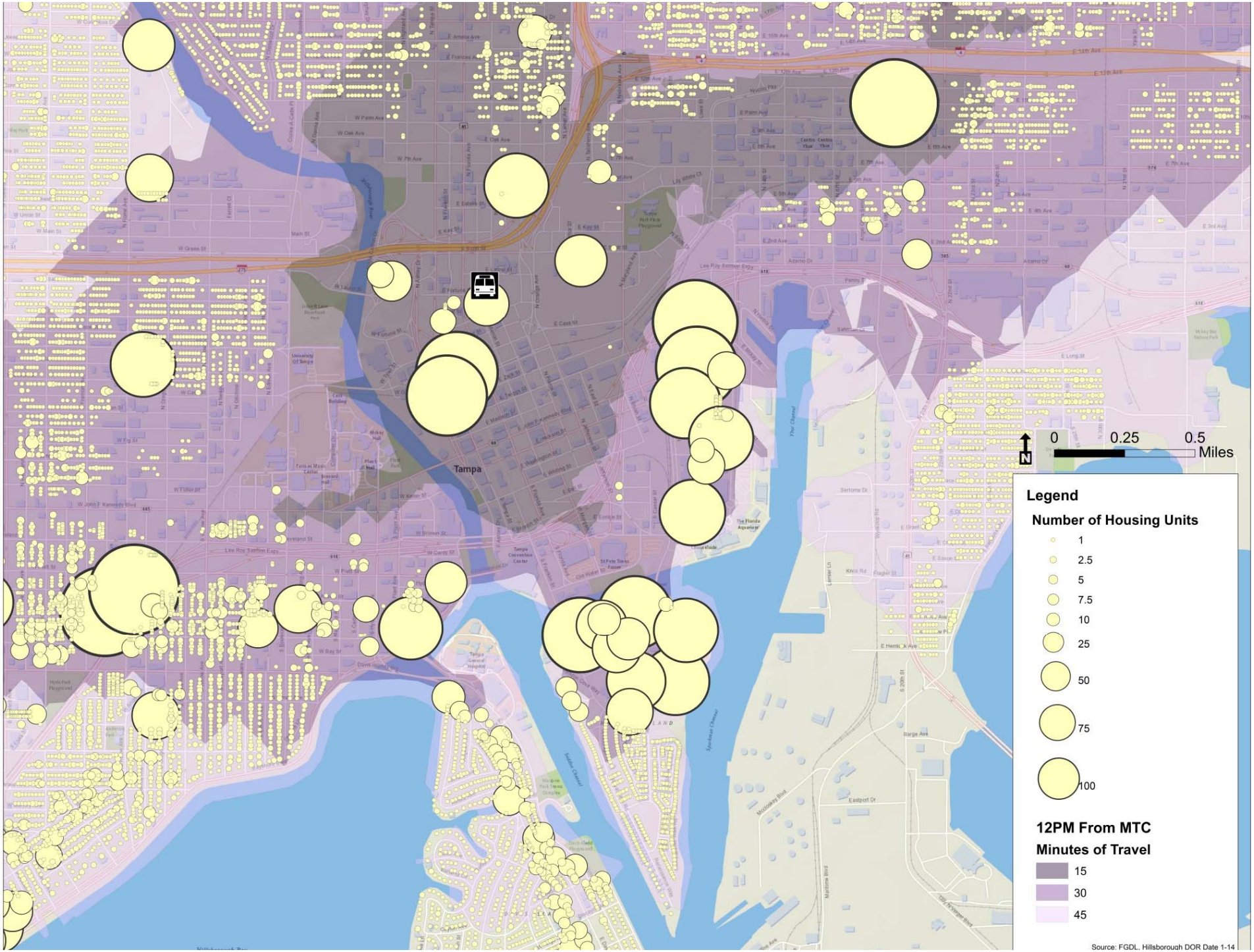

Tampa
0
0.25
0.5
Legend
Number of Housing Units
1
2.5
5
7.5
10
25
50
75
100

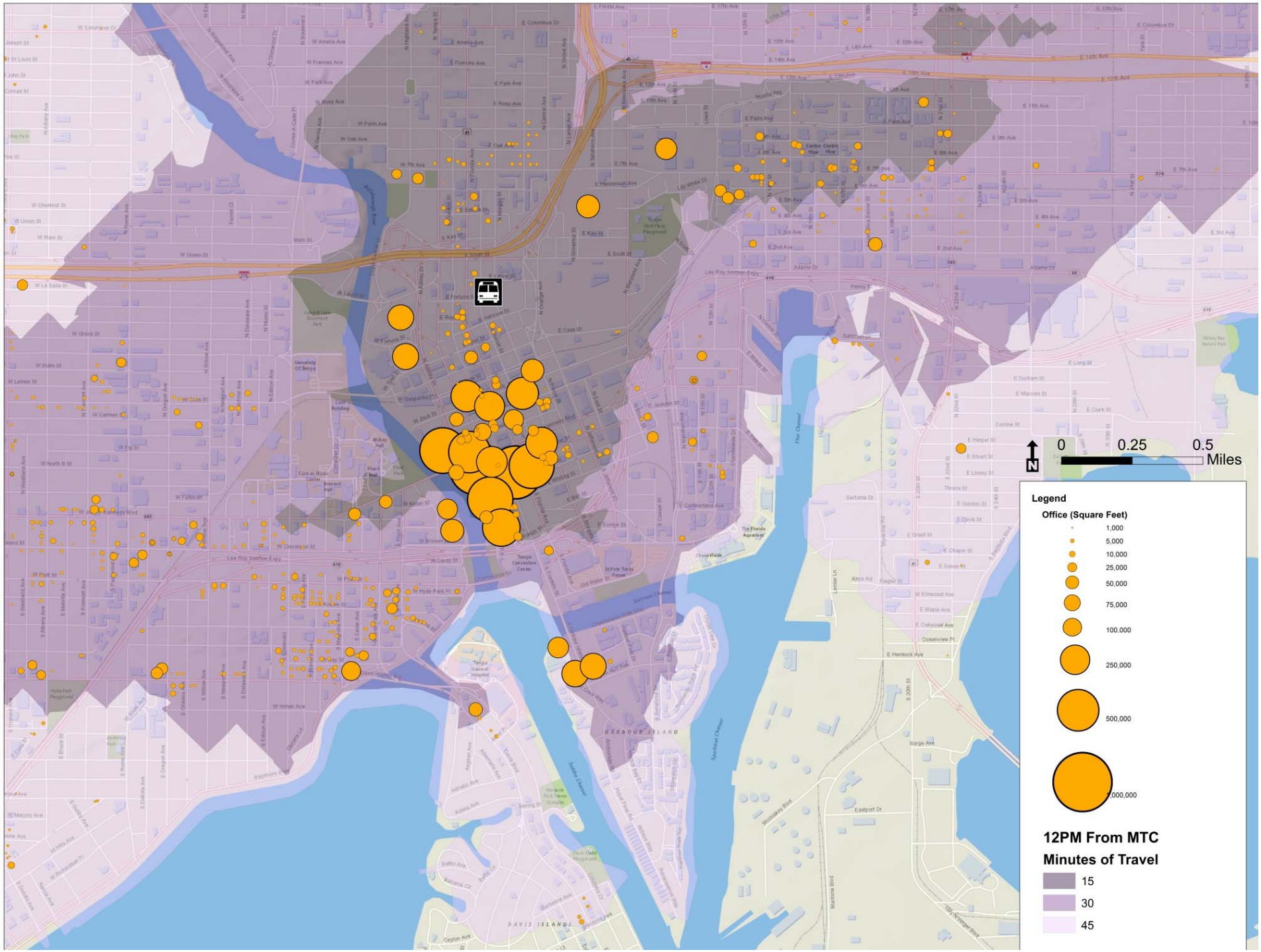

0
0.25
0.5
Miles
Legend
Office (Square Foot)
1,000
5,000
10,000
25,000
50,000
75,000
100,000
250,000
500,000
1,000,000


0
0.25
0.5
Miles
Legend
Industrial (Acres)
0.1
0.25
0.5
0.75
1
2.5
5
7.5
10
Tampa
HARBOUR ISLAND
DAVIS ISLANDS


Tampa
DAVIS ISLANDS
HARBOUR ISLAND
0
0.25
0.5
Miles
Legend
Retail (Square Feet)
100
500
1,000
2,500
5,000
7,500
10,000
25,000
50,000
100,000


0
0.25
0.5
Miles
Legend
Recreation/Entertainment/Tourism
1,000
10,000
50,000
100,000
1,000,000
HARBOUR ISLAND
DAVIS ISLANDS


Tampa
0
0.25
0.5
Miles
N
Legend
Number of Housing Units
1
2.5
5
7.5
10
25
50
75
100
12PM From MTC
Minutes of Travel
15
30
45
Source: FGDL, Hillsborough DOR Date 1-14


0
0.25
0.5
Miles
Legend
Office (Square Feet)
1,000
5,000
10,000
25,000
50,000
75,000
100,000
250,000
500,000
1,000,000
12PM From MTC
Minutes of Travel
15
30
45

Element 2

- Assessment of Connections Beyond Central City Area
- Expand the Assessment of Existing Population and Activity Centers to County Level
  - Draw from Previous Work
    - Consider Travel Demand
    - Consider Congestion Analysis
    - Consider Travel Times

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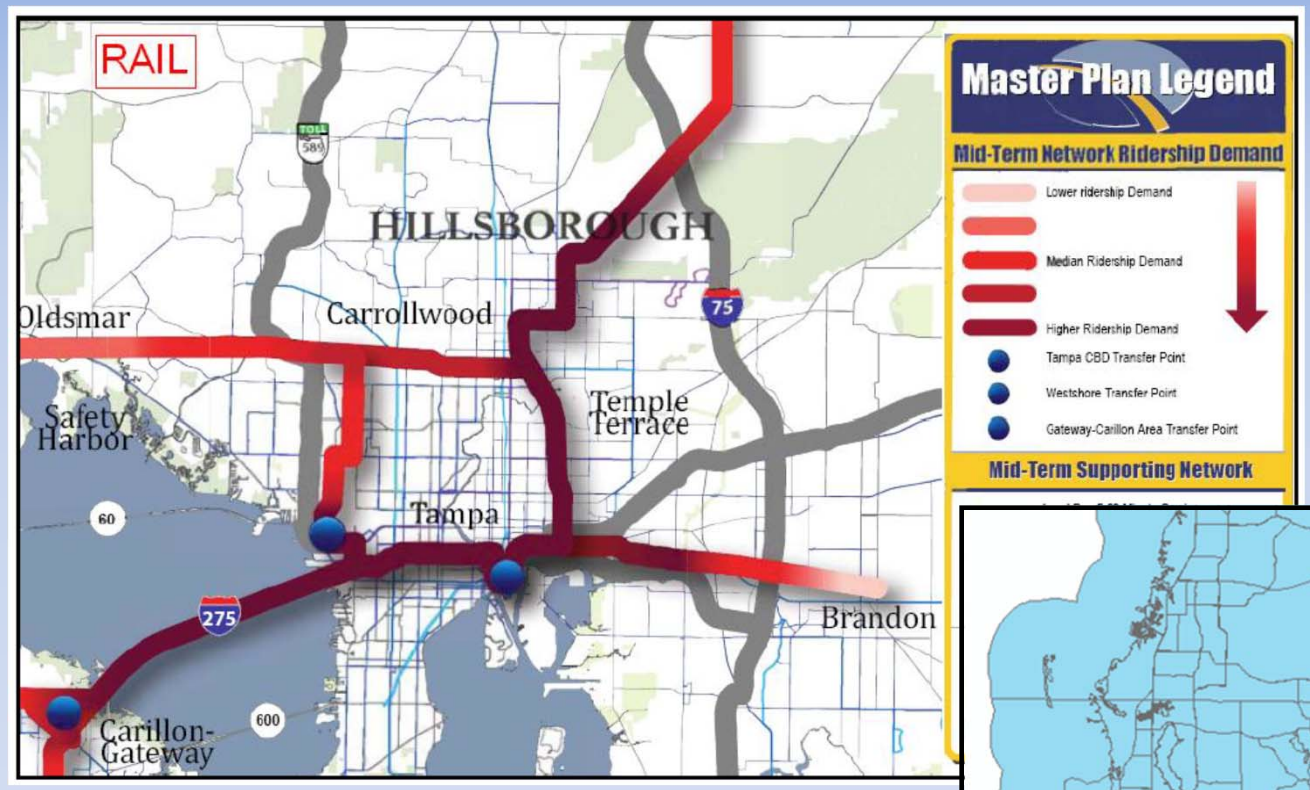
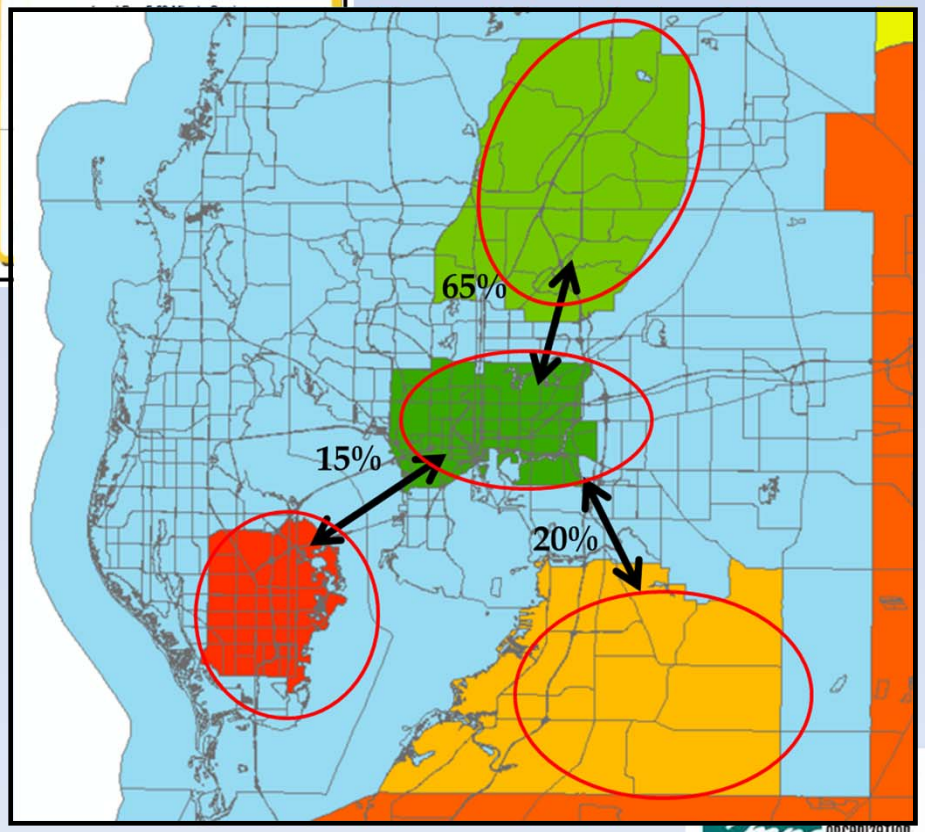
Elements of Previous Studies





Roadway	2006 V/C	2035 V/C	% Increase
7th Avenue @ Nebraska Avenue	1.43	1.6	11.9%
Interstate 4 @ Interstate 275	2.34	2.81	20.1%
Nebraska Avenue @ Martin Luther King, Jr. Boulevard	0.4	1.39	247.5%
Hillsborough Avenue @ Interstate 275	1.46	2.31	58.2%
Sligh Ave @ Interstate 275	1.07	1.59	48.6%
Busch Boulevard @ Interstate 275	1.41	1.79	27.0%
Nebraska Avenue @ Sligh Avenue	0.7	1.66	137.1%
Fowler Avenue @ Interstate 275	2.11	2.46	16.6%
Bruce B. Downs Boulevard @ Fletcher Avenue	1.33	2.03	52.6%
Fletcher Avenue @ Bruce B. Downs Boulevard	1.76	2.31	31.3%
Interstate 4 @ 50th Street	0.87	1.49	71.3%
Average V/C Ratio	**1.29**	**1.85**	**68.5%**

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Regional Opportunities

Goals and Objectives

- ***GOAL*** – Create a regional transit network maximizing the TECO Line Streetcar System.
  - ***OBJECTIVE*** – Identify projects for the 2040 LRTP
  - ***OBJECTIVE*** – Identify projects for the 2014 HART TDP

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Goals and Objectives

- ***GOAL –*** Maximize utilization of existing transit assets and expand service markets.
  - ***OBJECTIVE –*** Identify opportunities along existing freight rail corridors.
  - ***OBJECTIVE –*** Identify opportunities for effective integration of technologies (rail and bus).
  - ***OBJECTIVE –*** Identify rail technologies that maximize flexibility existing rail lines.

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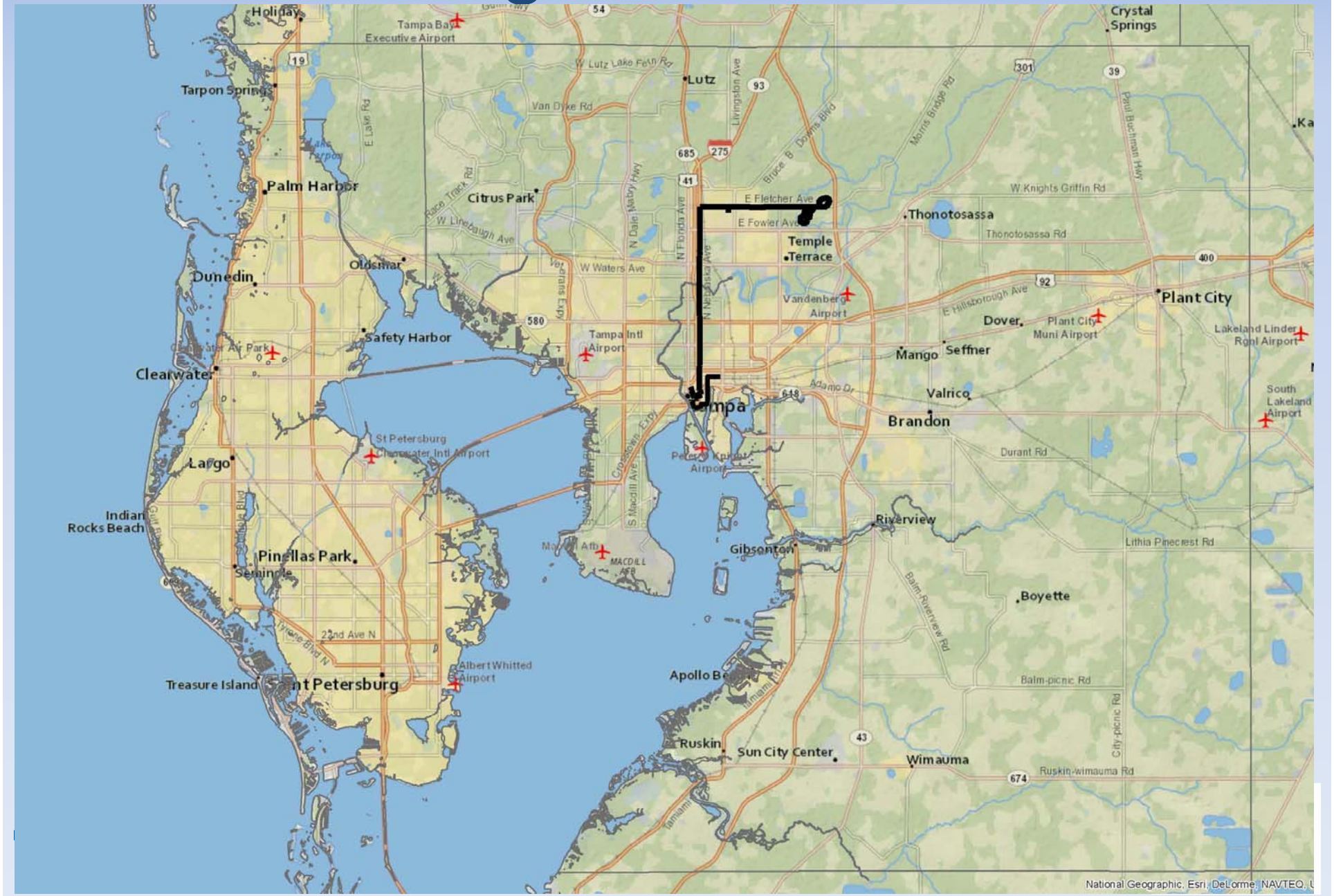
Regional Focus



Regional High-Capacity Transit Plans

- Existing
  - TECO Line Streetcar System
  - HART Metro Rapid
- Proposed Plans
  - Hillsborough County MPO (2035, 2040 strategy B&C)
  - HART Metro Rapid East-West
  - FDOT Express Lanes Master Plan
  - TIA People Mover
  - SunRail/All Aboard Florida
  - TBARTA
- Stakeholder Meeting #1 input

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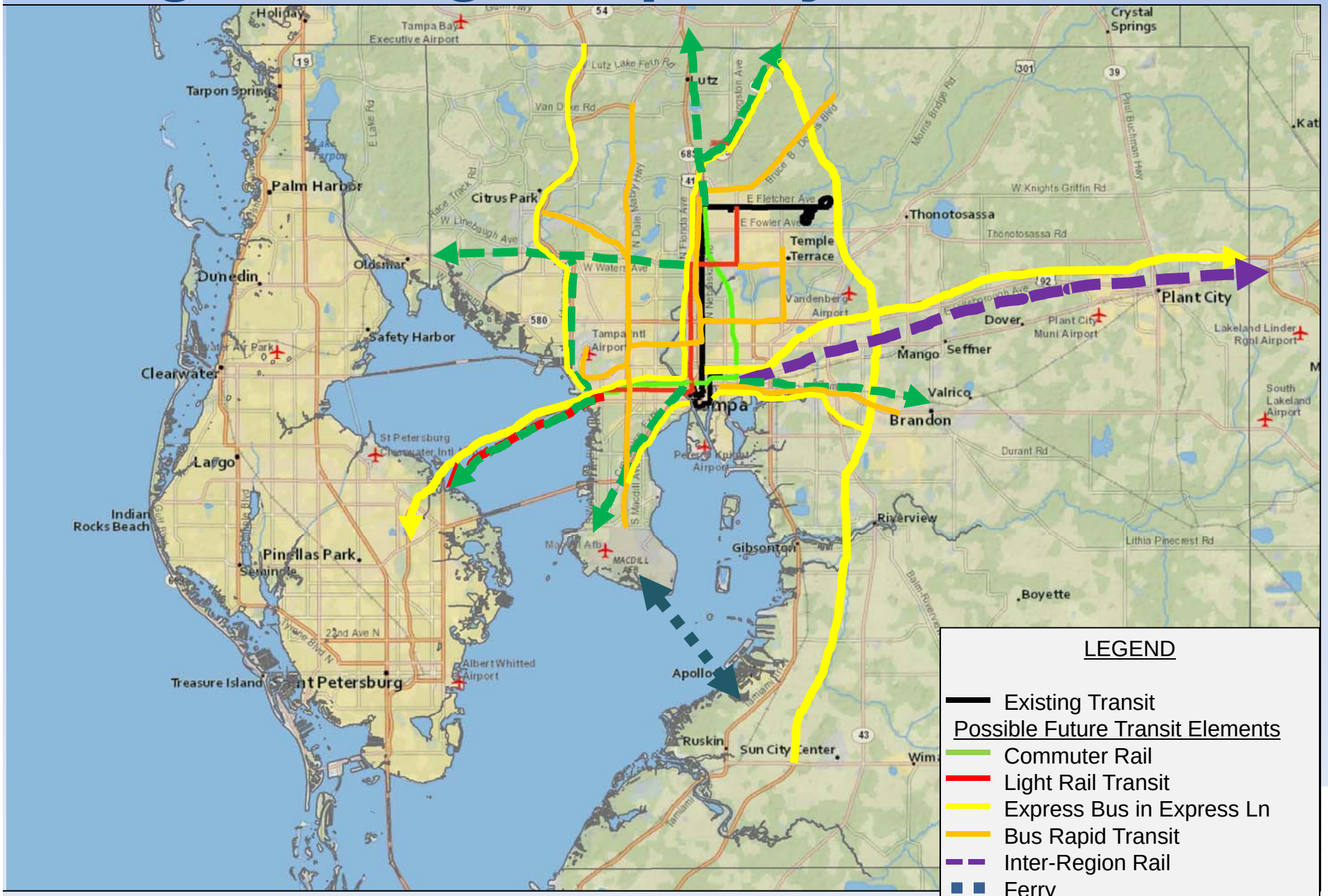
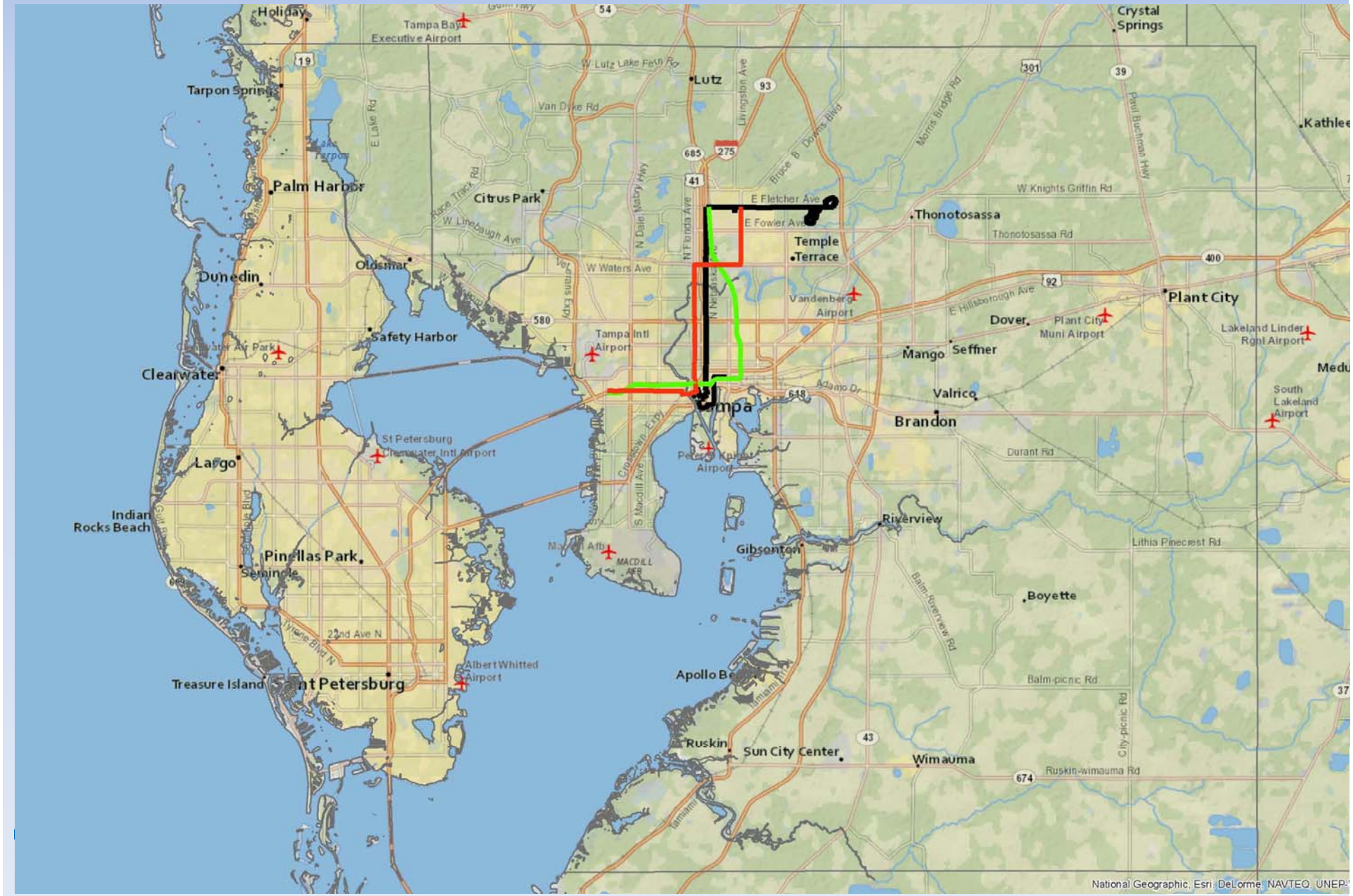
Regional High-Capacity Transit Plans



Potential Rail Investment



General Mode & Vehicle Considerations

- Ridership:
  - Service frequency
  - Vehicle capacity
  - Train size
- Performance:
  - Acceleration and braking
  - Maximum speed
- Compliance:
  - FRA
  - ADA
  - Buy America
  - EPA
- Other Benefits & Constraints
- Cost

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High-Capacity Transit Modes

WHAT ARE OUR HIGH-CAPACITY OPTIONS FOR TRANSIT?	WHAT IS IT, WHERE DOES IT GO, AND WHEN DO I USE IT?	HOW MANY PEOPLE CAN IT CARRY PER HOUR DURING RUSH HOUR?*	HOW FAST DOES IT GO ON AVERAGE?	HOW OFTEN DOES IT STOP?	WHEN CAN I GET ON?
Commuter Rail	Commuter Rail trains operate on railroad tracks that carry riders to and from work in a region. *Typically used to travel from suburbs to central cities.*	400 - 1,400 passengers	30-50mph	1 to 5 miles apart	RUSH HOUR Every 30 min during rush hour and every hour all other times
Light Rail	Light Rail is an electrified service that uses a steel-tracked fixed guideway and operates primarily along an exclusive right of way. *Typically used to travel in urban locations*	700 - 2,000 passengers	10-30mph	2 to 4 blocks up to ½ mile apart	RUSH HOUR Every 10 min during rush hour and every 15 min all other times
Bus Rapid Transit	Bus Rapid Transit (BRT) operates in mixed traffic or its own lane. It usually consists of longer buses with more technology in them to speed up your trip. For example, many BRT buses communicate with traffic lights to keep lights green longer. *Typically used to travel within a city and between close-in suburbs and the city.*	700 - 1,300 passengers	15-30mph	½ to 1 mile apart	RUSH HOUR Every 10 min during rush hour and every 15 min all other times
Express Bus	Express buses carry riders to and from work in a region. They make fewer intermediate stops and operate in mixed traffic on highways and sometimes in HOV/ managed lanes. *Typically used to travel within a city and between close-in suburbs and the city.*	400 - 900 passengers	Varies depending on traffic	Multiple stops within close proximity near termini with 5-25 miles of non-stop service in between	Every 10 min during rush hour and every 30 min all other times

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High-Capacity Transit Vehicles

Commuter Rail:

Diesel Multiple Unit (DMU)

Commuter Rail:

Locomotive Hauled Coach (LHC)

Light Rail Transit

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Commuter Rail: LHC

- Ridership
  - 30 min peak & 45/60 min off peak
  - Longer station spacing
  - Commuter service, emphasis on park-and-rides
  - Larger, heavier than LRT & DMU
  - High passenger capacity for price
- Performance
  - Performance proportional to train length
  - Dedicated ROW so can go faster
  - Higher max speed of over 110 mph if conducive
  - Braking is a challenge for short trains
- Compliance
  - FRA Compliant: share ROW or track with freight, crash worthy
  - ADA: special level boarding platforms
  - Buy America: numerous suppliers
  - EPA: Diesel, upgraded, 2 mpg typical
- Other Benefits & Constraints
  - Most common, proven
  - Turning radius is larger, cumbersome
  - Purchase locomotive (new or used) and coaches (single or double)
  - Noise & Vibration is higher than LRT& DMU
  - Not much ROW required, but dedicated
  - Least cost, longer distances
  - Self powered
- Amtrak, Miami, California, Dallas-Fort Worth, New York, Albuquerque, Denver, Seattle

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Commuter Rail: DMU

- Ridership
  - 30 min peak & 45/60 min off peak
  - Longer station spacing
  - Commuter service, emphasis on park-and-rides
  - Larger, heavier than LRT, lower profile, smaller than LHC, single or double-decker
  - Economical for smaller passenger volume
- Performance
  - Distributed power – performance does not degrade with train length
  - Faster acceleration and deceleration
  - Dedicated ROW so can go faster
  - Lower max speed of over 90 mph if conducive
- Compliance
  - FRA Compliant: share ROW or track with freight, FRA waivers needed
  - ADA: some require level boarding platform
  - Buy America: limited suppliers
  - EPA: Diesel, meet standard, 1 mpg typical
- Other Benefits & Constraints
  - Least common
  - Turning radius is same as LHC, cumbersome
  - More human scale, TOD potential increases
  - Noise & Vibration is lower than LHC
  - Not much ROW required, but dedicated
  - Longer distances
  - Self powered
  - Greater fuel efficiency
- Austin, Denton, Portland, San Diego

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Light Rail Transit (LRT)

- Ridership
  - 10/20 min peak & 20/35 min off peak
  - Shorter station spacing
  - Commuter & urban service, park-and-rides & walk-up stations
  - Smallest profile
  - Highest cost generally
- Performance
  - Fast acceleration and deceleration
  - Dedicated or shared ROW
  - Lowest max speed of over 55 to 65 mph if conducive
- Dallas, Charlotte, Portland, Salt Lake
- Compliance
  - FRA Compliant: can NOT share track with freight, share ROW requires crash walls, NOT FRA compliant
  - ADA: newer models are low floor, compliant
  - Buy America: numerous suppliers, compliant
  - EPA: Electric, no standard needed, 0 mpg
- Other Benefits & Constraints
  - Common, proven technology
  - Turning radius is smaller, more nimble
  - Most human scale, TOD potential increases
  - Noise & Vibration is lower than LHC & DMU
  - ROW required, can be dedicated or shared
  - Shorter distances, typically
  - Electrified with overhead catenary and substations, greater fuel efficiency

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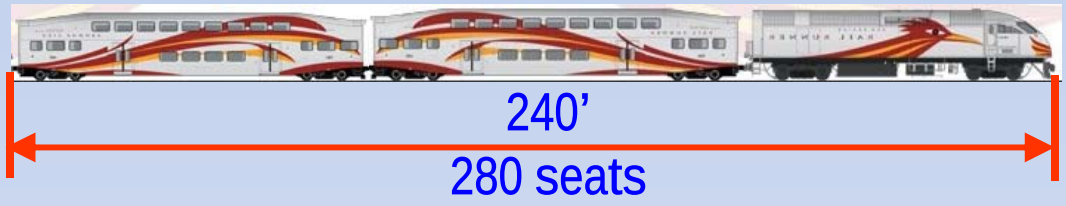
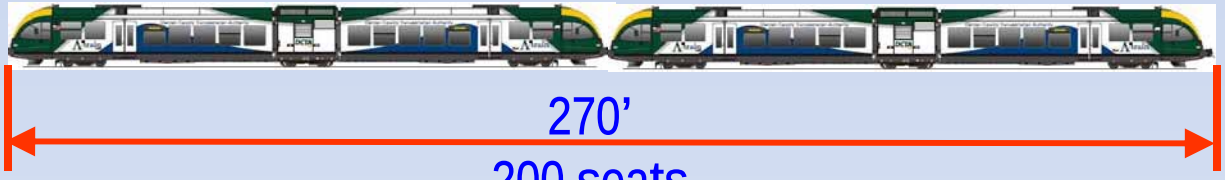
Comparison of Vehicles: Cost and Capacity



Bi-Level LHC

~ $6 to $7.5 million (new coaches, used loco)



DMU Not Compliant

~ $6 to $10 million

DMU Compliant

~ $15 to $20 million

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Types of Rail Stations

- Walk-up Station
  - No parking available
  - Densely populated areas or TODs
  - At major activity center
  - Constrained ROWs
  - Closer to downtown areas
  - Good walkability
  - Similar to Tampa Streetcar

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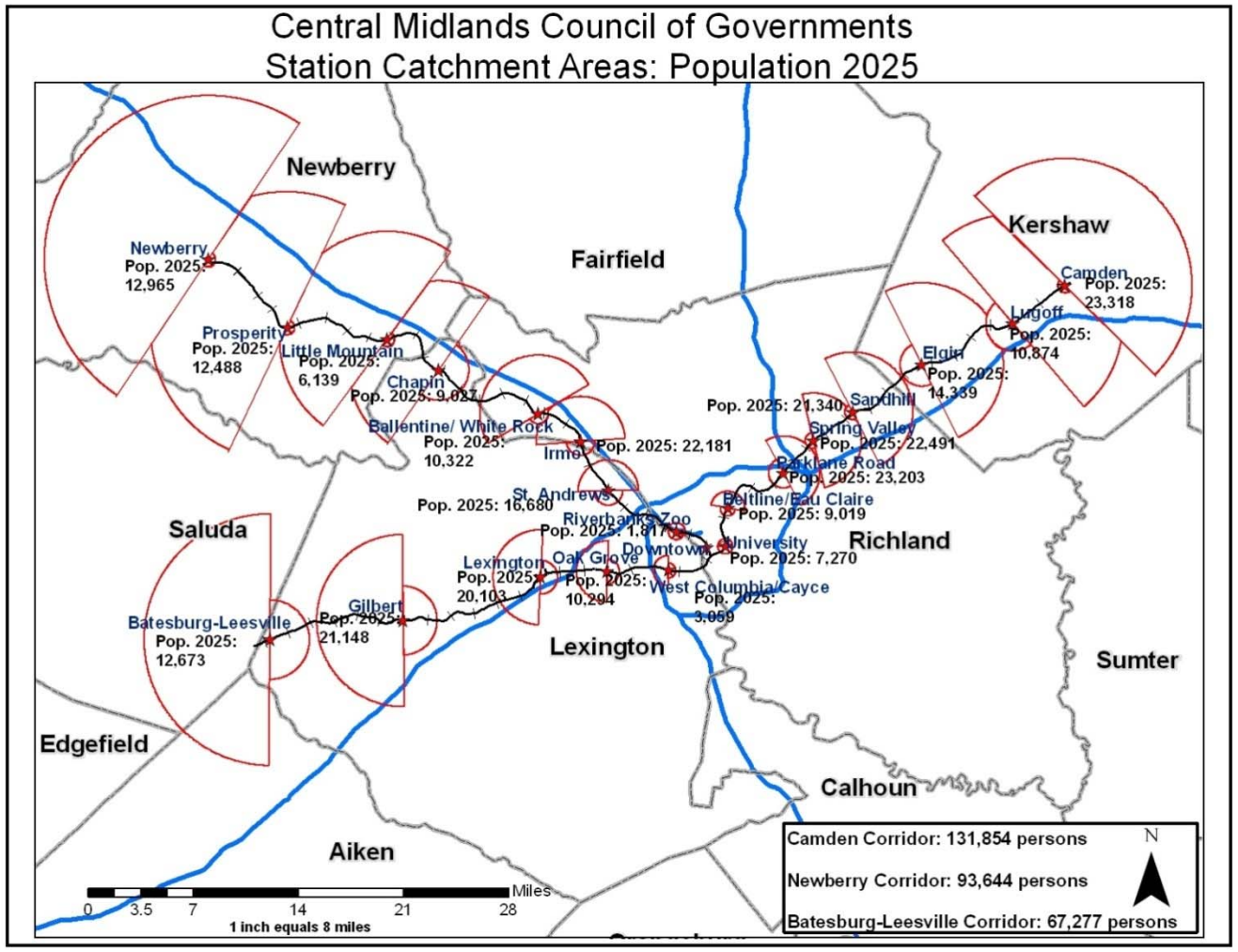
Types of Rail Stations: Walk-Up

Types of Rail Stations

- P



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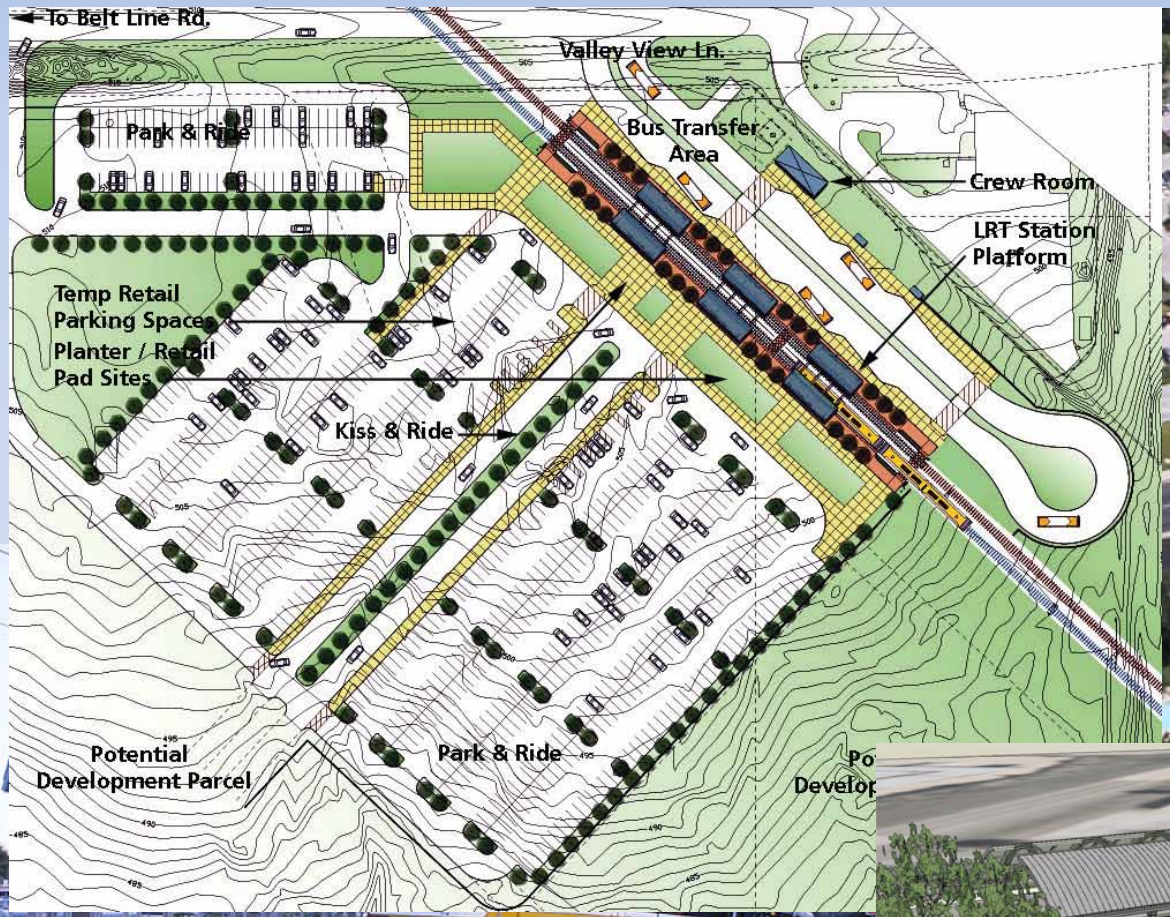
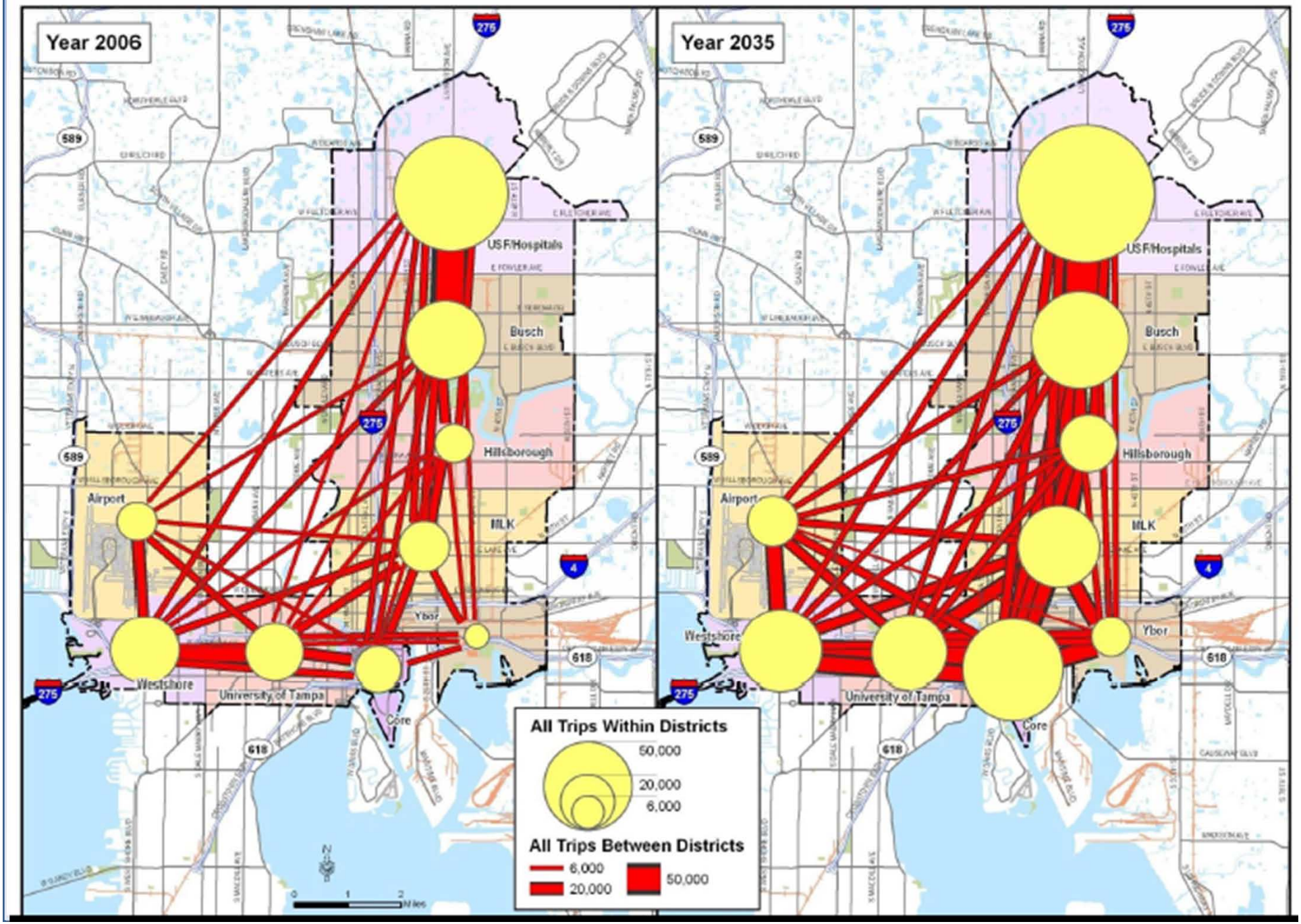
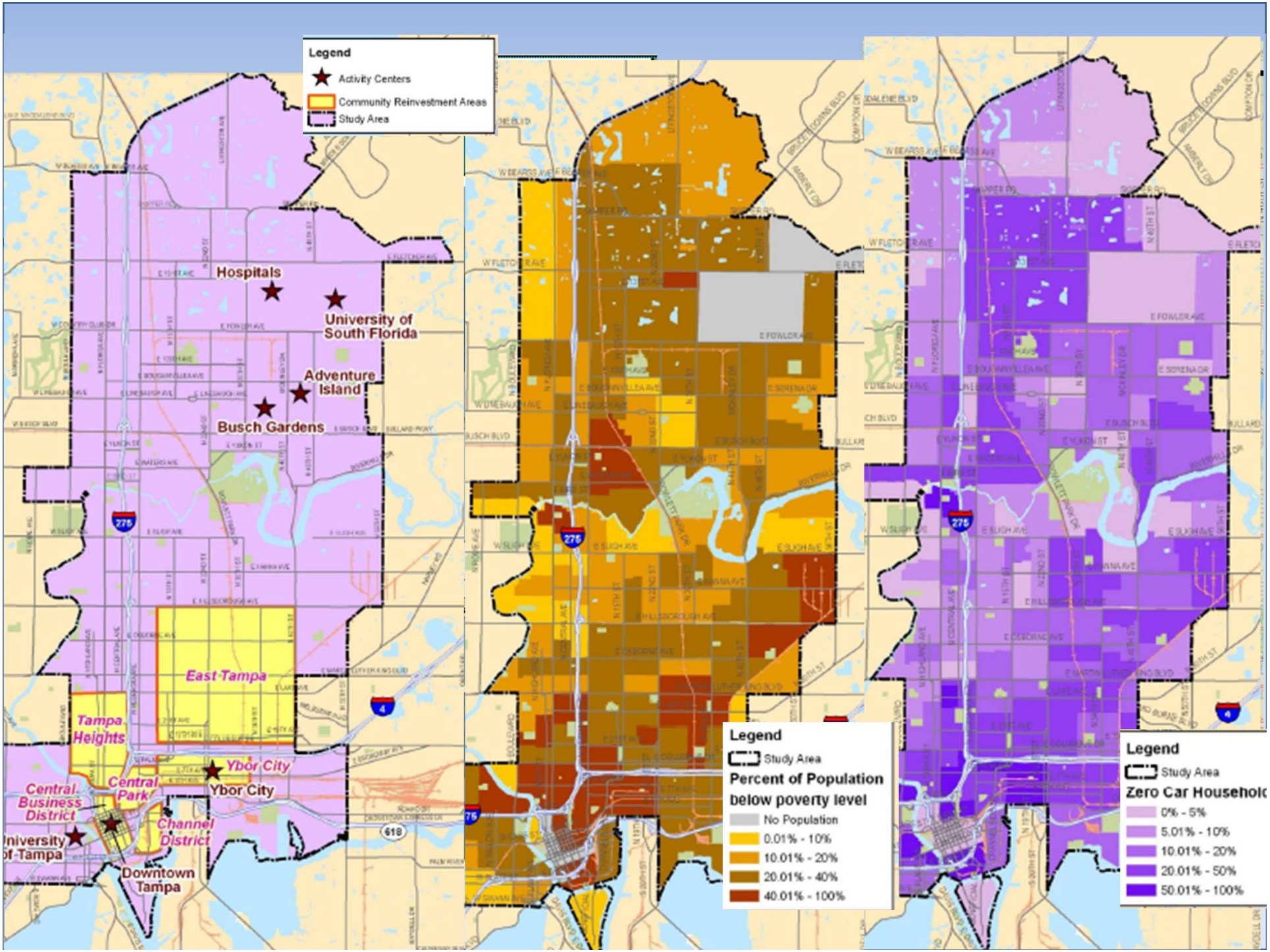
Types of Rail Stations: Park-and-Ride



Types of Stations: Aerial

Figure 2-11: Travel Demand Patterns Within the Study Area




Legend
Activity Centers
Community Reinvestment Areas
Study Area
Hospitals
University of South Florida
Adventure Island
Busch Gardens
East Tampa
Tampa Heights
Ybor City
Ybor City
Central Business District
Central Park
Channel District
University of Tampa
Downtown Tampa
Legend
Study Area
Percent of Population below poverty level
No Population
0.01% - 10%
10.01% - 20%
20.01% - 40%
40.01% - 100%
Legend
Study Area
Zero Car Household
0% - 5%
5.01% - 10%
10.01% - 20%
20.01% - 50%
50.01% - 100%

Why North Corridor?

- Major activity centers – USF, University Hospital, VA, Moffet Cancer Research Facility, Busch Gardens, Seminole/Tampa Heights neighborhoods, Ybor City
- Existing freight rail ROW
- Redevelopment/Infill deveolpment: Ybor City, East Tampa, Sulfur Springs & Florida (historic streetcar path)
- Work trips: Downtown, USF, Hospitals, Busch Gardens, Ybor City
- Live/Play trips: Downtown, Ybor City, Busch Gardens, Seminole Heights
- Extend to: north suburban communities, Pasco County BRT east-west corridor, west on CSX to West Chase and Pinellas

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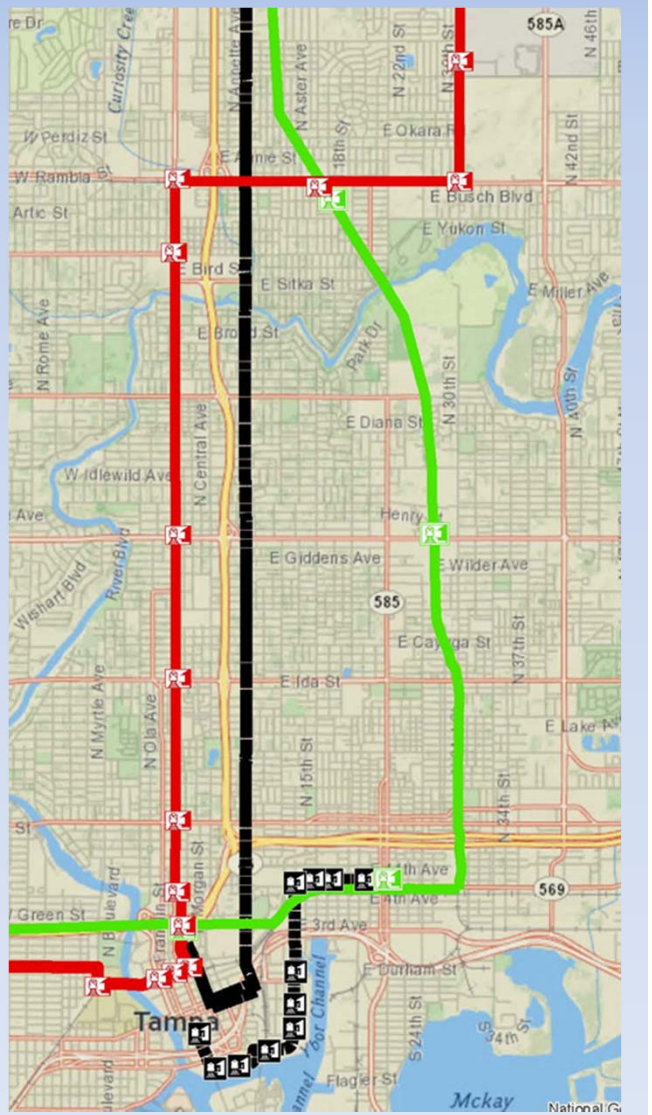
North Corridor

CR: 11 miles
- 3 Park-and-Rides
- 2 Walk-Up stations

- CR in CSX ROW sharing track
- Serves: Downtown, Ybor, Hillsborough, Bush Gardens, USF
- Travel time USF from Downtown: 35 min

LRT: 11 miles
- 9 Park-and-Rides
- 1 Walk-Up

- LRT in-street (Florida)
- Serves: Downtown, Tampa Heights, Busch Gardens, Tampa Industrial Park, USF
- Travel time USF from Downtown: 36 min



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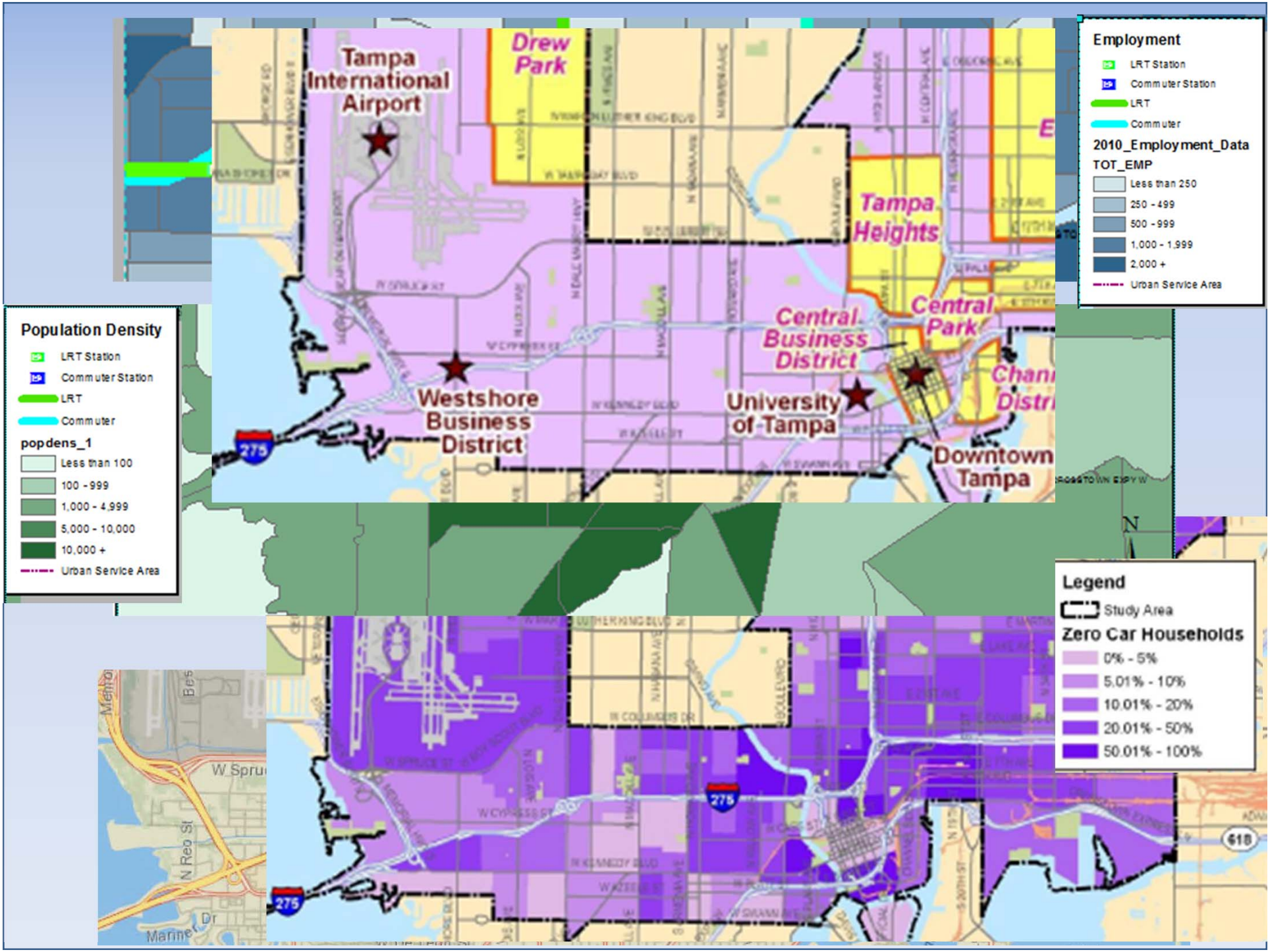
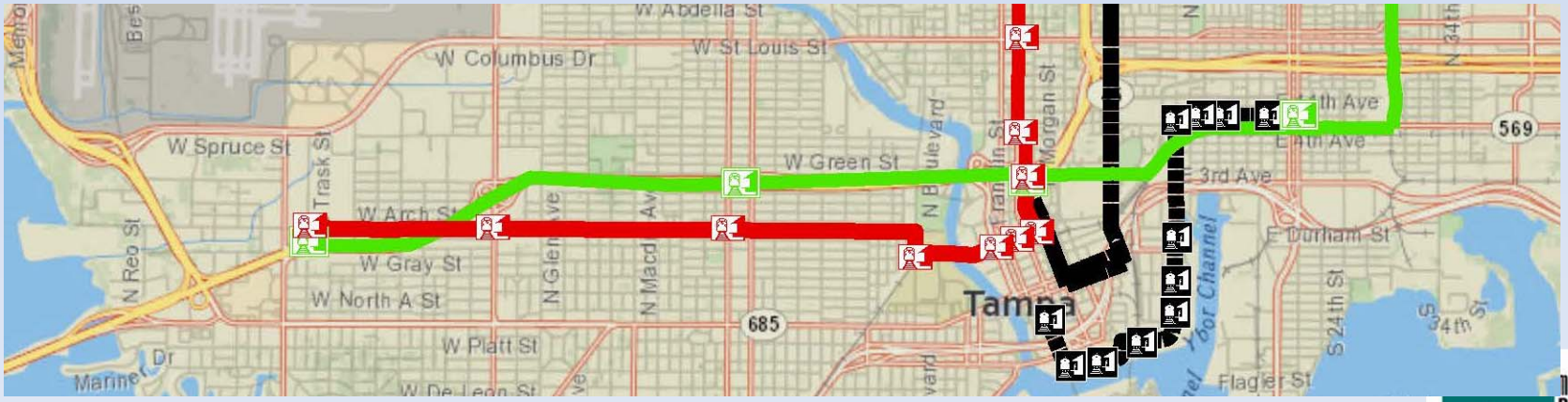

Tampa International Airport
Drew Park
Tampa Heights
Central Business District
Central Park
University of Tampa
Westshore Business District
Downtown Tampa
Employment
LRT Station
Commuter Station
LRT
Commuter
2010_Employment_Data
TOT_EMP
Less than 250
250 - 499
500 - 999
1,000 - 1,999
2,000 +
Urban Service Area
Population Density
LRT Station
Commuter Station
LRT
Commuter
popdens_1
Less than 100
100 - 999
1,000 - 4,999
5,000 - 10,000
10,000 +
Urban Service Area
Legend
Study Area
Zero Car Households
0% - 5%
5.01% - 10%
10.01% - 20%
20.01% - 50%
50.01% - 100%
275
618

Why West Corridor?

- Major activity centers – Westshore largest by square footage office complex in state, TIA, WMC
- Work trips: Downtown, Westshore, TIA
- Live/Play trips: Downtown, UT, TIA, Westshore
- Future Extensions: Pinellas County, South Peninsula (Hyde Park, AFB), Veterans



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West Corridor

- CR: 5 miles
  - 1 Park-and-Rides
  - 1 Walk-Up
  - 1 Aerial
- In I-275 ROW
- Serves: Downtown, WMC, Armenia, TIA
- Travel time WMC from Downtown: 14 min

- LRT: 5 miles
  - 4 Park-and-Rides
  - 4 Walk-Up
- LRT in-street (Cypress)
- Serves: Downtown, UT, Armenia, Dale Mabry, WMC, TIA
- Travel time WMC from Downtown: 18 min

Suggested Next Meetings

- Meeting #3: week of February 17, 2014
- Public Meeting # 1: Early March 2014
- Meeting #4: week of March 17, 2014