Transit Technologies
Technologies Considered

- Bus
- Light Rail
- Commuter Rail
- Standard or articulated high-capacity vehicles
- Special lanes or signal priority – Bus Rapid Transit
- Advantage of flexible service
- Congestion problem
Commuter Rail

- Locomotive pulling passenger cars
- Shares freight tracks
- Flexible capacity
- Peak hour service
- Long haul or suburb to city
- Needs to run flat and straight
Light Rail

- Powered from above by electric wires
- Has its own tracks
- Frequent service
- All day service
- Suburb to city and urban area travel
- Quick acceleration
- Can climb and turn
Study Summary
MPO Transit Study Process

Identify Needs And Opportunities  
June

Analyze Transit Concepts  
August

Recommend Transit Concept For 2050  
October
Concept A:
Diagram
Concept B: Diagram
Concept C:
Diagram
Getting to the 2050 Concept

- Serving existing and emerging activity centers
- Serving growing and redeveloping areas
- Measuring the potential for station area development
- Respecting community character and land use policies
- Grounding ourselves in reality
  - Appropriate transit technology
  - Rights of way
  - Costs
Transit Concept for 2050
Transit Concept for 2050

- **Basis of Concept**
  - Improve Mobility
  - Support Economic Vitality
  - Growth Management

- **Transit Service Characteristics**
  - Destinations
  - Transit for All
  - Service (Distance, Frequency, Time, Capacity)

- **Optimized by Benefits**
  - Maximize ability to serve largest concentrations of (existing & future) residential and employment areas with optimal balance of service
Concept Selection Process

- Evaluated current capacity of transit corridors to accommodate development
- Applied transit station area prototypes (type, size, character)
- Determined projected growth (jobs & housing) for the concept vs. trend for 2050
- Identified appropriate technology to best serve destinations and range of riders (i.e., balance time vs. distance)
- Evaluated overall order of magnitude cost to select technology and service type
Light Rail
- New Tampa-Westshore
- Brandon-Westchase
- South Tampa-Downtown

Commuter Rail
- Lutz
- SouthShore
- Plant City

Bus
- Complementary Bus Network
Light Rail
- New Tampa-Westshore
- Brandon-Westchase
- South Tampa-Downtown

Commuter Rail
- Lutz
- SouthShore
- Plant City

Bus
- Complementary Bus Network
Connects major activity centers
Continuous all-day service
Closely spaced station
- 30 miles
- 26 Stations
Serves urban living, transit dependent, choice riders & special event
Capacity to supports future growth

Red Line (Light Rail):
New Tampa/USF – Westshore
- Connects housing & employment
- Brandon as regional center
- Infill east of CBD
- Closely spaced station
  - 27 miles
  - 27 Stations
- Serves urban living, transit dependent, choice riders & special event

Blue Line (Light Rail): Westchase – Brandon
- Serves densely populated area and activity centers
- Closely spaced station
  - 8 miles
  - 9 Stations
- Serves urban living, transit dependent, choice riders & special event

**Green Line (Light Rail): South Tampa – Downtown Tampa**
- Commuter rail service to north Hillsborough and Pasco counties
- Peak period travel & transfer stations to light rail
- Express service
  - 17 miles
  - 6 Stations
- Provides alternative to commuters, transit dependent & underserved areas
- Added capacity alternatives to major road investments

Magenta Line (Commuter Rail): Lutz – Downtown Tampa
- Commuter rail service to Plant City, Brandon and Polk County
- Peak period travel & transfer stations to Brandon light rail
- Express service
  - 26 miles
  - 5 Stations
- Provides alternative to commuters, transit dependent & underserved areas
- Added capacity alternatives to major road investments

**Purple Line (Commuter Rail): Plant City/Brandon – Downtown Tampa**
- Commuter rail service to SouthShore and Sarasota/Manatee counties
- Peak period travel & transfer stations to light rail
- Express service
  - 26 miles
  - 7 Stations
- Provides alternative to commuters, transit dependent & underserved areas
- Added capacity alternatives to major road investments

**Orange Line (Commuter Rail):**
SouthShore – Downtown Tampa
- Commuter rail service to Plant City along I-4 and East Central Florida
- Peak period travel to Tampa
- Express service
  - 26 miles
  - 5 Stations
- Provides alternative to commuters, transit dependent & underserved areas
- Added capacity alternatives to major highway investments

Red Line (Commuter/Regional Rail): Plant City/I-4 – Downtown Tampa
## Transit Concept Characteristics

### Light Rail  (Average 1 mile station spacing)

- **New Tampa-Westshore (Red Line)**: 30 miles  →  26 stations
- **Brandon-Westchase (Blue Line)**: 27 miles  →  27 stations
- **South Tampa-Downtown (Green Line)**: 8 miles  →  9 stations

### Commuter Rail  (Avg. 3-5 mile station spacing)

- **Lutz (Magenta Line)**: 17 miles  →  6 stations
- **SouthShore (Orange Line)**: 26 miles  →  7 stations
- **Plant City/Brandon (Purple Line)**: 26 miles  →  5 stations
- **Plant City/I-4 (Red Line)**: 26 miles  →  5 stations
Station Types

- Regional
  - 50-100 DU/Ac
  - 30-500 Jobs/Ac

- Community
  - 20-75 DU/Ac
  - 5-100 Jobs/Ac

- Neighborhood
  - 10-50 DU/Ac
  - 2-15 Jobs/Ac
HH Density
Current

- < 2
- 2 - 4
- 4 - 8
- 8 - 16
- > 16

DU/Acre (2000)
HH Density
Transit Concept

- < 2
- 2 - 4
- 4 - 8
- 8 - 16
- > 16

DU/Acre (2050)
Projected Total
With Transit
HH Density
Trend
- < 2
- 2 - 4
- 4 - 8
- 8 - 16
- > 16

DU/Acre (2050)
Projected Total
Without Transit
Jobs Density

Transit Concept

- < 1
- 1 - 5
- 5 – 25
- 25 – 50
- > 50

Jobs/Acre (2050)
Projected Transit Growth Increment
Jobs Density
Transit Concept

- < 1
- 1 - 5
- 5 – 25
- 25 – 50
- > 50

Jobs/Acre (2050)
Projected Total
With Transit

Legend
- Light Rail
- Commuter Rail
- Complementary Bus
  - Streetcar
  - Stations
2050 Transit Concept Employment Total
Jobs per Acre
- < 1
- 1 - 5
- 5 - 25
- 25 - 50
- > 50
Jobs Density

Trend
- < 1
- 1 - 5
- 5 - 25
- 25 - 50
- > 50

Jobs/Acre (2050)
Projected Total
Without Transit
HH Density
By Station
- < 2
- 2 - 4
- 4 - 8
- 8 - 16
- > 16

DU/Acre (2050)
Generalized Station Intensity
Jobs Density
By Station
- < 1
- 1 - 5
- 5 - 25
- 25 - 50
- > 50

Jobs/Acre (2050)
Generalized Station Intensity
Households & Jobs Within ¼ mile of Stations

- New Tampa - Westshore
- Brandon - Westchase
- South Tampa - Downtown
- Lutz - Downtown
- SouthShore - Downtown
- Plant City/Brandon - Downtown
- Plant City/I4 - Downtown

Total (removes duplication at transfer stations)
- 85,000 HH and 300,000 Jobs

Transit Supported Growth (Projected Avg.)
- 10-15 DU/Ac and 30-50 Jobs/Ac
Households & Jobs
Within Station Areas (up to 1 mile)

**Total** (*removes duplication at transfer stations*)
350,000 HH and 930,000 Jobs
Transit Supported Growth (Projected Avg.)
6-12 DU/Ac and 15-30 Jobs/Ac
### Total Households & Jobs
**Within Station Areas (1/4 & 1 mile)**

#### Light Rail
- **New Tampa-Westshore**: 35k HH & 170k Jobs
- **Brandon-Westchase**: 40k HH & 200k Jobs
- **South Tampa-Downtown**: 15k HH & 70k Jobs

#### Commuter Rail
- **Lutz-Downtown**: 10k HH & 50k Jobs
- **South Shore-Downtown**: 10k HH & 50k Jobs
- **Plant City-Downtown**: 10k HH & 50k Jobs
- **Plant City/I-4-Downtown**: 5k HH & 10k Jobs

#### Total
- **85k HH & 300k Jobs**
- **350k HH & 930k Jobs**

(*removes duplication at transfer stations)

#### Transit Supported Growth
- **10-15 DU/Ac**
- **6-12 DU/Ac**

(*Projected Gross Avg Density)
- **30-50 Jobs/Ac**
- **15-30 Jobs/Ac**
Transit Served Households & Jobs (% of Projected 2050 Growth)

- New Tampa - Westshore
- Brandon - Westchase
- South Tampa - Downtown
- Lutz - Downtown
- SouthShore - Downtown
- Plant City/Brandon - Downtown
- Plant City/I-4 - Downtown
- System Total

HH/2050 HH
EMP/2050 EMP

2050
Transit Served Households & Jobs (% of 2000 to 2050 Growth Increment)

- New Tampa - Westshore
- Brandon - Westchase
- South Tampa - Downtown
- Lutz - Downtown
- SouthShore - Downtown
- Plant City/Brandon - Downtown
- Plant City/I-4 - Downtown
- System Total

\[ \Delta 2000-2050 \]
### Transit Served Population & Jobs
(\% of 2050 Total & Growth Increment)

#### Light Rail
- **New Tampa-Westshore**
  - 2050: 16% HH & 33% Jobs
  - \(\Delta\) 2000-2050: 31% HH & 62% Jobs
- **Brandon-Westchase**
  - 2050: 17% HH & 36% Jobs
  - \(\Delta\) 2000-2050: 32% HH & 69% Jobs
- **South Tampa-Downtown**
  - 2050: 3% HH & 6% Jobs
  - \(\Delta\) 2000-2050: 7% HH & 11% Jobs

#### Commuter Rail
- **Lutz-Downtown**
  - 2050: 3% HH & 5% Jobs
  - \(\Delta\) 2000-2050: 6% HH & 9% Jobs
- **South Shore-Downtown**
  - 2050: 5% HH & 4% Jobs
  - \(\Delta\) 2000-2050: 9% HH & 8% Jobs
- **Plant City-Downtown**
  - 2050: 4% HH & 5% Jobs
  - \(\Delta\) 2000-2050: 8% HH & 9% Jobs
- **Plant City/I-4-Downtown**
  - 2050: 1% HH & 1% Jobs
  - \(\Delta\) 2000-2050: 2% HH & 2% Jobs

#### Total
- 2050: 34% HH & 49% Jobs
- \(\Delta\) 2000-2050: 65% HH & 93% Jobs

* based on 1 mile radius
Transit Ridership

**Light Rail**
- New Tampa-Westshore (Red Line) 10-25,000 Trips Per Day
- Brandon-Westchase (Blue Line) 20-30,000 Trips Per Day
- South Tampa-Downtown (Green Line) 5-10,000 Trips Per Day

**Commuter Rail**
- Lutz-Downtown (Magenta Line) 1-8,000 Trips Per Day
- SouthShore-Downtown (Orange Line) 2-8,000 Trips Per Day
- Plant City/Brandon-Downtown (Purple Line) 1-8,000 Trips Per Day
- Plant City/I-4-Downtown (Red Line) 1-2,500 Trips Per Day

**Total** 40-90,000 Trips Per Day
<table>
<thead>
<tr>
<th>Light Rail</th>
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<td>New Tampa-Westshore (Red Line)</td>
<td>1000 Trips/Mile</td>
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<tr>
<td>Brandon-Westchase (Blue Line)</td>
<td>1100 Trips/Mile</td>
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<tr>
<td>South Tampa-Downtown (Green Line)</td>
<td>1250 Trips/Mile</td>
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<th>Commuter Rail</th>
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<tr>
<td>Lutz-Downtown (Magenta Line)</td>
<td>475 Trips/Mile</td>
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<td>South Shore-Downtown (Orange Line)</td>
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<tr>
<td>Plant City/Brandon-Downtown (Purple Line)</td>
<td>300 Trips/Mile</td>
</tr>
<tr>
<td>Plant City/I-4-Downtown (Red Line)</td>
<td>100 Trips/Mile</td>
</tr>
</tbody>
</table>
Light Rail
- New Tampa-Westshore
- Brandon-Westchase
- South Tampa-Downtown

Commuter Rail
- Lutz
- SouthShore
- Plant City

Bus
- Complementary Bus Network