Long Range Transportation Plan Update
Scenario Planning

AMPO Annual Conference, October 22, 2015

Space Coast LRTP 2040
Space Coast

- Brevard County - 9th largest
  - 2 urbanized areas
  - 16 Municipalities
  - 8 unincorporated “communities”

- Population: 556,885
  - 88% of population migrated
  - Median age: 41.4
Three Population Centers

• North
  – Kennedy Space Center
  – Merritt Island National Wildlife Center
  – Canaveral National Seashore

• Central
  – Port Canaveral
  – Florida’s biggest beach / Orlando’s closest
  – Ron Jon’s / East Coast Surfing Capitol

• South
  – Patrick Air Force Base
  – Melbourne International Airport
  – Harris / Embraer
QUINTI–Modal

- Road
- Rail
- Air
- Sea
- Space
Space Coast Timeline

1962: Kennedy Space Center opens
2004: Shuttle retirement announced
2006: Transition team formed
2008: Space transportation funding
2008-10: Great recession
2009: Space infrastructure in TIP
2010: LRTP 2035 Adopted
2010-12: 10,000 jobs lost
Space Coast Timeline

2011: Complete Streets kick-off
2012: KSC 50th Anniversary
2012: Final Shuttle launch
2013: LRTP 2040 Begins
2014-18: $20M annually for Space in FDOT work program
2015-17: 100% TMA allocated to Complete Streets
LRTP Timeline

- Spring, 2013: Leadership workshops
- Summer, 2013: Community survey
- Oct, 2013: Transportation Symposium
- Feb, 2014: Choices Workshop
- Jul, 2014: Vision Workshop
- Jul, 2014: Vision Adopted
- Mar, 2015: Corridor Plan Workshop
- Jul, 2015: Cost Feasible Plan Presented
- Oct, 2015: CFP Adopted
Community Survey

- Statistically valid sample
- Promoted through media
- Over 400 responses
- Included:
  - Existing transportation conditions
  - Future aspirations
  - Funding methods
Transportation Symposium

- 3 hours
- 80+ participants
- LRTP overview
- Survey results
- 25+ city/mode presentations
Symposium Results

- Expand economic prosperity through diversity
- Protect the natural environment by managing growth
- Capitalize on high tech potential
Context – Scenario Planning

New direction (multimodal travel)

- City/County comp plans
- Modal master plans
- Complete Streets
- Bike / ped master plan
- ITS Master Plan
- Intercity rail and stations
- Corridor plans

Current direction (auto orientation)
Context – Scenario Planning

- Vision statement and map (multimodal travel)
- Transit system plan (system extent and hierarchy)
- Multimodal corridors
- Multimodal hubs
- Multimodal corridor / land use and transportation plans
- City/County comp plans
- Modal master plans
- Corridor plans
- Intercity rail and stations
- Complete Streets
- Bike / ped master plan
- ITS Master Plan
- Current direction (auto orientation)
Scenario Planning

• Scenarios allow “test drives” of the future
  – Begin with scenario stories
  – Build a “virtual future” scenario for each story
  – Evaluate how each scenario plays out
  – Create vision from evaluation

• Set context for transportation plan
  – Scenarios and resulting vision look out to 2060
  – Transportation plan prepared for 2040
Scenario Planning

• Constants
  – Population / employment forecasts
  – Improvement budget
  – Place types

• Variables
  – Place type proportions / allocations
  – Transportation improvements
Step 1: Scenario Stories

- What if past patterns continue? *Current Trend*
- What if we invest in and connect the *ports*? *Ports Centers*
- What if we embrace *technology*? *High Tech Lifestyle*
- What if we *balance* open space and development and provide *choices*? *Connected Communities*
Step 2: Allocate to place types

Compact, walkable place types

Lower intensity, auto oriented place types
Step 2: Allocate to place types

- Length of top bars reflect population
- Bottom bars employment
- Dark blue walkable types
- Light blue suburban types
Step 3: Scenario Concept Maps

Identify major centers of jobs and housing

Identify major transportation investments
Step 4: Allocate to concepts

Envision Tomorrow + Software

Place types allocated to developed and vacant land
Step 5: Transportation improvements

• Each scenario assumes total investment of $4.6 billion

• Types of investments differed to support scenario concept
Step 6: Evaluate results

- CT – Current Trend scenario
- PC – Port Centers scenario
- Evaluation measures from workshop, symposium and survey
- Developed with Envision Tomorrow+, travel demand model, and GIS tools
Scenarios Presentation

- I don’t get it…

Space Coast LRTP 2040
Choices Workshop

- 3 hours
- 80+ participants
- LRTP overview
- Scenarios education
- Audience participation
- Transportation choices
Matching Exercise

Urban Core  Mobility Hub  Traditional Neighborhood  Multifamily Focus

Corridor  Single Family  Commercial  Employment Center
Transportation Choices Workshop

• Best at positioning Brevard for economic prosperity
• Best at addressing Brevard’s future population growth
• Best at protecting the natural environment
• Best at meeting the way I live and travel
Transportation Choices Workshop

- Provoke imaginations
- Each scenario focuses on one or more goals
- Not either / or options
- Vision is a composite of reactions
Scenario Highlights

- Development patterns continue as they have, and investments continue to focus on roadways
- 1960 - Minimal development clustered in Titusville, Cocoa and Melbourne
- 2010 - Much of land east of I-95 developed, new development west of I-95 in Palm Bay and Viera
Impacts

- Developed land increases by 60 percent
- Most new homes are single family
- Most new jobs are office jobs
- Sea level rise impacts minimal (same for all scenarios)
Impacts

• Slight increase in those living in walkable communities

• Decrease in those working in walkable communities

• Investments continue to focus on roads

• Energy consumption and air emissions nearly double from today
Current Trend Reactions

• Positives
  – Single family housing
  – Planned communities
  – Familiar

• Negatives
  – Continues urban sprawl
  – Too auto reliant
Alternatives Futures

• 3 other scenarios based on public input
• Each focuses on meeting common goals
Port Centers

- **Economic prosperity**
  - Invest in ports
- **Population growth**
  - Jobs / housing near ports
- **Protection**
  - Compact communities
- **Lifestyle**
  - Transportation and housing choices
Port Centers Allocation

Compared to the Trend scenario, more residents live and work in walkable communities.
Port Centers

Investments are made in each of the ports and in freight and passenger rail that connects them.
Port Centers Reactions

• Positives
  – Emphasizes what is unique about Brevard
  – Promotes walkability / transit
  – Provides housing choices

• Negatives
  – Focuses on northern County
  – Large amount of industrial development
  – Fewer liveable places
High Tech Lifestyle

- Economic prosperity
  - Invest in high tech travel and communities

- Population growth
  - Oriented around walkable high tech hubs

- Protection
  - Compact communities

- Lifestyle
  - Less reliance/need for work commute, more travel choices
High Tech Allocation

About the same number of people and jobs are in walkable and suburban places.
High Tech Lifestyle

• More working and shopping occur from home

• Ability to work and shop in nearby walkable hubs

• Cars, roads and parking lots are more efficient and smaller
High Tech Lifestyle Reactions

• Positives
  – “Outside of the box” thinking
  – Creates “Silicon Valley” feel
  – Attracts next generation of workers
  – Working from home options
  – Walkable mobility hubs

• Negatives
  – Will technologies become reality?
  – Affordability of new technologies
  – Ability of older residents to adapt to new technologies
Connected Communities

• Economic prosperity
  – Invest in existing and new town centers

• Population growth
  – Oriented around walkable / transit oriented town centers

• Protection
  – Compact communities

• Lifestyle
  – Transit/multimodal and housing choices
Compared to Trend, more live and work in transit oriented, walkable city and town centers.
Connected Communities

• Growth is directed to existing and new town centers
• Investments are made in rail transit along the FEC and bus rapid transit connections
Connected Communities Reactions

• Positives
  – Concentrates growth
  – Multi-modal emphasis
  – Mix of housing options

• Negatives
  – Costs of bus rapid transit and rail improvements
  – Lack of identified economic drivers
Comparing with Trend

- New acres of developed land is reduced by more than half
- Higher proportion of new residents living in multifamily housing
Comparing with Trend

- Number living and working in walkable communities increases significantly
- Lower investment in roads, higher investment in transit / high tech
- Energy consumption and air emissions drop by 15 to 35 percent
Scenario Comparisons among Goals

Best at positioning Brevard for economic prosperity

Leveraging ports and high tech are sound economic development strategies

<table>
<thead>
<tr>
<th>Current Trend</th>
<th>Port Centers</th>
<th>High Tech Lifestyle</th>
<th>Connected Communities</th>
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<tbody>
<tr>
<td>9%</td>
<td>77%</td>
<td>70%</td>
<td>49%</td>
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</table>
Scenario Comparisons among Goals

*Best at addressing Brevard’s future population growth*

*Increasing place type options and travel choices are sound growth management strategies*

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Current Trend</td>
<td>11%</td>
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<tr>
<td>Port Centers</td>
<td>56%</td>
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<tr>
<td>High Tech Lifestyle</td>
<td>59%</td>
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<tr>
<td>Connected Communities</td>
<td>78%</td>
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</table>
Scenario Comparisons among Goals

**Best at protecting the natural environment**

Compact communities, travel choices and high tech are sound environmental protection strategies.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Trend</td>
<td>13%</td>
</tr>
<tr>
<td>Port Centers</td>
<td>52%</td>
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<tr>
<td>High Tech Lifestyle</td>
<td>70%</td>
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<tr>
<td>Connected Communities</td>
<td>73%</td>
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Scenario Comparison among Goals

*Best at meeting the way I live and travel*

*Each of the scenarios improves quality of life over the Trend*

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Current Trend</td>
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<tr>
<td>Port Centers</td>
<td>60%</td>
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<tr>
<td>High Tech Lifestyle</td>
<td>60%</td>
</tr>
<tr>
<td>Connected Communities</td>
<td>66%</td>
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</table>
Vision Themes

• Economic prosperity
  – *Leverage what’s uniquely Brevard*
    • Invest in ports
    • Continue high tech focus
• Address population growth and protect environment
  – *Find the right balance for growth*
    • More compact communities
    • Less reliance on autos
• Improve the way I live and travel
  – *Provide a wider range of community and travel options*
    • Wider variety of housing
    • More transportation choices
TPO Vision

- **Destination (place) types**
  - Intermodal
  - Regional multimodal
  - Neighborhood multimodal

- **Corridor types**
  - Intermodal roads
  - Intermodal rail
    - Inter county (passenger and freight)
    - Intra county (freight only)
  - Multimodal
    - Inter-county
    - Intra-county
Multimodal Corridors

- **Vision map:**
  - Guides corridor plan locations
  - Guides transit technology types
  - Guides transit station typology
- **Corridors**
  - Transit technologies
    - Commuter rail
    - Bus rapid transit
  - Interconnections
- **Station types and locations**
  - Regional
    - Intermodal
    - Regional multimodal
  - Multimodal
Strategic Corridor Plans

- Corridor graphic

- Station Areas:
  - Intermodal
  - Commuter Rail
  - Regional Commuter Rail
  - Neighborhood Commuter Rail
  - Regional Intermodal Bus Rapid Transit
  - Regional Bus Rapid Transit
  - Neighborhood Bus Rapid Transit

- Railroad ROW Width:
  - FEC: 100'
  - US 1: 127'

- ROW Width:
  - FEC: 110'
  - US 1: 150'

- Right of Way:
  - FEC: Required for 8 lanes (140')
  - US 1: Required for 6 lanes (110')

- Commuter Rail:
  - Year 2005 Volumes & Levels of Service:
    - 40
  - Year 2060 Volumes & Levels of Service:
    - 70

- Bus Rapid Transit:
  - Year 2005 Volumes & Levels of Service:
    - 40
  - Year 2060 Volumes & Levels of Service:
    - 80

- Percent of FDOT recommended station area residents and jobs:
  - 50

- Stations:
  - FEC
  - US 1

- Corridor Overview:
  - Viaro Blvd

*Note: Volumes in 000s of daily trips

*Station Areas represent 1/2 mile radius walkshed
Long Range Transportation Plan

- Vision Plan set context for LRTP update
- Informed Goals and Objectives
- 2040 update interim to longer term vision
- Portion of revenues set aside for multimodal, vision-supportive investments
- Corridor approach to plan analysis/organization
Transportation Vision Workshop

- 1 Hour
- 100+ participants
- Choices results
- FHWA certification
- TPO Board participation
- Vision Vote
Corridor Planning Workshop

- 1.5 Hours
- Two Events
  - Technical Staff
  - Public
# LRTP 2040

## Scenario Choices

- Transportation Vision
- Corridor Planning
- Cost Feasible Plan

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### CORRIDOR PROJECTS

<table>
<thead>
<tr>
<th>Period</th>
<th>Project Type</th>
<th>Facility</th>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Net Cost*</th>
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<tbody>
<tr>
<td>2021-2036</td>
<td>Highway Capacity</td>
<td>Clearlake Rd.</td>
<td>Michigan</td>
<td>Industry Rd.</td>
<td>Widen to 4 lanes</td>
<td>$8,311</td>
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<tr>
<td></td>
<td></td>
<td>SR 524</td>
<td>I-95 Interchange (South)</td>
<td>Industry Rd.</td>
<td>Widen to 4 lanes</td>
<td>$17,433</td>
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<tr>
<td></td>
<td>ITS</td>
<td>SR 501</td>
<td>SR 520</td>
<td>SR 528</td>
<td>ITS improvements</td>
<td>$550</td>
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<tr>
<td></td>
<td>Bike/Ped</td>
<td>Clearlake Rd.</td>
<td>2600' E of E Industry Rd</td>
<td>King Street</td>
<td>Designated Bike Lane</td>
<td>$306</td>
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<tr>
<td></td>
<td></td>
<td>Clearlake Rd.</td>
<td>400' S of W King St</td>
<td>Range/ Pluckebaum Rd</td>
<td>Paved Shoulder</td>
<td>$88</td>
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<tr>
<td></td>
<td></td>
<td>Friday Rd</td>
<td>Highway 524</td>
<td>2300' south of Highway 524</td>
<td>Paved Shoulder</td>
<td>$48</td>
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<tr>
<td></td>
<td></td>
<td>Cox Rd</td>
<td>SR 524</td>
<td>600' north of W King Street</td>
<td>Sidewalk</td>
<td>$218</td>
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<tr>
<td></td>
<td></td>
<td>La Marche Dr</td>
<td>Otterbein Ave</td>
<td>Michigan Ave</td>
<td>Sidewalk</td>
<td>$50</td>
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<td></td>
<td>Complete Streets</td>
<td>Michigan</td>
<td>Range</td>
<td>Clearlake</td>
<td>Complete Street</td>
<td>TBD</td>
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<tr>
<td></td>
<td>Transit</td>
<td>West Cocoa Circulator</td>
<td>Range</td>
<td>Clearlake</td>
<td>New fixed route service</td>
<td>$300</td>
</tr>
</tbody>
</table>

*Cost estimates reflect publicly funded capital costs in $000's YOE. Estimated costs for Program and Unfunded projects are represented in present day dollars.

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### REFERENCE DOCUMENTS

- Space Coast Bicycle and Pedestrian Mobility Plan (2013)
- Space Coast TPO Complete Streets Evaluation Methodology (2014)
- Space Coast TPO ITS Master Plan (2014)
- Space Coast Area Transit Development Plan (2012)
Long Range Transportation Plan Update
Scenario Planning

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Scenario Planning as part of a Long Range Transportation Plan Update

Space Coast 2040 LRTP

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