Transforming a Region – Transit, Sustainability and Affordability

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Transit Principal – HDR Engineering
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Our jurisdiction area covers over 10% of the state.
Developing a Regional Story

- PART and Piedmont Triad Partnership Formed
- Growing Together in the Triad
- Alternatives Analysis
- Seamless Mobility Study
- The Heart of the Triad
- Regional Transit Development Plan
- Livable Communities Summit
- Sustainable Communities Regional Planning Project
- Next ??
Growing Together in the Triad
Growing Together in the Triad

Issues for the Triad
- Near sole reliance on the automobile
- Rising VMT
- Growing congestion
- More time lost sitting in traffic
- Increased fuel consumption and emissions

<table>
<thead>
<tr>
<th>YEAR</th>
<th>1994</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Miles Traveled (VMT)</td>
<td>20.8 million</td>
<td>40 million</td>
</tr>
<tr>
<td>Vehicle Hours Traveled (VHT)</td>
<td>459,000</td>
<td>767,000</td>
</tr>
<tr>
<td>Average Street Driving Speed</td>
<td>44 mph</td>
<td>38 mph</td>
</tr>
<tr>
<td>Average Capacity of Roadways Used by Traffic</td>
<td>70%</td>
<td>86%</td>
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</tbody>
</table>

Source: NCDOT
The Sustainability Challenge

Environment
- Environmental and Energy Planning
  - NEPA
  - Renewable Energy
  - Climate Plans
  - Social Return On Investment

Community
- Community, Mobility and Infrastructure Planning
  - Redevelopment
  - Risk Analysis
  - Carbon Markets
  - Green Jobs

Economy
- Cost/Benefit and Economic Development
  - Mobility Plans
  - Green House Gas Mgmt Plans
  - Context Sensitive Solutions

Sustainable Solutions
- Redevelopment
- Risk Analysis
- Carbon Markets
- Green Jobs

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Economy
- Cost/Benefit and Economic Development
Transforming a Region – Transit, Sustainability and Affordability

A Vision and Philosophy for Putting Sustainability into Practice
Sustainability is not new...

Crop rotation

Making ends meet

Mill villages
What we now know...
TRANSPORTATION DEMAND MANAGEMENT (TDM)

WHETHER?
SUBSTITUTES
Telework
Teleconferencing
Online shopping
Trip Chaining

WHY?
PURPOSE
Work
School
Medical
Shopping
Recreation

WHEN?
TIME
Weekday Peak Hour
Weekday Off–Peak
Evening
Weekend
Set / Flexible

WHERE?
DESTINATION
Street
Neighborhood
Community
City
Region

HOW?
MODE
Car Driver/Passenger
Walking
Cycling
Carpool / Vanpool
Public Transit

TRANSPORTATION DEMAND

The Case for TDM in Canada

TDM encompasses several tools to help with traffic congestion mitigation by offering alternatives to the single-occupancy vehicle.
Framework for Managing Mobility

The Case for TDM in Canada
determinants of travel behavior

framework for managing mobility

The Case for TDM in Canada
A new paradigm...

Honey, I just love living in this amazing multi-modal community.
Piedmont North Carolina Commuting Patterns
Reducing VMT’s

PART ridership reduced....
Vehicle Miles Traveled by 9,480,073 miles during FY 09
Air Pollution Emissions by 6395.33 tons during FY 10

Source: National Highway Traffic Safety Administration
Connectivity
Its all about connecting places
Piedmont Triad – 51.2% of family income is spent on housing and transportation
25.1% on transportation cost – 10% higher than the suggested national average
Economic

- Support economic development
- Help establish the community as a place of distinction
- Provide mobility choices – work, education
- Reduce dependence on foreign oil
- Create and jobs and capital investment
  - Every $1 billion invested in capital and operations, supports an average of 36,000 jobs.
  - These 36,000 jobs result in roughly $3.6 billion in business sales and generate nearly $500 million Federal, State and Local tax revenues.
An ever evolving multimodal transportation system that provides infrastructure and services which:

- attract users across all modes;
- enables a smooth transition from one mode to another;
- connects places of neighborhood, local and regional interest;
- offers alternatives for individuals seeking to reduce their energy use and carbon footprint; and
- results in a financially and functionally viable network.
TDM Program

TDM encompasses several tools to help with traffic congestion mitigation by offering alternatives to the single-occupancy vehicle. Some of these alternatives include:

- Teleworking
- Compressed Work Week
- Trip Chaining
- Walking
- Bicycling
- Carpooling
- Vanpooling
- Using Public Transit
Planning

- Travel Demand Modeling
  - Includes 4 MPOs
- Alternatives Analysis
  - 35 mile light rail/BRT corridor
- Regional Transit Development Plan
  - 10 counties including regional express, community circulators, new urban fixed route service and regional connectivity
- Sustainable Communities Regional Planning Project
  - HUD Planning grant covering 12 counties
Regional Cooperation

- Marketing – Triad Commute Challenge
- Technology
  - Demand Response Scheduling
  - Regional Trip Planner
  - GPS – Next Bus Technology
  - Automatic Passenger Counters
- Regional Call Center
- Transit Route Map
- Air Quality
  - Modeling
  - Conformity
  - Management
  - Awareness
- Regional Ride Share / Vanpool Program
Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect.
Questions?

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Mass Transit

BRT and Rail DMU Alternatives

Clemmons–Burlington Corridor

<table>
<thead>
<tr>
<th>Station Type</th>
<th>BRT</th>
<th>Rail</th>
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<tbody>
<tr>
<td>Hub</td>
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<tr>
<td>Regional</td>
<td></td>
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<tr>
<td>Specialty</td>
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<tr>
<td>Village</td>
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- Bus Rapid Transit (BRT) Alternative
- Rail - DMU Alternative

Corridor 1. Clemmons–Burlington

<table>
<thead>
<tr>
<th></th>
<th>BRT</th>
<th>Rail DMU</th>
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<tbody>
<tr>
<td>Operating Cost/Passenger Mile</td>
<td>$0.68</td>
<td>$1.20</td>
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<tr>
<td>Capital Cost/ per Mile</td>
<td>$6.46M</td>
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<td>Annual Ridership</td>
<td>2,600,000</td>
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<td>Cost per Rider</td>
<td>$17.20</td>
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<tr>
<td>Travel Time (End to End in Minutes)</td>
<td>143</td>
<td>82</td>
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<tr>
<td>Coverage</td>
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<td></td>
</tr>
<tr>
<td>High Speed CBD Connection</td>
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<td>5</td>
</tr>
<tr>
<td>Colleges</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Malls</td>
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Corridor 1B. Greensboro–Winston-Salem

<table>
<thead>
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<th></th>
<th>BRT</th>
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<tr>
<td>Operating Cost/Passenger Mile</td>
<td>$0.92</td>
<td>$1.60</td>
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<td>Capital Cost/ per Mile</td>
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<td>Annual Ridership</td>
<td>940,000</td>
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<td>Cost per Rider</td>
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<tr>
<td>Colleges</td>
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<tr>
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