


**Chattanooga-Hamilton County
/ North Georgia
2040 Regional Transportation Plan**

A Performance Based Planning Success Story

2013 AMPO Annual Conference


October 25, 2013



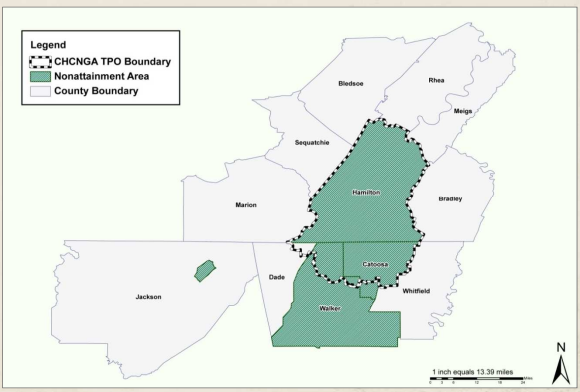
2040 RTP REGIONAL TRANSPORTATION PLAN

Chattanooga-Hamilton County/N. GA Transportation Planning Organization

Presentation Overview



- Chattanooga region
- Chattanooga 2040 Regional Transportation Plan (RTP)
- Performance-based plan development
- Performance framework
- Implementing the framework
- Key outcomes and takeaways



Chattanooga Region



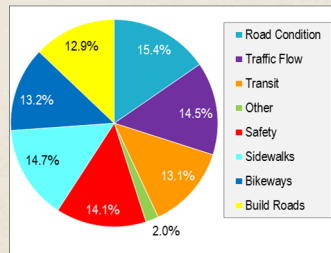
- 443,000 people with 26% growth over plan horizon
- 216,000 jobs with 39% growth over plan horizon
- 19 jurisdictions (four counties and 15 municipalities)
- 2,110 lane-miles



Need for New Investment Approach



- Nationally:
 - Transportation funds lagging, at same time that transportation needs have increased
 - Emphasis on asset management, coupled with less revenue, has serious implications on revenue availability for new infrastructure
 - Multimodal capital investments must be identified in transparent processes that are performance-driven and outcome-based
- In Chattanooga:
 - Shift to multimodal investment has been limited in its geographic extent
 - Large areas throughout region remain dangerous to pedestrians and cyclists and inaccessible to transit users



Chattanooga 2040 RTP



- Focus on strategic, performance-based investment decisions
- Extensive stakeholder engagement
 - Core Technical Team (CTT) and Community Advisory Committee (CAC)
 - Two half-day leadership forums
 - Multiple on line survey efforts and questionnaires
 - Five topic-based workshops
 - Social media




CAC members complete an exercise on transportation challenges at their first meeting

Chattanooga 2040 RTP (continued)



- Integration of asset-management principles coupled with system preservation funding analysis
 - Identified optimal funding levels needed to maintain roads and bridges over life of the plan
 - Doubling of maintenance funding needed
- New tools to support improved evaluation
 - GIS methods for multimodal gap analysis and health/accessibility analysis
 - Off-model calculator for evaluating smaller-scale system operations and bicycle and pedestrian improvements
 - Greatly improved travel demand model with ability to model transit


Performance-Based Plan Process



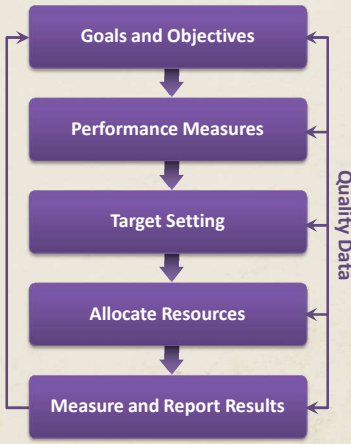
- Supports transparent decision-making in competitive funding environment
- Provides context, helps organize steps of plan development
- Key metrics to track positive outcomes
- Ensures investment decisions align with long-term goals
- Helps agency manage expectations
- Preparation for new requirements under MAP-21
 - Safety
 - Infrastructure condition
 - Congestion reduction
 - System reliability
 - Freight movement and economic vitality
 - Environmental sustainability
 - Project delivery

7

Steps of Performance-Based Process



The traditional approach focuses on five key elements



```

graph TD
    A[Goals and Objectives] --> B[Performance Measures]
    B --> C[Target Setting]
    C --> D[Allocate Resources]
    D --> E[Measure and Report Results]
    E --> A
    subgraph "Quality Data"
        B
        C
        D
        E
    end
            
```

8

Define Goals and Objectives



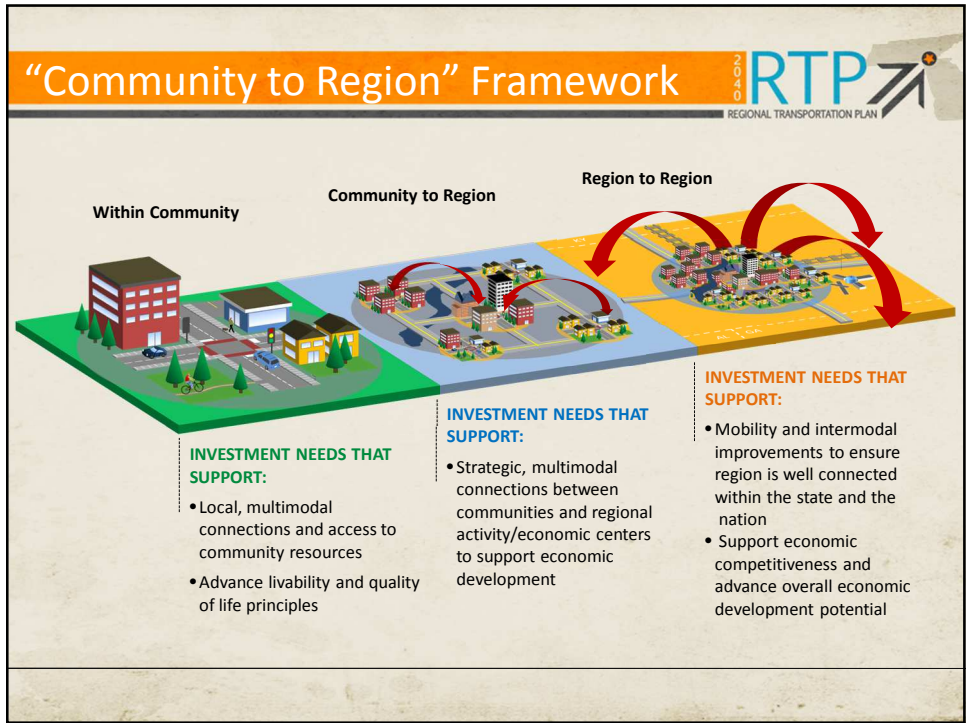
- First critical step in the process
- Based on extensive outreach efforts conducted early in plan development
 - CAC and CTT meetings
 - First regional leadership symposium
 - Transit visioning workshop
 - Public open house and public questionnaires
 - Stakeholder interviews





9





Scale 1-Goals/Objectives


Goal
BUILD AND MAINTAIN SAFE AND HEALTHY COMMUNITIES

Objectives


- Support walkable and bicycle-friendly communities that promote safe connections to community resources
- Provide incentives for complete streets project design
- Encourage investments anchored in integrated transportation and land use planning that support desired community character
- Improve safety through improved system operations, preventative maintenance, and ADA compliance
- Prioritize investments in areas where local land use and development regulations support healthy, safe communities
- Prioritize investment that improves multimodal access to existing or planned transit hubs or that fills gaps in existing multimodal system
- Encourage connected street network

Within Community

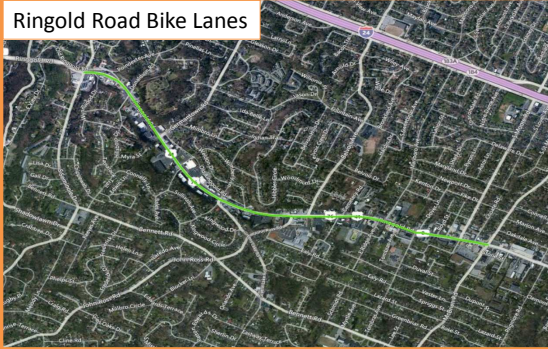
Scale 1-Example Projects




Within Community



Ringold Road Bike Lanes



Jenkins Road Widening



Scale 2-Goals/Objectives



Goal
CONNECT COMMUNITIES IN THE REGION BY PROVIDING MULTIMODAL TRAVEL OPTIONS TO ACTIVITY AND ECONOMIC CENTERS

Objectives


- Preserve, maintain, and improve existing infrastructure before adding new capacity
- Provide incentives for complete streets project design
- Encourage corridor improvements anchored in integrated transportation and land use planning that support desired community character
- Improve mobility and support economic development by providing expanded set of travel options, with emphasis on public transit
- Improve travel time reliability through improved system operations
- Incentive corridor protection plans

Community to Region




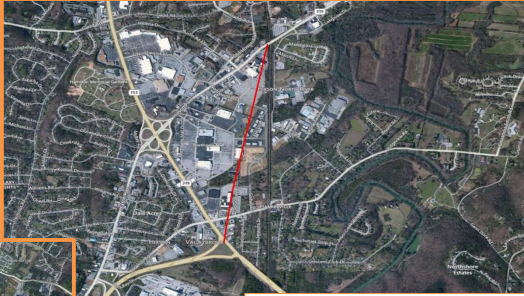
14

Scale 2-Example Projects

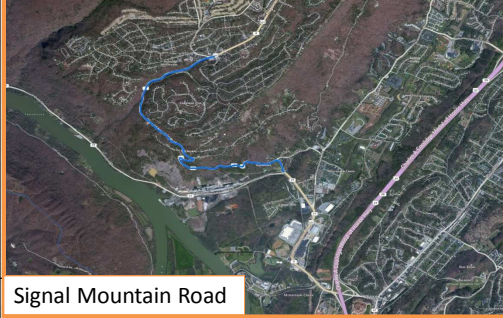


Community to Region





Dupont Parkway Extension



Signal Mountain Road

Scale 3-Goals/Objectives



Goal
GROW ECONOMIC OPPORTUNITY THROUGH STRATEGIC INVESTMENT IN CRITICAL REGIONAL INFRASTRUCTURE

Objectives


- Preserve, maintain, and improve existing infrastructure before adding new capacity
- Support continued economic growth of the region by improving intermodal connections that reduce delay for both people and goods
- Reduce delay on critical regional thoroughfares with minimal impact to community, historic and environmental resources
- Improve the efficiency and reliability of freight, cargo, and goods movement by reducing delay on corridors critical to freight movement
- Improve travel time reliability through improved system operations

Region to Region




16


Scale 3-Example Projects




Region to Region




I-75/I-24 Capacity




Enterprise Parkway Extension



Breaking with Tradition...



The Chattanooga 2040 RTP varied goals and objectives by the need and purpose (“scale”) of investment breaking the traditional, linear approach.





```

graph TD
    subgraph Scale1 [Scale 1]
        G1[Goal Scale 1]
        O1[Objectives Scale 1]
    end
    subgraph Scale2 [Scale 2]
        G2[Goal Scale 2]
        O2[Objectives Scale 2]
    end
    subgraph Scale3 [Scale 3]
        G3[Goal Scale 3]
        O3[Objectives Scale 3]
    end
    G1 --> O1
    G2 --> O2
    G3 --> O3
    O1 --> PM[Performance Measures  
Weighted to reflect relative level of importance within each scale]
    O2 --> PM
    O3 --> PM
    PM --> AR[Allocate Resources]
    AR --> MR[Measure and Report Results]
    MR --> PM
    
```

18

Intent of Revised Approach






- Enable balanced consideration of investment needs across three geographic scales
- Infuse context into the project evaluation process to better match solutions to needs
- Provide flexible approach to project evaluation to support livability considerations at community level without impeding mobility and economic considerations at regional level

19

Define Performance Measures



- Align with regional and national goals and objectives
- Vital few
- Easy to communicate, transparent
- Existing, readily available data and tools
- For this approach, very important to apply same set of (mode-neutral) performance measures across different scales to ensure objective evaluation

2040 RTP Performance Measures

PM Categories*	Project Level Measures	Systems Level Measures
System Maintenance	1. Project addresses pavement, bridge deficiency	1. Percent pavement in good condition 2. Percent bridge in good condition
Congestion Reduction	2. Project reduces delay (VHD) <ul style="list-style-type: none"> • Interstate • Corridor to/within key center 	3. Average commute trip time, auto and transit
Safety and Security	3. Project reduces fatal or serious crashes 4. Addresses security or emergency response need, provides network redundancy	4. Level of dedicated safety funding
Economic Growth/ Freight Movement	5. Project reduces delay (VHD) <ul style="list-style-type: none"> • Intermodal connection • Freight corridor/area 	5. Annual congestion costs, trucks and autos
Environmental Sustainability	6. Project reduces VMT 7. Promotes safe, nonmotorized access; integrates complete streets 8. In keeping with community character	6. VMT per capita
System Reliability	9. Adopted corridor protection plan 10. Project fills gap in existing system 11. Improves efficiency through ITS	7. Level of funding for system operations
Project Delivery	12. Supported by TDOT and local jurisdictions	8. Percent projects completed or advanced from previous plan

*Align with MAP-21 National Goal Area

- ## Weight Performance Measures
- Weighting system varies across three scales
 - Within Community
 - Community to Region
 - Region to Region
 - Weights vary by level of significance of each measure for each scale
 - TPO membership involved in defining weights
 - Different weighting system allows projects to be scored and ranked according to unique needs of each scale

Weight Performance Measures

PM Categories	Project Level Measures	Within Community	Community to Region	Region to Region
System Maintenance	1. Project addresses pavement, bridge deficiency	15	15	15
Congestion Reduction	2. Project reduces delay <ul style="list-style-type: none"> • Interstate • Corridor to/within key center 	10	15	20
Safety and Security	3. Project reduces fatal or serious crashes 4. Addresses security or emergency response need, provides network redundancy	15	15	15
Economic Growth/ Freight Movement	5. Project reduces delay <ul style="list-style-type: none"> • Intermodal connection • Freight corridor/area 	5	10	20
Environmental Sustainability	6. Project reduces VMT 7. Promotes safe, nonmotorized access; integrates complete streets 8. In keeping with community character	30	20	10
System Reliability	9. Adopted corridor protection plan 10. Project fills gap in existing system 11. Improves efficiency through ITS	15	15	10
Project Delivery	12. Supported by TDOT and local jurisdictions	10	10	10

- ## Assign Projects to Scale
- Project’s need and purpose
 - Location and proximity to community or environmental assets
 - Functional classification
 - Note: TPO membership reviewed assigned scales prior to project scoring

Score Projects

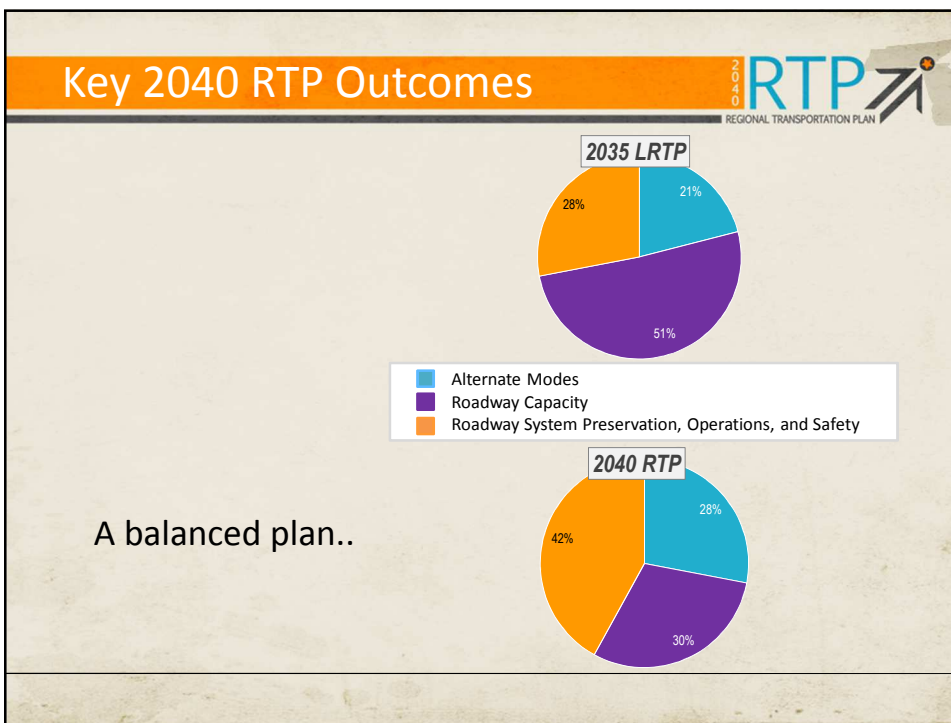
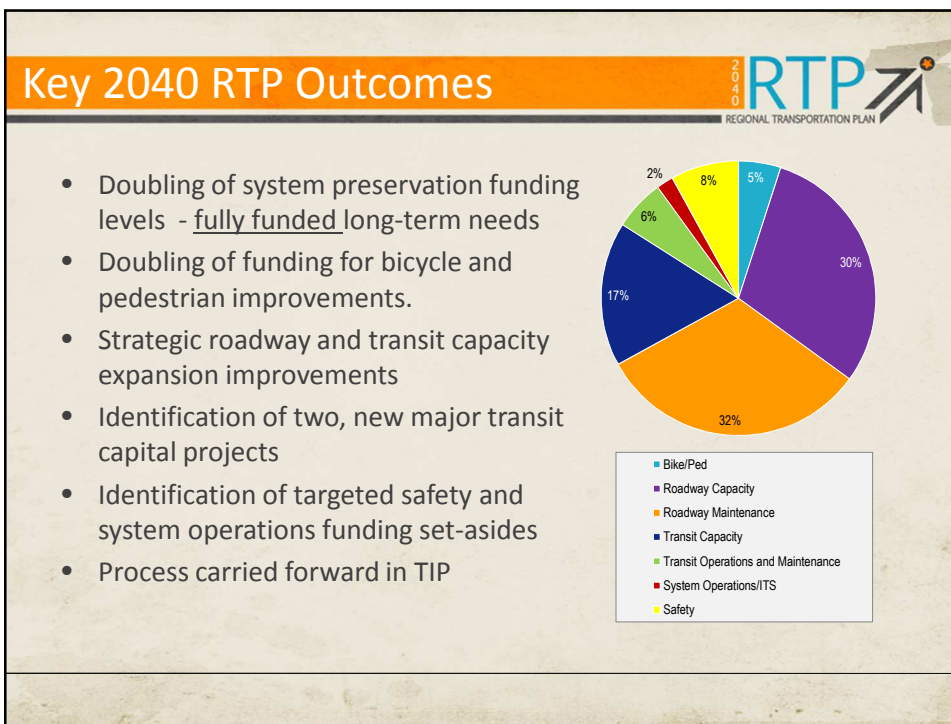


- Within each scale, projects evaluated relative to one another for each of the 12 performance measures
- Weights applied for each measure, given scale of project
- Points summed across all measures to produce individual project scores
- 100 point score across 12 performance measures

Scoring and Ranking Outcomes



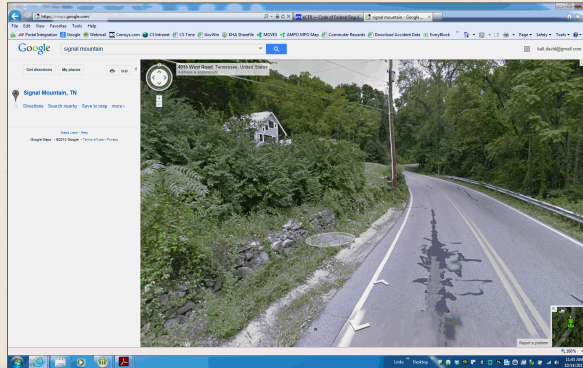
- Process yielded three ranked lists; one for each scale
- Projects were combined into one rank based on scores
- Projects were grouped into four tiers (“Rank 1, Rank 2, etc.) based on groupings of scores
- Process produced:
 - Blend of high ranking projects (by project type and across geographic scales) for the fiscally constrained 2040 RTP
 - Objective support for variety of investments given the mode-neutral performance evaluation
 - Focus on performance and priorities – Priorities established *before* funding source entered discussion
 - All projects Rank 1 and 2 were funded in the 2040 RTP



Take-Aways



- Appropriate weighting is critical
 - “Watering down” this approach will not work
- Must have a manageable number of projects
 - It takes time understand context
 - Supports more refined performance evaluation



Take-Aways (continued)



- Need tools in place to evaluate off-model projects
- Need to keep the measures simple and mode-neutral to ensure objective, cross-“scale” analysis
- A combination of qualitative and quantitative measures is OK; does not preclude an objective ranking
- Important to carry forward into TIP process
- Other potential applications
 - E.g., Community to Region Framework for new countywide Comprehensive Vision & Places Strategy for the City of Chattanooga