UNIFIED VISION

A partnership of public and private organizations focused on changing how we move – and making the Denver metro area a better place to work and live.
Collaboration of CDOT, RTD, and DRCOG policies, programs, and transportation investments

Pilot projects with private sector partners and continued participation of the business community

Identifying potential for efficient technology-leveraged investments
MCB PROCESS OVERVIEW

Input
- Community Engagement
- Research
  - Existing Programs
  - Peer Cities
  - Transformational Technologies

Blueprint Framework
- Vision, Mission
- Themes, Problems, Outcomes
- Workshop Results
- Emerging Mobility Systems

Scenario Evaluation
- 2030 Existing Plans
- 2030 Trends
- 2030 Reactive
- 2030 Proactive

Preliminary & Final Recommendations
- Policy Changes
- Mobility Programs
- Funding Sources
- Governance Models
- Pilot Projects
- Next Steps

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Spring | Summer | Fall
---|---|---

MOBILITY CHOICE BLUEPRINT
EMERGING MOBILITY SYSTEMS

On-Demand Mobility
- Ridehailing
- Microtransit
- Car Sharing
- Bike sharing
- Mobility as a Service

Traveler Information and Payment
- Mobile Transit App
- Intermodal Trip Planner App
- Mobile Travel Incentives App

Transportation Systems Optimization
- V2X
- Active Travel Demand Management
- Integrated Corridor Management
- Smart Parking

Freight and Delivery
- Courier Services
- Driverless Delivery
- Drone Delivery
- 3D Printing

Vehicle Technology
- Autonomous Vehicles Levels 1-5
- Electric Drive-train
- Battery Technology
ESTABLISHING A TECHNOLOGY BASELINE

- Technology Deployment Research
- Local HDR Resource Inputs
- Regional Demographics
- Regional Technology Assessment
- Phone Interview
ENABLING TECHNOLOGIES

- Traffic signal fiber optic system
- 5G cell network
- Dedicated Short Range AV/CV
- Electric Vehicle Charging Infrastructure
- Public data portal
- Smart streetlighting
- Wayfinding/trip planning app
SAFETY TECHNOLOGIES

- V2I connected vehicle safety applications
- Transit collision/warning detection
- Emergency vehicle preemption
- Pedestrian detection
MONITORING AND DETECTION TECH.

- Vehicle speed/volume detection
- Road weather information systems
- Roadway cameras

INDEX SCORE

- Denver, CO: 10.0
- Austin, TX: 10.0
- Boston, MA: 10.0
- Columbus, OH: 10.0
- Minneapolis, MN: 9.4
- Nashville, TN: 6.7
- Pittsburgh, PA: 10.0
- Portland, OR: 8.3
- San Francisco, CA: 3.3
- Seattle, WA: 8.3
- Tampa Bay, FL: 0.0
## Operational Optimization Tech.

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<td>Tampa Bay, FL</td>
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MODE / TRAVEL DEMAND CHANGE TECH.

INDEX SCORE

Denver, CO
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Tampa Bay, FL

7.2
6.6
8.7
7.7
6.7
3.9
5.2
5.2
8.9
8.3
5.8
PROCESS FLOW FOR THE DEVELOPMENT OF SCENARIOS

Themes

Existing Planning Assumptions

Strategies

Technology Trends

Tactical Actions

Scenario 1: Existing Planning Assumptions

Scenario 2: Technological Overrun

Scenario 3: Reactive

Scenario 4: Proactive
THEMES

- Safety
- Sustainable Mobility
- Funding and Finance
- Human Experience
- Infrastructure
- Governance
- Data
- System Efficiency
## THEMES, STRATEGIES AND ACTIONS

<table>
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<tr>
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<th>Themes</th>
<th>Strategies</th>
<th>Actions</th>
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COMPARATIVE EVALUATION CRITERIA

1) Technology Driven
2) Impact/Benefit to Mobility
3) Impact/Benefit to Society
   1) Sustainability - economic development, social, environmental
4) Multi-agency collaboration requirements
5) Cost Feasibility
6) Ability to Implement by RTD/DRCOG/CDOT
EXAMPLE: TACTICAL ACTION #3

- Create PPPs to establish transit service in underserved areas to reduce service gaps and partner with:
  - Transportation Network Companies (TNCs)
  - Micro-transit services
  - Mobility-as-a-Service providers

- Consider connections to senior housing, mobility-disadvantaged neighborhoods, healthcare facilities and similar locations

**EXAMPLE: TACTICAL ACTION #3**

- Type: Program
- Difficulty: Medium
- Investment: $6-15M
- Transects: Urban/Suburban
- Time to Implement: < 1 Year
EXAMPLE: TACTICAL ACTION #21

- Establish a Mobility Technology Clearinghouse:
  - Coordinate Pilot Projects throughout the Region
  - Pool funding
  - Coordinate Agency staff
  - Provide single point of contact
  - Coordinate technology in CIP projects
  - Employ process to prioritize corridors
  - Facilitate partnerships
  - Monitor performance and cost tracking

- Type: Program
- Difficulty: Easy
- Investment: < $0.5 M
- Transects: All/Region
- Time to Implement: < 1 Year
EXAMPLE: TACTICAL ACTION #22

• Establish a Regional Data Platform that will:
  o Consolidate multiagency data into single repository with joint access
  o Establish policy standards for data sharing for interoperability and security
  o Create policy(s) to ensure inter-operability of infrastructure and software
  o Promote open and well-documented APIs

• Type: Program
• Difficulty: Medium
• Investment: $2 - 5 M
• Transects: All/Region
• Time to Implement: < 1 Year
EXAMPLE: TACTICAL ACTION #27

- Fund and engage in Pre-development activities with affected cities to begin implementation of an Integrated Corridor Management (ICM) Pilot Project in a key metro corridor.
  - ICM combines two primary concepts:
    - Active Management
    - Modal Integration of Institutional, Operational and Technical elements

- **Type:** Pilot Project
- **Difficulty:** Medium
- **Investment:** $2 - 5 M
- **Transects:** Urban/Suburban
- **Time to Implement:** 1-3 Years
PROCESS FLOW FOR THE DEVELOPMENT OF SCENARIOS

Themes

1
2

... 27

Strategies

Technology Trends

Tactical Actions

Scenario 1: Existing Planning Assumptions

Scenario 2: Technological Overrun

Scenario 3: Reactive

Scenario 4: Proactive

Existing Planning Assumptions
FOUR SCENARIOS

• **Current Scenario 1:**
  - “Business as Usual with Existing Plans”
  - Fiscally Constrained Regional Transportation Plan

• **Hypothetical Scenario 2:**
  - Trends “Technological Overrun”
FOUR SCENARIOS

• Hypothetical Scenario 3:
  o “Reacting to technological changes as they evolve”

• Hypothetical Scenario 4:
  o “Proactively inviting and enhancing mobility technologies”
Thank You
Questions