Transportation Demand Management (TDM) Updates

Lisa Streisfeld
Office of Innovative Mobility
• Office of Innovative Mobility
• TDM Defined
• Benefits of TDM
• State TDM Plan (2019)
• CDOT Procedural Directive 1601 and TDM
• How to Create a TDM Plan
• Example Strategies During & Post Construction
• Internal Employee TDM
• TMO Grant Programs
• TDM Resources
• TDM Conference
• Future TDM Tasks
Reduce pollution in our air and congestion on our roads by expanding multimodal transportation options, utilizing traditional and emerging mobility technologies.
Colorado HB 19-1261: Climate Action Plan to Reduce Pollution

Sets bold goals for Colorado to Reduce Greenhouse Gas Emission from 2005 levels

- 26% by 2025
- 50% by 2030
- 90% by 2050

\[ \text{CO}_2, \text{CH}_4, \text{NO}_x, \text{HFCs}, \text{PFCs}, \text{NF}_3, \text{SF}_6 \]
Transportation Demand Management (TDM)

Reduce or manage vehicular travel to maintain operational capacity on highway infrastructure.

- Don’t travel: remote work, school, doctor’s appointments, etc.
- Change day of travel
- Change time of day
- Change the route of the trip
- Change the mode of the trip: walk, bike, bus, rail, scooter, TNC
- Transit for special events
- Combine trips
- Combine persons taking the trips:
  - Carpool
  - Vanpool
  - School pool
  - Ski-pool
  - Shared rides using TNCs*

*BNC: Transportation Network Company: such as Uber, Lyft, Hop-Skip-Jump

**BENEFITS:**
- Reduce vehicle miles traveled
- Reduce congestion and delay
- Reduce greenhouse gas emissions
- Enhance operational lifespan of infrastructure
- Helps maintenance during winter operations
- Reduces wear and tear on transportation network
- Reduce parking needs downtown
- Help promote economic development
- Increase accessibility to opportunities
- Reduce noise impacts
- Diversify mobility choice

Transportation demand management is influencing people’s behavior to use the existing infrastructure in more efficient ways.
2019 Statewide TDM Plan

- Inventory of TDM Strategies in the State
- Document Where Strategies are Being Implemented
- Estimate Participation
- Evaluate Cost to Implement
- Calculate Cost Effectiveness
Policy Directive #1601 for Interchange Access Approval

• The process to review and approve requests for new interchanges and major or minor improvements to existing interchanges on the state and federal-aid highway system

• The policy integrates FHWA and CDOT environmental, access, permitting, and planning partner approval elements into one overarching process

• Preserve the state highway system’s level of service (LOS)

• Ensure fair and consistent consideration of proposals for new & existing interchanges

• Have sufficient information for CDOT to make an informed decision

• Minimize duplicative analytical, regulatory, and procedural requirements

• Amended by Transportation Commission in 2021

  • Will require applicants to include a TDM (Transportation Demand Management) Plan for Type 1 and Type 2 interchange proposals. Also applies to Type 2 interchange modifications on interstate facilities.

  • Applicant to meet a TDM scorecard with a target point system based on the type & location of the proposed improvement.
Inclusion of a TDM Plan for PD 1601 Interchange Approval

Goals:
• Early promotion of multi-modal options
• Provide alternative travel choices
• Preserve the functionality and operability of the transportation infrastructure investment
• Decrease VMT-Vehicle Miles Traveled
  • 3% or greater reduction in ADT (Average Daily Traffic) in MPO areas
  • 1% or greater reduction in ADT outside of MPO areas
• Decrease vehicle greenhouse gas emissions
PD # 1601 Process Overview Steps

- Notification by applicant
- Pre-application meeting
- Initial intergovernmental agreement (IGA)
- Prepare a System Level Study (SLS)
- CDOT Approval of SLS
- Approval by MPO/TPR Board (consistent with constrained RTP and TIP)
- Conceptual design and NEPA approval process
- Final Intergovernmental Agreement (includes TDM Plan)
Ten Step: How to Create a TDM Plan

1 - Describe Proposed Development
   a. Current and future land uses (within the development)
   b. Population (density and behaviors)
   c. Trip generation rates
   d. The transportation problem (use System Level Feasibility Study)
      a. Why are people currently using the modes of transportation that they are? Are they limited to one mode?
      b. What kind of traffic volumes are targeted for change?
      c. Where does congestion occur and what time/day of week?
   e. Overall goals/solutions that these TDM Strategies will accomplish
   f. General performance targets (elaborate in Section 10: Evaluation Plan)
      a. What are the mode split and/or trip reduction goals?
      b. What is the implementation timeline?

How to Create A TDM Plan
2 - List Existing Land Use Plans and Conditions

a. Existing master plans
   a. Are there bike, pedestrian, TDM, and/or transportation master plans for the city or county?
b. Population (density and behaviors)
c. Existing or future transit plans
d. Adjacent land use and context
Ten Step: How to Create a TDM Plan

3 - Define Target Population
   a. Population density
      a. What is the population density for the planned area?
      b. Note: Rural and urban communities need context-sensitive solutions.
   b. Demographics
      a. Whose mobility behavior is being targeted (residents, employees, universities, schools, shift employees, game-day attendees, tourists, etc.)?
      b. Are there any groups with unique needs (students, veterans, seniors, etc.)?
      c. Who is living and working in this area?
   c. Current travel patterns
      a. How are users getting around the area?
   d. Understand Why are the trips being taken?
      a. Commerce
      b. Recreation
      c. Education
      d. Medical
      e. Employment
Ten Step: How to Create a TDM Plan

4 - Plan Coordination

a. Local agency stakeholders
   a. Who should be involved from the City and/or County (including elected officials)?
   b. TPR, MPO, and/or TMA/TMO
      a. Are any groups doing work in the area and do they have TDM programs this plan should coordinate with?
   c. Transit agencies, other nonprofits, or private companies
   d. CDOT representatives
      a. Have you discussed this plan with CDOT regional representatives and/or TDM-focused CDOT representatives?
5 - Propose Solutions and Strategies

a. TDM Strategy Selection
   a. What options will address the transportation problems? Refer to the CDOT website on TDM, and Statewide TDM Plan for ideas.
   b. How will these strategies interact with existing and future infrastructure and influence human behavior?
   c. What new and emerging technologies (micromobility, autonomous shuttles, etc.) make sense in this area?
   d. Will there be any special events in this area that will need other TDM strategies?

b. Context-Sensitivity
   a. How will the proposed TDM strategies complement existing programs and infrastructure to ensure that the proposed improvements do not detract or replace existing strategies?
Ten Step: How to Create a TDM Plan

6 - Costs and Funding Sources for Plan

a. Startup capital and long-term maintenance costs
b. Project funds
c. Partnerships
   a. What agency or organization will fund the TDM Plan?
   b. Will financial partnerships with a local transit agency or MPO be needed? Are there opportunities to partner with local business parks, universities, developers, or other private partners?
   c. Have you considered federal and state grants?
   d. Are additional funds from CDOT requested?
Ten Step: How to Create a TDM Plan

7 - Identify Needs for an Intergovernmental Agreement (IGA)
   a. Reference a project scope of work
   b. Contain a schedule for implementation of the TDM Plan, which carefully considers lead times for capital acquisition to ensure on-time delivery
   c. Identify the responsible parties for funding and deployment of the TDM plan
   d. Reference dates the IGA is active
   e. Reference a timeframe to revisit, refresh and amend both the TDM Plan and the IGA
   f. Contain signatories and their respective titles.
8 - Marketing and Education Plan

a. Communications and marketing plans
   a. Are flyers and/or press releases needed?
   b. Provide information about all of the social media platforms and electronic communications that will be used to encourage the use of these TDM strategies.
   c. What other groups in the community need outreach?
Ten Step: How to Create a TDM Plan

9 - Create a TDM Implementation Schedule
   a. Schedule with key tasks identified
   b. Start date
   c. Management responsibilities and staffing
   d. Operations & Maintenance responsibilities and staffing needs
10 - Evaluate Success of the Plan

a. Determine Key Performance Indicators (KPIs) of a successful project and how they will be reported
b. Identify parties responsible for evaluation and cadence of reports
c. What type of greenhouse gas emission reduction will be achieved by this plan?
Examples of TDM During Construction

- Public marketing campaign
- Increase in transit options
- Local employer participation
- Dedicated safety patrol.. traffic incident management system
I-70 Central Corridor Construction

Image by Northeast Transportation Connections (NETC)
SH 82 Grand Avenue Bridge Replacement
I-25/US 24 Cimarron Interchange
Examples of TDM Post-Construction
Mobility Hubs:
Curb Space for TNCs

Image by Leah Hogsten for Salt Lake Tribune
Transit and Transit Support Amenities

- Bus Only Lanes
- Transit Queue Jumps at Traffic Signals
- Dedicated Curb Space
- Curb Space Management Systems
- Digital Mobility Hubs-Connected Colorado
- Transit Ticketing Connectivity to other modes
  (TNCS or Scooter Share)
Targeted Transit Services

- Bustang to Estes Park
- Pegasus
- Snowstang
- Ramsride
- Employer Shuttles
Comfortable and Connected Pedestrian Facilities
Micromobility

INFO BRIEF
E-Scooter Management in Midsized Cities in the United States

Image by Ground Control Systems
EV Charging Stations
Parking Management Systems
GoTober 2020: Top Commuters

October 01, 2020 - October 31, 2020
Log your trips and climb your way to the top of the leaderboard!

Modes Eligible: Bike, Carpool, Transit, Vanpool, Walk, E-Scooter, Telework
Source(s) Eligible: All
Eligible Days: Su, M, T, W, Th, F, S
Maximum Eligible Daily Trips: 4

<table>
<thead>
<tr>
<th>PARTICIPANTS</th>
<th>TRIPS</th>
<th>DISTANCE</th>
<th>MONEY SAVED</th>
<th>CO2 SAVINGS</th>
<th>CALORIES BURNED</th>
</tr>
</thead>
<tbody>
<tr>
<td>645</td>
<td>17,114</td>
<td>204,404.3 mi</td>
<td>$0.1 Million</td>
<td>76.5 tons</td>
<td>1 Million</td>
</tr>
</tbody>
</table>

LEADING: PARTICIPANTS

<table>
<thead>
<tr>
<th>Rank</th>
<th>Name</th>
<th>Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chelsea</td>
<td>120</td>
</tr>
</tbody>
</table>

Image from MyWayToGo
Remote Work

2020 CDOT TELEWORK GRANT
School-Oriented TDM

Walking School Bus
School Pool Programs
Safe Routes to Schools
Bike Safety Courses
Traveler Information

ROAD CAMERAS

TRAFFIC MANAGEMENT CENTER

POST TRAVEL TIMES ON VARIABLE MESSAGE BOARD
Colorado HB 21-1076: Carpooling Internet Applications

- Separates carpool apps from the definition on Transportation Network Companies like Uber or Lyft
- Website contains: Copy of the bill & Question/Answer document
- Companies required to Register with CDOT starting Oct. 1, 2021
- Two companies registered to date
- Carpool rides must at least 23 miles
  - Rides to ski resort are exempt from minimum.
- Carpool trips are limited to one round-trip per day
- Vehicles are allowed one driver and up to 6 passengers
- Drivers are reimbursed through these apps for wear/tear on the vehicle and fuel only
- CDOT supports carpooling as a low-cost & high-value solution to reducing vehicle miles traveled and greenhouse gas emissions

National data from American Community Survey 2019 (from US Census)
8.6% of people carpool to work.
See all the operating vanpools in the Denver metro area on one map, including vanpools from VanGo (Fort Collins), Way to Go (Denver Metro), and Metro Rides (Colorado Springs).
HOV Lanes
CDOT Employee TDM Efforts

- Employee surveys
- Educational webinars
- E-bikes deployment
- E-bike training
- Bike racks at offices
- Indoor bike storage room
- EV training videos
- Participation in Bike to Work days
- Commuter challenges
- Transit rides reimbursement program
- Statewide access to vanpool program
- Installed EV charging on CDOT campuses: fleet vehicle and staff use
- Monthly reimbursement for staff biking to work
Colorado FY 2022 TDM Grants
Encourages actions identified in the 2021 GHG Pollution Reduction Roadmap to meet Colorado’s climate targets and reduce congestion.

Opportunity 1: TMO Support Grant
- Released this summer
- Provides funding to Transportation Management Organizations (TMOs)
  - To deploy new trip-reduction projects and programs
  - To support employer-driven TDM planning and interventions
- Over $450,000 awarded to date

Opportunity 2: TDM Programs, TDM Projects, and Telework Support
- Fall release expected
- Approximately $400,000 in funding available
- Program has broad scope for TDM
  - To capture innovative approaches for trip reduction
  - To promote teleworking practices
  - To support new programs
- Open to local governments and other transit or governmental entities statewide
  - Private, for-profit companies, nonprofits and transportation management organizations (TMOs) may partner with jurisdictions or be a sub-recipient of a governmental agency
CDOT Staff

- Lisa Streisfeld, Assistant Director of Mobility Services
- John Featherstone, OIM Project Coordinator
- TBD, Mobility Coordinator, Division of Transit and Rail
- Nathan Vanderbroek, Bike and Pedestrian Program Manager
- Kyle French, Bus Operations Manager
- Jeffrey Prillwitz, Bus Operations Coordinator
- Nathan Lindquist, Land Use Planner

EXTERNAL

- Metropolitan Planning Organizations (DRCOG: Way to Go Program or NFRMPO: Van Go)
- 9 TMOs in Colorado
- America Walks
- Bicycle Colorado
- Colorado Association of State Transit Agencies (CASTA)
- American Planning Association (APA)
- Association for Commuter Transportation (ACT)
- NACTO (National Association of City Transportation Officials)
- Transit Agencies
Helpful Documents and Websites

- CDOT Mobility Services Website
- Colorado State TDM Plan Phase 1
- TDM Toolkit
- 10 Steps to Completing a TDM Plan
- Updated Policy Directive 1601 for Interchange Approval which incorporates a TDM Plan
- CDOT Bicycle and Pedestrian Plan (Amended 2015)
- NACTO: National Association of Street Transportation Officials has a Micromobility Guide
- ACT: Association for Commuter Transportation with a Rocky Mountain Chapter
- Transportation Resource Board has a TDM Committee
- Mobility Lab
- FHWA-TDM Bibliography
- FHWA: Integrating TDM into Transportation Planning
- North Carolina DOT Statewide TDM Strategic Plan
- Bicycle and Pedestrian Information Center
- DRCOG TDM- and Way to Go Program
- GoBoulder Program
- City of Durango: TDM Savings Calculator
Co-hosted by the Association of Commuter Transportation (ACT) and CDOT

**Purpose:** Showcase transportation options geared toward private employers, transportation professionals, municipalities and other organizations that have a role in transportation demand management (TDM)

November 5, 2021 (7:30 am-1:30 pm)

Virtual and Free

**Registration** on CDOT OIM/Mobility Services Website

**Sample Session Themes Under Economic Development and TDM**
- Best Practices in Data Collection and Reporting
- TDM at Schools, Colleges and Universities
- Local Project Highlights
- Employer Based TDM Programs

18 presentations committed to date
Future TDM Tasks

- Updates to the CDOT NEPA Manual
- Quantitative Assessment of Impacts of TDM Programs
- Publication of Procedural Directive for the 1601 Interchange Approval Process
Thank You!

LISA STREISFELD
Assistant Director of Mobility Services
Office of Innovative Mobility
Colorado Department of Transportation
Lisa.Streisfeld@state.co.us
(303)757-9876