Purpose
To brief and engage the Transportation Commission on new effort to reset the planning and Statewide Transportation Improvement Program (STIP) process in order to streamline multiple processes and the stakeholder engagement involved in these efforts.

Action
None. Information only.

Background
Over the last several months the Commission has received several briefings on the upcoming launch of the 2045 Statewide Plan, a federally required planning document (23 U.S. Code § 135) with a target adoption rate of March 2020. In addition to the Statewide Plan, the Commission also has been closely involved in the review and adoption of several additional planning and project prioritization efforts. This work, briefly summarized, includes the following:

- The 4-year STIP: A fiscally constrained list of projects, currently updated on a rolling basis where the fourth year of projects is added every year.
- The 10-year Development Program: A list of unfunded capital projects that has served as the basis for identifying project opportunities when new funding sources become available.

While these processes have been closely coordinated and connected within the Department, their development as largely distinct efforts has limited CDOT’s ability to realize efficiencies and to effectively engage our public and stakeholders.

Details
Under the direction of Director Lew, staff is working to bring these efforts together in order to develop a 10-year strategic pipeline of projects, inclusive of all modes, informed both by a data-driven needs assessment and public and stakeholder input. This effort involves the following primary actions:

1. Leverage Statewide Planning Process to Deliver 10-Year Strategic Pipeline of Projects
   - Utilize the statewide planning process to involve the public not just in setting a 25-year vision, but also in shaping a more immediate 10-year list of projects.
• Build on the lessons learned and experience gained through the development of the 2040 plan, which achieved a record level of public involvement.

2. **Modal Plan Integration**
   - “Marry” the Statewide Transit Plan and the overall 2045 Statewide Plan through enhanced coordination between the Division of Transportation Development (DTD) and the Division of Transit and Rail (DTR).
   - Previously these efforts were envisioned as two separate planning efforts with their own respective timelines and public meetings.
   - By “marrying” the two efforts CDOT can realize efficiencies to effectively engage the public and stakeholders. This change would still result in separate “plans” per Federal requirements, but will enable the public to better evaluate project needs across multiple modes.

3. **Utilize New Tools to Understand Current Conditions and Measure Needs**
   - Utilize CDOT’s recently completed Statewide Travel Model and in-house GIS capabilities to visually portray the relationship of the existing “footprint” of the state transportation system to a range of different factors through which the department can measure needs.
   - Factors could include population distribution, accident hot-spots, employment centers, military installations, etc.

4. **Evolution of the STIP**
   - Transition the 4-year rolling STIP to a 10-year strategic pipeline of projects.
   - Requirement for a 4-year fiscally constrained list of projects per Federal requirements is unchanged; however the STIP would also include a 6-year list of capital projects and asset investments that exist beyond the 4-year federally recognized STIP window.

The March Commission workshop will provide an initial overview of how these processes will be aligned. In April, staff will build on this information and engage the Commission in reviewing public outreach materials, including a series of visuals built around geospatial analysis. April’s workshop also will include additional information on how the asset management process aligns with this approach.

**Next Steps**
- April 2019: Review of public outreach materials and geospatial analysis visualization.
- April 2019: Asset management process alignment with streamlined planning approach.

**Attachments**
- Attachment A - An Overview of Resetting the Planning Process Presentation
Planning Workshop

Transportation Commission

March 19, 2019
Agenda

• Background

• Resetting the Planning Process
  o Statewide Planning Process and Pipeline of Projects
  o Modal Plan Integration
  o Evolution of the STIP
  o Utilization of New Tools

• Commission feedback and discussion

• Next Steps
Background

- The Commission has been involved in a number of planning and prioritization efforts.
  - The 25-year Statewide Plan
  - Additional Modal Plans and other Federally Required Documents (Colorado Freight Plan, Risk-Based Asset Management Plan, and the Statewide Transit Plan, etc.)
  - The 4-year STIP
  - The 10-year Development Program

- These planning activities are closely coordinated, but were largely independent efforts.

- Independent efforts have limited CDOT’s ability to maximize efficiencies and engagement opportunities with the public and stakeholders.
The Goal

Bring planning efforts together in order to develop a 10-year strategic pipeline of projects, inclusive of all modes, informed both by a data-driven needs assessment and public and stakeholder input.
Resetting the Planning Process

• Strategic Actions to Achieve Goal:

1. Leverage Statewide Planning Process to Deliver 10-Year Strategic Pipeline of Projects
2. Modal Plan Integration
3. Evolution of the STIP
1. **Leverage Statewide Planning Process to Deliver 10-Year Strategic Pipeline of Projects**

- Utilize the statewide planning process to involve the public shaping a more immediate 10-year list of projects.
- Build on the lessons learned and experience gained through the development of the 2040 plan.
- Continue the high level coordination with the Transportation Planning Regions (TPRs) as seen in the 2040 plan development.
2. Modal Plan Integration

- Merge development of the Statewide Transit Plan and the 2045 Statewide Plan
  - Previously two separate planning efforts with their own respective timelines and public meetings.

- Create efficiencies for public engagement.

- Federal rules still require separate products and CDOT will do more to enable the public to better evaluate project needs across multiple modes.

- Coordinated evaluation of solutions across modes
- Ensures one “fix” doesn’t preclude another option
- Single project list; developed in tandem
3. **Evolution of the STIP**

- Transition the 4-year rolling STIP to a 10-year strategic pipeline of projects.
  
  - Requirement for a 4-year fiscally constrained list of projects per Federal requirements is unchanged.
  
  - Add a 6-year list of capital projects and asset investments that exist beyond the 4-year federally recognized STIP window.
  
  - Allows CDOT to better plan for the future and optimize project delivery over a broader period of time.
Evolution of the STIP

Rolling 4-Year STIP (OLD)

Statewide Transportation Improvement Program

Year 1          Year 2          Year 3          Year 4

10 Year Strategic Pipeline of Projects (NEW)

Statewide Transportation Improvement Program

Year 1          Year 2          Year 3          Year 4          Years 5-10

New Year Added on Annual Basis

PMO Optimization of Project Delivery

Attachment A - An Overview of Resetting the Planning Process
Utilization of New Tools


- Utilize CDOT’s recently completed Statewide Travel Model and in-house GIS capabilities.

- Visually portray the relationship of the existing “footprint” of the state transportation system to a range of different factors through which the department can measure needs.

- Factors could include population distribution, accident hot-spots, employment centers, military installations, etc.
Previous Modeling Approach

• Simplified form of “modeling” and “forecasting”:
  o Used traffic counts on road segments with available count info to estimate volumes on other segments.
  o For forecast years--calculate growth rates from past year counts, and use those rates to estimate future volumes.

• Could not tie growth/development to growth in traffic--simply assumed that future growth would be like past growth.

• No analysis of vehicle occupancy was possible.
• Behavioral model of human behavior and preferences
• Can handle multiple “what ifs” (changes in land use, transit and bicycle/pedestrian, etc.)
• Multi-modal (can examine effects of traffic congestion on transit demand and vice versa)
• Can provide projections for 10-year window
• Can examine the effects of multiple simultaneous changes (e.g. changing land use, transit and highway facilities all at once)
Utilization of New Tools & Data--Example

Land use (Housing and Job locations), AADT(2017)

Legend

Project Planning Layers

Mobility / Congestion

AADT (2017)
- 40 - 10,000
- 10,000 - 26,000
- 26,000 - 52,000
- 52,000 - 94,000
- 94,000 - 167,000
- 167,000 - 280,000

Housing Locations (0)

Job Locations (1)
- 0 - 5
- 5 - 20
- 20 - 100
- 100 - 500
- 500+
Utilization of New Tools: Geospatial Analysis -- Example

Community anchor institutions, Population by Transportation Analysis Zone, Drivability Life
Utilization of New Tools & Data--Example

Flood hazard zones, Bridge Condition, Culvert Condition, Mile points

Legend
- NFHL - Flood Hazard Zones
  - 1% Annual Chance Flood Hazard
  - Regulatory Floodway
  - Special Floodway
  - Area of Undetermined Flood Hazard
  - 0.2% Annual Chance Flood Hazard
  - Future Conditions 1% Annual Chance Flood Hazard
  - Area with Reduced Risk Due to Levee

Milepoints
- Milepoints (1 mile)

Project Planning Layers

Maintaining the System

Bridges
- Not rated
- Good
- Fair
- Poor

Culverts
- Not rated
- Good
- Fair
- Poor

CDOT State Highway System
Utilization of New Tools & Data--Example

Post Fire Debris Flows (2018), Community anchor institutions, Culvert condition, Shoulders 2’ or Less

Legend
- Post Fire Debris Flows 2018
- Debris Basins
- Basin Outlets
- Fire Perimeter
- Watchstreams
- Segment Probability Estimates
  - 0 - 20%
  - 20 - 40%
  - 40 - 60%
  - 60 - 80%
  - 80 - 100%
- Segment Volume Estimates
  - < 1,000 m$^3$
  - 1,000 - 10,000 m$^3$
  - 10,000 - 100,000 m$^3$
  - > 100,000 m$^3$
- Segment Combined Hazard Estimates
  - Low
  - Moderate
  - High

- Basin Probability Estimates
  - 0 - 20%
  - 20 - 40%
  - 40 - 60%
  - 60 - 80%
  - 80 - 100%
- Basin Volume Estimates
  - < 1,000 m$^3$
  - 1,000 - 10,000 m$^3$
  - 10,000 - 100,000 m$^3$
  - > 100,000 m$^3$
- Basin Combined Hazard Estimates
  - Low
  - Moderate
  - High

Project Planning Layers
- Maintaining the System
  - Culverts
    - Not rated
    - Good
    - Fair
    - Poor
- Safety
  - Shoulders 2’ or less

CDOT State Highway System

Attachment A - An Overview of Resetting the Planning Process
Commission Feedback

• Are there particular GIS “layers” you would like to see?

• Thoughts on public engagement questions:
  – What do you need from your transportation system?
  – When you think of Colorado’s future, what do you think will be the biggest challenge to our transportation system (e.g. population growth)?
  – Where do you see a lot of accidents/near misses?
  – Where do you always get stuck in traffic?
Next Steps

• **April 2019**: Review of public outreach materials and engagement plan
  - Schedule and engagement tools
  - Geospatial analysis visualizations

• **April 2019**: Asset management process alignment with streamlined planning approach.