Department of Transportation

COT Meeting
August 29, 2019
AGENDA

➢ Approval of the Agenda
➢ Approval of the Minutes
➢ Department Update
➢ Review Proposed CTP Project Prioritization Criteria
➢ Review Draft FY21 – FY26 CTP
➢ Approve Draft and Prioritization Criteria for Public Comment (Action Item)
➢ Public Comment
Excellence in Transportation

Every Trip. Every Mode. Every Dollar. Everyone.

- **Every Trip**
  - We strive to make every trip taken in Delaware safe, reliable and convenient for people and commerce.

- **Every Mode**
  - We provide safe choices for travelers in Delaware to access roads, rails, buses, airways, waterways, bike trails, and walking paths.

- **Every Dollar**
  - We seek the best value for every dollar spent for the benefit of all.

- **Everyone**
  - We engage and communicate with our customers and employees openly and respectfully as we deliver our services.
DelDOT’s FY2020 Initiatives

- Creation of Cooperative Automated Transportation Section
- Expanding DMV and DTC Customer Service
- Increase efforts regarding Anti-Dumping/Anti-Littering
- Continue efforts with Pedestrian Safety Council
- Five Points Working Group Continuation
- Utility Coordination Working Group
MAKING JOBS A PRIORITY

TIIF Transportation Infrastructure Investment Fund

Providing economic assistance to the Department of Transportation for renovation, construction, and other improvements to roads and infrastructure.

TIIF Goals:
- Attract new businesses to Delaware
- Expand existing Delaware businesses
- Create jobs

Senate Bill 61
FY2020 – Sources of Funds – $1.036B

- I-95 Tolls, $146.4
- SR-1 Tolls, $65.0
- DMV Revenues, $221.2
- Motor Fuel Tax, $145.8
- Interest, $4.0
- Bond Proceeds, $128.6
- DTC Fare Box, $27.5
- Federal Funds, $280.0
- DelDOT OP (GF), $5.0
- Misc. Revenue, $12.6

Percentages:
- I-95 Tolls: 14%
- SR-1 Tolls: 6%
- DMV Revenues: 27%
- Motor Fuel Tax: 21%
- Interest: 14%
- Bond Proceeds: 14%
- DTC Fare Box: 6%
- Federal Funds: 12%
- Miscellaneous Revenue: 12%
## Trust Fund Revenues

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<tr>
<th>Revenues</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
<th>FY18</th>
<th>FY19</th>
<th>FY20</th>
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<th>FY22</th>
<th>FY23</th>
<th>FY24</th>
<th>FY25</th>
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<tr>
<td>Motor Fuel Tax</td>
<td>116.9</td>
<td>119.6</td>
<td>126.5</td>
<td>132.1</td>
<td>132.9</td>
<td>144.4</td>
<td>145.8</td>
<td>147.3</td>
<td>148.8</td>
<td>150.3</td>
<td>151.8</td>
<td>153.3</td>
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<tr>
<td>Toll Roads</td>
<td>170.0</td>
<td>176.1</td>
<td>192.3</td>
<td>197.4</td>
<td>197</td>
<td>208.9</td>
<td>211.4</td>
<td>213.8</td>
<td>216.4</td>
<td>218.9</td>
<td>221.2</td>
<td>223.5</td>
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<tr>
<td>DMV Revenues</td>
<td>160.3</td>
<td>171.0</td>
<td>198.1</td>
<td>211.0</td>
<td>211.1</td>
<td>218</td>
<td>221.2</td>
<td>224.4</td>
<td>227.7</td>
<td>231</td>
<td>234.4</td>
<td>237.7</td>
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<tr>
<td><strong>Total</strong></td>
<td>447.2</td>
<td>466.7</td>
<td>516.9</td>
<td>540.5</td>
<td>541.0</td>
<td>571.3</td>
<td>578.4</td>
<td>585.5</td>
<td>592.9</td>
<td>600.2</td>
<td>223.5</td>
<td>614.5</td>
</tr>
</tbody>
</table>

### Graphs

- Motor fuel Tax
- DMV Revenues
- Toll Roads
FY2020 – Uses of Funds – $1.036B

- State Capital, $371.4 (36%)
- Federal Capital, $280.0 (27%)
- DTC Operations, $122.3 (12%)
- Debt Service, $91.5 (9%)
- DelDOT OP (GF), $5.0 (16%)

Total Uses of Funds: $1.036B
FY2020 – US301 Sources and Uses of Funds
(in millions)

**USES -**

- Debt Service, $10.2
- Toll Stabilization Fund, $4.4
- Operations, $3.1

**SOURCES - US301 TOLL REVENUES $17.7M**
Debt–Service as a % of Revenue

Current Debt-Service

Debt-Service with 301
FY2020 – State Capital Categories - $371.4M
(in millions)

- Road Systems, $236.3
- Transit, $41.2
- Support Systems, $55.6
- Grants & Allocations, $38.3

- 64% Road Systems
- 15% Support Systems
- 11% Transit
- 10% Grants & Allocations
Project Prioritization Criteria
Prioritization Criteria

Proposed Quantitative Criteria (77.2%):
- Safety (35.0% from 33.0%)
- System Operating Effectiveness (19.1% from 24.8%)
- Revenue Generation/Economic Development/Jobs & Commerce (13.1% from 7.9%)
- Social and Health Elements (3.9%)
- State and Local Priority (6.1% from 5% of System Preservation)

Proposed Qualitative Criteria (22.8%):
- Multi-Modal Mobility/Flexibility/Access (11.9%)
- Impact on the Public/Social Disruption/Economic Justice (4.3% from 7.2%)
- Environmental Impact/Stewardship (6.6% from 6.5%)

Current Quantitative Criteria (70.7%):
- Safety (33%)
- System Operating Effectiveness (24.8%)
- Revenue Generation/Economic Development/Jobs & Commerce (7.9%)
- System Preservation (5%)

Current Qualitative Criteria (29.3%):
- Multi-Modal Mobility/Flexibility/Access (15.6%)
- Impact on the Public/Social Disruption/Economic Justice (7.2%)
- Environmental Impact/Stewardship (6.5%)

UPDATED!
Social Determinants of Health (SDoH)

“State innovation models are exploring connections among health care, social services, transportation, housing, and food with the assumption that outcomes and cost will improve.

National Academy of Medicine https://www.nam.edu/social-determinants-of-health-101
How does TREDIS work?

- Travel demand models may show changes in traffic volume, vehicle-miles of travel, vehicle-hours of travel and volume/capacity ratio.

- TREDIS translates such changes into effects on costs, reliability, safety and traffic volumes.

- It incorporates the full industry structure of IMPLAN - an economic input-output model of industry relationships among producers, consumers, and institutions for any given region.
Supply Chain Analysis

- Commodity flows and industry dependence
- MAP-21: Economic context of freight transportation planning

Diagram:
- Domestic Outbound & Int’l Export Commodities
  - Agriculture & Extraction
  - Primary Mfg
  - Secondary Mfg
  - Wholesale & Retail Trade
  - Final Demand
- Domestic Inbound & Int’l Import Commodities
- Utilities
TREDIS® is highly precise

- Trusted Data Sources
  - IMPLAN
  - Moody’s
  - FAF
    - WiserTrade
    - ESRI
- Expanded Freight Data Sets
  - v Freight
  - Transearch
- Consistently Updated
- Customized Spatial Detail

- Multimodal Analyses
- Addresses All Modes
  - Road, Rail, Aviation, Marine, Pedestrian, Bicycles, Custom
- Dynamic Multi-year Travel Characteristics
- Different Growth Rates for Trips, Mileage, Travel Time
- Expanded Forecast Year
- Market Access Measures
- Workforce Migration Effects
How is TREDIS applied?

Transportation Data Input
(Delaware Travel Demand Model)

TREDIS ANALYSIS

Project Result Data

Decision Lens
Economic Impact Analysis (EIA), in its common form, portrays the expected change in the economy of a designated area (region, state or nation) at future points in time. For transportation projects, this can be useful for identifying both the short-term and long-term consequences of projects.

- Short-term consequences tend to be those associated with construction activities.
- Long-term consequences tend to be those associated with cumulative economic growth generated in future years because of changes in productivity and competitiveness (attributable to changes in transportation conditions).
Social welfare gains

Benefit/Cost Analysis (BCA)
- Personal Time
- Safety
- Environmental
- Social/Livability

Productivity Factors
- Business-Related Time Cost
- Operating Cost
- Access/Agglomeration
- Reliability/Technology Adoption & Labor/Resource Utilization

GDP gains

Economic Impact Analysis (EIA)
- Economic Geography (Competitiveness)
  - Labor & Capital Flows
  - Export Growth
  - Import Substitution
  - Workforce & Pop. Migration

Value of non-money benefits

Cost saving economies + scale economies (output/cost)

Economic development effects

Source: TREDIS
### Project Type

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Primary Changes in Travel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adding a Lane</td>
<td>VHT ↓</td>
</tr>
<tr>
<td>Limited Highway</td>
<td>VHT ↓</td>
</tr>
<tr>
<td>Connector</td>
<td>VMT ↓</td>
</tr>
<tr>
<td>Freight Rail Capacity</td>
<td>VHT ↓</td>
</tr>
<tr>
<td>Psgr Rail Capacity</td>
<td>VHT ↓</td>
</tr>
</tbody>
</table>

Source: TREDIS
TREDIS Fueled by Transearch

- Commodity Flows: Available at state, region, county, and corridor level

<table>
<thead>
<tr>
<th>County Name</th>
<th>Route Type</th>
<th>Route Sign</th>
<th>Value ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rock County</td>
<td>Interstate Highway</td>
<td>I90</td>
<td>154,922</td>
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<tr>
<td>Dane County</td>
<td>Interstate Highway</td>
<td>I90</td>
<td>148,625</td>
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<tr>
<td>Dane County</td>
<td>Interstate Highway</td>
<td>I94</td>
<td>148,025</td>
</tr>
<tr>
<td>Dana County</td>
<td>US Route</td>
<td>U51</td>
<td>141,394</td>
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<td>Columbia County</td>
<td>Interstate Highway</td>
<td>I94</td>
<td>137,893</td>
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<tr>
<td>Columbia County</td>
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<td>137,893</td>
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<tr>
<td>Monroe County</td>
<td>Interstate Highway</td>
<td>I94</td>
<td>129,724</td>
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<td>Juneau County</td>
<td>Interstate Highway</td>
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<td>Juneau County</td>
<td>Interstate Highway</td>
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<td>129,724</td>
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</tbody>
</table>
Example: Two Roads with Similar

Annual Trucks (Thousands)

<table>
<thead>
<tr>
<th>Road</th>
<th>Trucks (Thousands)</th>
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</thead>
<tbody>
<tr>
<td>SH 33</td>
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<tr>
<td>SH 181</td>
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</table>
DelDOT model able to estimate and apply “cost value ranges” to different types & lengths of truck trips.
TREDIS Example: Historical Case #2 – I-95/SR 1 Ramps

**Travel Impact**

Project investment of $250M results in travel changes

**Societal Benefit**

Resulting changes in the transportation system yield benefits of $9.58M

**Economic Impact**

Project increases Gross Regional Product by $2M

**Jobs by Year**

Project creates 17 jobs, 32% with above average wages
Project Result Data for Decision Lens Inputs

- 50% – Future year percentage change in employment
- 50% – Future year percentage change in economy
  
  - XX-year GDP added by the project, divided by the XX-year level of value in the baseline economy

- Compare the percentage change in employment and economy of each project and rank them accordingly by county

- Selected Sussex County Projects for Demo
TREDIS Sample Inputs

- Baseline and Project–Build cases
- Passenger Vehicles and Trucks
- Annual Trips
- Annual Vehicle–Miles Traveled
- Annual Vehicle–Hours Traveled

### Data Year

2030

### TREDIS Sample Inputs

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Region</th>
<th>Period</th>
<th>Mode</th>
<th>Purpose</th>
<th>Period Veh-Trips</th>
<th>Period VMT</th>
<th>Period VHT</th>
<th>Transit Passenger Trips</th>
<th>Transit Passenger Miles</th>
<th>Transit Passenger Hours</th>
<th>Out of Vehicle Passenger Time</th>
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</thead>
<tbody>
<tr>
<td>Base</td>
<td>Default Region</td>
<td>Annual</td>
<td>Passenger Car</td>
<td>All</td>
<td>115,972,878</td>
<td>1,398,006,932</td>
<td>31,246,245</td>
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<tr>
<td>Base</td>
<td>Default Region</td>
<td>Annual</td>
<td>All Trucks</td>
<td>Freight</td>
<td>8,510,679</td>
<td>144,375,861</td>
<td>3,133,847</td>
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<tr>
<td>Project</td>
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<td>Annual</td>
<td>Passenger Car</td>
<td>All</td>
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<tr>
<td>Project</td>
<td>Default Region</td>
<td>Annual</td>
<td>All Trucks</td>
<td>Freight</td>
<td>8,506,836</td>
<td>143,784,738</td>
<td>3,123,104</td>
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Conceptual Approaches for Economic Impact Models

TREDIS Model Complexity

Travel Model Resolution (Scale)

Fall 2019

Spring 2020
Project Prioritization – an Evolving Process:

Recall: Two Key Components:
1) 7 Criteria, with Corresponding Weights & Application Method
2) For Each Criterion, Input Data & Technical Analysis.

Example:

<table>
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<tbody>
<tr>
<td>Travel Demand Model</td>
<td>Fall 2019</td>
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<tr>
<td></td>
<td>TIS</td>
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<td>TMC Devices</td>
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<td>Travel Demand Model</td>
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<td>Fall 2022</td>
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Project Prioritization – an Evolving Process:

Example:

**Current Process:**
Economic Development
- TID
- Cost Share Support
- Freight Route Corridor

**Proposed Process:**
Economic Impact (TREDIS)
- Economic Impact Analysis (EIA)
- Benefit/Cost Analysis (BCA)
- Refined TDM Output:
  - Trucks by Type
  - Trucks by Distance
  - Bike & Ped Trips
  - Transit
  - Zip Code-Based
  - Trip Purposes

**Timeline:**
- Fall 2019
- Spring 2020
Proposed Project Prioritization Criteria Timeline

- COT Endorsement Fall 2019
- Public Comment Fall/Winter 2019
- COT Approval Spring 2020

FY 21–26 CTP
- Spring/Summer 2019 application of new project prioritization criteria
- COT releases draft FY 21-26 CTP Fall 2019
- FY 21–26 CTP Public Comment in Fall/Winter of 2019
- COT Approval Spring 2020

FY 23–28 CTP
- Spring/Summer 2021 application of new project prioritization criteria
- COT releases draft FY 23-28 CTP
- FY 23–28 CTP Public Comment in Fall/Winter of 2021
- COT Approval Spring 2022
## Proposed CTP Timelines

<table>
<thead>
<tr>
<th>Proposed New CTP Criteria</th>
<th>Continuous Development of CTP Criteria (GIS, Travel Demand Models, etc.)</th>
<th>Proposed FY 21 - 26 CTP</th>
<th>Proposed FY 23 - 28 CTP</th>
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<tbody>
<tr>
<td><strong>2019</strong></td>
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<td><strong>2023</strong></td>
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</table>

- DelDOT Continuous CTP Development
- DelDOT Criteria Review and Assigned
- Preparing Draft with MPOs and Localities
- Hosting Public Workshops and Receiving Public Comment
- COT Approval of CTP or CTP Release for Public Comment
Continuous CTP Tools Development

- Priority Process is Core Part of **Planning’s Annual Work Program**

- **Geographic Information System**
  - Data from TMC, EPA, and etc.
  - Data import/export, Decision Lens integration.
  - Higher-resolution TREDIS applications.

- **Travel Demand Model**
  - Improving Intersection level modeling
  - Higher resolution geographic scale modeling

- **Documentation / Methods / Website Content**
Draft FY21 - FY26 CTP
New Castle
- East 7th Street
- 12 St. Connector
- S. College Ave. Gateway
- Maryland Ave. and Monroe St. (Maryland Ave./Monroe St./MLK Area)
- SR 4 and Churchmans Rd Intersection Improvement
- US 13: I–495 to PA Line
Kent
- Duck Creek Parkway (Bassett St. to Main St.)
- N. Main St. Smyrna – Shoulders (Duck Creek Parkway to Glenwood Ave.)
- Peachtree Run Rd. (Voshells Mill Rd. to Irish Hill Rd.)
- SR 15 and SR 42 Intersection Improvements
Draft FY21 – FY26 CTP – New Projects

Sussex
- Beaver Dam Rd Widening (SR 1 to Dairy Farm Rd.)
- Dewey Beach Pedestrian and ADA Improvements (Anchors Way to Bayard Ave.)
- SR 1 Fenwick Island Sidewalk (Lighthouse Rd. to Lewes St.)
- SR 54 Multi-modal Improvements (Blue Beard Trail to Monroe Ave.)
- US 9 Widening (Ward Ave. to Old Vine Blvd.)
Proposed FY21 – FY26 Capital Program

- Minor changes to projects names, project scope, projects schedules and budgets
  - Adjustments to schedules based on refinement of project scope
  - Adjustments to estimates based on more detailed project information
CTP Hearings

- New Castle County
  - September 16, 2019
  - Newark Free Library, Newark

- Kent County
  - September 23, 2019
  - DelDOT Administration Building, Dover

- Sussex County
  - September 25, 2019
  - DelDOT South District Administration Building, Georgetown
CTP Next Steps

- September 6, 2019: Publish Draft FY 21–26 CTP
- September: Hold CTP Hearings
- October 7, 2019: Public Comment Period Closes
- December: COT Meeting to Review Hearing Comments
- February: COT Meeting to Adopt FY 21–26 CTP
Public Comment