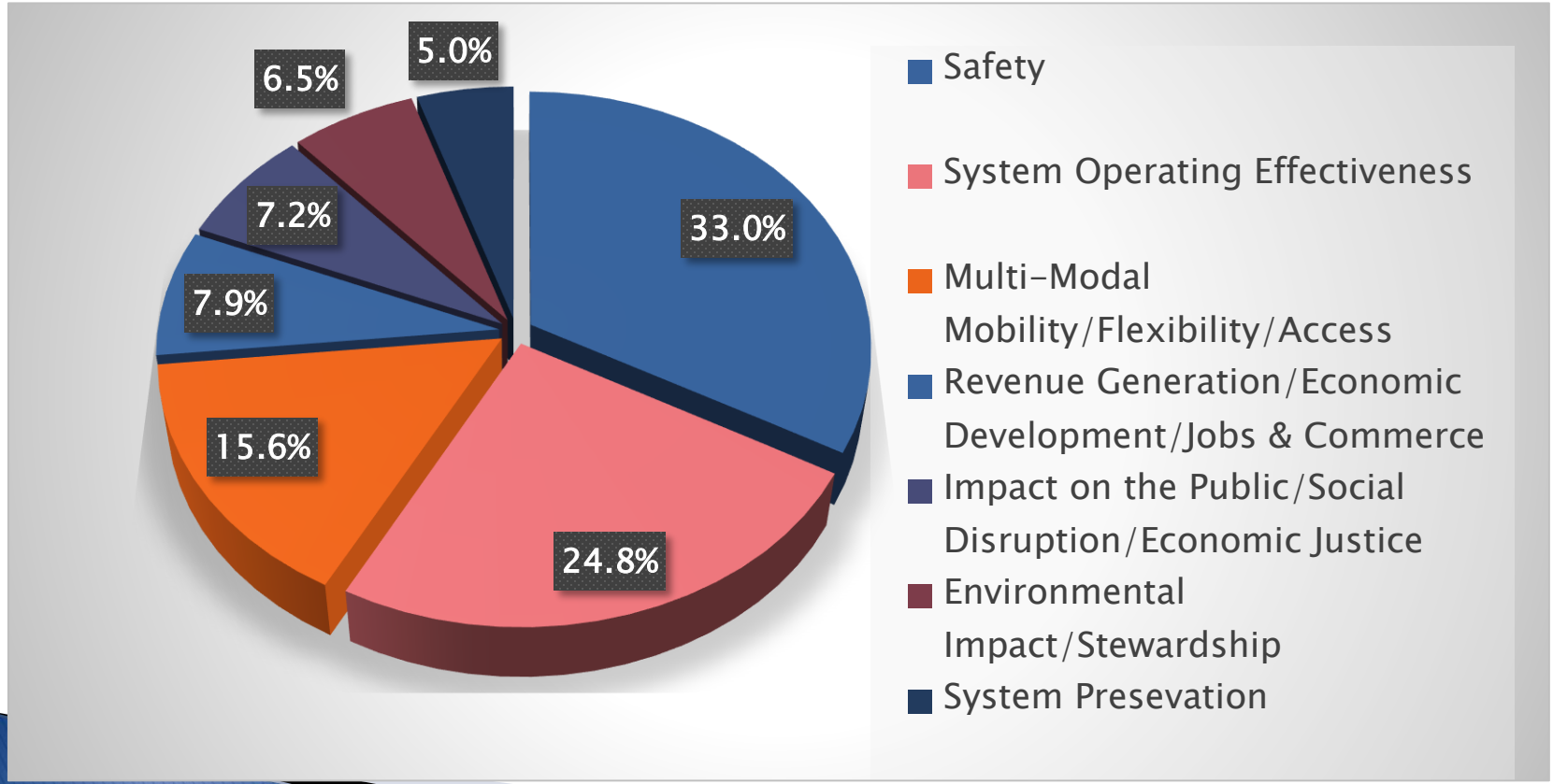
Delaware Department of Transportation
Council on Transportation
April 15, 2019

Project Prioritization Process

Current DelDOT CTP Prioritization Criteria



Current Prioritization Criteria

- **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%)

Why consider changes now?

- Current process was adopted in December 2013
- DelDOT's current investments in data collection allows the opportunity for more "data-driven" process
- Other criteria have evolved, possibly better able to "drive the CTP"

Address Current Federal and State Initiatives

- Setting the course for transportation investment in highways, the FAST Act—
  - Improves mobility on America's highways
  - Supports economic growth
  - Incorporates Performance Measures
    - Safety
    - Travel Time Reliability/Information from TMC APP
- These goals could be better incorporated in our process

DelDOT

Mission	Vision	Goal	Prioritization Criteria	Prioritization Sub-Criteria
Every Trip	We strive to make every trip taken in Delaware safe, reliable and convenient for people and commerce.	• Minimize the number of fatalities and injuries on our system • Build and mainain a nationally recognized system benefiting travelers and commerce	• Safety • System Operating Effectiveness • Priority	–New Safety Scores –No. of Strategies addressed in the Strategic Highway Safety Plan – Apply TMPC operation data –Identified as Congestion Corridors by MPO, Comprehensive Plans, and/or Planning Studies – State and Local Priority
Every Mode	We provide safe choices for travelers in Delaware to access roads, rails, buses, airways, waterways, bike trails, and walking paths.	• Provide every traveler with access and choices to our transportation system	• Multimodal Mobility/Flexibility/ Access	– Multimodal Mobility/Flexibility/ Access
Every Dollar	We seek the best value for every dollar spent for the benefit of all.	• Minimize the environmental impact of the state's transportation system • Achieve financial sustainability through accuracy, transparency and accountability	• Environmental Impact/Stewardship • Revenue Generation and Economic Development	– Environmental Impact/Stewardship –Identified in a Transportation Improvement District (TID) – Cost-sharing Support – Freight Corridor – Economic Impact
Everyone	We provide safe choices for travelers in Delaware to access roads, rails, buses, airways, waterways, bike trails, and walking paths.	• Develop and maintain a place where talented and motivated employees love to work and can be national leaders in transportation	• Impact of the Public/Social Disruption/Environmental Justice	– Social and Health Elements

Potential CTP Project Prioritization Criteria

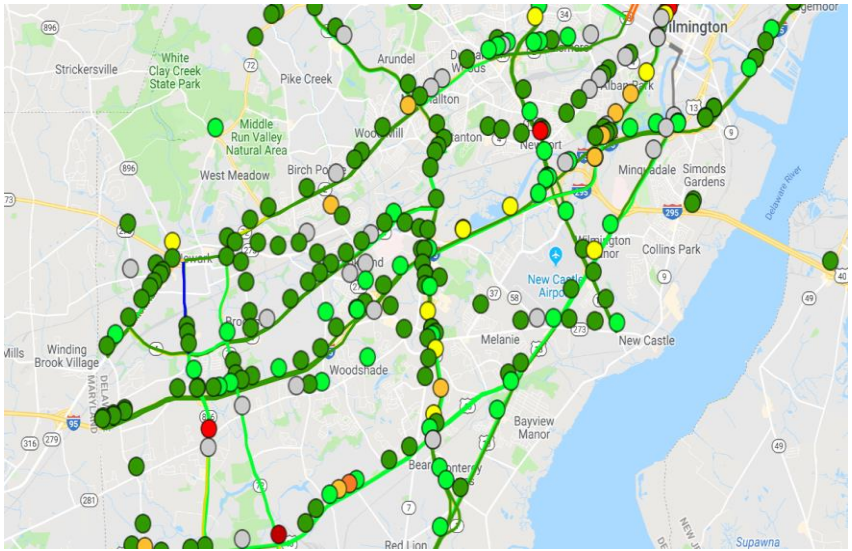
- Safety
  - Apply Safety Scores to all projects
    - Roadway Segments – Critical Crash Ratio
    - Intersections (new) – Crash Index
  - No. of Strategies addressed in the Strategic Highway Safety Plan (SHSP) – considering removing this criterion
    - Rationale – nearly every project meets at least one emphasis area of the SHSP so this criterion is not helpful in prioritization
  - Rationale for revisions
    - More aligned with the DelDOT Goal of "Minimize the number of fatalities and injuries on our system"
    - More aligned with the Strategic Highway Safety Plan

Potential CTP Project Prioritization Criteria

- Safety
  - Roadway Segment: Critical Crash Ratio
    - Three (3) most recent calendar years of fatal and injury crash data for which data is available.
      - Current method considers all crashes in calculations
  - Intersection: Crash Index
    - Crash Index (CI) based on three (3) most recent calendar years of crash data
    - Methodology developed in coordination with WILMAPCO
    - Values updated every other year in coordination with WILMAPCO
    - CI = (Number of Fatal Crashes * 40) + (Number of Injury Crashes * 4.5)+ (Number of Property Damage Only Crashes * 1)

Potential CTP Project Prioritization Criteria

- System Operating Effectiveness
  - Existing Congestion Level
    - TMC or TDM
      - Roadway Segment
      - Intersection
  - Identified as Congestion Corridors by MPO, Comprehensive Plans, and/or Planning Studies
  - DelDOT TMC Operation Data
    - Bluetooth Readers
    - Traffic Signal System Detectors

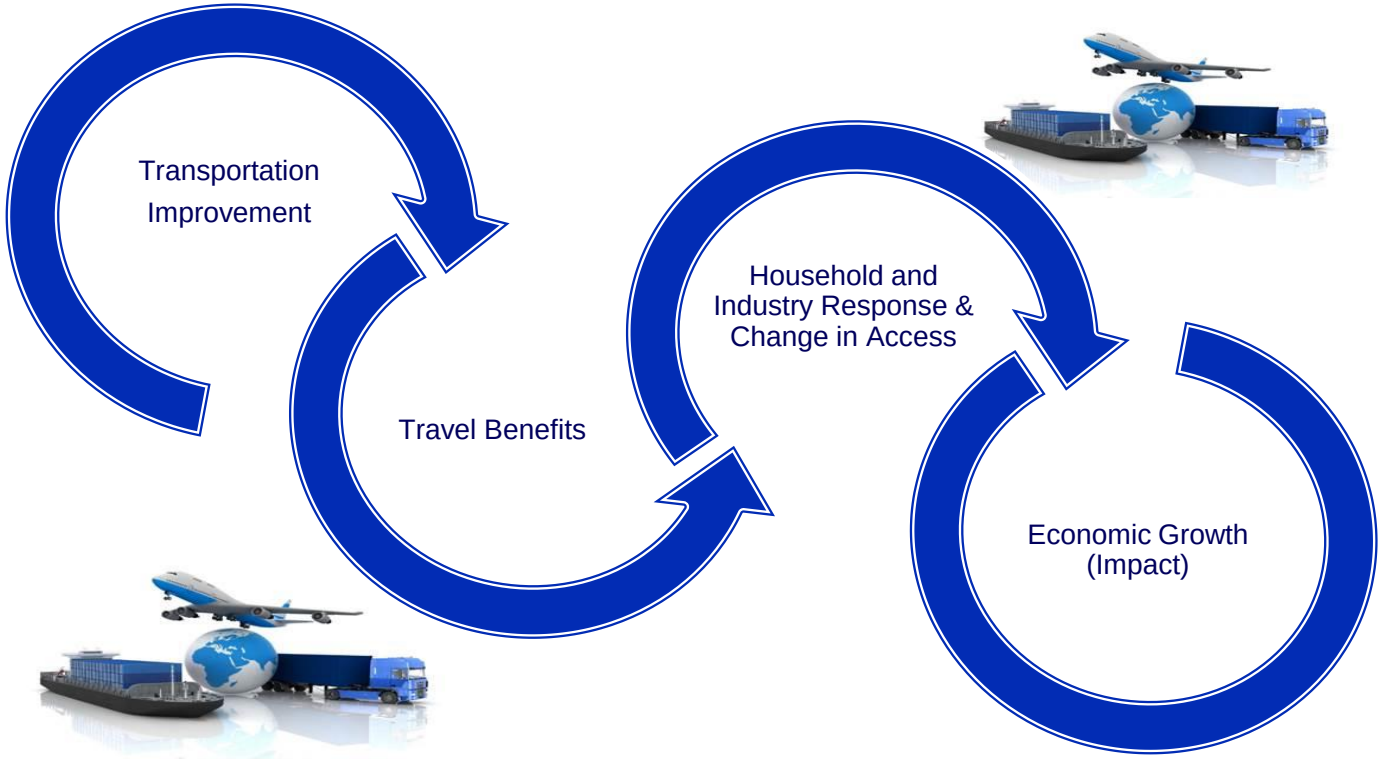


Potential CTP Project Prioritization Criteria
(continued)

- Multi-Modal Mobility/Flexibility/Access –
  - Assess the extent to which the Project addresses transportation choices and allows additional connectivity to the existing system

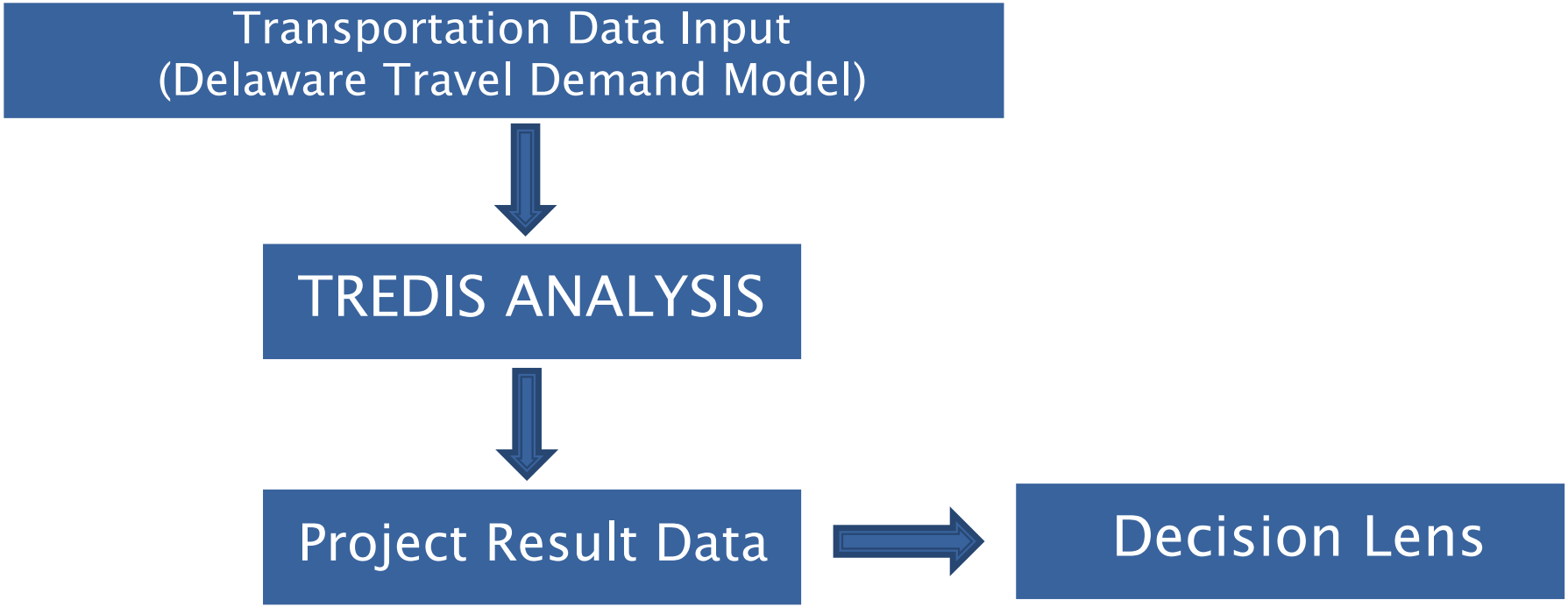
- Revenue Generation/Economic Development/Jobs & Commerce –
  - Identified in a Transportation Improvement District (TID)
  - Cost-sharing Support
  - Freight Corridor
  - **Economic Impact (Competitiveness)**

How are Economic Impacts measured?



Source: TREDIS

How is TREDIS applied?



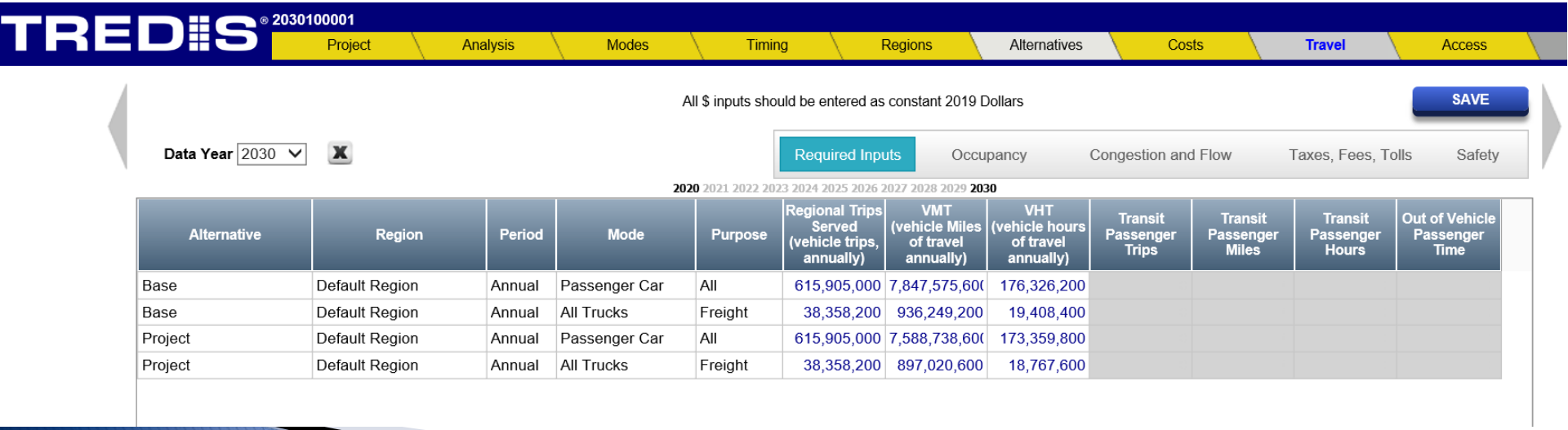
Economic Impact Assessment

- Project Result Data for Decision Lens Inputs
  - Future year percentage change in employment
  - 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**

TREDIS Sample Inputs

- Baseline and Project-Build cases
- Passenger Vehicles and Trucks

- Annual Trips
- Annual Vehicle-Miles Traveled
- Annual Vehicle-Hours Traveled



Alternative	Region	Period	Mode	Purpose	Regional Trips Served (vehicle trips, annually)	VMT (vehicle Miles of travel annually)	VHT (vehicle hours of travel annually)	Transit Passenger Trips	Transit Passenger Miles	Transit Passenger Hours	Out of Vehicle Passenger Time
Base	Default Region	Annual	Passenger Car	All	615,905,000	7,847,575,60(	176,326,200				
Base	Default Region	Annual	All Trucks	Freight	38,358,200	936,249,200	19,408,400				
Project	Default Region	Annual	Passenger Car	All	615,905,000	7,588,738,60(	173,359,800				
Project	Default Region	Annual	All Trucks	Freight	38,358,200	897,020,600	18,767,600				

TREDIS Sample Output

2030100001

Project analyzes 1 years of construction and 11 years of operation with results shown for 2030 (Total Impact)

Travel Impact

Project investment of **$20M** results in travel changes

Societal Benefit

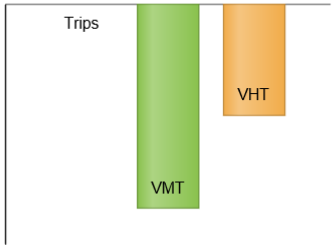
Resulting changes in the transportation system yield benefits of **$332.27M**

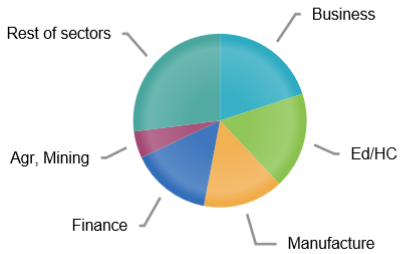
Economic Impact

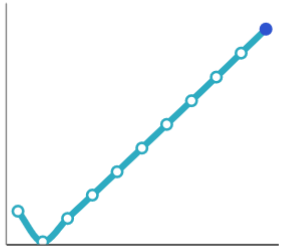
Project increases Gross Regional Product by **$68M**

Jobs by Year

Project creates **719 jobs, 29%** with above average wages







Competitiveness

Labor Market	Supply Chain	Productivity	Export (Income)
0.00%	0.00%	↓ -0.02%	↑ 0.09%

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.
- TREDIS also adds dynamic forecasting of long-term changes in the economy, general equilibrium equations representing labor force and industry cost responses, and transportation effects.

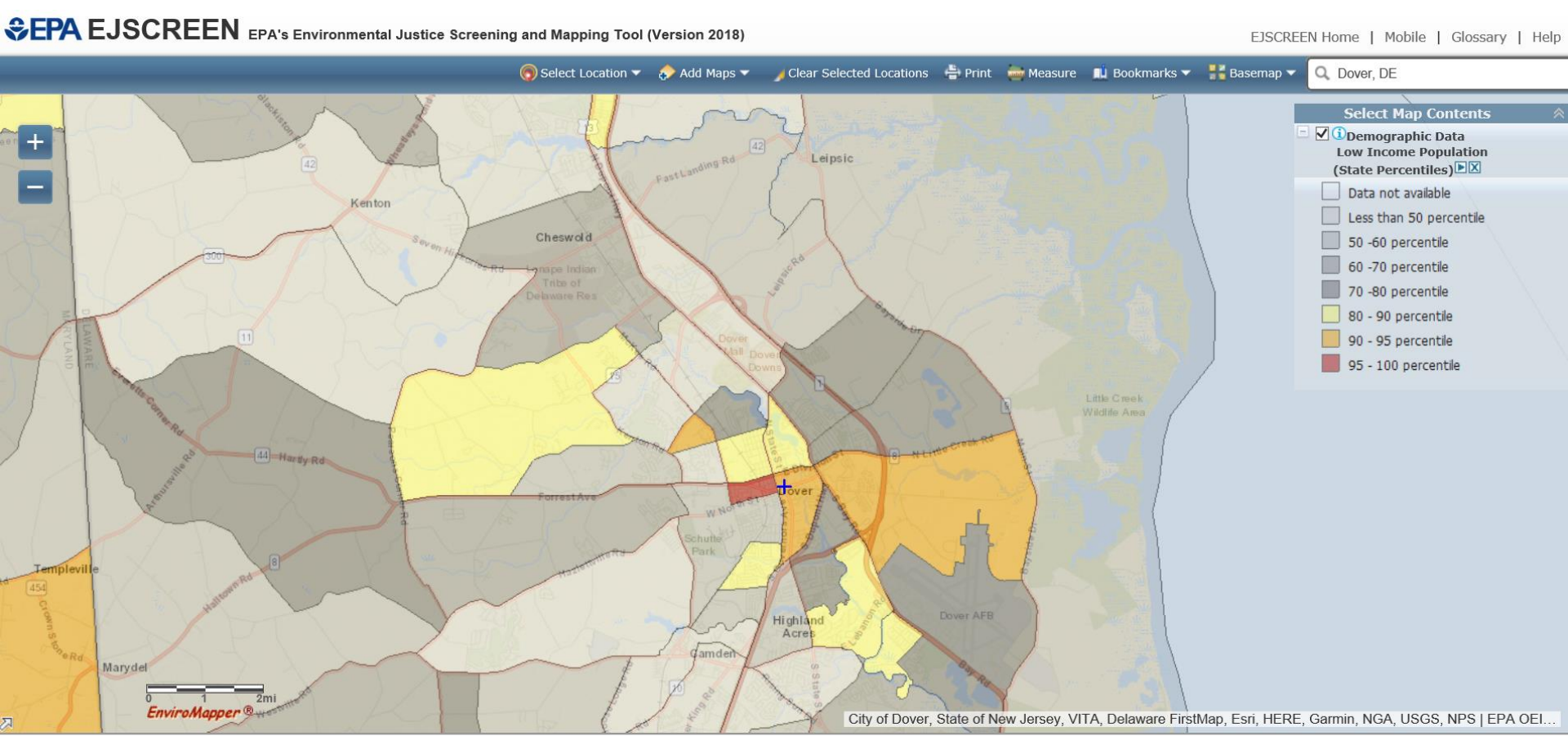
Potential CTP Project Prioritization Criteria
(continued)

- Impact on the Public/Social Disruption/Economic Justice **(Revised)**
  - Assess the extent to which the project supports investment in existing communities and provides community enhancements such as sidewalks, safe routes to school, etc.
    - Keep for connectivity purpose
  - **Social and Health Elements**
    - **EPA EJ Screens**

Potential CTP Project Prioritization Criteria
(continued)

- Social and Health Elements –
  - Base on EPA's EJ Screen Demographic Indicators (https://ejscreen.epa.gov/mapper/)
    - Below are factors to considering
      - **Percent low – income****
      - **Percent minority***
      - Percent less than high school education
      - Percent in linguistic isolation
      - Percent over age 64
      - Percent under age 5

*= Per USDOT Environmental Justice Strategy (November 15, 2016)


EPA EJSCREEN
EPA's Environmental Justice Screening and Mapping Tool (Version 2018)
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Select Location
Add Maps
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Print
Measure
Bookmarks
Basemap
Dover, DE
Select Map Contents
Demographic Data
Low Income Population
(State Percentiles)
Data not available
Less than 50 percentile
50 -60 percentile
60 -70 percentile
70 -80 percentile
80 - 90 percentile
90 - 95 percentile
95 - 100 percentile
Kenton
Cheswold
Leipsic
Dover
Dover AFB
Highland Acres
Camden
Templeville
Marydel
Little Creek Wildlife Area
Schutte Park
Dover Downs
Dover Mall
Delaware Indian Tribe of Delaware Res
Hardy Rd
Forrest Ave
Halltown Rd
Leipsic Rd
Past Landing Rd
N Little Creek Rd
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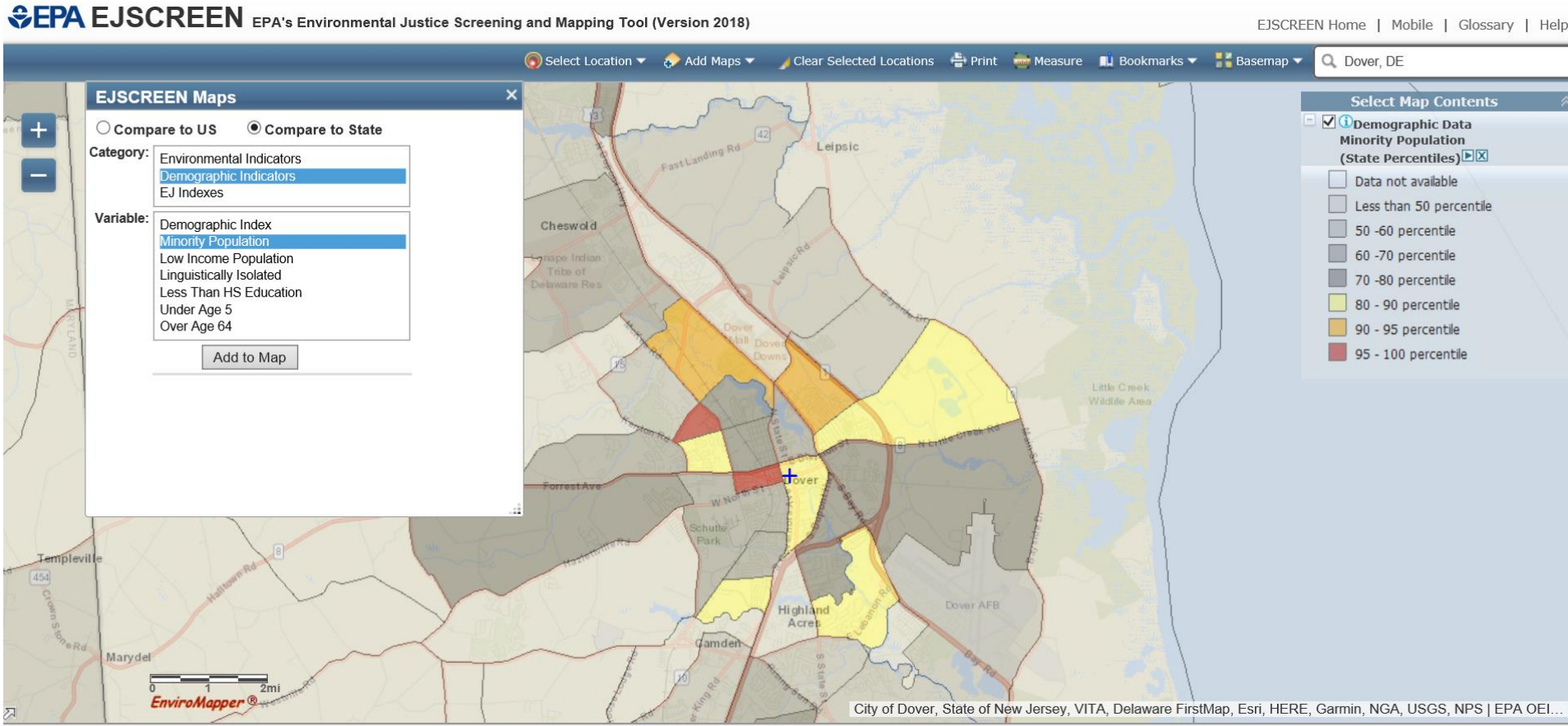
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Compare to US
Compare to State
Category:
Environmental Indicators
Demographic Indicators
EJ Indexes
Variable:
Demographic Index
Minority Population
Low Income Population
Linguistically Isolated
Less Than HS Education
Under Age 5
Over Age 64
Add to Map
Select Map Contents
Demographic Data
Minority Population
(State Percentiles)
Data not available
Less than 50 percentile
50 -60 percentile
60 -70 percentile
70 -80 percentile
80 - 90 percentile
90 - 95 percentile
95 - 100 percentile
Leipsic
Cheswold
Dover
Templeville
Marydel
Highland Acres
Camden
Dover AFB
Little Creek Wildlife Area
Schutte Park
0 1 2mi
EnviroMapper®
City of Dover, State of New Jersey, VITA, Delaware FirstMap, Esri, HERE, Garmin, NGA, USGS, NPS | EPA OEI...

Potential CTP Project Prioritization Criteria
(continued)

- Environmental Impact/Stewardship –
  - Assess the extent to which the Project mitigates the threat or damage to the environment, including Air Quality

- ~~System Preservation~~ (Delete)
  - Assess the extent to which a project contributes towards system preservation and is identified through an existing preservation program
  - DelDOT currently has a system preservation program for bridge, roadway pavement, signage, etc

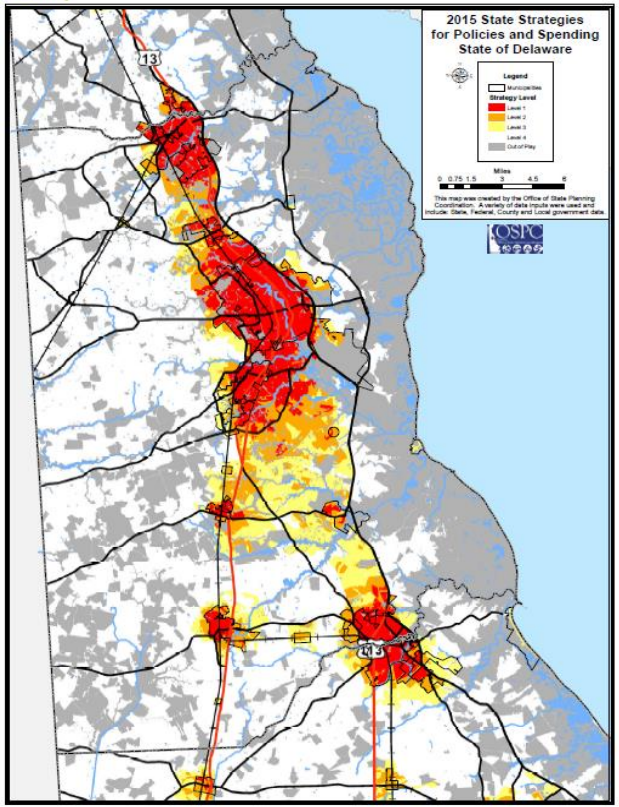
Potential CTP Project Prioritization Criteria
(continued)

- **Priority (New)**
  - **Delaware Strategies for State Policies and Spending**
    - Prepared by Delaware Office of State Planning Coordination
    - Approved by Cabinet Committee on State Planning Issues
  - **Local Priority**: Top fifteen projects identified by Delaware MPOs and Sussex County that are supported by the local and/or state planning efforts could be given a higher weight in Decision Lens
    - Top fifteen (15) Local Priority Projects will be scored.

Potential CTP Project Prioritization Criteria (continued)

- **Four Types of Investment Levels for Transportation**
  - **Level 1**: Investment Level 1 Areas are often municipalities, towns, or urbanizing area
  - **Level 2**: Less developed areas within municipalities; near Level 1 areas and rapidly growing areas in the counties
  - **Level 3**: Lands that are adjacent to or intermingled with fast-growing areas within counties or municipalities
  - **Level 4**: Rural in nature, open space/natural areas and agricultural industry

Kent County



Potential CTP Project Prioritization Criteria
(continued)

- Typical Level 1 and 2 area Transportation Investment:
  - Preserving existing facilities
  - Safety improvements
  - Context-sensitive transportation
  - System Capacity Enhancements
  - Transit system enhancements
  - ADA accessibility; closing gaps in the pedestrian system, including the Safe Routes to School projects.
  - Bicycle facilities
  - Signal-system enhancements
  - Interconnectivity of neighborhoods, and public facilities

Potential CTP Project Prioritization Criteria
(continued)

- Typical Level 3 Transportation Investment:
  - Focus on regional movements between towns and other
  - population centers.
  - Developers and property owners will make local roadway improvements
  - Lower priority to transportation system-capacity improvements and transit-system enhancements.
- Typical Level 4 Transportation Investment:
  - Preserve and maintain existing facilities in safe working order
  - Corridor-capacity preservation
  - Enhancement of transportation facilities to support agricultural business.

Question?