

Chapter VI- Financial Plan

Background

Federal regulations require transportation improvement projects to be included in a metropolitan transportation plan (MTP) and that these projects also be considered "financially responsible." This phrase means that all of the listed Innovation 2045 MTP transportation improvement projects cannot exceed the amount of reasonably expected revenues projected from identified federal, state, and local funding sources. This requirement ensures that the MTP is based upon realistic assumptions and can be implemented ([GHMPO MTP P.151](#)).

This chapter will describe how the D/KC MPO performed financial analysis on the identified transportation projects. The process includes capital funding forecasts from DeIDOT, project cost estimating, and project selection through Decision Lens. A detailed explanation of the federal transportation funding process is found on-line at the FHWA website under "[Funding Federal-aid Highways](#)."

Funding Forecast

As previously mentioned throughout Innovation 2045 MTP, the State of Delaware owns and maintains over 90% of roadways. DeIDOT is the State agency responsible for these roadways and submits annual budgets requesting funds to achieve its mission. As described in DeIDOT's 2019 Long Range Transportation Plan, two-thirds of DeIDOT's budget comes from the State Transportation Trust Fund and one-third from federal funding ([2019, DeIDOT P. I-81](#)). Sources of State funding, transportation spending trends, and revenue projects (before Covid-19) are found on pages I-82 through I-89. However, specific funding for D/KC MPO transportation projects identified within Innovation 2045 MTP comes from DeIDOT's Capital Transportation Program (CTP). An overview of the CTP is found on-line on the DeIDOT website under the "[Capital Transportation Program](#)." The overview provides an excellent summary of the CTP development process.

Capital Funding Forecast by County (FY21-45)¹

April 7, 2020

Calculation of County Percentages, Using Population and Mileage Factors

	Population (2020 Population Consortium Estimates)	Population Ratio	Population Factor (Ratio * .4)		Population Factor + Mileage Factor	Final Percentage
New Castle	564,780	0.58	0.23	+	New Castle	48%
Kent	178,650	0.18	0.07		Kent	21%
Sussex	234,350	0.24	0.10		Sussex	31%
Total	977,780	1.00	0.40		Total	100%

	Number of Lane Miles (2018)	Mileage Ratio	Mileage Factor (Ratio * .6)
New Castle	5,696.38	0.41	0.24
Kent	3,313.14	0.24	0.14
Sussex	4,962.42	0.36	0.21
Total	13,971.94	1.00	0.60

Calculation of Estimated² Capital Dollars³ Through 2045, Using County Percentages

Total Funds Available for Capital Expenditures	\$11,343,809	→ Multiply the Net Amount by the Final Percentage	New Castle	48%	\$2,994,766
Estimated Funds Reserved for State of Good Repair (SOGR) ³	-\$5,104,734		Kent	21%	\$1,310,210
Net Amount Available for Capital Projects	\$6,239,095		Sussex	31%	\$1,934,119
			Total	100%	\$6,239,095

¹ These numbers are estimates of capital transportation funding that are to be used for planning purposes only and are subject to change.

² All figures are in 000's. Capital expenditure estimates were taken from DeIDOT's Base Financial Plan through 2045, as of March 2020.

³ Based on a 2020 estimate of the percentage of future spending on State of Good Repair (SOGR)/system preservation programs.

45% SOGR Estimate

On April 7, 2020, DeIDOT provided a copy of its FY21-45 Capital Funding Forecast by county. As seen by the chart above, Kent County is allotted 21% of the projected capital funds, primarily based on Kent County's population and road mileage factors. According to the figures provided by DeIDOT, Kent County has \$1,310,210,000.00 or **1.3 billion dollars** for transportation projects proposed from 2021 through 2045. For Innovation 2045 MTP to be considered financially reasonable, the proposed projects listed in the plan cannot exceed 1.3 billion.

Project Identification

Projects identified and listed in the Innovation 2045 MTP came from the previous D/KC MPO MTP (Vision 2040), D/KC MPO Partners Comprehensive Plans, and project recommendations from Federal, State, Regional, and Local governmental agencies. Innovation 2045 MTP projects are listed in the attached PDF spreadsheet and provide more information about proposed projects such as:

- map and location
- project name
- regional significance (for air quality)
- the proponent of the project
- hyper-linked (if available) supporting documents (i.e., MTP, TIP, Study, Comprehensive Plan, etc.)
- document page number

- decision lens **priority score** (used to rank D/KC MPO projects highest to lowest in **recommending projects** to DeIDOT which should be considered for funding in the CTP)
- **CTP ranking** (if applicable)(DeIDOT also uses a priority system after D/KC MPO prioritizes our projects. The DeIDOT ranking (which may be different from the D/KC MPO ranking) is recommended for the CTP funding)
- estimated year for project completion
- project phase (Preliminary Engineering, Right-of-way acquisition, or construction)
- cost per project phase, and
- total estimated project cost (**Note:** These are rough cost estimates. If the project is selected for funding, DeIDOT will provide a more thorough project cost projection).

The compiled projects listed are also broken out into Near-term (2021-2026), Mid-term (2027-2034), Long-term (2035-2045), and Aspiration project categories. The projects are also listed in one of eight categories:

- Roadway,
- Study,
- Multi-modal,
- Bike,
- Pedestrian,
- Transit,
- Freight, and
- Safety projects.

2021 MTP Project Count as of 13 August 2020				
	Near Term 2021-2026	Mid Term 2027-2034	Long Term 2035-2045	Aspiration Project
Roadway	22	27	3	1
Studies	0	0	0	45
Multi-Modal	10	10	2	9
Bicycle	8	11	3	0
Pedestrian	9	4	2	0
Transit	3	0	0	0
Freight	5	5	0	0
Safety	4	0	0	0
Total	61	57	10	55
Combined Total	183			
	There are 12 Roadway projects which continue into another Term (10 Near into Mid and 2 Mid into Long). So, in reality, there is only 171 Projects			

Most of these projects in the Near Term, Mid Term, Long Term, and Aspiration columns came from the various transportation studies, MPO partner comprehensive land use plans, the previous 2017 D/KC MPO MTP, and the most recent Transportation Improvement Program (TIP). These projects are listed in the appendix and have hyperlinks to the documents and annotated the page numbers where the project can be located within that document. The aspiration list contains 1 Roadway, 45 Studies, and 9 Multi-modal projects requested by D/KC MPO municipal partners via their comprehensive land-use plans. These lists also contain hyperlinks and page numbers for the projects identified. The aspiration projects are not listed for funding; however, should additional funding become available, projects from the aspiration list would be considered first.

Innovation 2045 MTP Project Cost Estimates

The proposed cost estimates highlighted in the Innovation 2045 MTP are for planning purposes only and were documented in several other documents. For example, many transportation project cost estimates were part of the D/KC MPO Vision 2040 MTP, which were not completed before FY21 (July 1, 2020). Several project recommendations came from D/KC MPO Partners Comprehensive Plans; however, they did not include any cost estimates. DeIDOT suggested that the D/KC MPO fill out individual [Capital Transportation Project \(CTP\) Cost Estimate forms for those projects](#) and submit them back to DeIDOT for evaluation to estimate costs for the proposed MTP projects. D/KC MPO decided to follow DeIDOT's CTP cost estimation policy (received from DeIDOT on June 24, 2020).

Specifically, according to DeIDOT's policy, new projects added into the CTP include initial cost estimates based on the project's anticipated scope. These planning-level estimates are usually based on a cost per mile, unit costs, or **comparison to similar recent projects**. Once a project has started in the DeIDOT project development process, **the cost estimate will continue to be refined**. The D/KC MPO used the "comparison to similar recent projects" estimate process to establish rough cost estimates for newly listed Innovation 2045 MTP projects. Many of the rough cost estimates came from similar transportation projects. Those projects are listed in the WILMAPCO 2050 Regional Transportation Plan (RTP), published documents with transportation equipment and project cost estimates, and cost estimates listed within previously approved transportation planning studies. Rough cost estimate reference documents are included in Appendix A. They include hyperlinks to source documents and a page number where the cost can be found.

	A	B	C	D	E
1	Rough Cost Estimates for Innovation 2045 MTP				
2	Project category	Type of Project	Cost estimate	Reference	Page number
3	Roadway	Reconfigure/ raise roadway to mitigate flooding	\$22,000,000.00	http://www.wilmapco.org/Rtp/2050/2050RTP.pdf	44
4		Improve/reconfigure intersection	\$2,493,000.00	http://www.wilmapco.org/Rtp/2050/2050RTP.pdf	49
5		New interchange	\$54,000,000.00	http://www.wilmapco.org/Rtp/2050/2050RTP.pdf	45
6		Traffic calming	\$5,107,000.00	http://www.wilmapco.org/Rtp/2050/2050RTP.pdf	47
7		New roadway	\$9,581,000.00	http://www.wilmapco.org/Rtp/2050/2050RTP.pdf	47
8		Improve roadway, operational safety improvements	\$5,305,000.00	http://www.wilmapco.org/Rtp/2050/2050RTP.pdf	49
9					
10	Study	Bike and Pedestrian Study	\$50,000.00	Previous D/KC MPO Study costs	
11		Pedestrian Count Study	\$30,000.00	Previous D/KC MPO Study costs	
12		Parking Study	\$50,000.00	Previous D/KC MPO Study costs	
13		Town Corridor Study	\$30,000.00	Previous D/KC MPO Study costs	
14		Freight Study	\$75,000.00	Previous D/KC MPO Study costs	
15		Freight Terminal Study	\$150,000.00	Previous D/KC MPO Study costs	
16		Service Road Study	\$40,000.00	Previous D/KC MPO Study costs	
17		Route Concept Plan	\$150,000.00	Previous D/KC MPO Study costs	
18					
19	Multi-modal	Expand roadway, improve nonmotorized access	\$21,500,000.00	http://www.wilmapco.org/Rtp/2050/2050RTP.pdf	45
20		Pedestrian / bicycle improvement	\$9,980,000.00	http://www.wilmapco.org/Rtp/2050/2050RTP.pdf	49
21		New multimodal bridge	\$52,762,000.00	http://www.wilmapco.org/Rtp/2050/2050RTP.pdf	44

For example, the Intersection Improvement Feasibility Study SR 300 (Wheatleys Pond Rd, K041), School Ln (K040), and South Bassett St. project listed as a Near Term Project (2021-2026) used an Improve/reconfigure Intersection Project cost estimate of \$2,493,000.00. This project can be found on page 49 in the 2050 WILMAPCO Regional Transportation Plan. Then applied 10% of this cost for Preliminary Engineering work, 40% towards Right-of-way acquisition, and 50% for construction costs, as seen in the D/KC MPO Innovation 2045 MTP Near Term Project list.

Using earlier cost estimates from the D/KC MPO Vision 2040 MTP and rough estimates from similar projects in New Castle County, the constrained project costs are as follows:

Innovation 2045 MTP Project Cost by Type and Term (as of 20 NOV 2020)				
Project Type	Near Term (2021-2026)	Mid Term (2027-2034)	Long Term (2035-2045)	Aspiration Projects
Roadway	\$64,693,400.00	\$207,696,200.00	\$80,188,000.00	\$2,500,000.00
Study	\$0.00	\$0.00	\$0.00	\$2,200,000.00
Multi-modal	\$39,723,500.00	\$18,962,000.00	\$4,728,000.00	\$2,550,000.00
Bike	\$18,400,000.00	\$23,740,000.00	\$7,092,000.00	\$0.00
Pedestrian	\$15,740,000.00	\$5,678,000.00	\$1,900,000.00	\$0.00
Transit	\$14,921,400.00	\$0.00	\$0.00	\$0.00
Freight	\$2,875,000.00	\$26,525,000.00	\$0.00	\$0.00
Safety projects	\$58,400,000.00	\$0.00	\$0.00	\$0.00
Total	\$214,753,300.00	\$282,601,200.00	\$93,908,000.00	\$7,250,000.00
Total + Aspiration Projects	\$598,512,500.00			

The projected total is **\$598,512,500.00** for all projects (including the aspiration list) out to 2045. Compared with DeIDOT's projected capital Funding forecast FY21-45 of **\$1,310,210,000.00**, the Innovation 2045 MTP is **considered "financially constrained and reasonable."**

Changes to the Innovation 2045 MTP Project List

In FY20, the D/KC MPO initiated a new strategy regarding transportation project studies funded through the UPWP. As suggested through the [PEL](#) process, completed transportation planning studies should include a "purpose and need" statement to assist DeIDOT in future NEPA documentation along with recommended transportation project cost estimates that are part of the recommended course of action. In July 2019 (FY20), the D/KC MPO initiated five transportation studies using this new study strategy. Unfortunately, three of the five extensive planning studies were not finished during the Innovation 2045 MTP Project list development. However, these three studies were extended into FY21 and are expected to be completed before FY22 (July 2021).

Additionally, some D/KC MPO partners have initiated various transportation studies that are expected to be completed after the Innovation 2045 MTP is approved. These projects and the projects identified through the D/KC MPO UPWP transportation studies will be consolidated, reviewed, and considered in a future update to the Innovation 2045 MTP. This update may occur before the typical four to five year MTP update period. Any additional projects will be evaluated through the D/KC MPO Decision Lens process.

Innovation 2045 MTP Project Priority Process through Decision Lens

Decision Lens is a software prioritization and resource optimization system which allows the D/KC MPO to make funding decisions in a project prioritization and resource allocation manner based on **ten screening**

criteria and provides a prioritization evaluation and ranking on the **171 proposed Innovation 2045 MTP projects** out to the year 2045. This section will give an overview of how the D/KC MPO utilized the decision lens system when considering the 171 proposed projects. However, a quick overview of how the Decision Lens system works can be found on YouTube under [Decision Lens: Software Overview Video](#). This short video may help the public understand some of the process terms described in this section.

The D/KC MPO began using the Decision Lens system in 2016 when considering **60 projects** in the 2040 MTP. Those projects were listed in three categories:

- 41 Roadway,
- 5 Safety, and
- 15 Bicycle, Pedestrian and Transit

In February 2020, the D/KC MPO Principal Planner established a working group to review the current Decision Lens screening criteria used by the D/KC MPO staff and to develop updates to the system in preparation for a projected 175 projects being considered in Innovation 2045 MTP. The eleven (11) member working group had three goals: 1) Decide which of the proposed ten screening criteria were essential to the transportation network in Kent County; 2) Develop a scoring system to determine how well a project meets those screening criteria, and 3) determine which attribute/screening criteria are most important.

Decision Lens Screening Criteria Comparison	
<ul style="list-style-type: none">• 2017 MTP<ul style="list-style-type: none">– System Operating Effectiveness– Safety– Environmental Impact/ Stewardship– Revenue Generation/Economic Development/ Jobs– Supports Freight Movement– Multi-Modal Feasibility/ Access– Impact on the Public/ Social Disruption and Economic Justice– Community Priorities– State Strategies for Policy and Spending	<ul style="list-style-type: none">• 2021 MTP<ul style="list-style-type: none">– System Operating Effectiveness– Safety– Environmental Impact/ Stewardship– Revenue Generation/Economic Development/ Jobs– Supports Freight Movement– Multi-Modal Feasibility/ Access– Impact on the Public/ Social Disruption and Economic Justice– Community Priorities– State Strategies for Policy and Spending– Performance Measures (new)

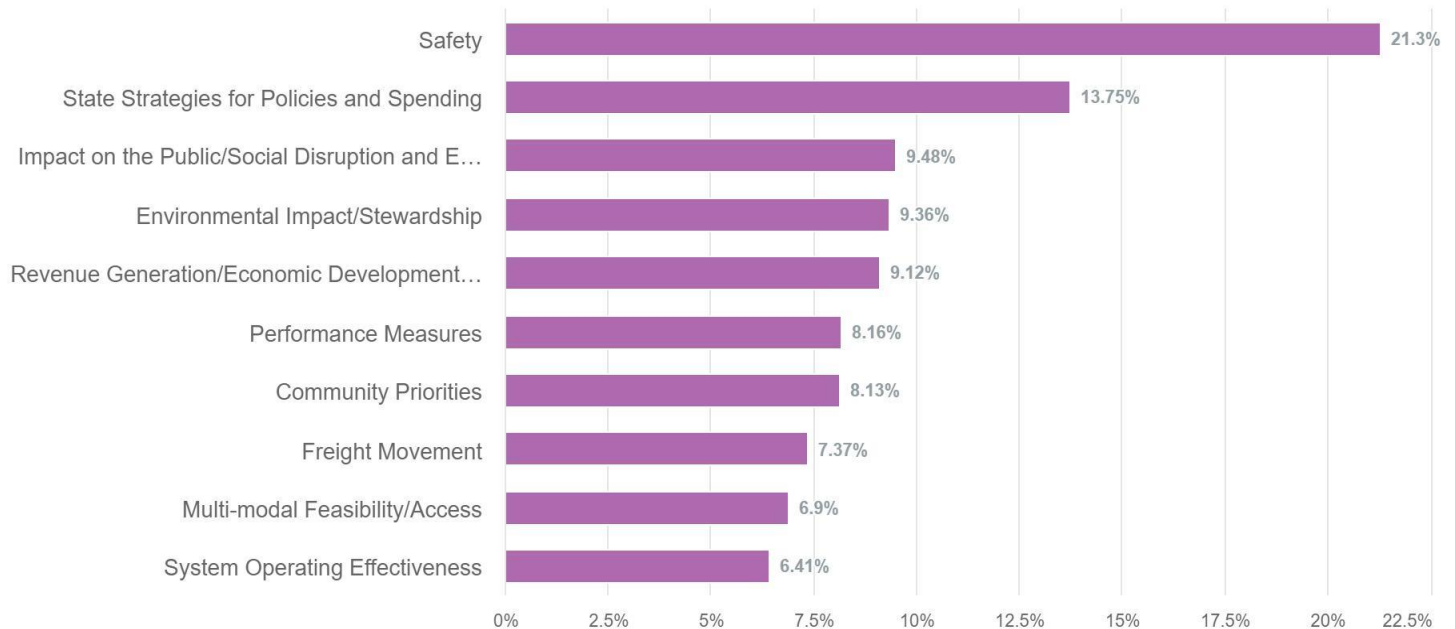
As seen above, the 2017 MTP used nine screening criteria, and the 2021 MTP (Innovation 2045 MTP) included the same nine and proposed adding a 10th criteria called "Performance Measures." The working group reviewed the definitions and quantitative values proposed for each of the ten screening criteria. This new scoring rubric relies on binary choices for many items, as shown in the image below regarding System Operating Effectiveness screening criteria. This criterion applies Existing Level of Service (LOS) and Appropriate Functional Classification values when assessing a project against these criteria. For example, if the proposed project were to occur on a road classified as being LOS F, that project would be assessed with a score of 1. Likewise, if the project is on a road currently not constructed to the Functional Road Classification standards, that project would also receive a score of 1.

Criteria Development 1

System Operating Effectiveness: *Extent to which the project contributes to the efficiency and performance of all applicable modes of the transportation system*

- **Existing Level of Service:** *The existing Level of Service that is calculated for the intersection, nearest intersection, or road segment that includes the project.*
 - 1 LOS F
 - 0.75 LOS E
 - 0.5 LOS D
 - 0.25 LOS C
 - 0 LOS B
 - 0 LOS A
 - 0 N/A or Unknown
- **Appropriate Functional Classification and Appropriate Road Construction:** *The project's ability to provide improvements needed to attain the design standards of its Functional Classification. Functional Classifications of roads were reviewed in collaboration with DelDOT, and further approved by Federal Highway Administration (FHWA) in 2014. MPO advocates for the roads to be constructed to their current classification to function as their appropriate roadway class.*
 - 0 The road design is constructed to the functional classification standards
 - 0.75 The road design is reasonably close to Functional Classification standards OR there are impediments to creating the standard
 - 1 The road design is NOT constructed to the functional classification standards

Once the Working Group agreed on the ten criteria, they were asked to rank their importance in assessing a transportation project. Specifically, all members were asked to consider each criterion against all the others in what Decision Lens calls a Pairwise Comparison. Each working group member worked through the 90+ possible matches, and the Safety screening criterion was determined to be the most important of all criteria. It was assessed as worth 21.3% of any transportation project prioritized in the Innovation 2045 MTP.



Although there are ten screening criteria, 22 quantitative elements are used to generate any transportation projects' value. **Note:** *Some of the ten screening criteria listed above have more than one scoring element. For example, safety has an overall value of 21.3%, including a combined element score of Roadway Safety (11.67%) and Bike/Pedestrian Safety (9.63%).* In the two images below, the 22 scoring elements listed in the blue-boxed area have a total overall percent value for each element, which added together equals **100%**. For example, Economic Development has an overall value of 9.12%, but the Route 8 / Saulsbury Road (DelDOT)

project received a scored value of 0.09% in this element. However, when adding all the 22 element scores assessed against this project, the project received an overall value score of **0.74**, ranking it as highest in project selection and funding priority.

Alternative Name	Value	Appropriate Functional Classification	Existing Level of Service	Roadway Safety	Bike/ Ped Safety	Air Quality	Other Environmental Impacts	Economic Development	Supports Freight Movement	DELMARVA Freight Plan	Transit Connections	Pedestrian Connections	MPO 2017 Regional Bike/ Pedestrian Plan Element	Impact on the Public
Route 8/Saulsbury Road (DelDOT)	0.74	3.21%	3.21%	11.67%	9.63%	5.59%	3.77%	9.12%	4.51%	2.87%	3.30%	1.96%	1.64%	2.98%
West Lookerman Street to Forest Street transition	0.65	0.03	0.02	0.12	0.10	0.00	0.02	0.09	0.05	0.00	0.03	0.02	0.02	0.03
South State Street (Intersection upgrades US 13 to SR 1)	0.63	0.02	0.02	0.09	0.05	0.00	0.04	0.09	0.05	0.00	0.03	0.02	0.00	0.00
Walker Road	0.62	0.02	0.02	0.09	0.10	0.00	0.02	0.09	0.05	0.00	0.03	0.02	0.02	0.00
North Main Street Smyrna (Glenwood Ave to Duck Creek Road)	0.61	0.02	0.02	0.09	0.10	0.00	0.04	0.09	0.05	0.00	0.00	0.02	0.02	0.03
Scarborough Road and C-D Roads (Dover Downs)	0.61	0.03	0.03	0.09	0.05	0.00	0.00	0.09	0.05	0.00	0.03	0.02	0.00	0.00

Alternative Name	Value	Social Disruption	Economic Justice	The Expressed Community Priority	Relationship to the Comprehensive Plan	State Strategies Priority	PM1- Safety	PM2- Road and Bridge Conditions	PM3- System Performance	TAMP-Transit Asset Management Plan
Route 8/Saulsbury Road (DelDOT)	0.74	3.33%	3.17%	1.90%	6.24%	13.75%	4.03%	1.67%	1.32%	1.14%
West Lookerman Street to Forest Street transition	0.65	0.00	0.03	0.01	0.00	0.14	0.02	0.00	0.01	0.00
South State Street (Intersection upgrades US 13 to SR 1)	0.63	0.03	0.03	0.01	0.03	0.14	0.00	0.00	0.00	0.00
Walker Road	0.62	0.00	0.00	0.01	0.03	0.14	0.02	0.02	0.01	0.00
North Main Street Smyrna (Glenwood Ave to Duck Creek Road)	0.61	0.00	0.00	0.01	0.03	0.07	0.02	0.02	0.00	0.00
Scarborough Road and C-D Roads (Dover Downs)	0.61	0.00	0.00	0.01	0.03	0.14	0.02	0.00	0.01	0.00
DE 10 (Camden Bypass South Street to Rising Sun Road)	0.60	0.00	0.00	0.01	0.06	0.14	0.02	0.02	0.00	0.00

As you can see from the data, safety is again the most critical factor in prioritizing new projects. The second priority is State Strategies, which incorporate all kinds of policies and state spending. The third is the impact on the public, especially social disruption on the underserved population. All of these priorities have been discussed in earlier chapters.

Near Term, Mid Term, Long Term, and Aspiration Projects

The list of proposed Innovation 2045 MTP Projects are listed in the Appendix and is also available in our [MTP 2045 Projects](#) interactive GIS mapping system.