



# Maryland Transportation Authority

FINANCE COMMITTEE

THURSDAY, JANUARY 12, 2023

MARYLAND TRANSPORTATION AUTHORITY  
2310 BROENING HWY  
BALTIMORE, MD 21224

**FINANCE COMMITTEE MEETING AGENDA**  
**January 12, 2023 – 9:00 a.m.**

**This meeting will be livestreamed on the [MDTA Finance Committee Page](#)**

**NOTE:** This is an Open Meeting being conducted via livestreaming. The public is welcomed to watch the meeting at the link listed above. *If you wish to comment on an agenda item please email your name, affiliation, and agenda item to [cdickinson@mdta.state.md.us](mailto:cdickinson@mdta.state.md.us) no later than noon on Wednesday, January 11, 2023. You MUST pre-register in order to comment.* Once you have pre-registered you will receive an email with all pertinent information.

**AGENDA**

**OPEN SESSION**

Call to Order

- |                             |  |   |         |
|-----------------------------|--|---|---------|
| 1. <b><u>Approval</u></b> – | Open Meeting Minutes from December 8, 2022   | Chairman von Paris  | 5 min.  |
| 2. <b><u>Update</u></b> –   | Update on Non-recourse Financings & Loans –<br>Annual update on outstanding non-recourse<br>debt financings and MDTA loans to other TBUs | Allen Garman<br>Yaw Berkoh<br>James Walsh, MAA                          | 15 min. |
| 3. <b><u>Update</u></b> –   | FY 2024 Preliminary Operating Budget –<br>DBM Rate Changes   | Jeffrey Brown   | 5 min.  |
| 4. <b><u>Update</u></b> –   | Traffic and Revenue Forecast – methodology,<br>growth analysis, and COVID-19 impacts   | Chantelle Green<br>Kelly Morison, CDM Smith<br>Scott Allaire, CDM Smith | 20 min. |

Vote to Adjourn

ITEM

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FINANCE COMMITTEE MONTHLY MEETING  
TUESDAY, DECEMBER 8, 2022  
OPEN MEETING VIA LIVESTREAMING

OPEN SESSION

MEMBERS ATTENDING: Cynthia Penny-Ardinger  
Dontae Carroll  
Jeffrey Rosen  
John von Paris

STAFF ATTENDING: Erika Brantley  
Jeff Davis  
Cheryl Dickinson  
Chantelle Green  
Natalie Henson  
Ibrahim Koroma  
Selena McKissick  
Kimberly Millender, Esq.  
Sushmita Mitra  
Ken Montgomery  
Mary O’Keeffe  
Will Pines  
Christina Thompson  
Paul Trentalance  
Eric Willison

At 9:00 a.m., Member John von Paris, Chair of the Finance Committee, called the Finance Committee Meeting to order.

**APPROVAL – OPEN MEETING MINUTES FROM NOVEMBER 10, 2022 MEETING**

Member von Paris called for the approval of the meeting minutes from the Open Meeting held on November 10, 2022. Member Jeffrey Rosen made the motion, and Member Dontae Carroll seconded the motion, which was unanimously approved.

**APPROVAL – CONTRACT NO. MR-3035-0000 – ON CALL UPGRADE AND REPLACE METAL TRAFFIC BARRIERS AND ATTENUATORS**

Ms. Sushmita Mitra requested a recommendation for approval from the Finance Committee to the full Maryland Transportation Authority (MDTA) Board for Contract No. MR-3035-0000, On Call Upgrade and Replace Metal Traffic Barriers and Attenuators.

This contract provides for the upgrade, replacement and maintenance of traffic barrier w-beam, end treatments, attenuators, and associated roadside safety hardware on an as-needed basis. The work on this contract is intended to be performed on an on-call basis at all MDTA facilities except Point Breeze as these are not at the Point Breeze facility.

A single bid was received and opened from L.S. Lee, Inc., on October 27, 2022. In response to the solicitation, the Division of Procurement received no-bid forms from 14 contractors. The engineer's estimate for the contract was \$4,489,775.00 and the lowest responsive bid was \$5,446,400.00, resulting in the preparation of a bid justification to determine if the bid was balanced and reasonable. Member Von Paris inquired about the significant bid variance (increase) versus the engineer's estimate. Ms. Mitra explained that the increase was attributable to supply-chain challenges and confirmed that the increases were reasonable.

The MBE goal for the contract is 4% with no VSBE requirement and no subgoals. L.S. Lee, Inc., has the current traffic barrier on-call contract and has successfully performed work for the MDTA and for the Maryland State Highway Administration.

Member von Paris called for a motion to recommend approval of this item to the full MDTA Board at its next scheduled meeting. Member Carroll made the motion, and Member Penny-Ardinger seconded the motion, which was unanimously approved.

**APPROVAL – CONTRACT NO. SV-3104-0000- INTERNAL AUDITING SERVICES RFP**

Mr. Paul Trentalance requested a recommendation for approval from the Finance Committee to the full MDTA Board for Contract No. SV-3104-0000, Internal Auditing Services RFP.

This contract is to provide internal auditing services that include assurance consulting services, providing expertise in critical areas through guidance, and augmenting existing MDTA staff and/or fully conducting audits. These services will assist the MDTA's Board, Executive Director, and the Office of Audits with improving the effectiveness of the organization's risk management, control, and governance process.

This contract, which was procured as a Request for Proposal, received seven bid proposals. The recommended awardee, BD & Co, was ranked first overall and provided the best value to the State with the lowest Financial Proposal and the third ranked Technical Proposal. The Evaluation Committee recommended award to BD & Co, which is the current incumbent with a proven track record in providing these services to the MDTA.

Member von Paris called for a motion to recommend approval of this item to the full MDTA Board at its next scheduled meeting. Member Rosen made the motion, and Member Penny-Ardinger seconded the motion, which was unanimously approved.

**UPDATE – RETIREMENT OF DEPUTY DIRECTOR OF FINANCE**

Member von Paris, the Finance Committee Members, and Executive Director Will Pines thanked Christina Thompson for her years of service, commended her for professionalism and stellar contributions to the MDTA, and wished her well on her retirement at the end of the month.

There being no further business, the meeting of the Finance Committee adjourned at 9:23 a.m., following a motion by Member Carroll, and seconded by Member Rosen.

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John von Paris, Chairman

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## MEMORANDUM

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**TO:** MDTA Board  
**FROM:** Allen Garman, Director of Treasury and Debt  
Yaw Berkoh, Debt Administrator  
**SUBJECT:** Non-Recourse Debt Update  
**DATE:** January 12, 2023

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### PURPOSE OF MEMORANDUM

Provide a required update on contracts and project improvements at BWI Marshall Airport that are funded from pledged passenger enplanement fees and consolidated rental car facility fees, as well as the status of other conduit financings and the loans to MDOT and MAA.

### SUMMARY

#### Key Points

1. Passenger Facility Charge improvement account funds on hand and projected net revenues are sufficient to meet near term capital expenditure needs of projects approved by the MDTA.
2. Consolidated Rental Car Facility improvement account funds on hand and projected net revenues are sufficient to meet near term capital expenditure needs of projects approved by the MDTA.
3. Revenues generated by the separate nonrecourse trusts are recovering post pandemic.
4. MDOT paid off its loan from the MDTA ahead of schedule.

Section 3 of Resolution 14-03 requires periodic updates to the Finance Committee and board on MAA contracts and project improvements that are funded from PFC (Passenger Facility Charge) and CRCF (Consolidated Rental Car Facility) pledged revenues. The PFC Financing Agreements and the CRCF Financing Agreement require the MDTA Board approval of all contracts prior to MAA's submission to the Board of Public Works. The 2014 board resolution delegated authority to the Executive Director to approve contracts funded from pledged PFC and CRCF revenues.

In 2018, the MDTA Board authorized loans totaling \$150 million to MDOT/MAA to provide a portion of the initial funding for MDOT's Traffic Relief Program (TRP) and finance certain



MAA improvements at BWI Airport. Of the \$150 million in loans approved, two loans were provided totaling \$70 million and the third loan to MAA for \$80 million was abandoned.

## **ANALYSIS**

### **BWI Consolidated Rental Car Facility (CRCF)**

The MDTA issued \$117.3 million of taxable revenue bonds in 2002 to finance the construction of the CRCF, a shuttle bus maintenance facility, vehicle storage facilities, and related roadway and utility infrastructure improvements. As of December 31, 2022, outstanding bonds totaled \$64.8 million. Pledged revenues are derived from a fee of \$3.75 per rental car transaction. And capital improvements are currently funded from net CRCF pledged revenues.

The pandemic resulted in a significant downturn in vehicle rentals. Following the pandemic, rental transactions have recovered significantly and continue to improve. Fiscal year to date rental revenue through November is averaging 71% of pre pandemic levels and 10.7% above the same period in fiscal 2022. Transactions have averaged 237,066 for the first half of fiscal 2023 versus 332,912 in the comparable period of 2019. Based on the Maryland Aviation Administration's (MAA) forecast, fiscal 2023 revenue is expected to be sufficient to pay debt service. MAA is forecasting to approximate the 1.25 times Rate Covenant. Given the close projected coverage near the covenant, it is being closely monitored by MDOT/MDTA to determine if MDOT will need take action as revenues are realized in coming months approaching fiscal year end 2023.

MDOT and MAA are proactively considering options to increase prospective coverage and provide funds for capital improvements/preservation, with a CFC rate increase planned for the next contract starting in 2024. Combined Reserves in the Facility Improvement Fund and the Coverage Fund exceed \$6 million or 70% of annual debt service, providing additional financial flexibility.

### **BWI Passenger Facility Charge (PFC)**

In 2012, 2014, and 2019, the MDTA issued a combined \$335 million in five series of PFC backed revenue bonds for infrastructure improvement projects at BWI Airport. Pledged revenues are derived from a charge of \$4.50 per passenger. As of December 31, 2022, outstanding bonds totaled \$240.6 million. The Series 2012C PFC Bonds were issued as variable rate demand notes and receive credit enhancement from a Wells Fargo letter of credit. Capital improvements are funded from bond proceeds and net PFC pledged revenues. Net Revenues held in the Improvement Fund and available for projects total \$68.7 million.

Of the \$118 million of Series 2019 bond proceeds, \$52.6 million remains in the Construction account that is expected to be spent by fiscal 2024. Per IRS rules for tax-exempt financings, a normal arbitrage calculation is required on the five-year anniversaries of issuance. Prevailing investment earnings rates for the unspent bond proceeds have risen above the bond yield, so it is possible that the construction account will generate modest earnings above the bond yield that must be rebated to the IRS. Arbitrage refers to the profit from borrowing funds in the tax-exempt market (through a bond issue) and investing them in the taxable market. Positive arbitrage results in no carrying costs for unspent bond proceeds.

In 2022, the MDTA was working on a refinancing transaction for the Series 2012 A & B bonds, but a random IRS audit of the tax-exempt financing delayed the bond sale. The MDTA’s Bond Counsel advised the sale could not proceed until the audit concluded. The IRS concluded the audit after several months of review and advised that no findings/issues were identified. Unfavorably, the sharply rising rate environment during the audit period eroded potential savings. Management will continuously monitor the market for refinancing opportunities in 2023.

Following the pandemic associated decline in enplanements, collections experienced significant recovery, averaging 91% of pre pandemic levels for the first five months of fiscal 2023. Monthly collections have averaged \$4.0 million in the second half of 2022 through November versus \$4.4 million in the comparable period of 2019. The fiscal 2022 debt service coverage ratio was 1.6 times. Based on annualized revenues fiscal year to date through November and projections by MAA, fiscal 2023 debt service coverage is estimated at 1.8 times.

### Calvert Street Parking Garage

In 2005, the MDTA issued \$23.785 million Parking Lease Revenue Bonds for Calvert Street Parking Garage Project in Annapolis, Maryland. The employee parking facility is operated by the Maryland Department of General Services (DGS) through an intergovernmental financing agreement. Debt service is funded through state appropriations.

#### Nonrecourse Debt

Obligor	Series	Final Maturity	Pledged	Par At Issue	Par Outstanding	Funded	Coupon
BWI Rental Car Facility	2002	7/1/32	Car Rental Fees	\$ 117.3	\$ 64.8	BWI Car Rental Facility	Fixed
BWI PFC	2012A	6/1/32	Enplanement Charges	50.9	30.7	Airport Projects	Fixed
BWI PFC	2012B	6/1/27	Enplanement Charges	92.1	37.0	Airport Projects	Fixed
BWI PFC	2012C	6/1/32	Enplanement Charges	43.4	43.4	Airport Projects	Variable Rate
BWI PFC	2014	6/1/32	Enplanement Charges	40.0	28.2	Airport Projects	Fixed
BWI PFC	2019	6/2/39	Enplanement Charges	108.7	101.3	Airport Projects	Fixed
Calvert Street Parking Garage	2015/05	7/1/32	State Appropriation	23.8	12.4	State Garage Annapolis	Fixed
				\$ 476.2	\$ 317.7		

December 31, 2022

The 2012 BWI Parking Garage Bonds were defeased on 2/25/2021.

The 2014 WMATA Bonds were defeased on 4/29/2021.

### MDTA Loans to MDOT and MAA

#### MDOT Loan

In 2018, the MDTA Board authorized a \$50 million loan to provide a portion of initial funding for MDOT’s public-private partnership (P3) TRP for the development of toll lanes on I-495 and I-270. The MDTA and MDOT are partners in delivering the P3 Program. One element of the MDTA’s role in the TRP includes providing back office and tolling system support for the program. Authorized funds were fully drawn by MDOT in three increments during the June 2019 through January 2020 period. Principal and interest payments began on July 15, 2021 and the loan was paid off early in July 2022.

**MAA Loan**

The \$20 million lending agreement to finance Concourse A improvements was executed on February 10, 2020, with MAA draws permitted through September 30, 2020. Principal and interest payments began on January 15, 2021. Level debt service at a 1.53% financing rate will be paid through July 15, 2033. The loan may be prepaid at any time.

**ATTACHMENTS**

MAA Project Tables

Baltimore/Washington International Thurgood Marshall Airport  
 Status Update of Customer Facility Charge (CFC) Funded Projects for MDTA

**Update 1/4/23**

- The FY23 budget for CFC funded projects totals \$325,081 with FYTD expenses totaling \$38,979. Open Projects include the following. Please see the following charts for detailed project information.

<b>Project</b>	<b>FY23 Budget</b>	<b>FYTD</b>
BMF Equipment Replacement	\$233,654	\$12,597
CRCF Facility Improvements	\$91,427	\$26,382
<b>Total FY23</b>	<b>\$277,775</b>	<b>\$38,979</b>

- Project Cost includes design, program management, construction management, and construction.

<b>Project Title</b>	<b>Project Scope</b>	<b>Project Status</b>	<b>Total Project Estimate</b>	<b>Total Project Expenses YTD</b>
BMF Equipment Replacement	Replacement equipment to include bus wash system, air and central vacuum system and CNG detection upgrades.	Substantially Complete	\$1,713,471	\$1,492,415
Facility Improvements	Rental Car Facilities Assessment	Substantially Complete	\$213,092	\$185,774
Facility Improvements	CONRAC Electrical Capacity Study for EV Chargers	Underway	\$50,000	\$37,393
Facility Improvements	Facility Appraisals	Completed	\$40,000	\$14,880
<b>Total</b>			<b>\$2,016,563</b>	<b>\$1,730,462</b>

Baltimore/Washington International Thurgood Marshall Airport  
Status Update of Customer Facility Charge (CFC) Funded Projects for MDTA

- There is currently no future spending programmed for the CFC Facility Fund, however, there is one request for consideration.

<b>Project Title</b>	<b>Project Scope</b>	<b>Total Project Estimate</b>
Vendor Reallocation Study	Reallocation of space to rental car companies based on the proportion of transactional volume.	\$150,000

Baltimore/Washington International Thurgood Marshall Airport  
Status Update of PFC Funded Projects for MDTA

**Passenger Facility Charge Program – Bond Funds**

- As of January 2023, only 2 bond funded projects are under construction and are expected to be completed in 2024.
  - Restrooms Improvements
  - Concourse D HVAC
- All other projects complete.

PFC Project #	Project Name	Project Scope	Project Status	Project Cost*	Expended YTD
13-04	Restroom Improvement Program	This program will renovate 64 BWI Marshall Airport restroom facilities over a four-year period. Scope includes some facility expansion, new fixtures, addition of stalls, new partitions, and supporting infrastructure.	Project under construction. Expected completion in Spring 2024.	\$67,052,475	\$28,586,811
13-08	Concourse D HVAC Replacement	This project will replace the existing HVAC systems serving the DY and commuter portions of Concourse D. Improvements include replacement of ceiling systems throughout the DX, DY, and commuter portions of the concourse.	Project under construction. Expected completion in Summer 2023.	\$19,283,232	\$11,712,376

*\*Cost Estimate includes design, program management, construction management, and construction.*

Baltimore/Washington International Thurgood Marshall Airport  
Status Update of PFC Funded Projects for MDTA

**Passenger Facility Charge Program – Improvement Funds**

- As of January 2023, only 3 projects funded by the Improvement Fund are underway and are expected to be completed by 2026.
  - Property Acquisition
  - Residential Sound Mitigation Program
  - BWI Mobile Stairs and Medical Lift
- All other projects complete.

PFC Project #	Project Name	Project Scope	Project Status	Project Cost*	Expended YTD
10-01	Property Acquisition	This program will acquire four properties under the Runway Safety Area/Runway Protection Zone project.	Project underway. Expected completion in FY 2024	\$1,643,000	\$7,000
13-03	Residential Sound Mitigation Program	This project will reestablish the Homeowner Noise Assistance Program using the FAA approved 2016 Part 150 Update. The 188 properties identified within the 65 DNL contour are considered “potentially eligible” for the Residential Sound Mitigation Program and will create a multi-year program based on homeowner desires to participate in sound mitigation treatment or acquisition.	Project under construction. Expected completion in FY 2026.	\$6,275,983 <i>*Note: This is the 20% match to 80% Federal funding.</i>	\$33,580
13-11	BWI Mobile Stairs and Medical Lift	This project replaces two mobile lounges with two stair trucks and a medical lift.	Procurement underway. Receipt of equipment expected in FY 2024.	\$1,115,200	\$0

*\*Cost Estimate includes design, program management, construction management, and construction.*

ITEM

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**Board Members:**

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**MEMORANDUM**

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**TO:** Finance Committee  
**FROM:** Jeffrey Brown, Director of Budget  
**SUBJECT:** FY 2024 Preliminary Operating Budget - DBM Changes  
**DATE:** January 12, 2023

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**PURPOSE OF MEMORANDUM**

The purpose of this memorandum is to update the Finance Committee on the impact of DBM fringe benefit changes to the Preliminary FY 2024 Operating Budget.

**SUMMARY**

Following the MDTA Board's contingent approval of the preliminary FY 2024 Operating Budget (contingent upon updated DBM fringe benefit rates and costs), DBM provided updated fringe benefit rates and charges. As a result of these changes, the budget has been increased by \$2.0 million, from \$391.4 million to \$393.4 million. The detail by sub-object is provided in Figure 1 below. In summary:

- Social Security – corrected rate from 7.65% to 7.37% resulting in a decrease of \$0.3 million
- Retiree Health Costs - rates were increased from 53.5% to 61.2% resulting in an increase of \$1.4 million.
- Employee Retirement System – rates increased from 21.36% to 21.74% resulting in an increase of \$0.2 million.
- Law Enforcement Pension – rates increased from 45.73% to 46.76% resulting in an increase of \$0.5 million.
- Worker's Compensation – the amount allocated to the MDTA increased by \$0.3 million.

- Other changes – various fees (State Radio Invoice, Retirement Agency Fees, other fees, and allocations (detail in Figure 1) account for a \$0.1 million reduction

**Figure 1** summarizes the DBM changes.

SubObject	Description	FY24 PreDBM	FY24AfterDBM	Difference	
0151	Social Security	9,594,423	9,262,144	(332,279)	Rate adjustment - 7.67% to 7.37%
0154	Retiree's Health Insurance	10,234,118	11,653,315	1,419,197	Rate increase from 53.5% to 61.2%
0161	Employees Retirement System	15,221,130	15,489,952	268,822	Rate increase from 21.36% to 21.74%
0169	LEOPS	22,270,383	22,771,990	501,607	Rate increase from 45.73% to 46.76%
0175	Workers Compensation	3,923,031	4,220,813	297,782	DBM Update
0305	State Paid Telecommunications	1,725,000	1,604,611	(120,389)	DBM Update
0874	OAG Administrative Fee	44,265	43,526	(739)	DBM Update
0875	Retirement Agency Admin Fee	197,998	243,454	45,456	DBM Update
0876	DOIT Services Allocation	85,000	52,080	(32,920)	DBM Update
0894	Statewide Personnel Syst Alloc	48,153	47,652	(501)	DBM Update
0897	Statewide Enterprise Budget System	27,574	27,646	72	DBM Update
	Total Impacted by DMB Changes	63,371,075	65,417,183	2,046,108	
	Total Budget	391,427,097	393,473,206	2,046,108	

ITEM

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**Board Members:**

Dontae Carroll	Mario J. Gangemi, P.E.
William H. Cox, Jr.	Cynthia D. Penny-Ardinger
William C. Ensor, III	Jeffrey S. Rosen
W. Lee Gaines, Jr.	John F. von Paris

William Pines, PE, Executive Director

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## MEMORANDUM

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**TO:** Finance Committee  
**FROM:** Chantelle Green, Director of Finance  
**PREPARED BY:** Kelly Morrison, CDM Smith Deputy Project Manager  
**SUBJECT:** CDM Smith T&R Modeling Methodology  
**DATE:** January 12, 2023

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### PURPOSE OF MEMORANDUM

To provide the Finance Committee with an overview of CDM Smith's modeling methodology and traffic and revenue (T&R) forecasting process with a concentrated focus on the methodology used to forecast the impact of the COVID-19 pandemic.

### SUMMARY

CDM Smith has decades of experience providing T&R consulting services to toll agencies across the United States. This experience has provided the framework for the consulting work performed by CDM Smith today. While every project has its unique components and challenges, there is a general modeling methodology that CDM Smith follows for traditional toll facilities like the Legacy system of the Maryland Transportation Authority (MDTA). While the COVID-19 pandemic provided a brand-new challenge, CDM Smith used its experience, routine monitoring, and available data resources to forecast the traffic impacts of the pandemic.

### ANALYSIS

CDM Smith's general modeling methodology begins with data and information gathering, including historical transactions and revenue, planned construction projects/roadway improvements, and economic data. CDM Smith obtains this information from various sources such as the MDTA and local organizations like Metropolitan Planning Organizations (MPOs). CDM Smith also obtains economic data such as population, employment, income, gasoline prices, and the GDP from sources such as Moody's, Woods and Poole (W&P), and the Energy Information Administration (EIA). Future changes in population and employment could modify traffic and travel patterns which would have an impact on T&R.

The information obtained through data collection is then fed into CDM Smith’s econometric analysis and the COVID-19 analysis, as applicable. The econometric modeling uses a linear regression analysis built upon the relationship between historical annual transactions, socioeconomic variables, and dummy variables such as construction and toll changes. The output of this analysis comprises the annual transaction growth rates, for each facility and vehicle type, which are the “baseline” or normal growth rates used in the T&R forecast. The COVID-19 analysis uses daily or monthly traffic data to estimate the impacts of the pandemic by comparing current data to a hypothetical “No COVID” forecast by applying the baseline growth to pre-pandemic traffic levels. The output of this process is a percentage impact that is layered onto the baseline forecast.

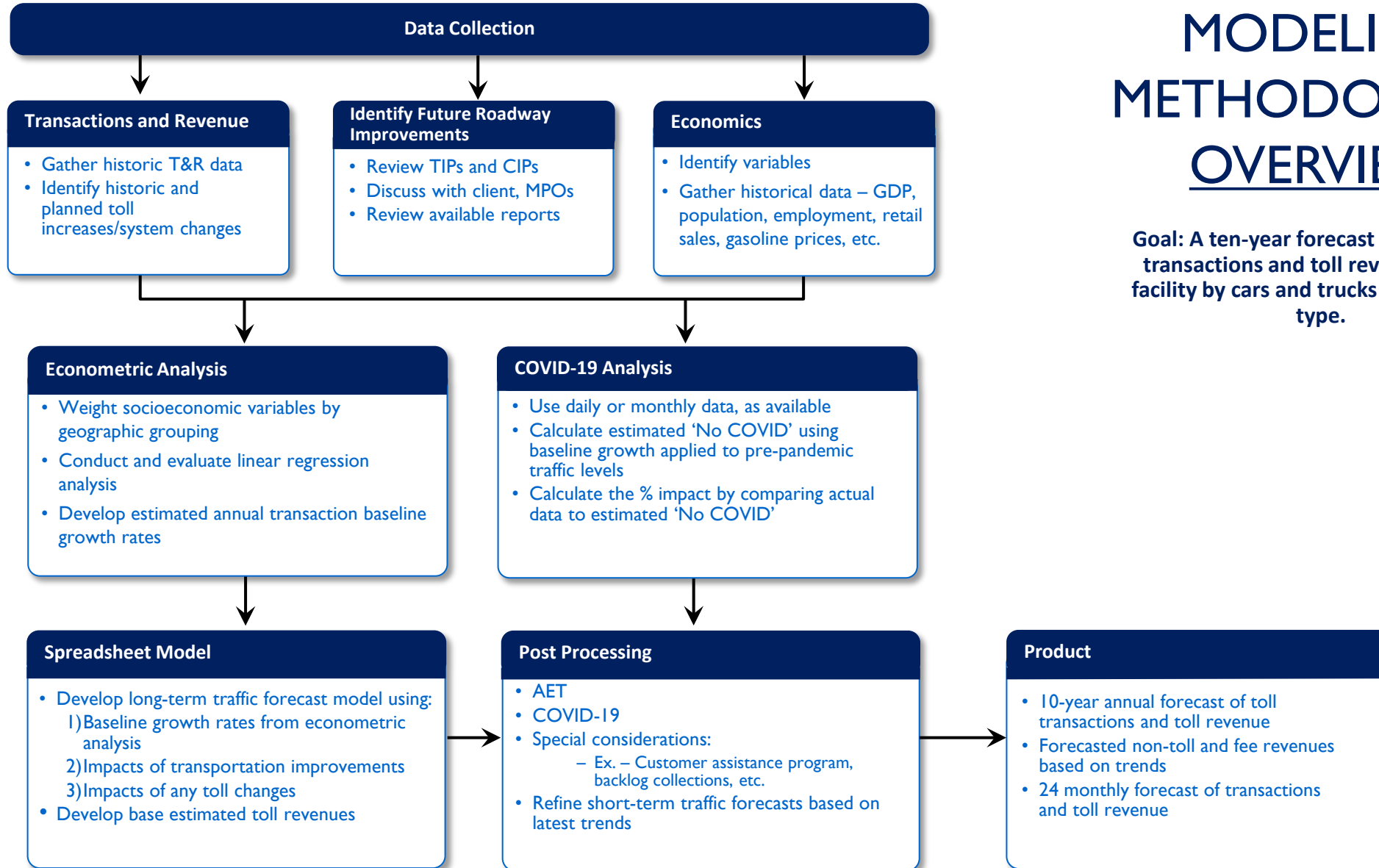
The final steps of the modeling process include the development of a spreadsheet model and any necessary post processing adjustments. The spreadsheet model develops long-term transaction forecasts by applying the baseline growth rates, estimated transportation improvement impacts, and toll change impacts to historical transactions. Forecasted toll revenue is calculated by applying the toll rates to the transaction forecast. After the baseline forecast is complete, additional impacts that need to be considered on a project specific-basis are layered on such as COVID-19, the AET conversion, and the Customer Assistance Plan. It is after this step that the short-term forecasts are refined based on recent trends, and the 10-year annual forecast is finalized. Any non-toll and fee revenue forecasts are generated using the latest trends, comparable transaction forecast growth, and CDM Smith’s professional judgement.

**ATTACHMENT**

T&R Modeling Methodology

# T&R MODELING METHODOLOGY

JANUARY 2023

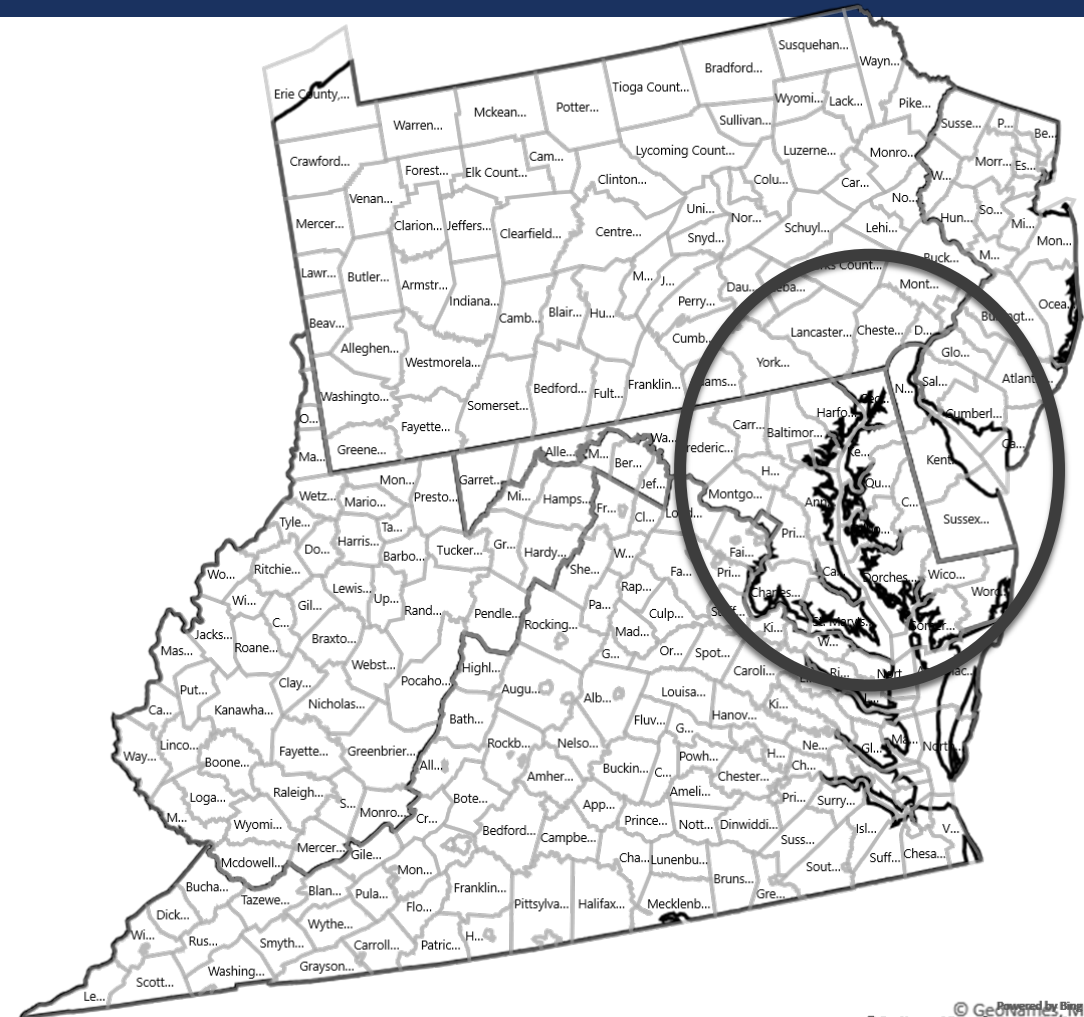


# MODELING METHODOLOGY OVERVIEW

**Goal: A ten-year forecast of annual toll transactions and toll revenue for the facility by cars and trucks and payment type.**

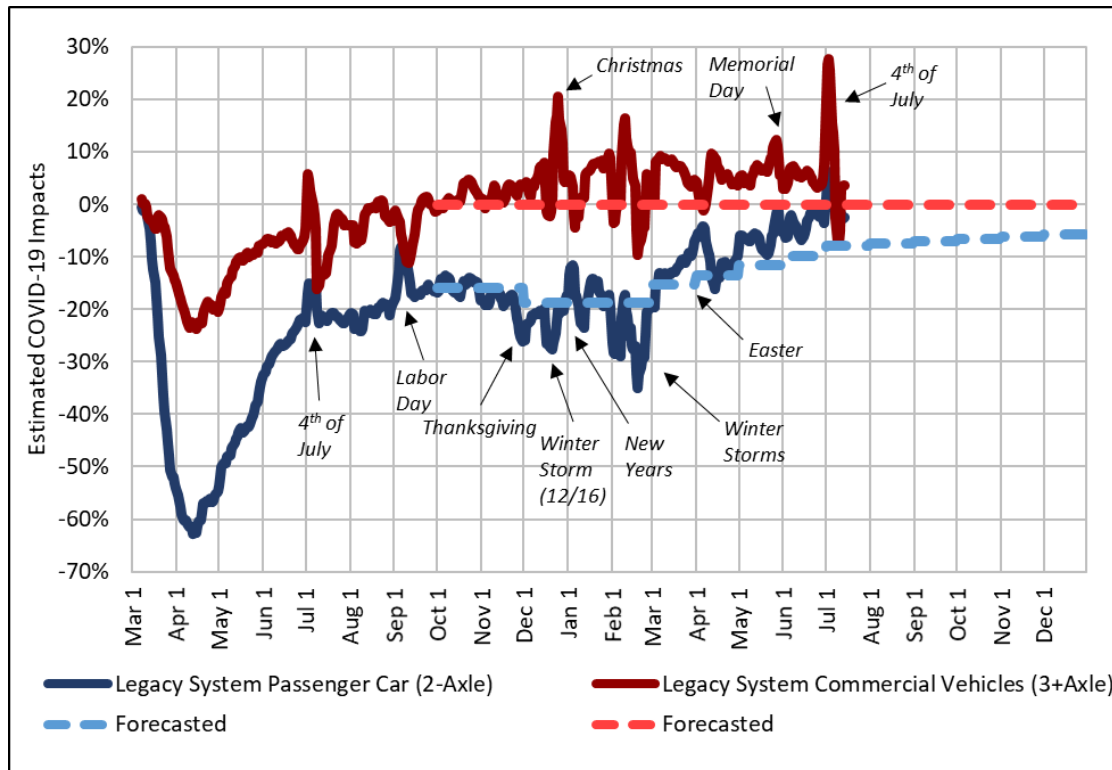
# ECONOMETRIC ANALYSIS

- Considerations:
  - Geographic Catchment (Socioeconomics)
  - Independent (Explanatory) Variables
    - Socioeconomic: Population, Employment, Income, Income Per Capita, Real GRP, Real Retail
    - Non-Socioeconomic: Great Recession, Construction, Gasoline and Diesel Prices (EIA), Average Annual Toll Rates
  - Historical Timeseries (Years)
  - Statistical Validity/Defensibility
    - Overall: adjusted  $R^2$ , F-stat and F-significance
    - Variables: coefficient direction/logic, t-stats and p-values
  - Consistent Logic
- Objective: Develop annual transaction growth rates
  - For T&R purposes, independent of regional travel demand model growth assumptions





# COVID-19 ANALYSIS



- Used daily gantry level data
- Estimated 'No COVID' using FY 2019 data and applying baseline growth rates
- Reviewed COVID impacts on a 7-day rolling average
- Contacted rating agencies and used online sources as available in 2020 to help estimate a recovery pattern
  - Moody's back-to-normal index, commuter and mobility trends from Google, studies and surveys on return to office potential
- Reviewed recovery during recession and other major historical events for comparison
- FY 2022 COVID analysis shows flattening of trends, allowing for monthly comparison rather than daily