JOINT TECHNICAL ADVISORY COMMITTEE (TAC) AND
AIR QUALITY SUBCOMMITTEE (AQS) MEETING
August 16, 2018

A meeting of the Joint Technical Advisory Committee (TAC) and Air Quality Subcommittee (AQS) was held on Thursday, August 16, 2018, at WILMAPCO, 850 Library Avenue, Suite 100, Newark, DE 19711.

1. CALL TO ORDER: Mr. Dahlstrom, TAC Chairperson, brought the TAC and AQS meeting to order at 10:00 a.m.

2. TAC Members present:
Ian Beam, Maryland Department of Transportation
Alex Brun, MDE (via conference call)
Stacey Dahlstrom, New Castle County Department of Land Use
David Dahlstrom, Maryland Department of Planning
Anthony DiGiacomo, Cecil County Land Use and Development Services
Brian Mitchell, City of Wilmington Department of Public Works
Jeanne Minner, Town of Elkton
Jolyon Shelton, DNREC
Joshua Thomas, Delaware Department of Transportation

TAC Ex-Officio Members present:
None

TAC Members absent:
City of Newark
City of Wilmington Department of Planning and Development
Delaware Division of Small Business, Development, and Tourism
Delaware Transit Corporation
Delaware River and Bay Authority
Delaware State Planning Coordination
Maryland Transit Administration

TAC Ex-Officio Members absent:
Amtrak
Diamond State Port Corporation
U.S. Environmental Protection Agency
U.S. Federal Highway Administration
U.S. Federal Transit Administration

AQS Members Present
Nathan Attard, DelDOT
Kevin Black, FHWA (via conference call)
Mike Du Ross, DelDOT (via conference call)
Jolyon Shelton, DNREC
Colleen Turner, MDOT (via conference call)

Guests and Invitees:
David Schlie, MDOT State Highway Administration
Bill Dunn, Civic League for New Castle County

Staff:
Dan Blevins, Principal Planner
Janet Butler, Administrative Assistant
Jacob Guise, Intern
Dave Gula, Principal Planner
Sharen Elcock, Executive Assistant
Randi Novakoff, Outreach Manager
Bill Swiatek, Principal Planner
Jacob Thompson, Transportation Planner
Tigist Zegeye, Executive Director

Minutes prepared by: Janet Butler

3. MINUTES
The following corrections were made to the July 19, 2018 TAC Minutes: On page 5, in the 7th paragraph, the word "identify" was changed to "include"; Mr. Tyson was changed to Mr. Byrne on pages 3 and 5; and Mr. Joylon was changed to Mr. Shelton on page 4.

ACTION: On motion by Mr. DiGiacomo and seconded by Mr. Mitchell, the TAC approved the July 19, 2018 minutes with corrections.

Motion passed. **(8-16-18 - 01)**

4. SUBCOMMITTEE UPDATES:

a. Nonmotorized Transportation Working Group (NMTWG)
Ms. Zegeye said the NMTWG met on August 7, 2018. Presentation/discussion items included an update of the project to fill a gap in the greater Newark Regional trails network by a representative from the Delaware State Parks, and an overview of the Delaware Bicycle Council grant program and review of the 2018 applications. They also reviewed the draft amendments to the TIP including an update on the TAP, and bicycle and pedestrian projects. In addition, there was a discussion of the draft changes to the non-motorized transportation objectives, actions, and performance measures of the 2050 Regional Transportation Plan (RTP), and an update on the status of the New Castle County Bicycle Plan.

5. PUBLIC COMMENT PERIOD:
None.

ACTION ITEMS:
6. To Recommend amending the FY 2019 Unified Planning Work Program (UPWP) with carry-over funds
Ms. Zegeye said the total carryover amount is $352,500.24, which matches the consultant funds remaining in the June 2018 WILMAPCO financial report distributed to TAC. On page 2 of the TAC packet, WILMAPCO's proposal is that the first nine projects would be carried over to the FY 2019 UPWP. Typographical errors are that the year should say 2019, not 2018, and the balance remaining should say 6/30/18 not 6/30/17, which will be corrected.

The next six projects have been completed. Of those, the first four projects were completed and were under budget, and the last two projects including Cecil County Travel Time for $18,000, would be put back in the general funds. This is because regional traffic counts were done for New Castle and Cecil Counties and those funds are already available. In addition, the left over funding for $48,000 from the Churchman's Crossing project would be put back into the general funds because there is leftover funding and WILMAPCO would like to finish the project using these unspent funds.

At the bottom of page 2, funds are listed that indicate what is left over after the fiscal year is closed out. The total amount to be carried over is $732,850.50, minus the prior year's tasks, which were not completed by June 30, 2018, which equals $269,738.48. The final amount is $463,112.02, which would be programmed for future tasks.

ACTION: On motion by Mr. Thomas and seconded by Ms. Dahlstrom, the TAC recommended amendment of the FY 2019 UPWP with carry over funds including corrections.

Motion passed **(8-16-18 - 02)**

7. To Recommend Amendment of the FY 2019-2022 TIP, including use of CMAQ, STP, TAP, and Transit 5310 and Urbanized Area funds for FY 2019

Mr. Swiatek said the FY 2019-2022 TIP update is relatively unchanged. The full TIP is included in the packet. One public comment is regarding the status of James Street Bridge over the Christiana River project, which has been pushed back to 2020. Another question was about the Newport Rail Station project, which is being updated with ridership projections.

ACTION: On motion by Mr. Mitchell and seconded by Ms. Dahlstrom, the TAC recommended amending the FY 2019-2022 TIP, including use of CMAQ, STP, TAP, and Transit 5310 and Urbanized Area funds for FY 2019.

PRESENTATION/DISCUSSION ITEMS:

8. Delaware CMAQ Target Setting

Mr. Swiatek distributed Performance Management 3 and DelDOT's CMAQ Emissions Calculations, May 2018 spreadsheet **(Attachment A)**.

Mr. Mike DuRoss, DelDOT, said a summary of the CMAQ Target Setting Process is found on page 15 of the handout. A list was developed for the FY2017-2021 period, which generated a five-year potential program of CMAQ supported projects. Then, DelDOT determined which projects could be estimated in a quantitative method, such as in a spreadsheet, or a qualitative method. Most were determined to be "quantitative" and were put into the spreadsheet. Then, they reviewed the emissions calculator, toolkit.

The spreadsheet process is a basic format to develop CMAQ estimates for emissions reductions. It uses estimates of dwelling units and population within a quarter of a mile of the project, mode-shift assumptions, and total project length. Assumed emission rates from the MOVES model are applied in the spreadsheet. For FY2018-FY2021, emissions from the four years were averaged. This average was then multiplied by two for the two-year target and multiplied by four for the four-year target.

DelDOT is revising the spreadsheet for the baseline performance monitoring report that is due October 1, 2018. DelDOT is also including the dwelling units and mode shifts and adding the emissions for PM2.5, which had not been provided on May 20, 2018.

DelDOT will establish permanent counters; or get temporary counters to get good data on the bike/pedestrian usage to improve and refine the spreadsheet method. In addition, DelDOT is about to hand off much of the monitoring process and annual generation of CMAQ emissions reduction estimates to consultants in a few months.

Mr. Swiatek said on the spreadsheet, the Christiana Bridge project was reassigned from CMAQ to STP; therefore, when you recalculate you can take that project off the spreadsheet. Mr. DuRoss agreed that some projects have shifted since May 20, 2018.

Ms. Turner, MDOT, asked if the targets are in kilograms per day. Mr. DuRoss replied they are just grams per day; however, we can change that.

Mr. Dahlstrom commented regarding Ride Share that there are no numbers associated with it, but there are totals in the right column. Mr. DuRoss replied there was a separate spreadsheet for Ride Share. It is a recurring project and we assume 1,000 trips per year, it has an average trip length, and there is a corresponding emissions rate for speed and distances. This has been a fixed rate for a long time.

Mr. Swiatek asked when WILMAPCO could expect finalized emissions data. Mr. DuRoss replied by the next Air Quality Subcommittee (AQS) meeting in September prior to the due date of the October 1, 2018 baseline report.

9. WILMAPCO's CMAQ Performance Plans

Mr. Swiatek distributed WILMAPCO's Baseline CMAQ Performance Plan and CMAQ Scoring for Cecil County **(Attachment B)**. Mr. Swiatek said by October 1, 2018, we must come up with a performance plan, and he referred to the following schedule:

- August 16, 2018: Presentation to TAC/AQS
- August 30, 2018: Special AQS review of Cecil County emissions targets
- September 13, 2018: AQS to recommend endorsement
- September 20, 2010: TAC to recommend endorsement
- September 28, 2018: Submit CMAQ Performance Plan to DelDOT/MDOT
- October 1, 2018: Submit CMAQ Performance Plan
- November 8, 2018: Council to adopt Performance Targets
- November 16, 2018: MPO Performance Targets are due

Mr. Swiatek also discussed specific pages of the Performance Plan: Rough Draft, dated August 13, 2018. He said there are three measures on page 6 for Peak Hour Excessive Delay. The Hours of Regional Delay Per Capita include the baseline of 6.8 hours in 2017 that increases to 17.2 targets in 2021. The Percent Non-SOV Travel: baseline is 27.9 %, the 2-year target is 28%; and the 4-year target is 28.1%.

Ms. Turner commented that regarding On-Road Mobile Source Emissions Targets on page 8: "MDOT's targets are based on previously-funded CMAQ projects (several roundabouts) that did not properly pass through our transportation planning process," MDOT could not support language that says we did not work properly through the process.

Mr. Swiatek explained that WILMAPCO does have a disagreement with MDOT regarding how to set the CMAQ targets in Cecil County. The issue is that the projects in Cecil County did not pass through WILMAPCO's process because they were not in the WILMAPCO TIP. In addition, more cost-effective projects could be funded via CMAQ and produce the same or better emissions results. Ms. Zegeye agreed.

Ms. Zegeye noted that the roundabout projects were not popular in Cecil County, and reiterated that they were not included in the WILMAPCO TIP. In addition, WILMAPCO staff believes that based on FHWA's cost benefits emission calculations, bike/ped projects have better emission benefits than roundabouts. Ms. Zegeye added our proposal is to use the priority letters that Cecil County and municipalities have submitted and use those projects to develop CMAQ targets. Mr. Swiatek said he would work with MDOT on the document language; the text was simply there to explain why WILMAPCO was creating its own targets.

Mr. Swiatek continued on page 9 in the New Castle County section. WILMAPCO will take what DelDOT has proposed as targets and adopt them. On page 10, the planned CMAQ projects will help to achieve the targets. In addition, page 11 provides the project descriptions to be developed in Cecil County. Both pages 10 and 11 are awaiting further details.

All the Cecil County bicycle and pedestrian projects that WILMAPCO staff proposes to use to develop a target for Cecil County came from the Priority Letters from Cecil County, North East, and Perryville.

Mr. Beam said to put MD, for state routes, instead of SR. Mr. Swiatek said he would correct that.

Mr. DiGiacomo commented that Cecil County does not have an adversarial relationship with MDOT but said that the roundabouts in question were not necessarily the top priority for the County government. He invited MDOT to the Cecil County Technical Meeting at 10:00 a.m., on September 6, 2018, and the Cecil County Tour on September 25, 2018.

10. WILMAPCO 2018 Interregional Report

Mr. Thompson said the 2018 Interregional Report includes demographic changes and travel characteristics, which covers a 28-county study area in four states. The study area includes MPOs and counties within 60 miles of the WILMAPCO region. The report was last updated in 2012 and the 2018 update is in progress.

Data sources include the US Census Bureau, FHWA, State Data Access websites; MPOs; County Planning departments; and Transit providers. The population will grow from 11.1 to 12.4 million. In the 2012 report, Philadelphia was the only county expected to decline (3%). Philadelphia would grow by 8% by 2040. Both Cape May and Salem Counties, in New Jersey would lose population.

However, employment would grow from 5.9 to 6.5 million. There will be 600,000 more jobs, which is a 10% increase. Lancaster County will be the largest contributor, adding 80,000 jobs. More than 70% of jobs will be in Maryland and Pennsylvania. In addition, New Castle, Delaware, Carrol, Maryland and Salem, New Jersey counties would lose jobs.

The average road segment carries more than 31,000 vehicles per day. The I-95 Corridor has more than 120,000 daily vehicles. The heaviest traffic volume that moves north to south is between Baltimore and Philadelphia. The population increases will drive increases in traffic.

From 2012 to 2045, there would be a 53% increase in traffic throughout the study area. The WILMAPCO region would see an 81% increase, and I-95 corridor would see a 51% increase.

From 2010 to 2016, the average commute time increased from 3.2 minutes to 28.7 minutes. More than half of the counties exceeded the regional average. The longest commutes are Philadelphia (33 minutes); Queen Anne's, Maryland (35 minutes); and Caroll, Maryland (21 minutes).

Regarding the driving mode share, the highest percentages of workers who drive alone include York County, Pennsylvania (86%) and Carroll County, Maryland (85%). The lowest percentages of workers who drive alone include Philadelphia (51%) and Baltimore City (59%). However, between 2010 and 2016 the overall percentage remained steady at 78%.

I-95 in the Mid-Atlantic is the most heavily traveled truck route in the US. In 2012, I-95 carried nearly 14,000 daily trucks (average by segment). Trucks comprise 8% of total traffic. Truck traffic is expected to grow by 55% by 2045, with growth occurring on roadways throughout the study area. I-95 truck traffic will grow by 50% reaching nearly 20,700 daily trucks. Long-distance truck traffic will increase from 24% to 27.5%.

Congestion is measured by volume to capacity ratio. Level of Service (LOS) is measured as A through F. By 2045, congestion is expected to significantly impede traffic flows, especially in the DVRPC and BMC regions. Roadways at and above capacity (E-F) are expected to increase by 65% from 2012.

Marine highways are alternatives to ground transportation. In 2010, USDOT identified 18 marine corridors, 8 projects, and 6 initiatives. From 2016-2018 additional funding enabled growth of the program, which now supports 21 projects. There are nine projects in or near the study area.

Transit scores are based on the ability to support transit investments. Factors include population density, employment density, and zero-car households. Since 2005, scores grew along Delaware Route 1 in Middletown, Smyrna, and Dover. Inter-county transit routes in the WILMAPCO region include DART Routes 301 and 302, Cecil Transit Routes 4 and 5, and the SEPTA Wilmington/Newark Line.

The inter-regional TIP projects extend or have impacts beyond WILMAPCO's borders. Completed projects include highway expansions and interchanges, freight rail feasibility studies, and passenger rail studies for commuter rail extension. Projects in progress are the highway and rail improvements.

Recommendations of the WILMAPCO 2018 Interregional Report include expanding inter-county transit services, continuing inter-agency coordination, supporting dense, walkable, land uses, and limiting outward growth. Next steps in the report are to update the data and analyses, update inter-regional activities, include analysis of key regional corridors, include potential new measures such as climate change impacts and new technologies, and produce a draft report by late September 2018.

Mr. DiGiacomo asked about the location of the long-range truck/short-range miles. Mr. Thompson replied that it goes outside the study areas from the Freight Analysis Framework. Mr. Dahlstrom asked if the 12% population increase and the 53% traffic increase are in the WILMAPCO region. Mr. Thompson replied 53% is in the study area, and 81% is the WILMAPCO increase.

11. AQ Conformity Update

Mr. Swiatek said on page 16 of the handout entitled Projects Modeled in summer 2018 (2050 RTP/FY20 TIP), there is a list of projects to be included in the 2018 Model. Members of staff were on a conference call with MDOT regarding the I-95 Interchange and Belvedere Road project to discuss getting it into the model with the draft model 2030 year.

The Project Schedule for the Conformity Analysis is on page 15. He added we are looking for the results of the Conformity Analysis by October 2018, which will be reviewed at the October 11, 2018 AQS meeting. The air quality document will be refined by AQS in December. Then it will go out for public comment along with the WILMAPCO 2050 RTP in January 2019 and be ready for the WILMAPCO Council approval at the March 2019 meeting.

Mr. Dunn asked why the air quality and congestion issues on the Stanton/Kirkwood Highway area at the Route 7/Route 4 split are being discussed. Mr. Swiatek said he would look at the TIP to see if that project is there, he believes there is a project funded at that intersection. He added that only the projects that are capacity-adding projects that are considered regionally significant are modeled for the conformity analysis. There are other projects that include congestion relief elements that are not on this list. Mr. Swiatek explained that this is not a ranked list; these projects are defined by descriptions that are already in the TIP and the RTP.

Mr. Dahlstrom asked if projects #12 and #23 indicate widening; however, others say they are widening from four to six lanes. Mr. Swiatek said he would investigate the project description and see if he can add that language. Mr. Dahlstrom also asked if the "Our Town" public meeting was a process. Mr. Swiatek said Our Town is usually a one-time event. The next WILMAPCO "Our Town" event will be held on February 7, 2019.

12. 2050 Regional Transportation Plan (RTP) Update

Mr. Blevins distributed the Draft 2050 RTP Transportation Investment Areas, July Version **(Attachment C)**. He said the maps show the investment areas. The areas in blue are the centers, which are "urban." The definitions are on the last page of the handout. Ms. Dahlstrom asked if they are not all "municipal" areas, but, also "suburban" areas. Mr. Blevins said will be able to change the wording and make things clearer. Ms. Zegeye said all of the 2050 RTP meetings are being set up with the Council members and not just with New Castle County.

Mr. Blevins added we cleaned up the boundaries around the investment areas. The City of Wilmington now stands as an "Urban Center", with other municipalities designated as "Centers." In Cecil County, some rural areas include villages that were added. The TIAs are the basis for where the various types of transportation investments should be made within the region. They draw the relationship between land use and transportation and provide input in the TIP project prioritization process criteria. In addition, tweaks were made to the TIAs based on newer data.

He provided the following draft 2050 TIA definitions for the investment areas:

- Center – Municipal areas with the highest concentrations of population and/or employment with well-established land uses, and development patterns and opportunities for significant re-development.
- Core – Non-municipal areas, which contain densely, settled population and employment patterns.
- Community – areas with well-established land uses and development patterns and where growth and development pressures are expected to be moderate.

- Developing – Areas where land uses and development patterns are not yet set and where they continue to emerge.
- Rural – Areas where limited growth and development exist or are expected, where transportation facilities and services are considered adequate to meet needs and where natural resources are to be preserved.
- Village (Cecil) – Areas that protect the character of the County's historic villages by separating them from surrounding rural or developed areas, which may feature a cluster of structures that include historic buildings, architectural elements, community focal points, and historic employment centers and commercial uses.

INFORMATION ITEMS:

13. Staff Report

Ms. Zegeye reported on the following plans and events:

- Staff has been participating in the Wilmington Comprehensive Plan meetings.
- The Elkton Pedestrian Plan was endorsed by the Elkton Mayor and Commissioners.
- Staff exhibited at the Southbridge Weekend Health Fair on July 21, 2018.
- The Route 202 Master Plan public meeting was held at Talleyville Fire Hall on July 25, 2018, which had 200 attendees, and a visioning workshop is planned for the fall.
- Staff exhibited at the 55+ Healthy Lifestyles Expo on August 9, 2018 at Elkton High School.
- The Route 9 Corridor Master Plan Steering Committee will meet on August 21, 2018.
- Staff continues to support the development of the Newark Sustainability Plan. Their next Steering Committee meeting is set for August 22, 2018.
- The joint WILMAPCO and DelDOT public workshop will be held on September 5, 2018 from 4-7 p.m. at the Newark Free Library.
- The Cecil County Pre-Tour meeting will be held on September 6, 2018, and the Cecil County Public Tour meeting will be held on September 25, 2018.
- Staff will exhibit at Newark Community Day on September 16, 2018.
- Staff is working on the Environmental Justice (EJ) and Transportation Justice (TJ) Report updates. TAC members who wish to serve on the committee please contact Mr. Swiatek.
- Staff will conduct New Castle County Bike Plan public outreach with municipalities and civic associations during the fall 2018.
- The Newark Area Transit Study Management Committee met on August 7, 2018. The consultant team and WILMAPCO surveyed transit riders and drivers for DART, Unicity, Cecil County Transit and the University transit systems. Online survey is available for business/organizations and Newark residents.
- Staff held the 12th Street Connector Alignment Public Meeting and 7th Street Peninsula Public Workshop.
- Whitman, Requardt, and Associates was selected as consultants for the Southern New Castle County Master Plan. A kick-off meeting will be scheduled soon.

OTHER BUSINESS:

None.

ADJOURNMENT:

The meeting adjourned at 11:35 a.m.

Attachments (3)

PERFORMANCE MANAGEMENT 3

"On-Road Mobile Source Emission Reductions, CMAQ PM 3 Measure"; Delaware DOT and Delaware MPO Coordination

Subpart H referred to "Emission Reductions Measures" requiring 2-Year and 4-Year for each applicable criteria pollutant and precursor. This was a separate, distinct PM 3 measure compared with the "regional measures" contained in Subpart G (the PHED and Non-SOV Travel Measures previously described).

The technical process used to develop the emission reductions corresponding to the CMAQ-funded projects in Delaware was as follows:

1) A spreadsheet was developed by DelDOT Finance Division staff describing CMAQ expenditures, project titles, project descriptions, and funding amounts for State FY 2017, FY 2018, FY 2019, FY 2020, and FY 2021.

2) For "out years" in the above spreadsheet (FY 2019 – FY 2021) a list of currently planned projects for the ""Bike/Pedestrian" category was developed by DelDOT Division of Planning, Local Systems staff. This was used to supplement the Finance spreadsheet so that project locations, project lengths, and potential usage estimates could be developed.

3) An assessment was made to determine if "qualitative" or "quantitative" methods could be used to estimate emission reductions, and amounts, according to grams per day, kilograms per day, or tons per year.

4) For those projects that were assessed as able to utilize "quantitative" methods, a further assessment was made to use:

    A) staff spreadsheet tools or
    B) the FHWA "CMAQ Emissions Calculator Toolkits".

5) Emissions estimates were then developed to support development of targets, based on likely or potential reductions.

PERFORMANCE MANAGEMENT 3

Considerations:

In developing the emissions reductions estimates, it was obvious that the allocation of CMAQ funds according to currently programmed projects could change (may likely change) as updates occur in the future. This might happen due to updating completion dates of currently underway projects, evolving priorities or recognition of updated prioritization factors and criteria (resulting in some projects currently programmed for CMAQ funds in "out years" potentially receiving more or less total CMAQ funds, adjustments to project horizon years and completion dates, and other element within the project planning, design, and construction processes.

The Total Emission Reduction for the current list of CMAQ-funded projects in Delaware (able to be assessed through quantitative methods) are as follows:

1) The 2-Year Total Emissions reductions of NOx are 7353.40 grams per day. The 2-Year Total Emissions reductions of VOC are 10521.40 grams per day.

2) The 4-Year Total Emissions reductions for NOx are 16086.83 grams per day. The 4-Year Total Emissions reductions for VOC are 26229.83 grams per day. Note that the 4-Year Emissions reductions include the estimated amounts for the previous 2-Year targets as well.

DelDOT's CMAQ Emissions Calculations
May 2018

CMAQ Project YEAR #VALUE!	Approximate Population within 1/4 mile	Occupied DU	Total DU	Peak Period Ped Trips	Peak Period Bike Trips	Project Only Trip Length (Miles)	PED AM VMT	PED PM VMT	BIKE Total VMT	BIKE AM VMT	BIKE PM VMT	Emission Rate Speed Bin	AM Nox Rate	PM Nox Rate	AM VOC Rate	PM VOC Rate	PM PM 2.5 Rate	AM Nox GRAMS	PM Nox GRAMS	AM VOC GRAMS	PM VOC GRAMS	PM PM 2.5 GRAMS		DAILY Nox Grams/Day	Daily VOC Grams	Daily PM 2.5 Grams	ANNUAL Nox Grams	ANNUAL PM2.5 Grams	ANNUAL Nox Tons	ANNUAL PM2.5 Tons
2017 Myrtle Avenue Sidewalk Improvements	2000	840	800	50	50	0.25	27	27	9	9		6 (25 mph)	0.81	0.29	1.08	1.09	0.071	#REF!	7.83	#REF!	29.43		1.917	78.30	294.30	19.17	28579.50	6997.88	0.032	0.008
2017 Manor Avenue Sidewalk Improvements	3000	1260	1200	75	75	0.45	50.625	50.625	16.875	16.875		6 (25 mph)	0.81	0.29	1.08	1.09	0.071	#REF!	14.68125	#REF!	55.18125		3.594375	146.81	551.81	35.94	53586.56	13119.47	0.059	0.014
2017 Georgetown to Lewes Rail to Trail	7500	3150	3000	125	50	1.15	215.625	215.625	143.75	143.75		6 (25 mph)	0.81	0.29	1.08	1.09	0.071	#REF!	62.53125	#REF!	235.03125		15.309375	625.31	2350.31	153.09	228369.06	55879.22	0.252	0.062
2017 Industrial Track Greenway Phase II	10000	4200	4000	75	150	1.75	234.375	234.375	656.25	656.25	Higher	6 (25 mph)	0.81	0.29	1.08	1.09	0.071	#REF!	67.96875	#REF!	255.46875		16.640625	679.69	2554.69	166.41	248085.94	60739.28	0.274	0.067
2017 West Street Trail Connection	3000	1260	1200	35	15	0.75	39.375	39.375	28.125	28.125		6 (25 mph)	0.81	0.29	1.08	1.09	0.071	#REF!	11.41875	#REF!	42.91875		2.795625	114.19	429.19	27.96	41678.44	10204.03	0.046	0.011
2017 Brecknock Park Multi Use Trail	5000	2100	2000	100	25	3.52	880	880	308	308	Higher	6 (25 mph)	0.81	0.29	1.08	1.09	0.071	#REF!	255.2	#REF!	959.1		62.48	2552.00	9592.00	624.80	931480.00	228052.00	1.027	0.252
2017 Christiana River Bridge	500	210	200	50	15	0.25	50	50	15	15	Much Higher	6 (25 mph)	0.81	0.29	1.08	1.09	0.071	#REF!	14.5	#REF!	54.5		3.55	145.00	545.00	35.50	52925.00	12957.50	0.058	0.014
2017 McCoy Road Pedestrian Bridge	500	210	200	25	10	0.5	18.75	18.75	12.5	12.5		6 (25 mph)	0.81	0.29	1.08	1.09	0.071	#REF!	5.4375	#REF!	20.4375		1.33125	54.38	204.38	13.31	19846.88	4859.06	0.022	0.005
2017 Capital City Trail	3000	1260	1200	35	15	0.65	34.125	34.125	24.375	24.375		6 (25 mph)	0.81	0.29	1.08	1.09	0.071	#REF!	9.89625	#REF!	37.19625		2.422875	98.96	371.96	24.23	36121.31	8843.49	0.040	0.010
2017 RIDESHARE																								2450.00	650.00	65.00	894250.00	23725.00	0.986	0.026
TOTAL																								6844.64	17543.64	1165.41	28579.50	425375.11	2.80	0.47
2018 Christiana River Bridge	500	210	200	50	25	0.25	50	50	15	15	Much Higher	6 (25 mph)	0.81	0.29	1.08	1.09	0.071	#REF!	14.5	#REF!	54.5		3.55	145.00	545.00	35.50	52925.00	12957.50	0.058	0.014
2018 Industrial Track Greenway Phase II	10000	4200	4000	75	150	1.75	234.375	234.375	656.25	656.25	Higher	6 (25 mph)	0.81	0.29	1.08	1.09	0.071	#REF!	67.96875	#REF!	255.46875		16.640625	679.69	2554.69	166.41	248085.94	60739.28	0.274	0.067
2018 Capital City Trail	3000	1260	1200	35	15	0.65	34.125	34.125	24.375	24.375		6 (25 mph)	0.81	0.29	1.08	1.09	0.071	#REF!	9.89625	#REF!	37.19625		2.422875	98.96	371.96	24.23	36121.31	8843.49	0.040	0.010
2018 Brecknock Park Multi Use Trail	5000	2100	2000	100	25	3.52	880	880	308	308	Higher	6 (25 mph)	0.81	0.29	1.08	1.09	0.071	#REF!	255.2	#REF!	959.1		62.48	2552.00	9592.00	624.80	931480.00	228052.00	1.027	0.252
2018 RIDESHARE																								2450.00	650.00	65.00	894250.00	23725.00	0.986	0.026
																								5925.65	13713.65	915.94	2162862.25	334316.28	2.39	0.37
2019 Elkton Road, MD Line to Cache Mill Rd	4000	1680	1600	50	25	2.5	187.5	187.5	156.25	156.25		6 (25 mph)	0.81	0.29	1.08	1.09	0.071		54.375		204.375		13.3125	543.75	2043.75	133.13	198468.75	48590.63	0.219	0.054
2019 Christiana River Bridge	500	210	200	50	15	0.25	18.75	18.75	9.375	9.375		6 (25 mph)	0.81	0.29	1.08	1.09	0.071		5.4375		20.4375		1.33125	54.38	204.38	13.31	19846.88	4859.06	0.022	0.005
2019 Senator Bikeway	4000	1680	1600	50	25	2.5	187.5	187.5	156.25	156.25		6 (25 mph)	0.81	0.29	1.08	1.09	0.071		54.375		204.375		13.3125	543.75	2043.75	133.13	198468.75	48590.63	0.219	0.054
2019 Capital City Trail	3000	1260	1200	35	15	0.65	34.125	34.125	24.375	24.375		6 (25 mph)	0.81	0.29	1.08	1.09	0.071		9.89625		37.19625		2.422875	98.96	371.96	24.23	36121.31	8843.49	0.040	0.010
2019 Georgetown to Lewes Rail to Trail, Minos	7500	3150	3000	125	50	1.15	215.625	215.625	143.75	143.75		6 (25 mph)	0.81	0.29	1.08	1.09	0.071		62.53125		235.03125		15.309375	625.31	2350.31	153.09	228238.06	55879.22	0.252	0.062
2019 RIDESHARE																								2450.00	650.00	65.00	894250.00	23725.00	0.986	0.026
																								4316.15	7664.15	521.89	1575394.75	190488.03	1.74	0.21
2020 Elkton Road, MD Line to Cache Mill Rd	4000	1680	1600	50	25	2.5	187.5	187.5	156.25	156.25		6 (25 mph)	0.81	0.29	1.08	1.09	0.071		54.375		204.375		13.3125	543.75	2043.75	133.13	198468.75	48590.63	0.219	0.054
2020 Christiana River Bridge	500	210	200	50	15	0.25	18.75	18.75	9.375	9.375		6 (25 mph)	0.81	0.29	1.08	1.09	0.071		5.4375		20.4375		1.33125	54.38	204.38	13.31	19846.88	4859.06	0.022	0.005
2020 Senator Bikeway	4000	1680	1600	50	25	2.5	187.5	187.5	156.25	156.25		6 (25 mph)	0.81	0.29	1.08	1.09	0.071		54.375		204.375		13.3125	543.75	2043.75	133.13	198468.75	48590.63	0.219	0.054
2020 Georgetown to Lewes Rail to Trail, Minos	7500	3150	3000	125	50	1.15	215.625	215.625	143.75	143.75		6 (25 mph)	0.81	0.29	1.08	1.09	0.071		62.53125		235.03125		15.309375	625.31	2350.31	153.09	228238.06	55879.22	0.252	0.062
2020 Georgetown to Lewes Rail to Trail, Georgetown	9000	3780	3600	150	60	0.75	168.75	168.75	112.5	112.5		6 (25 mph)	0.81	0.29	1.08	1.09	0.071		48.9375		183.9375		11.98125	489.38	1839.38	119.81	178921.88	43731.56	0.197	0.048
2020 RIDESHARE																								2450.00	650.00	65.00	894250.00	23725.00	0.986	0.026
																								4706.56	9131.56	617.47	1717895.31	225376.09	1.89	0.25
2021 Elkton Road, MD Line to Cache Mill Rd	4000	1680	1600	50	25	2.5	187.5	187.5	156.25	156.25		6 (25 mph)	0.81	0.29	1.08	1.09	0.071		54.375		204.375		13.3125	543.75	2043.75	133.13	198468.75	48590.63	0.219	0.054
2021 Mumchy Branch Trail	4000	1680	1600	50	25	2.5	187.5	187.5	156.25	156.25		6 (25 mph)	0.81	0.29	1.08	1.09	0.071		54.375		204.375		13.3125	543.75	2043.75	133.13	198468.75	48590.63	0.219	0.054
2021 Georgetown to Lewes Rail to Trail, Georgetown	9000	3780	3600	150	60	0.75	168.75	168.75	112.5	112.5		6 (25 mph)	0.81	0.29	1.08	1.09	0.071		48.9375		183.9375		11.98125	489.38	1839.38	119.81	178921.88	43731.56	0.197	0.048
2021 RIDESHARE																								2450.00	650.00	65.00	894250.00	23725.00	0.986	0.026
																								4026.88	6578.88	451.06	1469809.38	164637.41	1.62	0.18
																						Average of 5 Years		25919.875	54629.875	3671.768	6854541.188	1340193.313	10.434	1.478
																								5183.975	10925.975	734.353	1390908.238	268038.663	2.087	0.296
																						2 year Total 2018 - 2019		10241.800	21377.800					
																						4 Year Total 2018 - 2021		18975.238	37086.238					

8/16/2018

WILMAPCO's Baseline CMAQ Performance Plan
Timeline

DRAFT

	Aug '18	Sep '18	Oct '18	Nov '18
All requested data submitted to WILMAPCO	1			
Draft plan produced	14			
AQS/TAC presentation	16			
Special AQS full review of Cecil Co. emissions targets	30			
AQS recommends endorsement		13		
TAC recommends endorsement		20		
Submit CMAQ Performance Plan to DelDOT/MDOT		28		
CMAQ Performance Plan Due			1	
Council adoption of performance targets; endorsement of CMAQ Performance Plan				8
MPO Performance Targets Due				16

ATTACHMENT B

WILMAPCO

PERFORMANCE PLAN

CONGESTION MITIGATION AND AIR QUALITY (CMAQ)

Wilmington Area Planning Council (WILMAPCO)

Philadelphia, PA—NJ—DE—MD

ROUGH DRAFT – August 13, 2018# #

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Introduction

Both the Moving Ahead for Progress in the 21st Century (MAP-21) and the Fixing America's Surface Transportation (FAST) Acts called for a more performance-based approach to transportation planning. Under this federal legislation, States, Metropolitan Planning Organizations (MPOs), and public transportation providers must link investment priorities to certain performance-based measures and targets. These measures and targets lie in the following areas:

- Highway safety and assets
- System performance
- Transit safety and transit asset management

As the MPO for the Wilmington, Delaware region (which includes New Castle County, Delaware and Cecil County, Maryland) the Wilmington Area Planning Council (WILMAPCO) has a long history of incorporating performance measurement into the planning process. The Regional Progress Report, produced every two years, tracks the performance of and informs the update to policy in the Regional Transportation Plan, our long-range Plan. Looking beyond surface trends, the Progress Report uses deep indicators that assess why certain policy actions are on course while others may not be. With mature, performance-based planning already in place, WILMAPCO is in a strong position to incorporate new federally-required performance measures and targets.

This report specifically addresses federal requirements to incorporate performance measurement into Congestion Mitigation and Air Quality (CMAQ) planning and programming. It establishes baseline conditions/performance and two and four-year targets for both traffic congestion and on-road mobile source emission measures. The table on the following page identifies specific measures and data used. Going further, it then provides a description of future projects which may be funded by CMAQ monies and notes how they will help to achieve the identified targets.

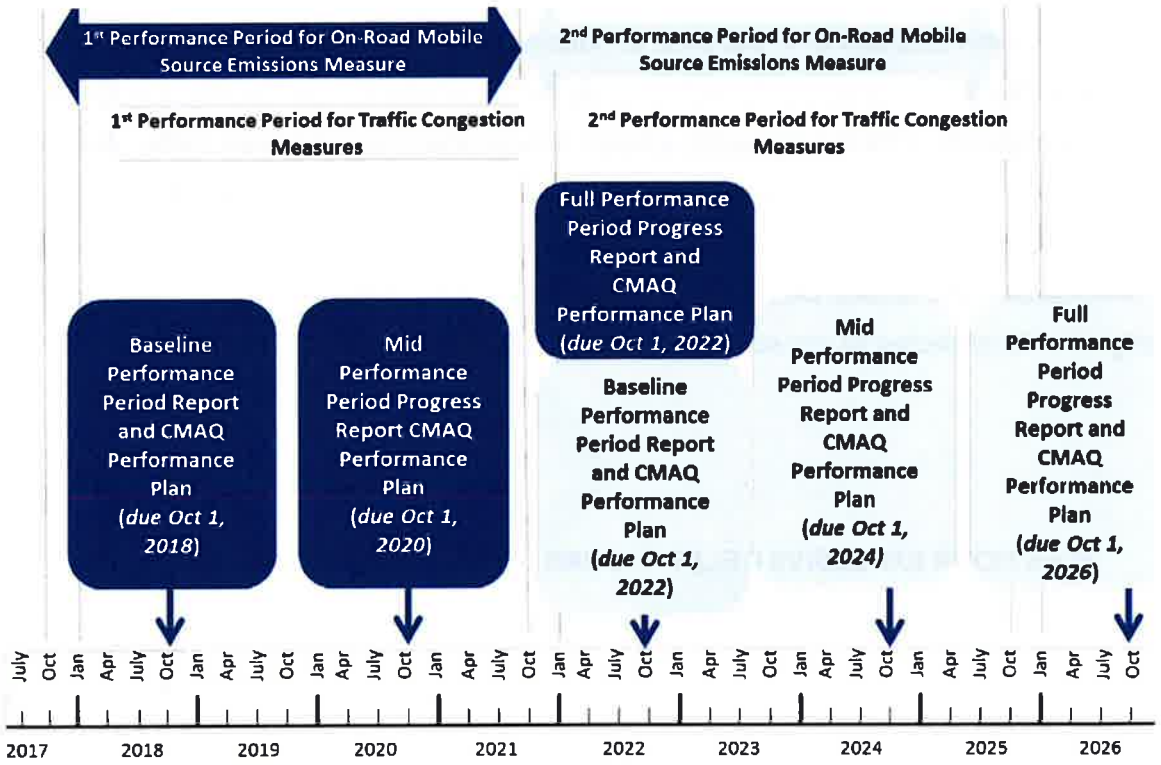
DATA PRESENTED IN THIS REPORT

CMAQ Program	Performance Measure	Data
Traffic Congestion	Peak Hour Excessive Delay	Annual hours of peak hour excessive delay per capita
Traffic Congestion	Mode Share	Percent of non-Single Occupancy Vehicle work trips
Mobile Source Emissions	CMAQ funded project emissions	NOx, VOC and PM2.5 reductions from CMAQ projects

As part of federal rulemaking, both the Delaware and Maryland Departments of Transportation (DelDOT and MDOT) had to establish performance measures and targets ahead of MPOs. MPOs have the choice to either adopt the state measures and targets or come up with their own. With our strong coordination between WILMAPCO and both DelDOT and MDOT, along with other regional partners, WILMAPCO has chosen to adopt all but one of the previously-submitted state targets. The exception is MDOT's 2 and 4-year targets for CMAQ emissions reductions. In this case, WILMAPCO presents its own targets.

This plan will be the first in a series of CMAQ Performance Plans WILMAPCO will submit through the next decade. The graphic on the following page, from the Federal Highway Administration, details the performance plans and progress reports and their deadlines.

PERFORMANCE PERIODS FOR CMAQ MEASURES AND REPORTING TIMELINE

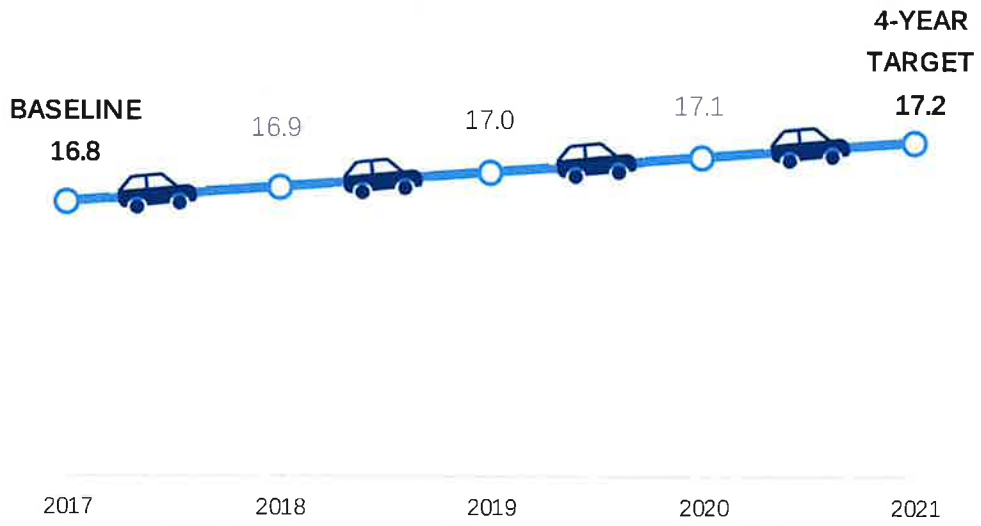


Source: "Congestion Mitigation and Air quality Improvement Program: A Guidebook for Preparing Performance Plans for Metropolitan Planning Organizations." FHWA.

Peak Hour Excessive Delay

The graph below displays both baseline conditions and a 4-year target for Peak Hour Excessive Delay (PHED) in the WILMAPCO region (both New Castle County, and Cecil County Maryland). PHED is the extra amount of time spent in congested traffic. A joint PHED baseline and target for the Philadelphia metropolitan region were set through a multiagency coordination process that occurred among relevant state DOTs and MPOs in Pennsylvania, New Jersey, Delaware, and Maryland. As shown in the graph, peak-hour congestion is expected to worsen on regional highways over the near term.

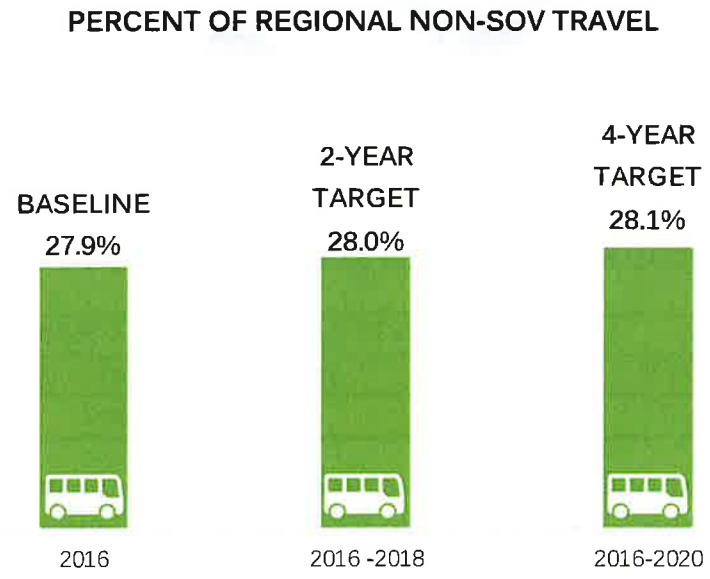
PEAK HOUR EXCESSIVE DELAY: HOURS OF REGIONAL DELAY PER CAPITA



Source: "Performance Management 3." Delaware DOT Division of Planning. May 20, 2018.

Percent Non-SOV Travel

The graph below displays both baseline conditions and 2 and 4-year targets for the percentage of non-Single Occupancy Vehicle (non-SOV) trips in the WILMAPCO region. These data, from the American Community Survey, are based how people report commuting to work. Non-SOV trips include: carpooling, public transit, walking, and bicycling. Joint non-SOV baseline and targets for the Philadelphia metropolitan region were set through a multiagency coordination process that occurred among relevant state DOTs and MPOs in Pennsylvania, New Jersey, Delaware, and Maryland. As shown in the graph, we expect non-SOV travel to slightly increase through 2020 data.



Source: "Performance Management 3" Delaware DOT Division of Planning. May 20, 2018.#

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On-Road Mobile Source Emissions

The figures below display both baseline conditions and 2 and 4-year targets for on-road mobile source emissions stemming from CMAQ projects. Data here are broken up between Cecil County and New Castle County and are presented for NOx, VOCs, and PM2.5.

In Cecil County we adopt MDOT's baseline measure but elect to set our own 2 and 4-year emissions targets. The baseline figure is based on summed emissions reductions from Cecil County's CMAQ projects from 2014 through 2017 placed in the FHWA CMAQ Public Access System database. MDOT's targets are based on previously-funded CMAQ projects (several roundabouts) that did not properly pass through our transportation planning process. While eligible, FHWA has found that roundabouts are one of the least cost-beneficial uses of CMAQ funding. Therefore, WILMAPCO proposes targets based on more cost-beneficial projects, which are a priority for Cecil County. [Describe methodology for developing targets here.]

CMAQ ON-ROAD MOBILE SOURCE EMISSIONS IN CECIL COUNTY, MD

BASELINE (kg/day)			2-YEAR TARGETS (kg/day)			4-YEAR TARGETS (kg/day)		
VOC	**NOx**	**PM2.5**	**VOC**	**NOx**	**PM2.5**	**VOC**	**NOx**	**PM2.5**
0.12	0.30	0.13	*to be developed*					

Source: MDOT's "CMAQ On-Road Mobile source Emissions" presentation to the WILMAPCO Air Quality Subcommittee. http://www.wilmapco.org/Aq/files/2018/other/WILMAPCO_CMAQBriefing_041018.pdf

In New Castle County, we adopt the emissions baselines and targets set by DelDOT for Delaware. These are presented in the table below. [Describe methodology for developing targets here.]

CMAQ ON-ROAD MOBILE SOURCE EMISSIONS IN NEW CASTLE COUNTY, DE

BASELINE (kg/day)			2-YEAR TARGETS (kg/day)			4-YEAR TARGETS (kg/day)		
VOC	**NOx**	**PM2.5**	**VOC**	**NOx**	**PM2.5**	**VOC**	**NOx**	**PM2.5**
to be developed			10.52	7.35	*to be developed*	26.23	16.09	*to be developed*

Source: "Performance Management 3" Delaware DOT Division of Planning. May 20, 2018.

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Planned CMAQ Projects

The table on the following page lists projects that may be funded by CMAQ over the next several years. Included are the project's expected emission benefits, and benefits to reducing PHED and increasing non-SOV travel. The projects in Cecil County are unfunded projects that are priorities for local government. The projects in New Castle County, meanwhile, were identified by WILMAPCO as CMAQ-eligible and tabbed by DelDOT for future CMAQ spending. In a coordinated process, we submit a ranked list of CMAQ-eligible projects in the Transportation Improvement Program to DelDOT each year. In turn, DelDOT works through that list to assign future CMAQ spending.

These projects reflect WILMAPCO's current priorities for CMAQ spending. These priorities may shift, and other projects may be funded via CMAQ monies in the future. Reasons for this may include (but are not limited to): changes to a project's scope, evolving priorities for spending CMAQ monies based on a better understanding of benefits, and evolving state DOT priorities or needs.

WILMAPCO will report on the status of these planned CMAQ funded projects, as well as the progress of meeting the targets presented in this plan in October 2020.

PLANNED CMAQ PROJECT DESCRIPTIONS

Cecil County, MD							
PROJECT	DESCRIPTION	YEAR(S) OF CMAQ FUNDING	NOx REDUCTION (kg/day)	VOC REDUCTION (kg/day)	PM2.5 REDUCTION (kg/day)	PHED BENEFIT	NON-SOV BENEFIT
to be developed							

New Castle County, DE							
PROJECT	DESCRIPTION	YEAR(S) OF CMAQ FUNDING	NOx REDUCTION (kg/day)	VOC REDUCTION (kg/day)	PM2.5 REDUCTION (kg/day)	PHED BENEFIT	NON-SOV BENEFIT
Transportation Management Improvements	Signal timing and traffic and weather monitoring enhancements; mobile app and radio development; dynamic messaging signs.	2019 – 2022	*to be developed*			Yes - traffic flow improvements	No
Bicycle and Pedestrian Improvements	Construction of new sidewalks, trails, and pathways	2019 – 2022				Yes - fewer vehicle trips	Yes - improved pedestrian and bicycle network
Elkton Road, MD Line to Casho Mill Road	Multimodal improvement of an arterial roadway. Bicycle and pedestrian elements are CMAQ-eligible.	2019 – 2021				Yes - potentially fewer vehicle trips	Yes - improved pedestrian and bicycle network
Rideshare Program/Trip Mitigation	Support for carpooling program.	2019 – 2022				Yes - fewer vehicle trips	No

Draft - 8.13.18

CMAQ SCORING - CECIL COUNTY

ID	Rank	Project	Source	Notes	Curret Total FY19-22 TIP Estimate $ x1000	Highest Ranking Project Type	Ped Priority Score	Qualitative Index* VMT	Cost	Life	Total
1	1	Mid-county multimodal transportation hub in North East	2018 Cecil Co. Priority Letter			5. Park and ride					
2	2	Susquenhanna River Rail Bridge (TIP)	FY '19 TIP	if rail use is projected to grow	7	6. Transit expansion					
3	2	Increase MARC service to Perryville	2018 Perryville Priority Letter			6. Transit expansion					
4	2	Fixed-route bus service b/t Newark and Aberdeen	2018 Cecil Co. Priority Letter			6. Transit expansion					
5	2	Extend MARC service to Newark	2018 Cecil Co. Priority Letter			6. Transit expansion					
6	2	Add MARC service in Elkton	2018 Cecil Co. Priority Letter			6. Transit expansion					
7	2	Add MARC service in North East	2017 North East Priority Letter			6. Transit expansion					
8	3	SR 7: North East Isles Dr. to Catherine St. -- interim bike/ped enhancements	2017 North East Priority Letter			7. Bike/ped	6				
9	3	SR 7: North East Isles Dr. to Catherine St. -- full bike/ped enhancements	2017 North East Priority Letter			7. Bike/ped	6				
10	3	US 40: Sycamore Dr. to SR 272 -- sidewalk	2017 North East Priority Letter			7. Bike/ped	3				
11	3	SR 7: East Cecil Ave. to Mechanics Valley Rd. -- sidewalk	2017 North East Priority Letter			7. Bike/ped	6				
12	3	SR 222: Clayton St. to St. Mark's Church Rd. -- sidewalk	2018 Perryville Priority Letter			7. Bike/ped	2				
13	3	SR 272: US 40 to I-95 -- bike lanes and sidewalks	2018 Cecil Co. Priority Letter	only bike/ped elements		7. Bike/ped	3				
14	3	SR 222: US 40 to SR 275 -- bike/ped improvements	2018 Cecil Co. Priority Letter	only bike/ped elements		7. Bike/ped	5				
15	3	US 40 at SR 213 -- bike/ped improvements	2018 Cecil Co. Priority Letter	only bike/ped elements		7. Bike/ped	8				
16	3	US 40 at SR 222 -- bike/ped improvements	2018 Cecil Co. Priority Letter	only bike/ped elements		7. Bike/ped	6				
17	3	US 40 at SR 272 -- bike/ped improvements	2018 Cecil Co. Priority Letter	only bike/ped elements		7. Bike/ped	5				
18	4	US 40 intersection improvements (non-capacity adding elements only)	2018 Cecil Co. Priority Letter	no capacity		10. Intersection improvements					

Not computed -- missing cost data

CMAQ Project Prioritization Process - Methodology

1. Rank projects by type, based on FHWA cost-effectiveness data (NOx and VOCs). Priority by type is: 1. Idle reduction, 2. Heavy vehicle engine replacements (diesel), 3. Incident management, 4. Extreme temperature cold start tech., 5.Park and ride, 6. Transit service expansion, 7. Bicycle and pedestrian, 8. Transit amenity improvements, 9. Employee transit benefits, 10. Intersection improvements, 11. Car sharing, 12. Ridesharing, 13. Intermodal freight, 14. Bike sharing, 15. Roundabouts, 16. Subsidized transit fares, and 17. Electric charging stations

2. Within project types, sort by quantitative emission benefits for diesel projects and qualitative benefits for others. Quantitative benefits can be determined from EPA calculators. An index determining the qualitative benefit follows.

*Qualitative Index

Reduce VMT - negligible (0); moderate (3); significant (6)
Cost - >2 million (0); $500,000 - $2 million (3); <$500,000 (6
Life expectancy - <5 years (0); 5-10 years (3); >10 years (6)

Ped Priority Score

Project's technical score in the WILMAPCO Top Pedestrian Priority Segment analysis (http://www.wilmapco.org/ped-priority/). Data updated in 2018.

Bike + Ped + Transit

CALCULATION INPUTS

Data Type	User-Defined Values
Scenario Year	2017
Annual average daily traffic (ADT) on the parallel arterial	8,391
Capacity of parallel arterial (vph)	1,500
Length of bike/ped project (miles)	2.0
Posted Speed on parallel arterial (mph)	35
Number of destinations within 1/2 mile of project	7
Within 2 miles of a university or college (Y/N)?	Y
Area Type	Suburban
Bicycle	
Does this project have a bicycle component?	Y
Average length of one-way bicycle trips (miles)	5.0
Pedestrian	
Does this project have a pedestrian component?	Y
Average length of one-way pedestrian trips (miles)	0.5
Transit	
Does project provide access to transit (Y/N)?	Y
Average length of one-way transit trips (miles)	5.2
Existing daily transit boardings in project transit corridor or at fixed-guideway station	600
Is ped/bike access to fixed guideway transit (Y/N)?	Y

CONSTANTS

Look Up Table Values and Other constants	Values
(C) activity center credit near project	0.002
(A) adjustment factor for ADT	0.021
Annualization factor	250
Increase in transit trips resulting from new bike/ped connections	4.0%
ADT to Hourly Volume Conversion	10.0%
Volume Density Function/BPR Curve Alpha	0.71
Volume Density Function/BPR Curve Beta	2.00

SCENARIO YEAR OUTPUTS

Data Type	Value
Annual One-Way Auto Trips Reduced (bike)	46,570
Annual One-Way Auto Trips Reduced (walk)	46,570
Annual One-Way Auto Trips Reduced (transit)	6,000
Annual One-Way Auto Trips Reduced - Total	99,140
Daily One-Way Auto Trips Reduced - Total	397
Hourly Volume Reduced due to Improvements	40
Free flow travel time on parallel arterial (minutes)	3.4
V/C Ratio before improvements on parallel arterial	0.56
V/C Ratio after improvements on parallel arterial	0.53
Congested Travel Time before improvements on parallel arterial (mins)	4.15
Congested Travel Time after improvements on parallel arterial (mins)	4.08
Congested Speed (mph) before improvements on parallel arterial	28.93
Congested Speed (mph) after improvements on parallel arterial	29.43
Emission Factors - Existing	
Light Duty Emission Factor CO2(g/mi)	383.96
Light Duty Emission Factor PM NOx(g/mi)	0.36
Light Duty Emission Factor PM (g/mi)	0.02
Light Duty Emission Factor NOx (g/mi)	0.37
Light Duty Emission Factor VOC (g/mi)	0.15
Emission Factors - Improved	
Light Duty Emission Factor CO2(g/mi)	379.55
Light Duty Emission Factor PM NOx(g/mi)	0.36
Light Duty Emission Factor PM (g/mi)	0.02
Light Duty Emission Factor NOx (g/mi)	0.36
Light Duty Emission Factor VOC (g/mi)	0.15
Emissions - Existing	
Light Duty Emissions CO2(g)	1,610,906,947.54
Light Duty Emissions PM NOx(g)	1,515,838.27
Light Duty Emissions PM (g)	70,625.36
Light Duty Emissions NOx (g)	1,552,348.46
Light Duty Emissions VOC (g)	625,067.32
Emissions - Improved	
Light Duty Emissions CO2(g)	1,483,338,614.65
Light Duty Emissions PM NOx(g)	1,398,253.77
Light Duty Emissions PM (g)	64,517.07
Light Duty Emissions NOx (g)	1,420,974.29
Light Duty Emissions VOC (g)	573,851.64

RESULTS

DELAY/VMT IMPACT

Reduction in Annual Vehicle Hours of Delay	9,167
Annual Auto VMT Reduced	287,385

TOTAL REDUCTION

Total Annual Reductions in GHG emissions (g CO2 /year)	127,568,333
Total Annual Reductions in PM NOx Emissions (g/year)	117,584
Total Annual Reductions in PM Emissions (g/year)	6,108
Total Annual Reductions in NOx Emissions (g/year)	131,374
Total Annual Reductions in VOC Emissions (g/year)	51,216
Total Daily Reductions in GHG emissions (short tons/day)	0.562
Total Daily Reductions in PM NOx Emissions (short tons/day)	0.00052
Total Daily Reductions in PM Emissions (short tons/day)	0.00003
Total Daily Reductions in NOx Emissions (short tons/day)	0.00058
Total Daily Reductions in VOC Emissions (short tons/day)	0.00023

8/13/2018

WILMAPCO's 2050 Regional Transportation Plan and FY 2020 Transportation Improvement Program
Air Quality Timeline

DRAFT

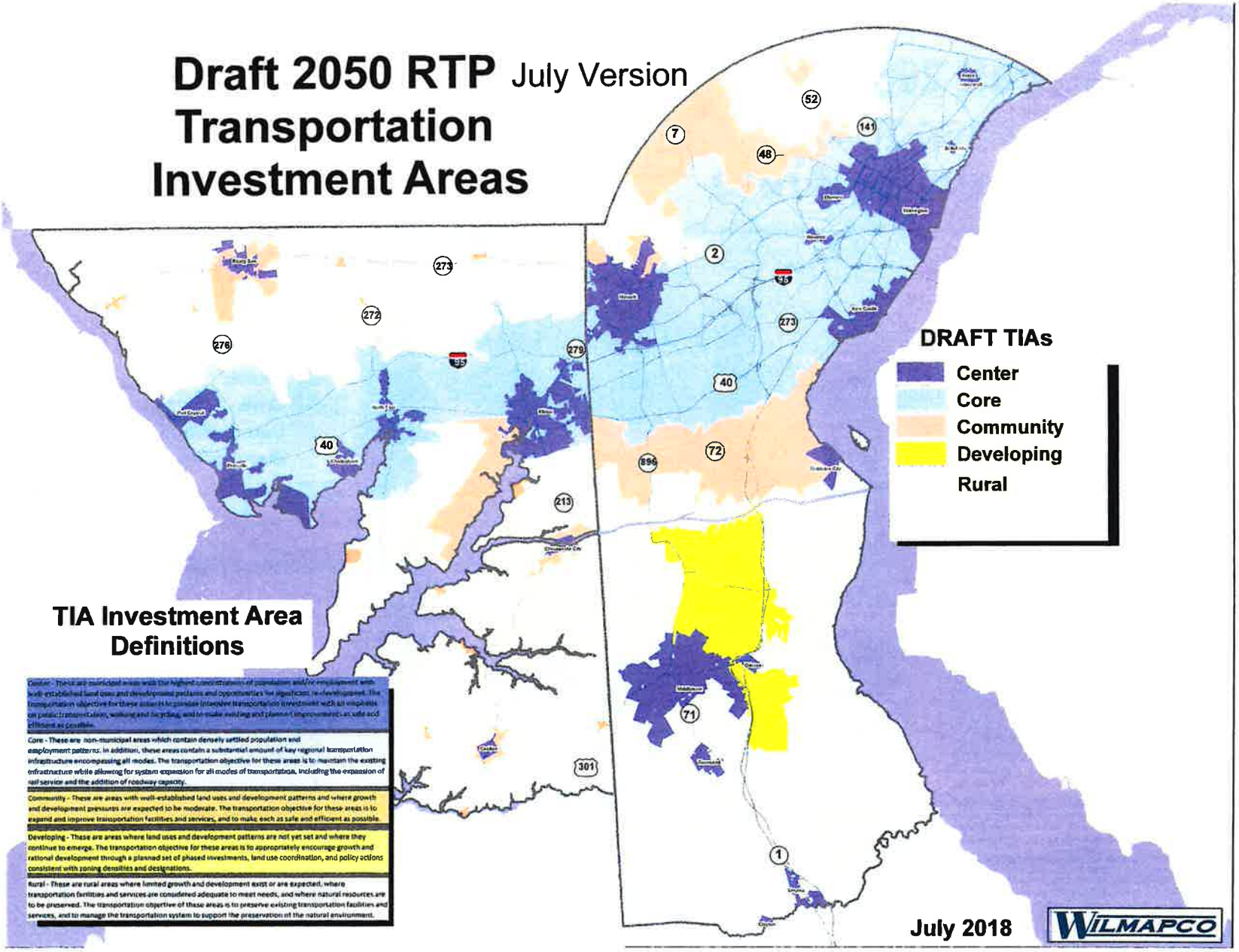
	Aug '18	Sep '18	Oct '18	Nov '18	Dec '18	Jan '19	Feb '19	Mar '19
Finalize regionally significant project list	16							
Run conformity analysis	August 16 - October 10							
Conformity results due for review			11					
Conformity results approved by AQS, draft document reviewed				13				
Conformity document approved by the AQS and released for comment					20			
Official RTP public comment period						January 14 - March 6		
Our Town public meeting							?	
AQS recommends adoption							14	
TAC recommends adoption							21	
Council adoption								14
Submission to federal agencies								

Projects Modeled in Summer 2018 (2050 RTP/FY 20 TIP)

DRAFT

Row	Project	County	List	2016 Model Year	DRAFT 2018 Model Year	Notes
1	MD 213: Frenchtown Road to US 40 (two to four lane divided highway)	Cecil	Aspiration	2040	2050	
2	I-95: Susquehanna River to DE Line (add a lane in each direction, plus bridge expansion)	Cecil	Constrained	2040	2040	
3	MD 272: US 40 to Lums Rd. (two to four lane divided highway)	Cecil	Constrained	2040	2050	
4	I-95/SR 222 Interchange (two to four lanes on the SR 222 bridge)	Cecil	Constrained	2040	2040	
5	MD 222: US 40 to MD 276 (multilane reconstruction)	Cecil	Constrained	2040	2040	
	NEW TO MODEL					
6	I-95/Belvidere Road Interchange (new expressway interchange)	Cecil	Aspiration		2030	
7	US 301: MD State Line to SR 1 (new four lane expressway)	NCC	Constrained	2020	2020	2019 last year of C spend
8	Christina River Bridge (new bridge)	NCC	Constrained	2020	2030	2020 last year of C spend
9	SR 72, McCoy Road to SR 71 (two to four lanes)	NCC	Constrained	2030	2030	
10	Road A / SR 7 Improvements (new lane in each direction)	NCC	Constrained	2030	2030	
11	SR 299, SR 1 to Catherine Street (widening)	NCC	Constrained	2030	2030	
12	Elkton Road, Maryland State Line to Casho Mill Road (widening)	NCC	Constrained	2030	2030	
13	SR 141/I-95 Interchange (expansion)	NCC	Constrained	2030	2030	
14	US 301: Spur (new two lane road)	NCC	Constrained	2030	2030	
15	US 40/SR 896 (grade separated intersection)	NCC	Constrained	2030	2030	
16	SR 896/I-95 Interchange (expansion)	NCC	Constrained	2030	2030	
17	SR 896/Bethel Church Road Interchange (expansion)	NCC	Constrained	2030	2030	
18	US 40 Widening: Salem Church Road to Walther Road	NCC	Constrained	2030	2030	
19	SR 1: Tybouts Corner to SR 273 (four to six lanes)	NCC	Constrained	2030	2030	NB Auxiliary Lane completion first
20	SR 4 (Christina Parkway): SR 2 to SR 896 (widening entire lengh 2 to 4 lanes)	NCC	Constrained	2030	2030	
21	Tyler McConnell Bridge, SR141: Montchanin Road to Alapocas Road (bridge expansion)	NCC	Constrained	2040	2040	
22	I-295 Northbound: SR 141 to US 13 (add third lane)	NCC	Constrained	2040	2040	
23	SR 1: Tybouts Corner to Roth Bridge (widening)	NCC	Constrained	2030	2050	
	NEW TO MODEL					
24	Boyds Corner Road: Cedar Lane Road to US 13 (two to four lanes)	NCC	Constrained	-	2030	
25	Center Boulevard extended to Churchmans Road	NCC	Constrained	-	2030	
26	Eagle Run Road: SR 273 to SR 7 (complete road for thru traffic)	NCC	Constrained	-	2030	
27	Eagle Run Road to Continental Drive Connector	NCC	Constrained	-	2040	
28	US 40/SR 7 Grade Separated Intersection	NCC	Constrained	-	2040	
29	SR 896: US 40 to I-95 (widening to six lanes)	NCC	Constrained	-	2050	

Draft 2050 RTP Transportation Investment Areas July Version



TIA Investment Area Definitions

Center - These are municipal areas with the highest concentrations of population and/or employment with well-established land uses and development patterns and opportunities for significant re-development. The transportation objective for these areas is to provide intensive transportation investment with an emphasis on public transportation, walking and bicycling, and to make existing and planned improvements as safe and efficient as possible.

Core - These are non-municipal areas which contain densely settled population and employment patterns. In addition, these areas contain a substantial amount of key regional transportation infrastructure encompassing all modes. The transportation objective for these areas is to maintain the existing infrastructure while allowing for system expansion for all modes of transportation, including the expansion of rail service and the addition of roadway capacity.

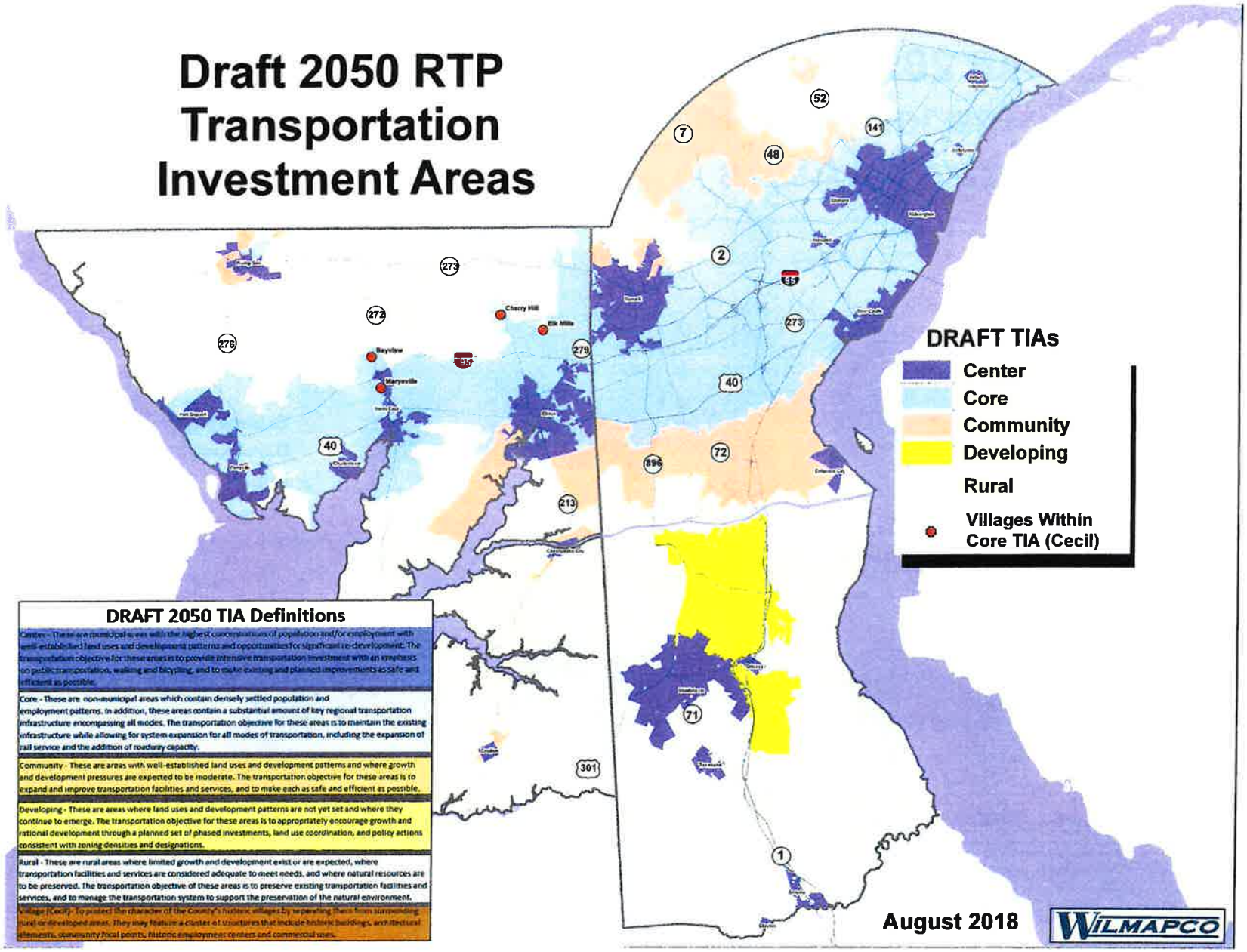
Community - These are areas with well-established land uses and development patterns and where growth and development pressures are expected to be moderate. The transportation objective for these areas is to expand and improve transportation facilities and services, and to make each as safe and efficient as possible.

Developing - These are areas where land uses and development patterns are not yet set and where they continue to emerge. The transportation objective for these areas is to appropriately encourage growth and rational development through a planned set of phased investments, land use coordination, and policy actions consistent with zoning densities and designations.

Rural - These are rural areas where limited growth and development exist or are expected, where transportation facilities and services are considered adequate to meet needs, and where natural resources are to be preserved. The transportation objective of these areas is to preserve existing transportation facilities and services, and to manage the transportation system to support the preservation of the natural environment.

ATTACHMENT C

Draft 2050 RTP Transportation Investment Areas



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Village (Cecil) - To protect the character of the County's historic villages by separating them from surrounding rural or developed areas. They may feature a cluster of structures that include historic buildings, architectural elements, community focal points, historic employment centers and commercial uses.

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