

DVRPC

WHITE PAPER

The State of the Practice:

A Study of DVRPC's Peer Metropolitan
Planning Organizations' Long-Range Plans



MARCH 2023



The Delaware Valley Regional Planning Commission

is the federally designated Metropolitan Planning Organization for the Greater Philadelphia region, established by an Interstate Compact between the Commonwealth of Pennsylvania and the State of New Jersey. Members include Bucks, Chester, Delaware, Montgomery, and Philadelphia counties, plus the City of Chester, in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer counties, plus the cities of Camden and Trenton, in New Jersey.

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DVRPC is funded through a variety of funding sources including federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), the Pennsylvania and New Jersey departments of transportation, as well as by DVRPC's state and local member governments. The authors, however, are solely responsible for the findings and conclusions herein, which may not represent the official views or policies of the funding agencies.

The State of the Practice

A Study of DVRPC's Peer Metropolitan Planning Organizations' Long-Range Plans

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Study Development

As the federally designated metropolitan planning organization (MPO) for Greater Philadelphia, the Delaware Valley Regional Planning Commission (DVRPC) is tasked with updating its Long-Range Plan every four years. Federal regulations require the Plan to guide the orderly growth and development of the region and have a fiscally constrained financial plan that shows how the region intends to invest reasonably expected transportation revenue at least 20 years into the future. The Plan does this by outlining a regional vision linking transportation infrastructure and land use; considering equity, resiliency, and sustainability principles; and focusing on economic growth, communities, and environment. DVRPC staff and partners then use this vision to inform transportation investments. DVRPC's Board adopted the latest Long-Range Plan, [Connections 2050 Plan for Greater Philadelphia](#) (*Connections 2050* or Plan) in September 2021.

In preparation for the next four-year revision, currently referred to as *Connections 2050 v2.0* (2.0), DVRPC conducted a series of interviews with peer MPOs to help staff assess the current state of practice around long-range planning, given the expanding topics MPOs cover and the increasing requirements from the federal government, and explore areas for improvement. Through these interviews, staff also sought answers to questions that arose during the development of *Connections 2050* from DVRPC's planning partners, including members of the Regional Technical Committee. This White Paper summarizes findings from this research and is intended to inform the 2.0 planning process, which is currently underway. This White Paper does not cover all aspects of the Long-Range Plan, but rather focuses on updates to the financial plan, land use considerations, and strategies to comprehensively center equity¹ that build upon the scenario planning, identification of indicators, and public engagement efforts from *Connections 2050*.

Peer Identification

To identify peer MPOs located in the United States, the DVRPC long-range planning staff conducted desktop research to evaluate over 400 MPOs. Staff evaluated the MPOs based on a number of factors related to their regions, including population, percentage of the MPO's population located in the region's major city, 10-year population growth, geographic area, demographics and socioeconomics. Staff also assessed the MPO's staff levels, budget, governance model, presence in previous DVRPC and peer studies, and potential to address topics of interest identified by local planning partners. Partner interests included the use of unsecured revenues in the financial plan, congestion goals, and regional funding allocation. Fourteen peer MPOs emerged from this evaluation, and all of them accepted DVRPC's invitation to participate in this

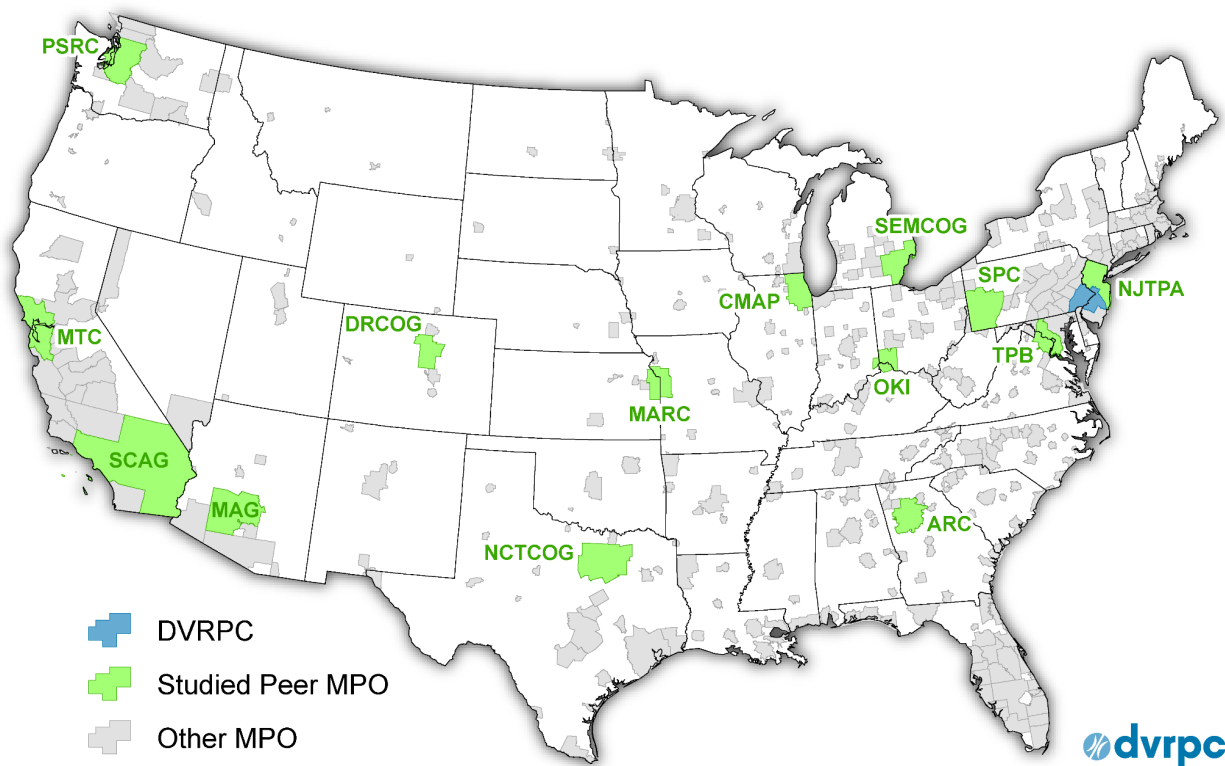
¹ This White Paper does not explore changes to applications of scenario planning, uses of indicators to track goal attainment, nor public engagement in visioning as these were major focal areas of *Connections 2050* planning process.

study. The selected MPOs included all of those studied in a 2012 DVRPC White Paper on the same topic.² These included:

1. Atlanta Regional Commission (ARC)
2. Chicago Metropolitan Agency for Planning (CMAP)
3. Denver Regional Council of Governments (DRCOG)
4. Maricopa Association of Governments (MAG)
5. Metropolitan Transportation Commission (MTC)
6. Mid-America Regional Council (MARC)
7. National Capital Region Transportation Planning Board (TPB)
8. North Central Texas Council of Governments (NCTCOG)
9. North Jersey Transportation Planning Authority (NJTPA)
10. Ohio-Kentucky-Indiana Regional Council of Governments (OKI)
11. Puget Sound Regional Council (PSRC)
12. Southeast Michigan Council of Governments (SEMCOG)
13. Southern California Association of Governments (SCAG)
14. Southwestern Pennsylvania Commission (SPC)

Figure 1 maps all national MPOs and highlights the jurisdictions of the peers selected, as well as DVRPC; **Appendix C** provides additional information on peer selection criteria and analysis.

Figure 1. Peer MPOs Studied



Sources: DVRPC, USDOT, and U.S. Census Bureau, 2022.

² DVRPC, *Best Practices in Long-Range Plan Development and Implementation Activities* (Philadelphia: DVRPC, 2012), <https://www.dvrpc.org/Products/WP12035>.

Research Methods

The primary method for gathering information from peer MPOs was one-on-one interviews. Before the scheduled interviews, long-range planning staff conducted research on the selected peers through plan review. This review provided initial insights and suggested lines of questioning beyond the original topics of interest. Long-range planning staff developed a standardized pre-interview survey, as well as a list of questions to be asked during the interview that varied by MPO depending on their responses to the survey questions. In July and early August of 2022, long-range planning staff conducted interviews of staff from each of the 14 peer MPOs. Interviews were conducted via Zoom and lasted 70–90 minutes each.

Documentation

The results of the study are summarized in four sections: Financial Plan, Key Issues, Forecasts and Land Use, and Process and Implementation. **Financial Plan** describes how peers allocate funding across their regions, incorporate unsecured revenue sources into their financial planning, identify and evaluate transportation projects for their long-range plans, and use scenarios to inform the financial plan. **Key Issues** discusses peer approaches to equity, climate change, emerging technologies, and issues beyond the typical purview of long-range transportation plans. **Forecasts and Land Use** summarizes population and employment forecasting and land use classification practices. **Process and Implementation** discusses how MPOs provide incentives for long-range plan implementation, align their long-range planning process with the Transportation Improvement Program (TIP) and Congestion Management Process (CMP), and design their plan documents.

Italicized paragraphs in each section indicate general takeaways on the topic. These are usually followed by details of notable practices by individual MPOs. **Appendix A** identifies the peer MPO staff interviewed for this research and links to reviewed plans. **Appendix B** lists the questions that DVRPC staff asked as part of pre-interview surveys and during interviews. **Appendix C** documents the considerations that went into identifying the peers to analyze.

Financial Plan

A major goal of this research was to learn from peer MPO financial planning practices. DVRPC asked participating peer MPO staff five questions related to their financial plans: (1) whether and how new revenues are incorporated into financial plans, (2) what, if any, framework(s) did they and their partners use to allocate funding across their regions, (3) how they identified candidate projects, (4) how they evaluated projects for fiscal constraint, and (5) whether and how they utilized scenarios to inform financial plans.

New Revenues

Seven of the fourteen peer MPOs expect to pay for fiscally constrained future investments partly with unsecured revenue sources, described either as “new revenues,” “reasonably expected revenues,” or “revenue enhancements.” Each peer that identified new revenues indicated a specific source for them. These sources include local or regional sales taxes, toll revenue, state gas tax increases, road user charges/mileage-based fees, congestion pricing, parking pricing, fare increases, transportation network company fees, and/or transportation benefit districts. **Table 1** lists the total transportation revenues anticipated by each MPO over the life of their respective plans, as well as the percentage funded by new revenues.

Table 1. Long-Range Plan Estimated Revenues and Percentage Funded by New Revenues

	Estimated Revenues (in Billions)	Percentage Funded by New Revenues
ARC	\$172.6	0.0%
CMAP	\$517.7	10.8%
DRCOG	\$186.2	0.7%
DVRPC	\$67.3	0.0%
MAG	\$74.3	49.1%**
MARC	\$52.3	0.0%
MTC	\$591.0*	23.5%
NCTCOG	\$148.3	4.6%
NJTPA	\$120.6	0.0%
OKI	\$18.0	0.0%
PSRC	\$373.9	13.3%
SCAG	\$638.9	22.8%
SEMOG	\$35.7	0.0%
SPC	\$14.2	0.0%
TPB	\$223.3	0.0%

*Transportation revenues only. MTC’s *Plan Bay Area 2050* includes estimated revenues totaling \$1.4 trillion, but the non-transportation sections of the plan do not have fiscal constraint requirements.

**MAG’s plan primarily relies on \$30.3 billion that would come from an extension of the Proposition 400 sales tax through 2050 (it currently expires in 2025). The funding extension is not described as a new revenue source in the plan, but Governor Ducey’s June 2022 veto of the bill to place the sales tax extension on the ballot threatens nearly half of MAG’s future funding.

Source: DVRPC, 2022.

A direct comparison of the estimated revenues is not useful or advised for several reasons. The length of time covered by each MPO's plan varies widely from 23 (**NCTCOG**, **TPB**) to 32 years (**CMAP**). Each MPO uses unique revenue projection techniques. In addition, there are vast differences between regions in the proportion of roads owned by different levels of government, in whether an MPO includes both capital and operating funding in its revenue forecast or only capital funding, and in how much funding comes from local sources. MPOs also take different approaches—often depending on Federal Highway Administration (FHWA) regional guidance—to anticipate what current and new revenue sources will be available in the future. **SPC**, for example, does not include any unallocated discretionary funding in their future revenues, while DVRPC extrapolates discretionary funding currently included in the TIP to estimate these future revenues. The sharp increase in competitive funding provided through the Infrastructure Investment and Jobs Act (IIJA) could widen differences in regional approaches to estimating future revenues.

DVRPC identified five significant factors in whether an MPO used new revenues in their plan:

- 1) *A track record of new funding sources becoming available in the region³*
 - a) Many new revenue sources from **PSRC**'s previous plans have come online over the past 10 years. They say new revenues are no longer seen as so ambitious.
 - b) Five of **SCAG**'s six counties have a sales tax measure to fund transportation, which they said helps explain their focus on new local revenue sources.
- 2) *The degree to which the MPO views the plan as a tool to advocate for projects*
 - a) **CMAP** considers the plan a policy platform they use to discuss with stakeholders what needs to be done to keep projects in the plan over the planning horizon.
- 3) *Direction by the MPO's board*
 - a) **MTC** said their elected officials kept asking where the bold investments were. Including new revenues helped get more projects in the pipeline.
- 4) *The share of the plan that would be funded by those new revenues*
 - a) **CMAP** described new revenues included as a small share of their plan's budget.
- 5) *The time period in which the new revenues are expected*
 - a) **DRCOG** thought it unrealistic to include an unsecured transportation funding ballot measure in the first years of their plan, so they pushed it to a later period.

³ Notably, **MTC** and **NCTCOG** extended this logic to federal funding as well. They were optimistic that additional federal revenues would continue to become available in the future based on the federal government's track record, regardless of whether the revenues would come from appropriations, new legislation, or another source.

In addition, the state FHWA division office must affirm that the inclusion of future unsecured revenues meets the requirement in 23 CFR 450.324(f)(11) that a financial plan must only contain revenues “reasonably expected to be available.” Fast-growing regions may have an easier time arguing that a track record of local or state action on transportation funding will continue into the future.

As a follow-up question, DVRPC asked what would happen if the new revenues did not materialize.

MPOs said they would make an adjustment in the next planning cycle, either by revising their financial strategy (**PSRC**), pushing projects into later staging periods (**SCAG**), or removing projects from the fiscally constrained plan until new funding sources could be secured (**NCTCOG**).

Funding Allocation

The peer MPOs were surveyed as to whether they allocated funding by need, population, political jurisdiction, or a combination of approaches. **ARC**, **SCAG**, and **TPB** selected “other” and filled a unique response. Their responses are reflected in **Table 2** with the category that best matched their approach.

Table 2. Funding Allocation Approaches

	A R C	C M A P	D R C O G	D V R P C	M A R C	M A R C	N C T C O G	N J T O P A	O K I	P S R C	S C A G	S E M C O G	S P C	T P B
By need	●							●	●				●	
By population														
By political jurisdiction														●
A combination		●	●	●	●	●	●			●	●	●		

Source: DVRPC, 2022.

Most MPOs indicated that they rely on a combination of factors to allocate funds. In no MPO were funds allocated solely by population, with the largest amount of funds going to the most heavily populated areas. Two peers did provide budgets to political jurisdictions, and three allocated funding based on the MPO’s assessment of need.

Of the three MPOs that provided further explanation, **ARC** wrote that their primary consideration was alignment with policies in the plan. **TPB** noted that Congestion Mitigation and Air Quality (CMAQ) funding allocation is controlled by the three jurisdictions (Washington, DC; Maryland; and Virginia) in their region, not at the MPO level. **SCAG** wrote that the approach varies and is

customized by funding source, although geographic equity by population is a consideration. **OKI** allocates funding by need within each state.

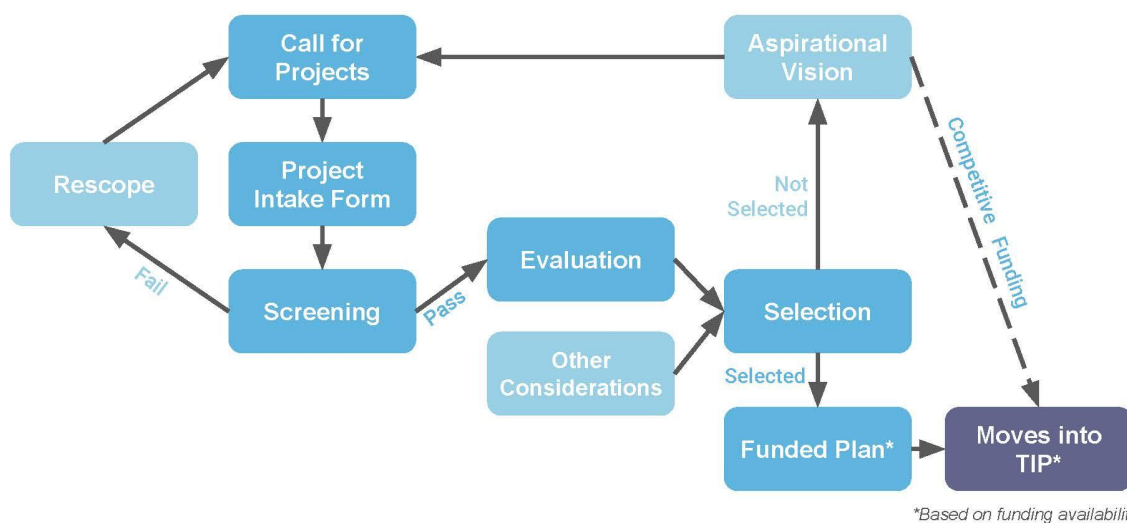
CMAP, MTC, and NCTCOG allocate investments needed to meet all system preservation needs over the life of the plan. They then set budgets for operational improvements and system expansion projects with the remaining anticipated revenues.

Project Identification

MPO long-range plans often include both a list of major regional transportation projects and a set of programmatic categories, which serve as placeholders for smaller projects not individually identified in the plan. DVRPC wanted to know how peer MPOs identify projects for consideration, and how they determine which projects should be explicitly listed in their plans.

*Although not the exact process of any individual peer, **Figure 2** outlines a generalized version of the project screening, evaluation, and selection process in a long-range plan. It includes a call for projects to the MPO’s planning partners. Some of the peers apply a screening to test whether a project is consistent with the plan. Projects that pass the screening undergo an evaluation to score them relevant to the plan’s goals and other factors like FHWA’s Transportation Performance Management (TPM) measures. The results are used along with other considerations—such as system level analyses, planning partner priorities, or geographic equity—to select projects.*

Figure 2. Typical Peer Process for Project Identification, Evaluation, and Selection



Source: DVRPC, 2022.

The participating MPOs listed projects with well-defined scopes that were determined to be regionally significant or involved major arterials or fixed guideway transit. Projects that were less well defined—especially when scheduled in the later years of the plan—were more likely to be

lumped into programmatic categories or included only on an aspirational list, where cost estimates would not impact fiscal constraint.

*Peer MPOs use varying metrics to weigh regional significance that would warrant inclusion in their plans. Project sponsor opinions are a common consideration, as is funding status. Projects that add or remove lanes, intersections, or transit rights-of-way are typically included. Some MPOs used thresholds related to the cost or length (in miles) of projects as a benchmark for inclusion (see **Table 3**), although no MPOs used these thresholds alone. None of the peer MPOs uses thresholds related to the surface area of a project. Several MPOs use air quality significance to determine if a project is regionally significant.*

Table 3. MPOs with Cost or Length Thresholds for Mandatory Project List Inclusion

	A R C	C M A P	D R C O G	D V R P C	M A G	M A R C	M T C	N C T C O G	N J T P A	O K I	P S R C	S C A G	S E M C O G	S P C	T P B
Project Cost		●		●			●				●		●	●	
Project Length			●	●		●	●					●			

Source: DVRPC, 2022.

A wide range of cost thresholds were reported among MPOs that considered cost in assessing regional significance. **SPC** was at the low end of the scale, with a threshold of \$10 million for projects in Pittsburgh’s Allegheny County and \$5 million for projects in outer counties. **CMAP** had a threshold of \$100 million for capacity-adding projects and \$250 million for projects that improve state-of-good-repair. **MTC** ran only capacity-increasing projects costing \$250 million or more through their robust project performance assessment process, although lower-cost capacity-increasing projects were still listed individually in their plan. **PSRC** had cost thresholds only for bicycle and pedestrian projects (\$20 million) and Intelligent Transportation Systems (ITS) projects (\$100 million).

Length criteria varied from one-quarter mile to one mile, were applied only to roadway projects, and generally referred to centerline miles rather than lane miles. DVRPC is an outlier, applying its benchmark of more than 20 total lane miles to roadway preservation projects only. **SCAG** noted that FHWA guidance had led them to move from cost-related thresholds to a one-mile length threshold for single-occupant vehicle (SOV) capacity-increasing projects, as this is the primary criterion that determines the need for CMP review.

In addition to construction costs, **MTC** also considered user costs, counting any project involving cordon pricing, tolling, or transit fares to be regionally significant. **PSRC** lists any project making multimodal improvements around transit stations.

Candidate projects are generally identified through a call for projects to MPO planning partners. This often includes project intake forms that allow sponsors to record project data that is used later in project evaluation. With some exceptions, uncompleted projects from previous plans are included in the plan update.

MARC, MTC, and OKI have recently moved to automatically include only those projects from previous plans that have already made use of federal funding. This allows a blank slate, where any non-federalized project has to be resubmitted by a project sponsor for consideration. Planning partners have the opportunity to reconsider project priorities, and staff can capture updates to scopes, costs, and other data used for evaluation.

MTC noted that their latest call for projects expanded beyond their planning partners, announcing a call for projects to the general public. A jury of experts selected 10 submissions for further study. Several of these were submitted by non-profits.

Project Evaluation

To inform the commission's evaluation criteria update for *Connections 2050 2.0*, DVRPC wanted to learn how peer MPOs evaluate projects.

Nearly all peers used a set of criteria to evaluate and compare individual projects; one peer analyzed projects at the network level instead. Criteria were largely derived from each plan's vision, principles, and goals. They typically relate to safety; the environment, sustainability, and resiliency; equity; active transportation; asset or facility condition; and congestion and reliability. Several peers publish the scoring and/or ranking results of their evaluation.

*Some peers use screening criteria to check for funding eligibility, project readiness or feasibility, or consistency with long-range plan principles and policies. Many peers weight their criteria as a method of prioritization and/or apply a cost-benefit analysis to arrive at a ranked project list. Complex modeling is commonly applied to evaluate regionally significant projects. Some peers utilize systems-level approaches to understand network connectivity effects. All of the peers see evaluation criteria as advisory, rather than prescriptive. Most MPOs work with their planning partners to select projects, although **SCAG** works with county-level commissions that both evaluate and select projects, and does a systems-level cost-benefit analysis for all the projects in their plan. **SEMCOG** works with county-level committees to evaluate local projects.*

Table 4 provides a comparison of project evaluation approaches among peers. It categorizes whether MPOs use their criteria for TIP or Plan projects, or for both (called "Joint" in the table). Three MPOs—**ARC, CMAP, and DRCOG**—have different sets of criteria for the TIP and the plan.

MTC has an extensive project evaluation process for its >100 megaprojects costing more than \$250 million. It includes the use of their activity-based model to develop three cost-benefit assessments based on assumptions in their exploratory scenarios (see Scenarios and the

Financial Plan section for additional information). They consider each project’s consistency with their plan’s five guiding principles and evaluate modeling outputs by income level to test equitable distribution of benefits. Project sponsors whose projects score poorly under evaluation may improve the chances of their project’s inclusion in the plan by writing a commitment letter explaining how they will address the project’s weaknesses. Project costs are developed through a lifecycle approach, which includes initial capital costs, annual operating and maintenance costs, asset replacement, and a residual asset value at the end of the analysis period.

SPC follows the *PennDOT Connects*⁴ guidance for its project evaluation, which explicitly considers the community’s vision among other issues. **TPB** identifies seven aspirational transportation priorities and evaluates whether a project helps to implement one or more of them. **DRCOG** asks applicants to provide a narrative on how a project addresses its problem statement.

Table 4. Comparison of Peer MPO Project Evaluation Practices

Evaluation Criteria Practices	TIP Only					Joint			Plan Only								
	A R C	C M P	D R O G	N J T P A	P R C	S P C	D V R P C	O K I	T P B	A R C	C M P	D R O G	M A R C	M A R T C	N C T O G	S C A G	S E M C O G
Project Screening	●		●	●	●	●					●	●			●		
Mode-Specific Criteria	●			●			●			●		●			●		●
Mode-Neutral Criteria		●	●		●		●	●	●		●		●	●			
Funding-Category-Specific Criteria					●	●	●								●		
Qualitative Criteria	●	●	●	●	●	●		●	●		●	●	●	●	●		
Quantitative Criteria	●	●		●	●		●			●	●		●	●	●	●	●
Weighted Criteria	●	●	●	●	●		●	●			●	●	●		●		
System-Level Analysis									●			●				●	
Use of Complex Modeling	●						●		●	●		●	●	●	●	●	●
Cost-Benefit Analysis	●						●							●		●	
Ranked Project List	●	●	●	●	●		●				●	●	●	●	●		
Formal Casemaking for Low-Scoring Projects				●	●							●	●	●	●		
Direct Inclusion of Federal Transportation Performance Measures			●	●	●	●	●	●		●	●	●	●		●		
Publish Results	●	●	●	●	●			●	●	●	●	●		●		●	

Source: DVRPC, 2022.

⁴ Talk PA Transportation, *Pennsylvania’s 2023 Transportation Program General and Procedural Guidance*, June 29, 2021, <https://talkpatransportation.com/perch/resources/pennsylvania-2023-transportation-program-general-and-procedural-guidance-1.pdf>.

Climate is beginning to play a larger role in project evaluation, specifically around climate risk and greenhouse gas emissions. For example, **ARC** is looking at climate risk. The MPO tests a project's impact on community resilience by checking its location in respect to a flood risk zone and assessing its potential to reduce flood risk. Many agencies have a criterion for greenhouse gas (GHG) emissions. ARC and **CMAQ** use modeled change in vehicle miles traveled (VMT) as a proxy for GHG emissions. **DRCOG**, **PSRC**, and **TPB** ask for narratives from project sponsors about how their projects will reduce GHG emissions—such as by mode shift away from SOV trips, improving traffic flow, or promoting cleaner fuels. TPB noted that there is ongoing debate within their board about which projects actively move the needle toward the regional vision, including through GHG reduction.

MAG worked with Cambridge Systematics in 2020 to complete a *Best Practices in Project Evaluation*⁵ report that reviewed 10 MPOs and one transit agency from around the country, including **ARC**, **MTC**, and **PSRC**. The report recommends the federal CMAQ calculator, regional environmental impact studies or calculators, or guidance from the Federal Interagency Working Group on the Social Cost of Carbon to estimate project-level changes in GHGs. Additionally, the report recommends criteria related to safety, asset management, mobility, active transportation, economic development, sustainability and the environment, congestion, equity, freight, land use, and connectivity (which measures how much a project benefits the overall network). It also identified practices for a continually improving project evaluation process:

- **Alignment and Integration with Regional Goals:** connect planning, programming, and performance management;
- **Transparent Communications of Results:** improve stakeholder understanding, external messaging, and decision making;
- **Multimodal Capability:** enable projects supporting different and/or multiple modes to be fairly compared, scored, and prioritized in line with societal goals to improve air quality, access to jobs, equitable access, and non-motorized mobility; this also creates a framework for more flexible funding and programming;
- **Cost-Benefit Comparison:** understanding total project benefits relative to total costs is critical to building cost-effective, fiscally constrained capital programs;
- **Classification:** scoring performance outcomes relative to project scale helps to accommodate diverse needs based on geography or network in large states or regions; and
- **Process Management and Support:** build stakeholder confidence by dedicating full-time staff to manage data, solicit candidate projects, and conduct prioritization for TIP and plan updates; undertaking regular criteria updates to address issues that arise and reflect data availability; and communicating the process and results to both technical and non-technical audiences.

⁵ Cambridge Systematics, Inc., *Project Evaluation Best Practices*, October 30, 2020, <https://azmag.gov/Portals/0/Documents/MapContent/2020-Project-Evaluation-Best-Practices-Report.pdf>.

Scenarios and the Financial Plan

Prior to the adoption of *Connections 2050*, DVRPC facilitated an exploratory scenario planning exercise, later documented in *Dispatches from Alternate Futures*.⁶ DVRPC focused its peer interviews on just one aspect of scenario planning: how scenarios inform an MPO's financial plan.

Although many of the peers have conducted scenario planning, the use of scenarios in financial plan development is limited and varies across MPOs that have made this connection. The following offers a few cases where a clear connection was observed.

MTC developed three exploratory future scenarios, then ran approximately 100 of their highest-cost projects through their travel demand model—in the cloud, to accommodate concurrent runs—under different assumptions for three exploratory scenarios. Most projects that performed well (bicycle and bus rapid transit projects did so consistently) in two or three future scenarios were included in MTC's fiscally constrained plan. However, the process highlighted that many projects developed in recent decades disproportionately served higher-income populations and were not cost effective in future scenarios. MTC kept some of these projects in the Plan but counterbalanced them by adopting more equitable policies.

MAG created four scenarios, two focused on system expansion and two on system optimization, running their activity-based model in shifts for almost 24 hours per day. The results convinced their elected officials that system optimization would be a more effective approach, leading to a fundamental shift in investment choices.

NJTPA's financial plan featured a contingent scenario planning exercise that tested the amount of funding available in three funding scenarios: Plan, Limited, and Aspirational. This approach was taken after exploring land use and societal change scenarios that would not allow the level of quantitative analysis desired.

⁶ DVRPC, *Dispatches from Alternate Futures: Exploratory Scenarios for Greater Philadelphia* (Philadelphia: DVRPC, 2020), <https://www.dvrpc.org/Products/20012>.

Key Issues

Equity, climate change, and emerging technologies are three of the most important issue areas in metropolitan transportation planning today. Plan review revealed that MPOs frequently address areas beyond the direct mandate of a long-range transportation plan, such as land use and economic planning. DVRPC sought to understand how MPOs incorporate these issues into their long-range planning.

Equity

All MPOs are required to consider equity as it relates to the protected classes named in Title VI of the Civil Rights Act and the Executive Order on Environmental Justice (EJ). Specifically, they must evaluate the distribution of benefits and burdens from policies and investments on these protected classes, and may extend those classes to include additional populations of interest, collectively referred to below as *underserved communities*. As a companion to this study, DVRPC is also working toward a report that further explores how peer MPOs fulfill these requirements.

DVRPC's pre-interview survey asked, "Which of the following program/plan areas in your agency uses an equity analysis to understand benefits and/or burdens?" Nearly all MPOs reported using an equity analysis in their long-range plan (see **Table 5**). **CMAQ** noted during their interview that, although equity is a core value they address in both their long-range plan and their work program, they did not feel their approach to benefits and burdens was sufficiently formal to refer to as an equity analysis.

Peers commonly used mapping tools or models based on secondary data sources, such as the census to assess benefits and burdens. A benefits and burdens analysis identifies the location of underserved communities, then assesses mobility and accessibility for underserved communities compared to the population as a whole on a system level or, in some cases, for an individual transportation project. Some peers worked directly with community representatives to identify equity considerations for evaluation or relied on project sponsors to identify and address equity issues. Often, MPOs focused on intersectional communities with several underserved characteristics. Frequently, interviewees expressed frustration that the proximity of a project to a community could not predict a positive or negative impact.

PSRC undertakes a formal equity analysis in their long-range plan with an expanded definition of underserved communities. The analysis utilizes their Opportunity and Displacement Risk Mapping Tools, although they do not have the resources to do a detailed project-by-project equity analysis. They use equity-centered evaluation criteria and have woven equity into their work program, procurement, hiring, and other internal processes. They have formed a regional Equity Advisory Committee and internal core equity group, created a Regional Equity Strategy,

conducted workshops with their board, have two dedicated equity program staff, and most of their staff are involved in at least one equity initiative.⁷

Table 5. Program Areas That Use Equity Analysis to Understand Benefits and/or Burdens

	A R C	M A R C	D R C O G	D V R P C	M A R C	M A R C	M T C O G	N C T O G	N J O P K I	P S C R A G	S M C O G	S E M P C	T P B
Long-Range Plan	●		●	●	●	●	●	●	●	●	●	●	●
TIP or STIP	●		●	●		●	●		●	●	●	●	●
Unified Planning Work Program									●	●			
Funding Opportunities	●			●	●		●	●	●		●	●	●

Source: DVRPC, 2022.

A few MPOs had notable collaborative relationships with representatives of underserved communities. **ARC** first convened their Transportation Equity Advisory Group (TEAG), including members of EJ communities, in 2018. TEAG has influenced how ARC defines and analyzes equity and has provided input on projects in ARC’s long-range plan and work program. **MARC** engaged representatives of underserved communities in their most recent plan update to help identify appropriate thresholds for EJ analysis. **MTC**’s Community Based Transportation Planning Program funds community-led transportation projects in Equity Priority Communities. They also partnered with two community organizations on a year-long participatory budgeting pilot project that allocated \$1 million of regional funds.

CMAP started a Community Alliance for Regional Equity program partnership with 12 regional nonprofits to bring equity viewpoints into all the agency’s work. Each non-profit will receive a \$10,000 honorarium for one year of participation. CMAP staff is handling the administrative work with FHWA, and a third party will evaluate the process.

At least three MPOs relied on local identification of equity issues. **TPB** required all project sponsors to submit a statement about how their project supports plan goals, advances equity, and mitigates GHG emissions. **ARC** and **DRCOG** both undertook systems-level analyses of equity but tasked project sponsors with a project-level analysis or identification of benefits.

Two additional observations by MPOs point to the challenges of getting equity right. **OKI** broadened their definition of equity to include zero-car households, the elderly, and disabled populations, which seemed problematic to some of their board members who felt that racial or ethnic minority communities should be the primary target for funding. OKI staff pointed out the balancing act inherent in weighing the needs of Title VI communities against those of elderly

⁷ For further information on some of PSRC’s equity-related work, see websites for their [Equity Advisory Committee](#), [Regional Equity Strategy](#), [VISION 2050 Equity-Related Policies and Actions](#), [Opportunity Mapping Tool](#), and [Displacement Risk Mapping Tool](#) (further discussed in the Land Use Considerations section).

people who lack sidewalks but live in wealthy, White neighborhoods. **ARC** noted that they, like most MPOs, do not forecast future demographics, making it difficult to evaluate future transportation investments for where underserved populations may be located in the future.

Climate Change

Although climate change is a defining issue of the day, and transportation is the largest source of GHG emissions in the United States,⁸ approaches to reducing transportation emissions are still evolving. DVRPC sought to understand how peer MPOs are addressing this issue.

*An emerging consensus among MPOs is that a comprehensive suite of policies and programs is more likely to move the needle on GHGs than any individual project, especially in regions with a mature transportation network. Land use policies, such as those supporting infill around transit stations, are thought to be a particularly effective way to limit GHGs from transportation, although MPOs have little direct influence over land use. MPOs see limiting GHG emissions as consistent with longstanding goals related to multimodal access, air quality, and congestion. Although many have started to include emissions in project evaluation or system-level modeling, few have imposed strict limits on highway system expansion. **MAG** noted that each mode has different strengths for meeting transportation needs and did not want to pit different modes against each other. Peers commonly used the U.S. Environmental Protection Agency's MOrtor Vehicle Emission Simulator (MOVES) spreadsheet tool for modeling.⁹ State-level policy, as well as advocacy by regional climate activists, were both factors in how actively peers moved to address climate change. Three MPOs—**MAG**, **OKI**, and **SEMCOG**—did not adopt policies to address climate change; all are located in areas where climate change is politically contentious.*

Examples from **MTC**, **TPB**, and **MARC** illustrate the evolving state of the practice. California's SB 375 required a 19 percent reduction in GHG emissions, necessitating MTC to take action. A network of high-occupancy toll (HOT) lanes in MTC's plan was projected to increase emissions by approximately 1 to 2 percent. They subsequently reduced the length of the HOT lanes and focused more heavily on bike and transit projects. MTC noted that project-level modeling revealed that even projects touted as environmentally beneficial might only reduce regional GHGs by 0.1 percent or less. Instead, what achieved the 19 percent reduction target in models were policies devoted to all-lane tolling, speed limits, speed enforcement, Vision Zero, electrification, land use, and transportation demand management.

TPB published a climate action plan in 2008 that set long-range plan goals to reduce GHG emissions by 20 percent by 2020, 30 percent by 2030, and 80 percent by 2050. This plan was recently updated and identified equity-focused actions to meet climate targets, including prioritizing sustainable energy, increasing access to transit for all residents, reducing solo-driving VMT, and creating more net-zero housing units. Staff acknowledged that the targets are aspirational and intended to set policy and rally funding toward achieving the stated goals.

⁸ U.S. EPA, "Sources of Greenhouse Gas Emissions," last updated August 5, 2022, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>.

⁹ U.S. EPA, "Latest Version of MOrtor Vehicle Emission Simulator (MOVES)," last updated August 5, 2022, <https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves>.

MARC adopted a climate action plan in March 2021 and has included GHG emissions reduction in their evaluation criteria.¹⁰ They used EPA's MOVES model but found it labor intensive. They were interested in finding tools to model induced demand and produce consistent emissions estimates across transportation, buildings, and the power sector. MARC experimented with the Rocky Mountain Institute State Highway Induced Frequency of Travel (SHIFT) Calculator¹¹ for induced demand and the ClimateOS tool from Climate View for emissions.¹² They found it was difficult to ground-truth the large VMT growth projected by the SHIFT Calculator.

DRCOG developed a multimodal Complete Streets vision that covers their entire regional road network.

PSRC noted that although some constituents would prefer not to see any new or widened roads, modeling found emissions would increase in a scenario without any roadway expansion. **ARC** conducts some emissions modeling for individual projects using VISUM and a CMAQ calculator, but their primary GHG modeling is done at the system level, which they import into MOVES and other software. **DRCOG** must comply with a new, statewide GHG emissions standard, which requires them to meet reductions targets over several periods. This led to the removal of \$900 million in roadway system expansion projects. Modeling in the Denver region has found a potential conflict between their goals for Vision Zero and reduced GHG emissions, as slowing traffic down increases emissions.

Although not otherwise included in this study, the Durham-Chapel Hill-Carrboro MPO in North Carolina notably also removed a few roadway expansion projects in their *2050 Metropolitan Transportation Plan* as a climate change response and proposed to no longer fund any roadway expansion projects after 2040.¹³

SEMCOG noted that even though they do not discuss climate change in their plan, they have been able to address some of its effects through work on flood mitigation, green infrastructure, and water and sewer planning. Finally, although DVRPC primarily asked about GHG emissions reduction, climate resiliency is also a concern. **SPC's** plan reserves \$275 million in highway and bridge funds for remediation, and **ARC, MARC, MTC, and NJTPA** address resiliency in their project evaluation criteria. These resiliency criteria consider flooding risks, change in impervious surface coverage, green infrastructure provision, natural resource preservation or restoration, and infrastructure adaptation to extreme weather.

¹⁰ MARC's [KC Regional Climate Action Plan](#) includes a series of goals to reduce GHG emissions through collaboration and coordination, transportation modeshift and cleaner fuels, reduced VMT, production of renewable energy, urban greening, healthy and energy-efficient buildings, and reducing waste and methane emissions from landfills; using agriculture and green space to sequester carbon; and making communities, transportation infrastructure, and food systems more resilient to climate change.

¹¹ [Rocky Mountain Institute SHIFT Calculator](#).

¹² [ClimateOS tool from Climate View](#).

¹³ James Brasuell, "Research Triangle Region Cuts Back Highway Widening Plans," *Planetizen*, March 2, 2022, www.planetizen.com/news/2022/03/116380-research-triangle-region-cuts-back-highway-widening-plans.

Emerging Technologies

DVRPC sought to understand how peer MPOs are preparing for, or investing in, emerging technologies, especially connected and automated vehicles (CAVs) and electric vehicles (EVs).

Work on different emerging technologies ranged widely among peer MPOs. Interest in CAVs was down relative to a few years earlier. Most MPOs were involved in work on EVs due to the recent National Electric Vehicle Infrastructure Formula Program established by the IIJA, although these initiatives are often being led at the state level. A few MPOs are particularly engaged in ITS projects. Many had written background papers on emerging technologies, and some had developed technology policy frameworks or explored technology futures through scenario planning. MPOs with pilot projects in their region are engaging in dialogue with the operators conducting them.

ARC's work on connected vehicles is notable. They have partnered with the Georgia Department of Transportation since 2016 to award implementation funding to local governments, with the goal of creating 1,000 connected intersections in the region. The primary uses for Dedicated Short-Range Communications and Cellular Vehicle-to-Everything technologies in the region have been transit vehicle prioritization and emergency vehicle preemption. ARC has also identified some pedestrian applications and has deployed on-board units to transit operators and first responders.

DRCOG formed an Advanced Mobility Partnership (AMP) with the Colorado Department of Transportation, the Regional Transportation District, and the Greater Denver Chamber of Commerce.¹⁴ The AMP has increased collaboration between the partners and stimulated regional dialogue around new transportation technologies. The AMP does not have any staff or budget but is included in each partner's annual work program. It developed a *2030 Mobility Choice Blueprint* to identify a vision and actions to prepare the Denver region for emerging technologies, including CAVs. DRCOG conducted an exploratory scenario planning exercise that considered impacts on the transportation system based on changes in land use, telework, transportation pricing, and EV penetration. The Denver region also funded an autonomous circulator pilot in Golden, Colorado that had nine shuttles operating with a maximum speed of 12 miles per hour.

Within **MAG**'s region, elected officials have set aside \$350 million of future funding for an emerging technology program. To date, only pilot studies have been conducted, with a future program yet to be defined. The state of Arizona protects automated ride-hailing services from being held liable when injuries result from their vehicles, which helped attract companies like Waymo to test automated vehicles in the region. **SPC** has made some investments in connected vehicle technology and has had discussions with self-driving vehicle companies, such as Aurora. SPC is currently discussing a grant for a connected corridor project that would link CAV test tracks to robotics centers via arterial and interstate roads.

¹⁴ DRCOG's [Advanced Mobility Partnership](#).

TPB adopted a list of CAV principles in their plan that weigh the costs and benefits to implementation. **MARC** has developed an automated vehicle policy framework, and **SCAG** has guidance for approaching new technologies, including through a lens of equity and sustainability. **NCTCOG** has two full-time staff dedicated to tracking new and emerging technologies and forecasting their impact on travel behavior. **OKI** created a 2050 Vision as part of their 2050 plan, in which they tested scenarios assuming various degrees of CAV and Mobility as a Service penetration outside the fiscally constrained plan to see the effects on VMT and congestion.

PSRC is aiming to develop a regional EV plan that will focus on supporting their member jurisdictions, so as not to duplicate state-level efforts. They did express concerns about EV lifecycle emissions. **MTC** noted that taking leadership on EVs is complicated due to the number of players at the local, county, regional, and state levels.

Comprehensive Planning in the MPO Context

A majority of peer MPOs or their associated COGs address long-range planning issues beyond the MPO transportation planning mandate. Of the 15 MPOs in the study (including DVRPC), five address these issues in a separate comprehensive planning document that is referenced in the long-range transportation plan, five include significant non-transportation elements in the long-range transportation plan itself, and five do not extend beyond the required transportation elements.

Table 6 details the elements covered in an associated comprehensive planning document or in the long-range plan itself.

Figure 3. PSRC’s Long-Range Planning Hierarchy



Source: PSRC, 2022.

Some of the separate comprehensive regional planning documents developed by MPOs/COGs are advisory, while others have additional authority. **OKI’s Strategic Regional Policy Plan** falls mostly in the advisory category, except that OKI incorporates its recommendations into the

project prioritization process. **PSRC**'s *VISION* plan has a stronger impact on their *Regional Transportation Plan* and *Regional Economic Strategy*, with the latter documents seen as implementing *VISION*'s regional policy direction (see **Figure 3**). Since the growth management strategies in *VISION* are enforced by Washington State's Growth Management Act, PSRC assumes those growth patterns will be implemented when planning transportation investments.

Table 6. Presence of Non-Transportation Elements Connected to MPO Long-Range Transportation Planning

	Planning Elements beyond Transportation	Separate plan	In LRTP*
ARC	<i>The Atlanta Region's Plan</i> (first developed in 2006 as <i>Envision 6</i> , last updated 2020): infrastructure, communities, economy	●	
CMAP	Community, prosperity, environment, governance		●
DRCOG	<i>Metro Vision</i> (1997, last amended 2019): development, transportation, environment, communities, economy	●	
DVRPC	Environment, communities, economy		●
MAG	-		
MARC	-		
MTC	Sustainable Communities Strategy**; housing, economy, environment		●
NCTCOG	-		
NJTPA	<i>Together North Jersey Plan</i> (2015, updated 2022): comprehensive plan for sustainable development, including business retention, workforce development, placemaking, infill development, diversity, affordable housing, public education, health, arts and culture, clean energy, and water	●	
OKI	<i>Strategic Regional Policy Plan</i> (2005, updated 2014): transportation, public facilities, natural systems, housing, economic development, land use	●	
PSRC	<i>VISION 2050</i> (adopted 1990 as <i>VISION 2020</i> , last updated 2020): growth management, transportation, environment, economy	●	
SCAG	Sustainable Communities Strategy**		●
SEMCOG	-		
SPC	Communities, economy		●
TPB	-		

*Extensive policies or strategies beyond transportation included in the same document as the long-range transportation plan. For example, all MPO long-range plans address transportation system impacts on the environment or the economy, but some plans also include policies promoting open space preservation or creating workforce development facilities.

**All California MPOs are required to develop Sustainable Communities Strategies under SB 375.

Source: DVRPC, 2022.

Among the MPOs that currently expand their long-range transportation plan, **CMAP** has been considering an umbrella plan lasting for more than four years and component plans that are updated on a rolling basis, partly to maintain a more consistent workload for staff.

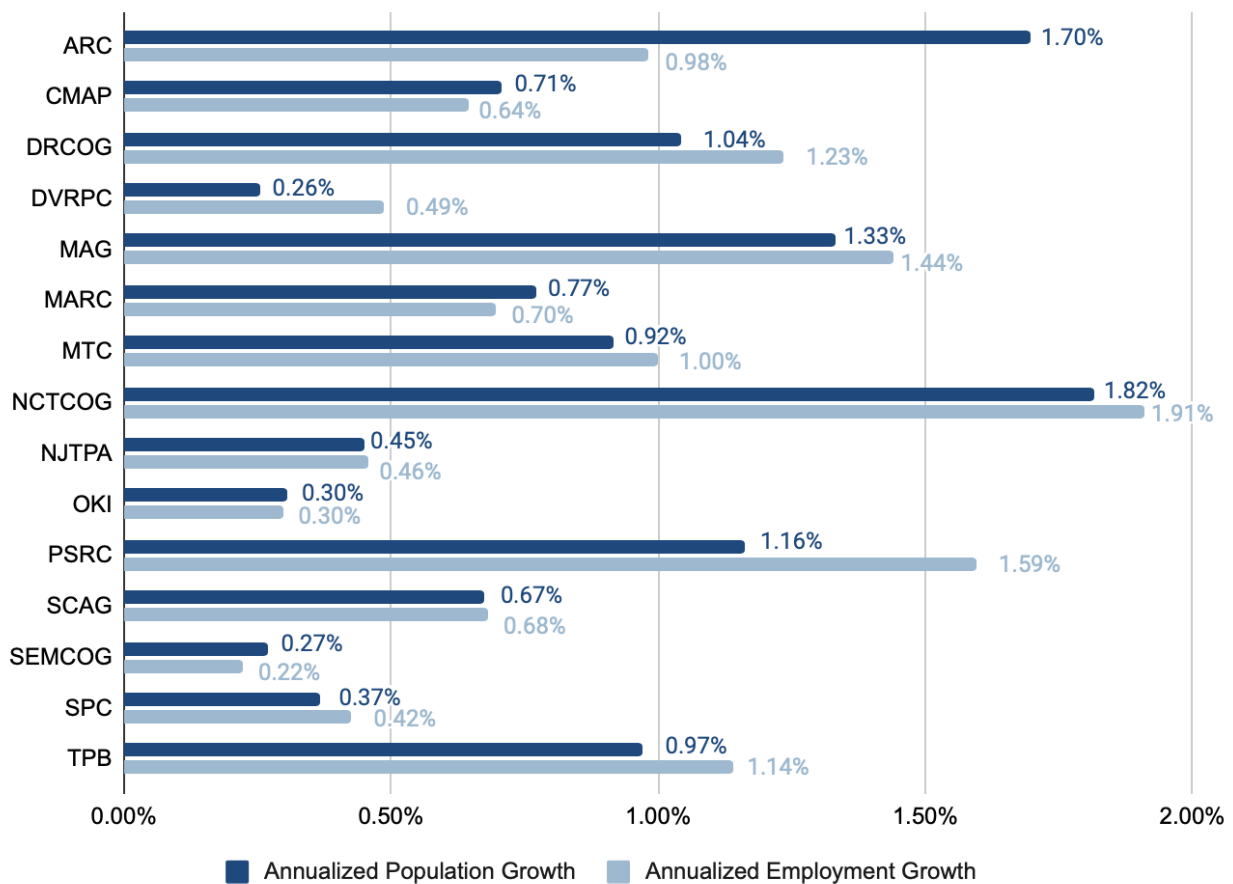
Forecasts and Land Use

MPOs consider current and future population and employment locations, as well as current and desired land use patterns, to ensure that planned transportation investments will link important regional origins and destinations effectively, equitably, and with the lowest environmental footprint. The following two sections explore how DVRPC’s peers consider these important conditions that shape regional transportation demand.

Population and Employment Forecasts

DVRPC sought to understand how other MPOs use their population and employment forecasts in long-range planning. **Figure 4** shows annualized population and employment growth forecasts by MPO region. Analysis found a correlation between population and employment growth forecasts and level of investment in new roadway and transit system expansion projects, where higher growth aligns with more expansion.¹⁵

Figure 4. Annualized Population and Employment Growth Forecast by MPO Region



Source: DVRPC, 2022.

¹⁵ See *Project Evaluation Tech Memo*, available upon request (DVRPC Publication ID 23112).

Aside from the system expansion analysis noted above, the peers generally thought their regional growth forecasts had little impact on fiscally constrained project lists—unless a future-year congestion or air quality impact was found, or the MPO used the forecasts to estimate future revenues or to allocate housing across their region. Forecasted growth estimates that went against local expectations sometimes caused pushback from localities, which peers addressed by strengthening forecasting and modeling techniques or by working with localities to address their concerns.

The process of developing forecasts diverges sharply between MPOs. Some start with state forecasts and suballocate them to smaller geographies across the region. **CMAP**, **DRCOG**, and **MTC** use UrbanSim for the suballocation process, while **NCTCOG** hires an independent economist to develop control totals based on statewide and regional numbers before suballocating them. Other MPOs, like **SCAG** and **TPB**, take a bottom-up approach by building off local forecasts, with SCAG going so far as to have one-on-one meetings with all 197 towns, cities, and counties in its region to get feedback on housing and employment projections.

All MPOs in air quality nonattainment and maintenance areas, including DVRPC, are required to use the forecasts as inputs into travel demand models to determine future-year transportation conditions and air quality impacts resulting from planned transportation investments. For some MPOs, the forecasts are also used to model future development and for local revenue estimates, both of which can impact fiscally constrained transportation projects. In the Bay Area, **MTC** is required to allocate housing to individual cities through California’s Regional Housing Needs Allocation process and relies on the forecasts for this task. In Greater Seattle, where transportation funding relies heavily on local and regional taxes, **PSRC** derives future revenue estimates from their Regional Transportation Revenue Model. This model uses population and employment projections as an input, rather than simply extrapolating from existing trends.

The rate of growth or decline in forecasts can also impact the policies in the plan. **SEMCOG**’s forecasts of an aging and plateauing population impacted discussions about housing, the workforce, the size of the transportation system, and its limited ability to serve non-drivers. Accordingly, they established a policy goal to “Anticipate the Socio-economic Challenges of an Aging Region including sustaining mobility for all ages and mitigating labor shortages.” The council’s plan also contains alternative population and employment forecasts depending on factors like the growth or decline of the automotive industry, whether the region’s economy diversifies, and immigration rates.

MAG has a team of 20–25 analysts that develop forecasts, which are then adopted by their Board. They have resolved local concerns by walking localities through their methodology and noting that the Board, composed of regional planning partners, adopted the forecasts. In Greater Atlanta, **ARC** has avoided local discord by investing heavily in their economic and activity-based models, which provide inputs to their growth forecast.

SCAG said the pandemic had prompted questions about whether job centers were still as relevant in driving the connection between transportation and land use. **NJTPA** was also

reluctant to assume any trend (such as growth in center cities) that could potentially reverse itself. They described the four-year long-range plan update cycle as a chance to correct for uncertainty as trends change.

Land Use Considerations

DVRPC wanted to know what land use considerations have been incorporated into peer MPO long-range plans and how such considerations are incorporated into project evaluation criteria. This question was answered primarily through plan review and secondarily through survey responses. **Table 7** shows the different land use practices conducted by DVRPC and peer MPOs.

Table 7. Comparison of Peer MPO Land Use Practices

Land Use Practices	A R C	C M A P	D R C O G	D V R P C	M A G	M A R C	M T C	N C T C O G	N J T P A	O K I	P S R C	S C A G	S E M C O G	S P C	T P B
Aspirational Land Use Vision	●			●								●			
Subregions/Planning Areas (Cover Entire Region)	●			●	●					●	●	●			
Corridors/Transit Service Areas						●		●				●		●	
Centers (Specific Transit-Oriented/Smart Growth Places)	●		●	●		●	●				●	●			●
Freight/Employment Centers	●	●		●			●					●			
Environmental Justice Areas (Based on Federal Guidance)			●	●			●	●				●			
Equity Areas (Using Other Indicators)							●				●		●		
Equity Emphasis Areas (Investment Centers)		●													●
Land Use Consideration in Project Evaluation Criteria		●	●	●		●		●	●					●	

Source: DVRPC, 2022.

Smart growth centers-based planning is the current state of the practice, utilized by eight of the 14 peers. A major underlying goal behind the use of centers is to link land use and transportation and increase the efficiency of infrastructure. For the most part, land use project evaluation criteria focus on whether the project is located in or near regional centers and will support or promote development in those centers. A key emerging trend is the shift of focus to equity emphasis areas in order to drive investment into places that have historically been marginalized, disinvested, or underserved.

ARC's Unified Growth Policy Map (UGPM) provides a land use vision for future development based on a combination of local plans and the *Atlanta Region's Plan* policies and forecasts. UGPM identifies "Areas" and "Places." *Areas* describe predominant existing and future land use patterns throughout the region. *Places* are concentrated uses that have defined boundaries and provide greater detail within Areas. ARC's *Development Guide* establishes guidelines for

building height and development density, illustrations that characterize typical and desirable development patterns, and implementation priorities that identify measures to achieve desired outcomes for each Area and Place. The UGPM and *Development Guide* are used to evaluate transportation projects for inclusion and funding in the plan.

In its *ON TO 2050* plan, **CMAP** identifies Economically Disconnected Areas and disinvested areas, which are not well connected to regional economic progress. These designations acknowledge that the region needs to do more to ensure that every resident and community has the ability to fully contribute to and benefit from the economy in order to achieve a stronger, more equitable future.

PSRC has developed two mapping tools for land use analysis. The first is an Opportunity Mapping Tool that assesses neighborhood opportunity by combining indicators for education, economic health, housing and neighborhood quality, mobility and transportation, and health and environment into an overall “opportunity score” for each census tract. It shows existing disparities and allows planners to model and evaluate land use and transportation investments. The second is a Displacement Risk Mapping Tool that assesses socio-demographics, transportation qualities, neighborhood characteristics, housing, and civic engagement. It can be used to better understand how development may impact existing communities and where assistance for existing residents and businesses may be needed.

TPB identified geographic areas with low-income and historically disadvantaged populations and labeled them equity emphasis areas (EEAs). They measure mobility and accessibility for people in the EEAs compared to the region as a whole through access to hospitals, schools, and food. They also use the EEAs to compare with regional issues, such as location of waste collection facilities, streetlights, and pluvial flooding. TPB evaluates projects based on whether they connect an EEA to a regional activity center (such as mixed-use areas, usually near transit, where much of the region’s future growth is intended). **DRCOG** similarly analyzed access to grocery stores, universities, and health care for vulnerable populations and assessed how the plan improves that access.

Process and Implementation

The following sections discuss how peer MPOs incentivize plan implementation, align their long-range plan with the TIP and CMP, and design their long-range planning product.

Plan Implementation

DVRPC surveyed its peer MPOs on how they promote the implementation of the vision, goals, and objectives listed in their plan documents.

*According to survey responses, nearly all peer MPOs incentivize plan implementation through technical assistance offered by staff to member governments and through other work program items (see **Table 8**). Promoting plan implementation through project evaluation criteria was less common, presumably because not all MPOs create prioritization scores for projects that can be quantitatively compared, or they have only partial control of the project identification process. For example, **TPB** evaluates, but does not rank, individual projects for their long-range plan. Least common of the options offered was providing incentives for plan implementation through municipal resources.*

Table 8. How MPOs Incentivize Plan Implementation

	ARC	CAMP	DROG	DVRPC	MAPG	MARTC	MTCOG	NCTOG	NJTOKI	OSRC	SCAG	SEMCOG	STPB
Technical Assistance	●	●	●	●	●	●	●	●	●	●	●	●	●
Other MPO Work Program Items, Including Grants	●		●	●	●	●	●	●	●	●	●	●	●
Project Evaluation Criteria	●	●	●	●	●	●		●	●	●			●
Municipal Resources	●		●	●	●	●	●						●

Source: DVRPC, 2022.

A few MPOs listed other incentives.

ARC mentioned that their Livable Centers Initiative (LCI) includes additional funding if local LCI plans are implemented. **MTC** listed several incentives, including funding eligibility requirements (such as Complete Streets or Transit-Oriented Communities), funding prioritization actions, transportation project endorsements (or lack thereof), and affordable housing pilot investments. Municipalities or agencies that adopt at least 50 percent of **NCTCOG**'s Metropolitan Transportation Plan policy bundle can receive Transportation Development Credits, which offset local funds in federal transportation projects. **CMAAP** has started a Regional Infrastructure Accelerator, funded by a \$1 million grant from the U.S. Department of Transportation (USDOT)

Build America Bureau, which will test out private-public partnerships around bridge bundling, EV infrastructure deployment, and other transportation investments.

TPB started a Housing Affordability Planning Program with a \$650,000 grant from Amazon. They are offering up to \$75,000 grants to local governments and non-profit developers for local planning initiatives and development projects building affordably priced housing near transit.

Although not otherwise included in this study—and not an MPO—Metropolitan Area Planning Council (MAPC) assigns each of their 101 municipalities to one of eight contiguous subregions that works with a dedicated MAPC staff member.¹⁶ This allows municipal officials and regional and community stakeholders to establish relationships and work together to develop MAPC's annual work program and advance regional priorities.

*An additional survey question asked whether MPOs had evaluated the effectiveness of their long-range plan in working toward stated goals, to which 11 MPOs replied yes and four replied no. **SCAG** assesses their progress toward a plan vision that has remained consistent across multiple planning cycles. **CMAF** spends the first year of their four-year plan development cycle assessing progress within topical silos and as a whole, and evaluating how time and resources were used in the previous cycle.*

*One tool that highlights the structural differences among MPOs is the ability of some to lobby elected leaders (an activity prohibited in DVRPC's charter). **SEMCOG** develops a bi-annual policy platform and lobbies multiple times per year in Lansing, Michigan, and Washington, DC. **MTC** annually adopts a platform for lobbying in Sacramento, California, and Washington, DC, where they may advocate for issues like new tolls, tax measures, or housing laws, or for a slate of transportation projects. **SCAG** also has dedicated lobbying teams in Sacramento and Washington, DC. **MWCOG**'s 501C3 creates an 8–10-page legislative agenda each year. **NCTCOG** is creative in its funding of these activities through a funding swap program. Surplus local match funds from a project may be exchanged for federal funds (which cannot be used for lobbying) within the MPO's general budget and then used for lobbying efforts.*

Alignment with the TIP and CMP

DVRPC's final set of questions concerned the alignment of long-range plan development with the TIP and CMP.

The first question asked how projects move from each MPO's fiscally constrained long-range plan into their TIP. For most MPOs, one of the main factors was whether a project had passed through feasibility, scoping, and cost estimate stages and was ready for preliminary engineering, final design, and construction. The second question asked about the availability of funding. Many peers defer to project sponsors to decide when projects are ready to move to the TIP. Most MPOs align their TIP and long-range plan or define the TIP as the first few years of the plan.

¹⁶ MAPC is a regional planning agency in the Metropolitan Boston area that focuses on smart growth and collaboration.

Notably, **MARC**, **OKI**, and **TPB** (the three multistate MPOs studied), all prepare a single, multistate TIP, in contrast to DVRPC's separate TIPs for Pennsylvania and New Jersey. **DRCOG** has a formal eligibility process for projects to move from the plan to the TIP. Their plan update precedes their TIP update, to ensure the TIP remains in line with the vision in the plan. They identify what is eligible to move from the plan to the TIP according to the plan's air quality staging periods. Projects in the current 10-year staging period of their plan can apply for pre-construction and construction funding, while projects in later staging periods can only apply for pre-construction.

CMAP is considering different levels of approval for projects entering their TIP based on how well defined the project is in an effort to avoid approving a project that is then changed by its sponsor in a way that impacts its performance, as was the case with a highway scoped for managed lanes that the state department of transportation later removed. **OKI** moved projects based on their inclusion in state and local transportation plans or following decisions to allocate regional funds to that project. **SPC** said that new, non-plan TIP projects are largely consistent with one of their investment category line items.

DVRPC also asked MPOs how they align their plans and their CMPs, followed by a question about their congestion reduction goals. A number of MPOs responded that they include the plan and CMP as part of a single process and document. Many said the primary value of the CMP was to emphasize operational improvements over system expansion. MPOs largely aim to manage congestion rather than reduce it, with their goals around congestion determined by the federal TPM measures.

After a 2018 forecast predicted that congestion in the DC metro area would increase by about 70 percent in 2040, **TPB** developed seven Aspirational Initiatives to improve the region's transportation system performance:

- Bring Jobs and Housing Closer Together;
- Expand Bus Rapid Transit and Transitways;
- Move More People on Metrorail;
- Provide More Telecommuting and Other Options for Commuting;
- Expand Express Highway Network;
- Improve Walk and Bike Access to Transit; and
- Complete the National Capital Trail Network.

OKI used the CMP to compare projects requested by members of the public with identified routes that have high travel time delays as part of evaluation. **DRCOG** said that, in place of a CMP plan, they publish annual reports on VMT and other metrics that inform their strategies for reducing congestion.

Plan Design

Although plan design was not a topic DVRPC sought to study, several elements stood out as noteworthy during plan review.

Most notably, several MPOs either created exclusively web-based documentation of their plan without a corresponding printed version or created both an extensive interactive web version and a PDF version of their plan. This is a new development for regional planning as more of the public interacts with organizations online. Several MPOs have a centralized, publicly accessible list of all plan amendments in the plan document itself, on the plan's website, and/or as part of an web-based version of the plan.

MARC staff noted that they had officially adopted a web version of their plan because they wanted their plan to feature more interactive graphics and allow more flexibility for incorporating amendments, citing the Coronavirus Disease 2019 pandemic as an example of an unexpected situation where a responsive plan design could be useful. They received only one request for a printed version and received positive feedback from their federal certification review. Although some staff had initial concerns about links breaking over time, it has not been an issue so far. They are still identifying how to save an archival version of the plan. **OKI** is considering reverting to a document in their next update, satisfied with the appearance of their web-based plan but observing readers' difficulty in recalling where to find specific information.

CMAF created both an interactive web version and a PDF version of their plan. They intended to create only a web version, but were required by their regional FHWA office to create a printed plan and adopt that as the formal version. Among the elements that appear only in the online version of the plan is a series of profiles highlighting residents with compelling stories related to plan principles. CMAP developed these profiles and used an urgent tone in their writing throughout the plan to highlight inequality in the region and call for spending resources differently than in the past. **TPB** included public comments they received from outreach throughout the plan document.

The way peers began their plan documents varied. **MTC** was the only peer to include a land acknowledgment in their plan,¹⁷ which they developed after engaging Native American tribes in their region. **ARC** included a list of their plan amendments and listed the laws and regulations under which they operate. **DRCOG** and **NJTPA** both began their plans with a letter from their respective executive directors, which, like **NCTCOG**'s "People Behind the Plan" web page, served to highlight some of the people at the institution.

Many peer MPO plan documents concluded with a section highlighting the anticipated beneficial outcomes associated with the plan's implementation and listing the metrics that would be used to measure its success. **DRCOG** listed the regional indicators they expected their plan to most

¹⁷ PSRC included a land acknowledgement in their *VISION 2050* comprehensive planning document but not in their *Regional Transportation Plan*.

positively impact. **PSRC** had a "What the Plan will Deliver" section that noted how the plan will reduce GHG emissions, and enhance transit access, equity, safety, mobility, and other factors.

Other unique features in process and design include **NCTCOG's** Map Your Experience¹⁸ tool, which allows the public to geolocate and comment on transportation issues. **ARC's** scenario planning element involved civic dinners, an online game, a transportation-focused comedy show, and pop-up open houses. **MTC's** scenario planning report, meanwhile, took the form of an election brochure with pros, cons, and non-partisan commentary on various futures.

¹⁸ North Central Texas Council of Governments, "Map Your Experience," <https://www.nctcog.org/trans/plan/mtp/map-your-experience>.

Conclusion of Findings

MPO long-range planning continues to evolve, with recent innovations ranging from financial planning to equity to plan design. Although DVRPC's practices are largely aligned with its peers, the following practices merit consideration, balanced with staff resources, federal and state requirements, Board direction, and regional priorities.

Project intake processes: Many MPOs have a formal call for projects, some even open to the general public. Many also use an intake form that solicits relevant data for project evaluation. DVRPC could explore ways to increase public access to the transportation planning process by opening its call to the general public.

Major Regional Project reset: Several MPOs started their last major regional project update cycle with a blank slate, except for those projects that have already made use of federal funding. This provides an opportunity for planning partners to reconsider priorities and to update project details.

Complex models in project evaluation: Several MPOs run individual projects or sets of projects through complex models as part of their project evaluation process, sometimes running the model(s) several times to analyze divergent future scenarios. DVRPC could explore other uses of its activity-based model for project evaluation, including testing a project's robustness across multiple future scenarios as part of the criteria.

Project evaluation process: DVRPC found two practices of note for consideration: (1) reporting project evaluation results and (2) dedicating staff to manage data, solicit candidate projects, undertake evaluation as part of TIP and Plan updates, oversee updates to evaluation criteria as part of each plan cycle, and communicate the process and results.

Plan Amendments: Several MPOs have developed a publicly accessible, centralized location to easily track Plan amendments. This is beneficial for public communication and also serves as an archive for the MPO.

Identification of potential new revenues: Several MPOs have found it productive to determine pathways forward on increased future revenues to help ensure that a pipeline of funded transportation projects is ready to go when funding materializes. Undertaking such a step needs to include Board adoption.

Equity: There continues to be opportunities to further promote equity across the Plan and work, including through deep collaborative relationships with representatives of underserved communities, establishment of an equity task force, identifying equity emphasis areas, continued research around equity analysis, or by asking project sponsors which equity issues a submitted project addresses.

Climate change: There is an emerging consensus that transportation policies and programs will move the needle on climate change more than any single project(s). Limits on road widening is an approach being taken in places that have to stay within a greenhouse gas emissions budget such as in Denver, CO. All-lane tolling with electronic payment, reducing speed limits or increasing enforcement, deploying EV service equipment, promoting density in development, and increasing transit ridership are seen as the best policy approaches to reduce emissions. DVRPC may also explore emissions modeling tools that allow for a comprehensive estimate across the transportation and energy sectors. Several peers factor GHG emissions and resiliency into their criteria by noting whether, for example, a project reduces VMT as a proxy for emissions, and is located outside of a flood risk zone as a proxy for resiliency.

Additional plan focus areas: Other MPOs have additional focus areas that go beyond those in the Plan for Greater Philadelphia. Given the *Connections 2050* principles around resiliency and sustainability and goal for net zero greenhouse gas emissions by 2050, energy could be added as a new focus area in the next update. In addition, the 2050 Plan's outreach found increased public desire for more input into governmental decision making. Governance could be another focus area to consider.

Emerging technologies: DVRPC should continue to formulate policy around CAVs and other emerging technologies, following other models of adopted principles or regional partnerships.

Complete Streets Vision: DVRPC could identify a Complete Streets design strategy for all relevant roads in the region as one of its peers has, to promote safe, context-sensitive, inclusive, equitable and flexible rights of way.

Moving projects from Plan to TIP: Especially given the influx of competitive grant funding, there is an opportunity to develop a more formal process for moving projects from the Plan to the TIP and incorporate this into the Project Benefit Evaluation Criteria.

Annual Work Program Development: DVRPC should be more proactive in utilizing the plan to inform work programming, starting with ensuring alignment with vision, goals, and regional needs, and identifying and implementing strategies that will help achieve regional targets.

Plan implementation assessment: It may be useful to continue to seek ways to assess the effectiveness of DVRPC's Plan in working toward its stated goals, as well as evaluate how time and resources were used in preparing the previous Plan update.

Web-based plans: Several MPOs created their latest long-range plan as an interactive website. Making it easy to repeatedly find information on the web, preparing a version for archives, and making the plan available to populations with limited internet access are important considerations.

Land acknowledgement: DVRPC may consider incorporating a land acknowledgement in the plan after engaging regional tribes.

Appendix A: MPO Staff and Plans

DVRPC extends its gratitude to the many staff at its peer MPOs throughout the country who generously shared their time, expertise, and experiences with the project team for this study.

Table A-1. List of MPOs Interviewed in this Study

MPO	Staff Interviewed	Plan Name	Year Adopted	Horizon Year
Delaware Valley Regional Planning Commission (DVRPC)	N/A	Connections 2050 Plan for Greater Philadelphia	2021	2050
Atlanta Regional Commission (ARC)	<ul style="list-style-type: none"> • Mike Alexander, Chief Operating Officer • John Orr, Managing Director, Transportation Programs • Kofi Wakhisi, Planning Administrator, Transportation Access and Mobility Group 	The Atlanta Region's Plan: Regional Transportation Plan	2020	2050
Chicago Metropolitan Agency for Planning (CMAP)	<ul style="list-style-type: none"> • Elizabeth Scott, Plan Implementation And Legislative Affairs • Jonathan Burch, Local Planning 	ON TO 2050 Comprehensive Regional Plan	2018	2050
Denver Regional Council of Governments (DRCOG)	<ul style="list-style-type: none"> • Jacob Riger, Long Range Transportation Planning Manager • Alvan-Bidal Sanchez, Transportation Planner • Robert Spotts, Mobility Analytics Program Manager • Todd Cottrell, Project and Program Delivery Manager • Nora Kern, Senior Mobility Planner 	2050 Metro Vision Regional Transportation Plan	2021	2050
Maricopa Association of Governments (MAG)	<ul style="list-style-type: none"> • Audra Koester Thomas, Transportation Planning Program Manager • Ted Brown, Transportation Performance Program Manager 	MOMENTUM 2050 Regional Transportation Plan	2021	2050
Metropolitan Transportation Commission (MTC)	<ul style="list-style-type: none"> • Dave Vautin, Assistant Director, Major Plans 	Plan Bay Area 2050	2021	2050
Mid-America Regional Council (MARC)	<ul style="list-style-type: none"> • Ron Achelpohl, Director of Transportation and Environment • Martin Rivarola, Assistant Director of Transportation and Land Use Planning 	Connected KC 2050 Regional Transportation Plan	2020	2050
National Capital Region Transportation Planning Board (TPB)	<ul style="list-style-type: none"> • Stacy Cook, Principal Planner/Long-Range Transportation Plan Technical Manager 	Visualize 2045: A Long-Range Transportation Plan for the National Capital Region	2022	2045

MPO	Staff Interviewed	Plan Name	Year Adopted	Horizon Year
North Central Texas Council of Governments (NCTCOG)	<ul style="list-style-type: none"> • Dan Lamers, Transportation Planning Senior Program Manager • Mitzi Ward, Principal Transportation Planner • Brendon Wheeler, Metropolitan Transportation Plan Program Manager • Amy Johnson, Senior Transportation Planner 	Mobility 2045: The Metropolitan Transportation Plan for North Central Texas – 2022 Update	2022	2045
North Jersey Transportation Planning Authority (NJTPA)	<ul style="list-style-type: none"> • Lois Goldman, Director, Long Range Transportation Planning • Peter Zambito, Principal Planner - Corridor Studies • Mark Solof, Director, Communications and Public Affairs 	Plan 2050: Transportation, People, Opportunity.	2021	2050
Ohio-Kentucky-Indiana Regional Council of Governments (OKI)	<ul style="list-style-type: none"> • Bob Koehler, Deputy Executive Director 	OKI 2050 Metropolitan Transportation Plan	2020	2050
Puget Sound Regional Council (PSRC)	<ul style="list-style-type: none"> • Kelly McGourty, Director of Transportation Planning • Jennifer Barnes, Program Manager, Transportation Planning • Gary Simonson, Senior Planner 	Regional Transportation Plan 2022–2050	2022	2050
Southeast Michigan Council of Governments (SEMCOG)	<ul style="list-style-type: none"> • Trevor Brydon, Planner III 	2045 Regional Transportation Plan for Southeast Michigan	2019	2045
Southern California Association of Governments (SCAG)	<ul style="list-style-type: none"> • Annie Nam, Transportation Deputy Director • Philip Law, Manager, Mobility Planning & Management 	Connect SoCal - The 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy	2020	2045
Southwestern Pennsylvania Commission (SPC)	<ul style="list-style-type: none"> • Domenic D'Andrea, PE, PTOE, Director, Office of Transportation Planning • Andy Waple, AICP, Deputy Executive Director, Programs • Ryan Gordon, Manager, Transportation Program Development 	SmartMoves for a Changing Region	2019	2045

Source: DVRPC, 2022.

Appendix B: Survey and Interview Questions

Long-range planning staff developed a standardized pre-interview survey, as well as a list of questions to be asked during the interview that varied by MPO depending on their responses to the survey questions. All survey questions were asked of each of the 14 participating MPOs via Google Form in advance of an interview, while interview questions varied slightly.

Survey Questions

1. How many staff work within your MPO (not Council of Governments or other roles)? How many staff work directly in long-range planning? (open-ended)
2. What typologies do you use to categorize geographic areas in your region (e.g., centers, planning areas, corridors, etc.)? (open-ended)
3. At what point(s) in the plan development process do you seek public input (e.g., visioning, strategy development, project selection, document review)?
Check all that apply: (a) Visioning (b) Strategy development (c) Project selection (d) Document review (e) Other, specify.
4. How do you allocate funds among your constituent regions?
Select one: (a) By need (b) By population (c) By political jurisdiction (d) A combination (e) Other, specify.
5. Which of the following program/plan areas in your agency uses an equity analysis to understand benefits and/or burdens?
Check all that apply: (a) Long-range plan (b) TIP or Statewide Transportation Improvement Program (STIP) (c) Work program (d) Funding opportunities (e) Other, specify
6. Has your organization adopted any policies to address climate change? (yes/no)
7. Does your Plan incorporate policies or funding to prepare for emerging technologies, such as connected and highly autonomous vehicles? (yes/no)
8. Are there projects with local/county support that require, but will not receive, state implementation? (yes/no)
9. How is plan implementation incentivized?
Check all that apply: (a) Technical assistance (b) Other MPO work program items, including grants (c) Project evaluation criteria (d) Municipal resources (e) Other, specify
10. Have you evaluated the effectiveness of your long-range plan in working toward stated goals? (yes/no)

Interview Questions

Project Selection

1. What makes a project eligible for consideration in your long-range plan (e.g., cost threshold)?

2. How do you evaluate projects for prioritization in your fiscally constrained project list?
 - a. Are project evaluation results advisory or prescriptive?
 - b. Are TPM targets considered in project selection?
 - i. What metrics are you using in project selection to move your region toward meeting TPMs?
3. How do you address projects on state-owned facilities that perform well in evaluation, but the state is not interested in taking on for implementation?

Financial Plan

4. How did you estimate the value of unsecured future local funding options in your region?
 - a. If these sources do not come through and revenue is not as high as was forecasted, will you plan to remove projects from fiscal constraint?
5. How are scenarios incorporated into your financial plan and fiscally constrained project list?

Key Issues

6. How do you assess benefits and burdens of transportation investments on Title VI and Environmental Justice communities to meet federal guidance?
7. If you answered “yes” to our survey question that asked, “Has your organization adopted any policies to address climate change?”, do you prioritize projects that support your climate-change goals (e.g., limiting roadway network expansion, expanding transit/bike/ped, evaluation criteria, other strategies)?
 - a. What screening or analysis methods do you use to evaluate how candidate projects would help meet your climate-change goals?
 - b. Do you estimate GHG emissions for capital improvements? If so, how?
8. How are you preparing for or investing in emerging technologies, especially CAVs and EVs?

Forecasting

9. How do population and employment forecasts impact your planning? Is there anything that changes based on your forecast?

Planning Coordination

10. What steps, if any, do you take to coordinate your plan with state and federal funding cycles?
11. How do projects move from your fiscally constrained plan to your TIP?
12. How are the CMP and plan aligned for your region?
 - a. How do you approach congestion reduction in your region? Do you have high-level goals to reduce congestion for your network as a whole?

Appendix C: Peer Selection Process

USDOT lists 402 MPOs in the country, along with the area and population covered by their jurisdictions in 2020.¹⁹ Fifty-four MPOs include at least one million people in their jurisdiction. DVRPC's region ranks eighth by population and 29th by area, making it one of the largest MPOs in the country. The region covered by an MPO is known as a metropolitan planning area (MPA). Few statistics on MPAs are readily accessible, and their boundaries are complex and updated regularly based on census counts.

When developing a list of peers for this study, DVRPC considered an MPO's inclusion in DVRPC's 2012 White Paper on the same topic, *Best Practices in Long-Range Plan Development and Implementation Activities* (WP12035).²⁰ Staff also developed an index to compare MPO jurisdictions quantitatively. Given the difficulty of obtaining precise statistics on MPAs, staff combined data on MPAs, Metropolitan Statistical Areas (MSAs), and cities in MPO regions to create an index of geographic similarity (see **Table C-1**). This index was based on a set of factors used to determine peer status, along with a weighted system for deducting points due to dissimilarity, out of a maximum 7 points. Deductions were applied as follows:

- **MPA population size** (–1 point if more than twice or less than half of DVRPC's population; –2 points for more than three times or less than one-third of DVRPC's population);
- **MPA area size** (–1 point if more than twice or less than half DVRPC's area; –2 points for more than three times or less than one-third of DVRPC's area);
- **Ratio of main city population to MPA population** (–1 point if more than twice or less than half the ratio of Philadelphia compared to DVRPC's region);
- **MSA population growth** (–1 point if more than twice or less than half Philadelphia MSA's population growth rate); and
- **MPA either covers multiple states or is also in the Northeast** (–1 point if neither)

Another factor considered when assessing the peer status of an MPO was its organizational capacity and structure, especially its total number of staff and the number who worked on the long-range plan. A complication was that each MPO has a unique structure tied to its original charter. MPOs often double as their region's council of governments, a voluntary association of local governments responsible for intergovernmental coordination in various domains. MPOs may be responsible for economic or land use planning, roadway construction, or even running a public transit system.

¹⁹ USDOT, "Metropolitan Planning Organization (MPO) Database," <https://www.planning.dot.gov/mpo/>.

²⁰ DVRPC, *Best Practices in Long-Range Plan Development and Implementation Activities* (Philadelphia: DVRPC, 2012), <https://www.dvrpc.org/Products/WP12035>.

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Table C-1. MPO Index of Geographic Similarity

MPO	2020 Population	Area (sq. mi.)	City/MPO Population Percentage	MSA Growth 2020–2010	Multistate	Northeastern	Index
Delaware Valley Regional Planning Commission (DVRPC)	5,893,466	3,811	27.2%	4.7%	Y	Y	7
<i>Ohio-Kentucky-Indiana Regional Council of Governments (OKI)</i>	2,070,892	2,619	14.9%	5.9%	Y		6
<i>Mid-America Regional Council (MARC)</i>	2,080,228	3,846	24.4%	7.7%	Y		6
<i>North Jersey Transportation Planning Authority (NJTPA)</i>	7,025,148	4,410	4.4%	6.6%		Y	6
San Diego Association of Governments (SANDAG)	3,298,495	4,260	42.0%	6.6%			6
Baltimore Regional Transportation Board (BRTB)	2,816,948	2,400	20.8%	4.9%		Y	6
<i>Puget Sound Regional Council (PSRC)</i>	4,294,365	6,384	17.2%	16.8%			5
<i>Chicago Metropolitan Agency for Planning (CMAP)</i>	8,602,637	4,133	31.9%	1.7%			5
<i>Denver Regional COG (DRCOG)</i>	3,305,020	3,605	21.6%	16.5%			5
<i>National Capital Region Transportation Planning Board (TPB)</i>	5,732,469	3,555	12.0%	14.4%	Y	Y	5
New York Metropolitan Transportation Council (NYMTC)	13,165,064	2,726	66.9%	6.6%		Y	5
Boston Region MPO	3,353,990	1,380	20.1%	8.5%			5
<i>Metropolitan Transportation Commission (MTC)</i>	7,765,693	7,485	13.0%	9.5%			4
<i>Maricopa Association of Governments (MAG)</i>	4,704,697	10,659	34.2%	15.6%			4
<i>Atlanta Regional Commission (ARC)</i>	5,585,284	4,550	8.9%	15.6%			4
<i>Southeast Michigan Council of Governments (SEMCOG)</i>	4,829,680	4,608	13.2%	2.2%			4
<i>North Central Texas Council of Governments (NCTCOG)</i>	7,698,817	9,448	16.9%	19.9%			4
<i>Southwestern Pennsylvania Commission (SPC)</i>	2,576,206	7,110	11.8%	0.6%		Y	4
Houston-Galveston Area Council (H-GAC)	7,092,124	8,466	32.5%	19.8%			4
Metropolitan Council	3,231,474	2,970	13.3%	12.5%	Y		4
East-West Gateway Council of Government (EWGCOG)	2,600,697	4,586	11.6%	0.3%	Y		4
Miami-Dade MPO	2,691,209	2,020	16.4%	10.3%			4
Puerto Rico Metropolitan Planning Organization	3,285,874	3,397	9.8%	-16.0%			4
Sacramento Area Council of Governments (SACOG)	2,537,783	6,189	20.7%	11.6%			4
Capital Area Metropolitan Planning Organization (CAMPO)	2,332,432	5,307	41.2%	33.0%			4
Northeast Ohio Areawide Coordinating Agency (NOACA)	2,082,043	2,005	17.9%	0.5%			4
Southeastern Wisconsin Regional Planning Commission (SEWRPC)	2,047,922	2,697	28.2%	1.2%			4
Hampton Roads Transportation Planning Organization (HRTPO)	1,705,382	2,673	26.9%	7.7%			4
Richmond Area Metropolitan Planning Organization	1,075,133	2,074	21.1%	4.5%			4
Fresno Council of Governments (Fresno COG)	1,009,236	6,016	53.7%	8.4%			4

Louisville/Jefferson County KY-IN MPO	1,136,612	1,423	34.0%	0.1%	Y		3
Alamo Area Metropolitan Planning Organization	2,374,046	2,714	60.4%	19.4%			3
METROPLAN Orlando	2,289,419	2,859	13.4%	25.3%			3
Regional Transportation Commission of Southern Nevada (RTC)	2,265,823	8,089	28.3%	16.1%			3
Nashville Area Metropolitan Planning Organization	1,822,846	3,951	37.8%	25.1%			3
Regional Planning Commission (RPC)	1,352,289	1,329	28.4%	8.9%			3
Association of Central Oklahoma Governments (ACOG)	1,313,136	2,094	51.9%	13.8%			3
Greater Buffalo-Niagara Regional Transportation Council (GBNRTC)	1,166,902	1,576	23.9%	2.8%			3
Pima Association of Governments (PAG)	1,043,433	9,195	52.0%	6.4%			3
Southern California Association of Governments (SCAG)	18,823,705	38,649	20.7%	2.9%			2
Memphis Urban Area Metropolitan Planning Organization	1,146,882	1,513	55.2%	1.6%	Y		2
Indianapolis Metropolitan Planning Organization	1,778,930	1,517	49.9%	20.2%			2
North Florida Transportation Planning Organization	1,576,159	2,681	60.2%	19.3%			2
Palm Beach Metropolitan Planning Organization	1,490,994	1,980	7.9%	10.3%			2
Capital Area Metropolitan Planning Organization (CAMPO)	1,357,017	1,604	34.5%	25.1%			2
Rio Grande Valley Metropolitan Planning Organization	1,355,260	3,232	10.5%	12.4%			2
State Planning Council (SPC)	1,097,186	1,193	35.3%	4.7%			2
Oahu Metropolitan Planning Organization	1,014,651	613	34.6%	6.6%			2
Wasatch Front Regional Council (WFRC)	1,802,700	1,777	11.1%	11.9%			1
Portland Area Comprehensive Transportation System (METRO)	1,685,021	509	38.7%	12.9%			1
Charlotte Regional Transportation Planning Organization (CRTPO)	1,523,089	1,559	57.4%	51.3%			1
Hillsborough Metropolitan Planning Organization (MPO)	1,459,745	1,111	26.4%	14.1%			1
Broward Metropolitan Planning Organization (BMPO)	1,944,346	1,225	9.4%	10.3%			0
Mid-Ohio Regional Planning Commission (MORPC)	1,658,731	1,132	54.6%	16.5%			0

MPOs invited and who participated in the study are listed in **red font**.

MPOs included in the 2012 DVRPC study are listed in *italics*; all of these are also **red**.

Darker blue or red indicates less similarity. Blue indicates that the number is greater than DVRPC's value in the same category, while red indicates that it is smaller.

Source: DVRPC, 2022.

The index revealed that OKI and MARC, despite covering smaller populations than DVRPC, had other commonalities, leading to their inclusion in the study. SCAG was the only MPO added to the study primarily due to planning partner and staff interest, particularly regarding their inclusion of new revenues.

Due to the difficulty of direct comparison, MPO staff were not used as a major component of peer selection. However, following selection, MPOs were asked to count MPO and council of governments staff separately, with inconsistent results (see **Table C-2**). DVRPC appears to be in the mid to upper range of MPO staffing numbers. When it came to long-range planning staff, some MPOs listed the number of staff assigned full-time to long-range planning, some listed the number working on long-range planning at peak times, and some did not clarify which number they were listing.

Table C-2. MPO Total and Long-Range Plan Staffing Complements

MPO	MPO Staff	Long-Range Plan Staff
DVRPC	108	2; 35 contributors at peak
ARC	25	1; 5-7 at peak
CMAF	124	0; 15-20 full-time at peak
DRCOG	10 solely MPO but another 20+ split between MPO and council of governments work	6 MPO, additional council of governments
MAG	130	5
MARC	26	10
MTC	~300–350 total, 45 in regional planning	20–25 at peak times
NCTCOG	170	10
NJTPA	55 full time, 20 in planning	5
OKI	30 full time, 4 interns	7
PSRC	64	26
SCAG	207.75 total (24 limited/non-permanent); 103.75 in planning (21 limited)	[No data]
SEMCOG	60; 25 planners and 10 modelers; 10 in transportation planners	1
SPC	25	10–15
TPB	70	4, but others contribute

Source: DVRPC, 2022.

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The State of the Practice

A Study of DVRPC's Peer Metropolitan Planning Organizations' Long-Range Plans

Publication Number: 23109

Date Published: January 2023

Geographic Area Covered: The nine-county Delaware Valley Regional Planning Commission region, as well as the planning jurisdictions of the Atlanta Regional Commission (ARC), Chicago Metropolitan Agency for Planning (CMAP), Denver Regional Council of Governments (DRCOG), Maricopa Association of Governments (MAG), Metropolitan Transportation Commission (MTC), Mid-America Regional Council (MARC), National Capital Region Transportation Planning Board (TPB), North Central Texas Council of Governments (NCTCOG), North Jersey Transportation Planning Authority (NJTPA), Ohio-Kentucky-Indiana Council of Governments (OKI), Puget Sound Regional Council (PSRC), Southeast Michigan Council of Governments (SEMCOG), Southern California Association of Governments (SCAG), and Southwestern Pennsylvania Commission (SPC).

Key Words: Climate Change, Comparison, Congestion Management Process, *Connections 2050*, Coordination, Criteria, Comprehensive Planning, Demographics, Employment, Equity, Equity Analysis, Financial Plans, Forecasting, Funding, Funding Allocation, Implementation, Interview, Land Use, Long-Range Plan, Metropolitan Planning Organization (MPO), New Revenue, Noteworthy Practices, Peer Study, Plan Design, Population, Project Evaluation, Project Identification, Research, Revenue, Scenario Planning, Selection, Survey, Technology, Transportation Improvement Program, Transportation Planning.

Abstract: A survey and in-person interviews of 14 Metropolitan Planning Organizations (MPOs) were conducted to identify the state of the practice of long-range planning among the Delaware Valley Regional Planning Commission's (DVRPC's) peers. The peers were selected based on jurisdiction, agency capacity and structure, and conducting work relevant to DVRPC. The White Paper contains four primary sections focused on a range of long-range plan activities. **Financial Plan** reviews assumptions for new revenues; intraregional funding allocation; transportation project identification, evaluation, and selection; and use scenarios in the financial plan. **Key Issues** discusses equity, climate change, emerging technology, and inclusion of focus areas beyond transportation. **Forecasts and Land Use** discusses population and employment forecasts and land use considerations. **Process and Implementation** looks at how MPOs incentivize plan implementation, align the plan with the Transportation Improvement Program and Congestion Management Process, and the design of plan documents. The White Paper concludes with a set of recommendations to inform the update to the *Connections 2050 v2.0* Long-Range Plan.

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