Congestion Management Process (CMP)

Procedures

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

Updated October, 2011

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The Delaware Valley Regional Planning Commission is dedicated to uniting the region's elected officials, planning professionals, and the public with a common vision of making a great region even greater. Shaping the way we live, work, and play, DVRPC builds consensus on improving transportation, promoting smart growth, protecting the environment, and enhancing the economy. We serve a diverse region of nine counties: Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer in New Jersey. DVRPC is the federally designated Metropolitan Planning Organization for the Greater Philadelphia Region — leading the way to a better future.

The symbol in our logo is adapted from the official DVRPC seal and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole while the diagonal bar signifies the Delaware River. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey.

DVRPC is funded by 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.

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Table of Contents

Figures

Appendix

Executive Summary

The Congestion Management Process (CMP) is relatively straightforward from a distance, but the up-close details involve complexities. The CMP has been worked out over years of discussion among DVRPC staff, with the CMP Advisory Committee, and with other metropolitan planning organizations (MPOs) and federal agencies.

The CMP is a systematic process to manage congestion for the bi-state Philadelphia metropolitan region. It uses analysis, review by the CMP Advisory Committee, and other inputs to identify multimodal strategies for all locations in the region. Where more single-occupancy vehicle (SOV) road capacity is appropriate, the CMP includes potential supplemental strategies to get the most long-term value from the investment. Examples of SOV road capacity projects include building new roads, adding lanes, creating new interchanges, or adding new movements to existing interchanges. The CMP strategies are a starting point, and the supplemental projects for a specific SOV capacity-adding project are cooperatively developed and scaled to its size. For more information on the whole process, see the 2011 *CMP Overview* (Publication 11042A) or the 2011 *CMP Report* (Publication 11042).

This technical memorandum provides documentation and guidance oriented to project managers at departments of transportation, county planners, and staff at other agencies. It covers how projects move through the CMP and how to review potential Transportation Improvement Program (TIP) projects for consistency with the CMP. It includes checklists and diagrams, and is a continually evolving document.

Projects that propose to add SOV road capacity using federal transportation funds in the Delaware Valley must be consistent with the CMP or they cannot be funded in the TIP past the Preliminary Engineering phase. DVRPC uses the CMP approach with all TIP projects regardless of funding, as people generally care more that transportation serves their needs than how the improvement was funded. The easiest way for a project manager to proceed is to contact DVRPC at the start of a study or project that seems likely to add SOV road capacity. The DVRPC approach has considerable flexibility, complies with federal regulations, and helps advance regional goals.

CHAPTER 1

Introduction

This memorandum documents and explains procedures relating to the Congestion Management Process (CMP) at Delaware Valley Regional Planning Commission (DVRPC). It complements the *CMP Report* and other CMP documents. This memorandum provides details about how to determine whether projects are consistent with the CMP as well as other related procedures.

A first version of this memorandum was prepared in 2005 and has evolved with the CMP to meet needs expressed by organizations using the CMP. The most significant changes in the last few years are:

- Clarify how projects move through the CMP – This section starts with an overview (Figure 1) and then discusses each step in more detail with reference to other parts of this memorandum, such as checklists.
- Formalize the review process – Reviewing projects with regard to the CMP was originally done by staff and involved phone calls for any needed information. However, a more formal process was proposed during the 2008/9 CMP update. This process follows the model of the Air Quality Conformity Interagency Consultation Group. Information and preliminary conclusions about projects that seem likely to add major SOV capacity will be circulated to a small project team. After a comment period, a summary will be provided to the CMP Advisory Committee.
- This document is a reformatting of the previous version to be easier to read. Reformatting included reordering of sections and minimal wording changes for clarity, but no significant changes since the changes made based on CMP Advisory Committee review of the document that ended in January 2009.

Background on CMP

The CMP is a systematic process to manage congestion. The purpose is to minimize congestion and enhance the ability of people and goods to reach their destinations in a manner that advances the goals of the regional Long-Range Plan (LRP).

A CMP starts with goals—for DVRPC, these are the transportation goals of the LRP. Criteria that flow from the goals are used to evaluate the multimodal transportation system of the region. This analysis is used to identify congested corridors and emerging/regionally significant corridors (referred to as emerging/regional). Emerging/regional corridors show indications that they may

become congested, so proactive steps to prevent this are efficient. The congested corridors are subdivided into subcorridors where, at a regional planning scale, similar strategies are appropriate. The analysis, existing corridor studies, and input from the CMP Advisory Committee are used to develop a unique set of strategies for each subcorridor.

The CMP identifies congested corridors and multimodal strategies to mitigate congestion. It identifies strategies to consider when starting to address problems. Where more SOV road capacity is appropriate, the CMP includes potential supplemental strategies to get the most long-term value from the investment. The CMP strategies are a starting point for developing supplemental projects for a specific SOV capacity-adding project; the specific supplemental projects are cooperatively developed and scaled to the size of the project. The entire process is summarized in the *CMP Report*.

The CMP results in information about congested corridors and subcorridors, including detailed maps. In a congested subcorridor where adding SOV capacity is an appropriate and needed strategy, the highest functional capacity road (of greatest regional importance) should be the first alternative considered. If there are alternate regional roads where projects would serve the same purpose but with fewer impacts or constraints, they may also be reviewed while following appropriate consultation and procedures. The CMP coordinates with, but does not replace, other procedures such as an Environmental Impact Statement (EIS).

Federal Requirements

As the Philadelphia region's Metropolitan Planning Organization (MPO), DVRPC is charged with developing and implementing the CMP for the region. The requirement that SOV capacity-adding projects have supplemental strategies comes from the Final Rule on CMP in the Federal Metropolitan Planning Regulations (23 CFR 450 and 23 CFR 500) updated per SAFETEA-LU in 2007. A key passage follows below. The full regulation is reprinted in the *CMP Report* and is available at various federal websites, including www.gpo.gov/fdsys. The highlighting was added by DVRPC for clarity.

> (d) In a TMA designated as nonattainment area for ozone or carbon monoxide pursuant to the Clean Air Act, **federal funds may not be programmed for any project that will result in a significant increase in the carrying capacity for SOVs** (i.e., a new general purpose highway on a new location or adding general purpose lanes, with the exception of safety improvements or the elimination of bottlenecks), **unless the project is addressed through a congestion management process** meeting the requirements of this section.
>
> (e) In TMAs designated as nonattainment for ozone or carbon monoxide, the congestion management process shall provide an **appropriate analysis** of reasonable (including multimodal) travel demand reduction and operational management strategies for the corridor in which a project that will result in a significant increase in capacity for SOVs (as

described in paragraph (d) of this section) is proposed to be advanced with Federal funds. If the analysis demonstrates that travel demand reduction and operational management strategies cannot fully satisfy the need for additional capacity in the corridor and additional SOV capacity is warranted, **then the congestion management process shall identify all reasonable strategies to manage the SOV facility safely and effectively (or to facilitate its management in the future).** Other travel demand reduction and operational management strategies appropriate for the corridor, but not appropriate for incorporation into the SOV facility itself, shall also be identified through the congestion management process. **All identified reasonable travel demand reduction and operational management strategies shall be incorporated into the SOV project or committed to by the State and MPO for implementation.**

Coordinating with the Long-Range Plan (LRP)

The LRP contains a set of fiscally-constrained large-scale transportation projects. The determination of the set balances CMP findings with transportation priorities, land use/smart growth policies, and financial constraints. The LRP considers the CMP in selecting projects.

The CMP helps implement the goals and objectives of the LRP. The CMP is a medium-range technical effort. It includes projects from the LRP, but also aids in development of potential projects of a scale smaller than those in the LRP. It provides analysis for updates of the LRP, so updates of the CMP are scheduled as a preliminary step to LRP updates.

Consistent with the TIP and LRP, the CMP addresses the shared regional transportation system with the expectation of reasonable coordination on all projects regardless of funding source(s). Travelers are not likely to care how a transportation facility was funded, but that it works now and in the future.

Coordination with the Transportation Improvement Program (TIP)

The TIP process determines the prioritized list of projects proposed for federal funding in the region. It incorporates a variety of considerations which include the CMP. It is guided by a TIP Development Committee for each state, which is a subset of DVRPC's Regional Transportation Committee (RTC).

From the perspective of the CMP, the TIP Development Committees are encouraged to prioritize investment in the transportation system within congested corridors first, then in the emerging/regional corridors, and lastly in areas outside of any corridor. A single small project may not solve congestion in a corridor, but ongoing smart multimodal investments will help achieve LRP goals over time.

The purpose of emerging/regional corridors is to preserve their function and character and to protect them from becoming congested corridors by using Smart Growth strategies. Emerging/regional corridors are generally not the most efficient places for new capacity although new capacity can be evaluated using the Checklist for Major SOV Capacity-Adding Projects Proposed Outside Congested Corridors (included in this document). The strategies appropriate for all corridors apply to the emerging/regional corridors with the caveat of common sense; for example, pedestrian improvements may not be helpful everywhere. The strategies appropriate everywhere are listed with the specific strategies by subcorridor in the *CMP Report*.

To promote sound regional planning, project sponsors of all TIP projects are encouraged to consult the *CMP Report*. The *CMP Report* provides strategies that generally seem helpful for each subcorridor and may assist sponsors in solving problems. Hearing back about why the strategies listed as Very Appropriate were not included in a project helps refine the on-going process. The TIP Development Committees may give higher priority to projects that implement Very Appropriate or Secondary strategies even for projects that add minor or no SOV capacity. All partners should provide adopted corridor studies and plans to incorporate into the CMP to increase coordination within corridors.

DVRPC coordinates internally and with partners and others to implement the CMP. For the DVRPC counties in New Jersey, CMP input to the TIP is coordinated through the New Jersey Project Identification and Prioritization (PIP) and through work on various NJDOT efforts. Staff coordinates for the Pennsylvania counties and plans to explore a process similar to the PIP to propose a short list of projects as priorities for updates of the Pennsylvania TIP. This will be coordinated with the PennDOT Linking Planning and NEPA effort. There may be more direct CMP involvement in project development in the future.

CHAPTER 2

How Projects Move Through the CMP

The most helpful approach a project manager can take to easily make his or her work consistent with the CMP is to contact DVRPC staff when starting a study or project that is reasonably likely to result in adding road capacity. Staff can then help guide the project through the steps and help make the end results even more effective at getting people and goods where they need to go in the next few years and in the longer term. The diagram on the next page is a summary of the steps that a project follows as prepared for the *CMP Overview*. That brief publication is a helpful starting point for people not already familiar with the CMP.

For project managers involved in the details of working with the CMP, a more detailed checklist was prepared. The checklist follows the diagram.

Figure 1: Summary of How a Project Moves Through the CMP

Is the problem in a congested subcorridor? Is the problem in an emerging / regional corridor?	☐ ***if YES...*** *Document.*	☐ ***if NO...*** *It may not matter, depending on the project.* *
Can the problem be addressed without building more road capacity?	☐ ***if YES...*** *DVRPC is available to help evaluate strategies.*	☐ ***if NO...*** *Document this initial research.*
If new road capacity is an alternative, is it likely to be Major SOV Capacity?	☐ ***if YES...*** *Go to next question.*	☐ ***if NO...*** *Keep the project description current in TIP listings; DVRPC is available to help.*
Is the new Major SOV Capacity consistent with the CMP?	☐ ***if YES...*** *Start considering supplemental strategies.*	☐ ***if NO...*** *A different SOV Capacity - adding strategy was listed - Include that strategy in an alternative, include other CMP strategies as alternatives.* *Adding Major SOV Capacity was not listed - Use the CMP Very Appropriate, Secondary, and Strategies Appropriate Everywhere to develop alternatives.* *The project is not in a congested subcorridor - See "Evaluating Projects Outside of Congested Corridor" and checklist.* *
Are the supplemental strategies set?	☐ ***if YES...*** *Stakeholders agree on strategies, implementation, and timeline.*	☐ ***if NO...*** *DVRPC remains available to help.*

* For a more detailed version, see "Moving from a Problem to a Project through the CMP" in this *CMP Procedures* memorandum.

Source: *Overview of the 2011 Congestion Management Process* (DVRPC Publication 11042A)

Checklist: Moving from a Problem to a Project Through the CMP

1. Is the problem in a congested subcorridor? Is the problem in an emerging/regional corridor?
Check CMP maps (*CMP Report* or website) or contact DVRPC.

- Yes – Document, as it may be a positive consideration for the TIP Subcommittee, go to step 2
- No - It may not matter for some types of projects, go to step 2

2. Can the problem be addressed without building more road capacity, such as through operations improvements or coordination of other modes?
Review the list of strategies appropriate everywhere and, if in a congested subcorridor, the Very Appropriate (VA) and Secondary (S) strategies for ideas to add to existing thoughts.

- Yes - DVRPC staff is available to provide technical support in evaluating strategies as we all try to advance toward goals for the region
- No - Document this initial research as it will help with step 3

3. If new road capacity is an alternative, is it likely to be Major SOV Capacity?
See "CMP Category of Project" in this *CMP Procedures* memorandum for initial guidance as to whether the project may add Major SOV Capacity. It may improve a project that will add minor SOV capacity to incorporate a proportional level of strategies such as to improve operations or pedestrian safety. Supplemental strategies are required for major SOV capacity-adding projects that will use federal funding and are strongly encouraged for those that will use other funding in order to help advance regional goals. Being listed at least initially as a Major SOV Capacity-adding Project will tend to provide access to more DVRPC technical support.

- Yes - The project is likely to have at least an alternative with Major SOV Capacity - Go to step 4
- No - At least for now the project is likely to be Minor SOV Capacity – Keep the project description current in TIP listings; DVRPC staff remain available for technical assistance and will review the project periodically as to whether the scale has changed.

4. Is the new Major SOV Capacity consistent with the CMP?
See "Evaluating Consistency of Projects with the CMP" later in this memorandum.

- Yes, it is listed as a strategy for that congested subcorridor - Build on previous research to start considering supplemental strategies and go to step 5
- No (see subbullets that follow for specific situations). Quantitatively develop at least two alternatives using the CMP Very Appropriate and Secondary strategies and strategies appropriate everywhere as reasonable. The expectation is to provide at least two alternatives that genuinely try the listed strategies other than building new road capacity. The approach might be to have one alternative focus on the VA strategies supplemented with others,

and one on a creative mix of strategies without adding major SOV capacity. Another approach is to prepare one non-SOV alternative representing the best that can be done using available funding and one if funding were unconstrained. Extra alternatives that explore ideas or combinations are helpful and DVRPC staff is available to assist. This is an ideal time to start working with a multimodal stakeholder group. Include DVRPC, FHWA, and the county in mailing lists for this group or include them in the group. Draft material should be discussed with DVRPC before evaluation is completed. The final recommended material will be forwarded to the project team (if different) and CMP Advisory Committee. Agreement on consistency of this project may be determined by consensus of the CMP Advisory Committee and DVRPC in the case of the first two subbullets. If there is concern about the project, it may be discussed with FHWA/FTA and, if necessary, with the RTC or Board.

- No, but a different SOV Capacity-adding strategy was listed - Can that strategy be used as part of a reasonable alternative for further evaluation? Quantitatively document this alternative or why it should not be considered and provide to DVRPC along with other material above. A somewhat lighter level of evaluation may be applied in changing from one SOV capacity-adding strategy to another (excluding from Frontage/Service Roads which are the smallest scale of these strategies) than to new introduction of SOV capacity-adding strategies to a subcorridor.
- No, adding Major SOV capacity was not listed for that congested subcorridor - See text above these subbullets.
- No, the project is not in a congested subcorridor - See "Evaluating Projects Outside of Congested Corridor." Such projects are flagged for further careful evaluation. The steps to proceed are in the referenced checklist and DVRPC staff is available to help. A draft of the analysis must be provided to DVRPC, the CMP project team, and in proposed final form to the CMP Advisory Committee. It should be revised based on comments. If the analysis recommends adding road capacity, the CMP and, depending on project scale, LRP will need to be amended by Board action before federal funds may be programmed for Final Engineering. Another option is to approach the project through a multimodal study that incorporates the checklist and is supported by stakeholders (including DVRPC) that could then be included in the next update of the CMP. Briefly, the checklist covers managing the problem in the short and long term, in the broader corridor, in the multimodal system, and in terms of likely resulting land use changes (with their transportation implications).

5. Are the supplemental strategies set?

See "Developing Supplemental Commitments" later in this memorandum. A result will be documentation of who will do what and when. There should be proportionality between the size of the project and the supplemental strategies. For example, a short extension of a collector road might result in brief text about how the project will accommodate bicycling and walking safely. The commitment documentation could be done in a phone call between the project proponent and DVRPC. Building a new road would likely call for new transit or significant land use planning to prevent sprawl that would promptly use up the new capacity. In the past, stakeholder groups have successfully prepared sets of supplemental strategies that have been approved by the Board. If there were issues, they would be worked through with the CMP Advisory Committee, FHWA/FTA, and if necessary the Board.

- Yes – A table has been agreed upon by stakeholders that lists the supplemental strategies, how they will be implemented, an approximate timeline, and has been provided for approval by the DVRPC Board with the understanding that there may be updates as the projects go forward
- No – DVRPC staff remain available to help refine supplemental strategies or research alternate funding sources for which supplemental strategies are strongly encouraged but not required.

The CMP Advisory Committee consists of representatives for the nine counties of the Delaware Valley region, PennDOT, NJDOT, transit agencies, TMAs, Regional Citizens Committee, Goods Movement Task Force, transportation authorities, and others. The e-mail list includes surrounding MPOs and other MPOs interested in learning from DVPRC's CMP and sharing what they learn though their CMPs.

The CMP Advisory Committee is a much-appreciated and valued group of informed stakeholders in the CMP. To date, the focus has been to get ongoing participation by all who should participate, such as DVRPC member counties and transportation agencies, with other interested bodies added at their request. At some point in the future, this group could become more formal in its membership or means of coming to consensus. Until and unless a more formal approach is requested by three or more member agencies or seems needed for DVRPC staff to meet deadlines, this group will come to consensus through discussion. An attribute requested and fostered in this group is effort to work together toward the region's goals and fully meeting federal regulations.

CHAPTER 3

Review of TIP Projects

All TIP projects will be reviewed with regard to the CMP when received for consideration in a TIP update, when the project is amended, and if there are significant changes in its description. TIP projects can come from the CMP/related studies or other sources and may be funded through federal or other means, but this uniform approach will maintain consistent information. When there are changes reported to DVRPC in a TIP project that may affect its CMP status, this is communicated by staff working on the TIP to staff working on the CMP. If this will affect whether a project is a major SOV capacity-adding project, the draft changes will be shared first with the project sponsor to check for clarifications, and then with the project team and CMP Advisory Committee.

Project managers may save time and effort by considering whether the current proposed project is the complete anticipated extent of effort, or whether the need is to continue with additional projects in the future in the same corridor or vicinity to address a specific problem. This consideration may well go to a broader planning level, but builds upon addressing 23 CFR 771.111(f) regarding segmentation as discussed in NEPA and Transportation Decisionmaking: Development and Evaluation of Alternatives (www.environment.fhwa.dot.gov/projdev/tdmalts.asp). Developing a set of supplemental strategies for the current and anticipated projects in a corridor takes care of the bulk of the work in one effort—future projects would involve brief updating of tables–and may make a smaller number of larger scale, more effective supplemental strategies possible. It will be helpful to communicate to DVRPC whether the project is part of a larger real or desired undertaking.

The CMP review of TIP projects provides three pieces of information. They are:

- CMP category of project (not SOV capacity, minor SOV capacity, major SOV capacity, or not yet determined)
- CMP location information (congested subcorridor number and letter, emerging/regional corridor, or not in a corridor)
- CMP category of consistency (yes, flag for further review and discussion, supplemental project, or no)

Some projects may fall within more than one category. Through 2009, CMP determinations were based upon best judgment of staff from the project description with additional research where necessary and follow-up reviews by

other participants. In 2008-9, based on input from the CMP Advisory Committee, the CMP has shifted to a more formal approach. As described in the following section, "CMP Category of Project," the process to be used is based upon the model of the Air Quality Conformity Interagency Consultation Group. This will result in a more transparent process without overly burdening the full Committee.

CMP Category of Project

All TIP projects are categorized as not an SOV capacity-adding project, minor SOV capacity-adding, major SOV capacity-adding, or not yet determined. The category considers coordination with the air quality conformity review process for transportation projects, the DVRPC categories of projects with regard to the LRP, the New Jersey TIP database field "NewProgram" and review of each project.

The CMP evaluation of all projects is used in the considerations of the TIP Subcommittees. It is, however, the review of projects that will add major SOV capacity that garners the most attention. For such projects in this region, federal regulations require that the CMP provide an appropriate analysis of all reasonable (including multimodal) travel demand reduction and operational management strategies, and whether they can satisfy the need for capacity in the corridor. If not, then the CMP is to identify which such strategies should be incorporated in the project to manage the SOV facility effectively before federal funds can be programmed for Final Engineering. All the identified reasonable strategies are to be incorporated in the project or committed to by the state and MPO for implementation. These steps reflect regulation 23 CFR parts 450 and 500.

The CMP project categorization and the air quality conformity determination processes overlap but are not precisely the same. The CMP focuses more on corridor travel patterns than the regional air quality conformity review does and also recognizes some project types exempt by federal regulations for conformity. Some scenarios where the two processes could be different follow. These are generic examples and all projects are individually reviewed in both processes.

- Example of a project exempt in terms of air quality conformity that might be categorized in the CMP as adding major SOV capacity – An EIS with alternatives adding lanes or roads. It is in the interest of the CMP to start interacting with such a project as early as possible, while it would not become part of conformity reviews until the resulting project was in Final Design.
- Example of a project that might be found nonexempt for air quality conformity but that would be categorized as just minor capacity in the CMP – A project that links a small number of traffic signals to coordinate them. A project that links two or more traffic signals would be considered nonexempt in conformity review, while the CMP would not focus full major SOV project attention on it unless it involved enough intersections and other minor capacity-adding pieces that corridor travel patterns would likely change.

The categories and their usual types of projects are described on the next page. Real projects are often combinations of items and otherwise have unique characteristics. A result is that some projects are difficult to categorize. Research, judgment, and discussion are used to determine the categorization of such projects. Examples of projects in these grey areas are provided as a guide in the last element of this section.

After discussion with the CMP Advisory Committee in 2009, the CMP shifted to a more formal approach to determining the category of projects. The set of new or modified projects that seem to add major SOV capacity will be circulated with reasoning to a small ad hoc CMP project team consisting of the relevant representative for FHWA, the DOT, involved county or counties, and project proponent if this is another organization. After a comment period and any revisions, a summary will be provided to the CMP Advisory Committee for more general review. If there are remaining questions or concerns, they may be discussed with FHWA and other agencies, the RTC, or, if necessary, the Board.

Another grey area is the term “bottleneck” as used in 23 CFR 450.320(d). For areas in nonattainment for ozone it states:

> Federal funds may not be programmed for any project that will result in a significant increase in the carrying capacity for SOVs (i.e. a new general purpose highway on a new location or adding general purpose lanes, with the exception of safety improvements or the elimination of bottlenecks), unless the project is addressed through a congestion management process meeting the requirements of this section.

The regulations do not include a definition of safety improvement or bottleneck elimination. In that virtually all major SOV capacity-adding projects may be said to address both safety and bottlenecks, the DVRPC CMP will apply to all projects that add major SOV capacity. The CMP supports the integrated planning that helps the region advance toward its goals which include reduction in congestion, and the CMP contributes to making projects as effective as possible. Based on the benefits, it makes sense to use the CMP with all major SOV capacity-adding projects.

Projects and Programs That Do Not Add SOV Capacity

A consideration in whether projects and programs do not add major or even minor SOV highway capacity is whether the regional Air Quality Code is exempt (codes M1 – X13). A slightly confusing factor is that while most of these projects are relatively small, transit projects are also in this category; they may add capacity to move people but do not add major SOV capacity. Projects that do not add SOV capacity are assumed be consistent strategies with regard to the CMP. The congested subcorridor or emerging corridor in which they are located

will be noted as this is a consideration in prioritizing TIP projects. This category generally includes the types of projects listed below:

- Bicyclist and pedestrian improvements and programs
- Bridge rehabilitation/reconstruction
- Drainage projects
- Dam improvements
- Landscaping, streetscaping, or historic preservation/restoration improvements
- Noise barriers
- Paving and basic maintenance projects, including basic upgrades of signals
- Shoulder improvements, widenings, guide rail
- Sight distance improvements
- Widening roadways with substandard widths (retain same number of lanes)
- Safety improvement projects and programs, and related safe route to school efforts
- ITS projects oriented toward traffic monitoring, traveler information, and emergency response (such as closed circuit television or variable message signs)
- Signage
- Transit projects
- TDM projects (such as TransitChek)
- Railroad crossing improvements
- Non-highway infrastructure (such as parking garages)
- Environmental mitigation projects such as wetlands replacements
- Congestion Mitigation and Air Quality (CMAQ) projects
- Marketing (including outreach, education, and planning) of TDM and transit
- Regional and municipal planning and review of regulations, freight movement planning, GIS mapping and data gathering, and other general planning activities. Studies that may result in specific large highway projects (such as an EIS) should go in other categories.

Minor SOV Capacity-Adding Projects

Minor SOV Capacity-Adding Projects are those that may slightly increase SOV road capacity, but are not new through travel lanes, new roads, or likely to result in capacity increases that would change corridor or regional travel patterns. In many cases, these will be isolated or spot improvements with no other projects nearby. Minor SOV capacity-adding projects will be carefully monitored for scope creep. Such projects are reviewed for consistency with the CMP and in which subcorridor (or emerging corridor) they are located. This category includes the types of projects listed below:

- ITS projects that deal with traffic flow (such as linked arterial signal improvements)
- Intersection improvements (such as turn lanes or alignment improvement). If many intersections are involved, see Major Added Capacity (next section).
- Center turn lanes

- Acceleration/deceleration lanes, including approach and turn lanes for access points
- Climbing lanes
- Roadway reconstruction that will not add capacity in a way that changes how the corridor functions with monitoring for scope creep
- Jug handles
- Ramp revisions at existing interchanges
- Traffic circle at-grade cut-throughs
- Bottleneck improvements of a limited scale that do not significantly change corridor travel times or character (vehicle or rail)
- Access management engineering and policy approaches that do not involve building major new capacity

Major SOV Capacity-Adding Projects

These are projects resulting in an increase in SOV capacity that impacts regional or corridor travel patterns. This review considers, though is not determined by, projects modeled for air quality conformity purposes and studies considered likely to result in non-exempt projects (Air Quality Code SDN). Other considerations include LRP status and DOT categorization. Major SOV capacity-adding projects are reviewed for consistency with the CMP and in which subcorridor (or emerging corridor) they are located. Major SOV capacity-adding projects usually have descriptions likely to result in one of the types of projects listed below:

- New roadway or bypass
- Additional through lanes on an existing highway
- Adding capacity to a corridor with the result that corridor or regional traffic patterns are likely to change, for example by improving many related intersections along with other components that also add minor capacity.
- New interchange
- Adding missing moves to an existing interchange
- Grade-separation of existing intersections
- If an EIS or similar study is underway in which significant alternatives add SOV Capacity, it may be categorized as Major SOV Capacity as a reminder for all parties to work together early on with expectation of further review once an alternative is selected. Otherwise, such a study would go in the Not Yet Determined category. It is productive to include CMP considerations and DVRPC staff in the early stages of studies.

Note that the TIP descriptions of major SOV capacity-adding projects are to briefly list the supplemental commitments that will facilitate their management in the future.

Not Yet Determined

These are studies not yet at a point where the likely resulting projects can be categorized. This entry may be used temporarily with projects for which not

enough information has been provided to categorize them or while they are being developed.

Examples

As noted previously, some projects are difficult to categorize. Below are several examples described in somewhat generic terms as a guide for consistency and clarity in determining categories:

Small End of Projects That Will Be Categorized As Adding Major SOV Capacity

Example 1: Construct a new interchange or grade separate an existing intersection to increase capacity and provide access for major new development in the vicinity that will change travel patterns in the corridor

Example 2: Through using shoulder space, removing parking and other means, create new travel lanes in the existing cartway for a significant distance, generally a mile or more

Example 3: A project that involves several minor capacity-adding aspects with the result that it changes the character of the corridor will be carefully reviewed and monitored. Depending on the intent and effect of the project it may be categorized as a major capacity addition.

Large End of Projects That Add Minor Capacity

These projects will be monitored as to whether they become major capacity-adding projects:

Example 1: Redesign an existing intersection or interchange that is chronically congested to address existing traffic and make it safer with no new access points

Example 2: Realign intersection of two arterials with short new through lanes and turning movements in a way that does not seem likely to significantly change land uses or travel patterns.

Example 3: Reconstruct road and enhance on and off access ramps and intersections with new acceleration/deceleration lanes and additional enhancements that taken together do not change the function of the corridor.

CMP Location Information

The potential entries are:

- Number and letter of CMP congested subcorridor
- Emerging/Regional Corridor
- Not in a CMP Corridor

CMP Category of Consistency

The potential entries are:

- Yes – Project consistent with CMP
- Flag – Further research or coordination are needed for this project. It does not seem to be consistent with the CMP at this point.
- Supplemental Project - These projects are consistent with the CMP and are being tracked as part of commitment agreements. The “parent” SOV project should be listed in this field for reference
- No - Project is not consistent with the CMP. This entry will be used after a project has been flagged and further discussions have been held. Federal transportation funds may not be programmed for such a project.

CHAPTER 4

Evaluating Consistency of Projects with the CMP

It is a federal requirement that major SOV capacity-adding projects proposed for federal funding in the TIP are consistent with the CMP. In that travelers tend to be more concerned that the transportation system meets their needs than who funded particular pieces, this analysis is conducted for all projects that add SOV capacity. This is also in keeping with the approach of the LRP and TIP. This review highlights important investments that benefit all travelers in a location and that help the region grow towards its goals.

The CMP supports the goals and strategies of the LRP. It does not encourage adding road capacity where the LRP has concluded that further land use development and road capacity additions are not appropriate.

The CMP takes a corridor-based approach rather than a facility-specific one. If a highway in a corridor is very congested but also very constrained, it may be appropriate to add capacity to parallel or new roads within the corridor as well as to pursue corridor or area-wide Transportation Demand Management/Transportation System Management (TDM/TSM) strategies.

Inclusion of capacity-adding strategies is only a first step that must lead into a process fully considering community, environmental, and economic impacts and involving all stakeholders as part of the project study or EIS process.

Projects Located in Congested Corridors

Major SOV capacity-adding projects from the CMP, other management systems, or related studies are likely to be consistent if they are located in a congested corridor and implement strategies listed in the CMP for that subcorridor. The review steps were summarized earlier in this document in “Moving from a Problem to a Project” and in more detail on the pages that follow. Projects that are consistent with the CMP will generally be viewed favorably in prioritizing projects for the TIP within the extent of the role of the CMP as input; there are many considerations used in prioritizing TIP projects.

Checklist: CMP Consistency of Projects that Add Major SOV Capacity

The answers to items one through three must be affirmative for the project to be consistent. Answers to the other questions are also important.

1. **Is the project located within a CMP congested subcorridor?**

2. **Does the CMP identify that type of major SOV capacity-adding strategy as a strategy for that subcorridor?** If not, did the project follow the steps in "Moving from a Problem to a Project through the CMP"?

3. **In keeping with federal regulations for the CMP, does the project identify all reasonable strategies to manage the SOV facility effectively (or to facilitate its management in the future)?** Other travel demand reduction and operational management strategies appropriate for the subcorridor, but not appropriate for incorporation into the SOV facility itself shall also be identified. All identified reasonable travel demand reduction and operational management strategies shall be incorporated into the SOV project or committed to by the State and MPO for implementation with the "parent" project. In addition to this regulatory language, commitments by other agencies, such as TMAs, are also accepted in the DVRPC process.

4. **If the project is of a scale that needs to be identified in the LRP, is it currently included in the Plan?** If the project is smaller in scale, is it in keeping with the goals and strategies of the LRP?

5. **If there are other projects being proposed, scheduled, or underway that impact this problem or serve the same need, explain how the proposed project is coordinated with them and is not segmentation.**

6. **Is the project from any other relevant approved regional, subregional, or local adopted plans?** If so, include this information. Is it included in the master plans of the municipality(s) or county(s)?

This analysis can be prepared by the project sponsor, consultants, the host county planning commission, or by DVRPC. If the sponsor requests that DVRPC prepare this evaluation, there must be a reasonable amount of time scheduled for evaluation and review. If the project is first being submitted as part of the update of a TIP, the submission should come to DVRPC as early as possible with adequate information about it to avoid a last minute rush for all involved.

All the questions need to be addressed in a thoughtful and documented way, however there is proportionality to the level of effort expected based on the size of the project. Much less depth of analysis is needed to justify a proposal to extend a collector road for a mile than to extend a freeway for ten miles. Common sense and input from project stakeholders are key guides, but consult DVRPC with questions.

As a result of the evaluation, the project(s) may be further refined and the results revised. DVRPC staff is available to assist in revising projects to better fit adopted plans and the CMP or to suggest other funding sources.

Projects Located Outside of Congested Corridors

Projects that add major SOV capacity located outside congested corridors face a higher burden of proof than ones in already agreed-upon congested corridors. Detailed CMP analysis must be conducted that evaluates the project. The TIP development process will consider this analysis and how it compares to capacity-adding projects listed in the TIP or proposed for congested corridors given the level of need and constraints on funding.

If a project is being considered that may not be consistent with the CMP, it is in the best interest of the project manager to confer with DVRPC at the earliest possible point. The following information should be provided at a minimum: project name, location, problem to be addressed, general scope and strategies, sponsoring agency/municipality.

DVRPC will clarify with the sponsor whether the project is consistent with the CMP or the steps necessary for the project to be considered. These steps may range from project refinements to analysis leading to the proposal of an amendment to the CMP.

If the project is not consistent with the CMP, the most efficient way for analysis to proceed is for the sponsor to prepare it as part of evaluating and developing the project. Much of the work would already be underway as part of preparing the project needs study or EIS.

A checklist for analysis necessary for an amendment to the CMP to be considered follows on the next page.

Checklist: Major SOV Capacity-Adding Projects Proposed Outside Congested Corridors

This evaluation must be done for projects that would add major SOV capacity in locations outside of CMP congested corridors. Doing this evaluation for any substantial proposed project may also be helpful in preparation for review of the project by the TIP Subcommittees. The technical work must fully and quantitatively assess the listed questions. The results will be used in consideration of an amendment to the CMP.

Alternatively, this checklist may be fully incorporated in a corridor study or other similar study. The work must be done in a professional manner with a multimodal steering committee that should include DVRPC CMP and other relevant staff at least on mailing lists. The proponent is encouraged to refer to *Corridor Planning Guide* (DVRPC Publication 08028). Where appropriate, formal adoption of the study recommendations by stakeholders gives added authority. Normally, such resulting reasonable corridor studies by DVRPC or its member agencies are incorporated in the updates of the CMP.

An amendment to the CMP (or incorporating a completed study) would likely result in the creation of a new congested corridor that would include the proposed new project. This approach is designed to insure that capacity-adding projects consider the range of suggested strategies for alleviating congestion and also consider the impacts of these projects on transportation corridors in addition to addressing localized congestion.

Proposed amendments to the CMP will be reviewed first by the CMP project team and then the full CMP Advisory Committee before going through the RTC, Regional Citizens Committee (RCC), and Board.

The following questions need to be addressed when proposing a major SOV capacity adding project outside of a congested corridor:

1. **Does the project advance the goals and strategies of the regional LRP and of adopted plans of the municipality(s) or county(s)?** Explain the answer.

2. **Is the facility or nearby road congested–Volume/Capacity (V/C) equal or greater than .85 for the peak hour?** Since the regional CMP is a system level analysis, shorter sections of congested roads may not have been identified. The work for this task involves capacity analysis using current and DVRPC Long-Range Plan horizon no-build traffic volumes. Other years may be included.

3. **Will congested conditions be remedied by the proposed project?** This should include V/C and Level of Service (LOS) change caused by the build scenario in the completion and horizon year. Analysis or discussion of potential induced traffic is helpful.

4. **How will congestion in the longer corridor or broader area change under the no-build and build scenarios (and other scenarios as helpful)?** If there are other projects being proposed, scheduled, or underway that address similar problems in the area, explain how the efforts are being coordinated.

5. **What are the probable changes in land uses reasonably attributable to the project, sketch level estimates of probable effect on air**

quality, and sketch level major environmental impacts? How would these changes likely impact future traffic, focusing on land use changes? This analysis should reference master plan and Long-Range Plan land use maps with comparison.

6. **In keeping with federal regulations, does the project identify all reasonable strategies to manage the SOV facility effectively (or to facilitate its management in the future)?** Other travel demand reduction and operational management strategies appropriate for the corridor, but not appropriate for incorporation into the SOV facility itself shall also be identified. All identified reasonable travel demand reduction and operational management strategies shall be incorporated into the SOV project or committed to by the State and MPO for implementation. In addition to this regulatory language, commitments by other agencies, such as TMAs, are also accepted in the DVRPC process. The development of strategies should consider the list of strategies appropriate in all corridor types included in the *CMP Report*. Sketch planning techniques such as the PennDOT or NJDOT AQONE or Cal B/C evaluation should be used. Benefit/Cost analysis may be useful in comparing different investment scenarios.

7. **How will the strategies to be evaluated be chosen?** They should include the strategies listed as appropriate everywhere in the CMP. FHWA, DOT, DVRPC, and the county should be included in mailing lists for such work. See "How to Develop a Set of Supplemental Projects" later in this memorandum for more guidance.

This analysis can be prepared by the project sponsor, consultants, the host county planning commission, or by DVRPC. If the sponsor requests that DVRPC prepare this evaluation, there must be a reasonable amount of time scheduled for evaluation and review. The proponent would probably need to find funding for DVRPC to do a full study and it would probably need to go into DVRPC's Work Program.

All the questions need to be addressed in a thoughtful and documented way, however there is proportionality of how much depth of analysis makes sense based on the size of the project. Much less depth of analysis is needed to justify a proposal to extend a collector road for a mile than to extend a freeway for ten miles. Common sense and input from project stakeholders are key guides, but consult DVRPC with questions.

As a result of the evaluation, the project(s) may be further refined and the results revised. DVRPC staff is available to assist in revising projects to better fit adopted plans and the CMP or to suggest other funding sources.

CHAPTER 5

Developing Supplemental Projects

A range of relevant stakeholders should work together to identify and commit to supplemental CMP strategies for major SOV capacity-adding projects in order to manage the SOV facility effectively and coordinate its management in the future. Depending on the scale of the project, the entities may include the project sponsor, impacted municipalities and/or counties, agencies (such as transit or TMAs), FHWA, DVRPC, and others. This step requires discussion and coordination to agree upon strategies that are both effective and can be realistically implemented. Appropriate public outreach and inclusion is important to doing this well. **This must be completed for a Major SOV capacity-adding project before Final Engineering for projects that seek federal transportation funding, or it will not be programmed in the TIP.** It will help make a project more effective in the short- and long-term to complete this planning before Final Engineering for all major projects regardless of funding source. The steps are described below.

Steps in Developing Supplemental Projects

The basic steps in considering strategies and developing supplemental projects are described in the checklist that follows. As has been stated previously, this effort would be scaled to the project.

Checklist: How to Develop a Set of Supplemental Projects

1. **Prepare a broad list of potential strategies, including travel demand reduction and operational management strategies appropriate to the facility or the corridor.** The CMP strategies for the subcorridor, with emphasis on Very Appropriate strategies, and those appropriate everywhere are a rational starting point though not a limit. For projects not in a congested subcorridor, the CMP strategies appropriate everywhere and full range of strategies in the *CMP Report* should be considered. In all cases, review local adopted plans and those of relevant agencies and organizations. The process, though scaled to the project, should include appropriate multimodal partners. DVRPC is available to assist in gathering stakeholders and facilitating meetings. In the event there are questions or problems, material may be discussed with the CMP Advisory Committee, RTC, or FHWA/FTA. Stakeholders should be comfortable that the list is multimodal, inclusive, and considers land use-transportation coordination. DVRPC should be informed of or involved in this process.

2. **Strategies with very limited support (due to costs or other issues) should be eliminated in a documented manner. The remaining strategies should be refined enough for serious consideration.** Good documentation at this point may help streamline the future NEPA process if the project ends up needing one.

3. **Draft, discuss, revise, and finally agree upon a table with descriptions, estimated costs, mechanism for implementation/sponsors, and general timing.**

4. **Provide the table to DVRPC CMP staff.** Staff prepares an annual *Status of Supplemental Projects Memorandum* that includes new SOV capacity-adding projects and their supplemental projects tables. If an amendment to the CMP is being proposed, it may be handled separately. The table(s) are reviewed by the CMP Advisory Committee, then presented to the RTC and RCC. It is adopted by either the RTC or Board. As stated in the federal regulations and the DVRPC methodology, this process must result in commitments as part of the project, inclusive of adequate funding mechanisms to ensure implementation.

Further Information about Supplemental Projects

There are four general mechanisms to implement supplemental projects:

1. They can be constructed as part of the SOV capacity-adding project.

2. Projects with independent utility can proceed on their own separate track although they will be monitored for completion as part of the CMP. Language should be added to both project descriptions linking them.

3. Some projects may be most efficiently implemented through on-going programs, such as those run by TMAs. Specific language should be added to the program and project, and implementation will be monitored.

4. Some strategies will need further study before they can result in projects. The CMP database may report on the study, but completion of the commitment will be based on the ensuing specific projects.

The intent is reasonable long-term management of the new capacity investment. This approach recognizes that it may be necessary to revise the specific details of the commitment list as implementation is underway. Stakeholders, including DVRPC, should be kept involved and informed.

A natural question regards the appropriate extent of the supplemental strategies. The best guidance seems to be that there should be proportionality to the scale of the major SOV project. The specifics will vary by location, stakeholder enthusiasm, needs, and other factors. Following are a few examples based on real approved projects.

Example 1: Extend a collector road about a mile to form a short connection that improves grid connectivity of a center and access to a train station with accompanying bicycle and pedestrian improvements. Such a project is clearly in keeping with Smart Growth principles. Added CMP actions: check with the municipality, county, and transit providers as to whether there are any other related efforts to note or coordinate on (this could be by e-mail), and inform DVRPC (this could again be an e-mail).

Example 2: Reconstruct five miles of an existing US route including adding a lane in each direction along with ramp improvements. This project was developed with ITS elements (including variable message signs) and off-site intersection improvements. Early and continuing work with the TMA included a web site to communicate information with an e-mail sign-up for updates and focused outreach to nearby employers regarding ride-matching and alternate work hours. In that this is one part of work that will continue in the corridor with other projects, additional service was added to existing transit and a shuttle was funded as supplemental projects across the different sections for at least the period of construction of the related projects and that will be evaluated for future funding based on use.

Example 3: Upgrade an existing partial grade-separated interchange of a state road with an interstate highway to full interchange with new ramps, realignment of existing ramps, new adjoining collector-distributor roads and new lighting. This project included enhancements for bicycle mobility and sidewalks on nearby facilities, upgrades and coordination of traffic signals in the vicinity, driveway access controls, enhanced focus on ride-matching and other TDM strategies including signage with phone number to call for carpooling.

Tracking Supplemental Projects

In addition to assisting in the development and adoption of supplemental projects, DVRPC is also required by federal regulations to track that these commitments are realized.

To meet this requirement, DVRPC maintains a database to track the status of CMP commitments. It includes the following components:

- Title
- Description
- Status of SOV project (planning, programmed, completed, no action, other)
- Status of CMP commitments (planning, programmed, completed/on-going, no action, other)
- Lead agency(s)
- Notes on status and next steps

DVRPC prepares an annual *Status of Supplemental Strategies Memorandum*. It provides updates about supplemental projects for a selection of projects. It also brings new tables of supplemental projects to vote for adoption.

DVRPC staff prepares the draft *Memorandum* based on speaking with project managers at departments of transportation and at counties. The draft is then provided to NJDOT, PennDOT, and other agencies/organizations as appropriate. If commitments have fallen significantly behind a SOV capacity-adding project, this is a point to agree on next steps. This review is scheduled to feed into the TIP update process to the degree possible.

It is recognized that supplemental strategies are often implemented by various agencies. If a stakeholder does not do its commitment, the first step would be discussion as to getting that task underway, but the fall-back would be replacing that task with a different one of similar scale through the group of stakeholders.

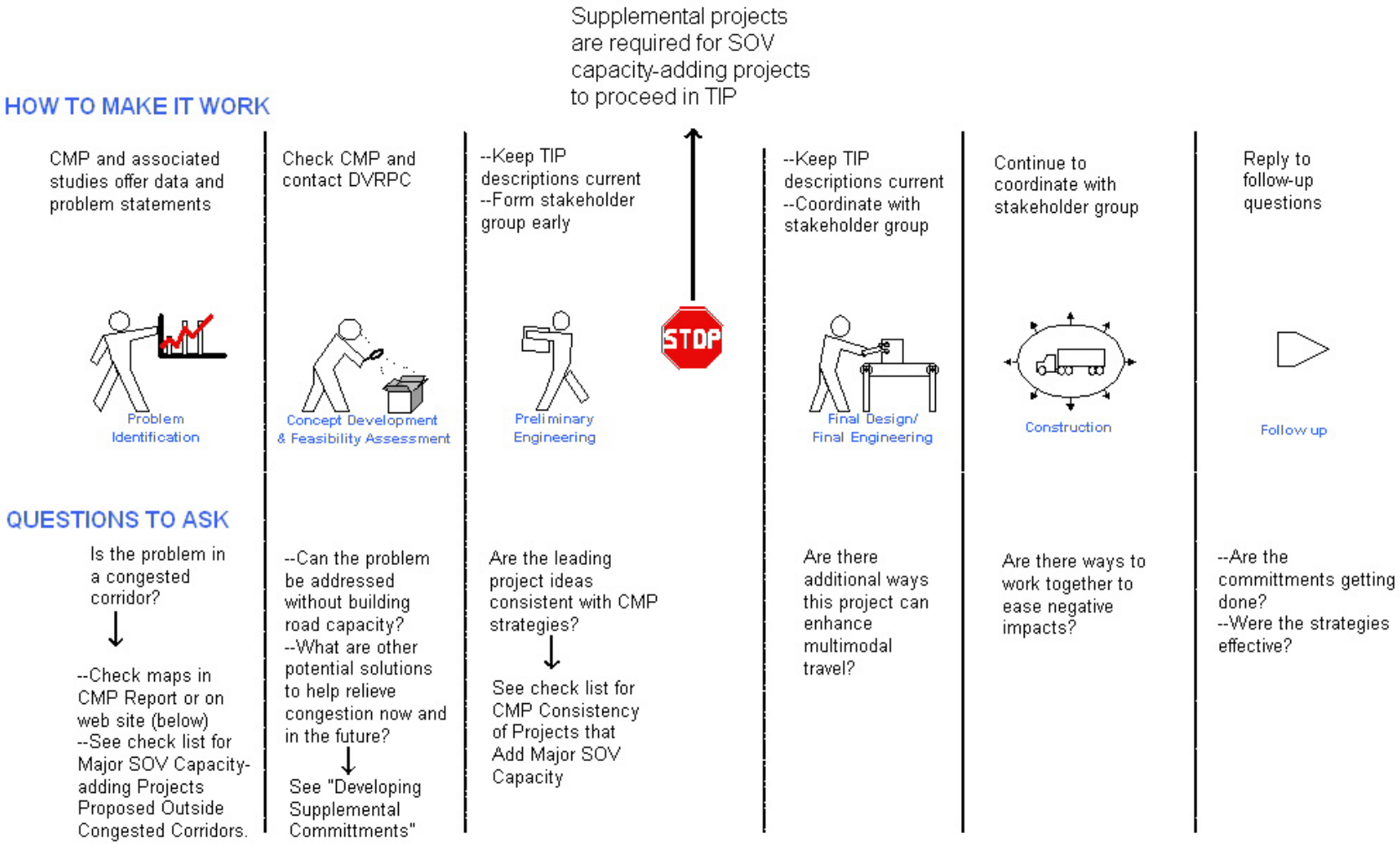
The *Memorandum* is distributed to the CMP Advisory Committee and proceeds through the appropriate DVRPC committees to approval. The memorandum can be adopted by the DVRPC Board or the RTC. As with all DVRPC reports, the completed memoranda are available for free from www.dvrpc.org/asp/publicationsearch.

APPENDIX A

CMP & DOT Project Development

The figure that follows was prepared for project managers at NJDOT and PennDOT. It lines up common steps in DOT project development with CMP resources. It was part of the handout, “How the CMP Gets Us There” used in Winter 2007 annual outreach meetings at the two DOTs. It was reviewed by DOT staff as it was prepared, but remains open for updating and advice on how to make it more useful.

Figure 2: CMP & Project Development



Please document answers clearly. Check lists and further information are available in the CMP Procedures Memo. Coordination is easiest if it starts early in project development. Please contact DVRPC at (215) 238-2839 with any questions. More information is available at www.dvrpc.org/congestionmanagement

Source: DVRPC CMP Advisory Committee using information from NJDOT and PennDOT, 2007

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Abstract: This technical memorandum provides guidance oriented to project managers at departments of transportation and other agencies. It covers how projects move through the CMP and how to review potential Transportation Improvement Program (TIP) projects for consistency with the CMP. Projects that propose to add Single-Occupancy Vehicle (SOV) road capacity using federal transportation funds in the Delaware Valley must be consistent with the CMP or they cannot be funded in the TIP for Final Engineering. The memorandum includes checklists and diagrams. The DVRPC approach has considerable flexibility, complies with federal regulations, and helps advance regional goals. See other CMP documents such as the *Overview of the 2011CMP* (DVRPC Publication 11042A) for more information.

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