



MEMORANDUM

To: Bicycle and Pedestrian Task Force (BPTF)

From: CMAP Staff

Date: May 31, 2017

Re: Review of the FFY 2018-2022 CMAQ and FFY 2018-2020 TAP Project Applications related to Bicycle Facilities

As part of the development process for the FFY 2018-2022 Congestion Mitigation and Air Quality Improvement and FFY 2018-2020 Transportation Alternatives programs, CMAP staff is seeking feedback from BPTF members on the bicycle facility projects submitted and on the project rankings developed by staff, including the air quality rankings. The feedback can include input on technical aspects of the projects, particularly whether there are any “fatal flaws,” as well as qualitative information not captured in the project rankings. Information collected from the BPTF participants will be used to refine the staff-recommended CMAQ program and TAP program for the Project Selection Committee to consider on July 20th.

To aid in reviewing the applications, several pieces of information are being provided.

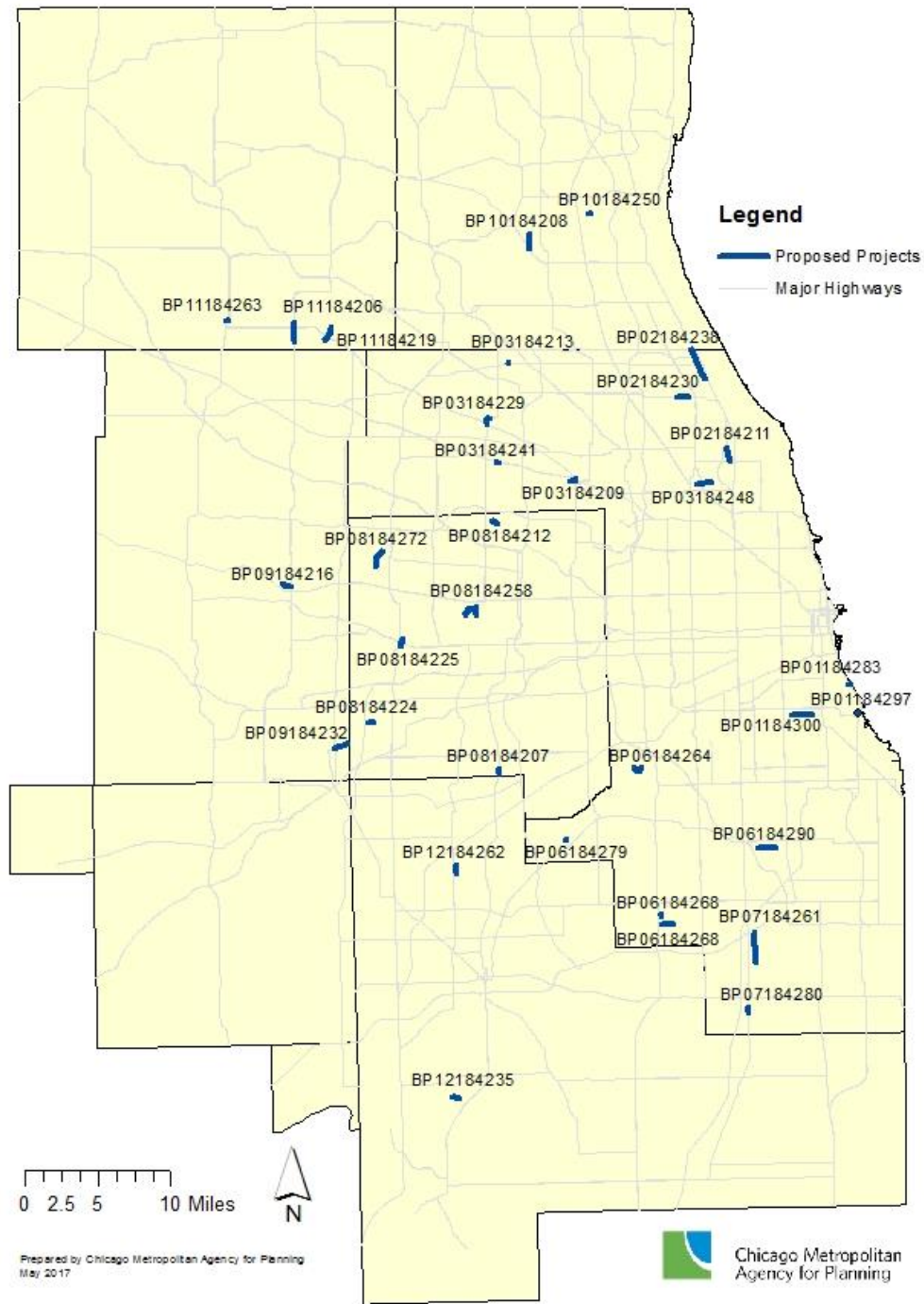
1. A description of the CMAQ and TAP project ranking methodology
2. A descriptive summary of the projects and rankings sorted by cost per kilogram of volatile organic compounds eliminated. The TAP scoring is included on the same ranking sheet but the projects are sorted only by their air quality cost-effectiveness.

To view a full project application, visit the [CMAQ/TAP Program Development](#) webpage or the [eTIP Project Report](#) sorted by CMAQ project ID. CMAP staff requests that BPTF members be prepared to give their feedback at the task force’s June 8th meeting. Feedback can also be given to staff in writing by sending an email to Doug Ferguson, dferguson@cmap.illinois.gov.

Overview of Bicycle Facility Projects

For this CMAQ/TAP cycle, 105 applications were received. Of these, 36 are bicycle-focused (32 bicycle facilities and 2 bike sharing), coming to approximately \$91 million. During the evaluation process two projects were withdrawn by their sponsor. The locations of the projects can be seen in the map in Figure 1.

Figure 1. Locations of FFY 18-22 CMAQ/TAP bicycle projects



CMAQ Project Ranking Process

The primary consideration for CMAQ projects is the cost-effectiveness of their air emissions reductions. Additional criteria are also taken into consideration when evaluating projects for potential funding. These are referred to as Transportation Impact Criteria and are scored on a 30-point scale by project type category. The Transportation Impact Criteria and their weights are as follows:

Project type	Criteria and Weights			
Highway	Reliability 15	Safety 5	On CMP* network 5	Transit Benefit 5
Transit	Ridership 15	Reliability (transit service) or asset condition (transit facilities) 15		
Bicycle	Safety & attractiveness 10	Transit accessibility 10	Facility connectivity 10	
Direct Emissions Reduction	Benefits sensitive population 20	Annual health benefits 5	Improves public fleets 5	

* CMP = Congestion Management Process highway network

Air Quality Cost-Effectiveness

The cost-effectiveness of emissions reductions for bicycle facilities is based on the elimination of trips and vehicle miles traveled (VMT) by single-occupancy vehicles (SOV) that can be associated with the implementation of a project. SOV trips and VMT eliminated for a new facility was estimated by CMAP staff using localized modeling tools. Given expected auto speeds, emissions reductions are then computed using future emissions rates as a function of estimated from the Motor Vehicle Emission Simulator (MOVES) software. Emission reductions from eliminating auto trips are based on emissions rates from cold starts while reductions from eliminating VMT are based emissions rates while running.

All cost-effectiveness values are annualized by multiplying by the capital recovery factor assuming a 3% discount rate. An air quality cost-effectiveness score is generated by taking 60 as the maximum (90 for projects classified as “other”) and scaling the project scores so that a middle score of 30 corresponds to the median cost-effectiveness of the projects submitted.

Safety and Attractiveness Rating

The “safety and attractiveness rating” scores the improvement in conditions for biking that result from building a facility. A project score is calculated as the safety and attractiveness rating after project less the rating before project, multiplied by 2, as shown in the table below. For example, a protected bike lane built on an arterial with no bicycle accommodation presently would receive a score of $(5 - 1) * 2 = 8$. For CMAQ, the score has a maximum value of 10.

Narrative description	Rating
Impassable barrier for walking and bicycling	0
Arterial road with no bicycle accommodation	1
Arterial road with some bicycle accommodation, including marked shared lanes, and collector streets with no accommodation;	2
Low-speed, local streets with no bicycle accommodation	3

Unprotected bike lane; local and collector streets with full accommodation	4
Trail or arterial sidepath, cycletrack, protected bike lane, buffered bike lane	5

Connectivity

Connectivity measures how much a bicycle project improves the ability to get from place to place by bicycle. The connectivity score is the greater of either (a) the connectivity of bikeways resulting from the project (shown in the table below), or (b) the project’s street network connectivity rating, measured with the pedestrian environment factor. This maximum is then weighted by the land use diversity index, which helps emphasize locations likely to generate short trips between nearby land uses conducive to cycling, to arrive at a final score. The score has a maximum value of 10. In general, projects in locations with a better pedestrian environment (typically above a PEF of about 25) and more mixed land uses will score better under the street network connectivity measure. The following table shows the assignment of points related to improving bikeway connectivity:

Connectivity of bikeways resulting from the project	Value assigned
Project fills a gap between existing bikeways	10
Project intersects an existing bikeway	6
Project extends an existing bikeway	3
Project is a new isolated bikeway segment	0

Transit Accessibility Index

Measuring transit accessibility helps ensure that a bicycle facility provides a realistic alternative to auto use by evaluating the potential to link bicycling with transit for longer trips. The maximum score on this measure is 10 (since the transit accessibility index ranges from 1 – 5, the index is weighted by 2 to produce the score).

TAP Project Ranking Process

The TAP ranking process considers three main criteria plus one bonus criterion, evaluated on a 100-point scale.

Completion of Regional Greenways and Trails Plan

GO TO 2040 specifically recommends prioritizing greenway trails in the programming of Transportation Enhancements (now Transportation Alternatives) funding. GO TO 2040 also uses miles of trails completed as an indicator of plan implementation. Thus, completion of the regional trail network is an important criterion.

Narrative description	Score
Connects two existing trail sections	30
Extends an existing regional trail	25
Builds a new isolated section of planned regional trail	20
Builds a new facility that intersects an existing regional trail	10

Market for Facility

Other things being equal, a better facility is one that is likely to receive more use. Population and employment density in the area served by the facility is the criterion used to evaluate anticipated usage. Points are assigned by density quintiles.

Population and employment density	Score
Top quintile of region	30
Second quintile	24
Third quintile	18
Fourth quintile	12
Lowest quintile	6

Safety and Attractiveness Rating

The design of a bicycle or pedestrian facility influences the likelihood and safety of using it. The “safety and attractiveness rating” is assessed as described above under CMAQ, but the score is weighted differently. For example, a protected bike lane built on an arterial with no bicycle accommodation presently would receive a score of $(5 - 1) * 6 = 24$. For TAP, the maximum score is 30.

Bonus

Given the importance of timely project implementation, bonus points will be awarded to projects that have no ROW or easements to obtain (5 points) and for which phase II engineering is already complete (5 points).