



Chicago Metropolitan Agency for Planning

FFY 2024 – 2028 STP Shared Fund Scoring Documentation

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Introduction

This document describes the methodologies used by CMAP staff to complete the scoring of STP Shared Fund applications received in the 2023 Call for Projects Cycle. The document is organized by scoring criteria which are presented in the same order as the program application booklet.

All submitted applications were first reviewed for eligibility. Eligible applications were then reviewed in each project type category requested by applicants in the project's application workbook to determine a preliminary score. Projects that did not result in any improvement or that did not meet the minimum thresholds for need in a particular project type category were determined to be ineligible in those categories and were dropped from further consideration. Upon completion of the preliminary scoring, the highest scoring project type category for each project was determined and all lower-scoring instances of each project that was scored in multiple categories was removed from further consideration. Because some of the need scores and all of the improvement scores are determined relative to all projects within the project type category, the removal of projects from consideration affects the final score for each project. The results of the scoring are being released to the STP Project Selection Committee (PSC), the Council of Mayors planning liaisons, and the sponsor contact listed in each application for review from June 19 to June 23, 2023. The planning liaisons are responsible for sharing the scores with any non-applicants and interested parties.

Following the receipt of applicant comments, any necessary adjustments will be made. After making all adjustments, the scores will be recalculated to determine all projects' final rankings, which will be used to develop the staff recommended active and contingency programs. The staff recommendation will be presented to the STP PSC on July 17, 2023. A public comment period will also begin on July 17, 2023 and will be held through August 11, 2023. The STP PSC will meet on August 31, 2023 to review public comment and the final program recommendation.

Project Eligibility: Minimum Cost or Partnership

Project financial data was reviewed to confirm that the minimum total cost of each project exceeded the \$5 million requirement. For projects with total cost less than \$5 million, application attachments were reviewed to confirm that partnership criteria (3 or more partners, including at least one municipality, contributing financially) were met.

Five (5) projects were determined not to meet these criteria and were eliminated from further consideration.

Project Eligibility: Inclusion in Plans

Sponsor responses to the "Inclusion in Plans" questions in the application workbook were screened first for "yes" or "no". If the sponsor answered "no" to both questions (project identified in plan and project type supported in plan), the project was deemed ineligible. If the sponsor answered "yes" to either question, the referenced plan was reviewed by staff to confirm inclusion of the project/project type.

Five (5) projects were determined not to meet this criterion and were eliminated from consideration.

Project Eligibility: Phase 1 Engineering Underway

Sponsor responses to the "Preliminary Engineering Status" question in eTIP were reviewed along with the attached quarterly status update form and other attached documents to confirm that preliminary engineering was at least underway for all projects. Projects seeking only preliminary engineering, if eligible as a highest need community, were not reviewed.

Six (6) projects were determined not to meet this criterion and were eliminated from consideration. Two of these projects also did not meet other eligibility criteria.

Engineering/ROW Completion

Engineering/ROW completion was scored in two parts: Phase 2 status and ROW status/need.

For phase 2 engineering, 5 points were given if “yes” was selected in eTIP in response to the “Phase 2 Engineering is Complete?” field and attached documents confirmed this status. If “no” was selected or no supporting documents were attached, the “current implementation status” field response, financial table, schedule info section, and attached documents were reviewed to determine the appropriate points to assign. In many cases, where applications were for additional funds for an existing TIP project, review of the existing project record provided evidence of status. IDOT D1 BLRS or Division of Highways staff were consulted if staff was unable to verify status.

For ROW, 5 points were given if “no” was selected in eTIP in response to the “Project requires right of way” field. If “yes” was selected, 5 points were given if “yes” was selected in the “If yes, has right of way been acquired?” field.

Scores ranged from 0 to 10 points. The maximum possible score was 10 points.

Financial Commitment

The individual financial line items exported from eTIP were used to sum the funding by phase for each TIP ID, Federal Fiscal Year, and Fund Source. If costs for any phases were omitted from eTIP, an estimate based on averages costs for the missing phases of similar projects in the TIP was used. Costs for ineligible or non-participating items were identified and subtracted from the federally-eligible share of the total. Committed funds from all sources were identified and the amount of local match provided for the requested funds and any other federal funds committed were verified. The funding amount requested was compared to the STP Shared Fund eligible share, and financial commitment points were assigned based on the percentage of the eligible cost that was requested as detailed in the application booklet.

Scores ranged from 0 to 4 points. The maximum possible score was 5 points.

Transportation Impact – Jobs and Households

Staff began this analysis by matching the segments and points selected in eTIP for each project with travel demand model links. A matrix of trips on the model links from and to each traffic analysis zone was produced. For each project, the number of trips using the project links and the percentage of all trips using the project links were calculated to/from each zone. A travel shed was defined from the zones serving as the top 85% of origins and destinations for those trips using the project links. The number of households and jobs within each zone of the travel shed were summed to determine the total jobs and households served by the project. The totals were then converted to a 10 point scale based on their percent rank among all projects.

The raw number of jobs plus households served by projects ranges from 32,600 to 4.47 million, resulting in scores ranging from 0.12 to 9.87 points.

Transportation Impact – Need and Improvement by project type

Bicycle/Pedestrian Barrier Elimination Projects

The type of barrier – road, rail, or water – for each project was determined based on the data provided in the application workbook and project description. Projects that did not identify or did not address a physical barrier were not eligible for funding consideration.

For road barriers, the level of traffic stress for the roadway being crossed was determined and scaled to a maximum of ten points for the route characteristics portion of the need score. If the barrier was fully eliminated by the project, the level of traffic stress was assumed to be reduced to zero and therefore the level of traffic stress value divided by the total cost of the project determined the cost effectiveness of the improvement.

For rail barriers, the quintile values for average daily trains and proximity to rail operations bottlenecks were determined from the maps published in the application booklet. In cases where quintile values varied over the project limits, the highest point value was selected. If the barrier was fully eliminated, the improvement was calculated by dividing the sum of the quintile scores by the total project cost to determine the cost effectiveness of the improvement.

For water barriers, staff verified the distance to the nearest existing crossing and assigned points using the scale in the application booklet. These points were divided by the total project cost to determine the cost effectiveness of the improvement.

For all barrier types, the population and employment density and transit availability quintiles portion of the market for facility element of the need score were determined from the maps provided in the application booklet. Staff verified that schools listed in the application workbook were within 1 mile of the project and assigned points according to the methodology. Staff also verified applicant responses regarding connectivity with regional greenways and trails and assigned points according to the methodology.

Thirteen (13) projects requested evaluation in this category. Two (2) projects were ineligible for the shared fund, 6 did not meet the minimum need thresholds in the category, and 1 project scored higher in a different category, leaving a total of 4 projects to be considered in the category. The need scores for those projects ranged from 12.0 to 17.0 and the improvement scores ranged from 4.0 to 16.0.

Bridge Rehab or Reconstruct projects

The NBI sufficiency rating for all bridges/structures within the project limits were determined by looking up the structure numbers in the NBI database. The structure within the project limits with the lowest sufficiency rating was deemed the most critical structure, and was used for determining scores in this category and in the bridge projects' improvement category.

Need points were calculated by subtracting the NBI sufficiency rating from 100 (the maximum rating) to determine the "need", and dividing the result by 5 to convert to a 20 point scale. For projects involving multiple structures, points were calculated based on the least sufficient structure.

To calculate improvement scores, data from all NBI database fields noted in the methodology were determined for the critical structure within each project and were utilized to calculate the raw values for each portion of the improvement score. The sum of these values was divided by the total project cost to determine the cost effectiveness.

Four projects requested evaluation in this category. One (1) project was ineligible for the shared fund and 1 was unable to be scored due to lack of condition data, leaving a total of 2 projects to be considered in the category. The need scores for those projects ranged from 7.8 to 14.3 and the improvement scores ranged from 6.7 to 13.3.

Bus Speed Improvement projects

Need scores were calculated based on two factors: current on-time performance and the difference between bus travel time and auto travel time. On-time performance scores were calculated by averaging the applicant-provided on-time performance for all bus routes affected by the project. Points were assigned by subtracting the on-time percentage from 100 to determine the "need". Bus travel time and auto travel time came from a review of schedules and travel time estimates from Google maps.

Improvement points were calculated based on two factors: the change in on-time performance and the change in the difference between bus travel time and auto travel time. Change in on-time performance scores were calculated by subtracting the average of applicant-provided on-time performance for all bus routes affected by the project before the project from the average of applicant-provided on-time performance after the project. The percent increase in bus travel time from before the project to after the project was calculated to determine the travel time improvement points. The raw improvement score was calculated by adding the two scores together and dividing by the total cost of the project.

One project was evaluated in this category. All relative scoring was determined by comparing the project to the highest-ranking project in this category during the prior call for projects cycle. The project's need score was 7.8 and improvement score was 8.9.

Corridor or Small Area Safety projects

The SRI value (minimal, low, medium, high, or critical) for each segment and intersection included in each project were determined from a visual inspection of IDOT safety tier maps. Projects were assigned a point value according to the scale included in the application booklet. Additional points for speed-related crashes and crashes involving vulnerable roadway users were assigned according to the application booklet methodology.

To determine improvement scores, staff reviewed the safety improvements included in each project, as indicated by applicants, and determined the highest CRF value that could address the crash types occurring within the project limits. That CRF was multiplied by the number of crashes occurring within the project limits within the last five years of available IDOT data that resulted in a fatality or serious injury, to determine the potential crash reduction. This number was then divided by the project's total cost to determine the cost per reduced crash.

Seventeen (17) projects requested evaluation in this category. Three (3) projects were ineligible for the shared fund, 5 did not meet the minimum need thresholds in the category, and 4 projects scored higher in a different category, leaving a total of 5 projects to be considered in the category. The need scores for those projects ranged from 4.8 to 9.0 and the improvement scores ranged from 3.3 to 16.7.

Highway Rail Grade Crossing projects

The score for each DOT crossing number within the project limits was determined from the map data provided in the application booklet and the crossing within the project limits with the highest need score was used to assign points. Scores were made up of two parts: rank (up to 15 points) and priority locations (5 points). Rank points were determined by multiplying each crossing's percentile rank by the 15 available points. The percentiles were calculated based on the rank of the sum of individual points for trucks, safety, delay, and buses. For projects involving multiple crossings, the highest score was used.

For full grade separations, delay and safety conflicts will be completely eliminated, so the sum of each crossing's safety and delay scores was divided by the total project cost (in millions) to determine the improvement score. For projects improving but not separating crossings, incremental changes to the delay and/or safety scores were applied prior to summing and dividing by total project cost; if the project involved improvement to train movements, 0.5 x delay score was used; if the project involved improvement to the crossing (gates, signals, etc.), 0.5 x safety score was used.

All four (4) projects that requested evaluation in this category were considered in this category. The need scores for those projects ranged from 12.6 to 19.8 and the improvement scores ranged from 4.0 to 16.0.

Road Reconstruction and Road Expansion projects

Project location segments were matched to condition, mobility, and reliability data to determine the raw values for each factor, which were scaled from 0 to 100 points. The project segment with the most critical SRI score

was determined and also scaled to 100 points. The weighting called for in the application booklet was applied to each measure to determine the total needs score, which was scaled to the total possible points (20).

The improvement in mobility (for expansion projects) or condition (for reconstruction projects) was scaled to 10 points. Points for inclusion of certain scope elements listed in the application booklet were added and the result was divided by the total project cost to obtain a raw improvement score.

Seventeen (17) projects requested evaluation in the road expansion category. One (1) project did not meet the minimum need thresholds in the category and 2 projects scored higher in a different category, leaving a total of 14 projects to be considered in the category. The need scores for those projects ranged from 5.7 to 15.0 and the improvement scores ranged from 1.3 to 18.7.

27 projects requested evaluation in the road reconstruction category. Seven (7) projects were ineligible for the shared fund, 8 did not meet the minimum need thresholds in the category, and 2 projects scored higher in a different category, leaving a total of 10 projects to be considered in the category. The need scores for those projects ranged from 2.2 to 13.5 and the improvement scores ranged from 1.7 to 18.2.

Transit Station, Yard, or Terminal projects

The need score was based on three factors: asset condition, compliance, and bike/ped access. The cost weighted average of existing TERM scores (provided by applicants) was calculated by dividing the sum of the replacement cost (\$ value) times TERM score for each element by the sum of the replacement cost for all elements. The result for each project was subtracted from the maximum possible TERM score (5) to determine the asset condition portion of the score. The percentage of roads in the station area with no sidewalk was determined from CMAP's sidewalk inventory and the existence of bicycle parking infrastructure reported by applicants was verified and bike/ped access need points were assigned according to the methodology. The level of compliance reported by applicants was reviewed for reasonableness and compliance need points were assigned according to the methodology. These scores were weighted and applied to projects based on scope as described in the application booklet.

Improvement scoring was also based on three factors: the improvement in TERM scores, the improvement to bike/ped access, and improvements to efficiency. The cost weighted average of TERM scores after the project (provided by applicants) was calculated by dividing the sum of the replacement cost (\$ value) times the TERM score for each element by the sum of the replacement cost for all elements. The "before" weighted TERM score was subtracted from the "after" score to determine the raw improvement. For projects improving bike/ped access, the amount of new plus improved sidewalk added by the project was calculated as a percentage of two times the total linear feet of roadway within the station area and scaled to 15 raw points. 5 additional raw points were added if bicycle parking infrastructure was being added as a result of the project. For yard or terminal projects, efficiency improvements were determined from the percent increase in the number of train cars that could be stored and the percent decrease in non-revenue trips due to the project. These scores were weighted and applied to projects based on scope as described in the application booklet.

Six (6) projects requested evaluation in the transit station, yard, or terminal category. Two (2) projects were ineligible for the shared fund, leaving a total of 4 projects to be considered in the category. The need scores for those projects ranged from 4.4 to 8.0 and the improvement scores ranged from 3.0 to 9.3.

Truck Route Improvement projects

Scores for condition, mobility, reliability, and safety factors were calculated as described for Road Reconstruction and Road Expansion projects. The length-weighted average of the truck volumes using all project segments were calculated, then scaled to the same 100-point scale as the other factors. Points for geometric deficiencies were assigned according to the methodology. The weighting described in the methodology was applied to determine the total needs score, which was then scaled to the total possible points (20).

Points for improvements to geometric deficiencies were calculated and added to points assigned according to the methodology for systematic improvements and mitigation of negative impacts and mobility improvement points to determine the raw improvement which was divided by the total cost of the project to determine the cost effectiveness.

Five (5) projects requested evaluation in the truck route category. One (1) project was ineligible for the shared fund and 4 projects scored higher in a different category, leaving no projects to be considered in the category.

Planning Factors

Inclusive Growth

Staff located project segments (roadway and/or transit) on the Inclusive Growth map and assigned points according to the scale contained in the application booklet. For projects with multiple segments, the segment with the highest percentage was used.

Complete Streets

Sponsor responses to the “Complete Streets” questions in the application workbook were screened first for “yes” or “no”. If the sponsor answered “no” to both questions, zero points were given. If the sponsor answered “yes” to having a complete streets policy, the referenced attachments or links were reviewed by staff to confirm the cited ordinance/policy was eligible. Raw points were assigned for inclusion of complete streets elements in the project and scaled according to the methodology.

Resilience

Sponsor responses to the “Resilience” questions in the application workbook were screened first for “yes” or “no”. If the sponsor answered “no” to all questions, zero points were given. If the sponsor answered “yes” to having a resilience policy, the referenced attachments or links were reviewed by staff to confirm the cited ordinance/policy was eligible. Points were assigned for inclusion of elements according to the methodology.

Freight Movement

Sponsor responses to the “Freight policy” questions in the application workbook were reviewed and points were assigned based on the methodology. Staff verified whether the project is located on a regional freight network and assigned 3 points to projects that are. The two scores were added together.

Transit Supportive Land Use

Staff reviewed the zoning information provided in the application workbook and assigned points in three parts. “Land Use” points were assigned for residential density and building height according to the scale contained in the application booklet, and the points in the two categories were averaged to determine the score for this part. “Parking” points were assigned by giving one point for each innovative parking element listed in the application booklet, up to a maximum of 2.5 points. “Mixed Use” points were assigned by giving one point for each zoning element listed in the application booklet, up to a maximum of 3 points. The scores in each part were added together to determine the total points.

Subregional Priority Points

Priorities designated by councils and CDOT were received via email and points were assigned according to the methodology after review of the justifications provided for priorities located outside of the boundaries of the council. Council and CDOT staff were given an opportunity to review the assigned priorities prior to final scoring.