

Transportation Project Prioritization Technical Report

This technical report provides a detailed explanation of the development and initial application of the spreadsheet-based Transportation Project Prioritization Tool (TPPT). Specifically, this document details the information and approach used to create the tool. The following key components of this process are presented:

- Identification of criteria for scoring transportation projects
- Development of a list of active and potential transportation projects
- Gathering of project details to apply methodology
- Creation of an Excel spreadsheet to perform the necessary calculations and present the project scores and details.

This tool was created by staff of the Transportation Planning and Funding Division (TPFD), of the Department of Engineering & Construction, of the City of Oakland Public Works Agency in October 2012. The report does not provide the most updated prioritized list of transportation projects, as that list will be updated and maintained over time by TPFD staff.

Background

To facilitate the development of transportation priorities, TPFD staff developed and applied an objective prioritization process for transportation projects. Having all City departments to agree to and use these shared criteria when prioritizing projects, applying for funding, and developing projects will streamline development of transportation infrastructure.

The TPPT was developed to assist in the process of identifying high-priority capital transportation projects for a variety of purposes (e.g., programming formula funding, grant applications). Because transportation projects emanate from several City Agencies, the tool provides a method for consolidating all projects into a single list, and for comparing projects based on objective criteria. The intended outcome is to identify and advance those transportation projects that best meet Oakland transportation policy goals (e.g., Transit First Policy), and allow for coordinated, efficient and effective project development.

The prioritization process was developed to meet several functional requirements, including that the tool be:

- Objective
- Applicable to a wide range of projects
- Efficient to apply
- Easy to understand
- Provides results that make sense

By establishing a single process to handle projects originating in multiple City departments, the tool will facilitate inter-departmental coordination to ensure consistency and efficient use of staff time. To meet these goals, the tool is designed to be used as a high-level screening to separate the most promising projects for future evaluation and screening.

Scoring and criteria

The tool uses an objective scoring system that rates each project on a 0-100 scale based on how well it satisfies the goals listed above (higher scores indicate higher priority projects). Points are allocated in three categories: policy coordination, project readiness and Complete Streets. These scoring categories derive from larger goals, as shown in Table 1 below.

Table 1. Goals and Evaluation Criteria

Goals "In order to..."	Project Evaluation Criteria "...we ask about:"
Prioritize transportation projects that match City policy and goals	<ul style="list-style-type: none"> ▪ Adoption in General or Council-approved Plan ▪ Proximity to transit ▪ Priority Development Areas ▪ Approval in partner agency plans
Ensure the readiness of these project by screening for projects that have completed key hurdles to ensure the feasibility of near-term implementation	<ul style="list-style-type: none"> ▪ Completion of public engagement process ▪ ROW acquisition ▪ Environmental clearance status ▪ 35% Plan completion ▪ Identification of staff leadership
Use complete streets principles to improve the multimodal network and maximize funding opportunities by prioritizing projects that match funding programs evaluation criteria	<ul style="list-style-type: none"> ▪ Transportation safety ▪ Pedestrian comfort and amenities ▪ Provision of bicycle facilities and parking ▪ Improved access to transit services

Projects are ranked and displayed based on their total score. Projects are also ranked by cost category based on predefined ranges (<\$1M, \$1 - \$5M and >\$5M). The five top-scoring projects for each cost category are then displayed. These scores constitute the Tier 1 screening process. The initial Tier 1 screening provides staff with an overall impression of the projects' *relative* merits; small differences in score are not necessarily significant. Tier 2 screening consists of staff review and evaluation of the projects.

The first criteria category is Policy Support (see Figure 1). Policy Coordination captures expressions of legislative intent and inter-agency support. The question about whether the project is included in the MTC Regional Transportation Plan only applies to larger projects and is not weighted. The Policy Support category makes up 25 of the 100 possible total points.

Figure 1. Policy Support answers, scores and weights.

Policy Support Criteria					
<i>City Plan Adoption</i>		<i>Partner Agency Plan Adoption</i>		<i>Regional Transportation Plan Inclusion</i>	
General Plan	1	Yes	1	Yes	1
Council Approved Plan	0.7	No	0	No	0
Other City Plan	0.4				
Not in a City Plan	0				
Project Weight: 10		Project Weight: 5		Project Weight: 0	
<i>Transit-Oriented Development</i>		<i>Priority Development Area</i>			
< 0.25 miles to BART/Trunk Bus	1	Planned	1		
<0.50 miles to BART	0.5	Potential	0.6		
>0.50 miles to BART	0	Proximate	0.3		
		N/A	0		
Project Weight: 5		Project Weight: 5			

In all categories, each criterion is given a number between zero and one that refers to the percent of the total weight to be allocated based on the applicable answer. For example, a project in a Council-Approved Plan would receive 0.7×10 , or 7 points, while a project in the General Plan would receive 1.0×10 , or 10 points.

The second criteria category is Project Readiness (see Figure 2). Project Readiness assesses the likelihood the project is ready for final design and implementation. The Environmental Clearance question applies to both NEPA and CEQA processes (depending on the project’s scope and funding source). Questions in this category identify potential schedule issues by asking about project manager identification and 35% plan completion. Project schedule itself is not addressed directly, as project schedules will often depend on grant awards. The question about whether the project necessitates acquiring right-of-way from another entity is not applicable to most projects, but if right-of-way must be acquired, it has the potential to delay a project substantially. The Project Readiness category makes up 35 of the 100 possible total points.

Figure 2. Project Readiness answers, scores and weights.

Project Readiness Criteria					
Public Process		ROW Acquisition Required		Staff Leadership	
Yes (Specific)	1	Yes	-1	PM Identified	1
Yes (General)	0.5	No	0	No PM Identified	0
No	0				
Project Weight: 10		Project Weight: 5		Project Weight: 5	
Environmental Clearance			35% Plans		
Environmental Document AND Studies Complete	1	Completed	1		
Environmental Document OR Studies Complete	0.7	In-process	0.3		
Studies Scoped	0.3	Pending	0		
None	0				
Project Weight: 10			Project Weight: 10		

The third criteria category is Complete Streets (see Figure 3). . The Complete Streets category makes up 40 of the 100 possible total points. This category’s high weight reflects its importance to both City and regional policy. In particular, the City of Oakland’s Transit-First Policy (73036 CMS) emphasizes that transportation projects should prioritize the movement of people (across all modes) rather than only moving automobiles. . Moreover, the Metropolitan Transportation Commission has a Complete Streets requirement for jurisdictions receiving One Bay Area Grant program funding. The Alameda County Transportation Commission (ACTC) also requires local jurisdictions that receive transportation sales tax pass-through funding to have an adopted Complete Streets policy. These questions help ensure the vision of these policies is carried through to project selection.

The Complete Streets questions evaluate the degree to which projects are designed and planned to be safe, comfortable, and convenient for all users, including drivers, bicyclists, transit riders and vehicles, and pedestrians of all ages and abilities

Figure 3. Complete Streets answers, scores and weights.

Pedestrian	Weight
Widen sidewalks	2
Increase pedestrian space for street furnishings, landscaping, and other pedestrian amenities	2
Install street trees, furniture, or other improvements to the pedestrian realm	1
Upgrade existing facilities that do not currently meet ADA standards	3
Provide new and/or enhanced pedestrian crossings of collector or arterial roadways	2
Add pedestrian-scale lighting	1
Bicycle	
Provide additional bike parking capacity	2
Bicycle Facility Type	
Bike Lane or Bike Path	4
Sharrows	1
Sharrow/Bike Lane Mix	2
Bicycle Boulevard	3
None	0
Bicycle Master Plan Priority Project or Major On-Street Project Bonus	200%
Transit Operations and Access	
Enhance passenger amenities through new transit shelters and/or benches	2
Improve disabled access to bus stops and/or BART stations	3
Provide dedicated bus lanes, queue jump lanes and/or bus bulbs to reduce bus delay	4
Provide stop consolidation, signal priority, or other strategies to reduce bus delay	2
Motor Vehicle	
Improve freight operations on designated freight routes	2
Use improved geometric design to improve safety at locations with high crash history	3
Upgrade signal system and communication to allow for more efficient operations	2
Upgrade illumination to meet best practices and improve safety	1

The Complete Streets category is also the most complex in terms of question clarity and scoring processes. The question about ADA compliance is only applicable to projects that eliminate existing non-compliant facilities. Although ADA compliance is required of any project, some projects may take place in an area that already meets ADA requirements. If there are no ADA improvements to be made, a project will not receive these points.

Projects identified as priorities in the Bicycle Master Plan receive a two-hundred percent bonus to their “Bike Facility” score. This bonus serves two purposes. Because the Bicycle Master Plan uses gap closure as a criterion for determining priority status, the bonus promotes projects that will create a complete bike network. More generally, by incorporating prior prioritization processes, the tool avoids creating a competing set of priority projects. However, priority projects from the Pedestrian Master Plan do not receive a similar bonus, because accessible pedestrian facilities are required on all City streets. Finally, the Complete Streets score of a project is discounted based on the status of the project’s 35% plans (see Figure 4). This helps ensure that the Complete Streets score is not overly optimistic for projects where potential constraints may not yet be apparent.

Figure 4. Complete Streets discounting rates

Discount applied to Complete Streets score based on 35% plans	
Completed	0%
In-process	10%
Pending	20%

Identification of transportation projects

Potential transportation projects were identified through a wide range of planning and engineering studies. The initial project list was developed as part of the baseline Priority Development Area (PDA) Survey conducted by ACTC which inventoried potential transportation, streetscape and TOD projects associated with PDAs and ready for implementation in the next four years. This list also included projects identified in the Countywide Plan and other long-term plans. Other projects have been added as necessary.

As the tool is adopted, multiple City departments may identify potential projects. This process is a way to synthesize information from many places and provide comparable information for a diverse set of projects. All potential transportation, streetscape and TOD projects will be included. Preservation projects, maintenance projects and routine upgrades will not be evaluated.

Tool format and refinement

The tool is housed in an Excel workbook with multiple tabs. Questions are answered by staff on the “Data Entry” tab. The text of each of these answers are assigned point values based on the corresponding cells in the “Policy and Readiness” and “Complete Streets” tabs. The scores are displayed, weighted and tallied in the “Calculations” tab. The top ten projects are displayed on the “Ranked Projects” tab, as are the top five projects in each cost category (as shown in Figure 5, page 9). All projects, ordered by rank, are displayed in “All Projects, Ranked.” Finally, the “Project Lookup” tab can be used to print a one-page summary of a project’s details (as shown in Figure 6, page 10). The project is selected for display by the drop-down menu at the top of the page. Use of Excel allows the tool to be dynamic and flexible. All scores and weights can readily be adjusted as necessary.

The tool was refined in three stages. First, several rounds of edits were collected and incorporated by TPFD staff. Second, feedback on the tool was collected from project managers across multiple city departments and incorporated as determined relevant. TPFD staff also reviewed the tool with project managers at a quarterly grants meeting and solicited feedback. Finally, the tool was discussed with representatives from ACTC. Most issues brought up during this process have been addressed in revisions of the tool. Potential issues for future updates are listed below.

Application of the prioritization process

Once projects have been placed on the proposed project list, they will be scored. Subsequent to Tier 1 screening with the tool, projects will be evaluated by staff to ensure that the priorities recommended in this report reflect environmental justice concerns, establish geographic equity, and direct limited resources in a manner to maximize economic impacts. This Tier 2 review process allows for consideration political feasibility and economic development potential.

TPFD staff have applied this process to a total of over 50 potential transportation projects during the course of tool development. Staff gathered project details through interviews with Project Managers, if identified. Staff also collected information from plans such as the Central Estuary Implementation Guide and Fruitvale ALIVE! The prioritization tool will serve as a valuable resource for staff to efficiently compare a large number of projects and to identify those most likely to match City and funding Agency priorities.

Preliminary results

According to staff's initial screen, Table 2 shows the top transportation projects resulting from the first round of tool development. Note that the project list is illustrative only. The most current list of transportation project priorities will be maintained by TPDFD staff based on on-going revision of the data within the TPPT.

Table 2. Top scoring 15 projects as of October 2012

Rank	Project Name	Cost	Needed
#1	Lakeside Green Street Project (Measure DD)	\$10 M	\$1.7M
2	Foothill/High/Melrose Streetscape	\$5.7 M	\$1.3 M
3	Foothill Seminary Streetscape	\$7 M	\$1.3 M
4	Oakland Army Base Infrastructure Project	\$316.84 M	\$63.3 M
5	Lake Merritt BART Bikeways	\$1.2 M	\$1.2M
6	Peralta Street Priority Area 1	\$2.9M	\$2.9M
7	Martin Luther King Jr. Way Priority Area 1	\$2.4 M	\$2.4M
8	Coliseum Industrial Infrastructure	\$2.7 M	\$2.1 M
9	Fruitvale Alive Streetscape (Phase II)	\$1.5 M	\$1.5 M
10	42nd/High Improvement Project	\$11.5 M	\$9.5 M
11	7th Street Streetscape Phase II	\$ 3.5 M	\$ 3.5 M
12	MacArthur Blvd Intelligent Transportation System	\$ 10 M	\$ 10 M
13	MacArthur Streetscape Phase II	\$ 4 M	\$ 0 M
14	Coliseum BART to Bay Trail connector	\$ 4 M	\$ 3.6 M
15	Bay Trail to Lake Merritt Bike/Pedestrian Bridge	\$ 15 M	\$ 15 M
Totals		\$ 398.24 M	\$ 199.3 M
Total without Army Base		\$ 81.4 M	\$ 56 M

This list has a total estimated funding need well in excess of funds available in this round of OBAG funding. Some projects, such as the Army Base, are more suited to Measure B funding sources. Staff's intention is to continue to refine this list with Alameda CTC to ensure that the maximum number and diversity of Oakland projects are prepared to receive OBAG funding. Projects on the list are characterized by a high degree of design development, environmental clearance, and extensive public process to ensure they can meet grant requirements. Some, notably Lakeside Green Street Project and the 42nd/High Access Improvement Project

have significant local funding already banked. Several “orphaned” Redevelopment Authority streetscape projects are also included, most of which are fully funded through design but lack construction dollars.

Conclusions and next steps

The project list and prioritization tool is a “living” document that will be updated and maintained by TPDF staff over time, whereas this Technical Report merely provides the background documentation for the structure and development of the TPPT. As such, the list will evolve as existing projects progress toward completion and new projects are developed. Such projects will be added to the list and evaluated by TPDF staff at minimum annually.

Finally, four issues were identified but not addressed in tool development. Subsequent updates may consider incorporating these changes to enhance the usability of the tool.

- “High” crash history should be defined, perhaps through a crash rate threshold or an indexing metric such as used by other transportation agencies
- Criteria should be refined to be specific to project funding levels/magnitude
- Once a Complete Streets street classification typology has been developed, it should be incorporated into the tool to differentiate streets by importance
- A parallel method of prioritization for planning efforts in addition to projects should be developed as needed.