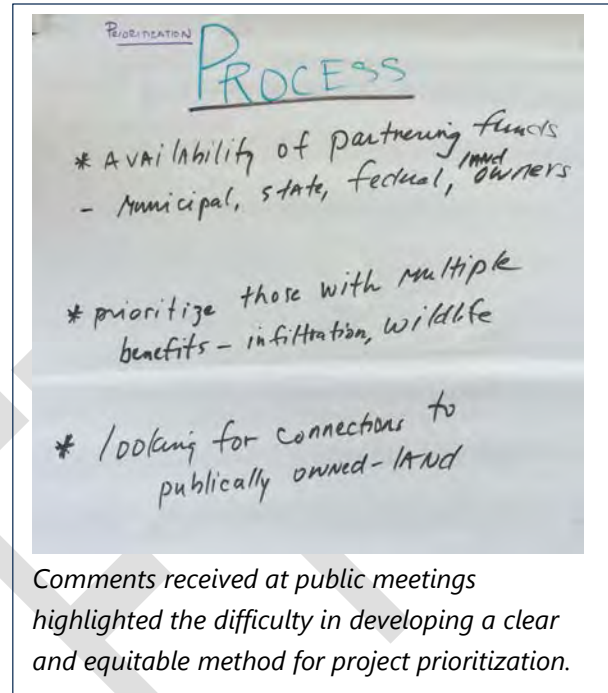


4.0 Project Prioritization Process

During the initial stages of its Watershed Management Plan (Plan) development, the District solicited stakeholder input on watershed management issues through a public engagement process. The results of the public engagement process identified "project prioritization" as an issue of high importance to stakeholders.

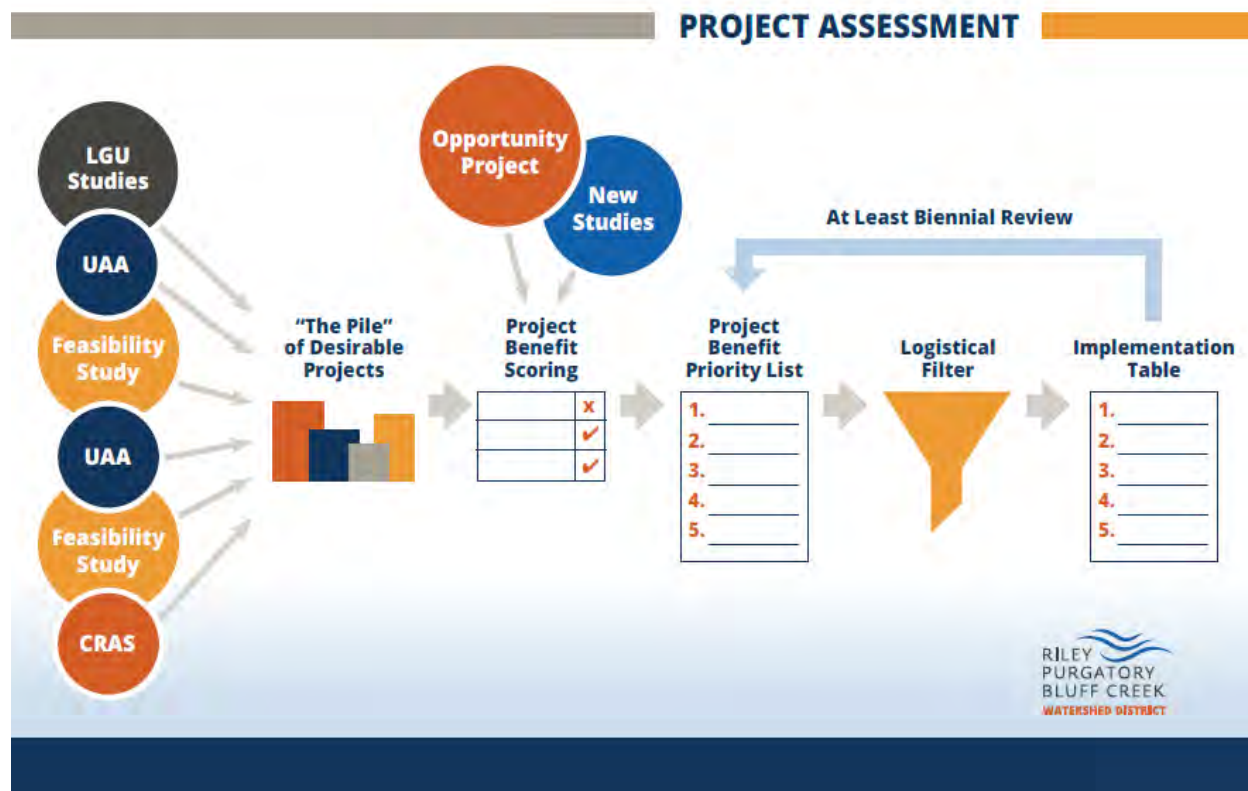
To address this concern, the District developed a proposed project prioritization method to allow a quantitative comparison of proposed projects of diverse types and benefits. This section summarizes the proposed method for scoring projects based on multiple benefits and prioritizing those projects with consideration for logistical factors. This method is applicable to District projects; District programs and ongoing operations (e.g., education program) are not subject to this prioritization method. The methodology was adjusted and enhanced during the planning process in response to comments received from the Citizen Advisory Committee, Technical Advisory Committee, and the Board of Managers. The process is summarized in Figure 4-1.



With its 2018 Plan, the District has proposed a project prioritization process that quantitatively considers project benefits and feasibility constraints. Projects identified in District studies, partner studies, and identified by cities are included in this process. Projects are scored according to nine benefit categories and a total benefit (see Section 4.1). Projects are sorted by major watershed, upstream to downstream, and ranked from greatest benefit to least benefit in the project benefit priority lists (see major watershed sections for Bluff Creek (Section 6.0), Purgatory Creek (Section 7.0), and Riley Creek (Section 0)). Projects with benefit scores greater than a District-identified minimum benefit score (currently 30 points) are prioritized in an implementation table (Table 9-1) with consideration for logistical factors (see Section 9.2.1) affecting the feasibility of project completion. The project benefit priority lists are living documents updated as new projects are identified and existing proposed projects are modified. The

District recognizes that projects with total benefit scores below 30 may be added to the implementation ranking under special circumstances, including but not limited to those described in Section 4.1.10.1.

Figure 4-1 Capital Project Assessment Process



4.1 Scoring of Projects

The prioritization method considers nine factors relating to potential project benefits. These factors include:

1. District goals
2. Sustainability
3. Volume management
4. Pollutant management
5. Habitat restoration
6. Shoreline/streambank restoration and stabilization
7. Watershed benefits
8. Partnership opportunities
9. Public access and education

A numeric score is assigned to each factor based on a quantitative or semi-quantitative analysis of a project's potential to achieve that benefit. Possible scores range from 1 to 7 (derived from the scoring system used in the District's Creek Restoration Action Strategy, or CRAS, process), with the exception of the District goals score, which can range from 1 to 6, reflecting the 6 District water resource goals included in the Plan (see below). The total project score is the sum of the individual 9 factor scores. Scoring for each of the nine factors listed above is detailed in the following sections.

4.1.1 District Goals Metric

A project is assigned a score from 1 to 6 based on how many of the District's six water resource goals are addressed by the project (note: the District will not pursue projects that fail to meet at least one District water resource goal). The District's six water resource goals include:

- Protect, manage, and restore water quality of District lakes and creeks to maintain designated uses.
- Preserve and enhance the quantity, as well as the function and value of District wetlands.
- Preserve and enhance habitat important to fish, waterfowl, and other wildlife.
- Promote the sustainable management of groundwater resources.
- Protect and enhance the ecological function of District floodplains to minimize adverse impacts.
- Limit the impact of stormwater runoff on receiving waterbodies.

A project receives a point for a water resource goal only if the project is specifically intended to address that goal and the extent to which the project addresses that goal can be quantified. For example, projects that reduce pollutant loading to a waterbody may indirectly improve aquatic habitat, but will not receive a point for enhancing habitat unless the pathway to the benefit is defined and the benefit is quantified.

Table 4-1 District Goals Metric Scoring Criteria

District Goal Score	Description
1	Addresses 1 RPBCWD Water Resources Goal
2	Addresses 2 RPBCWD Water Resources Goals
3	Addresses 3 RPBCWD Water Resources Goals
4	Addresses 4 RPBCWD Water Resources Goals
5	Addresses 5 RPBCWD Water Resources Goals
6	Addresses 6 RPBCWD Water Resources Goals

4.1.2 Sustainability Metric

A project is assigned a sustainability score of 1, 3, 5, or 7 based on a sustainability index calculated using a modified Envision™ sustainability rating system. The Envision™ rating system is a project assessment and guidance tool for sustainable infrastructure design developed by the Harvard Graduate School of Design, the American Society of Civil Engineers (ASCE), the American Public Works Association (APWA) and the American Council of Engineering Companies (ACEC). The Envision™ rating system defines sustainability as “a set of environmental, economic and social conditions in which all of society has the capacity and opportunity to maintain and improve its quality of life indefinitely without degrading the quantity, quality or the availability of natural resources and ecosystems” (Infrastructure, 2012). The Envision™ rating system assigns points based on the degree to which a project achieves criteria associated with specific sustainability credits. These credits are divided into the following five categories:

- Quality of life
- Leadership
- Resource allocation
- Natural world
- Climate and risk

The Envision™ rating system was designed to be applicable to a broad range of infrastructure projects. The District has modified the Envision™ rating system to make the criteria and credits more applicable to the activities of a watershed management organization and reduce the level of effort needed to score projects. These modifications include:

1. Criteria for credits were modified into yes/no questions (1 point for yes, 0 points for no)
2. Criteria language was modified to more closely align with District goals and strategies
3. Some additional criteria questions were added to account for District goals and strategies (most within the natural world category)

The first modification was made for two reasons: (1) to simplify the scoring process, and (2) to reflect the level of project definition that can be reasonably expected at the feasibility level, when it is anticipated that most projects will be scored. The second and third modifications adapt the Envision framework more specifically to the vision,

mission, and goals of the District. The credits were not modified from the original Envision framework. However, the criteria language was revised to more closely align with specific goals and strategies developed by the District. For some credits, the criteria include a single question with language that is either: 1) based on Envision language and revised to most accurately represent the application of the Envision credit to RPBCWD projects, or 2) based on language from the District goals and strategies rephrased as a yes/no question. For some credits, additional criteria were added to reflect increased focus of the District on the resource or practice associated with that credit. For example, the original Envision framework includes a single credit for “manage stormwater.” Four criteria were used to reflect the District’s multiple stormwater management objectives.

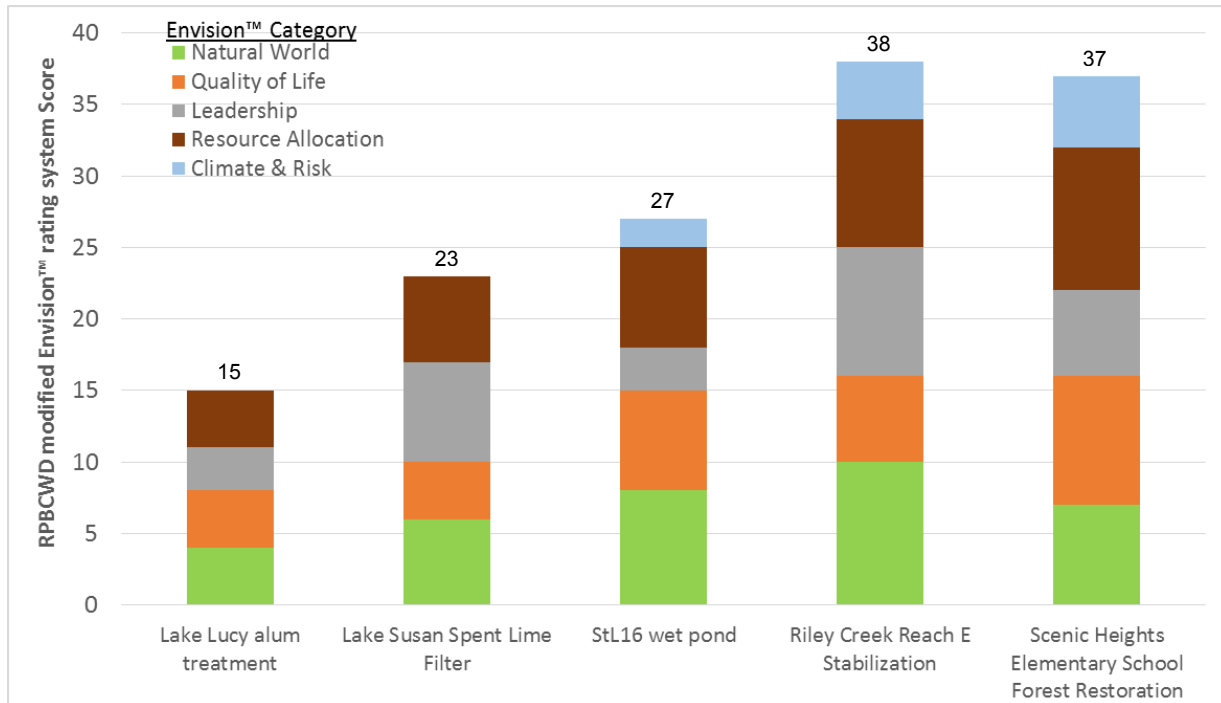
A list of the Envision credits and criteria questions developed for each credit are presented in a table included in Appendix D. Most of the credits with multiple criteria questions are included within the natural world category. The criteria questions are phrased such that a “yes” is a positive response (i.e., a benefit); a “yes” answer earns 1 point. Zero points are earned for a “no” answer. In total, there are 56 credits and 81 possible points to be earned, distributed among the categories list in Table 4-2.

Table 4-2 Modified Envision Rating System Credits

Category	Credits	Possible Points
Quality of life	12	18
Leadership	9	10
Resource allocation	13	15
Natural world	15	30
Climate and risk	7	8
Total	56	81

During the initial sustainability scoring of several projects it became evident that project types (e.g., wet detention pond, streambank restoration, internal nutrient load control, etc.) would generally score within a few points of each other (i.e., a wet pond in one portion of the watershed would have a similar score at a different location in the watershed). The figure below shows the five projects that were scored using the modified Envision™ rating system.

Figure 4-2 Summary of the Five Project Types that were Scored Using the Modified Envision™ Rating System



The sustainability score was normalized based on a range of modified Envision™ rating system score for the following two reasons: 1) similar project type would produce a similar score regardless of location and 2) the Citizen Advisory Committee, Technical Advisory Committee and Board comments about the level of effort needed to process each project through the modified Envision™ rating system. The modified Envision™ rating system score for each project is classified as Low, Medium, High, or Exceptional and assigned a score of 1, 3, 5, or 7 as shown in Table 4-3.

Table 4-3 Sustainability Metric Scoring Criteria

Sustainability Score	Modified Envision™ Rating System Score	Sustainability Index
1	0-10	Low
3	11-20	Medium
5	21-30	High
7	>30	Exceptional

4.1.3 Volume Reduction Metric

A project is assigned a volume reduction score of 1, 3, 5, or 7 based on the amount of runoff from impervious area that is abstracted on site. Abstraction includes, but is not limited to, infiltration, water reuse, and evaporative uses. Projects without impervious area or volume abstraction are assigned a minimum volume score of 1. Scores are correlated to the abstracted volume as shown in Table 4-4:

Table 4-4 Volume Reduction Metric Scoring Criteria

Volume Score	Abstracted Volume ¹	Volume Index
1	No Abstraction	Low
3	Up to 0.55" Abstraction	Medium
5	0.55" to 1.1" Abstraction	High
7	>1.1" Abstraction	Exceptional

¹ Abstraction volume as estimated from impervious surface in tributary watershed. Conversion of impervious surface to pervious area would be scored based on the amount of impervious reduction (25-50% reduction =3, 50-75% reduction = 5, >75%=7)

4.1.4 Pollutant Management

A project is assigned a pollutant management score of 1, 3, 5, or 7 according to the project's relative effectiveness in reducing pollutant loading to downstream resources. Pollutant reduction is quantified as the percentage of the pollutant reduction or protection goal for a given resource. Target load reductions are defined in District resource management plans (e.g., UAAs). For projects addressing multiple pollutants and/or resources, the maximum percent reduction among all pollutants and resources will be considered. Projects without a pollutant reduction benefit will receive a minimum score of 1. Table 4-5 correlates a scores to the pollutant reduction.

Table 4-5 Pollutant Management Metric Scoring Criteria

Pollutant Score	Percent of Pollutant Reduction Goal Attained by Project	Pollutant Index
1	<5%	Low
3	5-10%	Medium
5	11-30%	High
7	>30%	Exceptional

4.1.5 Habitat Restoration Metric

A project is assigned a habitat restoration score of 1, 3, 5, or 7 according to the extent that a project will improve habitat. Projects with no habitat benefit receive a minimum score of 1. Projects likely to achieve habitat benefits as a secondary project benefit receive a score of 3. Projects that include replacement of existing habitat with improved habitat receive a score of 5. Projects which include habitat creation or enhancement as the primary purpose of the project receive a score of 7. Projects including restoration of stream reaches will be evaluated using the Minnesota Pollution Control Agency's (MPCA's) Minnesota Stream Habitat Assessment (MSHA) methodology (detailed in Appendix A of the District's CRAS study). The MSHA process creates a score based on a variety of stream habitat characteristics, including both in-stream and riparian features. The lower the MSHA score, the more degraded the habitat, resulting in greater potential benefit that could be gained from a restoration project. Where MSHA scores are available, the habitat restoration score will be based on the MSHA score as in Table 4-6.

Table 4-6 Habitat Restoration Metric Scoring Criteria

Habitat Score	Benefit Description	MSHA Score (for CRAS projects)	Habitat Quality
1	No habitat benefit	76-100	Excellent
3	Little habitat benefit – side benefit	51-75	Good
5	Replace existing habitat with improved habitat	26-50	Fair
7	Primary purposes is habitat restoration	1-25	Poor

4.1.6 Shoreline/Streambank Restoration and Stabilization Metric

Streams naturally migrate through the landscape, transporting sediment from upstream to downstream. Stable streams are often referred to as being in "dynamic equilibrium" with their respective watersheds. Even with the best efforts to manage stormwater and runoff, development alters hydrology, which disrupts the dynamic equilibrium between the stream and its watershed. Moderate and severe disruptions can cause significant channel and bank instability, contributing to water quality degradation and the amount of sediment and phosphorus entering into the District's wetlands, lakes, creeks, and eventually to the Minnesota River.

The severity of channel erosion and stability was assessed using the Modified Pfankuch Channel Stability Rating Procedure (Pfankuch, 1975). Stream reaches were divided into sub-reaches, as appropriate, and scored using the Pfankuch assessment, which is based

on evaluating the upper banks, lower banks, and bed of the stream considering the stream type as identified by the Rosgen Classification System (Rosgen, 1994). A higher Pfankuch score represents a more degraded, less stable stream. Ranges of Pfankuch scores for each stream type were associated with CRAS scoring categories, as shown in below.

A project is assigned a shoreline/streambank restoration and stabilization score of 1, 3, 5, or 7 based on the length of streambank or shoreline restored and level of existing degradation. This metric is applied to projects with a designed restoration component (versus indirect benefits). Projects without a designed shoreline or streambank restoration component are assigned the minimum score of 1. This score is applied to shoreline and streambank projects only if the pollutant management score is not estimated (as both metrics address sediment loading to District resources).

A project is scored according to the existing level of shoreline or streambank degradation, as identified in the District's CRAS study or TMDL study, if applicable. If the applicable reach or shoreline has not been evaluated in a CRAS or TMDL study, the project is scored according to the length of shoreline restored and/or stabilized. Scores are assigned as outlined in Table 4-7.

Table 4-7 Shoreline Restoration and Streambank Stabilization Metric Scoring Criteria

Shoreline Score	Length Improved	TMDL Description	CRAS Description	Rosgen Stream Type					
				B-5	C-4/C-5	E-5	E-6	F-4	F-6
1	<100 feet	Stable	Very stable	58-57	70-79	50-62	40-51	85-97	80-87
3	100-499 feet	Minor	Moderately stable	58-68	80-90	63-75	52-63	98-110	88-95
5	500-1000 feet	Moderate	Moderately unstable	69-88	91-110	76-96	64-86	110-125	96-110
7	>1000 feet	Severe	Unstable	89+	111+	97+	87+	126+	111+

The specific streambank or shoreline restoration design does not factor into the project's score. All streambank and shoreline stabilization projects are subject to best management design practices and subject to District policies and rules prioritizing natural materials and techniques over hard armoring methods (e.g., riprap).

4.1.7 Watershed Benefits Metric

The District recognizes that some projects have notable benefits that extend beyond the nearest downstream resource and across the watershed. For example, a stabilization project completed at a headwater location on a stream may provide greater benefit by directly or indirectly improving or preserving the downstream reaches of a stream.

Each project is assigned a score of 1, 3, 5, or 7 based on the percent of the watershed downstream of a project, as described in Table 4-8. A higher score in this category corresponds to sites closer to the headwaters of the watershed, which may have greater positive effects for the entire watershed if improved. The watershed benefit score is calculated based entirely on location and does not consider the magnitude of intended project benefit (e.g., amount of pollutant reduction).

Table 4-8 Watershed Benefits Metric Scoring Criteria

Watershed Score	Percent of watershed downstream of project	Description
1	<25%	Limited watershed benefits
3	25-49%	Low to moderate watershed benefits
5	50-75%	Moderate to high watershed benefits
7	>75%	Significant watershed benefits, headwater site location

4.1.8 Partnership Opportunities Metric

The ability to partner with local groups and agencies within the District is important because it distributes costs, builds working relationships between different groups, and allows additional resources for larger and more comprehensive projects to be implemented and effectively managed. Projects are awarded a score of 1, 3, 5, or 7 based on the number of partners as shown in in Table 4-9. A project receives the maximum score of 7 if one or more of the partners is a financial contributor to the project.

Table 4-9 Partnership Opportunities Metric Scoring Criteria

Partnership Score	Description
1	No partnership
3	Single partner
5	Multiple partners
7	One or more partners with financial support

4.1.9 Public Access and Education Metric

Spreading awareness of District projects and their benefits to residents and users of the watershed is a key component of the District's Plan. The ability to create conversations and engage the public about how the District is improving water resources has the potential to increase water resource stewardship and implementation of best management practices within the community.

Similarly, the District seeks to promote opportunities for residents to access and enjoy the natural resources in the watershed. Interaction with these resources fosters higher quality of life while reinforcing public awareness and support for their protection, restoration, and management. During the public engagement process the stakeholders were asked to describe how they use the lakes, creeks, ponds and wetlands in the community or surrounding communities. Just over 80% of respondents identified wildlife watching and recreation adjacent to waterbodies as the most popular uses. Other recreational activities such as canoeing, swimming, and fishing were each selected by more than half of the survey respondents.

The potential for project sites to be accessed by the public and serve as educational resources to the public (through use of signage and interpretive materials), increase overall awareness of District efforts. Promoting recreational access to resources is another consideration in prioritizing District projects. Projects are awarded a public access and education score of 1, 3, 5, or 7 as shown in Table 4-10.

Table 4-10 Public Access and Education Metric Scoring Criteria

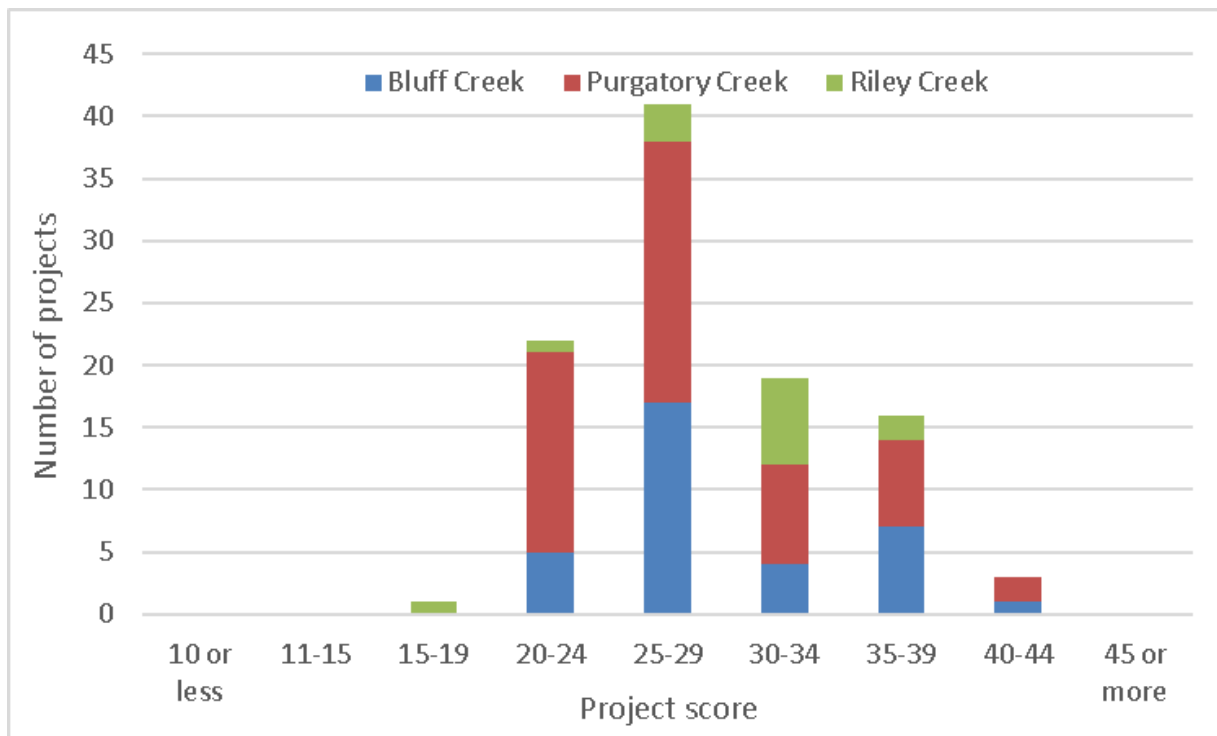
Public Access/Education Score	Description
1	Project is located entirely on private property and access would be limited almost exclusively to surrounding private residents
3	Project is accessible by private residents with part of the area accessible to the public
5	Project is located in a park or other public land but is not easily accessible
7	Project is located on public land that is highly visible and accessible (e.g., adjacent to trails, beach, or boat landing)

4.1.10 Total Benefit Score

A project's total benefit score is the sum of the scores for each of the nine benefit categories (note that streambank and shoreline restoration projects receive a score for pollutant reduction OR shoreline restoration, but not both). Possible scores range from 8 (least desirable) to 55 (most desirable). Preliminary scores for proposed District

projects range from 18 to 43, with an average project score of 29, and a median project score of 28. A histogram of project scores, subdivided by major watershed, is shown in Figure 4-3.

Figure 4-3 Histogram of Project Score by Major Watershed



4.1.10.1 Ranking and Sorting Projects by Benefit Score

Projects are separated into three lists according to their major watershed (Bluff Creek, Purgatory Creek, and Riley Creek), sorted from upstream to downstream based on the watershed benefit index and ranked in decreasing order by total benefit score. The resulting lists are referred to as project benefit priority lists. Projects with scores above 30 are carried forward to the next step in the prioritization process: implementation ranking. Projects with total benefit scores below 30 were reconsidered as needed to achieve the logistical considerations and remain on the District's project list for future consideration or re-evaluation. Projects with total benefit scores below 30 may be added to the implementation ranking under special circumstances, including but not limited to:

- Coordination with an imminent cooperator/project partner (e.g., redevelopment project)
- Outside funding that significantly reduces the District project costs

-
- Significantly increased environmental and/or public health risks if no action is taken
 - Project sequencing strategies prior to internal load reduction measures

The District recognizes that it is not necessarily most efficient, or even possible, to implement projects with the greatest benefit score from the prioritization process first. Therefore, when developing the Capital Improvements Program (see Section 9.2), the District considered additional logistical factors affecting project feasibility to determine an appropriate schedule for implementing the projects with greatest benefit in the most efficient manner possible (see Section 9.2.1). The District will update and re-sort the project priority lists as new projects are identified and evaluated as part of District studies, TMDLs, WRAPS, City implementation plans, and other sources. The District will not re-evaluate the scores of proposed projects already scored unless changes are made in the scope of the project.