# Integrated Stormwater Management Project Prioritization Model
# Divisional Implementation Plan

**[Updated August 28, 2015]**

Overview of Divisional CIP Program Integration

- The Integrated Stormwater Project Prioritization Model (the Model) is distributed to the Program Managers (Sectional Heads) and Sectional Teams across the Stormwater Management Division.

- Each team uses the Model to help identify, rate, and store potential projects on an ongoing basis throughout the year as best determined by each Program Manager. The Project ID format is set up to recognize the group that is evaluating/managing a given project. A field to indicate the status of the project will also be included within the Model, i.e., preliminary, budgeted, active, and complete. Further, the Model will indicate the original date of project evaluation as well as the most recent update, if/as applicable.

- Program Managers retain responsibility for assigning, reviewing, checking, and approving all projects identified and evaluated within their sectional program area. Program Managers are responsible for assigning and empowering staff within their sectional teams to help identify potential projects that are then applied with and through the model. Scoring metrics and guidance are summarized within the model under each of the nine main scoring criteria tabs. Drop down menus also help provide a basis for consistent scoring. Training/orientation sessions for model utilization are also provided for staff.

- Each group within the Division develops and stores their projects in a sectional master file(s) of projects.

- On a regular quarterly basis throughout the year, projects evaluated, reviewed, and checked at the sectional level are copied into an integrated divisional master file of potential CIP projects to be considered and prioritized for budgeting and subsequent implementation upon official approval and authorization.

- Tentative Schedule for Quarterly meetings: February, May, August, and November
    - Assuming that CIP budget information is submitted in January of each year with an update to SMAC prior
    - Each quarterly meeting no more than two hours, unless additional time needed
    - Strategic Planning team will facilitate the CIP development team meetings with Program Managers, in concert with and under direction of the Division Manager

- Strategic Planning team in concert with the Budget team, ahead of the quarterly projects leadership team meetings, reviews/sorts/organizes/analyzes the updated developing divisional CIP portfolio for the group's review.

    - 1-year CIP , 5-year CIP

- The developing divisional CIP portfolio is reviewed and vetted by the projects leadership/management/budget team during the quarterly meetings. Strategic level updates are provided to SMAC following the quarterly CIP development meetings, culminating in the annual CIP program budget recommendations.

- As a best practice consistent with the City's strategic goal of organizational excellence, any continual improvement/adaptive management updates to the Model as identified by the team throughout the year are regularly noted, discussed, and incorporated ahead of the upcoming fiscal calendar year. Updates are also provided to the SMAC and City Council, as appropriate, on any revisions/continual program improvements, etc.

<u>Program Benefits of Integrated Stormwater CIP Prioritization</u>

In addition to direct benefits from the Model implementation in terms of a quantitative, comprehensive, replicable, and systematically prioritized Stormwater CIP, the Model also provides strategic program level benefits including the following -

- The Model framework, developed in close collaboration across the Stormwater team and with significant SMAC input and guidance, encourages an integrated, efficient, effective, and strategic approach to stormwater management. Preferred projects will help achieve both stormwater quality and stormwater quantity management needs and goals.

- The Model framework and criteria help identify and reward stormwater projects that are compatible and aligned with the City's Strategic and Comprehensive Plans, thereby contributing to overall community quality of life and helping advance the City of Raleigh.

- The Model provides clear and direct insights towards the City's vetted priorities for Stormwater Management in terms of the Capital Improvement Program.

- The Model helps create an environment and framework within the Stormwater Program for enhanced watershed management and master planning.

- The integrated Model framework encourages innovative thinking that advances understanding of stormwater as a community and water resource asset at the same time as we continue to seek ways and means to further mitigate potential hazards, liabilities, or water quality challenges associated with excess runoff and/or inadequate stormwater management systems.

- The Model provides a comprehensive range of relative quantitative scores along with cost efficiency ratings for potential projects. The Model therefore provides a key tool for identifying optimal usage of limited available authorized resources for the community.

- The integrated framework and implementation plan for the Model helps create a more collaborative culture and divisional team-based approach within the Stormwater Management Program. The divisional team is encouraged and empowered to work together to identify multi-purpose projects as well as share developing project information throughout the year, not just concentrated during the budget season.

- The Model represents a leading practice example of the continued development of the City's Stormwater Management Program and Utility consistent with organizational excellence.

<u>Overview of Project Inputs, Basic and Integrated Criteria, Scoring Guidance, and Model Scoring Results</u>

The balance of this implementation guidance document serves to outline the Model and how projects are generally scored along with interpretation and application of scoring results. As with any model or method, professional judgment cannot be supplanted and must be utilized in proper application of the model to specific situations under evaluation. However, the integrated and vetted model framework, scoring approach with detailed information and drop-down menus where fitting and practicable for each criteria/sub-criteria, and cross-divisional knowledge sharing will help facilitate generally consistent scorings and evaluations of projects across the division.

Program Managers maintain responsibility for review of (potential) projects evaluated within their section while the Division Manager maintains overall responsibility for the Divisional CIP program. Support for both will come from the Strategic Planning and Budget teams throughout the year including facilitation of the quarterly CIP leadership team meetings. The Model and implementation document will be reviewed and updated annually, at a minimum, if/as needed.

***Project Inputs***

Following is a summary of basic input information required for the Model.

- **Project Identification (ID) Number** is assigned in the format of "PROGRAM-YEAR-000x"
    - The Program Code is the three digit number identifying the section within the Stormwater Management Division that is evaluating the project, e.g., 210 for the CIP Infrastructure Program.
    - As an example, the first project evaluated by Program 210 in calendar year 2015 would have an ID Number of 210-2015-0001. The second project evaluated by Program 210 in calendar year 2015 would have an ID Number of 210-2015-0002, and so on.
    - The first project evaluated by Program 216 (Drainage Assistance Program) in calendar year 2015 would have a unique ID Number of 216-2015-0001.
    - Each project will have and maintain a unique ID Number.
    - Each project evaluated will be saved and archived by the section and division for future use/reference purposes.

- **Project Name** is given by the evaluator/program manager. There is no specific format for project name although it is recommended that the name be as concise and descriptive as possible.
    - Examples would include
        - "Northshore Lake Rehabilitation"
        - "Cambridge Road Culvert Replacement"
        - "123 Maple Street Cistern"

- **Project Location** is generally the nearest street(s) in relation to the (proposed) project. As with the Project Name there is no strict format, but rather is left to the discretion of the Staff Evaluator/Program Manager. (Note - the Project ID above provides the unique identification tag for each and every project.)

- **River Basin** is consistent for all projects within the corporate limits of Raleigh **– the Neuse River Basin**. This section of the project input data is automatically populated with the river basin information.

- **Watershed** is the major watershed location for the project under evaluation. Major watersheds include Crabtree, Walnut, Perry, and the Neuse. Areas that drain directly to the Neuse River are included within the "Neuse" watershed descriptor.

- **Sub-Watershed** is the sub-watershed location for the project. "Sub-watersheds" are consistent with the "City Drainage Basins Map" that has been utilized by Stormwater to date.

- **Watershed Area** is the area of the watershed (or drainage basin) in ACRES as measured at the most downstream point of interest of the project or study.

- **Parcels Directly Impacted by Project** is the number of parcels that would be directly impacted (and also generally directly benefitted) by the proposed capital design/construction improvements. This is generally parcels where the City obtains easements in order to perform system improvements in addition to parcels directly contiguous with existing right of way where improvements are proposed. For drainage assistance (drainage petition) and stormwater quality cost share projects this may generally be the number of individual parcels participating in the project. For any project, a simple way to approach this is to examine the entire "footprint" of the proposed improvements. Parcels within the "footprint" of the improvement area would be included within this field.

- **Council District** is the City Council District location (A, B, C, D, or E) for the project.

- **Lead Group for Project** is the program section within the Stormwater Division that is leading evaluation of the project.

- **General CIP Program Category of Project** is the general CIP category for the project. The general CIP categories include CIP (this is both for Infrastructure and Water Quality CIP), DA (Drainage Assistance/Petitions Program Projects), SWQCS (Stormwater Quality Cost Share), CIP-HM (CIP Hazard Mitigation), and Other. Also select CIP Sub-Category, if known.

- **Primary Type of Project** is the type of stormwater management project within the general CIP category. Select "Integrated" if the project is intended to meet more than one objective, i.e., both water quality and quantity.

- **Project Scope** is a concise description of the proposed project improvements. Also note project stage.

- **Water Quality Performance Parameters for Project**
    - If/as applicable, provide the total annual load of TN and TSS reduced by the project in units of total pounds (lbs) per year.
    - As there are different technical methods for estimating pollutant loads and load reductions, the evaluator and program area manager should determine the method most applicable to the given project under evaluation.

- **Project Cost Information**
    - Provide an estimate of the study/engineering design cost ($, estimated)
    - Provide an estimate of the construction cost ($, estimated), if applicable
    - The total project cost estimate is then computed by the model based on above information entered by the user

- **Evaluated by** is the staff team member that is evaluating the given project. Be sure to also enter the date that the evaluator completes a given evaluation along with the most recent date.

- **Evaluation checked by** is the Program Manager or Division Manager, as applicable. Be sure to also enter the last (most recent) date that the evaluation is checked.

At this point the user is ready to begin the formal preliminary evaluation/scoring for a given project. Additional, more specific information regarding the stormwater-related needs for the given project (i.e., flood information, infrastructure condition, easements required, etc. as applicable) and improvements that would result from the project will be required in order to effectively score the project. The information required for individual evaluations will naturally vary from project to project, depending upon the extent and scope of the stormwater management need and improvement under consideration. More extensive and complex projects will generally require more information than simpler, less comprehensive projects. Ideally, projects are integrated to the extent possible to advance multiple stormwater management goals and priorities.

As desired by the user and program manager, a vicinity map, project notes, and representative project photos may also be incorporated into the project rating worksheet. These are not required but may be helpful for reference information.

More summary information is provided for the **basic eligibility and integrated prioritization criteria** below. Detailed yet user friendly **scoring metrics and guidance for each of the nine main criteria and sub-criteria items is provided within the Model on the individual worksheet tabs (the blue tabs)**.

***Basic Eligibility Criteria***

Per the table below, there are three or four basic eligibility criteria, depending upon the type of project under evaluation. For CIP projects that do not require cost-share, basic eligibility criteria B1, B2, and B3 apply. Note that B4 only applies to Drainage Assistance and Stormwater Quality Cost Share Projects. Another caveat is that Stormwater Quality Cost Share projects are the only projects that do not require public runoff.

| |
|---|
| B1. Project located within corporate limits of Raleigh |
| B2. Project receives and/or conveys public runoff* |
| B3. Project is compatible with City Strategic Plan + Comprehensive Plan |
| B4. For DA and SWQCS projects ONLY, petitioner(s) utility fee payment(s) current |
| [*Stormwater Quality Cost Share (SWQCS) projects are the only exception to B2] |

**B1** – Projects must be located within the corporate limits of Raleigh to be considered. Projects within the City's ETJ but outside the current corporate limits are <u>not eligible</u> as these areas are not subject to the City's Stormwater Utility User Fee. Municipal stormwater services, programs, and projects are only available to areas within the corporate limits of the City of Raleigh.

**B2** – Projects must receive and/or convey public runoff. Public runoff is defined as any runoff from a public street right of way and/or public land area.

**B3** – Projects must be generally compatible with the City's Strategic Plan and Comprehensive Plan. The default is "yes" for this basic criteria item unless the evaluator/program area manager/division manager determines that a proposed project would not be compatible with the spirit and intent of the City's broader plans. (Within the integrated scoring criteria, under Indirect Community Benefits, there is a separate item for the overall level of consistency with the City's plans. A checklist is provided.)

***Integrated Prioritization Criteria***

Following (on page 8 and 9) are the **nine integrated prioritization criteria** along with the sub-criteria under each. Scores for the individual items are generally from 0 to 10. The criteria and sub-criteria are also weighted accordingly based upon SMAC, Staff, and Management review and feedback. For example, Public Safety and Public Health receives a priority weighting of 17% towards the overall score. Flood Hazard Reduction Benefits receives a 14% priority weight towards the overall score yet is sub-categorized and sub-weighted in terms of street flooding, structural flooding, and non-structural flooding, respectively.

A drop-down menu is provided within the Model to help facilitate applicable scores for each item. In some cases only certain metric scores between 0 and 10 have currently been identified as fitting and these are reflected in the drop-down menus.

**The maximum score for each individual item is 10 and the minimum score is either 0 or 1, as applicable**. Within the Model there are **detailed scoring metrics/tables for each of the nine criteria and sub-criteria**. For ratings that are computed round to nearest whole number in drop down menu.

**Note that the score for each of the main criteria is generated by the Model based upon the user's scoring of each of the sub-criteria. Please consistently refer to the blue tabs integrated within the Model workbook for detailed item by item metrics and guidance. The summary tables are also provided as an appendix (Appendix 1) to this document for reference purposes.**

**Public Safety and Public Health**

PSH 1. Threat to human life
PSH 2. Threat to emergency access/critical location
PSH 3. Other (non-life) threat to public safety/health

**Flood Hazard Reduction Benefits**

FHR 1. Street Flooding
FHR 2. Structural Flooding
FHR 3. Non-Structural Flooding

**Regulatory Mandates and Compliance**

RMC 1. NPDES MS4 Stormwater Permit/Stormwater Management Program
RMC 2. Other Local, State, Federal Regulatory Programs

**Water Quality Benefits**

WQ 1. Priority Water Quality Area
WQ 2. Pollutant Treatment/Pollutant Load Reduction benefits
WQ 3. Erosion/Sediment Control/Sediment Load Reduction benefits

**Watershed Management Benefits**

WM 1. Stream system/riparian area functional benefits
WM 2. Protect/restore floodplain functions
WM 3. Protect/restore natural hydrologic conditions
WM 4. Linkage to watershed/basin master plan/phased system improvements
WM 5. Known stormwater problem area/valid complaints history

**Stormwater Infrastructure Asset Management Benefits**

AM 1. Infrastructure condition/effective service life
AM 2. Infrastructure capacity/level of service
AM 3. Consequence/risk of infrastructure failure
AM 4. Infrastructure asset operation & maintenance benefits/cost savings

**Community Support and Implementation Complexity**

CSIC 1. Level of community support/acceptance

CSIC 2. Right-of-Way (ROW)/Easement availability

CSIC 3. Project regulatory permitting/mitigation requirements

CSIC 4. Public and private utility impact/relocation considerations

**Resource Leveraging Opportunities**

RL 1. Grant funding opportunity

RL 2. Public-private (non-City) funding partnership opportunity

RL 3. Attractive/beneficial loan funding opportunity

**Indirect Community Benefits**

ICB 1. Leading/innovative Stormwater Management (SWM) practice

ICB 2. Integral public educational opportunity

ICB 3. Opportunity to collaborate area improvements with other department(s)

ICB 4. Level of consistency with City Strategic Plan + Comprehensive Plan

***Scoring Results Guidance***

Following are the primary scoring results provided by the Model upon input of accurate information by the user regarding the proposed project. **Total Project Score (TPS), Safety Criticality Score (SCS), and Mission Criticality Score (MCS)**. Each score is normalized by the Model to a 100 point scale. A fully ideal and completely integrated project would, in theory, receive a maximum score of 100. A negligibly beneficial project would receive a score at or near zero.

| Total Project Score (TPS) | Safety Criticality Score (SCS) | Mission Criticality Score (MCS) |
|---|---|---|
| (0 - 100) | (0 - 100) | (0 - 100) |

In practice, it will be virtually impossible for any project to receive scores at either extreme end of the total scoring spectrum due to the comprehensive and integrated nature of the Model along with practical realities of on the ground projects or even master planning studies. This is all exactly as intended and desired by SMAC and the Stormwater team, and consistent with the City's broader plans and goals. The Model framework encourages stretch goals for

projects (and the Stormwater Program) along with multi-purpose, multi-beneficial attributes for the community served.

The **Total Project Score (TPS)** is the overall total score for the project (0 to 100) under evaluation based upon scorings for all of the nine integrated criteria. All things else being equivalent amongst competing projects the TPS provides the most comprehensive surrogate indicator of the total value or benefits from a given (proposed) project with respect to other projects. In general, the higher the TPS the better.

The **Safety Criticality Score (SCS)** is the normalized score (0 to 100) for the priority public safety and public health criteria alone. It is helpful to have the SCS in concert with the TPS and other scores for consideration in terms of developing the CIP implementation plan. For example, there may be projects that receive similar TPS scores yet significantly different SCS scores. Safety criticality scores, along with other information provided by the Model, can help provide insights towards final implementation recommendation rankings for capital improvement projects. The higher the SCS, the more critical the project is in terms of public safety and public health, the highest priority criteria.

The **Mission Criticality Score (MCS)** represents the normalized score (0 to 100) from the top four most important criteria. The MCS effectively represents the score for mission critical goals within the Stormwater Management Program and CIP program. There will often be a relatively strong correlation between the MCS and TPS but not always. Consider a project that may have many stormwater and community-related benefits in terms of five of the nine integrated criteria but may not score as high on some or all of the top four mission critical criteria.

> *As discussed during the very early stages of the Integrated Stormwater Project Prioritization Model development by the team and SMAC, it was noted that the **relative scores** between and amongst competing project opportunities is a real key towards effective Model usage as a decision support tool. It was also noted that a single score (i.e., TPS) or even an array of scores for any project cannot identify each and every consideration that is inherent in the context of developing and implementing a Capital Improvement Program. Collective professional experience and judgment will always remain a vital component of proper application of this Model, or any model or method, along with consistent analysis and interpretation of the comparative quantifiable results.

In addition to the TPS, SCS, and MCS, other important decision support calculations and results from consistent applications of the model include:

**Cost per Area Served** – this is total project cost divided by the watershed area served by a given project and is computed as $ per ACRE. In general the lower this figure the better (i.e., more cost effective per area served) amongst otherwise equivalent competing projects.

**Cost per Number of Parcels Directly Impacted** – similar to the cost per area served estimate in concept but rather represents the total project cost in relation to the number of parcels directly impacted, also

arguably often directly benefitted, by the given project. The lower the figure ($/parcels impacted) the more cost effective in terms of parcels directly impacted.

**The two indicators for water quality performance recommended by the team for the initial Model are TN (Total Nitrogen) and TSS (Total Suspended Solids).**

> **Cost per TN reduced** – for applicable water quality projects, this calculation provides an estimate of the total cost per pound of TN removed annually. The lower the figure the better in terms of cost effectiveness for TN performance.
>
> **Cost per TSS reduced** – for applicable water quality projects, this calculation provides an estimate of the total cost per pound of TSS removed annually. The lower the figure the better in terms of cost effectiveness for TSS performance.

**Cost – Score Index** – this figure represents the total cost required to achieve a given Total Project Score (TPS). This is the total project cost divided by the TPS. The lower the figure the better in terms of cost per total point achieved by the proposed project.

## Appendix 1 – Scoring Metrics/Guidance Tables

| **Public Safety and Public Health**<br>PSH 1. Threat to human life<br>PSH 2. Threat to emergency access/critical location<br>PSH 3. Other (non-life) threat to public safety/health | **0**<br>No identifiable threat (0) | **1**<br>Minimal threat (1) | **2**<br>Minimal to low threat (2) | **3**<br>Low threat (3) | **4**<br>Low to intermediate threat (4) | **5**<br>Intermediate threat (5) | **6**<br>Intermediate to heightened threat (6) | **7**<br>Heightened threat (7) | **8**<br>Significant threat (8) | **9**<br>Very significant threat (9) | **10**<br>High/imminent threat (10) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Emergency access limited > 100 yr event | Emergency access limited - 100 yr event<br>(depth of overtopping less than 6 inches) | Emergency access limited - 50 yr event<br>(depth of overtopping less than 6 inches) | Emergency access limited - 25 yr event<br>(depth of overtopping less than 6 inches)<br><br>Emergency access limited - 100 yr event<br>(depth of overtopping 6 to less than 12 inches) | Emergency access limited - 10 yr event<br>(depth of overtopping less than 6 inches)<br><br>Emergency access limited - 50 yr event<br>(depth of overtopping 6 to less than 12 inches) | Emergency access limited - 2 yr event or less<br>(depth of overtopping less than 6 inches)<br><br>Emergency access limited - 25 yr event<br>(depth of overtopping 6 to less than 12 inches)<br><br>Emergency access limited - 100 yr event<br>(depth of overtopping 12 inches or greater) | Emergency access limited - 10 yr event<br>(depth of overtopping 6 to less than 12 inches)<br><br>Emergency access limited - 50 yr event<br>(depth of overtopping 12 inches or greater) | Emergency access limited - 2 yr event or less<br>(depth of overtopping 6 to less than 12 inches)<br><br>Emergency access limited - 25 yr event<br>(depth of overtopping 12 inches or greater) | Emergency access limited - 10 yr event<br>(depth of overtopping 12 inches or greater) | Emergency access limited - 2 yr event or less<br>(depth of overtopping 12 inches or greater) |
| | | | | Projects not involving impounded water | Projects involving impounded water, non-open (non-state regulated) | Projects involving impounded open water (non-state regulated) | Projects involving regulated low hazard dams | | Projects involving regulated intermediate hazard dams | | Projects involving regulated high hazard dams |
| | | Minimal level(s) of flooding, only minimal threat to safety<br><br>(see overall score from Flood Hazard Reduction criteria) | Minimal to low level(s) of flooding,<br>minimal to low threat to safety<br>(see overall score from Flood Hazard Reduction criteria) | Low level(s) of flooding, low threat to safety<br><br>(see overall score from Flood Hazard Reduction criteria) | (see overall score from Flood Hazard Reduction criteria) | Intermediate level(s) of flooding, intermediate threat to safety<br><br>(see overall score from Flood Hazard Reduction criteria) | (see overall score from Flood Hazard Reduction criteria) | Heightened level(s) of hazardous flooding,<br>heightened threat to safety<br>(see overall score from Flood Hazard Reduction criteria) | Significant level(s) of flooding, significant<br>threat to safety<br>(see overall score from Flood Hazard Reduction criteria) | Very significant level(s) of flooding, very<br>significant threat to safety<br>(see overall score from Flood Hazard Reduction criteria) | Dangerous level(s) of flooding, high threat to safety<br><br>(see overall score from Flood Hazard Reduction criteria) |
| | | Infrastructure failure would create only minimal safety threat<br><br>(see score from AM3) | (see score from AM3) | Infrastructure failure would create a low safety threat<br><br>(see score from AM3) | (see score from AM3) | Infrastructure failure would create an intermediate safety threat<br><br>(see score from AM3) | (see score from AM3) | Infrastructure failure would create heightened<br>safety threat<br>(see score from AM3) | Infrastructure failure would create a significant<br>safety threat<br>(see score from AM3) | Infrastructure failure would create a very significant<br>safety threat<br>(see score from AM3) | Infrastructure failure would create a high threat to safety<br><br>(see score from AM3) |
| | | | | | | | | Projects not involving safety critical facilities/locations | | | Projects involving safety critical facilities/locations |
| | | Minimal erosion, minimal safety threat<br>(80 ft or more from structure or ROW) | Modest erosion, minimal to low safety threat<br>(50 ft to less than 80 ft from structure or ROW) | Modest erosion, low safety threat<br>(30 ft to less than 50 ft from structure or ROW, not<br>actively eroding)<br><br>Modest erosion, low safety threat<br>(40 ft to less than 50 ft from structure or ROW, and<br>actively eroding) | Modest erosion, modest safety threat<br>(25 ft to less than 30 ft from structure or ROW, not<br>actively eroding)<br><br>Modest erosion, modest safety threat<br>(30 ft to less than 40 ft from structure or ROW, and<br>actively eroding) | Intermediate erosion, intermediate safety threat<br>(20 ft to less than 25 ft from structure or ROW, not<br>actively eroding)<br><br>Intermediate erosion, intermediate safety threat<br>(25 ft to less than 30 ft from structure or ROW, and<br>actively eroding) | Severe erosion, advancing threat to safety<br>(15 ft to less than 20 ft from structure or ROW, not<br>actively eroding)<br><br>Severe erosion, advancing threat to safety<br>(20 ft to less than 25 ft from structure or ROW, and<br>actively eroding) | Severe erosion, heightened threat to safety<br>(10 ft to less than 15 ft from structure or ROW, not<br>actively eroding)<br><br>Severe erosion, heightened threat to safety<br>(15 ft to less than 20 ft from structure or ROW, and<br>actively eroding) | Severe erosion, significant threat to safety<br>(5 ft to less than 10 ft from structure or ROW, not<br>actively eroding)<br><br>Severe erosion, significant threat to safety<br>(10 ft to less than 15 ft from structure or ROW, and<br>actively eroding) | Very severe erosion, very significant threat to safety<br>(5 ft or less from structure or ROW, not<br>actively eroding and/or not imminent threat)<br><br>Very severe erosion, very significant threat to safety<br>(5 ft to less than 10 ft from structure or ROW, and<br>actively eroding) | Dangerous erosion, high threat to safety<br>(5 ft or less from structure or ROW, and/or<br>highly active erosion and/or imminent threat) |
| | | Minimal threat to public health | | | | Intermediate threat to public health | | | | | High/imminent threat to public health |
| | | Also refer to score from AM3, if/as applicable | Also refer to score from AM3, if/as applicable | Also refer to score from AM3, if/as applicable | Also refer to score from AM3, if/as applicable | Also refer to score from AM3, if/as applicable | Also refer to score from AM3, if/as applicable | Also refer to score from AM3, if/as applicable | Also refer to score from AM3, if/as applicable | Also refer to score from AM3, if/as applicable | Also refer to score from AM3, if/as applicable |

| Flood Hazard Reduction Benefits | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | No flooding hazards (0) | Minimal flooding hazards (1) | Minimal to low flooding hazards (2) | Low flooding hazards (3) | Low to intermediate flooding hazards (4) | Intermediate flooding hazards (5) | Intermediate to heightened flooding hazards (6) | Heightened flooding hazards (7) | Significant flooding hazards (8) | Very significant flooding hazards (9) | High/major flooding hazards (10) |
| **FHR 1. Street Flooding**<br>(Base score, then adjust for street type, if applicable)<br>Industrial and Service Streets, Score x 0.85<br>Major Streets, Score X 1.35 | No street flooding | Street flooding > 100 yr event | Street flooding - 100 yr event<br>(depth of overtopping less than 6 inches) | Street flooding - 50 yr event<br>(depth of overtopping less than 6 inches) | Street flooding - 25 yr event<br>(depth of overtopping less than 6 inches)<br>Street flooding - 100 yr event<br>(depth of overtopping 6 to less than 12 inches) | Street flooding - 10 yr event<br>(depth of overtopping less than 6 inches)<br>Street flooding - 50 yr event<br>(depth of overtopping 6 to less than 12 inches) | Street flooding - 2 yr event or less<br>(depth of overtopping less than 6 inches)<br>Street flooding - 25 yr event<br>(depth of overtopping 6 to less than 12 inches)<br>Street flooding - 100 yr event<br>(depth of overtopping 12 inches or greater) | Street flooding - 10 yr event<br>(depth of overtopping 6 to less than 12 inches)<br>Street flooding - 50 yr event<br>(depth of overtopping 12 inches or greater) | Street flooding - 2 yr event or less<br>(depth of overtopping 6 to less than 12 inches)<br>Street flooding - 25 yr event<br>(depth of overtopping 12 inches or greater) | Street flooding - 10 yr event<br>(depth of overtopping 12 inches or greater) | Street flooding - 2 yr event or less<br>(depth of overtopping 12 inches or greater) |
| **FHR 2. Structural Flooding**<br>(Base score, then adjust, max. score 10)<br>1 structure, no adjustment<br>2 structures, Score X 1.1<br>3 - 5 structures, Score X 1.2<br>6 - 10 structures, Score X 1.3<br>11 - 15 structures, Score X 1.5<br>16 - 20 structures, Score X 1.7<br>> 20 structures, Score X 2.0 | No structural flooding | Structural non-FFE flooding - 100 yr event<br>(non-FFE flooding of less than 6 inches) | Structural non-FFE flooding - 50 yr event<br>(non-FFE flooding of less than 6 inches)<br>Structural non-FFE flooding - 100 yr event<br>(non-FFE flooding 6 to less than 12 inches) | Structural FFE flooding > 100 yr event<br>Structural non-FFE flooding - 25 yr event<br>(non-FFE flooding of less than 6 inches)<br>Structural non-FFE flooding - 50 yr event<br>(non-FFE flooding 6 to less than 12 inches)<br>Structural non-FFE flooding - 100 yr event<br>(non-FFE flooding 12 inches or greater) | Structural FFE flooding - 100 yr event<br>(FFE flooding of less than 6 inches)<br>Structural non-FFE flooding - 10 yr event<br>(non-FFE flooding of less than 6 inches)<br>Structural non-FFE flooding - 25 yr event<br>(non-FFE flooding 6 to less than 12 inches)<br>Structural non-FFE flooding - 50 yr event<br>(non-FFE flooding 12 inches or greater) | Structural FFE flooding - 50 yr event<br>(FFE flooding of less than 6 inches)<br>Structural FFE flooding - 100 yr event<br>(FFE flooding 6 to less than 12 inches)<br>Structural non-FFE flooding - 2 yr event<br>(non-FFE flooding of less than 6 inches)<br>Structural non-FFE flooding - 10 yr event<br>(non-FFE flooding 6 to less than 12 inches)<br>Structural non-FFE flooding - 25 yr event<br>(non-FFE flooding 12 inches or greater) | Structural FFE flooding - 25 yr event<br>(FFE flooding of less than 6 inches)<br>Structural FFE flooding - 50 yr event<br>(FFE flooding 6 to less than 12 inches)<br>Structural FFE flooding - 100 yr event<br>(FFE flooding 12 inches or greater)<br>Structural non-FFE flooding - 2 yr event<br>(non-FFE flooding 6 to less than 12 inches)<br>Structural non-FFE flooding - 10 yr event<br>(non-FFE flooding 12 inches or greater) | Structural FFE flooding - 10 yr event<br>(FFE flooding of less than 6 inches)<br>Structural FFE flooding - 25 yr event<br>(FFE flooding 6 to less than 12 inches)<br>Structural FFE flooding - 50 yr event<br>(FFE flooding 12 inches or greater)<br>Structural non-FFE flooding - 2 yr event<br>(non-FFE flooding 12 inches or greater) | Structural FFE flooding - 2 yr event or less<br>(FFE flooding of less than 6 inches)<br>Structural FFE flooding - 10 yr event<br>(FFE flooding 6 to less than 12 inches)<br>Structural FFE flooding - 25 yr event<br>(FFE flooding 12 inches or greater) | Structural FFE flooding - 2 yr event or less<br>(FFE flooding 6 to less than 12 inches)<br>Structural FFE flooding - 10 yr event<br>(FFE flooding 12 inches or greater) | Structural FFE flooding - 2 yr event or less<br>(FFE flooding 12 inches or greater) |
| **FHR 3. Non-Structural Flooding**<br>(Base score, then adjust, max. score 10)<br>1 parcel, no adjustment<br>2 parcels, Score X 1.1<br>3 - 5 parcels, Score X 1.2<br>6 - 10 parcels, Score X 1.3<br>11 - 15 parcels, Score X 1.5<br>16 - 20 parcels, Score X 1.7<br>> 20 parcels, Score X 2.0 | No non-structural flooding | Non-Structural flooding - 100 yr event<br>(flooding less than 12 inches) | Non-Structural flooding - 50 yr event<br>(flooding less than 12 inches)<br>Non-Structural flooding - 100 yr event<br>(flooding 12 inches or greater) | Non-Structural flooding - 25 yr event<br>(flooding less than 12 inches)<br>Non-Structural flooding - 50 yr event<br>(flooding 12 inches or greater) | Non-Structural flooding - 10 yr event<br>(flooding less than 12 inches)<br>Non-Structural flooding - 25 yr event<br>(flooding 12 inches or greater) | Non-Structural flooding - 2 yr event<br>(flooding less than 12 inches)<br>Non-Structural flooding - 10 yr event<br>(flooding 12 inches or greater) | Non-Structural flooding - 2 yr event<br>(flooding 12 inches or greater) | | | | |

| **Regulatory Mandates and Compliance**<br>RMC 1. NPDES MS4 Stormwater Permit/Stormwater Management Program<br>RMC 2. Other Local, State, Federal Regulatory Programs | **0**<br>No regulatory mandate (0) | **1**<br>Not inconsistent with regulatory requirements (1) | **2.5**<br>Minor regulatory mandate/compliance (2.5) | **5**<br>Intermediate regulatory mandate/compliance (5) | **7.5**<br>Priority regulatory mandate/compliance (7.5) | **10**<br>High priority regulatory mandate/compliance (10) |
|---|---|---|---|---|---|---|
| | | | TMDL implementation (5+ yr timeframe) | TMDL implementation (4 - 5 yr timeframe) | TMDL implementation (2 - 4 yr timeframe) | TMDL implementation (0 - 2 yr timeframe) |
| | | | | NPDES MS4 permit/program (4 - 5 yr timeframe) | NPDES MS4 permit/program (2 - 4 yr timeframe) | NPDES MS4 permit/program (0 - 2 yr timeframe) |
| | | | | State Dam Safety - regulatory low hazard projects | State Dam Safety - regulatory intermed. hazard projects | State Dam Safety - regulatory high hazard projects |
| | | | FEMA NFIP/CRS compliance - low priority | FEMA NFIP/CRS compliance - intermediate priority | FEMA NFIP/CRS compliance - priority | FEMA NFIP/CRS compliance - high priority |
| | | | Water Supply Watershed compliance - low priority | Water Supply Watershed compliance - intermed. priority | Water Supply Watershed compliance - priority | Water Supply Watershed compliance - high priority |
| | | | Neuse River Basin Stormwater Program - low priority | Neuse River Basin Stormwater Program - intermed. priority | Neuse River Basin Stormwater Program - priority | Neuse River Basin Stormwater Program - high priority |

| Water Quality Benefits | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **WQ 1. Priority Water Quality Area**<br>(see citywide map) | Non-priority water quality area (0) | Reserved for future use (1) | Reserved for future use (2) | Reserved for future use (3) | Reserved for future use (4) | **303(d) listed as impaired waters (5)**<br>Hare Snipe Creek<br>Little Brier Creek<br>Marsh Creek<br>Mine Creek<br>Richlands Creek<br>Rocky Branch | Reserved for future use (6) | Reserved for future use (7) | **303 (d) listed for multiple parameters (8)**<br>Walnut Creek<br>Crabtree Creek | Reserved for future use (9) | **Within Priority Water Quality Target Area (10)**<br>**(TMDL Areas, Water Supply Watersheds, Downtown)**<br>Pigeon House TMDL (Fecal Coliform, Copper)<br>Swift Creek TMDL (Biological integrity)<br>Perry Creek TMDL (Biological integrity)<br>Falls Lake Water Supply Watershed<br>Swift Creek Water Supply Watershed<br>Downtown area, see map |
| **WQ 2. Pollutant Treatment/Pollutant Load Reduction Benefits**<br>(utilizing TN as key parameter for pollutant load reduction) | No pollutant treatment/pollutant load reduction benefits (0) | Up to 0.5 lb/yr TN load reduction | >0.5 lb/yr to 1 lb/yr TN load reduction | >1 lb/yr to 2 lb/yr TN load reduction | >2 lb/yr to 5 lb/yr TN load reduction | >5 lb/yr to 10 lb/yr TN load reduction | >10 lb/yr to 50 lb/yr TN load reduction | >50 lb/yr to 100 lb/yr TN load reduction | >100 lb/yr to 200 lb/yr TN load reduction | >200 lb/yr to 500 lb/yr TN load reduction | > 500 lb/yr TN load reduction |
| **WQ 3. Erosion/Sediment Control/Sediment Load Reduction Benefits**<br>(utilizing TSS as key parameter for sediment load reduction) | No erosion/sediment control/ sediment load reduction benefits (0) | Typical outfall erosion control only (1) | Up to 0.5 ton/yr TSS load reduction | >0.5 ton/yr to 1 ton/yr TSS load reduction | >1 ton/yr to 2 ton/yr TSS load reduction | >2 ton/yr to 5 ton/yr TSS load reduction | >5 ton/yr to 10 ton/yr TSS load reduction | >10 ton/yr to 50 ton/yr TSS load reduction | >50 ton/yr to 100 ton/yr TSS load reduction | >100 ton/yr to 200 ton/yr TSS load reduction | > 200 tons/yr TSS load reduction |

| Watershed Management Benefits | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **WM 1. Stream system/riparian area functional benefits**<br>**WM 2. Protect/restore floodplain functional benefits**<br><br>[Base score, then adjust based on 1) length of project and 2) existing condition of stream system, max score 10]<br>**1) Adjustment for length of project reach (linear feet):**<br>Length of less than 100 lf, Score X 0.25<br>Length of 100 lf to < 250 lf, Score X 0.75<br>Length of 250 lf to < 500 lf, Score X 1.0<br>Length of 500 lf to < 1,000 lf, Score X 1.15<br>Length of 1,000 lf to < 2,000 lf, Score X 1.25<br>Length of 2,000 lf to < 3,000 lf, Score X 1.50<br>Length of 3,000 lf to < 5,000 lf, Score X 1.75<br>Length of > 5,000 lf, Score X 1.95<br>**2) Adjustment for existing stream condition:**<br>Existing stream in poor condition, Score X 1.0<br>Existing stream in fair condition, Score X 0.50<br>Existing stream in good condition, Score X 0.10 | No significant stream/riparian/floodplain benefits (0) | Basic stream bank stabilization only (1) | Basic stream enhancement, no floodplain reconnection (2) | Integral stream-riparian-floodplain restoration, based on level of restoration (3 - 7 | | | | | Integral stream-riparian-floodplain restoration including stream daylighting (8) | Integral stream-riparian-floodplain restoration including stream daylighting and/or wetland protection/enhancement (9) | Integral stream-riparian-floodplain restoration including stream daylighting and/or wetland creation and/or integral BMPs/SCMs (10) |
| **WM 3. Protect/restore natural hydrologic conditions** | No hydrologic benefits (0) | Reserved for future use (1) | Reserved for future use (2) | Project provides hydrologic protection/restoration benefits, based on level of restoration (3 - 9<br>(GI-LID projects, stream restoration, volume reduction, etc | | | | | | | Project would fully restore natural, pre-development hydrologic conditions for area of interest (10) |
| **WM 4. Linkage to watershed master plan/area master plan/ phased system improvements** | No linkage to master plan (0)<br><br>If identified in master plan/area plan, project not recommended (0) | Low priority project from master plan (1) | Reserved for future use (2) | Reserved for future use (3) | Reserved for future use (4) | Intermediate priority project from master plan (5) | Reserved for future use (6) | Reserved for future use (7) | Reserved for future use (8) | Reserved for future use (9) | High priority project from master plan/area plan/ important phase of high priority system project/s (10) |
| **WM 5. Known stormwater problem area/valid complaints history** | No known stormwater problems, no complaints for area of interest (0) | Known stormwater problem area, minor level of complaints (1) | Reserved for future use (2) | Reserved for future use (3) | Reserved for future use (4) | Known stormwater problem area, intermediate level of complaints (5) | Reserved for future use (6) | Reserved for future use (7) | Reserved for future use (8) | Reserved for future use (9) | Known stormwater problem area, high level of complaints (10) |

| Stormwater Infrastructure Asset Management Benefits | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM 1. Infrastructure condition/effective service life** | New condition (0)<br><br>Full service life available | Excellent condition (1)<br><br>Effective service life > 30 years | Good condition (2)<br><br>Effective service life > 25 years | Good to fair condition (3 - 4)<br><br>Estimated effective remaining service life ~ 15 - 25 years | | Fair/intermediate condition (5 - 6)<br><br>Estimated effective remaining service life ~ 10 - 15 years | | Fair to poor condition (7)<br><br>Estimated effective remaining service life ~ 5 - 10 years | Poor condition/minimal effective service life (8)<br><br>Estimated effective remaining service life ~ 3 - 5 years | Poor condition/failure imminent (9)<br><br>Estimated effective remaining service life ~ 2 years or less<br><br>Effectively failed but remaining in partial service | Failure condition/infrastructure out of service (10)<br><br>No remaining service life; infrastructure has failed and is out of service |
| **AM 2. Infrastructure capacity/level of service** | Full (100% or greater) LOS/capacity available (0) | 90% LOS/capacity available (1) | 80% LOS/capacity available (2) | 70% LOS/capacity available (3) | 60% LOS/capacity available (4) | 50% LOS/capacity available (5) | 40% LOS/capacity available (6) | 30% LOS/capacity available (7) | 20% LOS/capacity available (8) | 10% LOS/capacity available (9) | Less than 10% LOS/capacity available (10) |
| **AM 3. Consequence/risk of infrastructure failure**<br><br>Evaluate Risk of failure by considering Consequence of failure and Probability of failure [Risk = P x C]<br><br>1) Consider what can or could go wrong and/or fail …<br>2) Consider the potential consequence(s) …<br>3) Consider the probability or likelihood of failure and/or the issue(s) of concern …<br><br>**Reference/source Information:**<br>Adapted from paper by Richard G. Little, USC, "Managing the Risk of Aging Infrastructure", prepared for the IRGC, November 2012. | Not applicable (0) | **Consequence of failure** ➡<br>**Probability of failure** ⬇ | High / life safety threat<br>Very dangerous | Very serious threat | Heightened threat<br>Potentially serious | Non-serious consequence(s)<br>Minimal to no safety concerns | | | | | |
| | | Most probable | **10** | **9** | **8** | **4** | | | | | |
| | | Highly probable | **9** | **8** | **7** | **3** | | | | | |
| | | Probable | **8** | **7** | **6** | **2** | | | | | |
| | | Improbable/minimal | **7** | **6** | **5** | **1** | | | | | |
| **AM 4. Infrastructure asset operation & maintenance benefits** | No identifiable benefits to system O&M (0)<br><br>No reductions with respect to frequency and scope of system O&M | Minimal benefits to system O&M (1) | | | | Intermediate benefits to system O&M (5) | | | | | High level of benefits to system O&M (10)<br><br>Significantly reduced frequency, scope, and/or cost for system operation and maintenance |

| Community Support & Implementation Complexity | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **CSIC 1. Level of community support/acceptance** | No apparent community support for project (0)<br><br>Support at or near 0% for directly impacted | Low level of community support for project (1)<br><br>Support level ~ 10% of directly impacted | Support level ~ 20% of directly impacted | Support level ~ 30% of directly impacted | Support level ~ 40% of directly impacted | Intermediate level of community support for project (5)<br><br>Support level ~ 50% of directly impacted | Support level ~ 60% of directly impacted | Support level ~ 70% of directly impacted | Support level ~ 80% of directly impacted | Support level ~ 90% of directly impacted | High level of community support for project (10)<br><br>Support level ~ 100% of directly impacted |
| **CSIC 2. Right-of-Way (ROW)/Easement availability** | Easements required<br>(More than 80 easements required) | Easements required<br>(61 - 80 easements required) | Easements required<br>(45 - 60 easements required) | Easements required<br>(36 - 45 easements required) | Easements required<br>(26 - 35 easements required) | Easements required<br>(16 - 25 easements required) | Easements required<br>(9 - 15 easements required) | Easements required<br>(6 - 8 easements required) | Easements required<br>(3 - 5 easements required) | Easements required<br>(1 - 2 easements required) | All existing public ROW/public land (10)<br>No easements required |
| **CSIC 3. Project regulatory permitting/mitigation requirements** | Very difficult to permit/high level of mitigation required (0)<br><br>Individual permit most certainly required<br><br>If permittable, mitigation costs 50% or greater of total project cost | Difficult to permit/major level of mitigation required (1)<br><br>Individual permit may be required<br><br>If permittable, mitigation costs 25% to < 50% of total project cost | Challenging to permit/significant level of mitigation required (2)<br><br>If permittable, mitigation costs 25% or less of total project cost | Reserved for future use (3) | Reserved for future use (4) | Typical permitting/no mitigation required (5)<br><br>Nationwide/general permits<br><br>PCN required | Reserved for future use (6) | No permits required<br><br>No mitigation credit<br>No PCN required | Desirable permitting/significant level of mitigation credit granted from improvements (8)<br><br>Mitigation credit valued at less than 25% of total project cost | Desirable permitting/very significant level of mitigation credit granted from improvements (9)<br><br>Mitigation credit valued at 25% to < 50% of total project cost | Highly desirable permitting/high level of mitigation credit granted from improvements (10)<br><br>Mitigation credit valued at 50% or more of total project cost |
| **CSIC 4. Public and private utility impact/relocation considerations** | High level of utility impacts (0)<br><br>Utility impacts likely 50% or more of total project cost | | | | | Typical level of utility impacts (5) | | | | | No utility impacts (10)<br><br>No additional costs due to utility impacts |

| Resource Leveraging Opportunities | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RL 1. Grant funding opportunity**<br>**RL 2. Public-private (non-City) funding partnership opportunity**<br>**RL 3. Attractive/beneficial loan funding opportunity** | No external funding (0)<br><br>(100% funded by the City of Raleigh Stormwater Utility/Program) | Beneficial loan opportunity (1)<br><br>Low/attractive interest loan opportunity | Beneficial loan opportunity (2)<br><br>0% interest / no interest loan opportunity | (>0% to 15% of total project cost from external funding) | (>15% to < 25% of total project cost from external funding) | Intermediate level of external funding (5)<br><br>(25% of total project cost from external funding) | (>25% to 30% of total project cost from external funding) | (>30% to 35% of total project cost from external funding) | (>35% to 40% of total project cost from external funding) | (>40% to < 50% of total project cost from external funding) | High level of external funding (10)<br><br>(50% or more of total project cost from external funding) |

| Indirect Community Benefits | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ICB 1. Leading/innovative Stormwater Management (SWM) practice** | Typical/routine SWM practice (0) | | | | | Partially innovative SWM practice (5) | | | | | Fully leading/innovative SWM practice (10)<br>Would often include pilot/demonstration type projects |
| **ICB 2. Integral public educational opportunity** | No significant integral public education (0)<br>No formal public meeting(s) | Project involves at least one formal public meeting (1)<br>Project appears on COR website | | | | Intermediate level of integral public education (5)<br>In addition to / beyond public meeting(s) and web presence | | | | | High level of integral public education (10)<br>Typically would involve permanent educational component(s) |
| **ICB 3. Opportunity to collaborate area improvements with other department(s)** | Not applicable (0) | | | | | Intermediate collaborative opportunity (5)<br>At least one collaborative project integrated into the primary SWM project | | | | | Major collaborative opportunity (10)<br>Two or more collaborative projects part of the primary SWM project |
| **ICB 4. Level of consistency with City Strategic Plan + Comprehensive Plan**<br>(See checklist table below) | | Project not inconsistent with COR Strategic Plan + Comprehensive Plan (1)<br>May not directly satisfy any specific checklist items but remains compatible with COR Strategic Plan + Comprehensive Plan | Low level of consistency with COR Strategic Plan + Comprehensive Plan (2)<br>Satisfies 1 - 2 specific checklist items | Satisfies 3 - 5 items | Satisfies 6 - 9 items | Intermediate level of consistency with COR Strategic Plan + Comprehensive Plan (5)<br>Satisfies 10 items | Satisfies 11 - 12 items | Satisfies 13 - 14 items | Satisfies 15 - 16 items | Satisfies 17 - 18 items | High level of consistency with COR Strategic Plan + Comprehensive Plan (10)<br>Satisfies 19 - 20 checklist items |

| | Checklist items (20) for level of consistency with COR Strategic Plan + Comprehensive Plan: |
|---|---|
| 1 | Project includes an integral public art/cultural resource/historical resource opportunity |
| | Project involves a public-private partnership |
| | Project involves collaboration with area universities |
| 1 | Project involves collaboration with the State of North Carolina |
| | Project supports efforts to improve the state government complex |
| | Project maintains/develops amenities/infrastructure attractive to economic development |
| | Project protects the community's natural resources while encouraging sustainable growth |
| | Project increases the networks of green spaces and/or green infrastructure |
| | Project promotes sustainability, resiliency, and efficiency |
| | Project helps preserve/create neighborhoods of choice |
| | Project supports existing growth and helps catalyze investment in targeted areas |
| | Project within an area/region with evidence of physical disinvestment |
| 1 | Project promotes community health and safety |
| | Project enhances citizens' quality of life through design that facilitates active living |
| | Project supports the transportation/transit network/system |
| 1 | Project protects/preserves sensitive lands/waters |
| | Project involved with/related to/ or advances watershed planning/management |
| | Project acquires necessary land and/or easements to provide for maintenance of stormwater system on private property |
| | Project involves retrofitting of municipal/public buildings with emphasis on demonstration projects for public |
| | Project incorporates context-sensitive planning/design |
| **4** | **= Overall level of consistency with COR Strategic Plan + Comprehensive Plan** |
| **20 %** | |

# City of Raleigh
## Integrated Stormwater Management Project Prioritization Model

| Project ID Number | Project Name | General Category of Project | Primary Type of Project | Sub-Watershed | Council District | Total Project Score (TPS) | Safety Criticality Score (SCS) | Mission Criticality Score (MCS) | Lead Group for Project | Study and/or Engineering Design Cost | Construction Cost | Total Project Cost | Watershed Area Served by Project | Cost / Area Served | Number of Parcels Directly Impacted | Cost / Parcel(s) Directly Impacted | Annual TN Pollutant Load Reduced | Cost / TN Reduced | Annual TSS Pollutant Load Reduced | Cost / TSS Reduced | Cost-Score Index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | (0 - 100) | (0 - 100) | (0 - 100) | | ($) | ($) | ($) | (in Acres) | ($/Acre) | (# of parcels) | ($/# of parcels) | (lbs TN/yr) | ($/lbs TN/yr) | (lbs TSS/yr) | ($/lbs TSS/yr) | ($/TPS) |
| Prioritization Model_ | Project Name | CIP | Integrated | Rocky Branch | A | 100.00 | 100.00 | 100.00 | Infrastructure (210) | $5,000 | $50,000 | $55,000 | 10.0 | 5,500 | 5 | 11,000 | N/A | N/A | N/A | N/A | 550.00 |

Project Vicinity Map:

Project Notes, if needed:

Project Note 1 )
Project Note 2 )
Project Note 3 )
Project Note 4 )
Project Note 5 )
Project Note 6 )

Representative Photo(s):

## Project Inputs

| | |
|---|---|
| **Project ID Number (ID Number format is "Program ID-YEAR-000x")** | Prioritization Model_Master |
| **Project Name** | Project Name |
| **Project Location** | Project Location |
| River Basin | Neuse River Basin |
| **Watershed** | Walnut Creek |
| **Sub-Watershed** (City "Drainage Basin") | Rocky Branch |
| **Watershed Area Served by Project** (watershed area for the project in ACRES) | 10 |
| **Parcels Directly Impacted by Project Improvements, if applicable** (# of parcels) | 5 |
| **Council District** (A, B, C, D, E) | A |
| **Lead Group for Project** | Infrastructure (210) |
| **General CIP Program Category of Project** (CIP, DA, SWQCS, CIP-HM, Other) | CIP |
| **CIP Sub-Category** | TBD |
| **Primary Type of Project** | Integrated |
| **Project Scope** (Brief Description of Basic Elements; limit to space provided): | BRIEF, BASIC SCOPE INFORMATION ABOUT THE PROPOSED PROJECT |
| **Stage of Project** (Preliminary, Budgeted, Active, Complete) | Preliminary |
| **Water Quality Performance Parameters for Project, if applicable:** | |
| Total annual load of TN reduced by project (in lbs TN/year) | 0 |
| Total annual load of TSS reduced by project (in lbs TSS/year) | 0 |
| **Project Cost Information:** | |
| Study/Engineering Design Cost, estimate ($) | $5,000 |
| Construction Cost, estimate ($) | $50,000 |
| Total Project Cost, computed estimate ($) | $55,000 |
| **Evaluated by:** | Stormwater Staff Member |
| Date of Original Evaluation: | 8/27/2015 |
| Date Evaluation last Updated: | 8/27/2015 |
| **Evaluation Checked by:** | Blair Hinkle, PE |
| Date Evaluation last Checked: | 8/27/2015 |

## Basic Eligibility Criteria

| | Yes No N/A |
|---|---|
| B1. Project located within corporate limits of Raleigh | YES |
| B2. Project receives and/or conveys public runoff* | YES |
| B3. Project is compatible with City Strategic Plan + Comprehensive Plan | YES |
| B4. For DA and SWQCS projects ONLY, petitioner(s) utility fee payment(s) current | Not Applicable |
| [*Stormwater Quality Cost Share (SWQCS) projects are the only exception to B2] | |

## Integrated Prioritization Criteria

| | [Criteria Scoring Metrics] | | | [Criteria Weights] | [Criteria Scores] | [Contribution to TPS] | [Contribution to SCS] | [Contribution to MCS] |
|---|---|---|---|---|---|---|---|---|
| **Public Safety and Public Health** | 0 | 5 | 10 | 17.0 | 10 | 17.00 | 100.00 | 30.63 |
| PSH 1. Threat to human life<br>PSH 2. Threat to emergency access/critical location<br>PSH 3. Other (non-life) threat to public safety/health | No identifiable threat (0) | Intermediate threat (5) | High/imminent threat (10) | 100% | 10 | | | |
| **Flood Hazard Reduction Benefits** | 0 | 5 | 10 | 14.0 | 10.0 | 14.00 | 0 | 25.23 |
| FHR 1. Street Flooding | No street flooding (0) | Intermediate street flooding (5) | Major street flooding (10) | 50% | 10 | | | |
| FHR 2. Structural Flooding | No structural flooding (0) | Intermediate structural flooding (5) | Major structural flooding (10) | 40% | 10 | | | |
| FHR 3. Non-Structural Flooding | No non-structural flooding (0) | Intermediate non-structural flooding (5) | Major non-structural flooding (10) | 10% | 10 | | | |
| **Regulatory Mandates and Compliance** | 0 | 5 | 10 | 13.0 | 10 | 13.00 | 0 | 23.42 |
| RMC 1. NPDES MS4 Stormwater Permit/Stormwater Management Program<br>RMC 2. Other Local, State, Federal Regulatory Program | No regulatory mandate (0) | Intermediate mandate/compliance (5) | High priority mandate/compliance (10) | 100% | 10 | | | |
| **Water Quality Benefits** | 0 | 5 | 10 | 11.5 | 10.0 | 11.50 | 0 | 20.72 |
| WQ 1. Priority Water Quality Area | Non-priority WQ area (0) | 303(d) listed as impaired waters (5) | Within Priority WQ Target Area (10) | 33% | 10 | | | |
| WQ 2. Pollutant Treatment/Pollutant Load Reduction benefits | No pollutant treatment/load reduction benefits (0) | | Significant treatment/load reduction benefits (10) | 33% | 10 | | | |
| WQ 3. Erosion/Sediment Control/Sediment Load Reduction benefits | No erosion/sediment control benefits (0) | | Significant erosion/sediment control benefits (10) | 33% | 10 | | | |
| **Watershed Management Benefits** | 0 | 5 | 10 | 10.0 | 10.0 | 10.00 | 0 | 0 |
| WM 1. Stream system/riparian area functional benefits<br>WM 2. Protect/restore floodplain functions | No significant stream/riparian/floodplain benefits (0) | Stream-riparian-floodplain restoration/functional uplift (1 - 10) | | 25% | 10 | | | |
| WM 3. Protect/restore natural hydrologic conditions | No hydrologic benefits (0) | Hydrologic protection/restoration benefits (3 - 9) | Fully restores natural hydrology (10) | 25% | 10 | | | |
| WM 4. Linkage to watershed/basin master plan/phased system improvements | No linkage to master plan or not recommended (0) | Linkage to master plan/phased system improvements (1, 5 or 10) | | 25% | 10 | | | |
| WM 5. Known stormwater problem area/valid complaints history | No known SW problems/complaints (0) | | Significant SW problems/high complaint level (10) | 25% | 10 | | | |
| **Stormwater Infrastructure Asset Management Benefits** | 0 | 5 | 10 | 10.0 | 10.0 | 10.00 | 0 | 0 |
| AM 1. Infrastructure condition/effective service life | New/excellent condition (0) | Intermediate/fair condition (5) | Poor/failing condition (10) | 25% | 10 | | | |
| AM 2. Infrastructure capacity/level of service | Full LOS/capacity (0) | Intermediate LOS/capacity (5) | Poor LOS/capacity (10) | 25% | 10 | | | |
| AM 3. Consequence/risk of infrastructure failure | Low risk/low consequence (1) | Intermediate risk/consequence (5) | High risk/high consequence (10) | 25% | 10 | | | |
| AM 4. Infrastructure asset operation & maintenance benefits/cost savings | No O&M benefits (0) | Intermediate O&M benefits (5) | High O&M benefits (10) | 25% | 10 | | | |
| **Community Support and Implementation Complexity** | 0 | 5 | 10 | 9.0 | 10.0 | 9.00 | 0 | 0 |
| CSIC 1. Level of community support/acceptance | Low level of support (1) | Intermediate level of support (5) | High level of support (10) | 25% | 10 | | | |
| CSIC 2. Right-of-Way (ROW)/Easement availability | Easements required (0 - 9) | | All existing Public ROW/Public Land (10) | 25% | 10 | | | |
| CSIC 3. Project regulatory permitting/mitigation requirements | Difficult to permit/high mitigation (0) | Typical permitting/no mitigation required (5) | Desirable permitting/mitigation credit (10) | 25% | 10 | | | |
| CSIC 4. Public and private utility impact/relocation considerations | High level of utility impacts (0) | Typical level of utility impacts (5) | No utility impacts (10) | 25% | 10 | | | |
| **Resource Leveraging Opportunities** | 0 | 5 | 10 | 8.5 | 10.0 | 8.50 | 0 | 0 |
| RL 1. Grant funding opportunity<br>RL 2. Public-private (non-City) funding partnership opportunity<br>RL 3. Attractive/beneficial loan funding opportunity | No external funding (0) Beneficial loan opp. (1 - 2) | Intermediate external funding, 25% (5) | High external funding, 50%+ (10) | 100% | 10 | | | |
| **Indirect Community Benefits** | 0 | 5 | 10 | 7.0 | 10.0 | 7.00 | 0 | 0 |
| ICB 1. Leading/innovative Stormwater Management (SWM) practice | Typical/routine SWM practice (0) | Partially innovative (5) | Fully leading/innovative SWM practice (10) | 25% | 10 | | | |
| ICB 2. Integral public educational opportunity | No integral public educ (0) | Limited integral public educ (5) | High level of integral public educ (10) | 25% | 10 | | | |
| ICB 3. Opportunity to collaborate area improvements with other department(s) | Not applicable (0) | Intermediate collaborative opportunity (5) | Major collaborative opportunity (10) | 25% | 10 | | | |
| ICB 4. Level of consistency with City Strategic Plan + Comprehensive Plan | Not inconsistent (1) | Intermediate level of consistency (5) | High level of consistency (10) | 25% | 10 | | | |
| | | | | | | 100.00 | 100.00 | 100.00 |