# F. X. Browne, Inc.
# Memorandum

To: Fairfax County
From: F. X. Browne, Inc.
Date: July 10, 2009
RE: Task 3.2 Initial Subwatershed Strategies for Sugarland Run and Horsepen Creek Watersheds

Task 3.2 provides that initial strategies will be developed for Sugarland Run and Horsepen Creek watersheds. The initial subwatershed strategies consist of two main components, identifying priority subwatersheds and identifying candidate restoration projects.

**Priority Subwatershed Identification**

Priority subwatersheds/candidate restoration areas were identified based on the results of Final Subwatershed Ranking, priority restoration elements from SPA, problem areas identified during subwatershed characterization and field reconnaissance, and input from the WAG team. Potential alternatives were identified for the seven planned, un-built regional ponds within the watersheds.

F.X. Browne, Inc. used the following data sources and indicators to identify priority subwatersheds/candidate restoration areas.

**Table 1 Candidate Restoration Area Selection Criteria**

| Data Source/ Indicator | Selection Process |
|---|---|
| Subwatershed Ranking | Lowest 40% of overall objective composite scores |
| SPA | Best professional judgment, numerous impairments for habitat, CEM (type 2 or 3), stream crossings, erosion, bank stability/headcuts, or insufficient riparian buffer |
| Regional Ponds | All subwatersheds draining to a planned/un-built regional pond |
| Flooding | All subwatersheds with non-zero scores for SW Ranking flooding indicators. |
| Field Reconnaissance | Best professional judgment, problem areas identified during field reconnaissance |
| Public Comments | Subwatersheds with problem areas identified by WAG members or during the Introduction and Initial Scoping Forum |

There are also areas within Sugarland Run and Horsepen Creek watersheds that would benefit from preservation strategies rather than solely restorative strategies. Preservation strategies target the less impacted subwatersheds and key areas such as headwaters to prevent future degradation of the subwatershed and downstream areas.

F. X. Browne, Inc. used the following data sources and indicators to identify priority subwatersheds for preservation strategies.

**Table 2 Candidate Preservation Area Selection Criteria**

| Data Source/ Indicator | Selection Process |
|---|---|
| Subwatershed Ranking | Highest 20% of overall objective composite scores to identify less impacted subwatersheds |
| STEPL | Greatest increase in modeled pollutant loadings to identify subwatersheds (top 20%) at greatest risk for future impairments |
| Total Impervious Area | Total impervious area of less than 10% to identify pristine subwatersheds & Greatest increase in impervious area to identify subwatersheds (top 20%) at greatest risk for future impairments |

## Identifying Impairments

Once priority subwatersheds have been identified, F. X. Browne, Inc. reviewed the following data in order to identify impairments for each subwatershed.

**Table 3 Impairment Data Reviewed for Each Priority Subwatershed**

| Data Format | Data/Indicator | Impairment Type |
|---|---|---|
| Table | Overall composite score | All |
| Table | Objective composite scores | All |
| Table | Flooding Indicators | Flooding & Water Quantity |
| Table | STEPL pollutant loads | Pollutant Loading & Water Quality |
| Table | STEPL streambank erosion loads | Habitat & Stream Condition |
| Table | % Imperviousness | All |
| GIS | SPA CEM, Erosion, Headcuts | Habitat & Stream Condition |
| GIS | SPA Crossings, Ditch, Pipe | Habitat & Stream Condition |
| GIS | SPA Deficient Buffer, Habitat | Habitat & Stream Condition |
| GIS | SPS Fish IBI Score (Fish Community) | Habitat & Stream Condition |
| GIS | SPS IBI Score (Benthic Community) | Habitat & Stream Condition |
| GIS | E. coli | Pollutant Loading & Water Quality |
| GIS | 303d Impaired Streams | Pollutant Loading & Water Quality |
| GIS | Subarea stormwater management controls | All |

Reviewing the data directly removes the problems associated with relying on surrogate data used during SW Ranking. This is most notable with E. coli and SPS data that have limited data points.

## Developing Strategies

General subwatershed characteristics and impairments were recorded for each priority subwatershed. Sources of subwatershed impairments were identified where evident and improvement goals/strategies were developed for each priority subwatershed. Improvement goals/strategies may include both structural and non-structural practices. The following table includes a summary of project types that may be included for the various improvement goals/ strategies.

**Table 4 Summary of Subwatershed Strategies & Project Types**

| Strategies: | Project Types: |
|---|---|
| Regional Pond Alternatives | Stormwater Pond Retrofits<br>New Stormwater Ponds<br>Low Impact Development Retrofits<br>Culvert Retrofits<br>Outfall Improvements<br>Area-wide Drainage Improvements |
| Subwatershed Improvements | Stormwater Pond Retrofits<br>New Stormwater Ponds<br>Low Impact Development Retrofits<br>Culvert Retrofits, including Road Crossing Improvements<br>Outfall Improvements<br>Area-wide Drainage Improvements |
| Stream Restoration | Streambank Stabilization<br>Natural Channel Restoration |
| Non-Structural Measures & Preservation Strategies | Buffer restoration<br>Rain barrel programs<br>Dumpsite/Obstruction removal<br>Community outreach/Public education<br>Conservation acquisition/easements<br>Street sweeping<br>Storm drain stenciling |

Regional ponds may be considered as a watershed management tool; however, the County has indicated that they are not a preferred tool. All subwatersheds containing a planned, un-built regional pond or draining to a planned, un-built regional pond will be evaluated for potential alternatives. **Regional Pond Alternative Strategies** may include retrofits to existing stormwater ponds, new stormwater ponds, low impact development projects, culvert retrofits, outfall improvements, area-wide drainage improvements, or a combination of the aforementioned project types. When more than one project is proposed for a regional pond drainage area, the project group will be considered as a single project in order to emphasize the necessity of implementing the entire group of projects.

**Subwatershed Improvement Strategies** are intended to reduce stormwater impacts for subwatersheds that do not drain to a planned, un-built regional pond. Project types for Subwatershed Improvement Strategies are the same types of projects recommended for the planned, un-built regional pond drainage areas. However, each individual project will be given its own project identification number and will not considered as a combined group of projects.

Low impact development (LID) projects may be incorporated into Regional Pond Alternative Strategies and Subwatershed Improvement Strategies. LID projects are Best Management Practices (BMPs) designed to provide water quality and quantity benefits for stormwater management on the site where stormwater is generated. Possible LID projects include:

- Sand and Sand/Peat Filters
- Rain Gardens/Bioretention
- Infiltration Basins/Trenches
- Vegetated Rooftops
- Porous/Permeable Paving
- Underground or Rooftop Storage

**Stream Restoration Strategies** are targeted at improving habitat, promoting stable stream geomorphology, and reducing in-stream pollutants due to erosion. Regional Pond Alternative and Subwatershed Improvement Strategies are critical to the success of Stream Restoration Strategies by improving drainage and reducing peak flows. A major component of Stream Restoration Strategies is identifying and addressing the source of the impairments.

**Non-Structural Measures and Preservation Strategies** are crucial to successful watershed management. Although it may be difficult to directly measure their benefits, Non-Structural Measures and Preservation Strategies can provide significant benefits to both the quality and quantity of stormwater runoff, improve habitat and stream quality, and help mitigate the potential impacts of future development. Because county-wide policy recommendations were adequately developed during the first round of Watershed Management Plans (WMPs), the Non-Structural Measures and Preservation Strategies developed for the Sugarland Run and Horsepen Creek WMP will focus on projects other than policy-related recommendations.

## Priority Subwatersheds

Based on the data/indicators available as of the completion of this technical memorandum, the following subwatersheds have been identified as priorities for restorative or preservation strategies. Table 6 also indicates which selection criteria were used elevate the subwatershed to priority status.

**Table 6 Priority Subwatersheds and Selection Criteria**

| | Preservation | | | | Restoration | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed ID | SW Ranking | Total Imperv. Area | % Increase Total Impervious | % Increase STEPL TSS | SW Ranking | SPA Data | Regional Ponds | Flooding | Public Comment/ Involvement | Field Recon | Field Recon/ ProRata |
| HC-CR-0001 | | | | | X | | | | | X | X |
| HC-CR-0002 | | | | | X | | X | | X | | |
| HC-CR-0003 | | | | | X | | | | | | |
| HC-CR-0004 | | | | | X | | X | | | X | |
| HC-CR-0005 | | | | | X | | X | | | X | |
| HC-FP-0001 | | | X | X | X | | | X | | | |
| HC-FP-0002 | | | | | | | | | | | |
| HC-FP-0003 | | | | | | | | | X | | |
| HC-FP-0004 | | | | | | | | | | | |
| HC-FP-0005 | | | | | X | | | | | | |
| HC-FP-0006 | | | X | | | | | | | | |
| HC-HC-0013 | | | | | X | | | | | | |
| HC-HC-0015 | | | | | X | | | | | | |
| HC-HC-0017 | | | | | X | | | | | | |
| HC-HC-0018 | | | | | | | | | | | X |
| HC-HC-0019 | | | | X | X | | | X | | | X |
| HC-HC-0020 | | | | | X | X | | X | X | | |
| HC-HC-0021 | | | | | X | | | | | | |
| HC-HC-0022 | | | | | | | | | | | |
| HC-HC-0023 | | X | | | X | | | | | | |
| HC-HC-0024 | | | | | X | | | | | | |
| HC-HC-0025 | | | | | X | | | | | | |
| HC-HC-0026 | | | | X | X | | | | | | |

| | Preservation | | | | Restoration | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Subwatershed ID** | **SW Ranking** | **Total Imperv. Area** | **% Increase Total Impervious** | **% Increase STEPL TSS** | **SW Ranking** | **SPA Data** | **Regional Ponds** | **Flooding** | **Public Comment/ Involvement** | **Field Recon** | **Field Recon/ ProRata** |
| **HC-HC-0027** | | | X | X | X | | | | | | |
| **HC-HC-0028** | | X | X | X | X | X | | X | | | X |
| **HC-HC-0029** | | | X | X | | | X | | | | |
| **HC-HC-0030** | | | | X | X | | | X | | | |
| **HC-HC-0031** | | | | X | X | X | | | | | |
| **HC-HC-0032** | | | | | X | | | | | | X |
| **HC-HC-0033** | | | | | | X | | | | X | |
| **HC-HC-0034** | | | | | X | X | | | | X | |
| **HC-HC-0035** | | | | | X | | | | | | |
| HC-HC-0036 | | | | | | | | | | | |
| HC-HC-0037 | | | | | | | | | | | |
| HC-HC-0038 | | | | | | | | | | | |
| **HC-HC-0039** | | | | | X | X | | | X | | |
| **HC-HC-0040** | | | | | X | X | | | X | | |
| **HC-IC-0007** | X | X | | | | | | | | | |
| HC-IC-0008 | | | | | | | | | | | |
| **HC-MR-0001** | | | X | X | X | X | | X | | | |
| **HC-MR-0002** | | | X | X | | | | X | | | |
| **HC-MR-0003** | X | | | X | | | | | | | |
| HC-MR-0004 | | | | | | | | | | | |
| **SU-FF-0001** | | | | | | | X | | | | |
| **SU-FF-0002** | | | | | | X | X | | | | |
| **SU-FF-0003** | | | X | | | | X | | | | X |
| **SU-FF-0004** | | | | | | | X | | | | X |
| **SU-FL-0001** | | | | | X | X | | | | | |
| **SU-FL-0002** | | | | | | X | | | X | | |
| **SU-FL-0003** | X | | | X | | X | | | X | | |
| **SU-FL-0004** | | | X | | | X | | X | X | | |

| | Preservation | | | | Restoration | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Subwatershed ID** | **SW Ranking** | **Total Imperv. Area** | **% Increase Total Impervious** | **% Increase STEPL TSS** | **SW Ranking** | **SPA Data** | **Regional Ponds** | **Flooding** | **Public Comment/ Involvement** | **Field Recon** | **Field Recon/ ProRata** |
| SU-FL-0005 | | | | | | | | | | | |
| **SU-FL-0006** | | | | | X | | | | | | |
| **SU-FL-0007** | | | | | X | | | X | | | |
| **SU-FL-0008** | | | X | X | | | | X | | | |
| **SU-FL-0009** | | | X | | | | | | | | |
| **SU-HB-0001** | X | | | | | | | | | | |
| **SU-MB-0001** | X | | X | | | | | | | | |
| SU-MB-0002 | | | | | | | | | | | |
| **SU-MB-0003** | X | X | | | | | | | | | |
| **SU-MB-0004** | X | X | | | | | | | | | |
| **SU-MB-0005** | X | X | | | | | | | | | |
| **SU-PO-0001** | X | X | | | | | | | | | |
| **SU-PO-0002** | X | X | | | | | | | | | |
| **SU-RI-0001** | | | | | X | | | | | | |
| SU-RI-0002 | | | | | | | | | | | |
| **SU-RI-0003** | | | | | | | X | | X | X | |
| **SU-SU-0006** | X | | | | | | | | | | |
| **SU-SU-0007** | X | | | | | | | | | | |
| SU-SU-0008 | | | | | | | | | | | |
| **SU-SU-0011** | X | X | | | | | | X | | | |
| SU-SU-0012 | | | | | | | | | | | |
| **SU-SU-0013** | X | X | X | | | | | | | | X |
| **SU-SU-0018** | | | X | X | | | | X | | | |
| **SU-SU-0019** | X | | | | | | | X | | | |
| **SU-SU-0020** | X | X | X | | | | | | | | |
| **SU-SU-0021** | X | | | | | | | | | | |
| **SU-SU-0022** | X | | | | | X | | X | | | |
| SU-SU-0023 | | | | | | | | | | | |

| | Preservation | | | | Restoration | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Subwatershed ID** | **SW Ranking** | **Total Imperv. Area** | **% Increase Total Impervious** | **% Increase STEPL TSS** | **SW Ranking** | **SPA Data** | **Regional Ponds** | **Flooding** | **Public Comment/ Involvement** | **Field Recon** | **Field Recon/ ProRata** |
| **SU-SU-0024** | | X | | | | | | | X | | |
| SU-SU-0025 | | | | | | | | | | | |
| **SU-SU-0026** | | | | | | | X | | | X | |
| **SU-SU-0027** | X | | | | | | X | | | | |
| **SU-SU-0028** | | | X | X | | X | | | | | |
| **SU-SU-0029** | X | | | | | | | | | | |
| **SU-SU-0030** | | | | | | X | | | | | |
| **SU-SU-0031** | | | | | | X | | | | | |
| **SU-SU-0032** | | | | | | X | | | X | | |
| SU-SU-0033 | | | | | | | | | | | |
| **SU-SU-0034** | | | X | X | | X | | | | | |
| **SU-SU-0035** | | | | | | | | X | | | |
| **SU-SU-0036** | | | | | | | | | X | X | |
| **SU-SU-0037** | | | | X | | | | | | X | |
| **SU-SU-0038** | | | | | | | | | X | | |
| **SU-SU-0039** | | | | | X | | | | | | |
| **SU-SU-0040** | | | | | X | | | X | X | | |
| **SU-SU-0041** | | | X | X | X | | | | | | |
| **SU-SU-0042** | | | | X | X | | | X | X | | |
| **SU-SU-0043** | | | X | X | X | | | | X | | |
| **SU-SU-0044** | | | X | | X | | | | | | |
| **SU-SU-0045** | | | | | X | | | X | X | | |
| **SU-SU-0046** | | | | | X | | | X | | | |
| **SU-SU-0047** | | | | | X | | | X | | | |
| **SU-SU-0048** | | | | | X | | | X | | | |
| **SU-SU-0049** | | | | | X | | | X | | | |
| **SU-SU-0050** | | | | | X | | | | | | |
| SU-SU-0051 | | | | | | | | | | | |

**Identifying Projects**

A universe of potential projects was identified for the watersheds focusing on the Improvement Goals/Strategies and Preservation Strategies developed for each subwatershed. Temporary Project Identification Numbers and preliminary Project Type Codes were assigned to each project. All structural candidate projects were investigated in the field in order to determine viability and WAG members were allowed three weeks to review and provide comments on the initial universe of potential projects. The initial universe of candidate projects is provided in Appendix A. Preliminary Project Type Codes, used in the Candidate Projects table, are provided in Table 7

**Table 7 Preliminary Project Type Codes**

| Code: | Project Type: |
|---|---|
| 0 | Regional Pond Alternatives |
| 1 | New Stormwater Ponds and Stormwater Pond Retrofits |
| 2 | Natural Channel Restoration |
| 3 | Streambank Stabilization |
| 4 | Road Crossing Improvements |
| 7 | Culvert Retrofits |
| 8 | Drainage Improvements |
| 9 | Low Impact Development Retrofits |
| No ID | Non-Structural & Preservation |

Final Project Type Codes were developed by the County after the completion of the Candidate Projects table and will be used in final project numbering and in the Watershed Management Plan. These Project Type Codes are provided in Table 8, below.

**Table 8 Final Project Type Codes**

| Code: | Project Type: |
|---|---|
| 0 | Regional Pond Alternatives |
| 1 | New Stormwater Ponds and Stormwater Pond Retrofits |
| 2 | Stream Restoration |
| 3 | Area-wide Drainage Improvements |
| 4 | Culvert Retrofits |
| 5 | New Best Management Practices/Low Impact Development Retrofits |
| 6 | Flood Protection/Mitigation |
| 7 | Outfall Improvements |
| No ID | Non-Structural & Preservation |

# Appendix A

Candidate Projects Table
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Candidate Projects Map #8

# *Candidate Projects Report*

**Subwatershed** **HC-CR-0001** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Cedar

| | | | |
|---|---|---|---|
| **Description** | Primarliy MDR,OS along stream corridor, 2 DP, much of MDR has no SWM controls | **Impairments** | Erosion downstream from dry ponds, poor water quality |
| **Restoration Selection Criteria** | Field Recon/DC, Field Recon/ProRata, SW Ranking | **Preservation Qualities** | |
| **Preservation Selection Criteria** | | **Improvement Goals** | Capture impervious runoff, improve existing dry ponds, improve water quality |
| **Percent Impervious** | 31.32% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 183 | Subwatershed Improvement | 1 | Expand existing dry pond into field, replace existing paved ditch with naturalized drainage channel farther upstream, possible reduce size of low flow orifice to hold back smaller storm events | May compliment or replace projects 187 and/or 188; Should be completed prior to project 189 (stream restoration) | 3029 JEANNIE ANNA CT |
| 184 | Subwatershed Improvement | 1 | Enlarge existing dry pond 0443DP and retrofit to naturalized basin, possible reduce size of low flow orifice to hold back smaller storm events | May compliment or replace project 185 | 2992 EMERALD CHASE DR |
| 185 | Subwatershed Improvement | 9 | Integrate infiltration basin into existing dry pond 0443DP, create low flow channel with vegetated swale | May compliment or replace project 184 | 2992 EMERALD CHASE DR |
| 186 | Subwatershed Improvement | 8 | Improve outfall below dry pond 0443DP to dissipate more energy | May compliment, but should not replace projects 184 and/or 185 | 2911 PLEASANT GLEN DR |
| 187 | Subwatershed Improvement | 9 | Replace drainage ditch with vegetated swale/infiltration trench, include check dams to slow flow/dissipate energy | May compliment, but should not replace project 183 | 2907 MOTHER WELL CT |
| 188 | Subwatershed Improvement | 8 | Improve outfall to dissipate more energy | May compliment, but should not replace projects 183 and/or 187 | 13239 PLEASANT GLEN CT |
| 189 | Stream Restoration | 3 | Repair eroding streambanks below outfall | Must control stormwater prior to stream restoration (projects 183, 187, 188) | 13239 PLEASANT GLEN CT |
| 190 | Subwatershed Improvement | 9 | Disconnect drainage and re-route through vegetated swale/infiltration trench to expanded dry pond (project 183), additional drainage area to dry pond approx 5 acres | Must expand/enhance dry pond (project 183) prior to re-routing storm flow | 13304 GLEN TAYLOR LA |

| | | | | | |
|---|---|---|---|---|---|
| 191 | Subwatershed Improvement | 1 | New naturalized basin or wetland to intercept flow before it reaches the stream, drainage area approx 6 acres - along trail, also Public Education | | 2961 MOTHER WELL CT |
| 192 | Subwatershed Improvement | 9 | Replace paved ditch with infiltration trench/basin or combination of LID retrofits, drainage area approx 3 acres | | 2940 MOTHER WELL CT |
| 193 | Subwatershed Improvement | 9 | Replace paved ditch with infiltration trench/basin or combination of LID retrofits, drainage area approx 2 acres | | 13313 SCOTSMORE WY |
| 194 | Subwatershed Improvement | 9 | New infiltration basin between homes and road, drainage area approx 10 acres | Possible alternative to project 195 | 3020 SUMMERSHADE CT |
| 195 | Subwatershed Improvement | 1 | New SWM facility (naturalized basin or constructed wetland to receive flow from road drainage and intercept flow from drainage channel in HC-CR-0003, drainage area approx 13 acres | Possible alternative to project 194 | 3022 SUMMERSHADE CT |
| 196 | Subwatershed Improvement | 9 | Replace paved ditch with infiltration trench | | 3018 EMERALD CHASE DR |
| 197 | Subwatershed Improvement | 9 | Disconnect drainage and re-route through infiltration basin/variety of LID retrofits, drainage approx 5 acres | Possible alternative to project 198 | 3020 EMERALD CHASE DR |
| 198 | Subwatershed Improvement | 1 | New naturalized basin or wetland to intercept flow before it reaches the stream, drainage area approx 5 acres | Possible alternative to project 197 | 3020 EMERALD CHASE DR |
| 199 | Subwatershed Improvement | 1 | New naturalized basin or wetland to intercept flow before it reaches the stream, drainage area approx 7 acres | | 3004 EMERALD CHASE DR |

**Subwatershed** **HC-CR-0002** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Cedar

**Description** Headwaters, MDR - culdesacs, OS along stream corridor but 50' or less forested buffer, no SWM

**Impairments** Poor habitat and water quality, stream erosion impacts, high flows per acre

**Restoration Selection Criteria** Regional Pond and Public Involvement, SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Provide alternatives to regional pond, improve habitat and water quality, capture impervious runoff

**Percent Impervious** 28.95%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M1a | Regional Pond Alternatives | 0 | LID retrofit - Replace existing concrete channel with new infiltration basin, drainage area approx 8 acres | | 3013 HUGHSMITH CT |
| M1b | Regional Pond Alternatives | 0 | Drainage improvement - Replace existing piped drainage with some type of natural channel along edge of field | may compliment or replace project M1c, possible alternative to project M1d | 3021 HUGHSMITH CT |
| M1c | Regional Pond Alternatives | 0 | LID project - integrate Infiltration trench/basin with drainage improvement project (bringing drainage from pipe to surface), drainage area approx. 6 acres | may compliment or replace project M1b, possible alternative to project M1d | 3021 HUGHSMITH CT |
| M1d | Regional Pond Alternatives | 0 | New constructed wetland to replace existing piped drainage, drainage area approx. 6 acres | possible alternative to projects M1b & M1c | 3021 HUGHSMITH CT |
| M1e | Regional Pond Alternatives | 0 | Drainage improvement project to add meander to straightened stream channel | | 13239 STONE HEATHER DR |
| M1f | Regional Pond Alternatives | 0 | New SWM facility - wetland or wet pond to receive flow from portion of Chantilly Highlands, drainage area approx 12 acres | | 13131 LADYBANK LA |
| M1g | Regional Pond Alternatives | 0 | LID project - new bioretention or infiltration to intercept piped drainage before it reaches the stream, drainage area approx 1.5 acres | | 13145 LADYBANK LA |
| M2 | Stream Restoration | 3 | Repair headcut and erosion | | 2973 MOTHER WELL CT |

**Subwatershed** **HC-CR-0003** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Cedar

**Description** Primarily MDR culdesaces, OS along stream corridor, some ESR along riparian zone slated for LDR, 6 DP

**Impairments** Poor water quality, deficient riparian buffer, high channelized streams

**Restoration Selection Criteria** SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Improve water quality & riparian buffer, improve channelized streams

**Percent Impervious** 30.04%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 200 | Stream Restoration | 2 | Daylight stream and return to natural channel - follow meander of OS | May compliment project 201 and 202 | 13104 WHEELER WY |
| 201 | Subwatershed Improvement | 1 | New naturalized basin or wetland | May compliment project 200 and 202 | 13106 WHEELER WY |
| 202 | Subwatershed Improvement | 9 | Replace paved ditch with vegetated swale/infiltration trench | May compliment project 200 and 201 | 3115 ASHBURTON AV |
| 203 | Subwatershed Improvement | 9 | Integrate infiltration basin into dry pond 1059DP, and replace paved ditch with vegetated swale/infiltration trench | | 3117 ASHBURTON AV |
| 204 | Subwatershed Improvement | 9 | Retrofit grass swale to vegetated swale/infiltration trench, include check dams to slow flow/dissipate energy and improve outfalls | | 13022 GREY FRIARS PL |
| 205 | Subwatershed Improvement | 1 | New naturalized basin or wetland, drainage area approx 13 acres | | 12903 HARRINGTON CT |
| 206 | Subwatershed Improvement | 9 | Integrate infiltration basin into dry pond 1072DP, replace paved ditches with vegetated swales/infiltration trenches | | 12900 HARRINGTON CT |
| 207 | Subwatershed Improvement | 1 | Retrofit dry pond 1001DP to naturalized basin | | 12807 SAFFRON DR |
| 208 | Subwatershed Improvement | 9 | Integrate infiltration basin into dry pond 1116DP, replace paved ditches with vegetated swales/infiltration trenches | Possible alternative to project 209 | 12901 HEDGETOP DR |
| 209 | Subwatershed Improvement | 1 | Retrofit dry pond 1116DP to naturalized basin | Possible alternative to project 208 | 12901 HEDGETOP DR |
| 210 | Preservation | | Restore and improve riparian buffer | | 12902 HEDGETOP DR |

**Subwatershed** **HC-CR-0004** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Cedar

**Description** Headwaters, primarily MDR, culdesacs, OS along most of stream corridor, most of MDR has SWM control, 1 WP, 1 DP, 2 nonSWM ponds

**Impairments** Flood complaints, poor habitat and water quality

**Restoration Selection Criteria** Regional Pond and Field Recon/DC, SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Provide alternatives to regional pond, improve habitat and water quality, capture impervious runoff

**Percent Impervious** 20.75%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M4r | Regional Pond Alternatives | 0 | SWM retrofit - retrofit existing dry pond 0116DP to provide additional quantity and/or quality control | | 2956 TIMBER WOOD WY |
| M4s | Regional Pond Alternatives | 0 | LID retrofit - retrofit existing dry pond 0116DP to infiltration basin | | 2956 TIMBER WOOD WY |
| M4t | Regional Pond Alternatives | 0 | LID retrofit, bio retention to intercept piped drainage before it reaches stream drainage area approx 1 acre | would require homeowner consent | 12811 AWBREY CT |
| M4u | Regional Pond Alternatives | 0 | New constructed wetland to replace existing channelized drainage, drainage area approx. 20 acres - also integrate public education (park) | | 12754 FLAT MEADOW LA |
| M4v | Regional Pond Alternatives | 0 | New constructed wetland to replace existing paved ditch, drainage area approx. 9 acres - also integrate public education (park/trail) | possible alternative to projects M4w or M4x | 12712 TURBERVILLE CT |
| M4w | Regional Pond Alternatives | 0 | New infiltration basin to replace existing paved ditch, drainage area approx. 9 acres | possible alternative to projects M4v or M4x | 12759 FLAT MEADOW LA |
| M4x | Regional Pond Alternatives | 0 | Drainage improvement project to add meander/natural channel to paved ditch | possible alternative to projects M4v or M4w | 12712 TURBERVILLE CT |

**Subwatershed** **HC-CR-0005** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Cedar

**Description** Headwaters, primarily MDR, culdesacs, OS along most of stream corridor, most of MDR has SWM control,5 DP, 1 WP, 3 nonSWM pond

**Impairments** Flood complaints, fair habitat, poor water quality

**Restoration Selection Criteria** Drains to Regional Pond in HC-CR-0004 and Field Recon/DC, SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Provide alternatives to regional pond, improve habitat and water quality, capture impervious runoff

**Percent Impervious** 23.01%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M3 | Stream Restoration | 2 | Daylight streams between utility ROW and wet pond | May compliment projects M4m/M4n/M4o and M4p/M4q | 12776 TURBERVILLE LA |
| M4a | Regional Pond Alternatives | 0 | LID retrofit - retrofit existing berm/open area to infiltration basin, drainage area approx 5 acres | | 12605 ASTURIAN CT |
| M4b | Regional Pond Alternatives | 0 | New constructed wetland/SWM pond to provide treatment to Franklin Corner sbdv, re-route pipe at edge of woodlands to intercept flows, drainage area approx 15 acres | | 12605 HERITAGE FARM LA |
| M4c | Regional Pond Alternatives | 0 | LID project - bioretention at rear corner of yard, drainage area approx. 1.5 acres | would require homeowner consent | 3001 JONQUILLA CT |
| M4d | Regional Pond Alternatives | 0 | SWM retrofit - retrofit existing non-stormwater pond to provide additional quantity and/or quality control, may include pond draw-down | | 12710 FRANKLIN FARM RD |
| M4e | Regional Pond Alternatives | 0 | SWM retrofit - retrofit existing dry pond 0880DP to naturalized dry pond or wetland | | 3116 FRANKLINS WY |
| M4f | Regional Pond Alternatives | 0 | SWM retrofit - retrofit existing non-stormwater pond to provide additional quantity and/or quality control, may include pond draw-down | | 12741 FRANKLIN FARM RD |
| M4g | Regional Pond Alternatives | 0 | New constructed wetland/SWM pond at pipe outfall to provide treatment to portion of Franklin Farm sbdv, drainage area approx 12 acres | | 13123 ROUNDING RUN CI |

| | | | | | |
|---|---|---|---|---|---|
| M4h | Regional Pond Alternatives | 0 | New constructed wetland/SWM pond between two pipe outfalls to provide treatment to portion of Franklin Farm sbdv, drainage area approx 15 acres | | 13111 ROUNDING RUN CI |
| M4i | Regional Pond Alternatives | 0 | New LID project - infiltration basin to intercept piped drainage before it reaches the stream, drainage area approx. 5 acres | | 3124 HANNAH'S POND LA |
| M4j | Regional Pond Alternatives | 0 | Non-Structural - Targeted rain barrel program for homes on Cross Creek Ln & Cross Creek Ct | | 12810 CROSS CREEK LA |
| M4k | Regional Pond Alternatives | 0 | Drainage improvement - improve drainage channel between piped outfall and stream | | 13100 BRAMBLEWOOD LA |
| M4l | Regional Pond Alternatives | 0 | New LID project - infiltration basin to intercept piped drainage, drainage area approx. 7 acres | | 13126 THORNAPPLE PL |
| M4m | Regional Pond Alternatives | 0 | New LID project - 2 infiltration basins to replace existing paved ditches, drainage area approx. 14 acres total | possible alternative to projects M4n or M4o | 12709 TURBERVILLE CT |
| M4n | Regional Pond Alternatives | 0 | New constructed wetlands to replace existing paved ditches, drainage area approx. 14 acres total | possible alternative to projects M4m or M4o | 12709 TURBERVILLE CT |
| M4o | Regional Pond Alternatives | 0 | Drainage improvement project to replace existing paved ditches with meander/natural channel | possible alternative to projects M4m or M4n | 3007 FLAT MEADOW CT |
| M4p | Regional Pond Alternatives | 0 | New LID project - infiltration basin replace existing paved ditch, drainage area approx. 2.5 acres | possible alternative to project M4q | 3108 HANNAH'S POND LA |
| M4q | Regional Pond Alternatives | 0 | Drainage improvement project to replace existing paved ditch with meander/natural channel | possible alternative to project M4p | 3108 HANNAH'S POND LA |

**Subwatershed** **HC-FP-0001** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Frying Pan

| | | | |
|---|---|---|---|
| **Description** | Primarily LDR, HDR, INT, OS, some non-riparian OS slated for HDR, 5 DP - most of dev has SWM | **Impairments** | Flooding, deficient buffer, poor habitat, severe headcut |
| **Restoration Selection Criteria** | SW Ranking, Flooding | **Preservation Qualities** | At risk for future development of OS |
| **Preservation Selection Criteria** | % Increase IMP (7.44%), STEPL | **Improvement Goals** | capture impervious runoff, improve habitat and riparian buffers, repair headcut |
| **Percent Impervious** | 23.27% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 60 | Subwatershed Improvement | 8 | Improve outfall to dissipate more energy | Possible alternative to project 61 | 2714 COPPER CREEK RD |
| 61 | Subwatershed Improvement | 1 | New SWM facility - re-route drainage pipe to discharge into new dry pond/constructed wetland downstream of current outlet | Possible alternative to project 60 | 2718 COPPER CREEK RD |
| 62 | Stream Restoration | 3 | Repair headcut below SW outfall | | 2714 COPPER CREEK RD |
| 63 | Subwatershed Improvement | 1 | Retrofit existing dry pond 1288DP to provide additional storage/water quality - current outlet structure is 5' culvert, not functioning dry pond | | 2554 CENTREVILLE RD |
| 64 | Preservation | | Conservation easement to preserve riparian buffer area and allow for enhanced dry pond | | 2554 CENTREVILLE RD |
| 65 | Subwatershed Improvement | 9 | LID retrofits including bioretention and infiltration around facility parking lots/landscaping to intercept SW runoff before it reaches the stream | | 13600 FRYING PAN RD |
| 66 | Subwatershed Improvement | 9 | LID retrofits including bioretention and infiltration around facility parking lots/landscaping to infiltrate SW runoff | | 2717 WEST OX RD |
| 67 | Subwatershed Improvement | 1 | SWM retrofit - enhance or replace TBD dry pond with functioning dry pond/naturalized basin, approx drainage area 20 acres | | 2625 CENTREVILLE RD |
| 68 | Subwatershed Improvement | 9 | LID retrofit/bioretention/infiltration to treat runoff from HIC and roadside drainage | | 13500 COPPER RIDGE DR |

***Subwatershed*** ***HC-FP-0002*** ***Watershed:*** *Horsepen Creek* ***Management Area:*** *Horsepen - Frying Pan*

***Description*** Primarily HDR & INT, 3 DP, most dev area has SWM

***Impairments***

***Restoration Selection Criteria*** Non-Priority

***Preservation Qualities***

***Preservation Selection Criteria*** Non-Priority

***Improvement Goals***

***Percent Impervious***

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 69 | Subwatershed Improvement | 1 | Retrofit existing dry pond DP0406 to naturalized basin | | 2486 MASONS FERRY DR |

**Subwatershed** **HC-FP-0003** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Frying Pan

**Description** Primarily MDR & OS, 3 DP, most of res area is detention only SWM

**Impairments** Invasive species, deficient buffer, fair habitat, channelized streams

**Restoration Selection Criteria** Public Involvement

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** buffer restoration, restore natural stream channels

**Percent Impervious** 20.74%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 70 | Subwatershed Improvement | 1 | New SWM facility, wet pond/constructed wetland, drainage area approx 5 acres | | 13139 CURVED IRON RD |
| 71 | Subwatershed Improvement | 1 | New SWM facility, wet pond/constructed wetland, drainage area approx 8 acres | Possible alternative to project 72 | 2504 HALTERBREAK CT |
| 72 | Subwatershed Improvement | 9 | New infiltration basin, may or may not include swale, drainage area approx 8 acres | Possible alternative to project 71 | 2500 HALTERBREAK CT |
| 73 | Subwatershed Improvement | 1 | Retrofit existing dry pond 0919DP into naturalized dry pond | | 13115 FARMSTED CT |
| 74 | Stream Restoration | 2 | Remove concrete channel replace with natural channel design | will compliment project 73 | 13107 FARMSTED CT |
| 75 | Preservation | | Riparian buffer restoration | | 13109 FARMSTED CT |
| 76 | Subwatershed Improvement | 9 | New infiltration basin integrated into dry pond 0563DP, drainage area approx 13 acres | | 13022 HENSON CT |
| 77 | Subwatershed Improvement | 9 | New infiltration basin integrated into dry pond 0631DP, drainage area approx 12 acres | | 13019 NEW AUSTIN CT |

**Subwatershed** **HC-FP-0004** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Frying Pan

**Description** Primarily MDR & HDR, 6 DP, 1 non-SWM pond, res not treated

**Impairments**

**Restoration Selection Criteria** Non-Priority

**Preservation Qualities**

**Preservation Selection Criteria** Non-Priority

**Improvement Goals**

**Percent Impervious**

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 78 | Subwatershed Improvement | 1 | New infiltration basin, may or may not include swale, drainage area approx 6 acres | | 2469 IRON FORGE RD |
| 79 | Subwatershed Improvement | 1 | New bioretention basin(s)/infiltration LID, approx drainage area 2 acres | | 13108 WEATHERED OAK CT |
| 80 | Subwatershed Improvement | 1 | Retrofit dry pond 1224DP to naturalized basin | | 13029 MONROE MANOR DR |
| 81 | Subwatershed Improvement | 1 | Retrofit dry pond 1485DP to naturalized basin | | 13240 COPPER COVE WY |
| 82 | Subwatershed Improvement | 1 | Retrofit dry pond 0933DP to naturalized basin | | 13112 ASHNUT LA |
| 83 | Subwatershed Improvement | 1 | Retrofit dry pond 1416DP to naturalized basin | | 12962 PARK CRESCENT CI |

**Subwatershed** **HC-FP-0005** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Frying Pan

**Description** Primarily MDR, some OS - not planned for dev, 2 WP, 3 DP

**Impairments** Poor habitat ds of WPs, deficient riparian buffer, fair water quality

**Restoration Selection Criteria** SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Improve water quality, habitat and riparian buffers

**Percent Impervious** 32.78%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 84 | Subwatershed Improvement | 1 | Retrofit lower portion of dry pond 1222DP to naturalized basin | | 12913 LOCKSLEY CT |
| 85 | Subwatershed Improvement | 1 | New naturalized basin in existing depression, drainage area approx 8 acres (not including drainage area to upstream dry pond) | | 2482 SYCAMORE LAKES CV |
| 86 | Subwatershed Improvement | 1 | Retrofit dry pond 0610DP to naturalized basin | Possible alternative to project 87 | 12839 TOURNAMENT DR |
| 87 | Subwatershed Improvement | 9 | Integrate infiltration basins into dry pond 0610DP, drainage area approx 35 acres | Possible alternative to project 86 | 12839 TOURNAMENT DR |
| 88 | Subwatershed Improvement | 1 | New naturalized basin/wet pond to intercept drainage from Oak Mill subv before it reaches stream, drainage area approx 11 acres | | 13005 PINEY GLADE RD |

**Subwatershed** **HC-FP-0006** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Frying Pan

**Description** Headwaters, primarily MDR, some OS - not planned for dev, no SWM

**Impairments** Fair water quality downstream

**Restoration Selection Criteria**

**Preservation Qualities** Future development in non-riparian areas

**Preservation Selection Criteria** % Increase IMP (2.24%)

**Improvement Goals** Improve water quality, preserve habitat and riparian buffers, provide SWM controls

**Percent Impervious** 28.90%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 89 | Subwatershed Improvement | 1 | Retrofit existing paved ditch into naturalized dry basin or constructed wetland | | 12715 FOX WOODS DR |
| 90 | Subwatershed Improvement | 1 | New naturalized basin/wet pond to intercept drainage from Monroe Manor subv before it reaches stream, drainage area approx 19 acres | | 2520 CAMBERWELL CT |
| 91 | Subwatershed Improvement | 1 | New naturalized basin to intercept drainage from Fox Mill Heights Sect. 1 subv before it reaches stream, drainage area approx 30 acres | | 12708 FOX WOODS DR |

***Subwatershed*** ***HC-HC-0013*** ***Watershed:*** *Horsepen Creek* ***Management Area:*** *Horsepen -Lower Middle*

| | | | |
|---|---|---|---|
| ***Description*** | Very small land area entirely within Dulles Int'l Airport | ***Impairments*** | |
| ***Restoration Selection Criteria*** | SW Ranking | ***Preservation Qualities*** | |
| ***Preservation Selection Criteria*** | | ***Improvement Goals*** | No improvement opportunities |
| ***Percent Impervious*** | 33.97% | | |

| *Temporary Project ID* | *Strategy* | *Project Type* | *Description of Project* | *Comments* | *Nearest Address* |
|---|---|---|---|---|---|

***Subwatershed*** ***HC-HC-0015*** ***Watershed:*** *Horsepen Creek* ***Management Area:*** *Horsepen -Lower Middle*

***Description*** Very small land area (approx 8 acres) within Fairfax County, wooded with 1 LIC facility

***Impairments***

***Restoration Selection Criteria*** SW Ranking

***Preservation Qualities***

***Preservation Selection Criteria***

***Improvement Goals*** No improvement opportunities

***Percent Impervious*** 18.03%

| *Temporary Project ID* | *Strategy* | *Project Type* | *Description of Project* | *Comments* | *Nearest Address* |
|---|---|---|---|---|---|

**Subwatershed** **HC-HC-0017** **Watershed:** Horsepen Creek **Management Area:** Horsepen -Lower Middle

**Description** Bordering Loudoun, primarily MDR, 1 WP, 1 DP

**Impairments** low water quality, higher impervious

**Restoration Selection Criteria** SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Provide water quality treatment, capture impervious runoff

**Percent Impervious** 33.55%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 1 | Subwatershed Improvement | 9 | Retrofit dry pond to naturalized infiltration basin | if soils support infiltration, if not use project 2, Town of Herndon | 914 SPRING KNOLL DR |
| 2 | Subwatershed Improvement | 1 | Retrofit dry pond to naturalized dry basin | if project 1 unsuitable, Town of Herndon | 1540 SUMMERSET PL |
| 3 | Subwatershed Improvement | 1 | New stormwater facility - naturalized dry pond, drainage area approx. 30 ac. | Town of Herndon | 1491 OAK TRAIL CT |

**Subwatershed** **HC-HC-0018** **Watershed:** Horsepen Creek **Management Area:** Horsepen -Lower Middle

**Description** Bordering Loudoun, primarily HDR & MDR, 1 DP

**Impairments** Culvert bottoms rusted out, channel eroding beneath and around culvert

**Restoration Selection Criteria** Field Recon/ ProRata

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Replace culvert, capture impervious runoff if possible

**Percent Impervious** 23.93%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 4 | Subwatershed Improvement | 7 | Culvert retrofit upstream of Rock Hill Rd crossing (Pro Rata Project No. OAK-1) | if project 4 unsuitable, try project 5 | 2169 ASTORIA Cl |
| 5 | Road Crossing Improvement | 4 | Raise road and replace culvert at Rock Hill Rd crossing (Pro Rata Project No. OAK-1) | if project 5 unsuitable, try project 4 | 2169 ASTORIA Cl |
| 6 | Non-Structural | | Rain Barrel Program Reflection Lake HOA & Four Season HOA (Herndon) | | 2021 MALEADY DR |

**Subwatershed** **HC-HC-0019** **Watershed:** Horsepen Creek **Management Area:** Horsepen -Lower Middle

| | | | |
|---|---|---|---|
| **Description** | Bordering Loudoun, primarily HDR & MDR, some open space along stream, Dulles Toll Rd, 1 non-SW pond/marsh, no SWM | **Impairments** | Flooding (2yr)/ineffective control at road crossing, at risk for future development, poor water quality, high flows per acre |
| **Restoration Selection Criteria** | Field Recon/ ProRata, SW Ranking, Flooding | **Preservation Qualities** | |
| **Preservation Selection Criteria** | STEPL | **Improvement Goals** | Fix road crossing at Rock Hill Rd, improve water quality, capture impervious runoff. Address flows upstream. |
| **Percent Impervious** | 29.95% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 7 | Subwatershed Improvement | 7 | Culvert retrofit upstream of Rock Hill Rd crossing (Pro Rata Project No. OAK-2) | | 2152 ROCK HILL RD |
| 8 | Preservation | | Preserve existing wetland/marsh/non-stormwater pond area from future development | | 2280 ASTORIA Cl |
| 9 | Non-Structural | | Rain Barrel Program Reflection Lake HOA | | 13417 POCONO CT |

**Subwatershed** **HC-HC-0020** **Watershed:** Horsepen Creek **Management Area:** Horsepen -Lower Middle

**Description** Good riparian corridor, Primarily HDR, some LIC/HIC, and an Elem School, DP & BMP at school, 1 DP for LIC/HIC, 2 UG for HIC, in-line pond, bulk of HDR has no SWM

**Impairments** Flooding (Public inv & based on FEMA), Stream erosion & ditch impacts from uncontrolled runoff, high SW outfalls, high impervious, poor water quality

**Restoration Selection Criteria** SPA Data, SW Ranking, Flooding, Public Involvement

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Capture impervious runoff, stabilize/repair stream impacts, improve water quality

**Percent Impervious** 42.22%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 10 | Subwatershed Improvement | 9 | Two infiltration basins on athletic fields in Four Seasons HOA park area, drainage area approx. 10 acres each. Additional LID around parking lot/rec. center - rain gardens, infiltration trenches, cisterns | | 1201 HERNDON PW |
| 11 | Subwatershed Improvement | 9 | New infiltration basin in HOA open corner, total drainage area approx 18 ac. Additional LID around parking lots, between buildings, along roadway - rain gardens, infiltration trenches | if infiltration not possible try project 12 | 2201 CHAMBLEE PL |
| 12 | Subwatershed Improvement | 1 | New dry pond in HOA open corner, total drainage area approx 18 ac. | if project 11 is unsuitable | 2201 CHAMBLEE PL |
| 13 | Subwatershed Improvement | 7 | Culvert retrofit upstream of Parcher Ave to replace WP0219 (no outlet structure) | | 2102 MONAGHAN DR |
| 14 | Subwatershed Improvement | 1 | New SWM pond, intercept storm drains from Reflection Lake/Reflection Lake Sect. 10 , drainage area approx 18 ac. | | 13351 PARCHER AV |
| 15 | Subwatershed Improvement | 8 | Improve drainage channels & outfalls from Reflection Lake Sect. 7 to stream | | 13352 FONES PL |
| 16 | Subwatershed Improvement | 8 | Improve drainage channels & outfalls from Reflection Lake Sect. 7 to stream | | 13353 FELDMAN PL |
| 17 | Subwatershed Improvement | 8 | Improve drainage channels & outfalls from Reflection Lake Sect. 7 to stream | | 13359 HUNGERFORD PL |
| 18 | Subwatershed Improvement | 8 | Improve drainage channels & outfalls from Reflection Lake Sect. 7 to stream | | 13357 SHEA PL |
| 19 | Subwatershed Improvement | 8 | Improve drainage channels & outfalls from Reflection Lake Sect. 7 to stream | If project 21 not possible | 13349 APGAR PL |

| | | | | | |
|---|---|---|---|---|---|
| 20 | Subwatershed Improvement | 8 | Improve drainage channels & outfalls from Reflection Lake Sect. 7 to stream | | 13317 AIKEN PL |
| 21 | Subwatershed Improvement | 1 | New SWM pond, intercept storm drains from eastern half of Reflection Lake Sect. 7, drainage area approx 10 acres | If new SWM pond possible, project 19 not necessary | 13349 APGAR PL |
| 22 | Subwatershed Improvement | 8 | Improve drainage channels & outfalls from Reflection Lake to stream | | 2123 MALEADY DR |
| 23 | Subwatershed Improvement | 8 | Improve drainage channels & outfalls from Reflection Lake to stream | | 2117 MALEADY DR |
| 24 | Subwatershed Improvement | 8 | Improve drainage channels & outfalls from Reflection Lake to stream | | 13351 PARCHER AV |
| 25 | Stream Restoration | 3 | Repair eroding banks at SPA erosion points HCUT6-6-E4 & E5 | | 13351 PARCHER AV |
| 26 | Non-Structural | | Riparian buffer restoration upstream of Parcher Ave. | | 2138 MONAGHAN DR |

**Subwatershed** **HC-HC-0021** **Watershed:** Horsepen Creek **Management Area:** Horsepen -Lower Middle

**Description** Headwaters, Primarily MDR & HDR, no SWM

**Impairments** Poor habitat, high impervious, poor water quality

**Restoration Selection Criteria** SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Capture impervious runoff, improve water quality

**Percent Impervious** 44.12%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 27 | Subwatershed Improvement | 9 | New infiltration basins/trenches on lawn in Four Seasons HOA, intercept drainage from development on N side of Herndon Pwy, drainage area approx. 35 acres total. | Infiltration is ideal, if not possible, try project 28 | 1338 SPRINGTIDE PL |
| 28 | Subwatershed Improvement | 1 | New dry pond on lawn in Four Seasons HOA, intercept drainage from development on N side of Herndon Pwy, drainage area approx. 35 acres total. | If project 27 not possible | 1334 SPRINGTIDE PL |
| 29 | Subwatershed Improvement | 9 | New infiltration basin in park area of Four Seasons Regime HOA, drainage area approx 5 acres | | 624 CLEARWATER CT |

**Subwatershed** **HC-HC-0023** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Middle

| | | | |
|---|---|---|---|
| **Description** | Bordering Loudoun, primarily undeveloped woodlands between Sully Rd and Horsepen Creek - part of Dulles Int'l Airport property | **Impairments** | Poor habitat diversity and stream water quality |
| **Restoration Selection Criteria** | SW Ranking | **Preservation Qualities** | Undeveloped woodlands on bulk of Fairfax Co. portion of subwatershed |
| **Preservation Selection Criteria** | IMP | **Improvement Goals** | Most likely upstream effects, address water quality upstream, preserve undeveloped woodlands |
| **Percent Impervious** | 5.44% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|

**Subwatershed** **HC-HC-0024** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Middle

**Description** Bordering Loudoun, no buildings, primarily short grass land cover - part of Dulles Int'l Airport property

**Impairments** No stream buffer, poor water quality, poor habitat, high stormwater flows

**Restoration Selection Criteria** SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Restore riparian buffers to the extent possible, improve water quality, drainage improvements, reduce stormwater flows

**Percent Impervious** 11.35%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 30 | Subwatershed Improvement | 1 | Retrofit existing marsh area to high quality wetland | | 2550 DULLES VIEW DR |
| 31 | Non-Structural | | Riparian buffer restoration to the extent possible on the airport property | | 2551 DULLES VIEW DR |
| 32 | Subwatershed Improvement | 1 | Drainage improvement project to add meander to straightened stream channel | | 2551 DULLES VIEW DR |

**Subwatershed** **HC-HC-0025** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Middle

| | | | |
|---|---|---|---|
| **Description** | Tank farm & power substation for Dulles Int'l Airport, and undeveloped woodlands to north, no SWM | **Impairments** | Deficient riparian buffer, poor water quality, high stormwater flows |
| **Restoration Selection Criteria** | SW Ranking | **Preservation Qualities** | |
| **Preservation Selection Criteria** | | **Improvement Goals** | Restore riparian buffers, improve water quality, reduce stormwater flows |
| **Percent Impervious** | 17.33% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 33 | Subwatershed Improvement | 1 | Retrofit sediment basin into SWM facility and intercept drainage from ditch along Dulles Toll Road. | | 13801 FRYING PAN RD |
| 34 | Non-Structural | | Riparian buffer restoration | | 2551 DULLES VIEW DR |

**Subwatershed** **HC-HC-0026** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Middle

**Description** Primarily LIC & HDR, all developed LU is treated by WP, LIC ds of WP is under development in 2007 aerial - burying stream, OS is slated for IND

**Impairments** Poor habitat and water quality, high imperviousness, deficient buffers, and very high stormwater flows

**Restoration Selection Criteria** SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria** STEPL

**Improvement Goals** Improve stream habitat and water quality including riparian buffers, capture impervious runoff and reduce stormwater flows

**Percent Impervious** 44.72%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 35 | Stream Restoration | 2 | Daylight stream and return to natural channel | | 2551 DULLES VIEW DR |
| 36 | Non-Structural | | Riparian buffer restoration | | 2551 DULLES VIEW DR |
| 37 | Subwatershed Improvement | 1 | Retrofit existing dry pond to provide quality treatment for Wellesley HOA | | 13680 SAINT JOHNS WOOD PL |
| 38 | Subwatershed Improvement | 1 | New naturalized basin in existing drainage swale | in a very new development, may or may not have un-identified SWM facilities already | 13648 LEGACY CI |

**Subwatershed** **HC-HC-0027** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Middle

| | | | |
|---|---|---|---|
| **Description** | Primarily ESR & OS, slated for HIC & IND, 1 WP | **Impairments** | Poor habitat and deficient buffer (SPS sampling station for fish & benthic) |
| **Restoration Selection Criteria** | SW Ranking | **Preservation Qualities** | At risk for future development of ESR & OS including riparian buffer |
| **Preservation Selection Criteria** | % Increase IMP (9.51%), STEPL | **Improvement Goals** | Preserve & enhance riparian buffer & habitat |
| **Percent Impervious** | 10.50% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 59 | Preservation | | Conservation easement to preserve riparian buffer area and Riparian Buffer restoration | | 13801 FRYING PAN RD |

**Subwatershed** **HC-HC-0028** **Watershed:** Horsepen Creek **Management Area:** Horsepen -Middle

| | | | |
|---|---|---|---|
| **Description** | Primarily LDR, HDR, IND, HIC with some OS riparian buffers, 1 WP, 7 DP, 1 group of BMPs | **Impairments** | Poor habitat, numerous SPA impacts (erosion and tree obstructions), minor flooding |
| **Restoration Selection Criteria** | Field Recon/ ProRata, SPA Data, SW Ranking, Flooding | **Preservation Qualities** | At risk for future development of OS to IND |
| **Preservation Selection Criteria** | IMP, % Increase IMP (19.80%), STEPL | **Improvement Goals** | Restore stream impacts, preserve riparian buffers, improve water quality, reduce stormwater flows upstream |
| **Percent Impervious** | 28.61% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 100 | Non-Structural | | Investigate and remove obstructions (possibly 4 moderate-severe obstructions) | | 13617 MOUNTAIN VIEW CT |
| 101 | Subwatershed Improvement | 8 | Improve outfall to dissipate more energy | | 13617 MOUNTAIN VIEW CT |
| 102 | Non-Structural | | Investigate and remove obstructions (possibly 2 moderate-severe obstructions) | | 13616 MOUNTAIN VIEW CT |
| 103 | Stream Restoration | 3 | Repair eroding streambanks (erosion leading to fallen tree obstructions, creating more erosion) | | 13611 FLORIS ST |
| 104 | Stream Restoration | 3 | Repair eroding streambanks (erosion leading to fallen tree obstructions, creating more erosion) | | 13652 CEDAR RUN LA |
| 105 | Stream Restoration | 3 | Repair eroding streambanks (erosion leading to fallen tree obstructions, creating more erosion) | | 2748 COPPER CREEK RD |
| 106 | Subwatershed Improvement | 9 | New infiltration basin in empty field, drainage area approx 9 acres | | 13508 FLORIS ST |
| 107 | Preservation | | Conservation easement to preserve riparian buffer | | 13611 FLORIS ST |
| 92 | Subwatershed Improvement | 1 | Retrofit dry pond 0495DP to naturalized basin | | 2816 MUSTANG DR |
| 93 | Subwatershed Improvement | 1 | Retrofit dry pond 0671DP to naturalized basin | | 2760 COPPER CREEK RD |
| 94 | Subwatershed Improvement | 9 | Retrofit dry pond 0426DP to infiltration basin, drainage area approx 9 acres | Possible alternative to project 95 | 2742 COPPER CREEK RD |
| 95 | Subwatershed Improvement | 1 | Retrofit dry pond 0426DP to naturalized basin | If project 94 (infiltration) not possible | 2740 COPPER CREEK RD |

| | | | | |
|---|---|---|---|---|
| 96 | Non-Structural | | Riparian buffer restoration | 2744 COPPER CREEK RD |
| 97 | Non-Structural | | Investigate and remove obstructions (possibly three moderate-severe obstructions) | 2818 MUSTANG DR |
| 98 | Non-Structural | | Investigate and remove obstructions (possibly 2moderate-severe obstructions) | 13611 FLORIS ST |
| 99 | Subwatershed Improvement | 8 | Improve outfall to dissipate more energy | 13611 FLORIS ST |

**Subwatershed** **HC-HC-0029** **Watershed:** Horsepen Creek **Management Area:** Horsepen -Middle

| | | | |
|---|---|---|---|
| **Description** | Headwaters, primarily LIC & INT, large area of OS slated for IND, 1 WP treats most LIC/INT, Carson Middle Sch treated by DP (not in StormNet) | **Impairments** | Fair habitat, few obstruction/erosion impacts, high stormwater flows, 1 VPDES discharger (Boeing) |
| **Restoration Selection Criteria** | Regional Pond | **Preservation Qualities** | At risk for future development of OS including riparian buffer |
| **Preservation Selection Criteria** | % Increase IMP (95.15%), STEPL | **Improvement Goals** | Preserve stream buffer, reduce stormwater flows, improve water quality, restore stream impacts |
| **Percent Impervious** | 29.37% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 108 | Preservation | | Conservation easement to preserve riparian buffer | | 13641 CEDAR RUN LA |
| 109a | Regional Pond Alternatives | 0 | Retrofit existing dry pond to naturalized basin (dry pond not in StormNet) | | 13635 CEDAR RUN LA |
| 109b | Regional Pond Alternatives | 0 | LID retrofits including bioretention, infiltration, green roofs around Boeing facility to infiltrate SW runoff | | 13651 MCLEAREN RD |
| 110 | Stream Restoration | 3 | Repair eroding streambanks, including investigation and removal of upstream obstruction | | 13618 MCLEAREN RD |

**Subwatershed** **HC-HC-0030** **Watershed:** Horsepen Creek **Management Area:** Horsepen -Upper

**Description** Headwaters, primarily MDR, some INT, ESR, LDR, 7 DP, 1 lg nonSWM pond

**Impairments** Minor flooding at Centreville Rd, erosion below nonSWM pond, high channelized streams, poor riparian buffers and water quality

**Restoration Selection Criteria** SW Ranking, Flooding

**Preservation Qualities** At risk for future development of ESR & LDR to MDR

**Preservation Selection Criteria** STEPL

**Improvement Goals** Reduce stormwater flows, identify and address source of erosion below nonSWM pond, improve stream and water quality

**Percent Impervious** 26.22%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 111 | Subwatershed Improvement | 1 | Retrofit dry pond 0196DP to naturalized basin | Possible alternative to project 112 | 13348 POINT RIDER LA |
| 112 | Subwatershed Improvement | 9 | Integrate infiltration basins into dry pond 0196DP, drainage area approx 25 acres | Possible alternative to project 111 | 13346 POINT RIDER LA |
| 113 | Preservation | | Conservation easement to preserve riparian buffer and SWM facility | | 2733 CENTREVILLE RD |
| 114 | Subwatershed Improvement | 1 | Retrofit dry pond 0803DP to naturalized basin | will compliment project 115 | 2707 MERRICOURT LA |
| 115 | Subwatershed Improvement | 9 | Integrate infiltration basin into existing dry pond (no StormNet ID), total drainage area approx 18 acres | will compliment project 114 | 2714 FLORIS LA |
| 116 | Subwatershed Improvement | 9 | Integrate infiltration basin into dry pond DP0382, total drainage area approx 3 acres, or replace with a combination of LID retrofits (bioretention in existing landscaping, infiltration trenches) | | 2727 CENTREVILLE RD |
| 117 | Subwatershed Improvement | 9 | Combination of LID retrofits including retrofitting dry pond DP0493 into bioretention or infiltration, land available for infiltration or other LID retrofits, total drainage area approx 2 acres. | | 2745 CENTREVILLE RD |
| 118 | Subwatershed Improvement | 9 | Integrate infiltration basin into dry pond DP0015, total drainage area approx 3 acres, or replace with a combination of LID retrofits (bioretention in existing landscaping, infiltration trenches) | | 2800 CENTREVILLE RD |
| 119 | Subwatershed Improvement | 1 | Retrofit dry pond VDOT29068 to naturalized basin | | 13574 CEDAR RUN LA |

| | | | | | |
|---|---|---|---|---|---|
| 120 | Subwatershed Improvement | 1 | Retrofit nonSWM pond FM0014 to wet pond | | 13492 LAKE SHORE DR |
| 121 | Subwatershed Improvement | 8 | Improve outfall to dissipate more energy | will compliment, but should not replace project 120 | 13496 LAKE SHORE DR |

**Subwatershed** **HC-HC-0031** **Watershed:** Horsepen Creek **Management Area:** Horsepen -Upper

| | | | |
|---|---|---|---|
| **Description** | Primarily MDR & LIC, OS along streams, 4 DP, 2 groups of BMPs, some res dev untreated | **Impairments** | Numerous erosion and obstruction impacts, poor water quality |
| **Restoration Selection Criteria** | SPA Data, SW Ranking | **Preservation Qualities** | Future development in non-riparian areas |
| **Preservation Selection Criteria** | STEPL | **Improvement Goals** | Reduce stormwater flows, remove obstructions and repair eroding streambanks, improve water quality |
| **Percent Impervious** | 28.73% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 122 | Non-Structural | | Investigate and remove obstructions at SPA reach 9-1 (may be up to 5 moderate-severe obstructions) | | 13592 COBRA DR |
| 123 | Stream Restoration | 3 | Stream restoration - repair erosion/headcuts on SPA reach 9-1 (5 moderate stream erosion areas) | | 13365 HORSEPEN WOODS LA |
| 124 | Subwatershed Improvement | 1 | New SWM facility, naturalized dry pond/constructed wetland, drainage area approx 8 acres | Possible alternative to project 125 | 2870 SPRING CHAPEL CT |
| 125 | Subwatershed Improvement | 1 | New infiltration basin, may or may not include swale, drainage area approx 8 acres | Possible alternative to project 124 | 2870 SPRING CHAPEL CT |
| 126 | Subwatershed Improvement | 9 | Bioretention or other LID retrofits in OS behind homes on both sides of Spring Chapel Ct to capture runoff before it discharges to stream | | 2863 SPRING CHAPEL CT |
| 127 | Stream Restoration | 2 | Daylight stream and return to natural channel | | 13446 LAKE SHORE DR |
| 128 | Non-Structural | | Investigate and remove obstruction/repair outlet structure for dry pond DP0151 - outlet is clogged or damaged and not draining | | 2921H CENTREVILLE RD |
| 129 | Subwatershed Improvement | 1 | Retrofit existing dry pond to naturalized basin (dry pond not in StormNet) | | 3001 CENTREVILLE RD |
| 159 | Subwatershed Improvement | 1 | Retrofit dry pond 1349DP to naturalized basin | | 2882 HORSEPEN WOODS CT |

**Subwatershed** **HC-HC-0032** **Watershed:** Horsepen Creek **Management Area:** Horsepen -Upper

**Description** Primarily MDR, HDR, HIC, 2DP, MDR is mostly untreated

**Impairments** Stream erosion upstream of McLearan Rd, impacts from SW outfalls, poor water quality

**Restoration Selection Criteria** Field Recon/ ProRata, SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Reduce stormwater flows, improve stormwater drainage and water quality, repair eroded streambanks

**Percent Impervious** 37.76%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 130 | Subwatershed Improvement | 1 | New constructed wetland/naturalized basin to intercept drainage before it reaches stream, drainage area approx 8 acres | | 13421 ELLIOTT AN CT |
| 131 | Subwatershed Improvement | 9 | Bioretention or other LID retrofits in OS behind homes to capture runoff before it discharges to stream, drainage area approx 2.5 acres | | 13415 GLEN TAYLOR LA |
| 132 | Subwatershed Improvement | 1 | New constructed wetland/naturalized basin to intercept drainage before it reaches stream, drainage area approx 10 acres | | 3138 KINROSS CI |
| 133 | Subwatershed Improvement | 1 | New constructed wetland/naturalized basin to intercept drainage before it reaches stream, drainage area approx 7 acres | Possible alternative to project 134 | 3142 KINROSS CI |
| 134 | Subwatershed Improvement | 9 | New infiltration basin to intercept drainage before it reaches stream, drainage area approx 7 acres | Possible alternative to project 133 | 13411 GLEN TAYLOR LA |
| 135 | Subwatershed Improvement | 1 | Retrofit dry pond 1055DP to naturalized basin | | 3029 MCMASTER CT |
| 136 | Subwatershed Improvement | 1 | Replace concrete channel with naturalized dry basin, drainage area approx 7 acres | Possible alternative to project 137 | 3003 TAYLOR MAKENZYE CT |
| 137 | Subwatershed Improvement | 9 | Replace concrete channel with infiltration basin, drainage area approx 7 acres | Possible alternative to project 136 | 3011 TAYLOR MAKENZYE CT |
| 138 | Stream Restoration | 3 | Repair stream erosion upstream of McLearen Rd | | 13591 COBRA DR |

**Subwatershed** HC-HC-0033 **Watershed:** Horsepen Creek **Management Area:** Horsepen -Upper

**Description** Primarily MDR, some HDR, INT, HIC, 5 DP

**Impairments** Several crossing, obstruction, and erosion impacts, deficient riparian buffers

**Restoration Selection Criteria** Field Recon/ SPA Data

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Reduce stormwater flows, remove obstructions and repair eroding streambanks, improve riparian buffers

**Percent Impervious** 32.24%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 139 | Subwatershed Improvement | 9 | Integrate infiltration basins into regional dry pond H-19 (0747DP) | | 3151 KIRKWELL PL |
| 140 | Subwatershed Improvement | 1 | New constructed wetland/naturalized basin to intercept drainage before it reaches stream, drainage area approx 13 acres | | 3161 KIRKWELL PL |
| 141 | Non-Structural | | Targeted rain barrel program for portion of Chantilly Highlands | | 13636 DORNOCK CT |
| 142 | Subwatershed Improvement | 9 | Infiltration basin to receive flow from two drainage channels, drainage area approx 7 acres | May compliment or replace project 143 | 13449 MUIRKIRK LA |
| 143 | Subwatershed Improvement | 1 | New naturalized basin to receive flow from two drainage channels and extend floodplain, drainage area approx 8 acres | May compliment or replace project 142 | 13459 MUIRKIRK LA |
| 144 | Subwatershed Improvement | 9 | Infiltration basin to intercept flow before it reaches stream, drainage area approx 3 acres | Possible alternative to project 145 | 13365 SCOTSMORE WY |
| 145 | Subwatershed Improvement | 1 | New constructed wetland/naturalized basin to intercept flow before it reaches stream, drainage area approx 3 acres | Possible alternative to project 144 | 13365 SCOTSMORE WY |
| 146 | Subwatershed Improvement | 9 | New Infiltration basin to intercept flow from two drain pipes before it reaches stream, drainage area approx 9 acres | Possible alternative to project 147 | 13226 CAROLINE CT |
| 147 | Subwatershed Improvement | 1 | New naturalized basin/constructed wetland to intercept flow from two drain pipes before it reaches stream, drainage area approx 9 acres | Possible alternative to project 146 | 13226 CAROLINE CT |
| 148 | Non-Structural | | Targeted rain barrel program for portion of Chantilly Highlands | | 13344 SCOTSMORE WY |

| | | | | |
|---|---|---|---|---|
| 149 | Non-Structural | | Riparian buffer restoration (deficient buffer approx 2,500 ft in length) | 3231 KINROSS Cl |
| 150 | Subwatershed Improvement | 9 | Variety of LID retrofits around parking lots and athletic fields - rain gardens/bioretention, infiltration trenches/basins, cisterns | 3210 KINROSS Cl |
| 151 | Subwatershed Improvement | 1 | Retrofit dry pond 0606DP to naturalized basin | 3254 TAYLOE CT |

***Subwatershed*** **HC-HC-0034** ***Watershed:*** Horsepen Creek ***Management Area:*** Horsepen -Upper

| | | | |
|---|---|---|---|
| ***Description*** | Primarily MDR, some OS along riparian zone, 1 WP, 2 DP, most MDR is treated | ***Impairments*** | Moderate to severe erosion, poor water quality, |
| ***Restoration Selection Criteria*** | Field Recon/ SPA Data, SW Ranking | ***Preservation Qualities*** | |
| ***Preservation Selection Criteria*** | | ***Improvement Goals*** | Reduce stormwater flows, improve water quality, repair eroded streams |
| ***Percent Impervious*** | 37.33% | | |

| *Temporary Project ID* | *Strategy* | *Project Type* | *Description of Project* | *Comments* | *Nearest Address* |
|---|---|---|---|---|---|
| 152 | Stream Restoration | 3 | Repair stream erosion | Will compliment, but should not replace project 153 | 13132 BRADLEY FARM DR |
| 153 | Subwatershed Improvement | 8 | Improve outfall to dissipate more energy - SPA ID HCHC011.P003 | May compliment or replace project 152 | 13130 BRADLEY FARM DR |
| 154 | Subwatershed Improvement | 1 | New naturalized dry basin or wetland, drainage area approx 7 acres (not including area upstream of 0562DP | | 2780 MIDDLETON FARM CT |
| 155 | Preservation | | Riparian buffer restoration | | 13231 MIDDLETON FARM LA |
| 156 | Non-Structural | | Targeted rain barrel program for portion of Middleton Farm sbdv | | 13301 HORSEPEN WOODS LA |
| 157 | Subwatershed Improvement | 1 | Retrofit dry pond 0568DP to naturalized basin | | 2659 COCKERILL FARM LA |
| 158 | Subwatershed Improvement | 1 | Integrate infiltration basin into existing dry pond 0562DP, total drainage area approx 10 acres | | 13074 MONTEREY ESTATES DR |

**Subwatershed** **HC-HC-0035** **Watershed:** Horsepen Creek **Management Area:** Horsepen -Upper

| | | | |
|---|---|---|---|
| **Description** | Primarily MDR, OS along riparian zone, 3 DP, | **Impairments** | Flood complaints, poor water quality |
| **Restoration Selection Criteria** | SW Ranking | **Preservation Qualities** | |
| **Preservation Selection Criteria** | | **Improvement Goals** | Reduce stormwater flows, improve water quality, repair eroded streams |
| **Percent Impervious** | 26.12% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 160 | Subwatershed Improvement | 9 | Replace paved ditch with vegetated swale or infiltration trench and add bioretention at outlet, drainage area approx 3 acres | | 13158 LAZY GLEN LA |
| 161 | Subwatershed Improvement | 9 | Integrate infiltration basin into existing dry pond 0440DP and improve low flow channel with vegetated swale | | 2975 EMERALD CHASE DR |
| 162 | Subwatershed Improvement | 1 | Retrofit dry pond 1349DP to naturalized basin | | 13100 BRADLEY FARM DR |

**Subwatershed** **HC-HC-0036** **Watershed:** Horsepen Creek **Management Area:** Horsepen -Upper

**Description** Primarily MDR, 2 DP (including regional - West Ox Pond), 1 UG BMP

**Impairments**

**Restoration Selection Criteria** Non-Priority

**Preservation Qualities**

**Preservation Selection Criteria** Non-Priority

**Improvement Goals** Reduce stormwater flows, improve water quality

**Percent Impervious**

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 163 | Subwatershed Improvement | 9 | Integrate infiltration basin into existing dry pond 0440DP and improve low flow channel with vegetated swale | | 2665 NEW ASPEN CT |
| 164 | Subwatershed Improvement | 9 | Integrate infiltration basin into existing dry pond (no StormNet ID) and improve low flow channel with vegetated swale | | 2875 FRANKLIN OAKS DR |
| 165 | Subwatershed Improvement | 1 | Retrofit dry pond (no StormNet ID) to naturalized basin | | 2802 GIBSON OAKS DR |

**Subwatershed** **HC-HC-0037** **Watershed:** Horsepen Creek **Management Area:** Horsepen -Upper

**Description** Primarily MDR, 2 DP

**Impairments**

**Restoration Selection Criteria** Non-Priority

**Preservation Qualities**

**Preservation Selection Criteria** Non-Priority

**Improvement Goals** Reduce stormwater flows, improve water quality

**Percent Impervious**

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 166 | Stream Restoration | 3 | Repair streambank erosion | | 12724 BRADWELL RD |
| 167 | Subwatershed Improvement | 9 | Replace ditch with infiltration basin to intercept flow from pipe before it reaches stream, may include low flow vegetated swale total drainage area approx 18 acres | Possible alternative to project 168 | 12617 PINECREST RD |
| 168 | Subwatershed Improvement | 1 | New naturalized basin in place of existing swale | Possible alternative to project 167 | 12617 PINECREST RD |
| 169 | Subwatershed Improvement | 7 | Culvert retrofit | | 2587 VIKING DR |
| 170 | Subwatershed Improvement | 9 | Integrate infiltration basins into existing dry pond 0243DP, drainage area approx 120 acres | May compliment or replace project 171 | 2560 HUNTINGTON DR |
| 171 | Subwatershed Improvement | 1 | Retrofit dry pond 0243DP to naturalized basin, drainage area approx 120 acres | May compliment or replace project 170 | 2554 HUNTINGTON DR |

***Subwatershed*** ***HC-HC-0038*** ***Watershed:*** *Horsepen Creek* ***Management Area:*** *Horsepen -Upper*

| | | | |
|---|---|---|---|
| ***Description*** | Primarily MDR, 1 WP | ***Impairments*** | |
| ***Restoration Selection Criteria*** | Non-Priority | ***Preservation Qualities*** | |
| ***Preservation Selection Criteria*** | Non-Priority | ***Improvement Goals*** | Reduce stormwater flows, improve water quality |
| ***Percent Impervious*** | | | |

| *Temporary Project ID* | *Strategy* | *Project Type* | *Description of Project* | *Comments* | *Nearest Address* |
|---|---|---|---|---|---|

**Subwatershed** **HC-HC-0039** **Watershed:** Horsepen Creek **Management Area:** Horsepen -Upper

**Description** Primarily MDR, 2 DP

**Impairments** Fair habitat, numerous erosion impacts, flooding complaints, poor water quality

**Restoration Selection Criteria** Public Involvement, SPA Data, SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Reduce stormwater flows, improve water quality and habitat, repair eroded streams

**Percent Impervious** 21.82%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 172 | Subwatershed Improvement | 9 | Vegetated swale with an infiltration trench, drainage area approx 5 acres | May compliment project 173 | 12810 KETTERING DR |
| 173 | Subwatershed Improvement | 1 | New naturalized basin to intercept drainage from pipe discharge and proposed vegetated swale (project 173), drainage area approx 24 acres including proposed vegetated swale (project 173) | May compliment project 172 | 12830 KETTERING DR |
| 174 | Subwatershed Improvement | 1 | New wetland or naturalized dry pond to intercepted piped drainage before it reaches stream, drainage area approx 20 acres | | 2632 VIKING DR |
| 175 | Subwatershed Improvement | 1 | Retrofit existing dry pond(s) to naturalized basins - outlet structure may be damaged/malfunctioning | | 2907 TIMBER WOOD WY |
| 176 | Stream Restoration | 2 | Repair erosion impacts on SPA reach 10-4, may be as many as 5 moderate to severe erosion areas | | 12827 KETTERING DR |
| 177 | Stream Restoration | 2 | Repair erosion impacts on SPA reach 10-3, may be as many as 5 moderate to severe erosion areas | | 12854 TEWKSBURY DR |

**Subwatershed** **HC-HC-0040** **Watershed:** Horsepen Creek **Management Area:** Horsepen -Upper

**Description** Primarily MDR, 2DP, 2 groups of BMPs, 1 nonSWM pond

**Impairments** Poor habitat, numerous erosion impacts, flooding complaints, high channelized drainage

**Restoration Selection Criteria** Public Involvement, SPA Data, SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Reduce stormwater flows, improve habitat and water quality, repair eroded streams

**Percent Impervious** 28.92%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 178 | Stream Restoration | 2 | Repair erosion impacts on SPA reach 10-5, may be as many as 7 moderate to severe erosion areas | Must control stormwater prior to stream restoration (projects 179, 180, 181, 182) | 2779 PRINCE HAROLD CT |
| 179 | Subwatershed Improvement | 1 | New naturalized basin to provide treatment to Fox Mill Estates stormwater before it reaches stream, drainage area approx 35 acres | Should be completed prior to project 178 (stream restoration) | 12562 QUINCY ADAMS CT |
| 180 | Subwatershed Improvement | 9 | Replace paved ditch with vegetated swale or infiltration trench | Should be completed prior to project 178 (stream restoration) | 12524 CHASBARB TE |
| 181 | Subwatershed Improvement | 1 | Expand existing dry pond into field, possibly reduce size of low flow orifice to hold back smaller storm events | Should be completed prior to project 178 (stream restoration) | 2627 QUINCY ADAMS DR |
| 182 | Subwatershed Improvement | 1 | New naturalized basin/wetland to control stormwater before it reaches major erosion points, drainage area approx 97 acres | Should be completed prior to project 178 (stream restoration) | 2785 PRINCE HAROLD CT |

***Subwatershed*** ***HC-IC-0007*** ***Watershed:*** *Horsepen Creek* ***Management Area:*** *Horsepen - Indian*

| | | | |
|---|---|---|---|
| ***Description*** | Nearly entirely in Loudoun County | ***Impairments*** | |
| ***Restoration Selection Criteria*** | | ***Preservation Qualities*** | |
| ***Preservation Selection Criteria*** | IMP, SW Ranking | ***Improvement Goals*** | No improvement opportunities |
| ***Percent Impervious*** | 9.85% | | |

| *Temporary Project ID* | *Strategy* | *Project Type* | *Description of Project* | *Comments* | *Nearest Address* |
|---|---|---|---|---|---|

**Subwatershed** **HC-MR-0001** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Merrybrook

| | | | |
|---|---|---|---|
| **Description** | Bordering Loudoun, primarily LIC & HDR, some OS around stream, 2 WP, 1 DP, 2 nonSWM ponds, some LIC/HDR untreated | **Impairments** | Deficient riparian buffer, poor water quality & habitat, SPA erosion, obstruction & ditch impacts |
| **Restoration Selection Criteria** | SPA Data, SW Ranking, Flooding | **Preservation Qualities** | At risk for future development of wooded OS |
| **Preservation Selection Criteria** | % Increase IMP (2.75%), STEPL | **Improvement Goals** | Preserve riparian buffer, improve water quality & habitat, repair/improve SPA impacts |
| **Percent Impervious** | 37.66% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 39 | Subwatershed Improvement | 1 | Retrofit existing dry pond to naturalized basin | | 2424 LITTLE CURRENT DR |
| 40 | Preservation | | Conservation easement to preserve riparian buffer | | 2436 LITTLE CURRENT DR |
| 41 | Subwatershed Improvement | 1 | Retrofit existing ornamental ponds in Dulles Corner commercial park to a constructed wetland with forebay | feasibility may be low, can also try project 42 | 2340 DULLES CORNER BV |
| 42 | Subwatershed Improvement | 9 | Variety of LID retrofits around parking lots and buildings - rain gardens, infiltration trenches, cisterns | May compliment or replace project 41 | 2325 DULLES CORNER BV |
| 43 | Stream Restoration | 3 | Repair eroding banks at SPA erosion point HCMR7-1-E1 | | 13834 COPPERMINE RD |
| 44 | Non-Structural | | Remove obstruction at SPA obstruction point HCMR7-2-O2 | | 2436 LITTLE CURRENT DR |

**Subwatershed** **HC-MR-0002** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Merrybrook

| | | | |
|---|---|---|---|
| **Description** | Primarily LIC & HDR, very little SWM, 1 sm WP, 3 sm DP, several UG BMPs, lg ESR is slated for HIC | **Impairments** | Deficient riparian buffer, high impervious & SW outfalls, flooding of buildings (Coppermine Crossing Condos) and Centerville Rd north of Sunrise Valley Rd |
| **Restoration Selection Criteria** | Flooding | **Preservation Qualities** | At risk for future development of ESR & OS |
| **Preservation Selection Criteria** | % Increase IMP (18.24%), STEPL | **Improvement Goals** | Preserve riparian buffer, capture impervious runoff, improve drainage & outfalls, address high SW flows upstream to reduce flooding |
| **Percent Impervious** | 35.95% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 45 | Preservation | | Conservation easement to preserve riparian buffer | | 13512 DAVINCI LA |
| 46 | Preservation | | Conservation easement to preserve riparian buffer area and Riparian Buffer restoration | | 2475 CENTREVILLE RD |
| 47 | Subwatershed Improvement | 1 | New SWM facility - pair of wetlands or larger naturalized dry pond to intercept drainage from commercial park before it enters the stream, drainage area approx 40 acres | | 2475 CENTREVILLE RD |
| 48 | Subwatershed Improvement | 1 | New constructed wetland to intercept flow from drainage behind Coppermine Crossing Condominiums before it reaches the stream, drainage area approx 6 acres | | 13512 DAVINCI LA |
| 49 | Subwatershed Improvement | 1 | New constructed wetland to intercept flow from drainage behind Coppermine Crossing Condominiums before it reaches the stream, drainage area approx 8 acres | | 13644 SALK ST |
| 50 | Subwatershed Improvement | 9 | LID retrofits for urban commercial development (infiltration, bioretention, underground systems) for all commercial properties within Dulles Technology Drive | looks like newer development, may already be in place, but not visible | 13600 DULLES TECHNOLOGY DR |
| 51 | Preservation | | Conservation easement to preserve floodplain and riparian buffer area and Riparian Buffer restoration | | 2346 CENTREVILLE RD |
| 52 | Stream Restoration | 2 | Stream restoration - provide more buffer to road (this portion will flood in 100 yr storm event), possibly widen floodplain, natural channel design | would require homeowner consent | 2346 CENTREVILLE RD |

**Subwatershed** **HC-MR-0003** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Merrybrook

**Description** Primarily LIC & HDR, some OS slated for LIC/HDR/IND, includes portion of Dulles Toll Rd, 3 WP in series, much of upper portion untreated

**Impairments** High impervious

**Restoration Selection Criteria**

**Preservation Qualities** At risk for future development of OS including riparian buffer

**Preservation Selection Criteria** SW Ranking, STEPL

**Improvement Goals** Capture impervious runoff (especially important for downstream subbasin), preserve key OS areas

**Percent Impervious** 45.13%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 53 | Subwatershed Improvement | 9 | Infiltration basin(s) on baseball diamond outfield. Additional LID retrofits throughout office complex (infiltration trenches, bioretention, underground systems) | | 2291 WOOD OAK DR |
| 54 | Preservation | | Preserve and enhance buffer around series of wet ponds through conservation easement and buffer restoration projects | | 13200 WOODLAND PARK RD |
| 55 | Subwatershed Improvement | 9 | Infiltration basin(s) on baseball diamond outfield. Additional LID retrofits throughout office complex (infiltration trenches, bioretention, underground systems) | | 2121 COOPERATIVE WY |
| 56 | Subwatershed Improvement | 9 | Infiltration basin on large parking lot island, drainage area approx 10 acres. Additional LID retrofits throughout office complex (infiltration trenches, bioretention, underground systems) | | 13221 WOODLAND PARK RD |

**Subwatershed** **HC-MR-0004** **Watershed:** Horsepen Creek **Management Area:** Horsepen - Merrybrook

**Description** Primarily LIC & HDR, no SWM, 1 non-SW wetland/pond

**Impairments**

**Restoration Selection Criteria** Non-Priority

**Preservation Qualities**

**Preservation Selection Criteria** Non-Priority

**Improvement Goals** Capture impervious runoff (especially important for downstream subbasin)

**Percent Impervious**

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 57 | Subwatershed Improvement | 9 | Infiltration basins and other LID on open space areas throughout Courts of Chandon subdv - 15+ locations available including athletic fields, total drainage area approx 75 acres | | 410 MAGNOLIA CT |
| 58 | Subwatershed Improvement | 1 | New SWM facility, naturalized dry pond or constructed wetland in common area of Courts of Chandon subdv, drainage area approx 15 acres | | 1249 ELDEN ST |

**Subwatershed** **SU-FF-0001** **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Primarily highly developed LDR & MDR, good forested riparian buffer, 1 DP

**Impairments** potential hot spot @ Metro Ready Mix Inc., multiple ditches and outfalls w/ moderate erosion impacts

**Restoration Selection Criteria** Regional Pond

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** provide alternatives to regional pond, capture impervious runoff, stabilize/repair stream impacts, improve water quality

**Percent Impervious** 12.94%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 96a | Regional Pond Alternatives | 0 | LID: new infiltration basin to intercept storm drains from Sugar Creek Sec. 1, drainage area approx 4.2 acres | use project 96b if soils do not promote infiltration | 12105 SNOW SHOE CT |
| 96b | Regional Pond Alternatives | 0 | New SW: new swm pond to intercept storm drains from Sugar Creek Sec. 1, drainage area approx 4.2 acres | if project 96a is unsuitable | 12105 SNOW SHOE CT |
| 96c | Regional Pond Alternatives | 0 | LID: Add bioretention or filter strip to provide some water quality treatment to outfalls | | 12110 HEATHER WY |
| 96d | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit dry pond VDOT29052 to naturalized dry basin | coordinate w/ VDOT | 1120 SUGAR MAPLE LA |
| 96e | Regional Pond Alternatives | 0 | LID: Add bioretention or filter strip to provide some water quality treatment to outfalls | | 1203 ROWLAND DR |
| 96f | Regional Pond Alternatives | 0 | Drainage Improvement: improve drainage channel and outfalls from Rowland Dr | | 1200 ROWLAND DR |
| 97 | Non-Structural | | Rain barrel program Shaker Woods HOA | | 1214 ROWLAND DR |
| 98 | Non-Structural | | Rain barrel program Sugar Creek Sec. 1 HOA | | 12111 SNOW SHOE CT |

**Subwatershed** SU-FF-0002 **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Primarily LDR with some ESR & MDR, portions of WWTP, good forested buffer along stream channels. 2 WP, 2 DP

**Impairments** CEM Type 3 (widening), moderate erosion problems where obstructions were before, portions of Corbalis Treatment Plant with outfalls into stream

**Restoration Selection Criteria** Regional Pond, SPA Data

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** provide alternatives to regional pond, capture impervious runoff, stabilize/repair stream impacts, improve water quality

**Percent Impervious** 14.65%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 100 | Stream Restoration | 2 | Repair eroding banks at SPA erosion points SUSU2-2-E6, E7 & E8 | | 1202 CRAYTON RD |
| 101 | Non-Structural | | Conservation easement to preserve riparian buffer and forested open space | | 1165 SILVER BEECH RD |
| 102 | Non-Structural | | Rain Barrel Program Sugar Creek 1st Addn, Sec. 2 HOA | | 11909 CRAYTON CT |
| 103 | Non-Structural | | Rain Barrel Program Timber Knoll HOA | | 11862 TIMBER KNOLL CT |
| 104 | Non-Structural | | Rain Barrel Program Stoney Creek Woods HOA | | 1177 TAJI CT |
| 99a | Regional Pond Alternatives | 0 | LID: replace riprap outfall protection at end of driveway culvert with swale & bioretention | | 1202 CRAYTON RD |
| 99b | Regional Pond Alternatives | 0 | New SW: new swm pond to intercept storm drains from southern part of Stoney Creek Woods, drainage area approx 27 acres | 2 wet ponds in series located upstream on WWTP property | 1207 CRAYTON RD |
| 99c | Regional Pond Alternatives | 0 | LID: retrofit dry pond 0727DP to naturalized infiltration basin | if soils support infiltration, if not use project 99d | 1176 SILVER BEECH RD |
| 99d | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit dry pond 0727DP to naturalized dry basin | if project 99cunsuitable | 1176 SILVER BEECH RD |
| 99e | Regional Pond Alternatives | 0 | Culvert retrofit: construct control structure w/ wetland or wet pond to intercept outfalls fr. Sugar Creek HOA | | 1176 SILVER BEECH RD |

**Subwatershed** **SU-FF-0003** **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

| | | | |
|---|---|---|---|
| **Description** | LDR w/ large tracts of forested OS adjacent to streams, 1 DP | **Impairments** | undersized culverts w/ road flooding and minor erosion, poor habitat, moderate erosion downstream |
| **Restoration Selection Criteria** | Drains to Regional Pond in SU-FF-0002, Field Recon/ProRata | **Preservation Qualities** | preserve open space to protect forested riparian buffers |
| **Preservation Selection Criteria** | % Increase IMP (2.29%) | **Improvement Goals** | provide alternatives to regional pond, capture impervious runoff, stabilize/repair stream impacts, improve road crossings, improve water quality |
| **Percent Impervious** | 10.87% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 105 | Non-Structural | | Rain Barrel Program Shaker Woods HOA | | 11666 GILMAN LA |
| 106 | Non-Structural | | Rain Barrel Program Caris Glenne HOA & Blackstone at Shaker Woods HOA | | 1104 ARBOROAK PL |
| 107 | Non-Structural | | Riparian buffer restoration downstream of Suart Hills Way crossing | | 1126 STUART HILLS WY |
| 99f | Regional Pond Alternatives | 0 | Road crossing improvement: Raise road and replace culvert at Shaker Woods Rd crossing (Pro Rata Project No. DR-6) | | 1225 SHAKER WOODS RD |
| 99g | Regional Pond Alternatives | 0 | Road crossing improvement: Replace culvert at Shaker Woods Rd crossing and stabilize stream banks (Pro Rata Project DR-5) | | 1214 SHAKER WOODS RD |
| 99h | Regional Pond Alternatives | 0 | LID: New infiltration basins to intercept storm drains from Shaker Woods HOA & Corbalis Water Treatment Plant, drainage area approx. 24 acres | if soils support infiltration otherwise use project 99i | 1225 SHAKER WOODS RD |
| 99i | Regional Pond Alternatives | 0 | New SW: new swm pond to intercept storm drains from southern part of Shaker Woods HOA & Corbalis Water Treatment Plant, drainage area approx. 24 acres | if project 99h is unsuitable | 1225 SHAKER WOODS RD |
| 99j | Regional Pond Alternatives | 0 | LID: retrofit dry pond 01064DP to naturalized infiltration basin | if soils support infiltration, if not use project 99k | 1207 DANLEA CT |
| 99k | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit dry pond 1064DP to naturalized dry basin | if project 99j is unsuitable | 1207 DANLEA CT |

**Subwatershed** **SU-FF-0004** **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Primarily LDR and MDR w/ some ESR, portions of WWTP, good forested buffer along streams, 2 farm ponds, 2DP

**Impairments** undersized culverts w/ road flooding and minor erosion, poor habitat, poor water quality, moderate downstream erosion

**Restoration Selection Criteria** Drains to Regional Pond in SU-FF-0002, Field Recon/ProRata

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** provide alternatives to regional pond, capture impervious runoff, stabilize/repair stream impacts, improve road crossings, improve water quality

**Percent Impervious** 15.29%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 108 | Stream Restoration | 2 | Repair eroding banks at SPA erosion points SUSU2-2-E10 | | 1209 CRAYTON RD |
| 109 | Non-Structural | | Rain Barrel Program Caris Glenne, Stuart Estates, & Stuart Hills HOA | | 1134 STUART HILLS WY |
| 110 | Non-Structural | | Rain Barrel Program Forest Heights Estates & Stoney Creek Woods HOA | | 11808 FOREST HEIGHTS CT |
| 111 | Non-Structural | | Rain Barrel Program Cedar Chase, Oak Creek Estates, Great Falls Woods, & D. J. Smithers HOAs | | 1074 CEDAR CHASE CT |
| 99aa | Regional Pond Alternatives | 0 | LID: New infiltration basin to intercept storm drains from western part of Cedar Chase, drainage area approx. 6.5 acres | if soils support infiltration otherwise use project 99ab | 11605 CEDAR CHASE RD |
| 99ab | Regional Pond Alternatives | 0 | New SW: new swm pond to intercept storm drains western part of Cedar Chase, drainage area approx. 6.5 acres | if project 99aa is unsuitable | 1080 CEDAR CHASE CT |
| 99l | Regional Pond Alternatives | 0 | LID: retrofit dry pond south of Forest Heights Ct to naturalized infiltration basin | if soils support infiltration, if not use project 99m | 11811 FOREST HEIGHTS CT |
| 99m | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit dry pond south of Forest Heights Ct to naturalized dry basin | if project 99l is unsuitable | 11811 FOREST HEIGHTS CT |
| 99n | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit farm pond to constructed wetland or wet pond | | 1224 ADMIRAL ZUMWALT LA |
| 99o | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit farm pond to constructed wetland or wet pond | | 1121 CLINCH RD |
| 99p | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit farm pond to constructed wetland or wet pond | | 1108 SHAKER WOODS RD |

| | | | | | |
|---|---|---|---|---|---|
| 99q | Regional Pond Alternatives | 0 | LID: retrofit dry pond DP0563 to naturalized infiltration basin | if soils support infiltration, if not use project 99k | 1096 LIBERTY MEETING CT |
| 99r | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit dry pond DP0564 to naturalized dry basin | if project 99j is unsuitable | 1096 LIBERTY MEETING CT |
| 99s | Regional Pond Alternatives | 0 | Road crossing improvement: Replace culvert at Shaker Woods Rd crossing and stabilize stream banks (Pro Rata Project DR-8) | | 1111 SHAKER WOODS RD |
| 99t | Regional Pond Alternatives | 0 | Road crossing improvement: Replace culvert at Shaker Woods Rd crossing and stabilize stream banks (Pro Rata Project DR-7) | | 1134 STUART HILLS WY |
| 99u | Regional Pond Alternatives | 0 | LID: New infiltration basin to intercept storm drains from Caris Glenne HOA, drainage area approx. 7 acres | if soils support infiltration otherwise use project 99v | 11715 CARIS GLENNE DR |
| 99v | Regional Pond Alternatives | 0 | New SW: new swm pond to intercept storm drains from Caris Glenne HOA, drainage area approx. 7 acres | if project 99u is unsuitable | 11715 CARIS GLENNE DR |
| 99w | Regional Pond Alternatives | 0 | LID: New infiltration basin to intercept storm drains from Oak Crest Estates, drainage area approx. 5.5 acres | if soils support infiltration otherwise use project 99x | 11696 CARSON OVERLOOK CT |
| 99x | Regional Pond Alternatives | 0 | New SW: new swm pond to intercept storm drains from Oak Crest Estates, drainage area approx. 5.5 acres | if project 99w is unsuitable | 11696 CARSON OVERLOOK CT |
| 99y | Regional Pond Alternatives | 0 | LID: New infiltration basin to intercept storm drains from eastern part of Cedar Chase, drainage area approx. 6 acres | if soils support infiltration otherwise use project 99z | 11589 CEDAR CHASE RD |
| 99z | Regional Pond Alternatives | 0 | New SW: new swm pond to intercept storm drains eastern part of Cedar Chase, drainage area approx. 6 acres | if project 99y is unsuitable | 11589 CEDAR CHASE RD |

**Subwatershed** SU-FL-0001 **Watershed:** Sugarland **Management Area:** Sugarland - Folly Lick

**Description** Primarily MDR,OS along stream corridor, 4 DP, much of MDR has SWM control

**Impairments** SPA Obstruction impacts, poor water quality, high channelized streams

**Restoration Selection Criteria** SPA Data, SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Remove obstructions, improve water quality, naturalize streams if possible

**Percent Impervious** 26.86%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M44 | Non-Structural | | Investigate and remove obstruction at SPA obstruction point SUFL3-2-O7 | | 12300 VALLEY HIGH RD |
| M45 | Non-Structural | | Investigate and remove obstruction at SPA obstruction point SUFL3-2-O10 | | 1425 VALLEY MILL CT |
| M46 | Subwatershed Improvement | 1 | Retrofit dry pond 0573DP to naturalized basin | Will compliment project M47 | 12346 CLIVEDEN ST |
| M47 | Subwatershed Improvement | 9 | Replace paved low flow channel with vegetated swale/infiltration trench | Will compliment project M46 | 12348 CLIVEDEN ST |
| M48 | Subwatershed Improvement | 1 | Retrofit dry pond 0785DP to naturalized basin | Will compliment project M49 | 12302 CLIVEDEN ST |
| M49 | Subwatershed Improvement | 9 | Replace paved low flow channel with vegetated swale/infiltration trench | Will compliment project M48 | 12302 CLIVEDEN ST |
| M50 | Subwatershed Improvement | 1 | Retrofit dry pond 0227DP to naturalized basin | Will compliment project M51 | 12308 VALLEY HIGH RD |
| M51 | Subwatershed Improvement | 9 | Replace paved low flow channel with vegetated swale/infiltration trench | Will compliment project M50 | 12308 VALLEY HIGH RD |
| M52 | Subwatershed Improvement | 9 | Replace paved low flow channel with vegetated swale/infiltration trench | | 1302 CASSIA ST |
| M53 | Stream Restoration | 3 | Replace paved ditch with naturalized channel | Will compliment project M52 | 1306 CASSIA ST |
| M54 | Stream Restoration | 3 | Replace paved ditch with naturalized channel | Will compliment projects M48 & M49 | 12302 CLIVEDEN ST |
| M55 | Subwatershed Improvement | 1 | New constructed wetland/naturalized dry pond to intercept drainage before it reaches stream, drainage area approx 6 acres, *project located along trail, also has a public education component | | 1423 VALLEY MILL CT |

| | | | | |
|---|---|---|---|---|
| M56 | Subwatershed Improvement | 9 | Suite of LID BMPs, vegetated swales, bioretention/infiltration, drainage area approx 3.5 acres, *project located along trail, also has public education component | 1431 VALLEY MILL CT |

**Subwatershed** **SU-FL-0002** **Watershed:** Sugarland **Management Area:** Sugarland - Folly Lick

**Description** Primarily MDR,OS along stream corridor, 5 DP, much of MDR has SWM control

**Impairments** Poor water quality, high channelized streams

**Restoration Selection Criteria** SPA Data, Public Involvement

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Improve water quality, naturalize streams if possible

**Percent Impervious** 31.41%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M57 | Subwatershed Improvement | 9 | Replace paved low flow channel and incoming pipes with naturalized vegetated swales/infiltration trenches (existing dry pond 0934DP) | | 12537 ROCK RIDGE RD |
| M58 | Subwatershed Improvement | 9 | Enlarge existing dry pond 0637DP and retrofit with infiltration basin, replaced paved low flow channel with vegetated swale/infiltration trench | | 12537 MISTY WATER DR |
| M59 | Subwatershed Improvement | 9 | Integrate infiltration basin into existing dry pond VDOT29049 | May compliment or replace project M60 | 1401 DRANESVILLE RD |
| M60 | Subwatershed Improvement | 1 | Retrofit existing dry pond VDOT29049 into naturalized basin | May compliment or replace project M59 | 1401 DRANESVILLE RD |
| M61 | Subwatershed Improvement | 9 | Integrate infiltration basin into existing dry pond VDOT29048 | May compliment or replace project M62 | 12333 EXBURY ST |
| M62 | Subwatershed Improvement | 1 | Retrofit existing dry pond VDOT29048 into naturalized basin | May compliment or replace project M61 | 1502 THURBER ST |
| M63 | Stream Restoration | 3 | Replace paved ditch with naturalized channel | Will compliment projects M61 & M62 | 12333 EXBURY ST |
| M64 | Subwatershed Improvement | 9 | New infiltration basins, total drainage area approx 35 acres | | 12571 ROCK RIDGE RD |
| M65 | Subwatershed Improvement | 9 | Replace paved low flow channel with vegetated swale/infiltration trench and integrate infiltration basin into existing dry pond 0827DP | May compliment or replace project M66 | 12579 ROCK RIDGE RD |
| M66 | Subwatershed Improvement | 1 | Retrofit existing dry pond 0827DP into naturalized basin | May compliment or replace project M65 | 12573 ROCK RIDGE RD |
| M67 | Subwatershed Improvement | 1 | New naturalized dry basin or wetland to intercept drainage before it reaches stream, *along trail, also public education component | | 1501 HIDDENBROOK DR |

| | | | | |
|---|---|---|---|---|
| M68 | Subwatershed Improvement | 1 | New naturalized dry basin or wetland to intercept drainage before it reaches stream, drainage area approx 10 acres, *along trail, also public education component | 12600 WESTLODGE CT |
| M69 | Subwatershed Improvement | 9 | Replace paved low flow channel with vegetated swale/infiltration trench and integrate infiltration basin into existing dry pond 0260DP | 12603 MILLBANK WY |
| M70 | Subwatershed Improvement | 9 | Replace paved low flow channel with vegetated swale/infiltration trench and integrate infiltration basin into existing dry pond 0283DP | 1551 COOMBER CT |
| M71 | Subwatershed Improvement | 9 | Replace paved low flow channel with vegetated swale/infiltration trench and integrate infiltration basin into existing dry pond 1343DP | 1540 COOMBER CT |
| M72 | Subwatershed Improvement | 9 | Replace paved low flow channel with vegetated swale/infiltration trench and integrate infiltration basin into existing dry pond 1441DP | 12520 PHILMONT DR |

**Subwatershed** **SU-FL-0003** **Watershed:** Sugarland **Management Area:** Sugarland - Folly Lick

**Description** Headwaters, primarily INT, mix of MDR, LDR, ESR - LDR & ESR slated for re-dev at higher densities, 1 (regional) dry pond

**Impairments**

**Restoration Selection Criteria** SPA Data, Public Involvement

**Preservation Qualities**

**Preservation Selection Criteria** SW Ranking, STEPL

**Improvement Goals**

**Percent Impervious** 30.36%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M73 | Subwatershed Improvement | 1 | New naturalized dry basin, drainage area approx 18 acres | | 1545 DRANESVILLE RD |
| M74 | Preservation | | Conservation easement to protect riparian zone and riparian buffer restoration | | 1546 DRANESVILLE RD |
| M75 | Subwatershed Improvement | 1 | Retrofit existing regional dry pond 1440DP (Regional ID S-04) to naturalized basin | | 1503 JUDD CT |

**Subwatershed** **SU-FL-0004** **Watershed:** Sugarland **Management Area:** Sugarland - Folly Lick

| | | | |
|---|---|---|---|
| **Description** | Primarily MDR, some INT, 1 DP, 1 BMP, 1 nonSWM pond, most of subwatershed has no SWM control | **Impairments** | Poor water quality, deficient riparian buffer, high channelized streams |
| **Restoration Selection Criteria** | SPA Data, Public Involvement, Flooding | **Preservation Qualities** | |
| **Preservation Selection Criteria** | % Increase IMP (3.42%) | **Improvement Goals** | Improve water quality and riparian buffer, naturalize streams if possible |
| **Percent Impervious** | 25.86% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M76 | Subwatershed Improvement | 8 | Improve outfall at SPA point SUFL3-1-P5 | | 12630 FANTASIA DR |
| M77 | Stream Restoration | 3 | Repair erosion at SPA points SUFL3-1-E10 and SUFL3-1-E12 | | 1291 MONROE ST |
| M78 | Stream Restoration | 3 | Repair erosion at SPA points SUFL3-1-E9, SUFL3-1-E8 including removing obstruction at SPA point SUFL3-1-O5 | | 1315 MONROE ST |
| M79 | Subwatershed Improvement | 1 | New naturalized dry basin, drainage area approx 11 acres | | 12628 FANTASIA DR |
| M80 | Subwatershed Improvement | 9 | Integrate infiltration basin and vegetated swale into existing dry pond | Possible alternative to project M81 | 1300 MONROE ST |
| M81 | Subwatershed Improvement | 1 | Retrofit existing dry pond to naturalized basin | Possible alternative to project M80 | 1300 MONROE ST |
| M82 | Subwatershed Improvement | 9 | Integrate infiltration basin and vegetated swale into existing dry pond (not in StormNet) | Possible alternative to project M83 | 1310 MONROE ST |
| M83 | Subwatershed Improvement | 1 | Retrofit existing dry pond to naturalized basin (dry pond not in StormNet) | Possible alternative to project M82 | 1310 MONROE ST |
| M84 | Subwatershed Improvement | 1 | New naturalized dry basin, drainage area approx 11 acres | | 12614 BUILDERS RD |

**Subwatershed** **SU-FL-0005** **Watershed:** Sugarland **Management Area:** Sugarland - Folly Lick

**Description** Bordering Loudoun, primarily MDR, 1 WP - treats most of subwatershed

**Impairments** Deficient riparian buffer, high channelized streams

**Restoration Selection Criteria** Non-Priority

**Preservation Qualities**

**Preservation Selection Criteria** Non-Priority

**Improvement Goals** Improve riparian buffer, naturalize streams if possible

**Percent Impervious**

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M85 | Subwatershed Improvement | 9 | New infiltration basin, drainage area approx 11 acres within Fairfax County | Possible alternative to project M86 | 1608 NATHAN LA |
| M86 | Subwatershed Improvement | 1 | New naturalized dry basin, drainage area approx 11 acres within Fairfax County | Possible alternative to project M85 | 1608 NATHAN LA |
| M87 | Stream Restoration | 2 | Restore grass channels to natural stream channels and improve riparian buffers | | 12707 NUREYEV LA |

**Subwatershed** **SU-FL-0006** **Watershed:** Sugarland **Management Area:** Sugarland - Folly Lick

| | | | |
|---|---|---|---|
| **Description** | Primarily Golf Course & HDR, 1 nonSWM pond, no SWM control | **Impairments** | High stormwater flows, poor habitat diversity & water quailty |
| **Restoration Selection Criteria** | SW Ranking | **Preservation Qualities** | |
| **Preservation Selection Criteria** | | **Improvement Goals** | Capture impervious runoff, improve habitat and water quality |
| **Percent Impervious** | 24.71% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M88 | Stream Restoration | 2 | Restore grass channels to natural stream channels and improve riparian buffers to the extent possible on Golf Course | | 1270 OLD HEIGHTS RD |
| M89 | Stream Restoration | 2 | Restore grass channels to natural stream channels and improve riparian buffers to the extent possible on Golf Course | | 1721 SADLERS WELLS DR |
| M90 | Subwatershed Improvement | 9 | New infiltration basin to intercept drainage before it reaches stream, drainage area approx 6 acres | Possible alternative to project M91 | 1100 WATERFORD PL |
| M91 | Subwatershed Improvement | 1 | New naturalized basin/constructed wetland to intercept drainage before it reaches stream, drainage area approx 6 acres | Possible alternative to project M90 | 1149 LISA CT |
| M92 | Subwatershed Improvement | 9 | New infiltration basin to intercept drainage before it reaches stream, drainage area approx 6 acres | Possible alternative to project M93 | 1427 BLUEMONT CT |
| M93 | Subwatershed Improvement | 1 | New naturalized basin/constructed wetland to intercept drainage before it reaches stream, drainage area approx 6 acres | Possible alternative to project M92 | 1427 BLUEMONT CT |
| M94 | Subwatershed Improvement | 9 | Variety of LID retrofits (bioretention, infiltration, rain barrels, etc) throughout Tralee subdv | Will compliment, but should not replace projects M90/91 and M92/93 | 1131 WATERFORD PL |
| M95 | Subwatershed Improvement | 9 | Replace pipe with vegetated swale/infiltration trench, also variety of LID retrofits (bioretention, infiltration) between buildings and throughout landscaping of Cavalier subdv | | 1027 QUEENS CT |

| | | | | |
|---|---|---|---|---|
| M96 | Subwatershed Improvement | 9 | New infiltration basin at point location and variety of LID retrofits (bioretention, infiltration) between buildings and throughout landscaping of Potomac Fairways Sect 1 and Sect 2 | 1109 LOPEZ LA |
| M97 | Stream Restoration | 2 | Daylight stream and restore to natural channel, including buffer restoration | 1106 TWAY LA |
| M98 | Subwatershed Improvement | 9 | New infiltration basin in athletic field, replace paved ditch with vegetated swale/infiltration trench | 1719 SADLERS WELLS DR |

**Subwatershed** **SU-FL-0007** **Watershed:** Sugarland **Management Area:** Sugarland - Folly Lick

**Description** Headwaters, primarily Golf Cource & MDR, 1 non-SWM pond, no SWM control

**Impairments** High stormwater flows, poor habitat health & diversity, poor water quality

**Restoration Selection Criteria** SW Ranking, Flooding

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Capture impervious runoff, improve habitat and water quality

**Percent Impervious** 29.33%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M100 | Subwatershed Improvement | 1 | New naturalized basin/constructed wetland, drainage area approx 20 acres | Possible alternative to project M99 | 1200 MAGNOLIA LA |
| M101 | Subwatershed Improvement | 9 | Variety of LID retrofits (bioretention/rain gardens, infiltration basins/trenches, vegetated swales, etc) throughout sports complex | | 661 DULLES PARK CT |
| M102 | Subwatershed Improvement | 1 | New naturalized dry pond or constructed wetland | | 800 MOSBY HOLLOW DR |
| M103 | Stream Restoration | 2 | Restore grass channels to natural stream channels and improve riparian buffers to the extent possible on Golf Course | | 1090 STERLING RD |
| M104 | Subwatershed Improvement | 9 | Retrofit grass channel to vegetated swale/infiltration trench and restore riparian buffer to the extent possible on Golf Course | | 816 MOSBY HOLLOW DR |
| M105 | Subwatershed Improvement | 1 | Replace pipe/concrete channel with new constructed wetland and restore riparian buffer downstream | | 810 MOSBY HOLLOW DR |
| M106 | Subwatershed Improvement | 1 | New naturalized dry pond or constructed wetland with naturalized/vegetated swales at outlet | | 995 CRESTVIEW DR |
| M107 | Subwatershed Improvement | 1 | New naturalized dry pond or constructed wetland with naturalized/vegetated swales at outlet | | 1301 BAYSHIRE LA |
| M108 | Non-Structural | | Targeted rain barrel program at Westfield subdv | | 1357 ICY BROOK DR |
| M99 | Subwatershed Improvement | 9 | New infiltration basins, drainage area approx 20 acres | Possible alternative to project M100 | 751 BARBARALYNN PL |

**Subwatershed** **SU-FL-0008** **Watershed:** Sugarland **Management Area:** Sugarland - Folly Lick

| | | | |
|---|---|---|---|
| **Description** | Mix of LDR, MDR, HDR, LIC, HIC and INT, no SWM control | **Impairments** | Poor habitat health, poor water quality, deficient riparian buffer |
| **Restoration Selection Criteria** | Flooding | **Preservation Qualities** | |
| **Preservation Selection Criteria** | % Increase IMP (4.24%), STEPL | **Improvement Goals** | Improve riparian buffer, habitat and water quality |
| **Percent Impervious** | 31.53% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M109 | Subwatershed Improvement | 1 | New SWM pond/constructed wetland, drainage area approx 3 acres | | 1001 STANTON PARK CT |
| M110 | Non-Structural | | Targeted rain barrel program at Haloyon of Herndon Sect 5, Van Vlecks subdv, Ballou subdv, Saubers subdv, Herndon Station, & Herndon Park Station | | 1001 MONROE ST |
| M111 | Subwatershed Improvement | 9 | New infiltration basin/LID suite, drainage area approx 2 acres | Possible alternative (along with project M112) to project M113 | 1021 KINGS CT |
| M112 | Subwatershed Improvement | 9 | Disconnect upstream outfall from Cavalier Park subdv and re-route through new vegetated swale/infiltration trench into new infiltration basin/bioretention | Possible alternative (along with project M111) to project M113 | 1056 KNIGHT LA |
| M113 | Subwatershed Improvement | 1 | New SWM pond/constructed wetland to intercept flow from 3 drainage pipes from Cavalier Park subdv - use vegetated swale to re-route flow from pipes to pond | Possible alternative to projects M111 & M112 | 1037 KINGS CT |
| M114 | Subwatershed Improvement | 9 | Daylight stream between property boundaries and replace pipe with vegetated swale/infiltration trench | | 913 MCDANIEL CT |
| M115 | Subwatershed Improvement | 9 | New infiltration basin, drainage area approx 11 acres | Possible alternative to project M116 | 937 BRANCH DR |
| M116 | Subwatershed Improvement | 1 | New naturalized basin/constructed wetland, drainage area approx 11 acres | Possible alternative to project M115 | 930 PARK AV |
| M117 | Subwatershed Improvement | 9 | Variety of LID retrofits (bioretention/rain gardens, infiltration basins/trenches, vegetated swales, etc) throughout Fortnightly Square | | 121 FORTNIGHTLY BV |
| M118 | Subwatershed Improvement | 1 | New naturalized dry pond in existing depression, drainage area approx 34 acres | | 800 VINE ST |

| | | | | | |
|---|---|---|---|---|---|
| M119 | Subwatershed Improvement | 9 | Integrate infiltration basin/bioretention into existing dry pond (not in StormNet) | Possible alternative to projects M120 & M121 | 769 GRACE ST |
| M120 | Subwatershed Improvement | 1 | Retrofit existing dry pond (not in StormNet) to naturalized dry pond | Possible alternative to project M119, will compliment project M121 | 769 GRACE ST |
| M121 | Subwatershed Improvement | 9 | New infiltration basin in athletic field | Will compliment project M120 or M119 | 763 GRACE ST |
| M122 | Subwatershed Improvement | 9 | New infiltration basin and/or LID suite in field/lawn, drainage area approx 25 acres | Possible alternative to project M123 | 782 ELDEN ST |
| M123 | Subwatershed Improvement | 1 | New naturalized dry pond in field/lawn, drainage area approx 25 acres | Possible alternative to project M122 | 782 ELDEN ST |
| M124 | Subwatershed Improvement | 9 | Replace grass channel with vegetated channel/infiltration trench | Will require homeowner consent | 879 STATION ST |

**Subwatershed** **SU-FL-0009** **Watershed:** Sugarland **Management Area:** Sugarland - Folly Lick

**Description** Headwaters, primarily MDR & HDR, with mix of INT, OS & HIC,1 DP, most dev has no SWM control

**Impairments** Poor habitat health, poor water quality

**Restoration Selection Criteria**

**Preservation Qualities**

**Preservation Selection Criteria** % Increase IMP (2.80%)

**Improvement Goals** Improve habitat and water quality

**Percent Impervious** 37.29%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M125 | Subwatershed Improvement | 9 | Daylight drainage channel and replace with vegetated channel/infiltration trench, also, disconnect drainage from dry pond and re-route to new vegetated channel with a second vegetated channel along rear of HDR | OS containing drainage channel is slated for HDR, moving the stream pre-emptively will ensure the stream is preserved in a natural condition and not paved over | 559 LEGACY PRIDE DR |
| M126 | Subwatershed Improvement | 9 | Daylight drainage channel and replace with vegetated channel/infiltration trench along edge of parking lot and between buildings | | 615 CENTER ST |
| M127 | Subwatershed Improvement | 9 | Replace paved ditch with vegetated swale/infiltration trench | | 541 FLORIDA AV |
| M128 | Subwatershed Improvement | 9 | New infiltration basin, re-route additional drainage to new basin, total drainage area potentially 12 acres | | 901 LOCUST ST |
| M129 | Subwatershed Improvement | 1 | New naturalized dry pond or constructed wetland, re-route additional drainage to new basin, total drainage area potentially 12 acres | | 901 LOCUST ST |
| M130 | Subwatershed Improvement | 9 | Integrate various LID retrofits into landscaping areas, bioretention, infiltration, rain barrels, etc. | | 523 FLORIDA AV |
| M131 | Subwatershed Improvement | 1 | Retrofit existing dry pond (no StormNet ID) into naturalized basin | Possible alternative to project M132 | 627 LEGACY PRIDE DR |
| M132 | Subwatershed Improvement | 9 | Integrate infiltration basin into existing dry pond (no StormNet ID), and replace paved low flow channel with vegetated swale/infiltration trench | Possible alternative to project M131 | 627 LEGACY PRIDE DR |

| | | | | |
|---|---|---|---|---|
| M133 | Subwatershed Improvement | 1 | New naturalized dry pond or constructed wetland, re-route additional drainage to new basin, total drainage area potentially 37 acres | 484 VIRGINIA AV |
| M134 | Non-Structural | | Targeted rain barrel program at Chandon subdv | 712 ARCHER CT |

**Subwatershed** **SU-HB-0001** **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Mostly in Loudoun, drains to Fairfax, headwaters subwatershed, primarily LDR & MDR, HIC along Leesburg Pike corridor, RT SW treatment at HIC

**Impairments** high impervious in Loudoun, poor habitat, high flows per acre

**Restoration Selection Criteria**

**Preservation Qualities**

**Preservation Selection Criteria** SW Ranking

**Improvement Goals** capture impervious runoff, improve water quality

**Percent Impervious** 10.69%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 63 | Subwatershed Improvement | 9 | New LID treatments (bioretention, infiltration trenches, filter strips, swales, cisterns) around HIC corner of Dranesville Rd & Leesburg Pike | | 21800 TOWNCENTER PZ |
| 64 | Subwatershed Improvement | 9 | New LID treatments (bioretention, infiltration trenches, filter strips, swales, cisterns) around HIC along Dranesville Rd | | 1015 DRANESVILLE RD |

**Subwatershed** **SU-MB-0001** **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Partially in Loudoun Co, highly developed w/ LDR & MDR w/ extensive SW pipe network, some OS, 2 DP

**Impairments**

**Restoration Selection Criteria**

**Preservation Qualities**

**Preservation Selection Criteria** % Increase IMP (4.74%), SW Ranking

**Improvement Goals**

**Percent Impervious** 20.47%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 69 | Preservation | | Conservation easement or lot purchase to preserve riparian buffer and forested open space | | 1369 ROCK CHAPEL RD |
| 70 | Preservation | | Conservation easement or lot purchase to preserve riparian buffer and forested open space | | 1379 ROCK CHAPEL RD |
| 71 | Subwatershed Improvement | 9 | New infiltration basin to capture runoff from Hastings Hunt Sec. 6 HOA, drainage area approx 12 ac. | if infiltration not possible try project 72 | 1290 BROWNS MILL CT |
| 72 | Subwatershed Improvement | 1 | New dry pond to capture runoff from Hastings Hunt Sec. 6 HOA, total drainage area approx 12 ac. | if project 71 is unsuitable | 1258 MASON MILL CT |
| 73 | Subwatershed Improvement | 9 | Retrofit dry pond 0828DP I209 | if infiltration not possible, try project 74 | 12596 CROSS HOLLOW CT |

**Subwatershed** **SU-MB-0003** **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Headwaters, Subwatershed completely w/in Loudoun, drains to Fairfax Co.

**Impairments**

**Restoration Selection Criteria**

**Preservation Qualities** Headwaters subwatershed

**Preservation Selection Criteria** IMP, SW Ranking

**Improvement Goals** Completely w/in Loudoun Co. - no projects proposed

**Percent Impervious** 3.62%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 75 | Subwatershed Improvement | 9 | Retrofit dry pond 0308DP w/ infiltration trench in basin bottom for added infiltration benefit, 22 ac. total drainage area | | 12500 CLIFF EDGE DR |
| 76 | Non-Structural | | Rain barrel program Hastings Hunt HOA | | 1462 POWELLS TAVERN PL |

**Subwatershed** **SU-MB-0004** **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Headwaters, Subwatershed completely w/in Loudoun, drains to Fairfax Co.

**Impairments**

**Restoration Selection Criteria**

**Preservation Qualities** Headwaters subwatershed

**Preservation Selection Criteria** IMP, SW Ranking

**Improvement Goals** Completely w/in Loudoun Co. - no projects proposed

**Percent Impervious** 6.85%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 77 | Non-Structural | | Rain barrel program Crestbrook HoA & Jenkins Ridge HOA | | 1318 BROWNS MILL CT |

***Subwatershed*** ***SU-MB-0005*** ***Watershed:*** *Sugarland* ***Management Area:*** *Sugarland - Lower Middle*

| | | | |
|---|---|---|---|
| ***Description*** | Headwaters, Subwatershed completely w/in Loudoun, drains to Fairfax Co. | ***Impairments*** | |
| ***Restoration Selection Criteria*** | | ***Preservation Qualities*** | Headwaters subwatershed |
| ***Preservation Selection Criteria*** | IMP, SW Ranking | ***Improvement Goals*** | Completely w/in Loudoun Co. - no projects proposed |
| ***Percent Impervious*** | 7.67% | | |

| *Temporary Project ID* | *Strategy* | *Project Type* | *Description of Project* | *Comments* | *Nearest Address* |
|---|---|---|---|---|---|

**Subwatershed** **SU-PO-0001** **Watershed:** Sugarland **Management Area:** Sugarland - Potomac

| | | | |
|---|---|---|---|
| **Description** | Bordering Loudoun, primarily LDR & OS, some ESR, no SWM | **Impairments** | |
| **Restoration Selection Criteria** | | **Preservation Qualities** | Headwaters subwatershed, large lot sizes and large forested and undeveloped open space areas, not planned for development |
| **Preservation Selection Criteria** | IMP, SW Ranking | **Improvement Goals** | Preserve open space areas and implement general watershed-wide preservation strategies. |
| **Percent Impervious** | 2.91% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| ***Subwatershed*** | ***SU-PO-0002*** | ***Watershed:*** | *Sugarland* | ***Management Area:*** | *Sugarland - Potomac* |

| | | | |
|---|---|---|---|
| ***Description*** | Bordering Loudoun, primarily LDR & ESR, 1 DP | ***Impairments*** | |
| ***Restoration Selection Criteria*** | | ***Preservation Qualities*** | Headwaters subwatershed, large low density lots, fully developed-no further proposed development |
| ***Preservation Selection Criteria*** | IMP, SW Ranking | ***Improvement Goals*** | Implement general watershed-wide preservations strategies (i.e. public education & outreach, street sweeping, etc.) |
| ***Percent Impervious*** | 8.56% | | |

| ***Temporary Project ID*** | ***Strategy*** | ***Project Type*** | ***Description of Project*** | ***Comments*** | ***Nearest Address*** |
|---|---|---|---|---|---|

**Subwatershed** **SU-RI-0001** **Watershed:** Sugarland **Management Area:** Sugarland - Upper Middle

**Description** Mostly LDR & MDR, OS along riparian corridor, Fairfax County Parkway (Rte 7100), drains some of Corbalis Water Treatment Plant, 4 DP

**Impairments** high impervious, poor water quality, upstream watershed impacts

**Restoration Selection Criteria** SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Capture impervious runoff, improve water quality

**Percent Impervious** 20.31%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 147 | Subwatershed Improvement | 9 | LID: retrofit dry pond VDOT29046 to naturalized infiltration basin, direct outfall fr. Shaker Woods/Corbalis to basin, increase size if necessary | if soils support infiltration, if not use project 148, coordinate w/ VDOT | 12024 SUGARLAND VALLEY DR |
| 148 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond VDOT29046 to naturalized dry basin, direct outfall fr. Shaker Woods/Corbalis to basin, increase size if necessary | if project 147 unsuitable, coordinate w/ VDOT | 12022 SUGARLAND VALLEY DR |
| 149 | Subwatershed Improvement | 9 | LID: retrofit dry pond 1032DP to naturalized infiltration basin | if soils support infiltration, if not use project 150 | 12014 ROSIERS BRANCH DR |
| 150 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 1032DP to naturalized dry basin | if project 149 unsuitable | 12012 ROSIERS BRANCH DR |
| 151 | Subwatershed Improvement | 9 | LID: retrofit dry pond 0898DP to naturalized infiltration basin | if soils support infiltration, if not use project 152 | 12003 MEADOWVILLE CT |
| 152 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 0898DP to naturalized dry basin | if project 151 unsuitable | 1314 SHAKER WOODS RD |
| 153 | Subwatershed Improvement | 9 | LID: retrofit dry pond VDOT29046 to naturalized infiltration basin | if soils support infiltration, if not use project 154, coordinate w/ VDOT | 12002 HEATHER DOWN DR |
| 154 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond VDOT29046 to naturalized dry basin | if project 153 unsuitable, coordinate w/ VDOT | 1409 NORTHPOINT GLEN CT |
| 155 | Subwatershed Improvement | 7 | Retrofit culvert at Fairfax County Pkwy, install control structure w/ micro-pool/wetland for increased runoff storage | coordinate w/ VDOT | 1403 NORTHPOINT GLEN CT |
| 156 | Non-Structural | | Rain barrel program Union Mill, North Point Glen, Stuart Ridge HOAs | | 11999 HEATHER DOWN DR |
| 157 | Non-Structural | | Rain barrel program Shaker Woods, Shaker Grove & Kingstream HOAs | | 1306 SHAKER WOODS RD |

**Subwatershed** **SU-RI-0002** **Watershed:** Sugarland **Management Area:** Sugarland - Upper Middle

**Description** Headwaters, primarily LDR & MDR, with HIC & HDR adjacent to Reston Parkway, extensive SW pipe system, 2 DP, 1 WP

**Impairments** moderate erosion fr crossing impacts, high impervious

**Restoration Selection Criteria** Non-Priority

**Preservation Qualities** OS along riparian buffer at risk for future development, headwaters subwatershed

**Preservation Selection Criteria**

**Improvement Goals** repair culvert impacts, capture imperviuos runoff

**Percent Impervious**

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 158 | Subwatershed Improvement | 9 | LID: retrofit dry pond 0887DP to naturalized infiltration basin | if soils support infiltration, if not use project 159 | 11922 FAWN RIDGE LA |
| 159 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 0887DP to naturalized dry basin | if project 158 unsuitable | 11870 FAWN RIDGE LA |
| 160 | Streambank Stabilization | 3 | Clear outlets at dry pond 0336DP, stabilize downstream impacts | | 11600 QUAIL RIDGE CT |
| 161 | Stream Restoration | 2 | Remove concrete channel and restore natural stream channel | | 11603 QUAIL RIDGE CT |
| 162 | Preservation | | Conservation easement or lot purchase to preserve riparian buffer and forested open space in headwaters | | 11879 FAWN RIDGE LA |
| 163 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 11723 GREAT OWL CI |
| 164 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lots, driveways & between buildings @ North Point Villas & Summer Ridge - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 11719 SUMMERCHASE CI |
| 165 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lots, driveways and between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs cisterns, porous paving, sand filters etc. | | 1456 NORTH POINT VILLAGE CE |

**Subwatershed** **SU-RI-0003** **Watershed:** Sugarland **Management Area:** Sugarland - Upper Middle

**Description** Headwaters, primarily LDR & MDR, OS along riparian corridor, 3 DP

**Impairments** Drainage impacts in residential areas, ineffective SW controls, increased flow per acre, poor water quality

**Restoration Selection Criteria** Regional Pond and Field Recon/DC, Public Involvement

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Provide alternatives to regional pond, capture imperviour runoff, improve drainage, improve water quality

**Percent Impervious** 13.83%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 166a | Regional Pond Alternatives | 0 | Drainage improvement: remove concrete channel along Pellow Circle Ct, replace w/ grass or veg swale, improve outfall structures | | 11672 PELLOW CIRCLE CT |
| 166b | Regional Pond Alternatives | 0 | Drainage improvement: improve drainage channel and outfall structures off Deer Forest Rd | | 11642 DEER FOREST RD |
| 166c | Regional Pond Alternatives | 0 | LID: New infiltration basins to intercept storm drains from Shaker Woods HOA, drainage area approx. 20.5 acres | if soils support infiltration otherwise use project 166d, will need 2 infil. basins | 11599 SOUTHINGTON LA |
| 166d | Regional Pond Alternatives | 0 | New SW: new swm pond to intercept storm drains from Caris Glenne HOA, drainage area approx. 7 acres | if project 166c is unsuitable | 11599 SOUTHINGTON LA |
| 166e | Regional Pond Alternatives | 0 | LID: retrofit dry pond VDOT29050 to naturalized infiltration basin | if soils support infiltration, if not use project 166f, direct drainage from Southington Lane to basin, coordinate w/ VDOT | 11597 SOUTHINGTON LA |
| 166f | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit dry pond VDOT29050 to naturalized dry basin | if project 166e unsuitable, direct drainage from Southington Lane to basin, coordinate w/ VDOT | 11597 SOUTHINGTON LA |
| 166g | Regional Pond Alternatives | 0 | LID: retrofit dry pond 0353DP to naturalized infiltration basin | if soils support infiltration, if not use project 166h, direct drainage fr Deer Forest Rd to basin | 11640 DEER FOREST RD |
| 166h | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit dry pond 0353DP to naturalized dry basin | if project 166g unsuitable, direct drainage fr Deer Forest Rd to basin | 11640 DEER FOREST RD |

| | | | | | |
|---|---|---|---|---|---|
| 166i | Regional Pond Alternatives | 0 | LID: retrofit drainage swale w/ infiltration trench and check dams for addt'l storage and infiltration benefits | omit infiltration trench if infiltration not possible | 11622 DEER FOREST RD |
| 166j | Regional Pond Alternatives | 0 | LID: New infiltration basin to intercept storm drains from Shaker Dr & Southington La, drainage area approx. 7.4 acres | if soils support infiltration otherwise use project 166k | 1219 SHAKER DR |
| 166k | Regional Pond Alternatives | 0 | New SW: new swm pond to intercept storm drains from Shaker Dr & Southington La, drainage area approx. 7.4 acres | if project 166j is unsuitable | 11550 SOUTHINGTON LA |
| 166l | Regional Pond Alternatives | 0 | LID: retrofit dry pond 0337DP to naturalized infiltration basin, remove concrete low flow channel, deepen basin, protect residences from basin overtopping | if soils support infiltration, if not use project 166m | 11601 AUBURN GROVE CT |
| 166m | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit dry pond 0337DP to naturalized dry basin, remove concrete low flow channel, deepen basin, protect residences from basin overtopping | if project 166l unsuitable | 11602 AUBURN GROVE CT |
| 166n | Regional Pond Alternatives | 0 | Drainage improvement: remove concrete channel between Auburn Grove Ct & Golden Eagle Dr, replace w/ grass or veg swale, improve outfall structures | | 11607 AUBURN GROVE CT |
| 167 | Non-Structural | | Rain barrel program Shaker Woods HOA | | 11584 SOUTHINGTON LA |

**Subwatershed** **SU-SU-0006** **Watershed:** Sugarland **Management Area:** Sugarland - Lower

**Description** Bordering Loudoun, 1 LDR & ESR

**Impairments**

**Restoration Selection Criteria**

**Preservation Qualities** Headwaters subwatershed, large low density lots and estates, low development potential

**Preservation Selection Criteria** SW Ranking

**Improvement Goals** Implement general watershed-wide preservations strategies (i.e. public education & outreach, street sweeping, etc.)

**Percent Impervious** 19.59%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 1 | Subwatershed Improvement | 8 | Remove concrete channel & replace with veg. swales at cul-de-sac on Woolington Road | | 11443 WOOLINGTON RD |

***Subwatershed*** ***SU-SU-0007*** ***Watershed:*** *Sugarland* ***Management Area:*** *Sugarland - Lower*

***Description*** Mostly in Loudoun, one building w/in Fairfax ***Impairments***

***Restoration Selection Criteria*** ***Preservation Qualities***

***Preservation Selection Criteria*** SW Ranking ***Improvement Goals***

***Percent Impervious*** 18.30%

| *Temporary Project ID* | *Strategy* | *Project Type* | *Description of Project* | *Comments* | *Nearest Address* |
|---|---|---|---|---|---|

***Subwatershed*** ***SU-SU-0008*** ***Watershed:*** *Sugarland* ***Management Area:*** *Sugarland - Lower*

***Description*** Bordering Loudoun, primarily LDR & ESR, some OS, 1 DP

***Impairments*** Channelized drainage

***Restoration Selection Criteria*** Non-Priority

***Preservation Qualities***

***Preservation Selection Criteria***

***Improvement Goals*** Drainage Improvements

***Percent Impervious***

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 2 | Subwatershed Improvement | 8 | Remove concrete channel & replace with veg. swales @ Seneca Green Way | | 515 SENECA GREEN WY |
| 3 | Subwatershed Improvement | 9 | LID Retrofit dry pond 1445DP to naturalized infiltration basin | if soils support infiltration, if not use project 5 | 501 JACKSON TAVERN WY |
| 4 | Subwatershed Improvement | 1 | Retrofit dry pond 1445DP to naturalized dry basin | if project 4 unsuitable | 511 JACKSON TAVERN WY |

***Subwatershed*** ***SU-SU-0011*** ***Watershed:*** *Sugarland* ***Management Area:*** *Sugarland - Lower*

| | | | |
|---|---|---|---|
| ***Description*** | Mostly in Loudoun, LDR | ***Impairments*** | Flooding (in Loudoun), higher impervious area |
| ***Restoration Selection Criteria*** | Flooding | ***Preservation Qualities*** | |
| ***Preservation Selection Criteria*** | IMP, SW Ranking | ***Improvement Goals*** | |
| ***Percent Impervious*** | 5.07% | | |

| *Temporary Project ID* | *Strategy* | *Project Type* | *Description of Project* | *Comments* | *Nearest Address* |
|---|---|---|---|---|---|

**Subwatershed** **SU-SU-0012** **Watershed:** Sugarland **Management Area:** Sugarland - Lower

**Description** Bordering Loudoun, primarily LDR & ESR, with some pastures & horse farms, 2 DP

**Impairments** Poor habitat downstream of 2 dry ponds

**Restoration Selection Criteria** Non-Priority

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Restore stream buffers, improve water quality

**Percent Impervious**

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 5 | Non-Structural | | Riparian buffer restoration upstream and downstream of Brockman Court. | Stream runs through 2 properties, one upstream and one downstream of Brockman Court | 603 BROCKMAN CT |
| 6 | Subwatershed Improvement | 9 | LID Retrofit dry pond 1447DP to naturalized infiltration basin | if soils support infiltration, if not use project 7 | 11655 GREAT FALLS WY |
| 7 | Subwatershed Improvement | 1 | Retrofit dry pond 1447DP to naturalized dry basin | if project 6 unsuitable | 11655 GREAT FALLS WY |
| 8 | Subwatershed Improvement | 9 | LID Retrofit dry pond 1446DP to naturalized infiltration basin | if soils support infiltration, if not use project 8 | 604 NALLS FARM WY |
| 9 | Subwatershed Improvement | 1 | Retrofit dry pond 1446DP to naturalized dry basin | if project 7 unsuitable | 604 NALLS FARM WY |

**Subwatershed** SU-SU-0013 **Watershed:** Sugarland **Management Area:** Sugarland - Lower

| | | | |
|---|---|---|---|
| **Description** | Bordering Loudoun, primarily ESR & LDR with some OS, 3 farm ponds, no SWM | **Impairments** | At risk for future development, damaged and undersized culvert, CEM Type 3 - Widening |
| **Restoration Selection Criteria** | Field Recon/ ProRata | **Preservation Qualities** | |
| **Preservation Selection Criteria** | IMP, % Increase IMP (6.50%), SW Ranking | **Improvement Goals** | Repair culvert, capture impervious runoff if possible |
| **Percent Impervious** | 6.19% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 10 | Road Crossing Improvement | 4 | Repair and replace culvert @ Kentland Drive | may not be needed if upstream projects reduce flow volume/velocities | 619 KENTLAND DR |
| 11 | Stream Restoration | 2 | Place j-hooks/cross vanes to reduce erosive flows to culvert at Kentland Drive | | 619 KENTLAND DR |
| 12 | Subwatershed Improvement | 9 | New infiltration basin in open space lot on Keithley Drive, drainage area approx 5 ac. | if infiltration not possible try project 13 | 770 KEITHLEY DR |
| 13 | Subwatershed Improvement | 1 | New dry pond in open space lot on Keithley Drive, total drainage area approx 5 ac. | if project 12 is unsuitable | 770 KEITHLEY DR |
| 14 | Road Crossing Improvement | 4 | repair and replace culvert @ driveway off Plantation Drive | 2003 SPA shows high bank erosion upstream and downstream of culvert, culvert may be undersized, new home and driveway shown on 2007 aerial, need to field verify to see if problem still exists | 11820 PLANTATION DR |
| 15 | Subwatershed Improvement | 1 | Retrofit existing farm pond to wet pond or constructed wetland | land-locked parcel to south (currently undeveloped) of farm pond could be purchased and used to expand size of SWM pond. | 11601 AIR VIEW LA |

**Subwatershed** **SU-SU-0018** **Watershed:** Sugarland **Management Area:** Sugarland - Lower

**Description** Bordering Loudoun, primarily ESR & LDR with some parcels being dev. or planned for dev.

**Impairments** Flooding in Loudoun County, at risk for future development

**Restoration Selection Criteria** Flooding

**Preservation Qualities**

**Preservation Selection Criteria** % Increase IMP (9.14%), STEPL

**Improvement Goals**

**Percent Impervious** 11.68%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 16 | Stream Restoration | 2 | Remove concrete channel and restore stream channel | | 804 THOMAS RUN DR |
| 17 | Subwatershed Improvement | 1 | Retrofit existing farm pond to wet pond or constructed wetland | will require homeowners consent | 11901 PLANTATION DR |

**Subwatershed** SU-SU-0019 **Watershed:** Sugarland **Management Area:** Sugarland - Lower

**Description** Bordering Loudoun, primarily LDR & MDR w/ some ESR, OS adjacent to streams,

**Impairments** 1 res bldg in Loudoun at risk of flooding,

**Restoration Selection Criteria** Flooding

**Preservation Qualities** forested riparian buffers, low density lots and estates

**Preservation Selection Criteria** SW Ranking

**Improvement Goals**

**Percent Impervious** 14.19%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 18 | Preservation | | Conservation easement to preserve riparian buffer | | 12001 THOMAS AV |
| 19 | Preservation | | Conservation easement to preserve riparian buffer | | 12031 THOMAS AV |

**Subwatershed** **SU-SU-0020** **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Headwaters, primarily ESR & LDR w/ some MDR, 1 DP, 3 farm ponds

**Impairments** At risk for some future development

**Restoration Selection Criteria**

**Preservation Qualities** Headwaters subwatershed, large low density lots and estates

**Preservation Selection Criteria** IMP, % Increase IMP (8.13%), SW Ranking

**Improvement Goals** Implement general watershed-wide preservations strategies (i.e. public education & outreach, street sweeping, etc.), preserve undeveloped lots to protect stream buffers

**Percent Impervious** 8.37%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 20 | Preservation | | Conservation easement or lot purchase to preserve riparian buffer and forested open space in headwaters | | 748 KENTLAND DR |
| 21 | Preservation | | Conservation easement to preserve riparian buffer | | 11639 BLUE RIDGE LA |
| 22 | Preservation | | Conservation easement or lot purchase to preserve riparian buffer and forested open space in headwaters | | 11819 THOMAS AV |
| 23 | Preservation | | Conservation easement or lot purchase to preserve riparian buffer and forested open space in headwaters | | 11925 THOMAS AV |

**Subwatershed** **SU-SU-0021** **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Headwaters, primarily LDR w/ some MDR & ESR, 2 DP

**Impairments**

**Restoration Selection Criteria**

**Preservation Qualities** Headwaters with good riparian buffers, good IBI ratings and fair habitat scores

**Preservation Selection Criteria** SW Ranking

**Improvement Goals** Implement general watershed-wide preservations strategies (i.e. public education & outreach, street sweeping, etc.)

**Percent Impervious** 11.36%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 24 | Preservation | | Conservation easement from homes along Tralee Dr & Rolling Meadow Dr to preserve riparian buffer | | 11550 TRALEE DR |
| 25 | Subwatershed Improvement | 9 | LID: retrofit dry pond 1454DP to naturalized infiltration basin | if soils support infiltration, if not use project 26 | 11538 TRALEE DR |
| 26 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 1454DP to naturalized dry basin | if project 25 unsuitable | 11528 TRALEE DR |
| 27 | Subwatershed Improvement | 9 | LID: retrofit dry pond 1382DP to naturalized infiltration basin | if soils support infiltration, if not use project 28 | 11558 TRALEE DR |
| 28 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 1382DP to naturalized dry basin | if project 27 unsuitable | 11558 TRALEE DR |

**Subwatershed** **SU-SU-0022** **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Bordering Loudoun, primarily LDR & MDR, large OS areas - conservation easements?, no SWM

**Impairments** SPA SUSU1-2-D7 ditch moderate impacts w/moderate erosion

**Restoration Selection Criteria** SPA Data, Flooding

**Preservation Qualities**

**Preservation Selection Criteria** SW Ranking

**Improvement Goals**

**Percent Impervious** 10.60%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 29 | Subwatershed Improvement | 8 | Improve drainage channel and outfalls from LIC parcel along Leesburg Pike | could complement project31 | 12218 LEESBURG PI |
| 30 | Non-Structural | | Riparian buffer restoration along Leesburg Pike | | 12219 LEESBURG PI |
| 31 | Subwatershed Improvement | 9 | Implement LID treatments (bioretention, filter strips, infiltration trenches, etc.) | could complement project 29 | 12218 LEESBURG PI |

**Subwatershed** **SU-SU-0024** **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Primarily LDR & MDR, adjacent to Leesburg Pike (Rte 7), some large ares of OS, 1 VDOT SWM facility

**Impairments**

**Restoration Selection Criteria** Public Involvement

**Preservation Qualities**

**Preservation Selection Criteria** IMP

**Improvement Goals**

**Percent Impervious** 8.99%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 32 | Subwatershed Improvement | 8 | Improve drainage channels & outfalls | | 12188 HOLLY KNOLL CI |
| 33 | Non-Structural | | Remove construction debris, cut/fill spoils, reforest or restore riparian buffer | coordinate w/ VDOT | 12200 LEESBURG PI |
| 34 | Subwatershed Improvement | 9 | LID: retrofit dry pond 1382DP to naturalized infiltration basin | if soils support infiltration, if not use project 35, coordinate w/ VDOT | 12201 LEESBURG PI |
| 35 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 1382DP to naturalized dry basin | if project 34 unsuitable, coordinate w/ VDOT | 12201 LEESBURG PI |

**Subwatershed** SU-SU-0026 **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Primarily LDR & some ESR, large OS areas-parks & recreation facilities, some INT & HIC, pot. hotspot , 3 DP, 2 non-SWM ponds, Leesburg Pike (Rte. 7)

**Impairments** Deficient riparian buffers, CEM Type 4 (stabilizing), potential hotspot (Dranesville Auto Service), channelized drainage

**Restoration Selection Criteria** Regional Pond and Field Recon/ Regional Ponds

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Provide alternatives to regional pond, Preserve open space areas, address potential water quality issues fr hotspot, improve drainage channels

**Percent Impervious** 21.12%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 36g | Regional Pond Alternatives | 0 | Drainage Improvement: Remove concrete channels & replace w/ veg. swales along Hollyview Dr. | | 11786 HOLLYVIEW DR |
| 36h | Regional Pond Alternatives | 0 | LID: Provide water quality pretreatment for runoff from Dranesville Auto Service - LID treatments such as sand filters, water quality inlets, rain gardens etc. | adjacent open space lot could be used to create bioretention/infiltration trench to provide water quality treatment. | 11800 LEESBURG PI |
| 36i | Regional Pond Alternatives | 0 | LID: retrofit dry pond DP0562 to naturalized infiltration basin | if soils support infiltration, if not use project 36j | 1090 LIBERTY MEETING CT |
| 36j | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit dry pond DP0562 to naturalized dry basin | if project 36iunsuitable | 1090 LIBERTY MEETING CT |
| 36k | Regional Pond Alternatives | 0 | New LID treatments (bioretention, infiltration trenches, filter strips, swales, cisterns) around school at Sugarland Rd & Liberty Meeting Ct | Implement project 37 together with this project | 1090 LIBERTY MEETING CT |
| 36l | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit farm pond into a high quality constructed wetland with appropriate wetland plantings | | 11800 LEESBURG PI |
| 36m | Regional Pond Alternatives | 0 | LID: New LID treatments around parking lot and along driveway - infiltration trenches, bioretention, filter strips, swales. | Implement project 39 together with this project | 11801 LEESBURG PI |
| 36n | Regional Pond Alternatives | 0 | LID: Add bioretention or filter strip to provide some water quality treatment to outfalls | | 11903 LEESBURG PI |
| 36o | Regional Pond Alternatives | 0 | New infiltration basin in athletic field in Grand Hamptons Sec. 1 off Safa St. drainage area approx 6 ac. | | 1081 SAFA ST |

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|---|---|---|---|---|---|
| 36p | Regional Pond Alternatives | 0 | New SW: new swm pond to intercept storm drains from eastern half of Holly Knoll Development, drainage area approx 19 acres | | 11903 LEESBURG PI |
| 36q | Regional Pond Alternatives | 0 | LID: retrofit dry pond 0656DP to naturalized infiltration basin | if soils support infiltration, if not use project 36r | 1085 SAFA ST |
| 36r | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit dry pond 0656DP to naturalized dry basin | if project 36qunsuitable | 1085 SAFA ST |
| 36s | Regional Pond Alternatives | 0 | Drainage Improvement: Remove concrete channels & replace w/ veg. swales in median of Leesburg Pike | | 11714 LEESBURG PI |
| 37 | Non-Structural | | Non-structural: provide informational signs at LID treatments and create educational program for students, parents and community | Implement project 36ktogether with this project | 1090 LIBERTY MEETING CT |
| 38 | Non-Structural | | Non-structural - riparian buffer restoration along Leesburg Pike @ driving range, will also provide highway screening | | 11800 LEESBURG PI |
| 39 | Non-Structural | | Non-structural - provide informational signs at LID treatments. | Implement project 36mtogether with this project | 11801 LEESBURG PI |

**Subwatershed** SU-SU-0027 **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Headwaters, primarily LDR w/ some ESR & OS protecting rip. buffers, 2 DP, 1 farm pond

**Impairments** some deficient riparian buffers ds end, channelized drainage

**Restoration Selection Criteria** Drains to Regional Pond in SU-SU-0026

**Preservation Qualities** Headwaters subwatershed, highly developed w/ low future dev. potential, fair to good riparian buffers

**Preservation Selection Criteria** SW Ranking

**Improvement Goals** Provide alternatives to regional pond, restore stream buffers, protect riparian buffers, capture impervious runoff

**Percent Impervious** 13.72%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 36a | Regional Pond Alternatives | 0 | Drainage Improvement: Remove concrete channels & replace w/ veg. swales along Saunders Haven Ct. | | 11503 SAUNDERS HAVEN CT |
| 36b | Regional Pond Alternatives | 0 | LID: retrofit dry pond 0570DP to naturalized infiltration basin | if soils support infiltration, if not use project 36c | 11697 HOLLYVIEW DR |
| 36c | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit dry pond 0570DP to naturalized dry basin | if project 36b unsuitable | 11695 HOLLYVIEW DR |
| 36d | Regional Pond Alternatives | 0 | LID: retrofit dry pond 1332DP to naturalized infiltration basin | if soils support infiltration, if not use project 36e | 11562 SENECA HILL CT |
| 36e | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit dry pond 1332DP to naturalized dry basin | if project 36d unsuitable | 11525 SENECA WOODS CT |
| 36f | Regional Pond Alternatives | 0 | SW Retrofit: Retrofit farm pond to constructed wetland or wet pond | | 11700 LEESBURG PI |
| 40 | Non-Structural | | Riparian buffer restoration downstream of farm pond | | 11706 LEESBURG PI |
| 41 | Non-Structural | | Rain barrel program Holly Knoll HOA | | 11697 HOLLYVIEW DR |
| 42 | Non-Structural | | Rain barrel program Saunders Haven & D. J. Smithers HOAs | | 11509 SAUNDERS HAVEN CT |
| 43 | Non-Structural | | Rain barrel program Great Falls Woods HOA | | 1004 PRESERVE CT |

**Subwatershed** SU-SU-0028 **Watershed:** Sugarland **Management Area:** Sugarland - Lower

**Description** Bordering Loudoun, primarily LDR w/ some LIC & OS, 4 dp, 1 farm pond, Leesburg Pike (Rte 7) & Dranesville Rd (Rte 228)

**Impairments** Severe erosion (5-6') on Sugarland Run along Dranesville Rd. - 15' headcut and undercut banks, high SW outfalls, multiple obstructions and ditch impacts

**Restoration Selection Criteria** SPA Data

**Preservation Qualities** large forested riparian buffers, at risk for increased impervious and increased nutrient loading

**Preservation Selection Criteria** % Increase IMP (26.19%), STEPL

**Improvement Goals** Capture impervious runoff and reduce erosive flows, stabilize and restore erosion impacts, preserve open space & riparian buffers

**Percent Impervious** 19.86%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 44 | Stream Restoration | 2 | Repair eroded banks at SPA erosion point SUSU1-2-E4 | | 1021 DRANESVILLE RD |
| 45 | Subwatershed Improvement | 9 | LID retrofit dry pond 0570DP to infiltration basin. Additional LID around building & parking lot - bioretention, infiltration trenches, filter strips, swales, cisterns | if infiltration not possible try project 46 | 1100 DRANESVILLE RD |
| 46 | Subwatershed Improvement | 1 | SW Retrofit dry pond 0570DP to naturalized dry pond | if project 45 is unsuitable | 1100 DRANESVILLE RD |
| 47 | Subwatershed Improvement | 9 | LID retrofit potential dry pond to infiltration basin or bioretention. Additional LID around building & parking lot - infiltration trenches, filter strips, swales, cisterns, rain gardens. | if infiltration not possible try project 48 | 1108 DRANESVILLE RD |
| 48 | Subwatershed Improvement | 9 | SW Retrofit potential dry pond to naturalized dry pond | if project 47 is unsuitable | 1108 DRANESVILLE RD |
| 49 | Subwatershed Improvement | 9 | New infiltration basin to capture runoff from Grand Hamptons II HOA, drainage area approx 6 ac. | if infiltration not possible try project 50 | 12213 WINDSOR HALL WY |
| 50 | Subwatershed Improvement | 1 | New dry pond to capture runoff from Grand Hamptons II HOA, total drainage area approx 6 ac. | if project 49 is unsuitable | 12211 WINDSOR HALL WY |
| 51 | Subwatershed Improvement | 9 | SW retrofit dry pond 1034DP to constructed wetland or wet pond | | 12125 WINDSOR HALL WY |
| 52 | Subwatershed Improvement | 8 | Improve drainage channel and outfall at SPA ditch SUSU1-2-D9 and clear obstructions upstream and downstream of ditch | | 1048 PLATO LA |

| | | | | | |
|---|---|---|---|---|---|
| 53 | Subwatershed Improvement | 9 | Install veg. swale w/ check dams or bioretention to capture runoff from outfall | | 12150 WINDSOR HALL WY |
| 54 | Subwatershed Improvement | 9 | New infiltration basin to capture runoff from Laing at Sugarland HOA, drainage area approx 7.2 ac. | if infiltration not possible try project 55 | 1062 METHVEN CT |
| 55 | Subwatershed Improvement | 1 | New dry pond to capture runoff from Grand Laing at Sugarland HOA, total drainage area approx 7.2 ac. | if project 54 is unsuitable | 1062 METHVEN CT |
| 56 | Subwatershed Improvement | 9 | Install veg. swale w/ check dams or bioretention to capture runoff from outfall | | 12146 WINDSOR HALL WY |
| 57 | Subwatershed Improvement | 8 | Improve drainage channel & outfall | | 12154 WINDSOR HALL WY |
| 58 | Subwatershed Improvement | 8 | Improve drainage channel and outfall at SPA ditch SUSU1-2-D10 and clear obstructions upstream and downstream of ditch | | 12282 MILLWOOD POND CT |
| 59 | Subwatershed Improvement | 9 | LID retrofit dry pond DP0501 to infiltration basin. Additional LID around building & parking lot - bioretention, infiltration trenches, filter strips, swales, cisterns | if infiltration not possible try project 60 | 1013 DRANESVILLE RD |
| 60 | Subwatershed Improvement | 1 | SW Retrofit dry pond DP0501 to naturalized dry pond | if project 59 is unsuitable | 1013 DRANESVILLE RD |
| 61 | Non-Structural | | Rain barrel program Grand Hamptons II HOA | | 12206 WINDSOR HALL WY |
| 62 | Non-Structural | | Rain barrel program Laing at Sugarland | | 1066 METHVEN CT |

**Subwatershed** **SU-SU-0029** **Watershed:** Sugarland **Management Area:** Sugarland - Lower

**Description** Mostly in Loudoun drains to Fairfax, primarily MDR & LDR, Dranesville Rd, 1 DP, 1 farm pond

**Impairments** high impervious in Loudoun

**Restoration Selection Criteria**

**Preservation Qualities** Artificial wetlands created from Dranesville Rd relocation

**Preservation Selection Criteria** SW Ranking

**Improvement Goals** Capture impervious runoff, preserve & enhance wetlands

**Percent Impervious** 17.84%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 65 | Subwatershed Improvement | 9 | LID retrofit dry pond 1257DP to infiltration basin. | if infiltration not possible try project 66 | 1111 LANDERSET DR |
| 66 | Subwatershed Improvement | 1 | SW Retrofit dry pond 1257DP to naturalized dry pond | if project 65 is unsuitable | 1109 LANDERSET DR |
| 67 | Subwatershed Improvement | 1 | SW retrofit artificial wetlands adjacent to Dranesville road to high quality constructed wetlands w/ sediment forebays | | 1103 LANDERSET DR |
| 68 | Non-Structural | | Rain barrel program Colvin Hunt HOA | | 12418 WILLOW FALLS DR |

**Subwatershed** **SU-SU-0030** **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Primarily MDR & LDR, extensive forested riparian buffers, large SW pipe networks - most areas routed to SW facilities, 3 DP, 1 WP, 1 farm pond

**Impairments** CEM Type 3 & Type 4, some large obstructions and multiple outfalls and ditches may be causing moderate erosion on outer bends

**Restoration Selection Criteria** SPA Data

**Preservation Qualities** extensive forested riparian buffers

**Preservation Selection Criteria**

**Improvement Goals** Capture impervious runoff and reduce erosive flows, stabilize and restore erosion impacts

**Percent Impervious** 21.04%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 78 | Subwatershed Improvement | 1 | Retrofit dry pond 0074DP to naturalized dry pond, add sediment forebays or wq pretreatment, splitting into multiple naturalized dry ponds | | 1345 BUTTER CHURN DR |
| 79 | Subwatershed Improvement | 8 | Improve drainage channels & outfalls from dry pond 0074DP | | 1345 BUTTER CHURN DR |
| 80 | Subwatershed Improvement | 8 | Improve drainage channels & outfalls from dry pond 0074DP | | 1353 BUTTER CHURN DR |
| 81 | Non-Structural | | Remove fallen tree and debris blocking flow of stream channel | | 12220 HEATHER WY |
| 82 | Subwatershed Improvement | 8 | Repair and improve drainage channel, provide additional flow dissipation | | 12214 HEATHER WY |
| 83 | Subwatershed Improvement | 8 | Improve drainage channels & outfalls from dry pond 0508DP | | 12217 SUGAR MAPLE DR |
| 84 | Subwatershed Improvement | 9 | LID: retrofit dry pond 0508DP to naturalized infiltration basin | if soils support infiltration, if not use project 85 | 12217 SUGAR MAPLE DR |
| 85 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 0508DP to naturalized dry basin | if project 84 unsuitable | 12213 SUGAR MAPLE DR |
| 86 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit farm pond to constructed wetland or wet pond | | 12214 SUGAR CREEK CT |
| 87 | Subwatershed Improvement | 9 | LID: retrofit dry pond 0508DP to naturalized infiltration basin | if soils support infiltration, if not use project 88 | 1141 BANDY RUN RD |
| 88 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 0508DP to naturalized dry basin | if project 87 unsuitable | 1137 BANDY RUN RD |
| 89 | Subwatershed Improvement | 9 | LID: remove concrete channels and create naturalized infiltration basin | if soils support infiltration, if not use project 90 | 1072 METHVEN CT |

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|---|---|---|---|---|---|
| 90 | Subwatershed Improvement | 1 | New SWM: remove concrete channels and install naturalized dry basin | if project 89unsuitable | 1070 METHVEN CT |
| 91 | Non-Structural | | Rain Barrel Program Sugar Creek HOA | | 1150 BANDY RUN RD |
| 92 | Non-Structural | | Rain Barrel Program Crestwood HOA | | 1323 ROCK CHAPEL RD |
| 93 | Non-Structural | | Rain Barrel Program Millwood Pond HOA & Grand Hamptons II HOA | | 1159 MILLWOOD POND DR |
| 94 | Stream Restoration | 2 | Repair eroding banks at SPA erosion points SUFF-2-1-E1 | | 12218 HEATHER WY |
| 95 | Stream Restoration | 2 | Repair eroding banks at SPA erosion points SUSU1-3-E5 | | 1164 MILLWOOD POND DR |

**Subwatershed** **SU-SU-0031** **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Primarily highly developed MDR w/ OS around riparian buffer, no SWM

**Impairments** Stream erosion from uncontrolled runoff and large obstruction, high SW outfalls, high impervious, poor water quality

**Restoration Selection Criteria** SPA Data

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Capture impervious runoff and reduce erosive flows, stabilize and restore erosion impacts

**Percent Impervious** 28.55%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 112 | Subwatershed Improvement | 9 | LID: New infiltration basins to intercept storm drains from Crestbrook subdivision, drainage area approx. 24 acres | will need at least 2 basins, if soils support infiltration otherwise use project 113 | 1405 BAKERS CREEK CT |
| 113 | Subwatershed Improvement | 1 | New SW: new swm pond to intercept storm drains from Crestbrook subdivision, drainage area approx. 24 acres | if project 112 is unsuitable | 12400 SHALLOW FORD CT |
| 114 | Subwatershed Improvement | 9 | LID: New infiltration basins to intercept storm drains from Crestbrook subdivision, drainage area approx. 2.5 acres | will need at least 2 basins, if soils support infiltration otherwise use project 115 | 1312 YELLOW TAVERN CT |
| 115 | Subwatershed Improvement | 1 | New SW: new swm pond to intercept storm drains from Crestbrook subdivision, drainage area approx. 2.5 acres | if project 114 is unsuitable | 1375 BUTTER CHURN DR |
| 116 | Stream Restoration | 2 | Stabilize and repair eroded bank at SPA erosion point SUSU1-3-E6 | | 1375 BUTTER CHURN DR |
| 117 | Non-Structural | | Rain Barrel Program Crestbrook HOA | | 1334 SHALLOW FORD RD |
| 118 | Non-Structural | | Remove obstruction at SPA obstruction point SUSU1-3-O8 | | 12222 HEATHER WY |

**Subwatershed** **SU-SU-0032** **Watershed:** Sugarland **Management Area:** Sugarland - Lower Middle

**Description** Mostly MDR w/ some LDR, INT in the southeast part of subwatershed, OS along riparian corridor, extensive SW piping network, 9 DP, 1 WP

**Impairments** Stream erosion and ditch impact from uncontrolled runoff, high SW outfalls, high impervious, poor water quality

**Restoration Selection Criteria** SPA Data, Public Involvement

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Capture impervious runoff and reduce erosive flows, stabilize and restore erosion impacts, improve water quality

**Percent Impervious** 22.23%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 119 | Subwatershed Improvement | 9 | LID: retrofit dry pond 0901DP to naturalized infiltration basin | if soils support infiltration, if not use project 120 | 12108 COURTNEY CT |
| 120 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 0901DP to naturalized dry basin | if project 119 unsuitable | 12108 COURTNEY CT |
| 121 | Subwatershed Improvement | 9 | LID: retrofit dry pond 0899DP to naturalized infiltration basin | if soils support infiltration, if not use project 122 | 12109 COURTNEY CT |
| 122 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 0899DP to naturalized dry basin | if project 121 unsuitable | 12118 SANDY CT |
| 123 | Subwatershed Improvement | 9 | LID: New infiltration basins to intercept storm drains from portion of Shaker Woods HOA, drainage area approx. 5 acres | if soils support infiltration otherwise use project 124 | 12111 SANDY CT |
| 124 | Subwatershed Improvement | 1 | New SW: new swm pond to intercept storm drains from Shaker Woods HOA, drainage area approx. 5 acres | if project 123 is unsuitable | 12109 SANDY CT |
| 125 | Subwatershed Improvement | 9 | LID: retrofit dry pond DP0345 to naturalized infiltration basin | if soils support infiltration, if not use project 126 | 12024 MEADOWVILLE CT |
| 126 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond DP0345 to naturalized dry basin | if project 125 unsuitable | 12024 MEADOWVILLE CT |
| 127 | Subwatershed Improvement | 9 | LID: retrofit dry pond VDOT29054 to naturalized infiltration basin | if soils support infiltration, if not use project 128, coordinate w/ VDOT | 12058 SUGARLAND VALLEY DR |
| 128 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond VDOT29054 to naturalized dry basin | if project 127 unsuitable, coordinate w/ VDOT | 12054 SUGARLAND VALLEY DR |
| 129 | Subwatershed Improvement | 9 | LID: retrofit dry pond 0575DP to naturalized infiltration basin | if soils support infiltration, if not use project 130 | 12250 EXBURY ST |

| | | | | | |
|---|---|---|---|---|---|
| 130 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 0575DP to naturalized dry basin | if project 129 unsuitable | 12250 EXBURY ST |
| 131 | Subwatershed Improvement | 9 | LID: retrofit dry pond VDOT29053 to naturalized infiltration basin | if soils support infiltration, if not use project 132, coordinate w/ VDOT | 12262 STREAMVALE CI |
| 132 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond VDOT29053 to naturalized dry basin | if project 131 unsuitable, coordinate w/ VDOT | 12256 STREAMVALE CI |
| 133 | Non-Structural | | Informational signage along trails for outreach | complements project 131 or 132 | 12256 STREAMVALE CI |
| 134 | Stream Restoration | 2 | Repair eroding banks at SPA erosion points SUSU1-1-E1 | | 1404 VALEBROOK LA |
| 135 | Stream Restoration | 2 | Repair eroding banks at SPA erosion points SUSU1-1-E2 | | 12035 SUGARLAND VALLEY DR |
| 136 | Subwatershed Improvement | 9 | LID: retrofit dry pond 0313DP to naturalized infiltration basin | if soils support infiltration, if not use project 137 | 12227 PARKSTREAM TE |
| 137 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 0313DP to naturalized dry basin | if project 136 unsuitable | 1449 KINGSTREAM DR |
| 138 | Subwatershed Improvement | 9 | LID: retrofit dry pond 0434DP to naturalized infiltration basin | if soils support infiltration, if not use project 138 | 12122 EDDYSPARK DR |
| 139 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 0434DP to naturalized dry basin | if project 137 unsuitable | 1407 VALEBROOK LA |
| 140 | Subwatershed Improvement | 9 | LID: retrofit dry pond 0845DP to naturalized infiltration basin | if soils support infiltration, if not use project 141 | 12149 EDDYSPARK DR |
| 141 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 0845DP to naturalized dry basin | if project 140 unsuitable | 1570 KINGSTREAM CI |
| 142 | Subwatershed Improvement | 9 | New infiltration basin on athletic fields at school, drainage area approx. 2 acres each. | if soils support infiltration | 12235 PARKSTREAM TE |
| 143 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot and along driveway - infiltration trenches, bioretention, filter strips, swales. | Implement project 144 together with this project | 1464 KINGSVALE CI |
| 144 | Non-Structural | | Provide informational signs at LID treatments. | Implement project 143 together with this project | 1470 KINGSVALE CI |
| 145 | Non-Structural | | Rain barrel program Shaker Woods HOA | | 12168 EDDYSPARK DR |
| 146 | Non-Structural | | Rain barrel program Kingstream HOA | | 1236 ROWLAND DR |

**Subwatershed** **SU-SU-0034** **Watershed:** Sugarland **Management Area:** Sugarland - Upper Middle

**Description** MDR w/ some LDR, OS along small riparian corridor, no SWM, all SW pipes outfall to stream

**Impairments** At risk for future development, some erosion and ditch impacts from uncontrolled runoff, major debris jams, high SW outfalls, high impervious, poor water quality

**Restoration Selection Criteria** SPA Data

**Preservation Qualities**

**Preservation Selection Criteria** % Increase IMP (5.99%), STEPL

**Improvement Goals** clear debris jams, capture impervious runoff and reduce erosive flows, stabilize and restore erosion and ditch impacts, improve water quality

**Percent Impervious** 28.58%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 168 | Subwatershed Improvement | 9 | LID: install vegetated swale with check dams & infiltration trench to promote detention and infiltration | | 714 JENNY ANN CT |
| 169 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | Implement project 170 together with this project | 840 DRANESVILLE RD |
| 170 | Non-Structural | | Non-structural - provide informational signs at LID treatments. | Implement project 169 together with this project | 840 DRANESVILLE RD |
| 171 | Subwatershed Improvement | 9 | LID: New infiltration basin in INT lot, drainage area approx. 12 acres | if soils support infiltration otherwise use project 172 | 844 DRANESVILLE RD |
| 172 | Subwatershed Improvement | 1 | New SW: new swm pond in INT lot, drainage area approx. 12 acres | if project 171 is unsuitable | 844 DRANESVILLE RD |
| 173 | Preservation | | Conservation easement or lot purchase to preserve riparian buffer and forested open space | | 700 JENNY ANN CT |
| 174 | Subwatershed Improvement | 9 | LID: New infiltration basins in undeveloped OS lot, drainage area approx. 28 acres | if project 173 is implemented, if soils support infiltration otherwise use 174 | 702 JENNY ANN CT |
| 175 | Subwatershed Improvement | 1 | New SW: new swm pond in undeveloped OS lot, drainage area approx. 28 acres | if project 174 is unsuitable | 702 JENNY ANN CT |
| 176 | Stream Restoration | 3 | Stabilize eroded bank at SPA erosion point SUSU018.E001 | | 722 HUNTSMAN PL |
| 177 | Non-Structural | | Remove obstruction at SPA obstruction point SUUT4-1-O2 & O3, and stabilize erosion impacts | | 12201 WOODVALE CT |

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|---|---|---|---|
| 178 | Non-Structural | Rain barrel program Van Vecks Subdivision, Barker Hill Sec. 1, Graymoor & Chestnut Grove HOAs | 788 3RD ST |
| 179 | Non-Structural | Rain barrel program Iron Ridge Sec. 2, Potomac Fairways, & Jeneba Woods HOAs | 620 3RD ST |
| 180 | Non-Structural | Rain barrel program Old Dranesville Hunt Club HOA | 718 OLD HUNT WY |

**Subwatershed** SU-SU-0035 **Watershed:** Sugarland **Management Area:** Sugarland - Upper Middle

**Description** Stream relocated by Fairfax Co. Pkwy, primarily HDR, w/ mixed LDR/MDR, HIC/LIC along Dulles Access Rd, some OS along riparian corridors, poor riparian buffer, 2 DP, 1 WP - regional pond

**Impairments** Straightened & relocated stream, immediately adjacent to Fairfax County Pkwy, potential for flooding, high impervious, deficient buffers, poor habitat, poor water quality

**Restoration Selection Criteria** Flooding

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Improve crossings, restore naturalized stream condition, capture impervious runoff and reduce erosive flows, improve water quality

**Percent Impervious** 29.96%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 215 | Subwatershed Improvement | 8 | Improve drainage channel and outfalls from Creekbend Dr | | 12016 CREEKBEND DR |
| 216 | Subwatershed Improvement | 9 | LID: retrofit dry pond VDOT29041 to naturalized infiltration basin, | if soils support infiltration, if not use project 217, coordinate w/ VDOT | 1606 POPLAR GROVE DR |
| 217 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond VDOT29041 to naturalized dry basin | if project 216 unsuitable, coordinate w/ VDOT | 1610 POPLAR GROVE DR |
| 218 | Stream Restoration | 2 | Restore naturalized stream channel | | 11957 GREY SQUIRREL LA |
| 219 | Subwatershed Improvement | 9 | LID: retrofit dry pond VDOT29040 to naturalized infiltration basin, | if soils support infiltration, if not use project 220, coordinate w/ VDOT | 1707 SUNDANCE DR |
| 220 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond VDOT29040 to naturalized dry basin | if project 219 unsuitable, coordinate w/ VDOT | 1707 SUNDANCE DR |
| 221 | Road Crossing Improvement | 4 | Remove/replace culvert, raise bed of access road off of Fairfax Co Pkwy, repair crossing impacts | | 1681 CEDAR HOLLOW WY |
| 222 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 11951 KILLINGSWORTH AV |
| 223 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 11790 BARON CAMERON AV |

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| 224 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 1651 RESTON PW |
| 225 | Subwatershed Improvement | 9 | New infiltration basin in athletic field off Reston Pkwy. drainage area approx 7 ac. Additional LID projects such as infiltration trenches, bioretention, filter strip, swales, green roofs etc. around parking lot and between buildings | Implement project 226 together with this project | 1635 RESTON PW |
| 226 | Non-Structural | | Non-structural: provide informational signs at LID treatments and create educational program for students, parents and community | Implement project 225 together with this project | 1635 RESTON PW |

**Subwatershed** SU-SU-0036 **Watershed:** Sugarland **Management Area:** Sugarland - Upper Middle

**Description** Headwaters, mostly HDR/MDR, OS along riparian corridors, INT slated for OS in future, extensive SW pipe networks, 3 DP, 1 WP

**Impairments** Riprap undermining channel, moderate to high erosion, blocked/clogged dry pond outlets, high impervious, high SW outfalls, fair habitat

**Restoration Selection Criteria** Field Recon/DC, Public Involvement

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Capture impervious runoff and reduce erosive flows, remove riprap, stabilize and repair damaged channels

**Percent Impervious** 29.10%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 181 | Subwatershed Improvement | 9 | LID: retrofit dry pond at Fairfax Co. Pkwy & Walnut Branch Rd to naturalized infiltration basin | if soils support infiltration, if not use project 182 | 12002 WALNUT BRANCH RD |
| 182 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond at Fairfax Co Pkwy & Walnut Branch Rd to naturalized dry basin | if project 181 unsuitable | 11967 GREY SQUIRREL LA |
| 183 | Subwatershed Improvement | 9 | LID: retrofit dry pond 0334DP to naturalized infiltration basin | if soils support infiltration, if not use project 184 | 1555 TRAILS EDGE LA |
| 184 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 0334DP to naturalized dry basin | if project 183 unsuitable | 1557 TWISTED OAK DR |
| 185 | Subwatershed Improvement | 9 | LID: retrofit dry pond 0333DP to naturalized infiltration basin | if soils support infiltration, if not use project 185 | 11922 WINSTEAD LA |
| 186 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 0333DP to naturalized dry basin | if project 184 unsuitable | 11922 WINSTEAD LA |
| 187 | Subwatershed Improvement | 9 | LID: New infiltration basins in undeveloped OS lot, drainage area approx. 6 acres | if soils support infiltration otherwise use 188 | 1502 TWISTED OAK DR |
| 188 | Subwatershed Improvement | 1 | New SW: new swm pond in undeveloped OS lot, drainage area approx. 6 acres | if project 187 is unsuitable | 1481 AUTUMN RIDGE CI |
| 189 | Stream Restoration | 3 | Remove riprap that is undermining channel, stabilize banks, restore riparian buffer | | 1550 RESTON PW |
| 190 | Subwatershed Improvement | 9 | LID: New infiltration basin in athletic field, intercept drainage fr western half of Reston Sec. 45, drainage area approx. 15 acres | if soils support infiltration | 1550 RESTON PW |
| 191 | Subwatershed Improvement | 9 | LID: New infiltration basins in undeveloped OS lot, drainage area approx. 10 acres | if soils support infiltration otherwise use 192 | 1567 TRAILS EDGE LA |

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| 192 | Subwatershed Improvement | 1 | New SW: new swm pond in undeveloped OS lot, drainage area approx. 10 acres | if project 191 is unsuitable | 11723 OLD BAYBERRY LA |
| 193 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 1668 HARVEST GREEN CT |
| 194 | Subwatershed Improvement | 9 | LID: new vegetated or grass swale w/ check dams and infiltration trench to promote detention storage & infiltration | omit infiltration trench if infiltration not possible | 1560 TWISTED OAK DR |
| 195 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | include signage & rain barrel program for education & outreach | 11758 ARBOR GLEN WY |
| 196 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | include signage & rain barrel program for education & outreach | 1542 TWISTED OAK DR |
| 197 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | include signage & rain barrel program for education & outreach | 1541 WOODCREST DR |
| 198 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | include signage & rain barrel program for education & outreach | 1509 DEER POINT WY |
| 199 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | include signage & rain barrel program for education & outreach | 1543 POPLAR GROVE DR |
| 200 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | include signage & rain barrel program for education & outreach | 1508 AUTUMN RIDGE CI |
| 201 | Subwatershed Improvement | 9 | LID: New infiltration basins in INT lot, drainage area approx. 13.5 acres | intercept outfalls from adjacent HDR area, if soils support infiltration otherwise use 202 | 1500 POPLAR GROVE DR |
| 202 | Subwatershed Improvement | 1 | New SW: new swm pond in INT lot, drainage area approx. 13.5 acres | intercept outfalls from adjacent HDR area, if project 201 is unsuitable | 11875 LAKE NEWPORT RD |

**Subwatershed** SU-SU-0037 **Watershed:** Sugarland **Management Area:** Sugarland - Upper Middle

**Description** Headwaters, highly developed w/ HIC, HDR & LIC, some OS in parks & INT areas, extensive SW pipe networks 1 RT, 1 WP - regional pond

**Impairments** Poor drainage at Library, high impervious, high SW outfalls, potential for future pollutant loading

**Restoration Selection Criteria** Field Recon/DC

**Preservation Qualities**

**Preservation Selection Criteria** STEPL

**Improvement Goals** Capture impervious runoff, and improve drainage

**Percent Impervious** 56.20%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 227 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 11999 EDGEMERE CI |
| 228 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | Implement project 229 together with this project | 1850 TOWN CENTER DR |
| 229 | Non-Structural | | Non-structural: provide informational signs at LID treatments and create education & outreach program | Implement project 228 together with this project | 12062 EDGEMERE CI |
| 230 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 1842 BOWMAN TOWNE CT |
| 231 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | Implement project 229 together with this project | 11925 BOWMAN TOWNE DR |
| 232 | Non-Structural | | Non-structural: provide informational signs at LID treatments and create education & outreach program | Implement project 228 together with this project | 11925 BOWMAN TOWNE DR |
| 233 | Subwatershed Improvement | 9 | LID: New infiltration basins in LIC lot along Bowman Towne Dr., drainage area approx. 6 acres | if soils support infiltration otherwise use 234 | 11925 BOWMAN TOWNE DR |
| 234 | Subwatershed Improvement | 1 | New SW: new swm pond in LIC lot along Bowman Towne Dr., drainage area approx. 6 acres | if project 233 is unsuitable | 1778 FOUNTAIN DR |

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| 235 | Subwatershed Improvement | 9 | LID: New infiltration basins in OS/INT lot along Bowman Towne Dr., drainage area approx. 13 acres | if soils support infiltration otherwise use 236, intercept drainage from HIC area @ New Dominion PW & Fountain Dr | 1815 FOUNTAIN DR |
| 236 | Subwatershed Improvement | 1 | New SW: new swm pond in OS/INT lot along Bowman Towne Dr., drainage area approx. 13 acres | if project 233 is unsuitable, intercept drainage from HIC area @ New Dominion PW & Fountain Dr | 1815 FOUNTAIN DR |
| 237 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 11810 FREEDOM DR |
| 238 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 1857 FOUNTAIN DR |
| 239 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 11870 SPECTRUM CE |
| 240 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 11816 SPECTRUM CE |
| 241 | Subwatershed Improvement | 9 | LID: New infiltration basins in OS lot along Fountain Dr., drainage area approx. 13 acres | if soils support infiltration otherwise use 242, intercept drainage from HIC area across Fountain Dr | 1778 FOUNTAIN DR |
| 242 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot along Fountain Dr., drainage area approx. 13 acres | if project 241 is unsuitable, intercept drainage from HIC area across Fountain Dr | 1778 FOUNTAIN DR |
| 243 | Subwatershed Improvement | 9 | LID: New infiltration basins in INT lot along Cameron Glen Dr., drainage area approx. 6 acres | if soils support infiltration otherwise use 244, intercept drainage from INT area along Cameron Glen Dr | 12000 BOWMAN TOWNE DR |
| 244 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot along Cameron Glen Dr., drainage area approx. 6 acres | if project 243 is unsuitable, intercept drainage from HIC area along Cameron Glen Dr | 12000 BOWMAN TOWNE DR |

**Subwatershed** **SU-SU-0038** **Watershed:** Sugarland **Management Area:** Sugarland - Upper Middle

**Description** Primarily MDR w/ some LDR, large OS parcels protecting riparian corridor, extensive SW pipe network but no SWM treatment

**Impairments** Public comments indicate flooding & inadequate SWM, uncontrolled runoff directed to streams, high impervious, poor water quality

**Restoration Selection Criteria** Public Involvement

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Capture impervious runoff and improve water quality

**Percent Impervious** 24.39%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 203 | Subwatershed Improvement | 9 | LID: New infiltration basins in OS lot, drainage area approx. 6 acres | intercept outfalls from adjacent MDR area, if soils support infiltration otherwise use 204 | 401 CAVENDISH ST |
| 204 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot, drainage area approx. 6 acres | intercept outfalls from adjacent MDR area, if project 203 is unsuitable | 401 CAVENDISH ST |
| 205 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot, drainage area approx. 42 acres | intercept outfalls from adjacent MDR area | 1108 CRITON ST |
| 206 | Subwatershed Improvement | 9 | LID: New infiltration basins in OS lot, drainage area approx. 6 acres | intercept outfalls from adjacent MDR area, if soils support infiltration otherwise use 208 | 400 QUEENS ROW ST |
| 207 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot, drainage area approx. 6 acres | intercept outfalls from adjacent MDR area, if project 207 is unsuitable | 401 QUEENS ROW ST |
| 208 | Subwatershed Improvement | 9 | LID: New infiltration basins in OS lot, drainage area approx. 18 acres | intercept outfalls from adjacent MDR/LDR area, if soils support infiltration otherwise use 209, may need 2 basins | 12024 CREEKBEND DR |
| 209 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot, drainage area approx. 18 acres | intercept outfalls from adjacent MDR area, if project 208 is unsuitable | 12018 CREEKBEND DR |
| 210 | Subwatershed Improvement | 9 | LID: New infiltration basins in OS lot, drainage area approx. 18 acres | intercept outfalls from adjacent MDR/LDR area, if soils support infiltration otherwise use 209, may need 2 basins | 12097 WALNUT BRANCH RD |

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| 211 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot, drainage area approx. 18 acres | intercept outfalls from adjacent MDR area, if project 208 is unsuitable, potential for wet pond/wetland depending on base flow | 12157 PURPLE SAGE CT |
| 212 | Non-Structural | | Targeted rain barrel program @ Hunter's Creek Sec. 2 | | 1104 CLARKE ST |
| 213 | Non-Structural | | Targeted rain barrel program @ Reston Sec. 49 | | 12039 CREEKBEND DR |
| 214 | Preservation | | Conservation easement to preserve riparian buffer | | 12048 CREEKBEND DR |

**Subwatershed** SU-SU-0039 **Watershed:** Sugarland **Management Area:** Sugarland - Upper Middle

**Description** Mostly MDR, some LDR, HIC & HDR along southern part of watershed, INT in northwest part, ESR adjacent to stream on east side, 2 DP

**Impairments** high impervious, high SW outfalls, poor water quality

**Restoration Selection Criteria** SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Capture impervious runoff and improve water quality

**Percent Impervious** 31.93%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 245 | Stream Restoration | 2 | Stabilize failing stream banks | | 409 QUEENS ROW ST |
| 246 | Subwatershed Improvement | 9 | LID: New infiltration basins in OS lot east of Herndon Pkwy, drainage area approx. 10 acres | if soils support infiltration otherwise use 247, intercept drainage from Hunters Creek HOA along Merlins Lane. | 115 HERNDON PW |
| 247 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot east of Herndon Pkwy, drainage area approx. 10 acres | if project 246 is unsuitable, intercept drainage from Hunters Creek HOA along Merlins Lane. | 115 HERNDON PW |
| 248 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot east of Herndon Pkwy, drainage area approx. 40 acres | depending on base flow, may be wet pond or constructed wetland | 903 LEONA LA |
| 249 | Subwatershed Improvement | 9 | LID: retrofit dry pond adjacent to Leona Lane to naturalized infiltration basin | if soils support infiltration, if not use project 250 | 917 LEONA LA |
| 250 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond adjacent to Leona Lane to naturalized dry basin | if project 249 unsuitable | 917 LEONA LA |
| 251 | Subwatershed Improvement | 8 | Improve drainage channel and outfalls from Reneau Wy. | | 371 RENEAU WY |
| 252 | Subwatershed Improvement | 9 | LID: New infiltration basin in athletic field off Reston Pkwy. drainage area approx 6 ac. | | 504 WOODSHIRE LA |
| 253 | Subwatershed Improvement | 9 | LID: New infiltration basin in INT lot off Dranesville Rd, drainage area approx 13 ac. | if soils support infiltration, if not use project 254 | 529 MERLINS LA |
| 254 | Subwatershed Improvement | 1 | New SW: New SWM pond in INT lot off Dranesville Rd, drainage area approx 13 ac. | if project 253 unsuitable | 529 MERLINS LA |

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| 255 | Subwatershed Improvement | 9 | LID: retrofit dry pond in INT lot off Park Ave. to naturalized infiltration basin | if soils support infiltration, if not use project 256 | 902 GRANT ST |
| 256 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond in INT lot off Park Ave. to naturalized dry basin | if project 255 unsuitable | 603 DRANESVILLE RD |
| 257 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | Implement project 258 together with this project | 651 DRANESVILLE RD |
| 258 | Non-Structural | | Non-structural: provide informational signs at LID treatments and create education & outreach program | Implement project 257 together with this project | 651 DRANESVILLE RD |
| 259 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | Implement project 260 together with this project | 670 DRANESVILLE RD |
| 260 | Non-Structural | | Non-structural: provide informational signs at LID treatments and create education & outreach program | Implement project 259 together with this project | 630 DRANESVILLE RD |
| 261 | Non-Structural | | Targeted rain barrel program @ Treeside Sec. 1, Sugar Land Heights & Yount Subdivision | | 815 GRANT ST |
| 262 | Non-Structural | | Targeted rain barrel program @ Potomac Fairways, Ashburn, The Villages, Chelmstord, & Chasa Goettling Subdivision | | 905 N GUNNELL CT |
| 263 | Non-Structural | | Targeted rain barrel program @ Hunters Creek HOA | | 503 PEMBROOK CT |

**Subwatershed** SU-SU-0040 **Watershed:** Sugarland **Management Area:** Sugarland - Upper Middle

**Description** Highly developed subwatershed w/ MDR, HDR, LIC, & HIC, ESR slated for OS, OS along riparian corridor, some IND in south, 2 DP, Elden St (Rte 606), Faifax County Pkwy. (Rte 7100)

**Impairments** Flooding - non-residential bldg & road crossing, SW controls needed on VDOT property, blocked culverts fr field recon, high impervious, deficient stream buffers, poor water quality

**Restoration Selection Criteria** SW Ranking, Public Involvment, Flooding

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Capture impervious runoff, improve drainage and improve water quality, remove culvert obstructions

**Percent Impervious** 38.55%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 264 | Subwatershed Improvement | 9 | LID: New infiltration basin in OS lot west of Herndon Pkwy, drainage area approx. 5 acres | if soils support infiltration otherwise use 265 | 200 HERNDON PW |
| 265 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot west of Herndon Pkwy, drainage area approx. 5 acres | if project 265 is unsuitable | 200 HERNDON PW |
| 266 | Subwatershed Improvement | 9 | LID: New infiltration basin in OS lot off of Laurel Way, drainage area approx. 6.25 acres | if soils support infiltration otherwise use 267, intercept outfalls from Laurel Way | 192 LAUREL WY |
| 267 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot off of Laurel Way, drainage area approx. 6.25 acres | if project 266 is unsuitable, intercept outfalls from Laurel Way | 188 LAUREL WY |
| 268 | Subwatershed Improvement | 9 | LID: New infiltration basin in OS lot east of Herndon Pkwy, drainage area approx. 10 acres | if soils support infiltration otherwise use 269, intercept outfall from Crestview Sec. 1 | 702 TAMARACK WY |
| 269 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot east of Herndon Pkwy, drainage area approx. 10 acres | if project 268 is unsuitable, intercept outfall from Crestview Sec. 1 | 700 TAMARACK WY |
| 270 | Subwatershed Improvement | 8 | Improve drainage channel and outfalls from Crestview Sec. 1 development | | 700 TAMARACK WY |
| 271 | Stream Restoration | 2 | Stabilize and repair eroding banks at SPA erosion points SUSU023-E001 | | 126 LAUREL WY |
| 272 | Subwatershed Improvement | 9 | LID: retrofit dry pond 1456DP to naturalized infiltration basin | if soils support infiltration, if not use project 273 | 1748 STUART POINTE LA |
| 273 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond 1456DP to naturalized dry basin | if project 272 unsuitable | 1748 STUART POINTE LA |

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| 274 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 150 ELDEN ST |
| 275 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 108 ELDEN ST |
| 276 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 171 ELDEN ST |
| 277 | Subwatershed Improvement | 9 | LID: retrofit dry pond VDOT29039 to naturalized infiltration basin | if soils support infiltration, if not use project 279 | 1704 LAKE SHORE CREST DR |
| 278 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond VDOT29039 to naturalized dry basin | if project 278 unsuitable | 1704 LAKE SHORE CREST DR |
| 279 | Non-Structural | | Targeted rain barrel program @ Crestview Sec. 1 & Runnymede Manor | | 762 CORDELL WY |
| 280 | Non-Structural | | Targeted rain barrel program @ Stuart Woods, Reston Sec. 49 & Towns at Stuart Pointe | | 12113 WALNUT BRANCH RD |

**Subwatershed** **SU-SU-0041** **Watershed:** Sugarland **Management Area:** Sugarland - Upper

**Description** Mostly LIC, HIC & HDR along Elden St, MDR & INT in southwest part of subwatershed, OS areas at risk for development, 2 DP

**Impairments** Very high impervious, poor water quality, poor habitat

**Restoration Selection Criteria** SW Ranking

**Preservation Qualities** OS areas at risk for future development, potential for increase in pollutant loading

**Preservation Selection Criteria** % Increase IMP (3.17%), STEPL

**Improvement Goals** preserve open space, capture impervious runoff, improve water quality

**Percent Impervious** 49.64%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 281 | Subwatershed Improvement | 8 | Improve drainage channel and outfalls off of Laurel Way from Stuart Woods development | | 124 LAUREL WY |
| 282 | Subwatershed Improvement | 9 | LID: New infiltration basin in OS lot south of Elden St, drainage area approx. 7 acres | if soils support infiltration otherwise use 283 | 381 ELDEN ST |
| 283 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot south of Elden St, drainage area approx. 7 acres | if project 282 is unsuitable | 381 ELDEN ST |
| 284 | Subwatershed Improvement | 9 | LID: retrofit dry pond @ northern end of IND lot off Spring St. to naturalized infiltration basin | if soils support infiltration, if not use project 285 | 347 ELDEN ST |
| 285 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond @ northern end of IND lot off Spring St. to naturalized dry basin | if project 284 unsuitable | 347 ELDEN ST |
| 286 | Subwatershed Improvement | 9 | LID: retrofit dry pond off Grove St. to naturalized infiltration basin | if soils support infiltration, if not use project 287 | 270 SPRING ST |
| 287 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond off Grove St to naturalized dry basin | if project 286 unsuitable | 270 SPRING ST |
| 288 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, sand filters, filter strips, swales, green roofs, cisterns etc. | | 381 ELDEN ST |
| 289 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, sand filters, filter strips, swales, green roofs, cisterns etc. | | 413 ELDEN ST |

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| 290 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, sand filters, filter strips, swales, green roofs, cisterns etc. | | 632 GRANT ST |
| 291 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, sand filters, filter strips, swales, green roofs, cisterns etc. | | 501 ELDEN ST |
| 292 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, sand filters, filter strips, swales, green roofs, cisterns etc. | | 460 ELDEN ST |
| 293 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, sand filters, filter strips, swales, green roofs, cisterns etc. | | 652 ELDEN ST |
| 294 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, sand filters, filter strips, swales, green roofs, cisterns etc. | | 605 ELDEN ST |
| 295 | Preservation | | Conservation easement or lot purchase to preserve OS adjacent to IND along Van Buren St | OS area could be used for SWM implementation | 101 PEARL ST |
| 296 | Subwatershed Improvement | 9 | LID: New infiltration basin in OS lot south of Elden St, drainage area approx. 5 acres | implement if project 295 proceeds and soils support infiltration otherwise use 297 | 601 NASH ST |
| 297 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot south of Elden St, drainage area approx. 5 acres | if project 296 is unsuitable and project 295 is implemented | 601 NASH ST |
| 298 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, sand filters, filter strips, swales, green roofs, cisterns etc. | | 585 GROVE ST |
| 299 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, sand filters, filter strips, swales, green roofs, cisterns etc. | | 499 GROVE ST |

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| 300 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, sand filters, filter strips, swales, green roofs, cisterns etc. | | 601 NASH ST |
| 301 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, sand filters, filter strips, swales, green roofs, cisterns etc. | | 505 HUNTMAR PARK DR |
| 302 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, sand filters, filter strips, swales, green roofs, cisterns etc. | | 530 HUNTMAR PARK DR |
| 303 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, sand filters, filter strips, swales, green roofs, cisterns etc. | | 475 SPRINGPARK PL |
| 304 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, sand filters, filter strips, swales, green roofs, cisterns etc. | | 470 SPRINGPARK PL |
| 305 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | Implement project 306 together with this project | 432 VAN BUREN ST |
| 306 | Non-Structural | | Non-structural: provide informational signs at LID treatments and create education & outreach program | Implement project 305 together with this project | 432 VAN BUREN ST |
| 307 | Subwatershed Improvement | 9 | LID: New infiltration basin in OS lot @ corner of Spring St & Van Buren St drainage area approx. 10 acres | if soils support infiltration otherwise use 308 | 550 VAN BUREN ST |
| 308 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot @ corner of Spring St & Van Buren St, drainage area approx. 10 acres | if project 307 is unsuitable | 550 VAN BUREN ST |
| 309 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 347 ELDEN ST |
| 310 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 500 CARLISLE DR |

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| 311 | Subwatershed Improvement | 9 | LID: retrofit dry pond adjacent to Fairfax Co. Pkwy to naturalized infiltration basin | if soils support infiltration, if not use project 312 | 101 ELDEN ST |
| 312 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond adjacent to Fairfax Co. Pkwy to naturalized dry basin | if project 311 unsuitable | 101 ELDEN ST |
| 313 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 1813 TOWN CENTER DR |
| 314 | Subwatershed Improvement | 9 | LID: retrofit dry pond DP0564 to naturalized infiltration basin | if soils support infiltration, if not use project 315 | 1800 TOWN CENTER DR |
| 315 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond DP0564 to naturalized dry basin | if project 314 unsuitable | 12036 EDGEMERE CI |
| 316 | Subwatershed Improvement | 9 | LID: New infiltration basin in OS adjacent to IND & LIC along Fairfax Co. Pkwy, drainage area approx. I acres | if soils support infiltration otherwise use 317 | 491 CARLISLE DR |
| 317 | Subwatershed Improvement | 1 | New SW: new swm pond in OS adjacent to IND & LIC along Fairfax Co. Pkwy, drainage area approx. 8 acres | if project 282 is unsuitable | 491 CARLISLE DR |
| 318 | Subwatershed Improvement | 9 | LID: retrofit dry pond VDOT29038 to naturalized infiltration basin | if soils support infiltration, if not use project 319 | 12195 ABINGTON HALL PL |
| 319 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond VDOT29038 to naturalized dry basin | if project 318 unsuitable | 461 CARLISLE DR |
| 320 | Stream Restoration | 3 | Stabilize eroded banks at SPA erosion point SUSU024.E001 | | 453 CARLISLE DR |
| 321 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 399 GROVE ST |
| 322 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 380 HERNDON PW |
| 323 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 360 HERNDON PW |
| 324 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 365 HERNDON PW |

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| 325 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | 397 HERNDON PW |

| Subwatershed | SU-SU-0042 | Watershed: | Sugarland | Management Area: | Sugarland - Upper |
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|---|---|---|---|
| **Description** | Primarily LIC w/ IND & HIC areas, some HDR & INT on eastern part of subwatershed, OS along riparian corridor - good forested riparian buffer, 3 DP, 2 UG | **Impairments** | Very high impervious, poor water quality, poor habitat, flooding - non-residential bldg in 100yr floodplain |
| **Restoration Selection Criteria** | SW Ranking, Public Involvment, Flooding | **Preservation Qualities** | |
| **Preservation Selection Criteria** | STEPL | **Improvement Goals** | Capture impervious runoff, improve drainage and improve water quality, remove culvert obstructions |
| **Percent Impervious** | 51.93% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|

**Subwatershed** SU-SU-0043 **Watershed:** Sugarland **Management Area:** Sugarland - Upper

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|---|---|---|---|
| **Description** | Highly developed w/ IND, HIC, MDR, some LIC & HDR, adjacent to Dulles Access Road, 2 DP, poor riparian buffers | **Impairments** | Very high impervious, at risk for increased impervious, poor water quality, deficient riparian buffers, poor habitat |
| **Restoration Selection Criteria** | SW Ranking, Public Involvment | **Preservation Qualities** | |
| **Preservation Selection Criteria** | % Increase IMP (3.76%), STEPL | **Improvement Goals** | Capture impervious runoff, stabilize/repair stream impacts, improve water quality |
| **Percent Impervious** | 48.05% | | |

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 326 | Preservation | | Conservation easement or lot purchase to preserve OS adjacent to IND along Spring St & Fairfax Co. Pkwy | OS area could be used for SWM implementation | 244 SUNSET PARK DR |
| 327 | Preservation | | Conservation easement or lot purchase to preserve OS adjacent to HIC/HDR along Dulles Access Rd & Fairfax Co. Pkwy | OS area could be used for SWM implementation | 230 FAIRBROOK DR |
| 328 | Subwatershed Improvement | 9 | LID: New infiltration basin in OS lot adjacent to HDR & IND lots off Sunset Park Dr drainage area approx. 7 acres | implement if project 326 proceeds and soils support infiltration otherwise use 329 | 230 FAIRBROOK DR |
| 329 | Subwatershed Improvement | 1 | New SW: new swm pond in OS lot adjacent to HDR & IND lots off Sunset Park Dr drainage area approx. 7 acres | implement if project 326 proceeds and project 328 is unsuitable | 230 FAIRBROOK DR |
| 330 | Subwatershed Improvement | 9 | LID: retrofit dry pond VDOT29076 to naturalized infiltration basin | if soils support infiltration, if not use project 331 | 533 HERNDON PW |
| 331 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond VDOT29076 to naturalized dry basin | if project 330 unsuitable | 533 HERNDON PW |
| 332 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 200 FAIRBROOK DR |
| 333 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 467 HERNDON PW |
| 334 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 151 SPRING ST |

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| 335 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 241 SPRING ST |
| 336 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 220 SPRING ST |
| 337 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond off Sugarland Meadow Dr to naturalized dry basin | | 352 SUGARLAND MEADOW DR |
| 338 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 560 HERNDON PW |
| 339 | Subwatershed Improvement | 9 | LID: New infiltration basin in athletic field off Van Buren St w/ addt'l LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, cisterns etc. | Implement project 340 together with this project | 324 VAN BUREN ST |
| 340 | Non-Structural | | Non-structural: provide informational signs at LID treatments and create education & outreach program | Implement project 339 together with this project | 320 VAN BUREN ST |
| 341 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 290 MISSOURI AV |
| 342 | Subwatershed Improvement | 9 | LID: LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | Implement project 343 together with this project | 320 SENATE CT |
| 343 | Non-Structural | | Non-structural: provide informational signs at LID treatments and create education & outreach program | Implement project 342 together with this project | 621 ALABAMA DR |
| 344 | Subwatershed Improvement | 9 | LID: New veg/grass swale w/ check dams & infiltration trench to bioretention | omit infiltration trench & bioretention if soils do not infiltrate | 411 SUGARLAND MEADOW DR |
| 345 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 575 HERNDON PW |
| 346 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 607 HERNDON PW |

**Subwatershed** SU-SU-0044 **Watershed:** Sugarland **Management Area:** Sugarland - Upper

**Description** Highily developed headwaters, Primarily HDR & HIC, some OS & LIC, no riparian buffers, 3 DP, 1 WP

**Impairments** Very high impervious, at risk for increased impervious, poor water quality, deficient riparian buffers, poor habitat

**Restoration Selection Criteria** SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria** % Increase IMP (6.48%)

**Improvement Goals** Capture impervious runoff, stabilize/repair stream impacts, improve water quality

**Percent Impervious** 38.32%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 347 | Subwatershed Improvement | 9 | LID: retrofit dry pond VDOT29036 to naturalized infiltration basin | if soils support infiltration, if not use project 348 | 429 CARLISLE DR |
| 348 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond VDOT29036 to naturalized dry basin | if project 347 unsuitable | 427 CARLISLE DR |
| 349 | Subwatershed Improvement | 9 | LID: retrofit dry pond VDOT29037 to naturalized infiltration basin | if soils support infiltration, if not use project 350 | 441 CARLISLE DR |
| 350 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond VDOT29037 to naturalized dry basin | if project 349 unsuitable | 12195 ABINGTON HALL PL |
| 351 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 12199 CHANCERY STATION CI |
| 352 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 12157 TRYTON WY |
| 353 | Subwatershed Improvement | 9 | LID: New infiltration basin in wooded area between HDR buildings at corner of Crescent Park Dr & Town Center Pkwy, drainage area approx. 6 acres | if soils support infiltration otherwise use 354 | 12070 KINSLEY PL |
| 354 | Subwatershed Improvement | 1 | New SW: new swm pond in wooded area between HDR buildings at corner of Crescent Park Dr & Town Center Pkwy, drainage area approx. 6 acres | if project 353 is unsuitable | 12070 KINSLEY PL |
| 355 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 12000 MARKET ST |

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| 356 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | 12061 BLUEMONT WY |
| 357 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | 11955 DEMOCRACY DR |

**Subwatershed** SU-SU-0045 **Watershed:** Sugarland **Management Area:** Sugarland - Upper

**Description** Highly developed headwaters w/ mostly LIC and HIC, some OS & IND, include Dulles Access Road (Rte 267),extensive SW pipe network, 1 bioretention, 2 UG, 5 dP, 2 WP

**Impairments** Flooding - non residential bldg in 100 yr floodplain with stream impairaments, poor water quality, deficient riparian buffers and poor habitat

**Restoration Selection Criteria** SW Ranking, Public Involvment, Flooding

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Capture impervious runoff, improve drainage and improve water quality, remove culvert obstructions

**Percent Impervious** 52.24%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| 358 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 12250 SUNSET HILLS RD |
| 359 | Subwatershed Improvement | 9 | LID: retrofit dry pond DP0421 to naturalized infiltration basin | if soils support infiltration, if not use project 360 | 12200 SUNSET HILLS RD |
| 360 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond DP0421 to naturalized dry basin | if project 359 unsuitable | 12200 SUNSET HILLS RD |
| 361 | Subwatershed Improvement | 9 | LID: retrofit dry pond DP0350 to naturalized infiltration basin | if soils support infiltration, if not use project 362 | 12197 SUNSET HILLS RD |
| 362 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond DP0350 to naturalized dry basin | if project 361 unsuitable | 12197 SUNSET HILLS RD |
| 363 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 12197 SUNSET HILLS RD |
| 364 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 12190 SUNSET HILLS RD |
| 365 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 12110 SUNSET HILLS RD |
| 366 | Subwatershed Improvement | 9 | LID: retrofit dry pond DP0289 to naturalized infiltration basin | if soils support infiltration, if not use project 367 | 12020 SUNSET HILLS RD |
| 367 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond DP0289 to naturalized dry basin | if project 366 unsuitable | 12020 SUNSET HILLS RD |

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| 368 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 12020 SUNSET HILLS RD |
| 369 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 12050 SUNSET HILLS RD |
| 370 | Subwatershed Improvement | 9 | LID: retrofit dry pond DP0440 to naturalized infiltration basin | if soils support infiltration, if not use project 371 | 12021 SUNSET HILLS RD |
| 371 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond DP0440 to naturalized dry basin | if project 370 unsuitable | 12021 SUNSET HILLS RD |
| 372 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 12021 SUNSET HILLS RD |
| 373 | Subwatershed Improvement | 9 | LID: retrofit dry pond DP0547 to naturalized infiltration basin | if soils support infiltration, if not use project 374 | 12012 SUNSET HILLS RD |
| 374 | Subwatershed Improvement | 1 | SW Retrofit: Retrofit dry pond DP0647 to naturalized dry basin | if project 373 unsuitable | 12012 SUNSET HILLS RD |
| 375 | Subwatershed Improvement | 9 | LID: New LID treatments around parking lot, driveways, between buildings - infiltration trenches, bioretention, filter strips, swales, green roofs, cisterns etc. | | 12011 SUNSET HILLS RD |

**Subwatershed** **SU-SU-0046** **Watershed:** Sugarland **Management Area:** Sugarland-Headwaters

**Description** Primarily LIC with some IND, HDR, HIC and GC, includes Dulles Access Rd (Rte 267). SW piping in most dev areas, 5DP, multiple WP

**Impairments** Flooding with stream impairaments, poor water quality and poor habitat

**Restoration Selection Criteria** SW Ranking, Flooding

**Preservation Qualities** Undeveloped wooded areas in LIC

**Preservation Selection Criteria**

**Improvement Goals** Stabilize/repair stream impacts, improve water quality

**Percent Impervious** 54.18%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M35 | Subwatershed Improvement | 1 | New infiltration basin, drainage area approx. 20 acres | If not suitable for infiltration, see project M36 | 12203 SUNRISE VALLEY DR |
| M36 | Subwatershed Improvement | 1 | New naturalized dry pond, drainage area approx. 20 acres | Only if site is not suitable for infiltration project M35 | 12203 SUNRISE VALLEY DR |
| M37 | Subwatershed Improvement | 9 | Retrofit dry pond DP0007 to naturalized dry pond | | 12018 SUNRISE VALLEY DR |
| M38 | Subwatershed Improvement | 9 | Retrofit dry pond DP0202 to naturalized dry pond | | 11854 SUNRISE VALLEY DR |
| M39 | Subwatershed Improvement | 9 | Retrofit dry pond DP0511 to naturalized dry pond | | 12010 SUNRISE VALLEY DR |
| M40 | Subwatershed Improvement | 9 | Retrofit dry pond DP0372 to naturalized dry pond | | 2000 EDMUND HALLEY DR |
| M41 | Subwatershed Improvement | 9 | Retrofit dry pond DP0389 to naturalized dry pond | | 2055 MERCATOR DR |
| M42 | Subwatershed Improvement | 1 | New infiltration basin, drainage area approx. 20 acres | If not suitable for infiltration, see project M43 | 2055 MERCATOR DR |
| M43 | Subwatershed Improvement | 1 | New naturalized dry pond, drainage area approx. 20 acres | Only if site is not suitable for infiltration project M42 | 2055 MERCATOR DR |

**Subwatershed** **SU-SU-0047** **Watershed:** Sugarland **Management Area:** Sugarland-Headwaters

**Description** Combination of MDR, LIC, IND and OS, includes Dulles Access Rd (Rte 267). Some SW piping, 1DP, 2WP, 1RT.

**Impairments** Some flooding with stream impairaments and poor habitat

**Restoration Selection Criteria** SW Ranking, Flooding

**Preservation Qualities** Undeveloped wooded areas in LIC and IND

**Preservation Selection Criteria**

**Improvement Goals** Stabilize/repair stream impacts, improve water quality

**Percent Impervious** 33.61%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M26 | Non-Structural Measures | | Rain barrel campaign for Polo Fields HOA | | 2326 CLUB POND LA |
| M27 | Stream Restoration | 2 | Remove paved ditch and restore naturalized stream | Good educational opportunity, signs | 2326 CLUB POND LA |
| M28A | Low Impact Development Retrofits | 0 | New infiltration basin, drainage area approx. 5 acres | If not suitable for infiltration, see project M28B | 2328 CLUB POND LA |
| M28B | Low Impact Development Retrofits | 0 | New naturalized dry pond, drainage area approx. 5 acres | Only if site is not suitable for infiltration project M28A | 2439 FOX MILL RD |
| M28C | Low Impact Development Retrofits | 0 | New infiltration basin, drainage area approx. 7 acres | If not suitable for infiltration, see project M28D | 2439 FOX MILL RD |
| M28D | Low Impact Development Retrofits | 0 | New naturalized dry pond, drainage area approx. 7 acres | Only if site is not suitable for infiltration project M28C | 12707 HITCHCOCK CT |
| M28E | Low Impact Development Retrofits | 0 | New infiltration basin, drainage area approx. 6 acres | If not suitable for infiltration, see project M28F | 2323 DARIUS LA |
| M28F | Low Impact Development Retrofits | 0 | New naturalized dry pond, drainage area approx. 6 acres | Only if site is not suitable for infiltration project M28E | 2325 DARIUS LA |
| M28G | Low Impact Development Retrofits | 0 | New infiltration basin, drainage area approx. 5 acres | If not suitable for infiltration, see project M28H | 12701 THUNDER CHASE DR |
| M28H | Low Impact Development Retrofits | 0 | New naturalized dry pond, drainage area approx. 5 acres | Only if site is not suitable for infiltration project M28G | 12701 THUNDER CHASE DR |
| M28I | Low Impact Development Retrofits | 0 | New infiltration basin, drainage area approx. 6 acres | If not suitable for infiltration, see project M28J | 12617 BAYARD DR |
| M28J | Low Impact Development Retrofits | 0 | New naturalized dry pond, drainage area approx. 6 acres | Only if site is not suitable for infiltration project M28I | 12617 BAYARD DR |
| M28K | Low Impact Development Retrofits | 0 | New infiltration basin, drainage area approx. 7 acres | If not suitable for infiltration, see project M28L | 2214 STIRRUP IRON LA |

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| M28L | Low Impact Development Retrofits | 0 | New naturalized dry pond, drainage area approx. 7 acres | Only if site is not suitable for infiltration project M28K | 2202 STIRRUP IRON LA |
| M28M | Low Impact Development Retrofits | 0 | New infiltration basin, drainage area approx. 6 acres | If not suitable for infiltration, see project M28N | 2202 STIRRUP IRON LA |
| M28N | Low Impact Development Retrofits | 0 | New naturalized dry pond, drainage area approx. 6 acres | Only if site is not suitable for infiltration project M28M | 12524 SUNRISE VALLEY DR |
| M28O | Low Impact Development Retrofits | 0 | New infiltration basin, drainage area approx. 14 acres | If not suitable for infiltration, see project M28P | 12707 HITCHCOCK CT |
| M28P | Low Impact Development Retrofits | 0 | New naturalized dry pond, drainage area approx. 14 acres | Only if site is not suitable for infiltration project M28O | 12703 THUNDER CHASE DR |
| M28Q | Low Impact Development Retrofits | 0 | New infiltration basin, drainage area approx. 14 acres | If not suitable for infiltration, see project M28R | 2206 MILBURN LA |
| M28R | Low Impact Development Retrofits | 0 | New naturalized dry pond, drainage area approx. 14 acres | Only if site is not suitable for infiltration project M28Q | 12703 ROARK CT |
| M28S | Stormwater Facility Retrofits | 0 | Retrofit dry pond DP1219 to naturalized dry pond | | 2311 ARCHDALE RD |
| M29 | Stream Restoration | 2 | Remove paved ditch and restore naturalized stream | Good educational opportunity, signs | 12707 HITCHCOCK CT |
| M30 | Stream Restoration | 2 | Remove paved ditch and restore naturalized stream | | 2206 MILBURN LA |
| M31 | Stream Restoration | 2 | Remove paved ditch and restore naturalized stream | | 2206 MILBURN LA |
| M32 | Stream Restoration | 2 | Remove paved ditch and restore naturalized stream | | 2214 STIRRUP IRON LA |
| M33 | Stream Restoration | 2 | Remove paved ditch and restore naturalized stream | | 12617 BAYARD DR |

**Subwatershed** **SU-SU-0048** **Watershed:** Sugarland **Management Area:** Sugarland-Headwaters

**Description** Combination of MDR, LIC and IND with some HDR. Extensive SW piping, 2DP, 1WP, 1BMP.

**Impairments** Flooding with stream impairaments, poor water quality and poor habitat, High Imperv.

**Restoration Selection Criteria** SW Ranking, Flooding

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Capture impervious runoff, stabilize/repair stream impacts, improve water quality

**Percent Impervious** 57.66%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M20 | Subwatershed Improvement | 9 | Porous pavers, infiltration and roof-top retrofit for Reston and Sunrise Professional Center | | 12502 SUNRISE VALLEY DR |
| M21 | Subwatershed Improvement | 9 | Porous pavers, infiltration and roof-top retrofit | | 12502 SUNRISE VALLEY DR |
| M22 | Subwatershed Improvement | 9 | Retrofit dry pond DP0164 to naturalized dry pond | | 12290 SUNRISE VALLEY DR |
| M23 | Subwatershed Improvement | 9 | Retrofit dry pond DP0388 to naturalized dry pond, remove low-flow concrete channel | | 12307 TIGERS EYE CT |
| M25 | Non-Structural Measures | | Rain barrel campaign for Polo Fields HOA | | 12713 HITCHCOCK CT |

**Subwatershed** **SU-SU-0049** **Watershed:** Sugarland **Management Area:** Sugarland-Headwaters

**Description** Combination of MDR, HDR, LIC and OS. Dev areas have some SW piping. No SW management.

**Impairments** Some flooding with stream impairaments, poor water quality and poor habitat

**Restoration Selection Criteria** SW Ranking, Flooding

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Stabilize/repair stream impacts, improve water quality

**Percent Impervious** 33.22%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M14 | Subwatershed Improvement | 1 | New infiltration trench or bio-retention basin. | | 12263 LAUREL GLADE CT |
| M15 | Subwatershed Improvement | 1 | New infiltration basin, may or may not include swale, drainage area approx 3 acres | | 2251 SANIBEL DR |
| M16 | Subwatershed Improvement | 1 | New infiltration basin, drainage area approx 8 acres | | 12274 ANGEL WING CT |
| M17 | Subwatershed Improvement | 1 | New infiltration basin, drainage area approx 3 acres | | 2293 ARCHDALE RD |
| M18 | Subwatershed Improvement | 1 | New infiltration basin, may or may not include swale, drainage area approx 5 acres | | 2287 COCQUINA DR |
| M19 | Subwatershed Improvement | 1 | New infiltration basin, may or may not include swale, drainage area approx 4 acres | | 12300 SUNRISE VALLEY DR |
| M24 | Stream Restoration | 2 | Remove paved ditch and restore naturalized stream | Good educational opportunity, signs | 12500 CROSS COUNTRY LA |

**Subwatershed** **SU-SU-0050** **Watershed:** Sugarland **Management Area:** Sugarland-Headwaters

**Description** Primarily LDR & MDR with some HDR, OS, INT & LIC. Some OS slated for MDR. Dev areas have some SW piping, 2DP, 1BMP

**Impairments** Some flooding with stream impairaments and poor water quality

**Restoration Selection Criteria** SW Ranking

**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Capture impervious runoff, stabilize/repair stream impacts, improve water quality

**Percent Impervious** 25.38%

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M1 | Subwatershed Improvement | 9 | Retrofit dry pond DP0160 to naturalized dry pond | will compliment project M2 | 2501 FOX MILL RD |
| M2 | Subwatershed Improvement | 1 | New infiltration basin, may or may not include swale, drainage area approx 8 acres | will compliment project M1 | 12515 KINGS LAKE DR |
| M3 | Subwatershed Improvement | 9 | Retrofit dry pond 1448DP to infiltration basin or naturalized dry pond | | 12394 BROWN FOX WY |
| M34 | Subwatershed Improvement | | New naturalized dry pond, drainage area approx. 10 acres | Only if site is not suitable for infiltration project M34 | 12603 NOBLE VICTORY LA |
| M4 | Stream Restoration | 2 | Drainage improvement - Replace existing concrete culvert with natural drainage channel | | 2351 BEDFORDSHIRE Cl |
| M5 | Subwatershed Improvement | 1 | New infiltration basin, drainage area approx 4 acres | | 2339 BEDFORDSHIRE Cl |
| M6 | Subwatershed Improvement | 1 | New infiltration basin, drainage area approx. 10 acres | If not suitable for infiltration, see project M28L | 2311 ARCHDALE RD |
| M7 | Subwatershed Improvement | 1 | New infiltration basin, may or may not include swale, drainage area approx 7 acres | | 12368 LIMA LA |

**Subwatershed** **SU-SU-0051** **Watershed:** Sugarland **Management Area:** Sugarland-Headwaters

**Description** Combination of LDR, MDR, HDR, LIC and OS. Dev areas have extensive SW piping. 1 DP, 1 WP.

**Impairments** Poor habitat, poor water quality

**Restoration Selection Criteria**

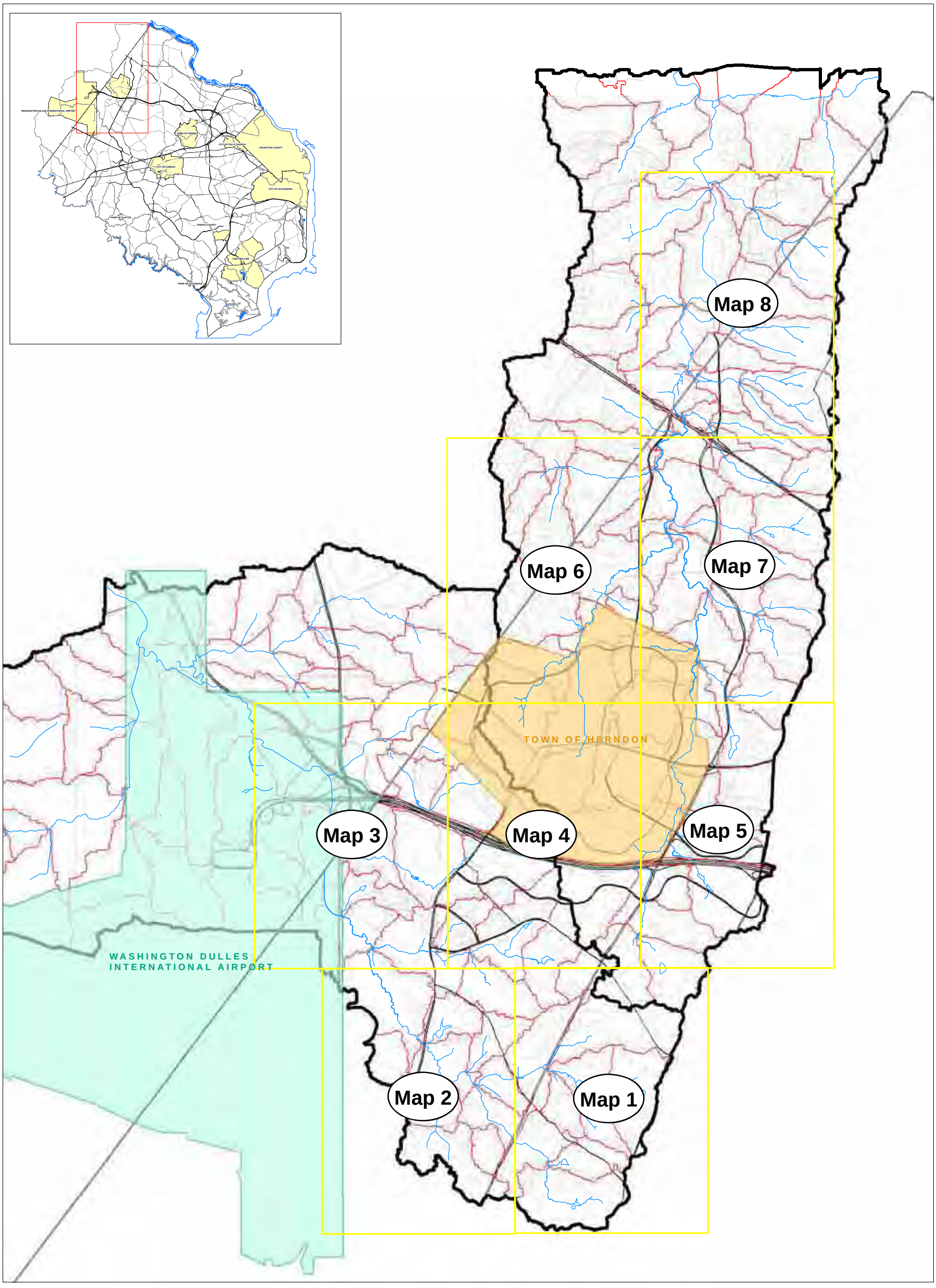
**Preservation Qualities**

**Preservation Selection Criteria**

**Improvement Goals** Improve water quality

**Percent Impervious**

| Temporary Project ID | Strategy | Project Type | Description of Project | Comments | Nearest Address |
|---|---|---|---|---|---|
| M10 | Subwatershed Improvement | 1 | New infiltration basin, may or may not include swale, drainage area approx 3 acres | | 2401 ANDORRA PL |
| M11 | Subwatershed Improvement | 1 | New infiltration basin, may or may not include swale, drainage area approx 3 acres | | 2226 LOFTY HEIGHTS PL |
| M12 | Stream Restoration | 2 | Drainage improvement - Replace existing concrete culvert with natural drainage channel | | 12331 COLERAINE CT |
| M13 | Subwatershed Improvement | 1 | New constructed wetland or wet pond, drainage area approx 12 acres | | 12262 LAUREL GLADE CT |
| M8 | Subwatershed Improvement | 1 | New infiltration basin, may or may not include swale, drainage area approx 6 acres | | 2529 FREETOWN DR |
| M9 | Subwatershed Improvement | 1 | New infiltration basin, may or may not include swale, drainage area approx 2 acres | | 2402 FREETOWN DR |




N

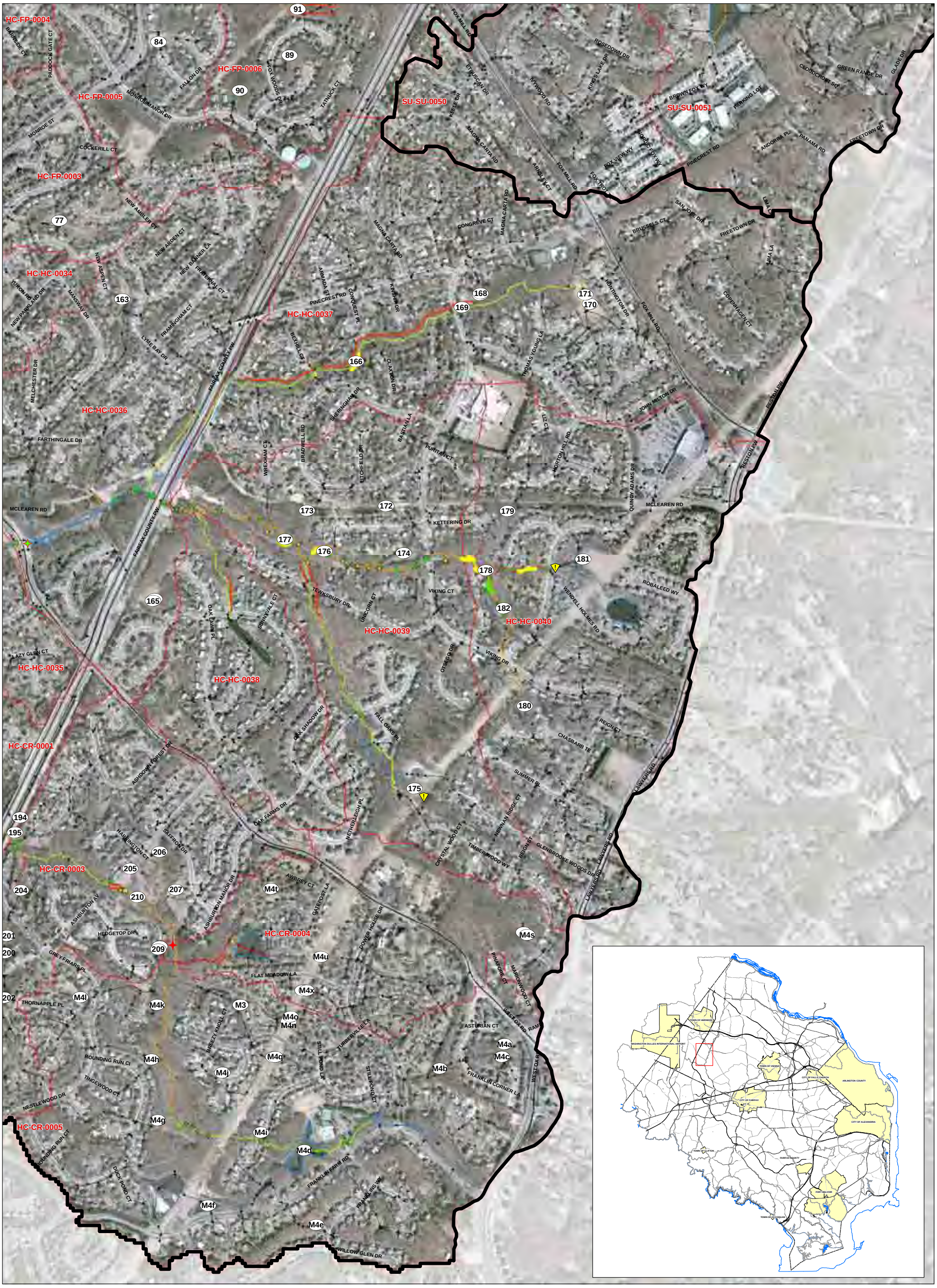
0 0.25 0.5 0.75 Miles

**Legend**

- Perennial Streams
- SH_Roads_major
- SH_Subbasins_061208
- Watersheds
- TOWN OF HERNDON
- WASHINGTON DULLES INTERNATIONAL AIRPORT
- County Bndry

**Index Map for Candidate Projects Maps**

**Sugarland Run and Horsepen Creek Watersheds**




N

0 250 500 750 1,000 Feet

Candidate Projects
Public Issues/Comments
ProRata Projects Still Needed
StormNet Drainage Network
Regional Ponds
Planned/Unbuilt
Completed

| SPA Erosion Line | SPA Head Cut Height | SPA Ditch Impacts | SPA Utility Impact | SPA Habitat |
|---|---|---|---|---|
| Minor | < 1' | Minor | Minor | Good |
| Moderate | 1'- 2' | Moderate | Moderate | Fair |
| Severe | >2' | Severe | Severe | Poor |
| | | | | Deficient Buffer |

| SPA Erosion Points | SPA Crossing Impact | SPA Pipe Imact | SPA Obstruction Impact |
|---|---|---|---|
| Minor | Minor | Minor | Minor |
| Moderate | Moderate | Moderate | Moderate |
| Severe | Severe | Severe | Severe |

**Candidate Projects for Sugarland Run and Horsepen Creek Watersheds**

**Map 1 of 8**

N

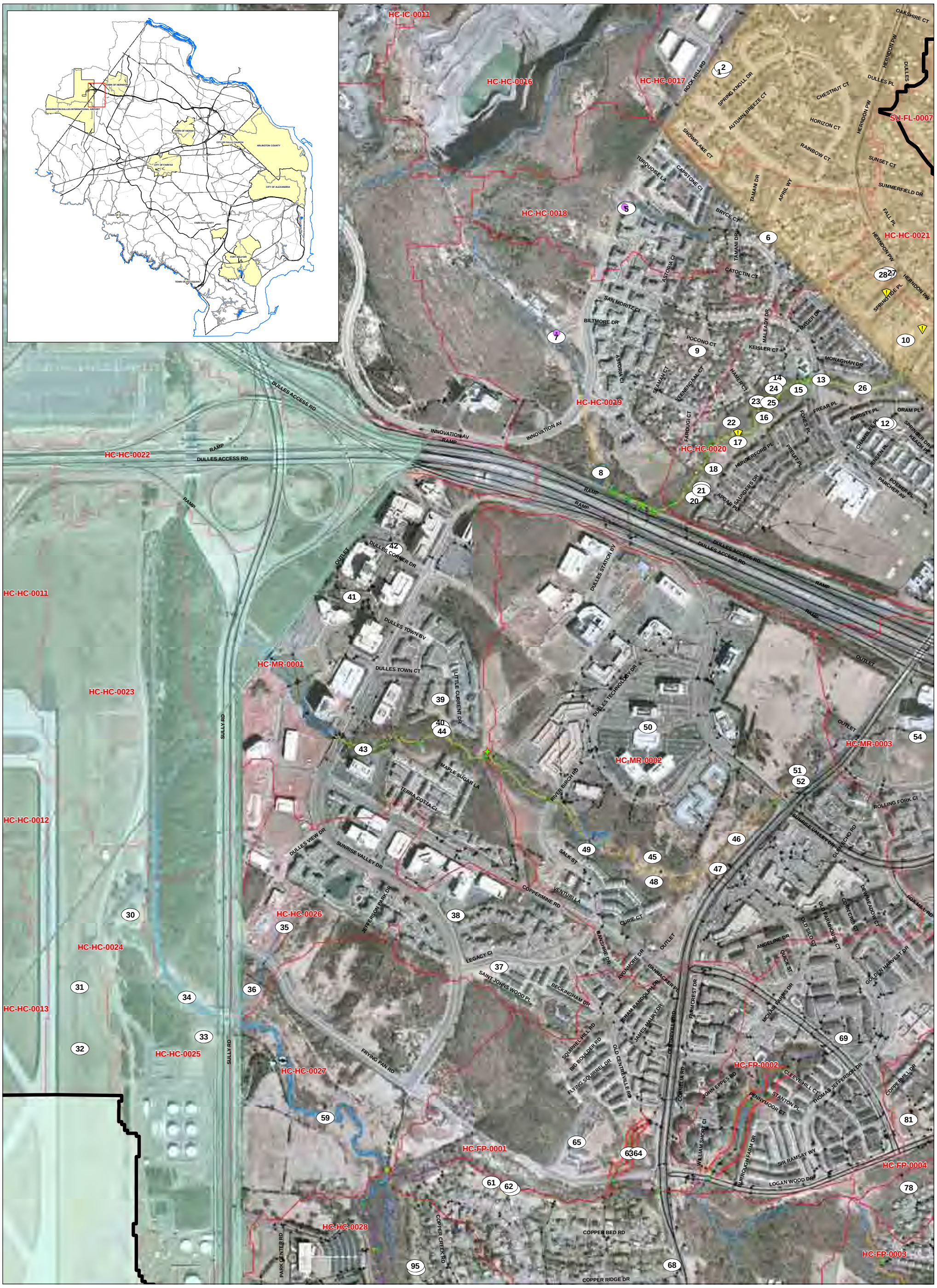
0 250 500 750 1,000 Feet

Candidate Projects
Public Issues/Comments
ProRata Projects Still Needed
StormNet Drainage Network
Regional Ponds
Planned/Unbuilt
Completed

SPA Erosion Line: Minor, Moderate, Severe
SPA Erosion Points: Minor, Moderate, Severe
SPA Head Cut Height: < 1', 1'- 2', >2'
SPA Crossing Impact: Minor, Moderate, Severe
SPA Ditch Impacts: Minor, Moderate, Severe
SPA Pipe Imact: Minor, Moderate, Severe
SPA Utility Impact: Minor, Moderate, Severe
SPA Obstruction Impact: Minor, Moderate, Severe
SPA Habitat: Good, Fair, Poor, Deficient Buffer

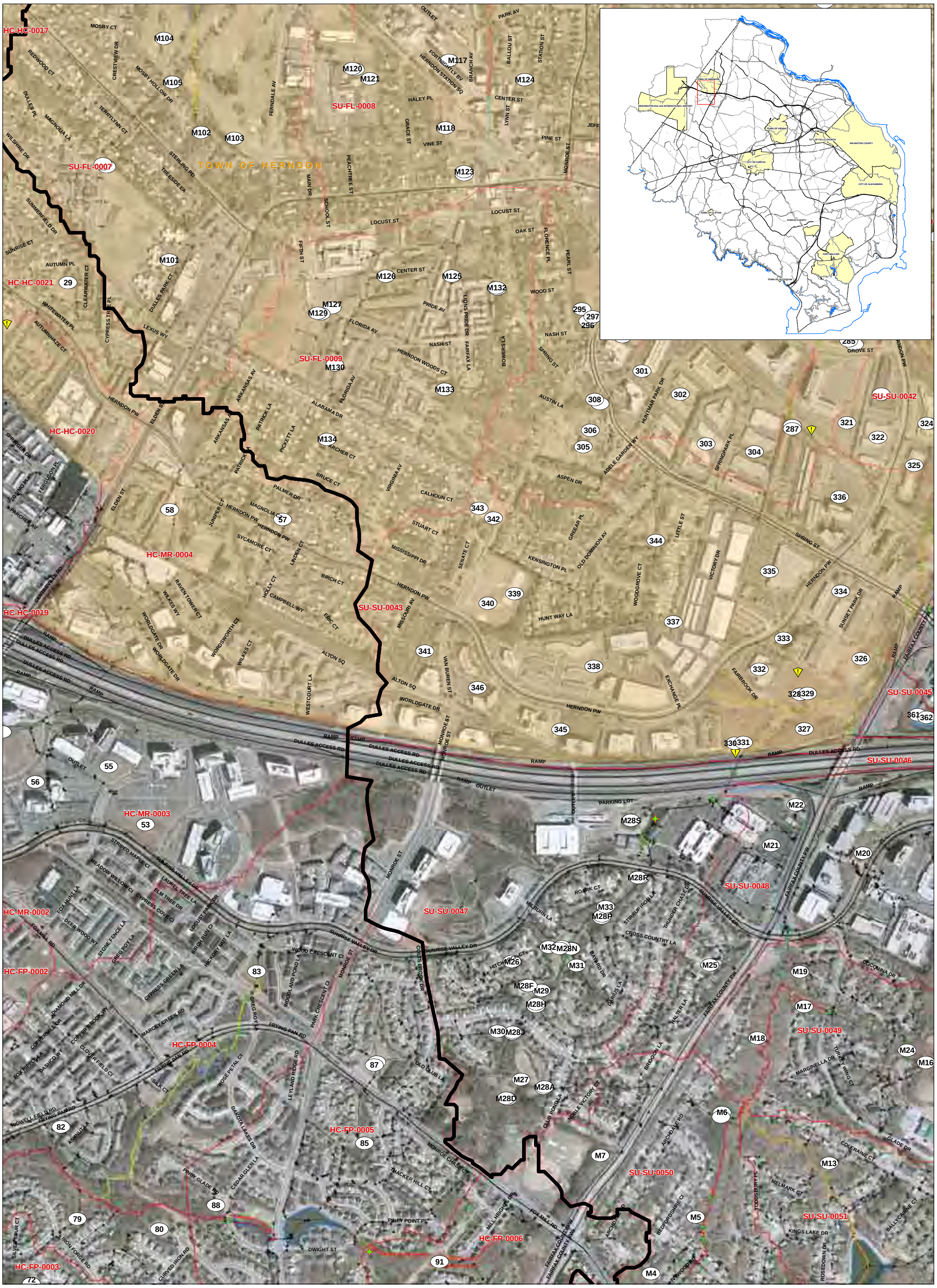
**Candidate Projects for Sugarland Run and Horsepen Creek Watersheds**

**Map 2 of 8**




**Candidate Projects for Sugarland Run and Horsepen Creek Watersheds**

**Map 3 of 8**




N

0 250 500 750 1,000 Feet

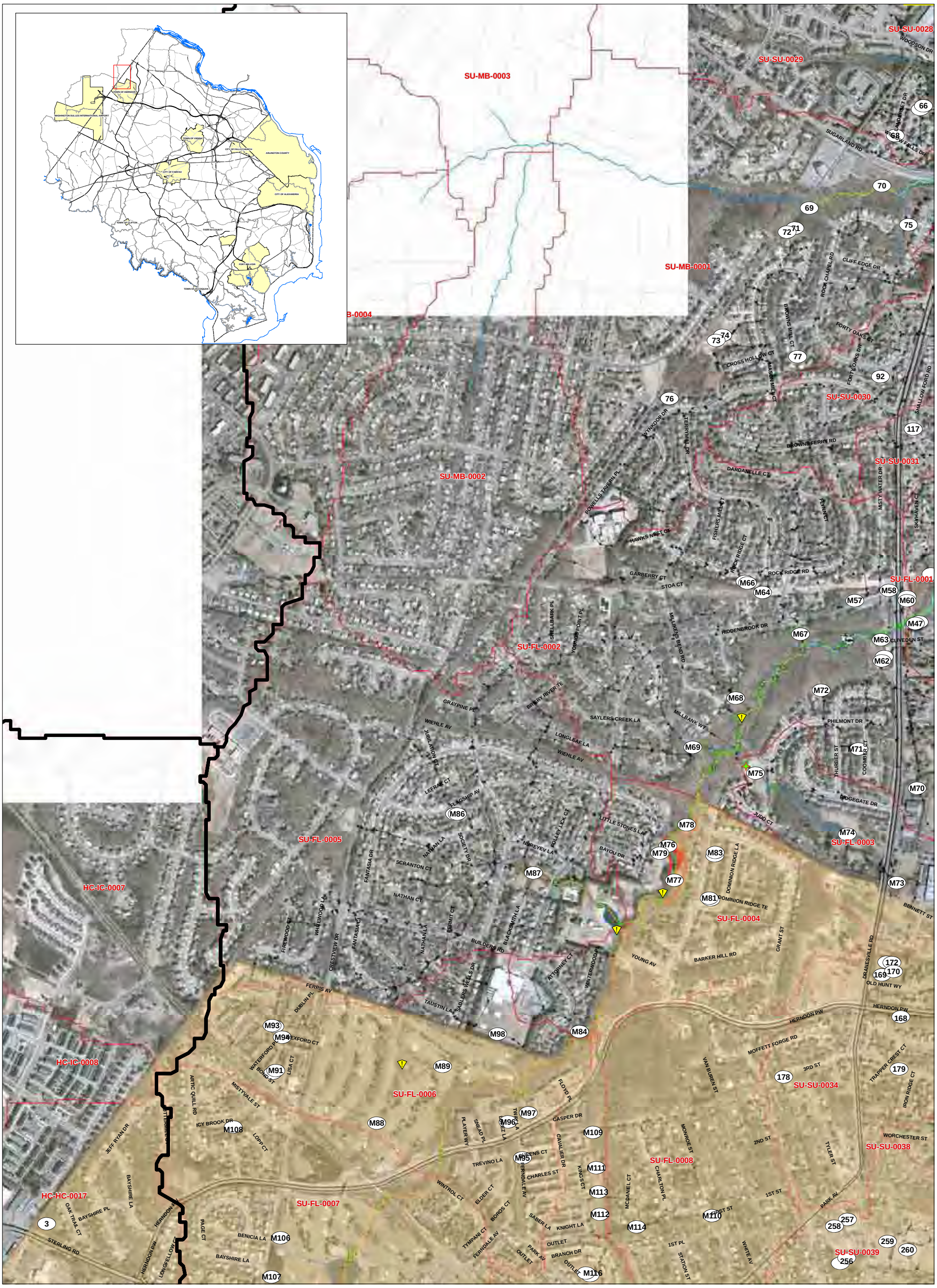
| | | | | | |
|---|---|---|---|---|---|
| ### Candidate Projects | SPA Erosion Line | SPA Head Cut Height | SPA Ditch Impacts | SPA Utility Impact | SPA Habitat |
| Public Issues/Comments | Minor | < 1' | Minor | Minor | Good |
| ProRata Projects Still Needed | Moderate | 1'- 2' | Moderate | Moderate | Fair |
| StormNet Drainage Network | Severe | >2' | Severe | Severe | Poor |
| Regional Ponds | SPA Erosion Points | SPA Crossing Impact | SPA Pipe Imact | SPA Obstruction Impact | Deficient Buffer |
| Planned/Unbuilt | Minor | Minor | Minor | Minor | |
| Completed | Moderate | Moderate | Moderate | Moderate | |
| | Severe | Severe | Severe | Severe | |

**Candidate Projects for Sugarland Run and Horsepen Creek Watersheds**

**Map 4 of 8**

**Candidate Projects for Sugarland Run and Horsepen Creek Watersheds**

**Map 5 of 8**

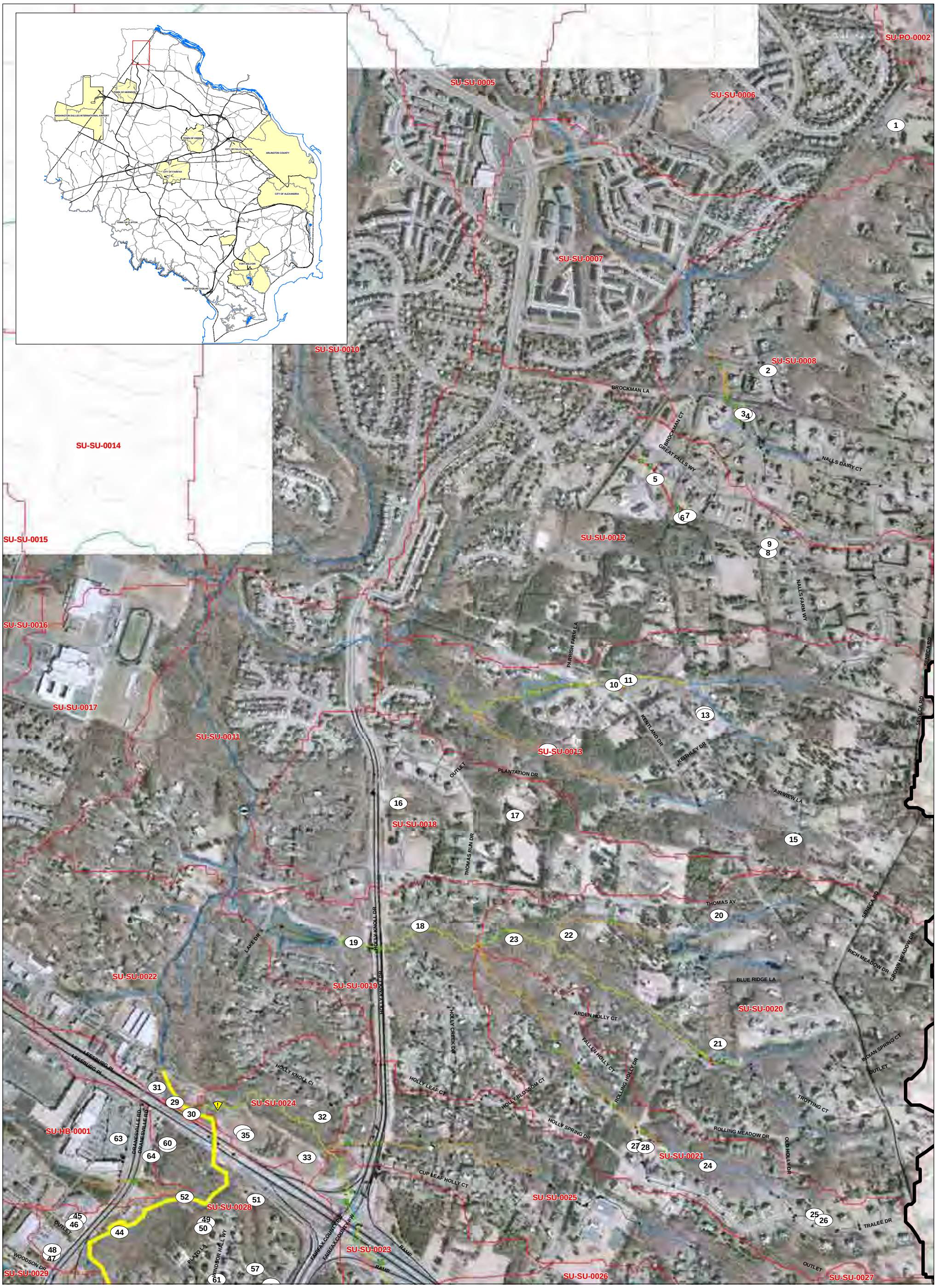



**Candidate Projects for Sugarland Run and Horsepen Creek Watersheds**

**Map 6 of 8**

**Candidate Projects for Sugarland Run and Horsepen Creek Watersheds**

**Map 7 of 8**




N

0 250 500 750 1,000 Feet

| | | | | | |
|---|---|---|---|---|---|
| ### Candidate Projects | SPA Erosion Line | SPA Head Cut Height | SPA Ditch Impacts | SPA Utility Impact | SPA Habitat |
| Public Issues/Comments | Minor | < 1' | Minor | Minor | Good |
| ProRata Projects Still Needed | Moderate | 1'- 2' | Moderate | Moderate | Fair |
| StormNet Drainage Network | Severe | >2' | Severe | Severe | Poor |
| Regional Ponds | SPA Erosion Points | SPA Crossing Impact | SPA Pipe Imact | SPA Obstruction Impact | Deficient Buffer |
| Planned/Unbuilt | Minor | Minor | Minor | Minor | |
| Completed | Moderate | Moderate | Moderate | Moderate | |
| | Severe | Severe | Severe | Severe | |

**Candidate Projects for Sugarland Run and Horsepen Creek Watersheds**

**Map 8 of 8**

# F. X. Browne, Inc.
# Memorandum

To: Fairfax County
From: F. X. Browne, Inc.
Date: April 1, 2010
RE: Tasks 3.3, 3.4 and 3.5 Evaluation and Ranking of Candidate Structural and Non-Structural Projects for Sugarland Run and Horsepen Creek Watersheds

Task 3.3 requires that potential candidate sites be investigated in the field to evaluate the potential scope, feasibility, and benefits of each candidate project. Tasks 3.4 and 3.5 require candidate structural projects be evaluated and ranked following the guidelines described in Section 5.1-E of the WMP Standards version 3.2 and that non-structural candidate projects be evaluated and ranked using best professional judgment based on their overall benefit and feasibility in meeting watershed goals and objectives.

**Task 3.3 Investigation of Candidate Projects**

Watershed advisory group (WAG) members reviewed proposed candidate projects and discussed overall project selection methods and the location and scope of individual proposed projects at a WAG meeting on June 3rd, 2009. Comments from the WAG meeting were summarized and considered during field reconnaissance efforts.

Field visits to candidate sites were conducted for all potential candidate structural projects in the Sugarland Run and Horsepen Creek watersheds from June 8th through July 3rd. A field evaluation form, provided by the County, was completed for each candidate project site. Additional notes were taken on aerial photographs of candidate sites and photos were taken at each site. Data recorded on field forms were digitized into a County-provided database.

Field reconnaissance efforts helped to provide a basis for the initial reduction of candidate projects. Various constraints for new stormwater management facilities identified during field reconnaissance efforts that limited project feasibility included space, slope, utilities, a change in the development status, and existing, mature vegetation; all potential project constraints were recorded on field forms and digitized into the County-provided database. Some proposed projects were deemed low priority due to favorable existing conditions including properly functioning and appropriately sized outlet structures, naturalized basin bottoms and swales, adequate energy dissipation, and a general lack of visible impacts from high velocity and high volume stormwater flows.

Best professional judgment was used to reduce the initial list of candidate structural projects to 128 projects in Sugarland Run and Horsepen Creek watersheds. Factors considered during the initial feasibility analysis included constraints identified during field reconnaissance, the size and

scale of the projects, the location and distribution of projects within a subwatershed, existing stormwater treatment in the subwatershed, project drainage area, and specific WAG member comments. Candidate projects deemed viable were those which had few, if any, site constraints, would provide significant additional stormwater treatment to a subwatershed, and were considered to be of significant size and scope.

Upon completion of the field reconnaissance efforts and initial feasibility analysis, candidate project sites that were deemed viable were digitized into GIS polygon shapefile format (*S_projects.shp; H_projects.shp*).

*Project Cost Estimates*
Costs were estimated for each project using unit costs provided by the County. The County considers a project to be of considerable size and scope if it is a minimum of $80,000. Smaller projects of similar scope and close proximity were grouped together during the initial reduction of candidate projects under Task 3.3. Individual sub-projects in a suite of grouped subprojects may be estimated to cost less than the County-minimum of $80,000; however, the total project group is greater than the threshold for project qualification.

**Task 3.4 Evaluation and Ranking Candidate Structural Projects**
Viable structural projects were given a six or seven digit project number according to the following numbering convention: XX9YZZ; where XX is the 2-digit watershed code, Y is the project type code, and ZZ is a 2-digit numbering code starting with 00 at the lowest point in the watershed. An additional seventh letter is used for any project with multiple subprojects. For regional pond alternatives, ZZ is the 2-digit regional pond number rather than a sequential numerical code.

Project type codes have been defined by the County in order to maintain consistency throughout the watershed management plans. Project type codes used in the Sugarland Run and Horsepen Creek watersheds include:

- 0 – Regional Pond Alternatives (may be any project type other than stream restoration that drains to a planned, unconstructed regional pond)
- 1 – New Stormwater Ponds and Stormwater Pond Retrofits
- 2 – Stream Restoration and Streambank Stabilization
- 4 – Road Crossing Improvements and Culvert Retrofits
- 5 – New Low Impact Development/Best Management Practices and LID/BMP Retrofits
- 9 – Non-Structural Projects

Planned, unconstructed regional ponds and the suite of regional pond alternatives proposed as an alternative group of projects for the regional pond are listed in Table 1.

**Table 1 Planned, Unconstructed Regional Ponds and Regional Pond Alternatives**

| Regional Pond ID | Regional Pond Alternative Project IDs |
|---|---|
| S-01 | SU9001A, SU9001B, SU9001C |
| S-02 | SU9002A, SU9002B, SU9002C, SU9002D |
| S-05 | SU9005A, SU9005B, SU9005C, SU9005D, SU9005E, SU9005F, SU9005G |
| S-07 | SU9007A, SU9007B, SU9007C, SU9007D, SU9007E, SU9007F, SU9007G, SU9007H, SU9007I, SU9007J, SU9007K, SU9007L |

| | |
|---|---|
| H-02 | HC9002A, HC9002B, HC9002C, HC9002D |
| H-07 | HC9007A, HC9007B, HC9007C, HC9007D, HC9007E, HC9007F |
| H-13 | HC9013A, HC9013B, HC9013C, HC9013D, HC9013E, HC9013F, HC9013G, HC9013H, HC9013I, HC9013J, HC9013K, HC9013L, HC9013M, HC9013N, HC9013O, HC9013P, HC9013Q, HC9013R |

Viable structural projects were prioritized and ranked according to the guidance set forth in Section 5.1E of the Watershed Management Plan Standards 3.2. Structural projects were scored from 1 to 5 points, with 5 representing the highest priority and 1 representing the lowest priority.

The project scores were based on the following five factors:

1. Effect on Watershed Impact Indicators
2. Effect on Source Indicators
3. Location within Priority Subwatersheds
4. Sequencing
5. Implementability

Evaluation of structural projects based on each of these factors is discussed in further detail below. Prioritization tables for each factor are located in Appendices A, B, C, D, and E.

*GIS Processing*

Prior to prioritization and ranking outlined in Section 5.1E, a sequence of GIS processing was required in preparation for water quality modeling with STEPL. The projects were divided into five 'runs' for GIS processing and water quality modeling purposes. Each run contained no more than one project per subwatershed; projects with multiple subprojects and regional pond alternative scenarios were processed together in order to model the benefits of the entire group of projects.

Drainage areas to each project with water quality and/or water quantity benefits were delineated in GIS and a revised subarea treatment layer was calculated for each 'run' to show proposed stormwater management for the future with projects modeling scenario. During the GIS processing, output tables were created for each 'run' that contain the land use and soils data for the proposed stormwater management areas for use in water quality and water quantity modeling.

*Water Quality Modeling with STEPL*

The land use and soils output tables were loaded into the STEPL spreadsheets in order to show the water quality benefits for each proposed candidate project. Previous land use information was cleared from the spreadsheets prior to loading the revised tables in order to ensure an accurate data transfer.

In some cases, the new project drainage areas caused a change in the majority soil type of the subareas within the subwatershed. Because of the changes in majority soil types, the total pollutant loadings before stormwater management facility reductions were applied varied from the future without projects condition to the future with projects condition by as much as 15 percent in either direction. This discrepancy in future pollutant loading resulted in a misrepresentation of the project benefits. In order to minimize the impact from this modeling

flaw, the total pollutant loadings without BMP reductions (the total pollutant loading before stormwater management facility reductions were applied) for the future without projects and future with projects were averaged, the future with projects BMP reductions were applied, and an adjusted future with projects pollutant loading was calculated.

Two existing regional ponds are proposed for retrofit which will increase the sediment and nutrient removal efficiency of the ponds. Since regional ponds are not modeled using the subarea classifications like smaller stormwater facilities, these projects were modeled using the future without projects subarea land use and soils data and revising the regional pond pollutant removal efficiencies. Each of the regional ponds drains a single subwatershed and the proposed removal efficiencies were determined based on CDM's Stormwater Loading Factors & BMP Efficiencies for Countywide SWMM Model Applications report, prepared for Fairfax County DPWES Stormwater Planning Division (February 5, 2005).

*Effect on Subwatershed Ranking Indicators*

Select subwatershed ranking indicators were evaluated for various candidate project types to facilitate candidate project ranking. Total nitrogen, total phosphorus, and total suspended solids were calculated for the future with projects scenario using STEPL as indicated above. Other indicators could not be calculated for the future with projects condition and were evaluated based on existing condition and/or future without projects condition.

Generally, each indicator without future with projects data was evaluated in two ways. First, the existing and/or future without projects subwatershed ranking data was reviewed to establish the overall need and potential benefit for a project in that particular subwatershed. A project was assumed to have a greater potential benefit if it was located in a subwatershed that was in poor condition compared to a subwatershed that was in better condition Also, if the subwatershed shows a worsening condition from the existing subwatershed ranking scenario to the future without project subwatershed ranking scenario, the subwatershed is in greater need of a proposed project. The second way each project was evaluated was based on the likely impact of the project on each subwatershed ranking indicator using our best professional judgment. This was dependent on the scale of the project and specific project details.

Project scores for each indicator were within a range from one to five, with five being the most beneficial and one providing the least benefit. Each project started with a score of 3 and was adjusted up or down based on the existing and future without projects subwatershed ranking data and our best professional judgment as indicated above and depicted on Tables 2, 3, and 4.

**Table 2 Project Scoring Methodology – Indicators with Existing Condition Only (1)**

| **Project Score Adjustment** | **Subwatershed Ranking (SW) Indicators:** Benthic Communities, Fish Communities, Aquatic Habitat, Channel Morphology, RPA Riparian Habitat, Headwater Riparian Habitat, Wetland Habitat |
|---|---|
| Start with "3", then add or subtract: | |
| +1 | Existing SW Ranking Score 2 or 4 |
| 0 | Existing SW Ranking Score 6 |
| -1 | Existing SW Ranking Score 8 or 10 |
| +1 | Great Benefit |
| 0 | Some Potential Benefit |
| -1 | Minimal/No Benefit |

**Table 3 Project Scoring Methodology – Indicators with Existing Condition Only (2)**

| **Project Score Adjustment** | **Subwatershed Ranking (SW) Indicators:** Instream Sediment, Channelized/Piped Streams, Stormwater Outfalls, Streambank Buffer Deficiency |
|---|---|
| Start with "3", then add or subtract: | |
| +1 | Existing SW Ranking Score 2.5 |
| 0 | Existing SW Ranking Score 5 |
| -1 | Existing SW Ranking Score 7.5 |
| -2 | Existing SW Ranking Score 10 |
| +1 | Great Benefit |
| 0 | Some Potential Benefit |
| -1 | Minimal/No Benefit |

**Table 4 Project Scoring Methodology – Indicators with Future w/out Projects Data**

| **Project Score Adjustment** | **Subwatershed Ranking (SW) Indicators:** Hydrology, Number of Road Hazards, Magnitude of Road Hazards, Residential and Non-Residential Building Hazards, Total Impervious Area, Directly Connected Impervious Area |
|---|---|
| Start with "3", then add or subtract: | |
| +1 | Worsening Condition from Existing to Future without Projects Scenario |
| +1 | Future without Projects SW Ranking Score 2.5 |
| 0 | Future without Projects SW Ranking Score 5 |
| -1 | Future without Projects SW Ranking Score 7.5 |
| -2 | Future without Projects SW Ranking Score 10 |
| +1 | Great Benefit |
| 0 | Some Potential Benefit |
| -1 | Minimal/No Benefit |

For the indicators with future without projects data, listed in Table 4, consideration of the expected change from existing condition to future without projects condition was included in the project score determination. Projects in subwatersheds that anticipate a worsening condition due to anticipated development were given an additional point to reflect the greater need of projects in the subwatershed. The hydrology indicator for a subwatershed was considered to have a worsening condition if the modeled flow per acre increased by six percent or greater. No changes were noted in the number or magnitude of road hazards or the residential or non-residential

building hazards indicators. The total impervious area indicator for a subwatershed was considered to have a worsening condition if the anticipated percentage of impervious area increased by one percent. The directly connected impervious area indicator for a subwatershed was considered to have a worsening condition if the anticipated percentage of impervious area increased by two percent.

The best professional judgment factor was applied according to Tables 2, 3, and 4 on a project by project basis depending on the anticipated benefit of the project. Some generalizations could be made based on the project type and specific project features. For the Instream Sediment indicator, a streambank stabilization project is anticipated to have a greater benefit than a stormwater pond retrofit so the streambank stabilization projects generally receive a +1 BPJ score, while a stormwater pond retrofit may receive a 0 or -1. The stormwater pond retrofit BPJ score is based on project specific factors such incorporation of outfall improvements or energy dissipation which will likely provide a greater benefit in terms of instream sediment than pond retrofits without these features.

For the indicators listed in Tables 3 and 4 above, it is possible to arrive at a project score of 0 or 6, which are outside of the required 1-5 range. These occurrences were very infrequent, but when encountered the project scores were capped at 1 and 5.

Indicators for which the future with projects scenario could be calculated were scored based on the project's impact on the future with projects scenario. These indicators include Total Nitrogen, Total Phosphorus, and Total Suspended Solids. Preliminary quartiles were calculated based on the range of percent change in the Sugarland Run values from the future without projects scenario to the future with projects scenario. Final quartiles (or quintiles) will be calculated by the County based on the range of percent change in all of the county watersheds and revised scores may be applied. Tables 5, 6, and 7, depict the preliminary quartiles used for each of the referenced indicators. Quartiles were used in lieu of the recommended quintiles in order to allow an additional point of adjustment based on best professional judgment without exceeding the maximum five point score.

**Table 5 Preliminary Total Nitrogen (TN) Quartiles**

| Percentile | % Change: Future w/out Project to Future with Project | Preliminary Project Score |
|---|---|---|
| 0% | -55.2% to -4.0% | 4 |
| 33% | -3.9% to -1.6% | 3 |
| 67% | -1.5% to 2.7% | 2 |
| 100% | 2.8% or greater | 1 |

**Table 6 Preliminary Total Phosphorus (TP) Quartiles**

| Percentile | % Change: Future w/out Project to Future with Project | Preliminary Project Score |
|---|---|---|
| 0% | -53.2% to -4.5% | 4 |
| 33% | -4.4% to -1.2% | 3 |
| 67% | -1.1% to 2.0% | 2 |
| 100% | 2.1% or greater | 1 |

**Table 7 Preliminary Total Suspended Solids (TSS) Quartiles**

| Percentile | % Change: Future w/out Project to Future with Project | Preliminary Project Score |
|---|---|---|
| 0% | -88.1% to -11.4% | 4 |
| 33% | -11.3% to -3.0% | 3 |
| 67% | -2.9% to 2.2% | 2 |
| 100% | 2.3% or greater | 1 |

In some cases, the existing and future condition without projects water quality scores (STEPL model) were modeled inaccurately. The treatment by some ponds was not included in the model because the pond was either not included in the County's stormwater network and not identified until candidate project field reconnaissance, or the drainage area to the pond did not contain any parcels included in the County's controlled parcels GIS layer. The treatment of some other areas was overestimated in the model either because the parcels were included in the County's controlled parcels GIS layer, but not located within the drainage area of an existing stormwater management facility, or because candidate project field reconnaissance indicated that an existing pond provided less treatment than was originally modeled. Best professional judgment was used to adjust the project scores for total nitrogen, total phosphorus, and total suspended solids based on whether the project benefit was accurately modeled or if the project benefits were over or under estimated due to inaccuracies in the future without projects condition STEPL model. Appendix F includes the STEPL output tables including pollutant loading for future without projects condition and future with projects condition, the percent reduction of pollutant loading, preliminary project score and best professional judgment score adjustment.

Regional pond alternative project groups were modeled in STEPL as a single group, but were evaluated individually in the project ranking spreadsheet so that subprojects could be eliminated, as necessary, if the overall benefit and cost of the regional pond alternative group far exceeded the benefit and cost of the proposed regional pond. Because the projects were modeled as a single project group, they all received the same modeled project benefit in the project ranking spreadsheet; however, some of the projects have a greater proportion of the benefit than others. Therefore, regional pond alternative project scores for total nitrogen, total phosphorus, and total suspended solids were adjusted using best professional judgment based on the project's likely proportion of the modeled benefit.

Projects which were not modeled in STEPL such as stream restoration projects and road crossing improvements were given a project score for total nitrogen, total phosphorus, and total suspended solids using best professional judgment based on the project's likely ability to affect each indicator.

Since every indicator is not likely to be impacted by some project types, a matrix was developed to show which project types are likely to affect which subwatershed ranking indicators. This way, the indicators evaluated for each project were targeted to those which the project was most likely to affect. This matrix is depicted in Tables 8 and 9, below.

While most projects conform to the matrix depicted in Tables 8 and 9, some projects consist of multi-faceted components that consist of a variety of project types, such as a stormwater pond retrofit that includes improvements to the pond's outfall and repairing streambank erosion below

the outfall. For these situations, additional indicators may have been evaluated in order to more accurately represent the scale and variety of project benefits.

**Table 8 Impact Indicator Scores Evaluated by Project Type**

| **Individual Impact Indicator Scores** | **Stream Restoration** (Type Code 2) | **Outfall Improvement** (Type Code 7) | **Culvert Retrofit** (Type Code 4) | **Flood Protection/ Mitigation** (Type 6) | **New/Retrofit BMP/LID** (Type Code 5) | **New Stormwater Pond** (Type Code 1) | **Stormwater Pond Retrofit** (Type Code 1) | **Area-wide Drainage Improvement** (Type 3) |
|---|---|---|---|---|---|---|---|---|
| Benthic Communities | X | X | | | | | | X |
| Fish Communities | X | X | | | | | | X |
| Aquatic Habitat | X | X | X | | | | | X |
| Channel Morphology (CEM) | X | | | X | | | | X |
| Instream Sediment | X | X | | | | X | X | X |
| Hydrology | X | X | X | X | X | X | X | X |
| Number of Road Hazards | | | X | X | | | | |
| Magnitude of Road Hazards | | | X | X | | | | |
| Residential Building Hazards | | | X | X | | | | |
| Non-Residential Building Hazards | | | X | X | | | | |
| Flood Complaints | | | | | | | | |
| RPA Riparian Habitat | X | | | | | | | X |
| Headwater Riparian Habitat | X | | | | | | | X |
| Wetland Habitat | X | | | | X | X | X | X |
| Terrestrial Forested Habitat | | | | | | | | |
| E. coli | | | | | | | | |
| TSS Concentration (STEPL) | X | X | X | | X | X | X | X |
| TN Concentration (STEPL) | | X | X | | X | X | X | X |
| TP Concentration (STEPL) | X | X | X | | X | X | X | X |
| X – Effects on these indicators were scored and evaluated | | | | | | | | |

**Table 9 Source Indicator Scores Evaluated by Project Type**

| Individual Impact Indicator Scores | **Stream Restoration** (Type Code 2) | **Outfall Improvement** (Type Code 7) | **Culvert Retrofit** (Type Code 4) | **Flood Protection/ Mitigation** (Type 6) | **New/Retrofit BMP/LID** (Type Code 5) | **New Stormwater Pond** (Type Code 1) | **Stormwater Pond Retrofit** (Type Code 1) | **Area-wide Drainage Improvement** (Type 3) |
|---|---|---|---|---|---|---|---|---|
| Channelized/Piped Streams | X | X | X | X | | X | | X |
| Directly Connected Impervious Area (DCIA) | | | | X | X | X | X | X |
| Total Impervious Area | | | | X | X | | | X |
| Stormwater Outfalls | X | X | | X | X | X | X | X |
| Sanitary Sewer Crossings | | | | | | | | |
| Streambank Buffer Deficiency | X | | | | | | | X |
| TSS Concentration (STEPL) | X | X | X | | X | X | X | X |
| TN Concentration (STEPL) | X | X | X | | X | X | X | X |
| TP Concentration (STEPL) | X | X | X | | X | X | X | X |
| X – Effects on these indicators were scored and evaluated | | | | | | | | |

The RPA Riparian Habitat and Headwater Riparian Habitat indicators will only be impacted by a project if the project is located within the RPA area or headwater area, respectively. Therefore, a project was only evaluated for whichever riparian area it was located within, but not for both headwater and RPA riparian habitat indicators.

Flood complaints were not considered for any project type due to the inconsistency of this data. Terrestrial forested habitat and sanitary sewer crossings are unlikely to be significantly affected by any of the structural projects; therefore, these indicators were not considered in project ranking. The scarcity of E. coli data and the difficulty in determining likely project benefits eliminated this indicator from consideration in project ranking.

Preliminary project scores based on subwatershed ranking indicator scores were calculating by taking an average of all of the individual indicator scores which were evaluated for each project. Appendix A contains a summary of the preliminary project scores based on subwatershed ranking impact indicator scores. A summary of preliminary project scores based on subwatershed ranking source indicator scores are located in Appendix B.

*Location within Priority Subwatersheds*

Results of the existing condition SW Ranking, updated in July 2009 (directory: Task2deliverables_Sugar-Horse/SW Ranking/Existing_073109/) were used to evaluate the "location within priority subwatersheds" project prioritization factor. Generally, candidate projects located within poor quality subwatersheds have the potential to provide a greater overall impact than a project located within a high quality subwatershed. In order to quantify this difference, preliminary quintiles were calculated based on existing condition watershed impact composite score for Sugarland Run and Horsepen Creek subwatersheds. Final quintiles will be calculated by the County based on the range of existing condition watershed impact composite scores in all of the county watersheds and revised scores may be applied. Table 10 depicts the preliminary quintiles used for Sugarland Run watershed. A complete list of project scores based on these priority subwatershed scores is located in Appendix C.

**Table 10 Preliminary Watershed Impact Composite Score Quintiles**

| Percentile | Watershed Impact Composite Scores | Preliminary Project Score |
|---|---|---|
| 80% | 6.13 to 10 | 1 |
| 60% | 5.18 to 6.12 | 2 |
| 40% | 4.53 to 5.17 | 3 |
| 20% | 4.32 to 4.52 | 4 |
| 0% | 3.79 to 4.31 | 5 |

Figures 1 and 2 overlay the 0-25 year proposed candidate projects on the existing condition SW Ranking results.

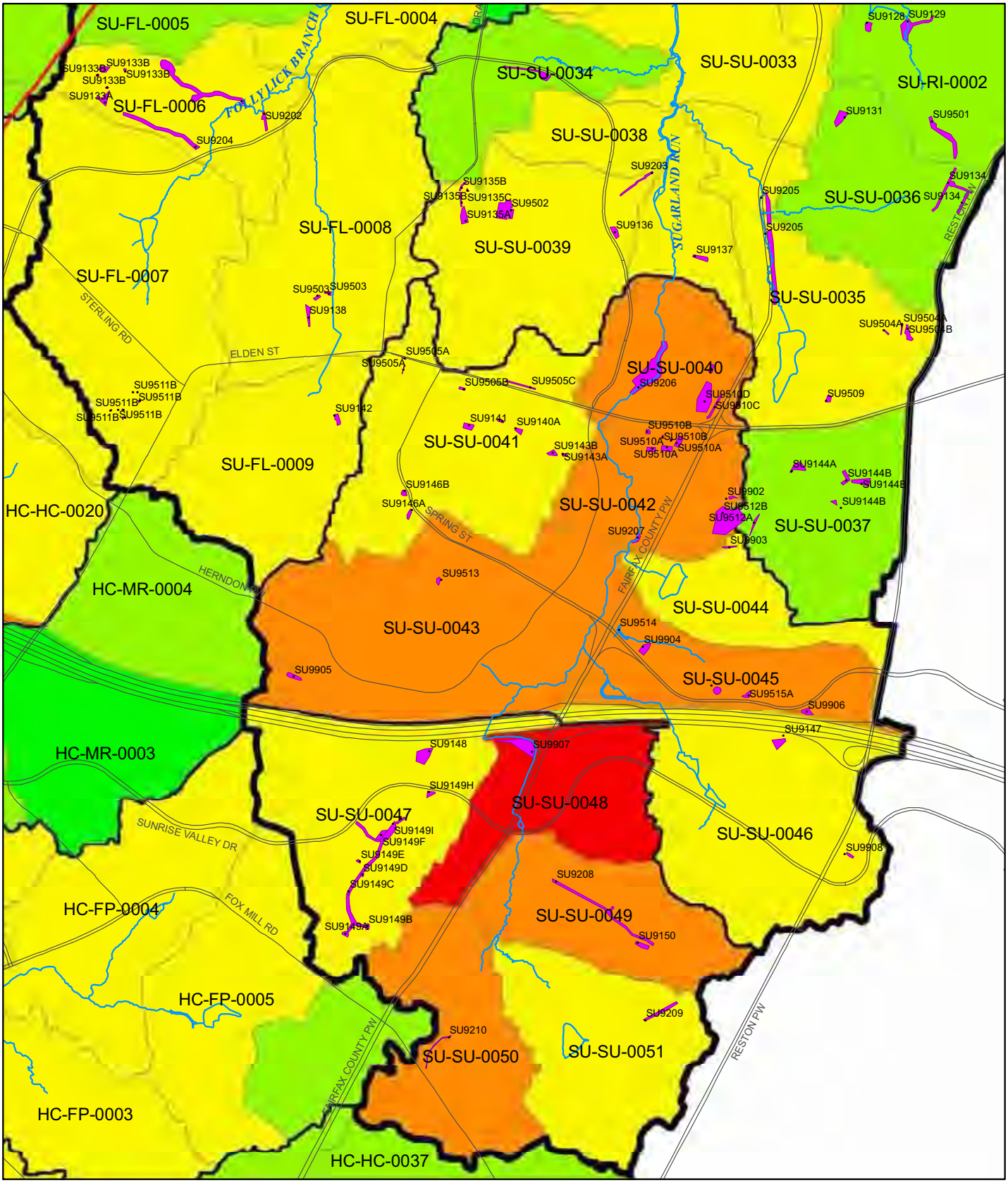



**FIGURE 1**

**Upper Sugarland Run 0-25 Year Projects**

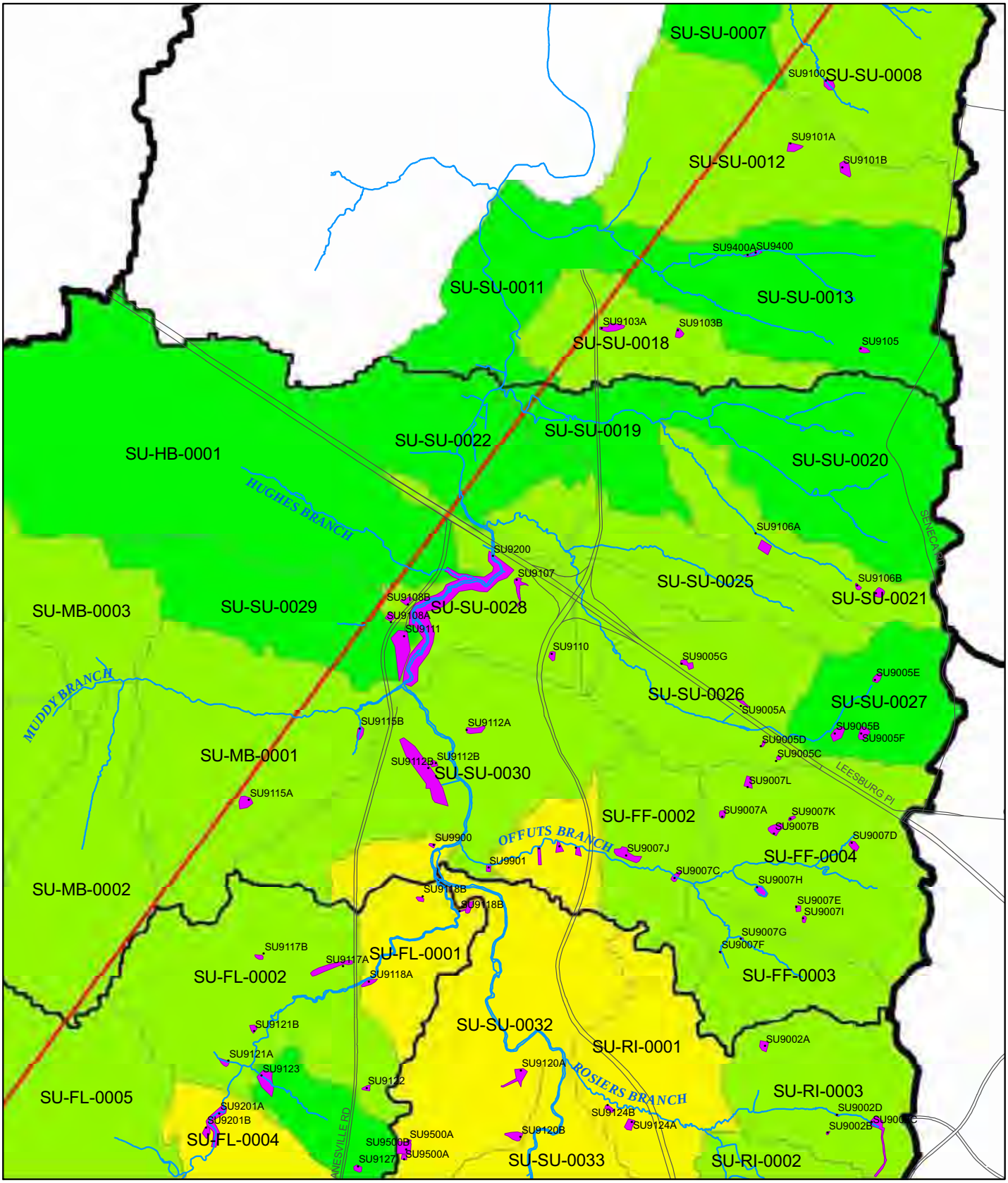



**FIGURE 2**

**Lower Sugarland Run 0-25 Year Projects**

*Sequencing*
Projects upstream relative to other projects should be completed prior to projects located downstream because upstream projects will provide protection for future downstream projects and also mitigate sources and stressors that cause cumulative impacts downstream. Therefore, projects in headwater areas should be considered the highest priority and receive a higher project score.

Subwatersheds were numbered according to relative stream order, see Figure 3. Headwater subwatersheds were given an order of one with higher numbered subwatersheds downstream. Once the subwatersheds were ordered, quintiles were calculated to determine project scores for each subwatershed. The subwatershed sequencing quintiles are depicted in Table 11, below.

**Table 11 Subwatershed Sequencing Quintiles**

| Percentile | Subwatershed Order | Preliminary Project Score |
|---|---|---|
| 80% | 4 to 12 | 1 |
| 60% | 2 to 3 | 3 |
| 0% - 40% | 1 | 5 |

A subwatershed may have headwater streams even if it receives flow from an upstream subwatershed. Candidate project SU9122 in Figure 3 Inset is an example of this; the project is located in SU-FL_0002 which was given a sequencing order of 4, however, SU9122 is located in a headwaters area so it should be scored accordingly. Project scores for projects located in these headwater areas, such as candidate project SU9122, were adjusted manually on a case by case basis. A complete listing of subwatershed order and project scores is provided in Appendix D.

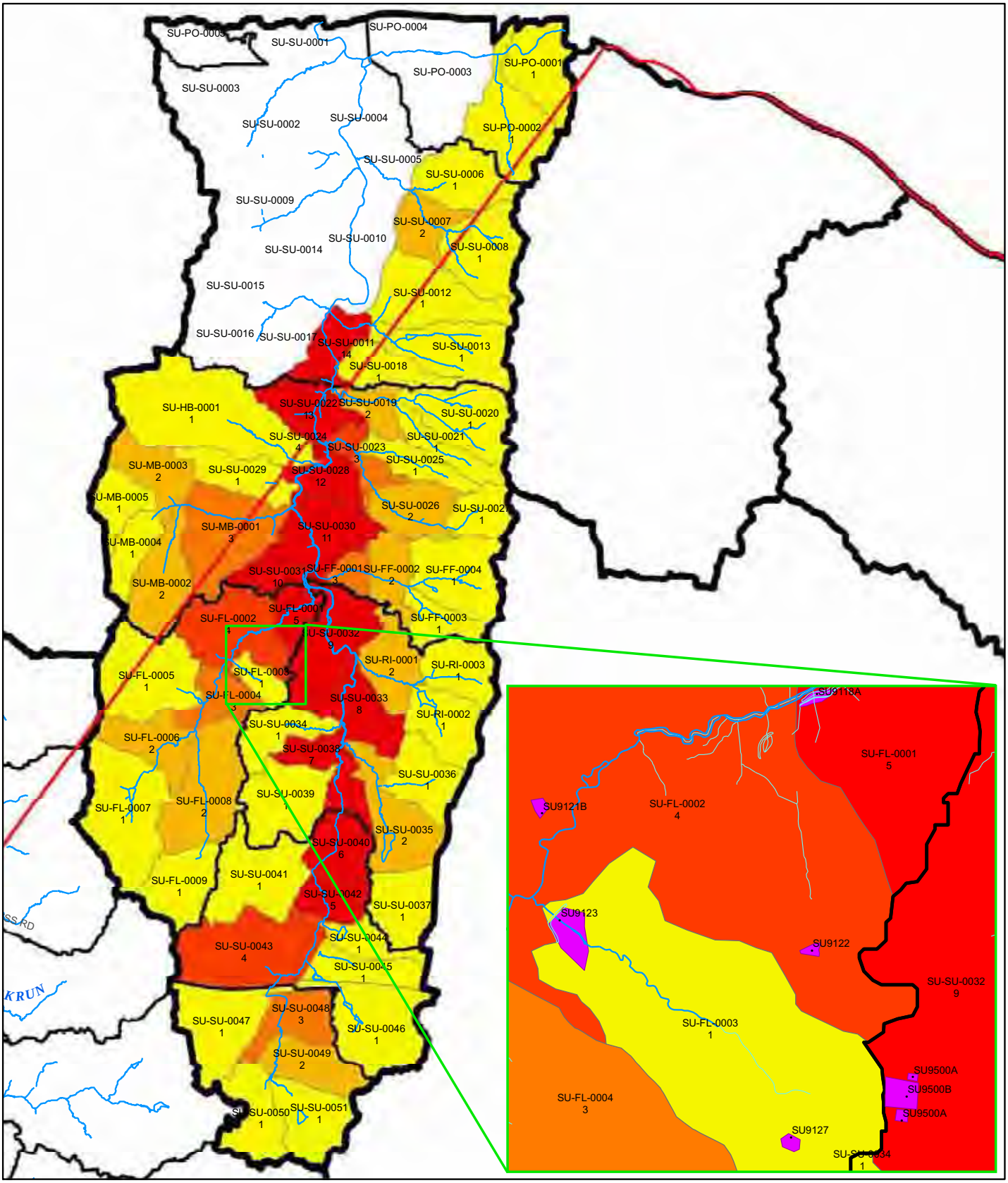



**FIGURE 3**

**Sequencing Factor for 0-25 Year Project Prioritization**

*Implementability*

Less complex projects and projects without land acquisition requirements will be easier to implement and are given higher scores accordingly. Those projects which are located on County property or retrofits of County-maintained stormwater facilities were scored higher than projects on private parcels and those with multiple landowners. Implementability was determined in three steps:

1) Analysis of property owner – projects were assigned points based on property ownership. County-owned parcels were assigned a point value of 1; Homeowners Associations, 2; Churches and Commercial parcels, 3; and private parcels, 4. The total point value for each project area was summed so that a greater number of owners resulted in a greater point value and indicated a greater difficulty of implementation. This point value was divided by 2 if the project involved an existing County-maintained facility regardless of land owner, since existing County-maintained facilities have existing maintenance agreements in place. Table 12 shows some examples of this step in the Implementability analysis.

**Table 12 Analysis of Property Ownership for Implementability**

| Property Owner(s) | Point Value | Existing County Facility? | Adjusted Point Value |
|---|---|---|---|
| 1 County Parcel | 1 | Yes | 0.5 |
| 1 County Parcel | 1 | No | 1 |
| 1 HOA Parcel | 2 | Yes | 1 |
| 1 Commercial or Church Parcel | 3 | Yes | 1.5 |
| 1 HOA Parcel | 2 | No | 2 |
| 1 Private Parcel | 4 | Yes | 2 |
| 1 Commercial or Church Parcel | 3 | No | 3 |
| 1 Commercial or Church Parcel | 6 | Yes | 3 |
| 1 Private Parcel | 4 | No | 4 |
| 3 Private Parcels | 12 | Yes | 6 |
| 3 Private Parcels | 12 | No | 12 |

2) Quintiles were established to produce a score based on parcel ownership. Quintiles for Implementability are depicted in Table 13. The quintiles were established so that County-maintained facilities on County-owned land were scored highest with the greatest ease of implementability, and private parcels without County-maintained facilities were scored lowest.

**Table 13 Implementability Score Quintiles**

| Percentile | Adjusted Point Values Based on Ownership | Preliminary Project Score |
|---|---|---|
| 0% | 0.5 | 5 |
| 20% | 1 or 1.5 | 4 |
| 40% | 2 | 3 |
| 60% | 3 | 2 |
| 80% | 4 or greater | 1 |

3) Final adjustments were made using best professional judgment based on the overall complexity and implementability of the project. In some cases, County-maintained facilities are located on parcels with multiple owner records in the ownership database provided by the County, this resulted in inflated initial point values that were not adequately reduced by the County-maintained facility division factor. Several BPJ adjustments were made to adjust this anomaly.

Implementability scores for each project are located in Appendix E.

*Initial Ranking Composite Score*

An initial ranking composite score was calculated for each project based on the weighted average of the five project scores described above.

1) Effect on Subwatershed Ranking Watershed Impact Indicators (30%)
2) Effect on Subwatershed Ranking Watershed Source Indicators (30%)
3) Location within Priority Subwatersheds (10%)
4) Sequencing (20%)
5) Implementability (10%)

The initial ranking composite score, or prioritization score is used to determine the overall rank of each project. Projects are ranked from one to 123 for Sugarland Run Horsepen Creek according to the prioritization score. The least beneficial projects may drop from the 0-25 year implementation plan and the top 70 projects will be promoted to the 10-year implementation plan.

Unconstructed regional ponds and regional pond alternatives were all ranked initially in order to help identify the most beneficial disposition option for each regional pond. Although regional ponds are not the preferred stormwater management tool in Fairfax County, two of the seven unconstructed regional ponds are proposed for construction with a modified scope. The alternatives identified for regional pond S-01 cannot provide sufficient treatment for the currently untreated developed land within the subwatershed; regional pond S-01 was re-named SU9001 in order to maintain consistency in project numbering. Regional Pond H-07 has a small, 67-acre drainage area and provides the best treatment option for stormwater management in its subwatershed. Various drainage improvement and stream restoration projects were also needed in the subwatershed and regional pond H-07 was added to a suite of subprojects and re-named HC9007E.

Following the fourth Watershed Advisory Group (WAG) meeting, comments from WAG members were compiled and the initial ranking composite scores were adjusted based on the comments received. Project ranks were updated based on the revised composite scores and initial 10-year and 25-year implementation plans were organized using the revised project ranks.

Once approved by the County, each of the projects in the 10-year implementation plan will be further evaluated with additional hydrologic modeling and details for each project will be compiled onto a project fact sheet. The project fact sheets will contain geographical information, a description of the project, potential benefits, project design considerations, a map of the project area and an estimated project cost.

A summary of the five project scores and the initial ranking composite score for each candidate project is provided in Table 14.

**Table 14 Summary of Individual Project Scores and Initial Ranking Composite Score**

| Subwatershed | Project No. | Watershed Impact Indicators | Watershed Source Indicators | Location within Priority Subwatersheds | Sequencing | Implementability | Initial Ranking Composite Score | Project Rank |
|---|---|---|---|---|---|---|---|---|
| HC-CR-0002 | HC9007 | 4 | 4 | 3 | 5 | 1 | 3.59 | 35 |
| HC-CR-0004/05 | HC9013 | 4 | 5 | 2 | 5 | 1 | 4.09 | 8 |
| HC-HC-0018 | HC9100 | 2 | 2 | 2 | 5 | 4 | 3.04 | 104 |
| HC-HC-0017 | HC9101 | 2 | 2 | 3 | 5 | 4 | 3.14 | 98 |
| HC-HC-0026 | HC9102 | 3 | 3 | 5 | 5 | 2 | 3.61 | 32 |
| HC-HC-0025 | HC9103 | 4 | 3 | 2 | 1 | 4 | 3.00 | 108 |
| HC-MR-0002 | HC9104 | 3 | 3 | 2 | 3 | 3 | 2.95 | 112 |
| HC-MR-0003 | HC9105 | 3 | 3 | 1 | 3 | 3 | 2.29 | 121 |
| HC-FP-0001 | HC9106 | 4 | 4 | 4 | 3 | 2 | 3.54 | 40 |
| HC-MR-0004 | HC9107 | 3 | 5 | 1 | 5 | 4 | 3.85 | 16 |
| HC-HC-0028 | HC9108 | 3 | 4 | 1 | 4 | 5 | 3.35 | 74 |
| HC-FP-0002 | HC9109 | 3 | 4 | 2 | 5 | 4 | 3.58 | 37 |
| HC-MR-0004 | HC9110 | 3 | 3 | 1 | 5 | 4 | 3.40 | 60 |
| HC-FP-0004 | HC9111 | 3 | 4 | 3 | 3 | 3 | 3.20 | 89 |
| HC-HC-0028 | HC9113 | 4 | 4 | 1 | 1 | 3 | 2.82 | 117 |
| HC-FP-0004 | HC9114 | 4 | 5 | 3 | 1 | 4 | 3.48 | 47 |
| HC-HC-0028 | HC9115 | 3 | 4 | 1 | 2 | 4 | 3.01 | 107 |
| HC-FP-0003 | HC9116 | 3 | 4 | 2 | 5 | 4 | 3.66 | 29 |
| HC-FP-0004 | HC9117 | 3 | 4 | 3 | 1 | 4 | 2.88 | 114 |
| HC-HC-0030 | HC9118 | 3 | 4 | 4 | 5 | 3 | 3.68 | 25 |
| HC-FP-0005 | HC9119 | 3 | 3 | 3 | 1 | 4 | 3.44 | 56 |
| HC-HC-0030 | HC9121 | 3 | 4 | 4 | 5 | 2 | 3.52 | 44 |
| HC-HC-0030 | HC9122 | 4 | 4 | 4 | 5 | 2 | 4.06 | 9 |
| HC-HC-0030 | HC9123 | 3 | 4 | 4 | 5 | 4 | 3.85 | 16 |
| HC-FP-0005 | HC9124 | 4 | 4 | 3 | 1 | 1 | 3.16 | 95 |
| HC-HC-0031 | HC9125 | 3 | 4 | 3 | 3 | 4 | 3.37 | 67 |
| HC-HC-0034 | HC9126 | 3 | 3 | 3 | 5 | 4 | 3.54 | 41 |
| HC-FP-0003 | HC9127 | 3 | 4 | 2 | 5 | 4 | 3.67 | 27 |
| HC-HC-0031 | HC9128 | 4 | 4 | 3 | 3 | 3 | 3.48 | 46 |
| HC-HC-0034 | HC9129 | 4 | 4 | 3 | 5 | 5 | 4.24 | 3 |
| HC-HC-0031 | HC9130 | 4 | 4 | 3 | 2 | 5 | 3.48 | 47 |
| HC-HC-0035 | HC9131 | 3 | 4 | 1 | 2 | 3 | 2.97 | 110 |
| HC-HC-0032 | HC9132 | 3 | 4 | 5 | 3 | 4 | 3.48 | 47 |

| Subwatershed | Project No. | Watershed Impact Indicators | Watershed Source Indicators | Location within Priority Subwatersheds | Sequencing | Implementability | Initial Ranking Composite Score | Project Rank |
|---|---|---|---|---|---|---|---|---|
| HC-CR-0001 | HC9133 | 3 | 4 | 4 | 1 | 4 | 3.27 | 84 |
| HC-HC-0033 | HC9134 | 4 | 4 | 1 | 5 | 4 | 3.88 | 14 |
| HC-CR-0001 | HC9135 | 3 | 4 | 4 | 2 | 4 | 3.20 | 90 |
| HC-HC-0037 | HC9136 | 3 | 4 | 1 | 5 | 4 | 3.39 | 61 |
| HC-HC-0039 | HC9137 | 4 | 4 | 2 | 3 | 4 | 3.53 | 43 |
| HC-CR-0001 | HC9138 | 3 | 4 | 4 | 2 | 4 | 3.37 | 68 |
| HC-HC-0039 | HC9139 | 4 | 4 | 2 | 1 | 5 | 3.30 | 80 |
| HC-HC-0037 | HC9140 | 3 | 3 | 1 | 5 | 4 | 3.34 | 75 |
| HC-HC-0040 | HC9142 | 4 | 5 | 2 | 5 | 4 | 4.15 | 4 |
| HC-CR-0003 | HC9143 | 3 | 4 | 5 | 1 | 3 | 3.27 | 83 |
| HC-CR-0003 | HC9146 | 3 | 4 | 5 | 1 | 4 | 3.15 | 97 |
| HC-HC-0039 | HC9148 | 4 | 4 | 2 | 1 | 4 | 3.08 | 102 |
| HC-HC-0040 | HC9149 | 4 | 5 | 2 | 5 | 1 | 4.12 | 6 |
| HC-HC-0020 | HC9200 | 4 | 4 | 5 | 3 | 4 | 3.77 | 23 |
| HC-HC-0037 | HC9201 | 4 | 4 | 1 | 5 | 4 | 3.90 | 13 |
| HC-HC-0039 | HC9202 | 4 | 4 | 2 | 3 | 4 | 3.43 | 57 |
| HC-CR-0001 | HC9302 | 3 | 4 | 4 | 2 | 3 | 3.31 | 79 |
| HC-HC-0019 | HC9400 | 3 | 3 | 5 | 3 | 4 | 3.05 | 103 |
| HC-HC-0018 | HC9401 | 1 | 2 | 2 | 5 | 2 | 2.15 | 122 |
| HC-HC-0026 | HC9500 | 4 | 4 | 5 | 5 | 4 | 4.05 | 10 |
| HC-HC-0028 | HC9501 | 3 | 4 | 1 | 1 | 1 | 2.40 | 120 |
| HC-HC-0028 | HC9502 | 3 | 4 | 1 | 1 | 4 | 2.65 | 119 |
| HC-FP-0001 | HC9503 | 4 | 4 | 4 | 1 | 4 | 3.80 | 21 |
| HC-HC-0035 | HC9505 | 4 | 4 | 1 | 1 | 4 | 2.98 | 109 |
| SU-FF-0001 | SU9001 | 3 | 2 | 4 | 3 | 4 | 3.18 | 93 |
| SU-RI-0003 | SU9002 | 3 | 4 | 2 | 5 | 1 | 3.39 | 63 |
| SU-SU-0026/27 | SU9005 | 3 | 4 | 3 | 3 | 1 | 3.31 | 78 |
| SU-FF-0002/03/04 | SU9007 | 3 | 4 | 3 | 3 | 1 | 3.46 | 54 |
| SU-SU-0008 | SU9100 | 4 | 4 | 1 | 5 | 2 | 3.48 | 47 |
| SU-SU-0012 | SU9101 | 3 | 3 | 1 | 5 | 4 | 3.46 | 54 |
| SU-SU-0018 | SU9103 | 4 | 3 | 1 | 5 | 2 | 3.47 | 52 |
| SU-SU-0013 | SU9105 | 4 | 3 | 1 | 5 | 2 | 3.30 | 81 |
| SU-SU-0021 | SU9106 | 3 | 3 | 1 | 5 | 4 | 3.47 | 53 |

| Subwatershed | Project No. | Watershed Impact Indicators | Watershed Source Indicators | Location within Priority Subwatersheds | Sequencing | Implementability | Initial Ranking Composite Score | Project Rank |
|---|---|---|---|---|---|---|---|---|
| SU-SU-0028 | SU9107 | 4 | 4 | 2 | 1 | 4 | 3.09 | 101 |
| SU-SU-0028 | SU9108 | 4 | 4 | 2 | 2 | 4 | 3.41 | 59 |
| SU-SU-0028 | SU9110 | 4 | 4 | 2 | 3 | 4 | 3.61 | 32 |
| SU-SU-0029 | SU9111 | 3 | 3 | 1 | 5 | 4 | 3.14 | 98 |
| SU-SU-0030 | SU9112 | 4 | 4 | 3 | 1 | 4 | 3.27 | 84 |
| SU-MB-0001 | SU9115 | 4 | 3 | 1 | 3 | 2 | 3.02 | 105 |
| SU-FL-0002 | SU9117 | 4 | 4 | 4 | 3 | 2 | 3.39 | 61 |
| SU-FL-0001 | SU9118 | 4 | 4 | 5 | 1 | 4 | 3.35 | 72 |
| SU-SU-0032 | SU9120 | 4 | 4 | 4 | 2 | 3 | 3.36 | 70 |
| SU-FL-0002 | SU9121 | 4 | 4 | 4 | 1 | 4 | 3.16 | 94 |
| SU-FL-0002 | SU9122 | 3 | 4 | 4 | 3 | 3 | 3.32 | 77 |
| SU-FL-0003 | SU9123 | 4 | 4 | 1 | 5 | 4 | 3.62 | 31 |
| SU-RI-0001 | SU9124 | 3 | 3 | 4 | 3 | 2 | 2.86 | 115 |
| SU-FL-0003 | SU9127 | 3 | 3 | 1 | 5 | 3 | 2.96 | 111 |
| SU-RI-0002 | SU9128 | 3 | 3 | 1 | 5 | 4 | 3.16 | 96 |
| SU-RI-0002 | SU9129 | 3 | 4 | 1 | 5 | 2 | 3.38 | 64 |
| SU-SU-0034 | SU9130 | 4 | 4 | 5 | 5 | 1 | 3.82 | 20 |
| SU-FL-0006 | SU9133 | 3 | 3 | 3 | 4 | 4 | 3.35 | 72 |
| SU-SU-0039 | SU9135 | 3 | 3 | 4 | 5 | 3 | 3.59 | 36 |
| SU-SU-0039 | SU9136 | 4 | 3 | 4 | 5 | 4 | 3.84 | 18 |
| SU-SU-0038 | SU9137 | 4 | 4 | 3 | 1 | 4 | 3.18 | 91 |
| SU-FL-0008 | SU9138 | 3 | 2 | 4 | 3 | 4 | 3.02 | 106 |
| SU-SU-0040 | SU9139 | 4 | 3 | 5 | 3 | 4 | 3.54 | 42 |
| SU-SU-0041 | SU9140 | 4 | 4 | 5 | 5 | 3 | 3.26 | 86 |
| SU-SU-0041 | SU9141 | 3 | 3 | 5 | 5 | 2 | 3.38 | 65 |
| SU-FL-0009 | SU9142 | 3 | 2 | 4 | 5 | 3 | 3.21 | 88 |
| SU-SU-0041 | SU9143 | 3 | 3 | 5 | 5 | 3 | 3.48 | 51 |
| SU-SU-0037 | SU9144 | 4 | 4 | 2 | 5 | 1 | 3.61 | 32 |
| SU-SU-0041 | SU9146 | 4 | 3 | 5 | 5 | 3 | 3.97 | 11 |
| SU-SU-0046 | SU9147 | 3 | 3 | 5 | 5 | 3 | 3.38 | 65 |
| SU-SU-0047 | SU9149 | 4 | 4 | 2 | 5 | 1 | 4.29 | 2 |
| SU-SU-0049 | SU9150 | 4 | 4 | 4 | 3 | 4 | 3.63 | 30 |
| SU-SU-0028 | SU9200 | 3 | 4 | 2 | 1 | 1 | 2.73 | 118 |
| SU-FL-0004 | SU9201 | 4 | 4 | 5 | 3 | 1 | 4.15 | 4 |
| SU-FL-0006 | SU9202 | 3 | 3 | 3 | 3 | 3 | 3.11 | 100 |

| Subwatershed | Project No. | Watershed Impact Indicators | Watershed Source Indicators | Location within Priority Subwatersheds | Sequencing | Implementability | Initial Ranking Composite Score | Project Rank |
|---|---|---|---|---|---|---|---|---|
| SU-SU-0039 | SU9203 | 4 | 4 | 4 | 5 | 4 | 4.09 | 7 |
| SU-FL-0006 | SU9204 | 3 | 3 | 3 | 4 | 4 | 3.48 | 45 |
| SU-SU-0035 | SU9205 | 3 | 4 | 3 | 3 | 2 | 3.42 | 58 |
| SU-SU-0040 | SU9206 | 4 | 4 | 5 | 1 | 2 | 3.34 | 76 |
| SU-SU-0042 | SU9207 | 4 | 3 | 5 | 1 | 2 | 3.28 | 82 |
| SU-SU-0049 | SU9208 | 4 | 4 | 4 | 4 | 1 | 3.94 | 12 |
| SU-SU-0051 | SU9209 | 4 | 4 | 2 | 5 | 2 | 3.78 | 22 |
| SU-SU-0050 | SU9210 | 3 | 4 | 4 | 5 | 1 | 3.66 | 28 |
| SU-SU-0013 | SU9400 | 3 | 3 | 1 | 5 | 1 | 2.84 | 116 |
| SU-SU-0032 | SU9500 | 4 | 4 | 4 | 3 | 4 | 3.55 | 39 |
| SU-RI-0002 | SU9501 | 3 | 3 | 1 | 5 | 2 | 3.25 | 87 |
| SU-SU-0039 | SU9502 | 3 | 4 | 4 | 5 | 4 | 3.83 | 19 |
| SU-FL-0008 | SU9503 | 3 | 3 | 4 | 3 | 2 | 2.00 | 123 |
| SU-SU-0035 | SU9504 | 3 | 3 | 3 | 4 | 4 | 3.37 | 69 |
| SU-SU-0041 | SU9505 | 3 | 4 | 5 | 5 | 1 | 3.69 | 24 |
| SU-SU-0035 | SU9509 | 4 | 4 | 3 | 4 | 3 | 3.68 | 25 |
| SU-SU-0040 | SU9510 | 3 | 3 | 5 | 3 | 1 | 2.90 | 113 |
| SU-FL-0007 | SU9511 | 3 | 3 | 4 | 5 | 3 | 3.35 | 71 |
| SU-SU-0037 | SU9512 | 3 | 4 | 2 | 5 | 1 | 3.56 | 38 |
| SU-SU-0043 | SU9513 | 3 | 3 | 5 | 3 | 4 | 3.18 | 92 |
| SU-SU-0045 | SU9514 | 4 | 5 | 5 | 5 | 4 | 4.41 | 1 |
| SU-SU-0045 | SU9515 | 3 | 4 | 5 | 5 | 2 | 3.86 | 15 |

## Task 3.5 Evaluation and Ranking Candidate Non-Structural Projects

Viable non-structural projects were given a six or seven digit project number according to the following numbering convention: XX9YZZ; where XX is the 2-digit watershed code, Y is the project type code, and ZZ is a 2-digit numbering code starting with 00 at the lowest point in the watershed. The project type code was not defined for non-structural projects; therefore, a code of '9' was used for non-structural projects. An additional seventh letter is used for any project with multiple subprojects, such as buffer restoration in several disconnected locations.

Non-structural projects are likely to be implemented through existing Fairfax County program, such as the buffer program and policy/outreach mandates. Table 15 contains a description of each of the viable non-structural projects for Sugarland Run and Horsepen Creek watersheds.

**Table 15 Non-Structural Projects**

| Subwatershed | Project No. | Project Description |
|---|---|---|
| HC-CR-0003 | HC9901A | Restore and improve riparian buffer |
| HC-CR-0003 | HC9901B | Restore buffer & educate homeowners about yard waste |
| HC-CR-0005 | HC9901C | Non-Structural - Targeted rain barrel program for homes on Cross Creek Ln & Cross Creek Ct |
| HC-CR-0005 | HC9901D | Remove invasives from pond and replant quality wetland and riparian vegetation |
| HC-FP-0001 | HC9902 | Riparian buffer improvement |
| HC-HC-0018 & 20 | HC9903A | Rain Barrel Program Reflection Lake HOA & Four Season HOA (Herndon) |
| HC-HC-0020 | HC9903B | Riparian buffer restoration upstream of Parcher Ave. |
| HC-HC-0025 | HC9904A | Riparian buffer restoration |
| HC-HC-0028 | HC9904B | Re-vegetate/expand riparian zone |
| HC-HC-0028 | HC9904C | Riparian buffer restoration |
| HC-HC-0029 | HC9904D | Conservation easement to preserve riparian buffer |
| HC-HC-0030 | HC9905A | Conservation easement to preserve riparian buffer and SWM facility |
| HC-HC-0031 | HC9905B | Investigate and remove obstructions at SPA reach 9-1 (may be up to 5 moderate-severe obstructions), clear invasives, replant quality vegetation |
| HC-HC-0032 | HC9905C | Restore riparian buffer to property lines with vegetation that can support steep slopes, add rocks for energy dissipation below outfall |
| HC-HC-0033 | HC9905D | Riparian buffer restoration (deficient buffer approx 2,500 ft in length) |
| HC-HC-0036 | HC9905E | Allow existing dry pond (no StormNet ID) to naturalize, stop mowing |
| HC-HC-0036 | HC9905F | Vegetate existing dry pond 0440DP with high quality riparian/floodplain vegetation and break up concrete trickle ditch, Leave concrete pieces in place for energy dissipation |
| HC-HC-0033 | HC9906A | Targeted rain barrel program for portion of Chantilly Highlands |
| HC-HC-0033 | HC9906B | Targeted rain barrel program for portion of Chantilly Highlands |
| HC-MR-0003 | HC9907 | Preserve and enhance buffer around series of wet ponds through conservation easement and buffer restoration projects |
| SU-FL-0007 | SU9900A | Targeted rain barrel program at Westfield subdv |

| Subwatershed | Project No. | Project Description |
|---|---|---|
| SU-FL-0008 | SU9900B | Targeted rain barrel program at Fortnightly Square, Haloyon of Herndon Sect 5, Van Vlecks subdv, Ballou subdv, Saubers subdv, Herndon Station, & Herndon Park Station |
| SU-FL-0009 | SU9900C | Targeted rain barrel program at Chandon subdv |
| SU-FF-0003 | SU9901A | Riparian buffer restoration downstream of Suart Hills Way crossing |
| SU-SU-0024 | SU9901B | Remove construction debris, cut/fill spoils, reforest or restore riparian buffer |
| SU-SU-0026 | SU9901C | Non-structural - riparian buffer restoration along Leesburg Pike @ driving range, will also provide highway screening |
| SU-SU-0027 | SU9901D | Riparian buffer restoration downstream of farm pond |
| SU-SU-0031 | SU9901E | Vegetate steep slopes, install terraced gardens/bioretention below outfall, plan better/sturdier vegetation (meadow plants) in low, flat area |
| SU-FF-0001/SU-SU-0030 | SU9902A | Rain barrel program Sugar Creek Sec. 1 HOA |
| SU-FF-0004 | SU9902B | Rain Barrel Program  Stuart Hills HOA, Cedar Chase HOA, and Oak Creek Estates |
| SU-FF-0004 | SU9902C | Rain Barrel Program Forest Heights Estates & Stoney Creek Woods HOA |
| SU-MB-0001 | SU9902D | Rain barrel program Hastings Hunt sec. 6 HOA and portion of Jenkins Ridge HOA |
| SU-SU-0027 | SU9902E | Rain barrel program Holly Knoll HOA |
| SU-SU-0031 | SU9902F | Rain Barrel Program Crestbrook HOA |
| SU-MB-0001 | SU9903A | Conservation easement or lot purchase to preserve riparian buffer and forested open space |
| SU-SU-0019, 20, 21 | SU9903B | Conservation easement to preserve riparian buffer, wide buffer for habitat preservation most desirable |
| SU-SU-0030 | SU9904 | Educate homeowners on erosion control BMPs and yard waste as an improper control measure |
| SU-SU-0040 | SU9905A | Targeted rain barrel program @ Crestview Sec. 1 & Runnymede Manor |
| SU-SU-0040 | SU9905B | Targeted rain barrel program @ Stuart Woods, Reston Sec. 49 & Towns at Stuart Pointe |
| SU-SU-0042 | SU9906A | Naturalize dry pond DP0564 with wetland plantings |
| SU-SU-0043 | SU9906B | Vegetate existing dry pond |
| SU-SU-0044 | SU9906C | Vegetate existing swale |
| SU-SU-0045 | SU9906D | Vegetate SW Facility DP0421 |
| SU-SU-0045 | SU9906E | Vegetate SW Facility DP0440 |
| SU-SU-0046 | SU9906F | Vegetate SW Facility DP0202 |
| SU-SU-0043 | SU9907 | Conservation easement and riparian buffer restoration, minimum of 100' wide to provide nutrient removal, sediment control, flood control, slated for industrial development contains numerous tributaries |
| SU-RI-0001 | SU9908A | Rain barrel program Stuart Ridge HOA |
| SU-RI-0001/3 | SU9908B | Rain barrel program Shaker Woods, Shaker Grove & Kingstream HOAs |
| SU-SU-0032 | SU9908C | Rain barrel program Kingstream HOA |

| Subwatershed | Project No. | Project Description |
|---|---|---|
| SU-SU-0034 | SU9908D | Targeted Rain Barrel program, Hunters Creek, Potomac Fairways, Iron Ridge Sec. 2, Graymoor, Chestnut Grove, Old Drainsville Hunt Club, Jeneba Woods |
| SU-SU-0038 | SU9908E | Targeted rain barrel program @ Reston Sec. 49 |
| SU-SU-0039 | SU9908F | Targeted rain barrel program Sugar Land Heights |
| SU-SU-0048 | SU9909 | Targeted Rain Barrel program Polo Fields HOA |
| SU-SU-0048 | SU9910 | Naturalize dry pond DP0164 |
| SU-SU-0047 | SU9911 | Preserve Sunrise Valley Wetland Park as a natural wetland area and naturalize adjacent dry pond (No StormNet ID) |

# **Appendix A**

Preliminary Project Scores
Based on Subwatershed Ranking
Impact Indicator Scores

*IMPACT INDICATOR SCORES*

| Project Number | Project Type | Subwatershed | Benthic | Fish Comm | Aquatic Habitat | Channel Morph | Instream Sediment | Hydrology | No Road Hazard | Magnitude Rd Hazard | Res. Bldg Haz | Non-Res Bldg Haz | Flood Complaints | Prot. RPA Riparian | Prot. Headwater Riparian | Prot. Wetl. | Prot. Nat Habitat | TSS | TN | TP | Ecoli | Sum | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HC9007 | 0 | HC-CR-0002 | 4 | 4 | 3 | 1 | 3 | - | - | - | - | - | - | 4 | - | 5 | - | 4 | 4 | 4 | - | 36 | 3.60 |
| HC9013 | 0 | HC-CR-0004/05 | 4 | 4 | 3 | 1 | 3 | - | - | - | - | - | - | - | - | 5 | - | 5 | 5 | 5 | - | 35 | 3.89 |
| HC9100 | 1 | HC-HC-0018 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 2 | 2 | 2 | - | 12 | 2.40 |
| HC9101 | 1 | HC-HC-0017 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 2 | 2 | 2 | - | 12 | 2.40 |
| HC9102 | 1 | HC-HC-0026 | - | - | - | - | 3 | - | - | - | - | - | - | - | - | 5 | - | 2 | 4 | 2 | - | 16 | 3.20 |
| HC9103 | 1 | HC-HC-0025 | - | - | - | - | 3 | - | - | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 20 | 4.00 |
| HC9104 | 1 | HC-MR-0002 | - | - | - | - | 2 | - | 3 | - | - | - | - | - | - | 5 | - | 3 | 2 | 3 | - | 18 | 3.00 |
| HC9105 | 1 | HC-MR-0003 | - | - | - | - | 0 | - | 2 | - | - | - | - | - | - | 5 | - | 2 | 2 | 3 | - | 14 | 2.80 |
| HC9106 | 1 | HC-FP-0001 | - | - | - | - | 3 | - | - | - | - | - | - | - | - | 4 | - | 4 | 4 | 4 | - | 19 | 3.80 |
| HC9107 | 1 | HC-MR-0004 | - | - | - | - | 1 | - | 2 | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 20 | 3.33 |
| HC9108 | 1 | HC-HC-0028 | - | - | - | - | 3 | - | - | - | - | - | - | - | - | 5 | - | 2 | 2 | 3 | - | 15 | 3.00 |
| HC9109 | 1 | HC-FP-0002 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 15 | 3.00 |
| HC9110 | 1 | HC-MR-0004 | - | - | - | - | 0 | - | - | - | - | - | - | - | - | 5 | - | 2 | 2 | 3 | - | 12 | 3.00 |
| HC9111 | 1 | HC-FP-0004 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 15 | 3.00 |
| HC9113 | 1 | HC-HC-0028 | - | - | - | - | 3 | - | - | - | - | - | - | - | - | 5 | - | 3 | 4 | 3 | - | 18 | 3.60 |
| HC9114 | 1 | HC-FP-0004 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 5 | 4 | 5 | - | 20 | 4.00 |
| HC9115 | 1 | HC-HC-0028 | - | - | - | - | 2 | - | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 16 | 3.20 |
| HC9116 | 1 | HC-FP-0003 | - | - | - | - | 2 | - | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 16 | 3.20 |
| HC9117 | 1 | HC-FP-0004 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 15 | 3.00 |
| HC9118 | 1 | HC-HC-0030 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 15 | 3.00 |
| HC9119 | 1 | HC-FP-0005 | - | - | - | - | 3 | - | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 17 | 3.40 |
| HC9121 | 5 | HC-HC-0030 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 3 | 2 | 3 | - | 14 | 2.80 |
| HC9122 | 1 | HC-HC-0030 | - | - | - | - | 2 | - | - | - | - | - | - | - | - | 4 | - | 4 | 4 | 5 | - | 19 | 3.80 |
| HC9123 | 1 | HC-HC-0030 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 15 | 3.00 |
| HC9124 | 1 | HC-FP-0005 | - | - | - | - | 3 | - | - | - | - | - | - | - | - | 5 | - | 4 | 5 | 4 | - | 21 | 4.20 |
| HC9125 | 1 | HC-HC-0031 | - | - | - | - | 2 | - | - | - | - | - | - | - | - | 5 | - | 4 | 3 | 3 | - | 17 | 3.40 |
| HC9126 | 1 | HC-HC-0034 | - | - | - | - | 2 | - | - | - | - | - | - | - | - | 5 | - | 3 | 2 | 2 | - | 14 | 2.80 |
| HC9127 | 1 | HC-FP-0003 | - | - | - | - | 3 | - | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 17 | 3.40 |
| HC9128 | 1 | HC-HC-0031 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 18 | 3.60 |
| HC9129 | 1 | HC-HC-0034 | - | - | - | - | 2 | - | - | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 19 | 3.80 |
| HC9130 | 1 | HC-HC-0031 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 5 | 3 | 4 | - | 18 | 3.60 |

*IMPACT INDICATOR SCORES*

| Project Number | Project Type | Subwatershed | Benthic | Fish Comm | Aquatic Habitat | Channel Morph | Instream Sediment | Hydrology | No Road Hazard | Magnitude Rd Hazard | Res. Bldg Haz | Non-Res Bldg Haz | Flood Complaints | Prot. RPA Riparian | Prot. Headwater Riparian | Prot. Wetl. | Prot. Nat Habitat | TSS | TN | TP | Ecoli | Sum | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HC9131 | 3 | HC-HC-0035 | - | - | - | - | 3 | - | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 17 | 3.40 |
| HC9132 | 1 | HC-HC-0032 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 15 | 3.00 |
| HC9133 | 3 | HC-CR-0001 | - | - | - | - | 2 | - | - | - | - | - | - | - | - | 4 | - | 3 | 4 | 4 | - | 17 | 3.40 |
| HC9134 | 5 | HC-HC-0033 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 18 | 3.60 |
| HC9135 | 1 | HC-CR-0001 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 15 | 3.00 |
| HC9136 | 1 | HC-HC-0037 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 2 | 3 | 3 | - | 14 | 2.80 |
| HC9137 | 1 | HC-HC-0039 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 18 | 3.60 |
| HC9138 | 1 | HC-CR-0001 | - | - | - | - | 3 | - | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 17 | 3.40 |
| HC9139 | 1 | HC-HC-0039 | - | - | - | - | 3 | - | - | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 20 | 4.00 |
| HC9140 | 1 | HC-HC-0037 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 2 | 3 | 3 | - | 14 | 2.80 |
| HC9142 | 1 | HC-HC-0040 | - | - | - | - | 3 | - | - | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 20 | 4.00 |
| HC9143 | 1 | HC-CR-0003 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 3 | 4 | 4 | - | 17 | 3.40 |
| HC9146 | 1 | HC-CR-0003 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 15 | 3.00 |
| HC9148 | 1 | HC-HC-0039 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 18 | 3.60 |
| HC9149 | 1 | HC-HC-0040 | - | - | - | - | 2 | - | - | - | - | - | - | - | - | 5 | - | 5 | 5 | 5 | - | 22 | 4.40 |
| HC9200 | 2 | HC-HC-0020 | 5 | 3 | 3 | 2 | 3 | - | - | - | - | - | - | 5 | 4 | 5 | - | 4 | 4 | 3 | - | 41 | 3.73 |
| HC9201 | 2 | HC-HC-0037 | 5 | 5 | 3 | 2 | 3 | - | - | - | - | - | - | 5 | 4 | 5 | - | - | - | - | - | 32 | 4.00 |
| HC9202 | 2 | HC-HC-0039 | 5 | 5 | 4 | 2 | 3 | - | - | - | - | - | - | 3 | 3 | 5 | - | - | - | - | - | 30 | 3.75 |
| HC9302 | 3 | HC-CR-0001 | 4 | 4 | 2 | 4 | 1 | - | - | - | - | - | - | 4 | 4 | 4 | - | - | - | - | - | 27 | 3.38 |
| HC9400 | 4 | HC-HC-0019 | - | - | - | - | 2 | - | - | 3 | 3 | 2 | - | - | - | - | - | 3 | 3 | 2 | - | 18 | 2.57 |
| HC9401 | 4 | HC-HC-0018 | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 1.00 |
| HC9500 | 5 | HC-HC-0026 | - | - | - | - | 5 | - | - | - | - | - | - | - | - | - | - | 3 | 3 | 3 | - | 14 | 3.50 |
| HC9501 | 5 | HC-HC-0028 | - | - | - | - | 3 | - | - | - | - | - | - | - | - | - | - | 3 | 3 | 3 | - | 12 | 3.00 |
| HC9502 | 5 | HC-HC-0028 | - | - | - | - | 4 | - | - | - | - | - | - | - | - | - | - | 2 | 3 | 3 | - | 12 | 3.00 |
| HC9503 | 5 | HC-FP-0001 | - | - | - | - | 2 | - | - | - | - | - | - | - | - | - | - | 4 | 4 | 4 | - | 14 | 3.50 |
| HC9505 | 5 | HC-HC-0035 | - | - | - | - | 4 | - | - | - | - | - | - | - | - | - | - | 3 | 4 | 4 | - | 15 | 3.75 |
| SU9001 | 0 | SU-FF-0001 | - | - | - | - | - | 3 | - | - | - | - | - | - | - | 5 | - | 2 | 2 | 2 | - | 14 | 2.80 |
| SU9002 | 0 | SU-RI-0003 | - | - | 2 | - | 2 | 3 | 1 | 1 | 1 | 1 | - | - | - | 5 | - | 4 | 4 | 4 | - | 28 | 2.55 |
| SU9005 | 0 | SU-SU-0026/27 | - | - | - | - | 1 | 3 | - | - | - | - | - | - | - | 5 | - | 4 | 3 | 3 | - | 19 | 3.17 |
| SU9007 | 0 | SU-FF-0002/03/04 | - | - | 3 | - | 1 | 5 | - | 1 | 1 | 1 | - | - | - | 5 | - | 5 | 5 | 5 | - | 32 | 3.20 |
| SU9100 | 1 | SU-SU-0008 | - | - | - | - | 2 | 4 | - | - | - | - | - | - | - | 5 | - | 3 | 4 | 4 | - | 22 | 3.67 |

*IMPACT INDICATOR SCORES*

| Project Number | Project Type | Subwatershed | Benthic | Fish Comm | Aquatic Habitat | Channel Morph | Instream Sediment | Hydrology | No Road Hazard | Magnitude Rd Hazard | Res. Bldg Haz | Non-Res Bldg Haz | Flood Complaints | Prot. RPA Riparian | Prot. Headwater Riparian | Prot. Wetl. | Prot. Nat Habitat | TSS | TN | TP | Ecoli | Sum | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SU9101 | 1 | SU-SU-0012 | - | - | - | - | 1 | 4 | - | - | - | - | - | - | - | 5 | - | 4 | 3 | 3 | - | 20 | 3.33 |
| SU9103 | 1 | SU-SU-0018 | - | - | - | - | 1 | 5 | - | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 23 | 3.83 |
| SU9105 | 1 | SU-SU-0013 | - | - | - | - | 1 | 5 | - | - | - | - | - | - | - | 5 | - | 4 | 3 | 4 | - | 22 | 3.67 |
| SU9106 | 1 | SU-SU-0021 | - | - | - | - | 1 | 4 | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 19 | 3.17 |
| SU9107 | 1 | SU-SU-0028 | - | - | - | - | 1 | 1 | - | - | - | - | - | - | - | 4 | - | 5 | 5 | 5 | - | 21 | 3.50 |
| SU9108 | 1 | SU-SU-0028 | - | - | - | - | 1 | 2 | - | - | - | - | - | - | - | 5 | - | 5 | 5 | 5 | - | 23 | 3.83 |
| SU9110 | 1 | SU-SU-0028 | - | - | - | - | 1 | 2 | - | - | - | - | - | - | - | 5 | - | 5 | 5 | 5 | - | 23 | 3.83 |
| SU9111 | 1 | SU-SU-0029 | - | - | - | - | 1 | 4 | - | - | - | - | - | - | - | 5 | - | 2 | 2 | 2 | - | 16 | 2.67 |
| SU9112 | 1 | SU-SU-0030 | - | - | - | - | 1 | 3 | - | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 21 | 3.50 |
| SU9115 | 1 | SU-MB-0001 | - | - | - | - | 2 | 3 | - | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 22 | 3.67 |
| SU9117 | 1 | SU-FL-0002 | - | - | - | - | 1 | 5 | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 4 | - | 21 | 3.50 |
| SU9118 | 1 | SU-FL-0001 | - | - | - | - | 1 | 4 | - | - | - | - | - | - | - | 5 | - | 3 | 4 | 4 | - | 21 | 3.50 |
| SU9120 | 1 | SU-SU-0032 | - | - | - | - | 2 | 4 | - | - | - | - | - | - | - | 5 | - | 4 | 3 | 4 | - | 22 | 3.67 |
| SU9121 | 1 | SU-FL-0002 | - | - | - | - | 1 | 5 | - | - | - | - | - | - | - | 5 | - | 4 | 3 | 3 | - | 21 | 3.50 |
| SU9122 | 1 | SU-FL-0002 | - | - | - | - | 1 | 5 | - | - | - | - | - | - | - | 5 | - | 3 | 2 | 3 | - | 19 | 3.17 |
| SU9123 | 1 | SU-FL-0003 | - | - | - | - | 1 | 3 | - | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 21 | 3.50 |
| SU9124 | 1 | SU-RI-0001 | - | - | - | - | 1 | 4 | - | - | - | - | - | - | - | 5 | - | 2 | 2 | 2 | - | 16 | 2.67 |
| SU9127 | 1 | SU-FL-0003 | - | - | - | - | 1 | 3 | - | - | - | - | - | - | - | 5 | - | 2 | 2 | 2 | - | 15 | 2.50 |
| SU9128 | 1 | SU-RI-0002 | - | - | - | - | 1 | 4 | - | - | - | - | - | - | - | 5 | - | 2 | 2 | 2 | - | 16 | 2.67 |
| SU9129 | 1 | SU-RI-0002 | - | - | - | - | 1 | 4 | - | - | - | - | - | - | - | 4 | - | 4 | 3 | 4 | - | 20 | 3.33 |
| SU9130 | 1 | SU-SU-0034 | - | - | - | - | 1 | 5 | - | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 23 | 3.83 |
| SU9133 | 1 | SU-FL-0006 | - | - | - | - | 1 | 5 | - | - | - | - | - | - | - | 5 | - | 2 | 3 | 3 | - | 19 | 3.17 |
| SU9135 | 1 | SU-SU-0039 | - | - | - | - | 1 | 4 | - | - | - | - | - | - | - | 5 | - | 3 | 2 | 3 | - | 18 | 3.00 |
| SU9136 | 1 | SU-SU-0039 | - | - | - | - | 2 | 5 | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 21 | 3.50 |
| SU9137 | 1 | SU-SU-0038 | - | - | - | - | 2 | 5 | - | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 24 | 4.00 |
| SU9138 | 1 | SU-FL-0008 | - | - | - | - | 2 | 5 | - | - | - | - | - | - | - | 5 | - | 2 | 2 | 2 | - | 18 | 3.00 |
| SU9139 | 1 | SU-SU-0040 | - | - | - | - | 1 | 4 | - | - | - | - | - | - | - | 5 | - | 4 | 3 | 4 | - | 21 | 3.50 |
| SU9140 | 1 | SU-SU-0041 | - | - | - | - | 3 | 5 | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 22 | 3.67 |
| SU9141 | 1 | SU-SU-0041 | - | - | - | - | 2 | 5 | - | - | - | - | - | - | - | 5 | - | 2 | 2 | 2 | - | 18 | 3.00 |
| SU9142 | 1 | SU-FL-0009 | - | - | - | - | 2 | 4 | - | - | - | - | - | - | - | 5 | - | 2 | 2 | 2 | - | 17 | 2.83 |
| SU9143 | 1 | SU-SU-0041 | - | - | - | - | 2 | 5 | - | - | - | - | - | - | - | 5 | - | 2 | 2 | 2 | - | 18 | 3.00 |

*IMPACT INDICATOR SCORES*

| Project Number | Project Type | Subwatershed | Benthic | Fish Comm | Aquatic Habitat | Channel Morph | Instream Sediment | Hydrology | No Road Hazard | Magnitude Rd Hazard | Res. Bldg Haz | Non-Res Bldg Haz | Flood Complaints | Prot. RPA Riparian | Prot. Headwater Riparian | Prot. Wetl. | Prot. Nat Habitat | TSS | TN | TP | Ecoli | Sum | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SU9144 | 1 | SU-SU-0037 | - | - | - | - | 1 | 3 | - | - | - | - | - | - | - | 5 | - | 4 | 4 | 4 | - | 21 | 3.50 |
| SU9146 | 1 | SU-SU-0041 | - | - | - | - | 3 | 5 | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 4 | - | 23 | 3.83 |
| SU9147 | 1 | SU-SU-0046 | - | - | - | - | 2 | 4 | - | - | - | - | - | - | - | 5 | - | 1 | 2 | 2 | - | 16 | 2.67 |
| SU9149 | 1 | SU-SU-0047 | 5 | 2 | 5 | 2 | 5 | 5 | - | - | - | - | - | - | 5 | 5 | - | 3 | 4 | 4 | - | 45 | 4.09 |
| SU9150 | 1 | SU-SU-0049 | - | - | - | - | 4 | 5 | - | - | - | - | - | - | - | 5 | - | 3 | 3 | 3 | - | 23 | 3.83 |
| SU9200 | 2 | SU-SU-0028 | 3 | 4 | 3 | 2 | 3 | 1 | - | - | - | - | - | 3 | - | 3 | - | 5 | 4 | 5 | - | 36 | 3.27 |
| SU9201 | 2 | SU-FL-0004 | 5 | 3 | 4 | 2 | 2 | 5 | - | - | - | - | - | 4 | - | 5 | - | 5 | 4 | 5 | - | 44 | 4.00 |
| SU9202 | 2 | SU-FL-0006 | 5 | 4 | 4 | 2 | 3 | 3 | - | - | - | - | - | - | 4 | 4 | - | 3 | 2 | 3 | - | 37 | 3.36 |
| SU9203 | 2 | SU-SU-0039 | 5 | 4 | 4 | 2 | 3 | 3 | - | - | - | - | - | - | 4 | 4 | - | 4 | 3 | 4 | - | 40 | 3.64 |
| SU9204 | 2 | SU-FL-0006 | 5 | 4 | 4 | 2 | 3 | 3 | - | - | - | - | - | - | 4 | 4 | - | 3 | 2 | 3 | - | 37 | 3.36 |
| SU9205 | 2 | SU-SU-0035 | 5 | 5 | 3 | 3 | 3 | 3 | - | - | - | - | - | 3 | - | 4 | - | 3 | 2 | 3 | - | 37 | 3.36 |
| SU9206 | 2 | SU-SU-0040 | 5 | 5 | 4 | 2 | 3 | 3 | - | - | - | - | - | 4 | - | 4 | - | 5 | 4 | 5 | - | 44 | 4.00 |
| SU9207 | 2 | SU-SU-0042 | 5 | 4 | 4 | 2 | 4 | 3 | - | - | - | - | - | 5 | - | 3 | - | 4 | 3 | 4 | - | 41 | 3.73 |
| SU9208 | 2 | SU-SU-0049 | 5 | 2 | 5 | 2 | 5 | 3 | - | - | - | - | - | - | 4 | 4 | - | 4 | 3 | 4 | - | 41 | 3.73 |
| SU9209 | 2 | SU-SU-0051 | 5 | 4 | 4 | 2 | 4 | 3 | - | - | - | - | - | - | 5 | 4 | - | 4 | 3 | 4 | - | 42 | 3.82 |
| SU9210 | 2 | SU-SU-0050 | 5 | 2 | 5 | 2 | 4 | 3 | - | - | - | - | - | - | 5 | 4 | - | 3 | 2 | 3 | - | 38 | 3.45 |
| SU9400 | 4 | SU-SU-0013 | - | - | 3 | - | 3 | 4 | 1 | 1 | 1 | 1 | - | - | - | - | - | 4 | 4 | 4 | - | 26 | 2.60 |
| SU9500 | 5 | SU-SU-0032 | - | - | - | - | - | 4 | - | - | - | - | - | - | - | 4 | - | 4 | 3 | 3 | - | 18 | 3.60 |
| SU9501 | 5 | SU-RI-0002 | - | - | - | - | - | 3 | - | - | - | - | - | - | - | 4 | - | 3 | 3 | 3 | - | 16 | 3.20 |
| SU9502 | 5 | SU-SU-0039 | - | - | - | - | - | 3 | - | - | - | - | - | - | - | 4 | - | 3 | 3 | 3 | - | 16 | 3.20 |
| SU9503 | 5 | SU-FL-0008 | - | - | - | - | - | 5 | - | - | - | - | - | - | - | 4 | - | 2 | 2 | 2 | - | 15 | 3.00 |
| SU9504 | 5 | SU-SU-0035 | - | - | - | - | - | 4 | - | - | - | - | - | - | - | 4 | - | 2 | 2 | 2 | - | 14 | 2.80 |
| SU9505 | 5 | SU-SU-0041 | - | - | - | - | - | 4 | - | - | - | - | - | - | - | 4 | - | 3 | 3 | 3 | - | 17 | 3.40 |
| SU9509 | 5 | SU-SU-0035 | - | - | - | - | - | 3 | - | - | - | - | - | - | - | 4 | - | 3 | 4 | 4 | - | 18 | 3.60 |
| SU9510 | 5 | SU-SU-0040 | - | - | - | - | - | 3 | - | - | - | - | - | - | - | 4 | - | 2 | 2 | 3 | - | 14 | 2.80 |
| SU9511 | 5 | SU-FL-0007 | - | - | - | - | - | 4 | - | - | - | - | - | - | - | 4 | - | 2 | 2 | 2 | - | 14 | 2.80 |
| SU9512 | 5 | SU-SU-0037 | - | - | - | - | - | 1 | - | - | - | - | - | - | - | 4 | - | 4 | 4 | 4 | - | 17 | 3.40 |
| SU9513 | 5 | SU-SU-0043 | - | - | - | - | - | 3 | - | - | - | - | - | - | - | 4 | - | 2 | 2 | 2 | - | 13 | 2.60 |
| SU9514 | 5 | SU-SU-0045 | - | - | - | - | - | 3 | - | - | - | - | - | - | - | 4 | - | 4 | 4 | 4 | - | 19 | 3.80 |
| SU9515 | 5 | SU-SU-0045 | - | - | - | - | - | 3 | - | - | - | - | - | - | - | 4 | - | 3 | 3 | 3 | - | 16 | 3.20 |

# **Appendix B**

Preliminary Project Scores
Based on Subwatershed Ranking
Source Indicator Scores

***SOURCE INDICATOR SCORES***

| Project Number | Project Type | Subwatershed | Total Imp | DCIA | Stream Bank Deficient | SW Outfalls | VPDES | Total Urban Area (%) | TSS | TN | TP | Septic | Channelized Pipes/Streams | Sum | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HC9007 | 0 | HC-CR-0002 | 3 | 5 | - | 5 | - | - | 4 | 4 | 4 | - | 1 | 26 | 3.71 |
| HC9013 | 0 | HC-CR-0004/05 | 3 | 4 | - | 5 | - | - | 5 | 5 | 5 | - | 5 | 32 | 4.57 |
| HC9100 | 1 | HC-HC-0018 | - | 3 | - | 3 | - | - | 2 | 2 | 2 | - | - | 12 | 2.40 |
| HC9101 | 1 | HC-HC-0017 | - | 4 | - | 2 | - | - | 2 | 2 | 2 | - | - | 12 | 2.40 |
| HC9102 | 1 | HC-HC-0026 | - | 5 | - | 4 | - | - | 2 | 4 | 2 | - | 2 | 19 | 3.17 |
| HC9103 | 1 | HC-HC-0025 | - | 4 | - | 3 | - | - | 4 | 4 | 4 | - | 1 | 20 | 3.33 |
| HC9104 | 1 | HC-MR-0002 | - | 5 | - | 5 | - | - | 3 | 2 | 3 | - | 1 | 19 | 3.17 |
| HC9105 | 1 | HC-MR-0003 | - | 4 | - | 4 | - | - | 2 | 2 | 3 | - | 4 | 19 | 3.17 |
| HC9106 | 1 | HC-FP-0001 | - | 4 | - | 5 | - | - | 4 | 4 | 4 | - | 3 | 24 | 4.00 |
| HC9107 | 1 | HC-MR-0004 | - | 5 | - | 5 | - | - | 4 | 4 | 4 | - | 5 | 27 | 4.50 |
| HC9108 | 1 | HC-HC-0028 | - | 5 | - | 4 | - | - | 2 | 2 | 3 | - | 5 | 21 | 3.50 |
| HC9109 | 1 | HC-FP-0002 | - | 4 | - | 5 | - | - | 3 | 3 | 3 | - | - | 18 | 3.60 |
| HC9110 | 1 | HC-MR-0004 | - | 5 | - | 4 | - | - | 2 | 2 | 3 | - | 4 | 20 | 3.33 |
| HC9111 | 1 | HC-FP-0004 | - | 4 | - | 5 | - | - | 3 | 3 | 3 | - | 4 | 22 | 3.67 |
| HC9113 | 1 | HC-HC-0028 | - | 5 | - | 4 | - | - | 3 | 4 | 3 | - | - | 19 | 3.80 |
| HC9114 | 1 | HC-FP-0004 | - | 4 | - | 5 | - | - | 5 | 4 | 5 | - | - | 23 | 4.60 |
| HC9115 | 1 | HC-HC-0028 | - | 5 | - | 4 | - | - | 3 | 3 | 3 | - | 5 | 23 | 3.83 |
| HC9116 | 1 | HC-FP-0003 | - | 4 | - | 5 | - | - | 3 | 3 | 3 | - | 4 | 22 | 3.67 |
| HC9117 | 1 | HC-FP-0004 | - | 4 | - | 5 | - | - | 3 | 3 | 3 | - | - | 18 | 3.60 |
| HC9118 | 1 | HC-HC-0030 | - | 4 | - | 5 | - | - | 3 | 3 | 3 | - | - | 18 | 3.60 |
| HC9119 | 1 | HC-FP-0005 | - | 4 | - | 4 | - | - | 3 | 3 | 3 | - | - | 17 | 3.40 |
| HC9121 | 5 | HC-HC-0030 | - | 5 | - | 5 | - | - | 3 | 2 | 3 | - | - | 18 | 3.60 |
| HC9122 | 1 | HC-HC-0030 | - | 4 | - | 5 | - | - | 4 | 4 | 5 | - | - | 22 | 4.40 |
| HC9123 | 1 | HC-HC-0030 | - | 4 | - | 5 | - | - | 3 | 3 | 3 | - | 5 | 23 | 3.83 |
| HC9124 | 1 | HC-FP-0005 | - | 4 | - | 5 | - | - | 4 | 5 | 4 | - | 4 | 26 | 4.33 |
| HC9125 | 1 | HC-HC-0031 | - | 5 | - | 4 | - | - | 4 | 3 | 3 | - | 2 | 21 | 3.50 |
| HC9126 | 1 | HC-HC-0034 | - | 4 | - | 5 | - | - | 3 | 2 | 2 | - | 4 | 20 | 3.33 |
| HC9127 | 1 | HC-FP-0003 | - | 3 | - | 5 | - | - | 3 | 3 | 3 | - | 4 | 21 | 3.50 |
| HC9128 | 1 | HC-HC-0031 | - | 4 | - | 4 | - | - | 4 | 4 | 4 | - | - | 20 | 4.00 |

***SOURCE INDICATOR SCORES***

| Project Number | Project Type | Subwatershed | Total Imp | DCIA | Stream Bank Deficient | SW Outfalls | VPDES | Total Urban Area (%) | TSS | TN | TP | Septic | Channelized Pipes/Streams | Sum | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HC9129 | 1 | HC-HC-0034 | - | 5 | - | 5 | - | - | 4 | 4 | 4 | - | 4 | 26 | 4.33 |
| HC9130 | 1 | HC-HC-0031 | - | 4 | - | 4 | - | - | 5 | 3 | 4 | - | - | 20 | 4.00 |
| HC9131 | 3 | HC-HC-0035 | - | 5 | - | 5 | - | - | 3 | 3 | 3 | - | 4 | 23 | 3.83 |
| HC9132 | 1 | HC-HC-0032 | - | 4 | - | 5 | - | - | 3 | 3 | 3 | - | - | 18 | 3.60 |
| HC9133 | 3 | HC-CR-0001 | - | 5 | - | 5 | - | - | 3 | 4 | 4 | - | 4 | 25 | 4.17 |
| HC9134 | 5 | HC-HC-0033 | - | 5 | - | 5 | - | - | 4 | 4 | 4 | - | 4 | 26 | 4.33 |
| HC9135 | 1 | HC-CR-0001 | - | 4 | - | 5 | - | - | 3 | 3 | 3 | - | 4 | 22 | 3.67 |
| HC9136 | 1 | HC-HC-0037 | - | 4 | - | 5 | - | - | 2 | 3 | 3 | - | 4 | 21 | 3.50 |
| HC9137 | 1 | HC-HC-0039 | - | 4 | - | 5 | - | - | 4 | 4 | 4 | - | 4 | 25 | 4.17 |
| HC9138 | 1 | HC-CR-0001 | - | 5 | - | 5 | - | - | 3 | 3 | 3 | - | 4 | 23 | 3.83 |
| HC9139 | 1 | HC-HC-0039 | - | 4 | - | 5 | - | - | 4 | 4 | 4 | - | 3 | 24 | 4.00 |
| HC9140 | 1 | HC-HC-0037 | - | 4 | - | 5 | - | - | 2 | 3 | 3 | - | 3 | 20 | 3.33 |
| HC9142 | 1 | HC-HC-0040 | - | 5 | - | 5 | - | - | 4 | 4 | 4 | - | 5 | 27 | 4.50 |
| HC9143 | 1 | HC-CR-0003 | - | 4 | - | 5 | - | - | 3 | 4 | 4 | - | 5 | 25 | 4.17 |
| HC9146 | 1 | HC-CR-0003 | - | 4 | - | 5 | - | - | 3 | 3 | 3 | - | 5 | 23 | 3.83 |
| HC9148 | 1 | HC-HC-0039 | - | 3 | - | 5 | - | - | 4 | 4 | 4 | - | 4 | 24 | 4.00 |
| HC9149 | 1 | HC-HC-0040 | - | 5 | - | 5 | - | - | 5 | 5 | 5 | - | 5 | 30 | 5.00 |
| HC9200 | 2 | HC-HC-0020 | - | - | 5 | 5 | - | - | 4 | 4 | 3 | - | 2 | 23 | 3.83 |
| HC9201 | 2 | HC-HC-0037 | - | - | 5 | 4 | - | - | - | - | - | - | 3 | 12 | 4.00 |
| HC9202 | 2 | HC-HC-0039 | - | - | 3 | 5 | - | - | - | - | - | - | 3 | 11 | 3.67 |
| HC9302 | 3 | HC-CR-0001 | 4 | 5 | 3 | 5 | - | - | - | - | - | - | 3 | 20 | 4.00 |
| HC9400 | 4 | HC-HC-0019 | - | - | - | 3 | - | - | 3 | 3 | 2 | - | 2 | 13 | 2.60 |
| HC9401 | 4 | HC-HC-0018 | - | - | - | 2 | - | - | - | - | - | - | 1 | 3 | 1.50 |
| HC9500 | 5 | HC-HC-0026 | 5 | 5 | - | 3 | - | - | 3 | 3 | 3 | - | - | 22 | 3.67 |
| HC9501 | 5 | HC-HC-0028 | 4 | 5 | - | 4 | - | - | 3 | 3 | 3 | - | - | 22 | 3.67 |
| HC9502 | 5 | HC-HC-0028 | 4 | 5 | - | 4 | - | - | 2 | 3 | 3 | - | - | 21 | 3.50 |
| HC9503 | 5 | HC-FP-0001 | 4 | 5 | - | 4 | - | - | 4 | 4 | 4 | - | - | 25 | 4.17 |
| HC9505 | 5 | HC-HC-0035 | 3 | 4 | - | 5 | - | - | 3 | 4 | 4 | - | 4 | 27 | 3.86 |
| SU9001 | 0 | SU-FF-0001 | 2 | 2 | - | 4 | - | - | 2 | 2 | 2 | - | 2 | 16 | 2.29 |

***SOURCE INDICATOR SCORES***

| Project Number | Project Type | Subwatershed | Total Imp | DCIA | Stream Bank Deficient | SW Outfalls | VPDES | Total Urban Area (%) | TSS | TN | TP | Septic | Channelized Pipes/Streams | Sum | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SU9002 | 0 | SU-RI-0003 | 2 | 2 | - | 5 | - | - | 4 | 4 | 4 | - | 4 | 25 | 3.57 |
| SU9005 | 0 | SU-SU-0026/27 | 3 | 3 | - | 5 | - | - | 4 | 3 | 3 | - | 5 | 26 | 3.71 |
| SU9007 | 0 | SU-FF-0002/03/04 | - | 2 | - | 5 | - | - | 5 | 5 | 5 | - | 3 | 25 | 4.17 |
| SU9100 | 1 | SU-SU-0008 | - | - | - | 4 | - | - | 3 | 4 | 4 | - | 3 | 18 | 3.60 |
| SU9101 | 1 | SU-SU-0012 | - | - | - | 3 | - | - | 4 | 3 | 3 | - | 3 | 16 | 3.20 |
| SU9103 | 1 | SU-SU-0018 | - | - | - | 2 | - | - | 4 | 4 | 4 | - | 3 | 17 | 3.40 |
| SU9105 | 1 | SU-SU-0013 | - | - | - | 3 | - | - | 4 | 3 | 4 | - | 1 | 15 | 3.00 |
| SU9106 | 1 | SU-SU-0021 | - | - | - | 5 | - | - | 3 | 3 | 3 | - | 3 | 17 | 3.40 |
| SU9107 | 1 | SU-SU-0028 | 4 | 4 | - | 2 | - | - | 5 | 5 | 5 | - | 4 | 29 | 4.14 |
| SU9108 | 1 | SU-SU-0028 | - | - | - | 2 | - | - | 5 | 5 | 5 | - | 4 | 21 | 4.20 |
| SU9110 | 1 | SU-SU-0028 | - | - | - | 2 | - | - | 5 | 5 | 5 | - | 4 | 21 | 4.20 |
| SU9111 | 1 | SU-SU-0029 | - | - | - | 5 | - | - | 2 | 2 | 2 | - | 3 | 14 | 2.80 |
| SU9112 | 1 | SU-SU-0030 | - | - | - | 5 | - | - | 4 | 4 | 4 | - | 5 | 22 | 4.40 |
| SU9115 | 1 | SU-MB-0001 | - | - | - | 2 | - | - | 4 | 4 | 4 | - | 3 | 17 | 3.40 |
| SU9117 | 1 | SU-FL-0002 | - | - | - | 4 | - | - | 3 | 3 | 4 | - | 5 | 19 | 3.80 |
| SU9118 | 1 | SU-FL-0001 | 3 | 4 | - | 5 | - | - | 3 | 4 | 4 | - | 5 | 28 | 4.00 |
| SU9120 | 1 | SU-SU-0032 | 3 | 3 | - | 5 | - | - | 4 | 3 | 4 | - | 5 | 27 | 3.86 |
| SU9121 | 1 | SU-FL-0002 | 4 | 4 | - | 4 | - | - | 4 | 3 | 3 | - | 4 | 26 | 3.71 |
| SU9122 | 1 | SU-FL-0002 | 4 | 4 | - | 5 | - | - | 3 | 2 | 3 | - | 4 | 25 | 3.57 |
| SU9123 | 1 | SU-FL-0003 | 3 | 4 | - | 4 | - | - | 4 | 4 | 4 | - | 2 | 25 | 3.57 |
| SU9124 | 1 | SU-RI-0001 | 3 | 3 | - | 5 | - | - | 2 | 2 | 2 | - | 3 | 20 | 2.86 |
| SU9127 | 1 | SU-FL-0003 | 3 | 4 | - | 4 | - | - | 2 | 2 | 2 | - | 2 | 19 | 2.71 |
| SU9128 | 1 | SU-RI-0002 | 4 | 4 | - | 5 | - | - | 2 | 2 | 2 | - | 1 | 20 | 2.86 |
| SU9129 | 1 | SU-RI-0002 | - | - | - | 5 | - | - | 4 | 3 | 4 | - | 2 | 18 | 3.60 |
| SU9130 | 1 | SU-SU-0034 | 4 | 5 | - | 3 | - | - | 4 | 4 | 4 | - | 1 | 25 | 3.57 |
| SU9133 | 1 | SU-FL-0006 | - | - | - | 4 | - | - | 2 | 3 | 3 | - | 3 | 15 | 3.00 |
| SU9135 | 1 | SU-SU-0039 | 4 | 4 | - | 5 | - | - | 3 | 2 | 3 | - | 2 | 23 | 3.29 |
| SU9136 | 1 | SU-SU-0039 | 4 | 4 | - | 5 | - | - | 3 | 3 | 3 | - | 1 | 23 | 3.29 |
| SU9137 | 1 | SU-SU-0038 | - | - | - | 3 | - | - | 4 | 4 | 4 | - | 3 | 18 | 3.60 |

*SOURCE INDICATOR SCORES*

| Project Number | Project Type | Subwatershed | Total Imp | DCIA | Stream Bank Deficient | SW Outfalls | VPDES | Total Urban Area (%) | TSS | TN | TP | Septic | Channelized Pipes/Streams | Sum | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SU9138 | 1 | SU-FL-0008 | - | - | - | 3 | - | - | 2 | 2 | 2 | - | 3 | 12 | 2.40 |
| SU9139 | 1 | SU-SU-0040 | 4 | 4 | - | 1 | - | - | 4 | 3 | 4 | - | 3 | 23 | 3.29 |
| SU9140 | 1 | SU-SU-0041 | 5 | 5 | - | 4 | - | - | 3 | 3 | 3 | - | 3 | 26 | 3.71 |
| SU9141 | 1 | SU-SU-0041 | - | - | - | 4 | - | - | 2 | 2 | 2 | - | 3 | 13 | 2.60 |
| SU9142 | 1 | SU-FL-0009 | - | - | - | 2 | - | - | 2 | 2 | 2 | - | 3 | 11 | 2.20 |
| SU9143 | 1 | SU-SU-0041 | - | - | - | 4 | - | - | 2 | 2 | 2 | - | 3 | 13 | 2.60 |
| SU9144 | 1 | SU-SU-0037 | - | - | - | 5 | - | - | 4 | 4 | 4 | - | 4 | 21 | 4.20 |
| SU9146 | 1 | SU-SU-0041 | - | - | - | 4 | - | - | 3 | 3 | 4 | - | 3 | 17 | 3.40 |
| SU9147 | 1 | SU-SU-0046 | - | - | - | 4 | - | - | 1 | 2 | 2 | - | 4 | 13 | 2.60 |
| SU9149 | 1 | SU-SU-0047 | - | - | - | 5 | - | - | 3 | 4 | 4 | - | 5 | 21 | 4.20 |
| SU9150 | 1 | SU-SU-0049 | - | - | - | 4 | - | - | 3 | 3 | 3 | - | 5 | 18 | 3.60 |
| SU9200 | 2 | SU-SU-0028 | - | - | 5 | 2 | - | - | 5 | 4 | 5 | - | 4 | 25 | 4.17 |
| SU9201 | 2 | SU-FL-0004 | - | - | 4 | 3 | - | - | 5 | 4 | 5 | - | 4 | 25 | 4.17 |
| SU9202 | 2 | SU-FL-0006 | - | - | 4 | 3 | - | - | 3 | 2 | 3 | - | 3 | 18 | 3.00 |
| SU9203 | 2 | SU-SU-0039 | 5 | 5 | 4 | 5 | - | - | 4 | 3 | 4 | - | 2 | 32 | 4.00 |
| SU9204 | 2 | SU-FL-0006 | 3 | 3 | 4 | 4 | - | - | 3 | 2 | 3 | - | 4 | 26 | 3.25 |
| SU9205 | 2 | SU-SU-0035 | 4 | 5 | 5 | 5 | - | - | 3 | 2 | 3 | - | 4 | 31 | 3.88 |
| SU9206 | 2 | SU-SU-0040 | 4 | 4 | 5 | 2 | - | - | 5 | 4 | 5 | - | 4 | 33 | 4.13 |
| SU9207 | 2 | SU-SU-0042 | 4 | 4 | 2 | 2 | - | - | 4 | 3 | 4 | - | 4 | 27 | 3.38 |
| SU9208 | 2 | SU-SU-0049 | 5 | 5 | 4 | 4 | - | - | 4 | 3 | 4 | - | 5 | 34 | 4.25 |
| SU9209 | 2 | SU-SU-0051 | 4 | 4 | 5 | 5 | - | - | 4 | 3 | 4 | - | 4 | 33 | 4.13 |
| SU9210 | 2 | SU-SU-0050 | 4 | 5 | 5 | 3 | - | - | 3 | 2 | 3 | - | 5 | 30 | 3.75 |
| SU9400 | 4 | SU-SU-0013 | 2 | 3 | - | 2 | - | - | 4 | 4 | 4 | - | 1 | 20 | 2.86 |
| SU9500 | 5 | SU-SU-0032 | 3 | 3 | - | 5 | - | - | 4 | 3 | 3 | - | 4 | 25 | 3.57 |
| SU9501 | 5 | SU-RI-0002 | 4 | 4 | - | 5 | - | - | 3 | 3 | 3 | - | 1 | 23 | 3.29 |
| SU9502 | 5 | SU-SU-0039 | 5 | 5 | - | 5 | - | - | 3 | 3 | 3 | - | 1 | 25 | 3.57 |
| SU9503 | 5 | SU-FL-0008 | 5 | 5 | - | 2 | - | - | 2 | 2 | 2 | - | 3 | 21 | 3.00 |
| SU9504 | 5 | SU-SU-0035 | 3 | 5 | - | 5 | - | - | 2 | 2 | 2 | - | 5 | 24 | 3.43 |
| SU9505 | 5 | SU-SU-0041 | 5 | 5 | - | 3 | - | - | 3 | 3 | 3 | - | 3 | 25 | 3.57 |

***SOURCE INDICATOR SCORES***

| Project Number | Project Type | Subwatershed | Total Imp | DCIA | Stream Bank Deficient | SW Outfalls | VPDES | Total Urban Area (%) | TSS | TN | TP | Septic | Channelized Pipes/Streams | Sum | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SU9509 | 5 | SU-SU-0035 | 3 | 5 | - | 5 | - | - | 3 | 4 | 4 | - | 4 | 28 | 4.00 |
| SU9510 | 5 | SU-SU-0040 | 4 | 5 | - | 1 | - | - | 2 | 2 | 3 | - | 3 | 20 | 2.86 |
| SU9511 | 5 | SU-FL-0007 | 3 | 5 | - | 4 | - | - | 2 | 2 | 2 | - | 1 | 19 | 2.71 |
| SU9512 | 5 | SU-SU-0037 | 4 | 5 | - | 4 | - | - | 4 | 4 | 4 | - | 4 | 29 | 4.14 |
| SU9513 | 5 | SU-SU-0043 | 5 | 5 | - | 3 | - | - | 2 | 2 | 2 | - | 2 | 21 | 3.00 |
| SU9514 | 5 | SU-SU-0045 | 5 | 5 | - | 5 | - | - | 4 | 4 | 4 | - | 5 | 32 | 4.57 |
| SU9515 | 5 | SU-SU-0045 | 5 | 5 | - | 4 | - | - | 3 | 3 | 3 | - | 5 | 28 | 4.00 |

# Appendix C

Preliminary Project Scores
Based on Location within Priority Subwatersheds

| *Priority Subwatersheds* | | Future w/o Project Score | Preliminary Project Score | FXB Adjustment (+1, 0, -1) | County Adjustment (+/-) | Applied Score |
|---|---|---|---|---|---|---|
| **Project Number** | **Subwatershed** | | | | | |
| HC9007 | HC-CR-0002 | 4.83 | 3 | | | 3 |
| HC9013 | HC-CR-0004/05 | 6.00 | 2 | | | 2 |
| HC9100 | HC-HC-0018 | 5.73 | 2 | | | 2 |
| HC9101 | HC-HC-0017 | 4.83 | 3 | | | 3 |
| HC9102 | HC-HC-0026 | 4.24 | 5 | | | 5 |
| HC9103 | HC-HC-0025 | 5.68 | 2 | | | 2 |
| HC9104 | HC-MR-0002 | 6.13 | 2 | | | 2 |
| HC9105 | HC-MR-0003 | 6.43 | 1 | | | 1 |
| HC9106 | HC-FP-0001 | 4.74 | 4 | | | 4 |
| HC9107 | HC-MR-0004 | 6.43 | 1 | | | 1 |
| HC9108 | HC-HC-0028 | 6.14 | 1 | | | 1 |
| HC9109 | HC-FP-0002 | 5.49 | 2 | | | 2 |
| HC9110 | HC-MR-0004 | 6.43 | 1 | | | 1 |
| HC9111 | HC-FP-0004 | 4.99 | 3 | | | 3 |
| HC9113 | HC-HC-0028 | 6.14 | 1 | | | 1 |
| HC9114 | HC-FP-0004 | 4.99 | 3 | | | 3 |
| HC9115 | HC-HC-0028 | 6.14 | 1 | | | 1 |
| HC9116 | HC-FP-0003 | 5.76 | 2 | | | 2 |
| HC9117 | HC-FP-0004 | 4.99 | 3 | | | 3 |
| HC9118 | HC-HC-0030 | 4.74 | 4 | | | 4 |
| HC9119 | HC-FP-0005 | 4.83 | 3 | | | 3 |
| HC9121 | HC-HC-0030 | 4.74 | 4 | | | 4 |
| HC9122 | HC-HC-0030 | 4.74 | 4 | | | 4 |
| HC9123 | HC-HC-0030 | 4.74 | 4 | | | 4 |
| HC9124 | HC-FP-0005 | 4.83 | 3 | | | 3 |
| HC9125 | HC-HC-0031 | 5.20 | 3 | | | 3 |
| HC9126 | HC-HC-0034 | 5.15 | 3 | | | 3 |
| HC9127 | HC-FP-0003 | 5.76 | 2 | | | 2 |
| HC9128 | HC-HC-0031 | 5.20 | 3 | | | 3 |
| HC9129 | HC-HC-0034 | 5.15 | 3 | | | 3 |
| HC9130 | HC-HC-0031 | 5.20 | 3 | | | 3 |
| HC9131 | HC-HC-0035 | 6.19 | 1 | | | 1 |
| HC9132 | HC-HC-0032 | 4.24 | 5 | | | 5 |
| HC9133 | HC-CR-0001 | 4.72 | 4 | | | 4 |
| HC9134 | HC-HC-0033 | 7.97 | 1 | | | 1 |
| HC9135 | HC-CR-0001 | 4.72 | 4 | | | 4 |
| HC9136 | HC-HC-0037 | 6.51 | 1 | | | 1 |
| HC9137 | HC-HC-0039 | 5.65 | 2 | | | 2 |
| HC9138 | HC-CR-0001 | 4.72 | 4 | | | 4 |
| HC9139 | HC-HC-0039 | 5.65 | 2 | | | 2 |
| HC9140 | HC-HC-0037 | 6.51 | 1 | | | 1 |
| HC9142 | HC-HC-0040 | 6.03 | 2 | | | 2 |
| HC9143 | HC-CR-0003 | 4.24 | 5 | | | 5 |
| HC9146 | HC-CR-0003 | 4.24 | 5 | | | 5 |
| HC9148 | HC-HC-0039 | 5.65 | 2 | | | 2 |

| *Priority Subwatersheds* | | Future w/o Project Score | Preliminary Project Score | FXB Adjustment (+1, 0, -1) | County Adjustment (+/-) | Applied Score |
|---|---|---|---|---|---|---|
| **Project Number** | **Subwatershed** | | | | | |
| HC9149 | HC-HC-0040 | 6.03 | 2 | | | 2 |
| HC9200 | HC-HC-0020 | 3.78 | 5 | | | 5 |
| HC9201 | HC-HC-0037 | 6.51 | 1 | | | 1 |
| HC9202 | HC-HC-0039 | 5.65 | 2 | | | 2 |
| HC9302 | HC-CR-0001 | 4.72 | 4 | | | 4 |
| HC9400 | HC-HC-0019 | 4.27 | 5 | | | 5 |
| HC9401 | HC-HC-0018 | 5.73 | 2 | | | 2 |
| HC9500 | HC-HC-0026 | 4.24 | 5 | | | 5 |
| HC9501 | HC-HC-0028 | 6.14 | 1 | | | 1 |
| HC9502 | HC-HC-0028 | 6.14 | 1 | | | 1 |
| HC9503 | HC-FP-0001 | 4.74 | 4 | | | 4 |
| HC9505 | HC-HC-0035 | 6.19 | 1 | | | 1 |
| SU9001 | SU-FF-0001 | 4.32 | 4 | | | 4 |
| SU9002 | SU-RI-0003 | 6.08 | 2 | | | 2 |
| SU9005 | SU-SU-0026/27 | 4.91 | 3 | | | 3 |
| SU9007 | SU-FF-0002/03/04 | 4.83 | 3 | | | 3 |
| SU9100 | SU-SU-0008 | 7.17 | 1 | | | 1 |
| SU9101 | SU-SU-0012 | 7.17 | 1 | | | 1 |
| SU9103 | SU-SU-0018 | 6.34 | 1 | | | 1 |
| SU9105 | SU-SU-0013 | 7.09 | 1 | | | 1 |
| SU9106 | SU-SU-0021 | 6.51 | 1 | | | 1 |
| SU9107 | SU-SU-0028 | 5.36 | 2 | | | 2 |
| SU9108 | SU-SU-0028 | 5.36 | 2 | | | 2 |
| SU9110 | SU-SU-0028 | 5.36 | 2 | | | 2 |
| SU9111 | SU-SU-0029 | 6.43 | 1 | | | 1 |
| SU9112 | SU-SU-0030 | 5.23 | 3 | | | 3 |
| SU9115 | SU-MB-0001 | 7.23 | 1 | | | 1 |
| SU9117 | SU-FL-0002 | 4.48 | 4 | | | 4 |
| SU9118 | SU-FL-0001 | 4.24 | 5 | | | 5 |
| SU9120 | SU-SU-0032 | 4.56 | 4 | | | 4 |
| SU9121 | SU-FL-0002 | 4.48 | 4 | | | 4 |
| SU9122 | SU-FL-0002 | 4.48 | 4 | | | 4 |
| SU9123 | SU-FL-0003 | 7.57 | 1 | | | 1 |
| SU9124 | SU-RI-0001 | 4.32 | 4 | | | 4 |
| SU9127 | SU-FL-0003 | 7.57 | 1 | | | 1 |
| SU9128 | SU-RI-0002 | 6.59 | 1 | | | 1 |
| SU9129 | SU-RI-0002 | 6.59 | 1 | | | 1 |
| SU9130 | SU-SU-0034 | 3.92 | 5 | | | 5 |
| SU9133 | SU-FL-0006 | 5.07 | 3 | | | 3 |
| SU9135 | SU-SU-0039 | 4.32 | 4 | | | 4 |
| SU9136 | SU-SU-0039 | 4.32 | 4 | | | 4 |
| SU9137 | SU-SU-0038 | 5.15 | 3 | | | 3 |
| SU9138 | SU-FL-0008 | 4.78 | 4 | | | 4 |
| SU9139 | SU-SU-0040 | 3.94 | 5 | | | 5 |
| SU9140 | SU-SU-0041 | 4.16 | 5 | | | 5 |

| *Priority Subwatersheds* | | Future w/o Project Score | Preliminary Project Score | FXB Adjustment (+1, 0, -1) | County Adjustment (+/-) | Applied Score |
|---|---|---|---|---|---|---|
| **Project Number** | **Subwatershed** | | | | | |
| SU9141 | SU-SU-0041 | 4.16 | 5 | | | 5 |
| SU9142 | SU-FL-0009 | 4.75 | 4 | | | 4 |
| SU9143 | SU-SU-0041 | 4.16 | 5 | | | 5 |
| SU9144 | SU-SU-0037 | 5.44 | 2 | | | 2 |

| *Priority Subwatersheds* | | Future w/o Project Score | Preliminary Project Score | FXB Adjustment (+1, 0, -1) | County Adjustment (+/-) | Applied Score |
|---|---|---|---|---|---|---|
| **Project Number** | **Subwatershed** | | | | | |
| SU9146 | SU-SU-0041 | 4.16 | 5 | | | 5 |
| SU9147 | SU-SU-0046 | 4.11 | 5 | | | 5 |
| SU9149 | SU-SU-0047 | 6.03 | 2 | | | 2 |
| SU9150 | SU-SU-0049 | 4.66 | 4 | | | 4 |
| SU9200 | SU-SU-0028 | 5.36 | 2 | | | 2 |
| SU9201 | SU-FL-0004 | 4.07 | 5 | | | 5 |
| SU9202 | SU-FL-0006 | 5.07 | 3 | | | 3 |
| SU9203 | SU-SU-0039 | 4.32 | 4 | | | 4 |
| SU9204 | SU-FL-0006 | 5.07 | 3 | | | 3 |
| SU9205 | SU-SU-0035 | 5.26 | 3 | | | 3 |
| SU9206 | SU-SU-0040 | 3.94 | 5 | | | 5 |
| SU9207 | SU-SU-0042 | 4.03 | 5 | | | 5 |
| SU9208 | SU-SU-0049 | 4.66 | 4 | | | 4 |
| SU9209 | SU-SU-0051 | 5.57 | 2 | | | 2 |
| SU9210 | SU-SU-0050 | 4.32 | 4 | | | 4 |
| SU9400 | SU-SU-0013 | 7.09 | 1 | | | 1 |
| SU9500 | SU-SU-0032 | 4.56 | 4 | | | 4 |
| SU9501 | SU-RI-0002 | 6.59 | 1 | | | 1 |
| SU9502 | SU-SU-0039 | 4.32 | 4 | | | 4 |
| SU9503 | SU-FL-0008 | 4.78 | 4 | | | 4 |
| SU9504 | SU-SU-0035 | 5.26 | 3 | | | 3 |
| SU9505 | SU-SU-0041 | 4.16 | 5 | | | 5 |
| SU9509 | SU-SU-0035 | 5.26 | 3 | | | 3 |
| SU9510 | SU-SU-0040 | 3.94 | 5 | | | 5 |
| SU9511 | SU-FL-0007 | 4.70 | 4 | | | 4 |
| SU9512 | SU-SU-0037 | 5.44 | 2 | | | 2 |
| SU9513 | SU-SU-0043 | 4.16 | 5 | | | 5 |
| SU9514 | SU-SU-0045 | 3.79 | 5 | | | 5 |
| SU9515 | SU-SU-0045 | 3.79 | 5 | | | 5 |

# Appendix D

Preliminary Project Scores
Based on Sequencing

| *Sequencing* | | Sequence Number | Preliminary Project Score | FXB Adjustment | County Adjustment (+/-) | Applied Score |
|---|---|---|---|---|---|---|
| **Project Number** | **Subwatershed** | | | | | |
| HC9007 | HC-CR-0002 | 1 | 5 | | | 5 |
| HC9013 | HC-CR-0004/05 | 1 | 5 | | | 5 |
| HC9100 | HC-HC-0018 | 1 | 5 | | | 5 |
| HC9101 | HC-HC-0017 | 1 | 5 | | | 5 |
| HC9102 | HC-HC-0026 | 1 | 5 | | | 5 |
| HC9103 | HC-HC-0025 | 8 | 1 | | | 1 |
| HC9104 | HC-MR-0002 | 3 | 3 | | | 3 |
| HC9105 | HC-MR-0003 | 2 | 3 | | | 3 |
| HC9106 | HC-FP-0001 | 4 | 1 | 3 | | 3 |
| HC9107 | HC-MR-0004 | 1 | 5 | | | 5 |
| HC9108 | HC-HC-0028 | 6 | 1 | 4 | | 4 |
| HC9109 | HC-FP-0002 | 1 | 5 | | | 5 |
| HC9110 | HC-MR-0004 | 1 | 5 | | | 5 |
| HC9111 | HC-FP-0004 | 3 | 3 | | | 3 |
| HC9113 | HC-HC-0028 | 6 | 1 | | | 1 |
| HC9114 | HC-FP-0004 | 3 | 3 | 1 | | 1 |
| HC9115 | HC-HC-0028 | 6 | 1 | 2 | | 2 |
| HC9116 | HC-FP-0003 | 1 | 5 | | | 5 |
| HC9117 | HC-FP-0004 | 3 | 3 | 1 | | 1 |
| HC9118 | HC-HC-0030 | 1 | 5 | | | 5 |
| HC9119 | HC-FP-0005 | 2 | 3 | 1 | | 1 |
| HC9121 | HC-HC-0030 | 1 | 5 | | | 5 |
| HC9122 | HC-HC-0030 | 1 | 5 | | | 5 |
| HC9123 | HC-HC-0030 | 1 | 5 | | | 5 |
| HC9124 | HC-FP-0005 | 2 | 3 | 1 | | 1 |
| HC9125 | HC-HC-0031 | 5 | 1 | 3 | | 3 |
| HC9126 | HC-HC-0034 | 1 | 5 | | | 5 |
| HC9127 | HC-FP-0003 | 1 | 5 | | | 5 |
| HC9128 | HC-HC-0031 | 5 | 1 | 3 | | 3 |
| HC9129 | HC-HC-0034 | 1 | 5 | | | 5 |
| HC9130 | HC-HC-0031 | 5 | 1 | 2 | | 2 |
| HC9131 | HC-HC-0035 | 4 | 1 | 2 | | 2 |
| HC9132 | HC-HC-0032 | 2 | 3 | | | 3 |
| HC9133 | HC-CR-0001 | 3 | 3 | 1 | | 1 |
| HC9134 | HC-HC-0033 | 1 | 5 | | | 5 |
| HC9135 | HC-CR-0001 | 3 | 3 | 2 | | 2 |
| HC9136 | HC-HC-0037 | 1 | 5 | | | 5 |
| HC9137 | HC-HC-0039 | 2 | 3 | | | 3 |
| HC9138 | HC-CR-0001 | 3 | 3 | 2 | | 2 |
| HC9139 | HC-HC-0039 | 2 | 3 | 1 | | 1 |

| *Sequencing* | | Sequence Number | Preliminary Project Score | FXB Adjustment | County Adjustment (+/-) | Applied Score |
|---|---|---|---|---|---|---|
| **Project Number** | **Subwatershed** | | | | | |
| HC9140 | HC-HC-0037 | 1 | 5 | | | 5 |
| HC9142 | HC-HC-0040 | 1 | 5 | | | 5 |
| HC9143 | HC-CR-0003 | 2 | 3 | 1 | | 1 |
| HC9146 | HC-CR-0003 | 2 | 3 | 1 | | 1 |
| HC9148 | HC-HC-0039 | 2 | 3 | 1 | | 1 |
| HC9149 | HC-HC-0040 | 1 | 5 | | | 5 |
| HC9200 | HC-HC-0020 | 2 | 3 | | | 3 |
| HC9201 | HC-HC-0037 | 1 | 5 | | | 5 |
| HC9202 | HC-HC-0039 | 2 | 3 | | | 3 |
| HC9302 | HC-CR-0001 | 3 | 3 | 2 | | 2 |
| HC9400 | HC-HC-0019 | 3 | 3 | | | 3 |
| HC9401 | HC-HC-0018 | 1 | 5 | | | 5 |
| HC9500 | HC-HC-0026 | 1 | 5 | | | 5 |
| HC9501 | HC-HC-0028 | 6 | 1 | | | 1 |
| HC9502 | HC-HC-0028 | 6 | 1 | 1 | | 1 |
| HC9503 | HC-FP-0001 | 4 | 1 | 1 | | 1 |
| HC9505 | HC-HC-0035 | 4 | 1 | 1 | | 1 |
| SU9001 | SU-FF-0001 | 3 | 3 | | | 3 |
| SU9002 | SU-RI-0003 | 1 | 5 | | | 5 |
| SU9005 | SU-SU-0026/27 | 2 | 3 | | | 3 |
| SU9007 | SU-FF-0002/03/04 | 2 | 3 | | | 3 |
| SU9100 | SU-SU-0008 | 1 | 5 | | | 5 |
| SU9101 | SU-SU-0012 | 1 | 5 | | | 5 |
| SU9103 | SU-SU-0018 | 1 | 5 | | | 5 |
| SU9105 | SU-SU-0013 | 1 | 5 | | | 5 |
| SU9106 | SU-SU-0021 | 1 | 5 | | | 5 |
| SU9107 | SU-SU-0028 | 12 | 1 | | | 1 |
| SU9108 | SU-SU-0028 | 12 | 1 | 2 | | 2 |
| SU9110 | SU-SU-0028 | 12 | 1 | 3 | | 3 |
| SU9111 | SU-SU-0029 | 1 | 5 | | | 5 |
| SU9112 | SU-SU-0030 | 11 | 1 | | | 1 |
| SU9115 | SU-MB-0001 | 3 | 3 | 3 | | 3 |
| SU9117 | SU-FL-0002 | 4 | 1 | 3 | | 3 |
| SU9118 | SU-FL-0001 | 5 | 1 | | | 1 |
| SU9120 | SU-SU-0032 | 9 | 1 | 2 | | 2 |
| SU9121 | SU-FL-0002 | 4 | 1 | | | 1 |
| SU9122 | SU-FL-0002 | 4 | 1 | 3 | | 3 |
| SU9123 | SU-FL-0003 | 1 | 5 | | | 5 |
| SU9124 | SU-RI-0001 | 2 | 3 | | | 3 |
| SU9127 | SU-FL-0003 | 1 | 5 | | | 5 |

| *Sequencing* | | Sequence Number | Preliminary Project Score | FXB Adjustment | County Adjustment (+/-) | Applied Score |
|---|---|---|---|---|---|---|
| **Project Number** | **Subwatershed** | | | | | |
| SU9128 | SU-RI-0002 | 1 | 5 | | | 5 |
| SU9129 | SU-RI-0002 | 1 | 5 | | | 5 |
| SU9130 | SU-SU-0034 | 1 | 5 | | | 5 |
| SU9133 | SU-FL-0006 | 2 | 3 | 4 | | 4 |
| SU9135 | SU-SU-0039 | 1 | 5 | | | 5 |
| SU9136 | SU-SU-0039 | 1 | 5 | | | 5 |
| SU9137 | SU-SU-0038 | 7 | 1 | | | 1 |
| SU9138 | SU-FL-0008 | 2 | 3 | | | 3 |
| SU9139 | SU-SU-0040 | 6 | 1 | 3 | | 3 |
| SU9140 | SU-SU-0041 | 1 | 5 | | | 5 |
| SU9141 | SU-SU-0041 | 1 | 5 | | | 5 |
| SU9142 | SU-FL-0009 | 1 | 5 | | | 5 |
| SU9143 | SU-SU-0041 | 1 | 5 | | | 5 |
| SU9144 | SU-SU-0037 | 1 | 5 | | | 5 |
| SU9146 | SU-SU-0041 | 1 | 5 | | | 5 |
| SU9147 | SU-SU-0046 | 1 | 5 | | | 5 |
| SU9149 | SU-SU-0047 | 1 | 5 | | | 5 |
| SU9150 | SU-SU-0049 | 2 | 3 | 3 | | 3 |
| SU9200 | SU-SU-0028 | 12 | 1 | | | 1 |
| SU9201 | SU-FL-0004 | 3 | 3 | | | 3 |
| SU9202 | SU-FL-0006 | 2 | 3 | | | 3 |
| SU9203 | SU-SU-0039 | 1 | 5 | | | 5 |
| SU9204 | SU-FL-0006 | 2 | 3 | 4 | | 4 |
| SU9205 | SU-SU-0035 | 2 | 3 | | | 3 |
| SU9206 | SU-SU-0040 | 6 | 1 | | | 1 |
| SU9207 | SU-SU-0042 | 5 | 1 | | | 1 |
| SU9208 | SU-SU-0049 | 2 | 3 | 4 | | 4 |
| SU9209 | SU-SU-0051 | 1 | 5 | | | 5 |
| SU9210 | SU-SU-0050 | 1 | 5 | | | 5 |
| SU9400 | SU-SU-0013 | 1 | 5 | | | 5 |
| SU9500 | SU-SU-0032 | 9 | 1 | 3 | | 3 |
| SU9501 | SU-RI-0002 | 1 | 5 | | | 5 |
| SU9502 | SU-SU-0039 | 1 | 5 | | | 5 |
| SU9503 | SU-FL-0008 | 2 | 3 | | | 3 |
| SU9504 | SU-SU-0035 | 2 | 3 | 4 | | 4 |
| SU9505 | SU-SU-0041 | 1 | 5 | | | 5 |
| SU9509 | SU-SU-0035 | 2 | 3 | 4 | | 4 |
| SU9510 | SU-SU-0040 | 6 | 1 | 3 | | 3 |
| SU9511 | SU-FL-0007 | 1 | 5 | | | 5 |
| SU9512 | SU-SU-0037 | 1 | 5 | | | 5 |

| *Sequencing* | | Sequence Number | Preliminary Project Score | FXB Adjustment | County Adjustment (+/-) | Applied Score |
|---|---|---|---|---|---|---|
| **Project Number** | **Subwatershed** | | | | | |
| SU9513 | SU-SU-0043 | 4 | 1 | 3 | | 3 |
| SU9514 | SU-SU-0045 | 1 | 5 | | | 5 |
| SU9515 | SU-SU-0045 | 1 | 5 | | | 5 |

# Appendix E

Preliminary Project Scores
Based on Implementability

| *Implementability* | | Initial Score based on Ownership | Is there an Existing DPs / WPs? (Yes = +1) | Adjusted Score for County Maintained WP or DP (Init Score / 2) | Preliminary Project Score | FXB Adjustment | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|
| **Project Number** | **Subwatershed** | | | | | | | |
| HC9007 | HC-CR-0002 | 14 | 0 | 14.0 | 1 | | | 1 |
| HC9013 | HC-CR-0004/05 | 51 | 1 | 25.5 | 1 | | | 1 |
| HC9100 | HC-HC-0018 | 2 | 0 | 2.0 | 4 | | | 4 |
| HC9101 | HC-HC-0017 | 1 | 0 | 1.0 | 4 | | | 4 |
| HC9102 | HC-HC-0026 | 6 | 0 | 6.0 | 2 | 2 | | 2 |
| HC9103 | HC-HC-0025 | 1 | 0 | 1.0 | 4 | | | 4 |
| HC9104 | HC-MR-0002 | 3 | 0 | 3.0 | 3 | | | 3 |
| HC9105 | HC-MR-0003 | 3 | 0 | 3.0 | 3 | | | 3 |
| HC9106 | HC-FP-0001 | 11 | 1 | 5.5 | 2 | | | 2 |
| HC9107 | HC-MR-0004 | 1 | 0 | 1.0 | 4 | | | 4 |
| HC9108 | HC-HC-0028 | 1 | 1 | 0.5 | 5 | | | 5 |
| HC9109 | HC-FP-0002 | 3 | 1 | 1.5 | 4 | | | 4 |
| HC9110 | HC-MR-0004 | 2 | 0 | 2.0 | 4 | | | 4 |
| HC9111 | HC-FP-0004 | 7 | 1 | 3.5 | 3 | | | 3 |
| HC9113 | HC-HC-0028 | 3 | 0 | 3.0 | 3 | | | 3 |
| HC9114 | HC-FP-0004 | 6 | 1 | 3.0 | 3 | 4 | | 4 |
| HC9115 | HC-HC-0028 | 6 | 1 | 3.0 | 3 | 4 | | 4 |
| HC9116 | HC-FP-0003 | 2 | 0 | 2.0 | 4 | | | 4 |
| HC9117 | HC-FP-0004 | 2 | 1 | 1.0 | 4 | | | 4 |
| HC9118 | HC-HC-0030 | 6 | 1 | 3.0 | 3 | | | 3 |
| HC9119 | HC-FP-0005 | 2 | 1 | 1.0 | 4 | | | 4 |
| HC9121 | HC-HC-0030 | 13 | 1 | 6.5 | 2 | | | 2 |
| HC9122 | HC-HC-0030 | 8 | 0 | 8.0 | 1 | 2 | | 2 |
| HC9123 | HC-HC-0030 | 2 | 1 | 1.0 | 4 | | | 4 |
| HC9124 | HC-FP-0005 | 18 | 1 | 9.0 | 1 | | | 1 |
| HC9125 | HC-HC-0031 | 1 | 0 | 1.0 | 4 | | | 4 |
| HC9126 | HC-HC-0034 | 2 | 1 | 1.0 | 4 | | | 4 |
| HC9127 | HC-FP-0003 | 4 | 1 | 2.0 | 4 | | | 4 |
| HC9128 | HC-HC-0031 | 3 | 0 | 3.0 | 3 | | | 3 |
| HC9129 | HC-HC-0034 | 1 | 1 | 0.5 | 5 | | | 5 |
| HC9130 | HC-HC-0031 | 1 | 1 | 0.5 | 5 | | | 5 |
| HC9131 | HC-HC-0035 | 6 | 1 | 3.0 | 3 | 3 | | 3 |
| HC9132 | HC-HC-0032 | 2 | 1 | 1.0 | 4 | | | 4 |

| *Implementability* | | Initial Score based on Ownership | Is there an Existing DPs / WPs? (Yes = +1) | Adjusted Score for County Maintained WP or DP (Init Score / 2) | Preliminary Project Score | FXB Adjustment | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|
| **Project Number** | **Subwatershed** | | | | | | | |
| HC9133 | HC-CR-0001 | 7 | 0 | 7.0 | 2 | 4 | | 4 |
| HC9134 | HC-HC-0033 | 6 | 1 | 3.0 | 3 | 4 | | 4 |
| HC9135 | HC-CR-0001 | 3 | 1 | 1.5 | 4 | | | 4 |
| HC9136 | HC-HC-0037 | 2 | 0 | 2.0 | 4 | | | 4 |
| HC9137 | HC-HC-0039 | 6 | 0 | 6.0 | 2 | 4 | | 4 |
| HC9138 | HC-CR-0001 | 3 | 0 | 3.0 | 3 | 4 | | 4 |
| HC9139 | HC-HC-0039 | 2 | 0 | 2.0 | 4 | 5 | | 5 |
| HC9140 | HC-HC-0037 | 2 | 1 | 1.0 | 4 | | | 4 |
| HC9142 | HC-HC-0040 | 4 | 0 | 4.0 | 2 | 4 | | 4 |
| HC9143 | HC-CR-0003 | 4 | 1 | 2.0 | 4 | 3 | | 3 |
| HC9146 | HC-CR-0003 | 9 | 1 | 4.5 | 2 | 4 | | 4 |
| HC9148 | HC-HC-0039 | 4 | 0 | 4.0 | 2 | 4 | | 4 |
| HC9149 | HC-HC-0040 | 10 | 0 | 10.0 | 1 | | | 1 |
| HC9200 | HC-HC-0020 | 7 | 1 | 3.5 | 3 | 4 | | 4 |
| HC9201 | HC-HC-0037 | 2 | 0 | 2.0 | 4 | | | 4 |
| HC9202 | HC-HC-0039 | 4 | 1 | 2.0 | 4 | | | 4 |
| HC9302 | HC-CR-0001 | 3 | 0 | 3.0 | 3 | | | 3 |
| HC9400 | HC-HC-0019 | 3 | 1 | 1.5 | 4 | | | 4 |
| HC9401 | HC-HC-0018 | 4 | 0 | 4.0 | 2 | | | 2 |
| HC9500 | HC-HC-0026 | 4 | 0 | 4.0 | 2 | 4 | | 4 |
| HC9501 | HC-HC-0028 | 12 | 0 | 12.0 | 1 | | | 1 |
| HC9502 | HC-HC-0028 | 1 | 0 | 1.0 | 4 | | | 4 |
| HC9503 | HC-FP-0001 | 1 | 0 | 1.0 | 4 | | | 4 |
| HC9505 | HC-HC-0035 | 2 | 1 | 1.0 | 4 | | | 4 |
| SU9001 | SU-FF-0001 | 1 | 0 | 1.0 | 4 | | | 4 |
| SU9002 | SU-RI-0003 | 10 | 0 | 10.0 | 1 | | | 1 |
| SU9005 | SU-SU-0026/27 | 17 | 0 | 17.0 | 1 | | | 1 |
| SU9007 | SU-FF-0002/03/04 | 28 | 0 | 28.0 | 1 | | | 1 |
| SU9100 | SU-SU-0008 | 4 | 0 | 4.0 | 2 | | | 2 |
| SU9101 | SU-SU-0012 | 8 | 0 | 8.0 | 1 | 4 | | 4 |
| SU9103 | SU-SU-0018 | 6 | 0 | 6.0 | 2 | | | 2 |
| SU9105 | SU-SU-0013 | 4 | 0 | 4.0 | 2 | | | 2 |
| SU9106 | SU-SU-0021 | 8 | 0 | 8.0 | 1 | 4 | | 4 |

| *Implementability* | | Initial Score based on Ownership | Is there an Existing DPs / WPs? (Yes = +1) | Adjusted Score for County Maintained WP or DP (Init Score / 2) | Preliminary Project Score | FXB Adjustment | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|
| **Project Number** | **Subwatershed** | | | | | | | |
| SU9107 | SU-SU-0028 | 2 | 0 | 2.0 | 4 | | | 4 |
| SU9108 | SU-SU-0028 | 6 | 0 | 6.0 | 2 | 4 | | 4 |
| SU9110 | SU-SU-0028 | 2 | 0 | 2.0 | 4 | | | 4 |
| SU9111 | SU-SU-0029 | 1 | 0 | 1.0 | 4 | | | 4 |
| SU9112 | SU-SU-0030 | 1 | 0 | 1.0 | 4 | | | 4 |
| SU9115 | SU-MB-0001 | 4 | 0 | 4.0 | 2 | | | 2 |
| SU9117 | SU-FL-0002 | 4 | 0 | 4.0 | 2 | | | 2 |
| SU9118 | SU-FL-0001 | 1 | 0 | 1.0 | 4 | | | 4 |
| SU9120 | SU-SU-0032 | 3 | 0 | 3.0 | 3 | | | 3 |
| SU9121 | SU-FL-0002 | 1 | 0 | 1.0 | 4 | | | 4 |
| SU9122 | SU-FL-0002 | 3 | 0 | 3.0 | 3 | | | 3 |
| SU9123 | SU-FL-0003 | 2 | 0 | 2.0 | 4 | | | 4 |
| SU9124 | SU-RI-0001 | 4 | 0 | 4.0 | 2 | | | 2 |
| SU9127 | SU-FL-0003 | 3 | 0 | 3.0 | 3 | | | 3 |
| SU9128 | SU-RI-0002 | 12 | 0 | 12.0 | 1 | 4 | | 4 |
| SU9129 | SU-RI-0002 | 5 | 0 | 5.0 | 2 | | | 2 |
| SU9130 | SU-SU-0034 | 28 | 0 | 28.0 | 1 | | | 1 |
| SU9133 | SU-FL-0006 | 2 | 0 | 2.0 | 4 | | | 4 |
| SU9135 | SU-SU-0039 | 3 | 0 | 3.0 | 3 | | | 3 |
| SU9136 | SU-SU-0039 | 1 | 0 | 1.0 | 4 | | | 4 |
| SU9137 | SU-SU-0038 | 2 | 0 | 2.0 | 4 | | | 4 |
| SU9138 | SU-FL-0008 | 1 | 0 | 1.0 | 4 | | | 4 |
| SU9139 | SU-SU-0040 | 2 | 0 | 2.0 | 4 | | | 4 |
| SU9140 | SU-SU-0041 | 3 | 0 | 3.0 | 3 | | | 3 |
| SU9141 | SU-SU-0041 | 4 | 0 | 4.0 | 2 | | | 2 |
| SU9142 | SU-FL-0009 | 3 | 0 | 3.0 | 3 | | | 3 |
| SU9143 | SU-SU-0041 | 3 | 0 | 3.0 | 3 | | | 3 |
| SU9144 | SU-SU-0037 | 9 | 0 | 9.0 | 1 | | | 1 |

| *Implementability* | | Initial Score based on Ownership | Is there an Existing DPs / WPs? (Yes = +1) | Adjusted Score for County Maintained WP or DP (Init Score / 2) | Preliminary Project Score | FXB Adjustment | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|
| **Project Number** | **Subwatershed** | | | | | | | |
| SU9146 | SU-SU-0041 | 3 | 0 | 3.0 | 3 | | | 3 |
| SU9147 | SU-SU-0046 | 3 | 0 | 3.0 | 3 | | | 3 |
| SU9149 | SU-SU-0047 | 8 | 0 | 8.0 | 1 | | | 1 |
| SU9150 | SU-SU-0049 | 1 | 0 | 1.0 | 4 | | | 4 |
| SU9200 | SU-SU-0028 | 40 | 0 | 40.0 | 1 | | | 1 |
| SU9201 | SU-FL-0004 | 25 | 0 | 25.0 | 1 | | | 1 |
| SU9202 | SU-FL-0006 | 3 | 0 | 3.0 | 3 | | | 3 |
| SU9203 | SU-SU-0039 | 2 | 0 | 2.0 | 4 | | | 4 |
| SU9204 | SU-FL-0006 | 1 | 0 | 1.0 | 4 | | | 4 |
| SU9205 | SU-SU-0035 | 5 | 0 | 5.0 | 2 | | | 2 |
| SU9206 | SU-SU-0040 | 4 | 0 | 4.0 | 2 | | | 2 |
| SU9207 | SU-SU-0042 | 4 | 0 | 4.0 | 2 | | | 2 |
| SU9208 | SU-SU-0049 | 11 | 0 | 11.0 | 1 | | | 1 |
| SU9209 | SU-SU-0051 | 4 | 0 | 4.0 | 2 | | | 2 |
| SU9210 | SU-SU-0050 | 34 | 0 | 34.0 | 1 | | | 1 |
| SU9400 | SU-SU-0013 | 8 | 0 | 8.0 | 1 | | | 1 |
| SU9500 | SU-SU-0032 | 1 | 0 | 1.0 | 4 | | | 4 |
| SU9501 | SU-RI-0002 | 6 | 0 | 6.0 | 2 | | | 2 |
| SU9502 | SU-SU-0039 | 1 | 0 | 1.0 | 4 | | | 4 |
| SU9503 | SU-FL-0008 | 4 | 0 | 4.0 | 2 | | | 2 |
| SU9504 | SU-SU-0035 | 1 | 0 | 1.0 | 4 | | | 4 |
| SU9505 | SU-SU-0041 | 13 | 0 | 13.0 | 1 | | | 1 |
| SU9509 | SU-SU-0035 | 3 | 0 | 3.0 | 3 | | | 3 |
| SU9510 | SU-SU-0040 | 175 | 0 | 175.0 | 1 | | | 1 |
| SU9511 | SU-FL-0007 | 3 | 0 | 3.0 | 3 | | | 3 |
| SU9512 | SU-SU-0037 | 36 | 0 | 36.0 | 1 | | | 1 |
| SU9513 | SU-SU-0043 | 2 | 0 | 2.0 | 4 | | | 4 |
| SU9514 | SU-SU-0045 | 2 | 0 | 2.0 | 4 | | | 4 |
| SU9515 | SU-SU-0045 | 7 | 0 | 7.0 | 2 | | | 2 |

# Appendix F

STEPL

| *Total Nitrogen (TN)* | | Existing | Future w/o Project | Future w/Project | % Change Future w/o to Future w/project | Adjusted Existing Score | FXB Adjustment (+1, 0, -1) | Preliminary Indicator Score | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|---|---|
| **Project No.** | **Subwatershed** | **Metric** | **Metric** | **Metric** | | | | | | |
| HC9007 | HC-CR-0002 | 6.36 | 6.36 | 2.85 | -55.2% | 4 | 0 | 4 | | 4 |
| HC9013 | HC-CR-0004/05 | 10.35 | 10.47 | 9.56 | -8.8% | 4 | 1 | 5 | | 5 |
| HC9100 | HC-HC-0018 | 6.02 | 6.19 | 6.16 | -0.3% | 2 | 0 | 2 | | 2 |
| HC9101 | HC-HC-0017 | 7.24 | 7.24 | 7.03 | -2.9% | 3 | -1 | 2 | | 2 |
| HC9102 | HC-HC-0026 | 7.80 | 8.71 | 8.49 | -2.5% | 3 | 1 | 4 | | 4 |
| HC9103 | HC-HC-0025 | 8.81 | 8.81 | 7.58 | -14.0% | 4 | 0 | 4 | | 4 |
| HC9104 | HC-MR-0002 | 3.32 | 4.30 | 4.24 | -1.4% | 2 | 0 | 2 | | 2 |
| HC9105 | HC-MR-0003 | 4.42 | 5.13 | 5.06 | -1.2% | 2 | 0 | 2 | | 2 |
| HC9106 | HC-FP-0001 | 6.04 | 7.18 | 7.06 | -1.6% | 3 | 1 | 4 | | 4 |
| HC9107 | HC-MR-0004 | 3.91 | 4.01 | 3.90 | -2.7% | 3 | 1 | 4 | | 4 |
| HC9108 | HC-HC-0028 | 5.75 | 6.49 | 6.40 | -1.4% | 2 | 0 | 2 | | 2 |
| HC9109 | HC-FP-0002 | 7.85 | 7.85 | 7.85 | 0.0% | 2 | 1 | 3 | | 3 |
| HC9110 | HC-MR-0004 | 3.91 | 4.01 | 3.97 | -0.9% | 2 | 0 | 2 | | 2 |
| HC9111 | HC-FP-0004 | 7.55 | 7.59 | 7.59 | -0.1% | 2 | 1 | 3 | | 3 |
| HC9113 | HC-HC-0028 | 5.75 | 6.49 | 6.23 | -4.0% | 4 | 0 | 4 | | 4 |
| HC9114 | HC-FP-0004 | 7.55 | 7.59 | 7.32 | -3.6% | 3 | 1 | 4 | | 4 |
| HC9115 | HC-HC-0028 | 5.75 | 6.49 | 6.43 | -0.9% | 2 | 1 | 3 | | 3 |
| HC9116 | HC-FP-0003 | 5.29 | 5.29 | 5.11 | -3.3% | 3 | 0 | 3 | | 3 |
| HC9117 | HC-FP-0004 | 7.55 | 7.59 | 7.59 | -0.1% | 2 | 1 | 3 | | 3 |
| HC9118 | HC-HC-0030 | 5.70 | 6.03 | 5.88 | -2.5% | 3 | 0 | 3 | | 3 |
| HC9119 | HC-FP-0005 | 7.52 | 7.52 | 7.42 | -1.4% | 2 | 1 | 3 | | 3 |
| HC9121 | HC-HC-0030 | 5.70 | 6.03 | 6.20 | 2.8% | 1 | 1 | 2 | | 2 |
| HC9122 | HC-HC-0030 | 5.70 | 6.03 | 5.86 | -2.9% | 3 | 1 | 4 | | 4 |
| HC9123 | HC-HC-0030 | 5.70 | 6.03 | 6.16 | 2.2% | 2 | 1 | 3 | | 3 |
| HC9124 | HC-FP-0005 | 7.52 | 7.52 | 7.40 | -1.6% | 3 | 2 | 5 | | 5 |
| HC9125 | HC-HC-0031 | 5.89 | 6.36 | 6.23 | -2.0% | 3 | 0 | 3 | | 3 |
| HC9126 | HC-HC-0034 | 6.46 | 6.49 | 6.45 | -0.7% | 2 | 0 | 2 | | 2 |
| HC9127 | HC-FP-0003 | 5.29 | 5.29 | 5.15 | -2.6% | 3 | 0 | 3 | | 3 |
| HC9128 | HC-HC-0031 | 5.89 | 6.36 | 6.09 | -4.3% | 4 | 0 | 4 | | 4 |
| HC9129 | HC-HC-0034 | 6.46 | 6.49 | 6.16 | -5.1% | 4 | 0 | 4 | | 4 |
| HC9130 | HC-HC-0031 | 5.89 | 6.36 | 6.30 | -1.0% | 2 | 1 | 3 | | 3 |
| HC9131 | HC-HC-0035 | 6.30 | 6.30 | 6.09 | -3.2% | 3 | 0 | 3 | | 3 |
| HC9132 | HC-HC-0032 | 8.41 | 8.45 | 8.21 | -2.8% | 3 | 0 | 3 | | 3 |
| HC9133 | HC-CR-0001 | 7.30 | 7.30 | 6.97 | -4.5% | 4 | 0 | 4 | | 4 |
| HC9134 | HC-HC-0033 | 3.91 | 3.91 | 3.23 | -17.4% | 4 | 0 | 4 | | 4 |
| HC9135 | HC-CR-0001 | 7.30 | 7.30 | 7.14 | -2.2% | 3 | 0 | 3 | | 3 |

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| *Total Nitrogen (TN)* | | Existing | Future w/o Project | Future w/Project | % Change Future w/o to Future w/project | Adjusted Existing Score | FXB Adjustment (+1, 0, -1) | Preliminary Indicator Score | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|---|---|
| **Project No.** | **Subwatershed** | **Metric** | **Metric** | **Metric** | | | | | | |
| HC9136 | HC-HC-0037 | 4.28 | 4.30 | 4.18 | -2.8% | 3 | 0 | 3 | | 3 |
| HC9137 | HC-HC-0039 | 3.27 | 3.27 | 2.92 | -10.8% | 4 | 0 | 4 | | 4 |
| HC9138 | HC-CR-0001 | 7.30 | 7.30 | 7.09 | -2.8% | 3 | 0 | 3 | | 3 |
| HC9139 | HC-HC-0039 | 3.27 | 3.27 | 2.95 | -9.7% | 4 | 0 | 4 | | 4 |
| HC9140 | HC-HC-0037 | 4.28 | 4.30 | 4.13 | -3.9% | 3 | 0 | 3 | | 3 |
| HC9142 | HC-HC-0040 | 3.73 | 3.75 | 3.51 | -6.4% | 4 | 0 | 4 | | 4 |
| HC9143 | HC-CR-0003 | 7.04 | 7.06 | 6.73 | -4.6% | 4 | 0 | 4 | | 4 |
| HC9146 | HC-CR-0003 | 7.04 | 7.06 | 6.90 | -2.2% | 3 | 0 | 3 | | 3 |
| HC9148 | HC-HC-0039 | 3.27 | 3.27 | 2.97 | -9.1% | 4 | 0 | 4 | | 4 |
| HC9149 | HC-HC-0040 | 3.73 | 3.75 | 3.56 | -5.2% | 4 | 1 | 5 | | 5 |
| HC9200 | HC-HC-0020 | 8.53 | 8.70 | 8.49 | -2.5% | 3 | 1 | 4 | | 4 |
| HC9201 | HC-HC-0037 | 4.28 | 4.30 | 4.30 | 0.0% | 2 | | - | | - |
| HC9202 | HC-HC-0039 | 3.27 | 3.27 | 3.06 | -6.4% | 4 | | - | | - |
| HC9302 | HC-CR-0001 | 7.30 | 7.30 | 6.94 | -4.9% | 4 | | - | | - |
| HC9400 | HC-HC-0019 | 9.09 | 10.10 | 9.73 | -3.7% | 3 | 0 | 3 | | 3 |
| HC9401 | HC-HC-0018 | 6.02 | 6.19 | 6.19 | 0.0% | 2 | | - | | - |
| HC9500 | HC-HC-0026 | 7.80 | 8.71 | 8.70 | -0.1% | 2 | 1 | 3 | | 3 |
| HC9501 | HC-HC-0028 | 5.75 | 6.49 | 6.34 | -2.3% | 3 | 0 | 3 | | 3 |
| HC9502 | HC-HC-0028 | 5.75 | 6.49 | 6.38 | -1.7% | 3 | 0 | 3 | | 3 |
| HC9503 | HC-FP-0001 | 6.04 | 7.18 | 7.00 | -2.4% | 3 | 1 | 4 | | 4 |
| HC9505 | HC-HC-0035 | 6.30 | 6.30 | 6.03 | -4.2% | 4 | 0 | 4 | | 4 |
| SU9001 | SU-FF-0001 | 7.57 | 7.57 | 7.57 | 0.0% | 2 | 0 | 2 | | 2 |
| SU9002 | SU-RI-0003 | 4.61 | 4.61 | 4.27 | -7.2% | 4 | 0 | 4 | | 4 |
| SU9005 | SU-SU-0026/27 | 9.71 | 9.72 | 9.03 | -7.1% | 4 | -1 | 3 | | 3 |
| SU9007 | SU-FF-0002/03/04 | 16.00 | 16.21 | 15.54 | -4.18% | 4 | 1 | 5 | | 5 |
| SU9100 | SU-SU-0008 | 3.54 | 3.56 | 3.42 | -4.17% | 4 | 0 | 4 | | 4 |
| SU9101 | SU-SU-0012 | 3.15 | 3.17 | 3.14 | -0.73% | 2 | 1 | 3 | | 3 |
| SU9103 | SU-SU-0018 | 3.61 | 4.03 | 3.45 | -14.24% | 4 | 0 | 4 | | 4 |
| SU9105 | SU-SU-0013 | 2.75 | 2.87 | 2.78 | -3.15% | 3 | 0 | 3 | | 3 |
| SU9106 | SU-SU-0021 | 4.10 | 4.14 | 4.13 | -0.21% | 2 | 1 | 3 | | 3 |
| SU9107 | SU-SU-0028 | 6.75 | 7.49 | 7.13 | -4.80% | 4 | 1 | 5 | | 5 |
| SU9108 | SU-SU-0028 | 6.75 | 7.49 | 7.09 | -5.32% | 4 | 1 | 5 | | 5 |
| SU9110 | SU-SU-0028 | 6.75 | 7.49 | 7.15 | -4.58% | 4 | 1 | 5 | | 5 |
| SU9111 | SU-SU-0029 | 4.18 | 4.18 | 4.18 | -0.05% | 2 | 0 | 2 | | 2 |
| SU9112 | SU-SU-0030 | 6.42 | 6.43 | 5.89 | -8.30% | 4 | 0 | 4 | | 4 |
| SU9115 | SU-MB-0001 | 4.01 | 4.19 | 3.93 | -6.17% | 4 | 0 | 4 | | 4 |

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| *Total Nitrogen (TN)* | | Existing | Future w/o Project | Future w/Project | % Change Future w/o to Future w/project | Adjusted Existing Score | FXB Adjustment (+1, 0, -1) | Preliminary Indicator Score | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|---|---|
| **Project No.** | **Subwatershed** | **Metric** | **Metric** | **Metric** | | | | | | |
| SU9117 | SU-FL-0002 | 6.42 | 6.42 | 6.16 | -3.95% | 3 | 0 | 3 | | 3 |
| SU9118 | SU-FL-0001 | 6.91 | 6.91 | 6.57 | -4.88% | 4 | 0 | 4 | | 4 |
| SU9120 | SU-SU-0032 | 7.81 | 7.81 | 7.54 | -3.53% | 3 | 0 | 3 | | 3 |
| SU9121 | SU-FL-0002 | 6.42 | 6.42 | 6.26 | -2.38% | 3 | 0 | 3 | | 3 |
| SU9122 | SU-FL-0002 | 6.42 | 6.42 | 6.37 | -0.74% | 2 | 0 | 2 | | 2 |
| SU9123 | SU-FL-0003 | 3.91 | 4.11 | 2.92 | -28.91% | 4 | 0 | 4 | | 4 |
| SU9124 | SU-RI-0001 | 9.22 | 9.22 | 9.20 | -0.26% | 2 | 0 | 2 | | 2 |
| SU9127 | SU-FL-0003 | 3.91 | 4.11 | 4.01 | -2.29% | 3 | -1 | 2 | | 2 |
| SU9128 | SU-RI-0002 | 4.67 | 4.82 | 4.73 | -1.72% | 3 | -1 | 2 | | 2 |
| SU9129 | SU-RI-0002 | 4.67 | 4.82 | 4.75 | -1.46% | 2 | 1 | 3 | | 3 |
| SU9130 | SU-SU-0034 | 8.86 | 9.38 | 8.46 | -9.89% | 4 | 0 | 4 | | 4 |
| SU9133 | SU-FL-0006 | 5.82 | 5.82 | 5.67 | -2.59% | 3 | 0 | 3 | | 3 |
| SU9135 | SU-SU-0039 | 8.53 | 8.72 | 8.60 | -1.28% | 2 | 0 | 2 | | 2 |
| SU9136 | SU-SU-0039 | 8.53 | 8.72 | 8.49 | -2.62% | 3 | 0 | 3 | | 3 |
| SU9137 | SU-SU-0038 | 6.61 | 6.21 | 5.92 | -4.75% | 4 | 0 | 4 | | 4 |
| SU9138 | SU-FL-0008 | 6.45 | 6.87 | 6.85 | -0.34% | 2 | 0 | 2 | | 2 |
| SU9139 | SU-SU-0040 | 9.40 | 9.31 | 9.20 | -1.19% | 2 | 1 | 3 | | 3 |
| SU9140 | SU-SU-0041 | 9.21 | 10.07 | 9.36 | -7.06% | 4 | -1 | 3 | | 3 |
| SU9141 | SU-SU-0041 | 9.21 | 10.07 | 9.88 | -1.88% | 3 | -1 | 2 | | 2 |
| SU9142 | SU-FL-0009 | 6.16 | 6.38 | 6.32 | -0.93% | 2 | 0 | 2 | | 2 |
| SU9143 | SU-SU-0041 | 9.21 | 10.07 | 10.07 | -0.04% | 2 | 0 | 2 | | 2 |
| SU9144 | SU-SU-0037 | 5.69 | 8.28 | 5.49 | -33.67% | 4 | 0 | 4 | | 4 |
| SU9146 | SU-SU-0041 | 9.21 | 10.07 | 9.95 | -1.17% | 2 | 1 | 3 | | 3 |
| SU9147 | SU-SU-0046 | 9.01 | 9.11 | 8.89 | -2.44% | 3 | -1 | 2 | | 2 |
| SU9149 | SU-SU-0047 | 6.17 | 6.17 | 5.85 | -5.19% | 4 | 0 | 4 | | 4 |
| SU9150 | SU-SU-0049 | 6.36 | 6.36 | 6.25 | -1.62% | 3 | 0 | 3 | | 3 |
| SU9200 | SU-SU-0028 | 6.75 | 7.49 | NA | - | - | 4 | 4 | | 4 |
| SU9201 | SU-FL-0004 | 6.44 | 6.54 | NA | - | - | 4 | 4 | | 4 |
| SU9202 | SU-FL-0006 | 5.82 | 5.82 | NA | - | - | 2 | 2 | | 2 |
| SU9203 | SU-SU-0039 | 8.53 | 8.72 | NA | - | - | 3 | 3 | | 3 |
| SU9204 | SU-FL-0006 | 5.82 | 5.82 | NA | - | - | 2 | 2 | | 2 |
| SU9205 | SU-SU-0035 | 6.98 | 7.02 | NA | - | - | 2 | 2 | | 2 |
| SU9206 | SU-SU-0040 | 9.40 | 9.31 | NA | - | - | 4 | 4 | | 4 |
| SU9207 | SU-SU-0042 | 8.35 | 8.60 | NA | - | - | 3 | 3 | | 3 |
| SU9208 | SU-SU-0049 | 6.36 | 6.36 | NA | - | - | 3 | 3 | | 3 |
| SU9209 | SU-SU-0051 | 5.48 | 5.48 | NA | - | - | 3 | 3 | | 3 |

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| *Total Nitrogen (TN)* | | Existing | Future w/o Project | Future w/Project | % Change Future w/o to Future w/project | Adjusted Existing Score | FXB Adjustment (+1, 0, -1) | Preliminary Indicator Score | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|---|---|
| **Project No.** | **Subwatershed** | **Metric** | **Metric** | **Metric** | | | | | | |
| SU9210 | SU-SU-0050 | 8.01 | 8.08 | NA | - | - | 2 | 2 | | 2 |
| SU9400 | SU-SU-0013 | 2.75 | 2.87 | 2.64 | -7.84% | 4 | 0 | 4 | | 4 |
| SU9500 | SU-SU-0032 | 7.81 | 7.81 | 7.66 | -2.03% | 3 | 0 | 3 | | 3 |
| SU9501 | SU-RI-0002 | 4.67 | 4.82 | 4.80 | -0.33% | 2 | 1 | 3 | | 3 |
| SU9502 | SU-SU-0039 | 8.53 | 8.72 | 8.69 | -0.33% | 2 | 1 | 3 | | 3 |
| SU9503 | SU-FL-0008 | 6.45 | 6.87 | 6.86 | -0.23% | 2 | 0 | 2 | | 2 |
| SU9504 | SU-SU-0035 | 6.98 | 7.02 | 6.98 | -0.57% | 2 | 0 | 2 | | 2 |
| SU9505 | SU-SU-0041 | 9.21 | 10.07 | 9.88 | -1.91% | 3 | 0 | 3 | | 3 |
| SU9509 | SU-SU-0035 | 6.98 | 7.02 | 6.87 | -2.11% | 3 | 1 | 4 | | 4 |
| SU9510 | SU-SU-0040 | 9.40 | 9.31 | 9.20 | -1.17% | 2 | 0 | 2 | | 2 |
| SU9511 | SU-FL-0007 | 6.31 | 6.44 | 6.39 | -0.81% | 2 | 0 | 2 | | 2 |
| SU9512 | SU-SU-0037 | 5.69 | 8.28 | 5.49 | -33.65% | 4 | 0 | 4 | | 4 |
| SU9513 | SU-SU-0043 | 9.14 | 10.44 | 10.40 | -0.39% | 2 | 0 | 2 | | 2 |
| SU9514 | SU-SU-0045 | 10.53 | 10.59 | 9.74 | -7.95% | 4 | 0 | 4 | | 4 |
| SU9515 | SU-SU-0045 | 10.53 | 10.59 | 10.41 | -1.63% | 3 | 0 | 3 | | 3 |

| *Total Phosphorus (TP)* | | Existing | Future w/o Project | Future w/Project | % Change Future w/o to Future w/project | Adjusted Existing Score | FXB Adjustment (+1, 0, -1) | Preliminary Indicator Score | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|---|---|
| **Project No.** | **Subwatershed** | **Metric** | **Metric** | **Metric** | | | | | | |
| HC9007 | HC-CR-0002 | 0.96 | 0.96 | 0.47 | -50.6% | 4 | 0 | 4 | | 4 |
| HC9013 | HC-CR-0004/05 | 1.54 | 1.56 | 1.36 | -12.6% | 4 | 1 | 5 | | 5 |
| HC9100 | HC-HC-0018 | 0.85 | 0.85 | 0.87 | 1.7% | 2 | 0 | 2 | | 2 |
| HC9101 | HC-HC-0017 | 1.08 | 1.08 | 1.04 | -3.4% | 3 | -1 | 2 | | 2 |
| HC9102 | HC-HC-0026 | 1.00 | 1.09 | 1.11 | 2.1% | 1 | 1 | 2 | | 2 |
| HC9103 | HC-HC-0025 | 0.95 | 0.95 | 0.77 | -18.6% | 4 | 0 | 4 | | 4 |
| HC9104 | HC-MR-0002 | 0.50 | 0.61 | 0.60 | -1.5% | 3 | 0 | 3 | | 3 |
| HC9105 | HC-MR-0003 | 0.72 | 0.81 | 0.80 | -1.5% | 3 | 0 | 3 | | 3 |
| HC9106 | HC-FP-0001 | 0.92 | 1.07 | 1.05 | -2.0% | 3 | 1 | 4 | | 4 |
| HC9107 | HC-MR-0004 | 0.60 | 0.60 | 0.58 | -3.5% | 3 | 1 | 4 | | 4 |
| HC9108 | HC-HC-0028 | 0.73 | 0.80 | 0.79 | -1.4% | 3 | 0 | 3 | | 3 |
| HC9109 | HC-FP-0002 | 1.07 | 1.07 | 1.07 | 0.1% | 2 | 1 | 3 | | 3 |
| HC9110 | HC-MR-0004 | 0.60 | 0.60 | 0.59 | -1.4% | 3 | 0 | 3 | | 3 |
| HC9111 | HC-FP-0004 | 1.08 | 1.09 | 1.09 | -0.1% | 2 | 1 | 3 | | 3 |
| HC9113 | HC-HC-0028 | 0.73 | 0.80 | 0.76 | -4.4% | 3 | 0 | 3 | | 3 |
| HC9114 | HC-FP-0004 | 1.08 | 1.09 | 1.04 | -4.9% | 4 | 1 | 5 | | 5 |
| HC9115 | HC-HC-0028 | 0.73 | 0.80 | 0.79 | -0.6% | 2 | 1 | 3 | | 3 |
| HC9116 | HC-FP-0003 | 0.80 | 0.80 | 0.77 | -4.1% | 3 | 0 | 3 | | 3 |
| HC9117 | HC-FP-0004 | 1.08 | 1.09 | 1.09 | -0.1% | 2 | 1 | 3 | | 3 |
| HC9118 | HC-HC-0030 | 0.89 | 0.93 | 0.90 | -3.4% | 3 | 0 | 3 | | 3 |
| HC9119 | HC-FP-0005 | 1.08 | 1.08 | 1.08 | -0.1% | 2 | 1 | 3 | | 3 |
| HC9121 | HC-HC-0030 | 0.89 | 0.93 | 0.94 | 1.3% | 2 | 1 | 3 | | 3 |
| HC9122 | HC-HC-0030 | 0.89 | 0.93 | 0.88 | -4.7% | 4 | 1 | 5 | | 5 |
| HC9123 | HC-HC-0030 | 0.89 | 0.93 | 0.94 | 1.6% | 2 | 1 | 3 | | 3 |
| HC9124 | HC-FP-0005 | 1.08 | 1.08 | 1.08 | -0.4% | 2 | 2 | 4 | | 4 |
| HC9125 | HC-HC-0031 | 0.86 | 0.91 | 0.87 | -3.8% | 3 | 0 | 3 | | 3 |
| HC9126 | HC-HC-0034 | 0.98 | 0.99 | 0.97 | -1.1% | 2 | 0 | 2 | | 2 |
| HC9127 | HC-FP-0003 | 0.80 | 0.80 | 0.78 | -2.9% | 3 | 0 | 3 | | 3 |
| HC9128 | HC-HC-0031 | 0.86 | 0.91 | 0.86 | -5.9% | 4 | 0 | 4 | | 4 |
| HC9129 | HC-HC-0034 | 0.98 | 0.99 | 0.92 | -7.0% | 4 | 0 | 4 | | 4 |
| HC9130 | HC-HC-0031 | 0.86 | 0.91 | 0.89 | -2.5% | 3 | 1 | 4 | | 4 |
| HC9131 | HC-HC-0035 | 0.95 | 0.95 | 0.91 | -4.4% | 3 | 0 | 3 | | 3 |
| HC9132 | HC-HC-0032 | 1.21 | 1.21 | 1.18 | -2.8% | 3 | 0 | 3 | | 3 |
| HC9133 | HC-CR-0001 | 1.12 | 1.12 | 1.05 | -6.0% | 4 | 0 | 4 | | 4 |
| HC9134 | HC-HC-0033 | 0.53 | 0.53 | 0.42 | -20.3% | 4 | 0 | 4 | | 4 |
| HC9135 | HC-CR-0001 | 1.12 | 1.12 | 1.09 | -2.6% | 3 | 0 | 3 | | 3 |

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| *Total Phosphorus (TP)* | | Existing | Future w/o Project | Future w/Project | % Change Future w/o to Future w/project | Adjusted Existing Score | FXB Adjustment (+1, 0, -1) | Preliminary Indicator Score | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|---|---|
| **Project No.** | **Subwatershed** | **Metric** | **Metric** | **Metric** | | | | | | |
| HC9136 | HC-HC-0037 | 0.59 | 0.59 | 0.57 | -3.0% | 3 | 0 | 3 | | 3 |
| HC9137 | HC-HC-0039 | 0.49 | 0.49 | 0.39 | -21.5% | 4 | 0 | 4 | | 4 |
| HC9138 | HC-CR-0001 | 1.12 | 1.12 | 1.08 | -3.4% | 3 | 0 | 3 | | 3 |
| HC9139 | HC-HC-0039 | 0.49 | 0.49 | 0.39 | -20.0% | 4 | 0 | 4 | | 4 |
| HC9140 | HC-HC-0037 | 0.59 | 0.59 | 0.57 | -4.1% | 3 | 0 | 3 | | 3 |
| HC9142 | HC-HC-0040 | 0.54 | 0.54 | 0.48 | -11.7% | 4 | 0 | 4 | | 4 |
| HC9143 | HC-CR-0003 | 1.07 | 1.08 | 1.02 | -5.5% | 4 | 0 | 4 | | 4 |
| HC9146 | HC-CR-0003 | 1.07 | 1.08 | 1.05 | -2.4% | 3 | 0 | 3 | | 3 |
| HC9148 | HC-HC-0039 | 0.49 | 0.49 | 0.40 | -19.6% | 4 | 0 | 4 | | 4 |
| HC9149 | HC-HC-0040 | 0.54 | 0.54 | 0.48 | -11.2% | 4 | 1 | 5 | | 5 |
| HC9200 | HC-HC-0020 | 1.20 | 1.20 | 1.20 | 0.2% | 2 | 1 | 3 | | 3 |
| HC9201 | HC-HC-0037 | 0.59 | 0.59 | 0.59 | 0.0% | 2 | | - | | - |
| HC9202 | HC-HC-0039 | 0.49 | 0.49 | 0.41 | -16.3% | 4 | | - | | - |
| HC9302 | HC-CR-0001 | 1.12 | 1.12 | 1.04 | -7.4% | 4 | | - | | - |
| HC9400 | HC-HC-0019 | 1.43 | 1.43 | 1.46 | 2.1% | 2 | 0 | 2 | | 2 |
| HC9401 | HC-HC-0018 | 0.85 | 0.85 | 0.87 | 1.8% | 2 | | - | | - |
| HC9500 | HC-HC-0026 | 1.00 | 1.09 | 1.10 | 0.6% | 2 | 1 | 3 | | 3 |
| HC9501 | HC-HC-0028 | 0.73 | 0.80 | 0.78 | -2.9% | 3 | 0 | 3 | | 3 |
| HC9502 | HC-HC-0028 | 0.73 | 0.80 | 0.79 | -1.8% | 3 | 0 | 3 | | 3 |
| HC9503 | HC-FP-0001 | 0.92 | 1.07 | 1.03 | -3.3% | 3 | 1 | 4 | | 4 |
| HC9505 | HC-HC-0035 | 0.95 | 0.95 | 0.90 | -5.1% | 4 | 0 | 4 | | 4 |
| SU9001 | SU-FF-0001 | 1.18 | 1.18 | 1.18 | 0.0% | 2 | 0 | 2 | | 2 |
| SU9002 | SU-RI-0003 | 0.72 | 0.72 | 0.66 | -9.0% | 4 | 0 | 4 | | 4 |
| SU9005 | SU-SU-0026/27 | 1.52 | 1.52 | 1.38 | -8.7% | 4 | -1 | 3 | | 3 |
| SU9007 | SU-FF-0002/03/04 | 2.32 | 2.34 | 2.20 | -6% | 4 | 1 | 5 | | 5 |
| SU9100 | SU-SU-0008 | 0.55 | 0.55 | 0.52 | -5% | 4 | 0 | 4 | | 4 |
| SU9101 | SU-SU-0012 | 0.47 | 0.47 | 0.47 | -1% | 2 | 1 | 3 | | 3 |
| SU9103 | SU-SU-0018 | 0.56 | 0.61 | 0.50 | -18% | 4 | 0 | 4 | | 4 |
| SU9105 | SU-SU-0013 | 0.42 | 0.44 | 0.42 | -5% | 4 | 0 | 4 | | 4 |
| SU9106 | SU-SU-0021 | 0.61 | 0.62 | 0.62 | 0% | 2 | 1 | 3 | | 3 |
| SU9107 | SU-SU-0028 | 1.13 | 1.22 | 1.08 | -11% | 4 | 1 | 5 | | 5 |
| SU9108 | SU-SU-0028 | 1.13 | 1.22 | 1.07 | -12% | 4 | 1 | 5 | | 5 |
| SU9110 | SU-SU-0028 | 1.13 | 1.22 | 1.08 | -11% | 4 | 1 | 5 | | 5 |
| SU9111 | SU-SU-0029 | 0.59 | 0.59 | 0.59 | -1% | 2 | 0 | 2 | | 2 |
| SU9112 | SU-SU-0030 | 0.99 | 0.99 | 0.89 | -10% | 4 | 0 | 4 | | 4 |
| SU9115 | SU-MB-0001 | 0.60 | 0.62 | 0.57 | -7% | 4 | 0 | 4 | | 4 |

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| *Total Phosphorus (TP)* | | Existing | Future w/o Project | Future w/Project | % Change Future w/o to Future w/project | Adjusted Existing Score | FXB Adjustment (+1, 0, -1) | Preliminary Indicator Score | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|---|---|
| **Project No.** | **Subwatershed** | **Metric** | **Metric** | **Metric** | | | | | | |
| SU9117 | SU-FL-0002 | 1.00 | 1.00 | 0.95 | -5% | 4 | 0 | 4 | | 4 |
| SU9118 | SU-FL-0001 | 1.05 | 1.05 | 0.99 | -5% | 4 | 0 | 4 | | 4 |
| SU9120 | SU-SU-0032 | 1.16 | 1.16 | 1.09 | -5% | 4 | 0 | 4 | | 4 |
| SU9121 | SU-FL-0002 | 1.00 | 1.00 | 0.96 | -4% | 3 | 0 | 3 | | 3 |
| SU9122 | SU-FL-0002 | 1.00 | 1.00 | 0.99 | -1% | 3 | 0 | 3 | | 3 |
| SU9123 | SU-FL-0003 | 0.54 | 0.56 | 0.40 | -27% | 4 | 0 | 4 | | 4 |
| SU9124 | SU-RI-0001 | 1.35 | 1.35 | 1.35 | 0% | 2 | 0 | 2 | | 2 |
| SU9127 | SU-FL-0003 | 0.54 | 0.56 | 0.54 | -3% | 3 | -1 | 2 | | 2 |
| SU9128 | SU-RI-0002 | 0.65 | 0.67 | 0.66 | -2% | 3 | -1 | 2 | | 2 |
| SU9129 | SU-RI-0002 | 0.65 | 0.67 | 0.66 | -2% | 3 | 1 | 4 | | 4 |
| SU9130 | SU-SU-0034 | 1.35 | 1.42 | 1.25 | -12% | 4 | 0 | 4 | | 4 |
| SU9133 | SU-FL-0006 | 0.93 | 0.93 | 0.91 | -3% | 3 | 0 | 3 | | 3 |
| SU9135 | SU-SU-0039 | 1.25 | 1.27 | 1.25 | -2% | 3 | 0 | 3 | | 3 |
| SU9136 | SU-SU-0039 | 1.25 | 1.27 | 1.23 | -3% | 3 | 0 | 3 | | 3 |
| SU9137 | SU-SU-0038 | 0.98 | 0.92 | 0.87 | -6% | 4 | 0 | 4 | | 4 |
| SU9138 | SU-FL-0008 | 0.98 | 1.04 | 1.04 | 0% | 2 | 0 | 2 | | 2 |
| SU9139 | SU-SU-0040 | 1.34 | 1.32 | 1.30 | -2% | 3 | 1 | 4 | | 4 |
| SU9140 | SU-SU-0041 | 1.21 | 1.32 | 1.21 | -9% | 4 | -1 | 3 | | 3 |
| SU9141 | SU-SU-0041 | 1.21 | 1.32 | 1.29 | -2% | 3 | -1 | 2 | | 2 |
| SU9142 | SU-FL-0009 | 0.93 | 0.96 | 0.95 | -1% | 2 | 0 | 2 | | 2 |
| SU9143 | SU-SU-0041 | 1.21 | 1.32 | 1.32 | 0% | 2 | 0 | 2 | | 2 |
| SU9144 | SU-SU-0037 | 0.57 | 1.16 | 0.54 | -53% | 4 | 0 | 4 | | 4 |
| SU9146 | SU-SU-0041 | 1.21 | 1.32 | 1.30 | -2% | 3 | 1 | 4 | | 4 |
| SU9147 | SU-SU-0046 | 1.24 | 1.25 | 1.22 | -2% | 3 | -1 | 2 | | 2 |
| SU9149 | SU-SU-0047 | 0.64 | 0.64 | 0.60 | -7% | 4 | 0 | 4 | | 4 |
| SU9150 | SU-SU-0049 | 0.95 | 0.95 | 0.93 | -2% | 3 | 0 | 3 | | 3 |
| SU9200 | SU-SU-0028 | 1.13 | 1.22 | NA | 0% | - | 5 | 5 | | 5 |
| SU9201 | SU-FL-0004 | 1.00 | 1.01 | NA | 0% | - | 5 | 5 | | 5 |
| SU9202 | SU-FL-0006 | 0.93 | 0.93 | NA | 0% | - | 3 | 3 | | 3 |
| SU9203 | SU-SU-0039 | 1.25 | 1.27 | NA | 0% | - | 4 | 4 | | 4 |
| SU9204 | SU-FL-0006 | 0.93 | 0.93 | NA | 0% | - | 3 | 3 | | 3 |
| SU9205 | SU-SU-0035 | 1.00 | 1.00 | NA | 0% | - | 3 | 3 | | 3 |
| SU9206 | SU-SU-0040 | 1.34 | 1.32 | NA | 0% | - | 5 | 5 | | 5 |
| SU9207 | SU-SU-0042 | 1.12 | 1.13 | NA | 0% | - | 4 | 4 | | 4 |
| SU9208 | SU-SU-0049 | 0.95 | 0.95 | NA | 0% | - | 4 | 4 | | 4 |
| SU9209 | SU-SU-0051 | 0.80 | 0.80 | NA | 0% | - | 4 | 4 | | 4 |

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| *Total Phosphorus (TP)* | | Existing | Future w/o Project | Future w/Project | % Change Future w/o to Future w/project | Adjusted Existing Score | FXB Adjustment (+1, 0, -1) | Preliminary Indicator Score | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|---|---|
| **Project No.** | **Subwatershed** | **Metric** | **Metric** | **Metric** | | | | | | |
| SU9210 | SU-SU-0050 | 1.20 | 1.21 | NA | 0% | - | 3 | 3 | | 3 |
| SU9400 | SU-SU-0013 | 0.42 | 0.44 | 0.38 | -12% | 4 | 0 | 4 | | 4 |
| SU9500 | SU-SU-0032 | 1.16 | 1.16 | 1.11 | -4% | 3 | 0 | 3 | | 3 |
| SU9501 | SU-RI-0002 | 0.65 | 0.67 | 0.67 | -1% | 2 | 1 | 3 | | 3 |
| SU9502 | SU-SU-0039 | 1.25 | 1.27 | 1.26 | 0% | 2 | 1 | 3 | | 3 |
| SU9503 | SU-FL-0008 | 0.98 | 1.04 | 1.04 | 0% | 2 | 0 | 2 | | 2 |
| SU9504 | SU-SU-0035 | 1.00 | 1.00 | 1.00 | 0% | 2 | 0 | 2 | | 2 |
| SU9505 | SU-SU-0041 | 1.21 | 1.32 | 1.29 | -2% | 3 | 0 | 3 | | 3 |
| SU9509 | SU-SU-0035 | 1.00 | 1.00 | 0.99 | -1% | 3 | 1 | 4 | | 4 |
| SU9510 | SU-SU-0040 | 1.34 | 1.32 | 1.31 | -1% | 3 | 0 | 3 | | 3 |
| SU9511 | SU-FL-0007 | 0.97 | 0.99 | 0.98 | -1% | 2 | 0 | 2 | | 2 |
| SU9512 | SU-SU-0037 | 0.57 | 1.16 | 0.55 | -53% | 4 | 0 | 4 | | 4 |
| SU9513 | SU-SU-0043 | 1.25 | 1.39 | 1.38 | -1% | 2 | 0 | 2 | | 2 |
| SU9514 | SU-SU-0045 | 1.44 | 1.45 | 1.29 | -11% | 4 | 0 | 4 | | 4 |
| SU9515 | SU-SU-0045 | 1.44 | 1.45 | 1.42 | -2% | 3 | 0 | 3 | | 3 |

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| *Total Suspended Solids (TSS)* | | Existing | Future w/o Project | Future w/Project | % Change Future w/o to Future w/project | Adjusted Existing Score | FXB Adjustment (+1, 0, -1) | Preliminary Indicator Score | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|---|---|
| **Project No.** | **Subwatershed** | **Metric** | **Metric** | **Rev Metric** | | | | | | |
| HC9007 | HC-CR-0002 | 0.15 | 0.15 | 0.02 | -85.8% | 4 | 0 | 4 | | 4 |
| HC9013 | HC-CR-0004/05 | 0.21 | 0.22 | 0.17 | -20.2% | 4 | 1 | 5 | | 5 |
| HC9100 | HC-HC-0018 | 0.11 | 0.11 | 0.11 | -2.4% | 2 | 0 | 2 | | 2 |
| HC9101 | HC-HC-0017 | 0.15 | 0.15 | 0.14 | -6.3% | 3 | -1 | 2 | | 2 |
| HC9102 | HC-HC-0026 | 0.13 | 0.15 | 0.16 | 2.3% | 1 | 1 | 2 | | 2 |
| HC9103 | HC-HC-0025 | 0.25 | 0.25 | 0.16 | -37.6% | 4 | 0 | 4 | | 4 |
| HC9104 | HC-MR-0002 | 0.02 | 0.03 | 0.03 | -2.9% | 3 | 0 | 3 | | 3 |
| HC9105 | HC-MR-0003 | 0.03 | 0.04 | 0.04 | -1.4% | 2 | 0 | 2 | | 2 |
| HC9106 | HC-FP-0001 | 0.12 | 0.14 | 0.14 | -4.3% | 3 | 1 | 4 | | 4 |
| HC9107 | HC-MR-0004 | 0.02 | 0.02 | 0.02 | -7.3% | 3 | 1 | 4 | | 4 |
| HC9108 | HC-HC-0028 | 0.12 | 0.14 | 0.14 | -1.7% | 2 | 0 | 2 | | 2 |
| HC9109 | HC-FP-0002 | 0.11 | 0.11 | 0.11 | 0.1% | 2 | 1 | 3 | | 3 |
| HC9110 | HC-MR-0004 | 0.02 | 0.02 | 0.02 | -0.8% | 2 | 0 | 2 | | 2 |
| HC9111 | HC-FP-0004 | 0.14 | 0.14 | 0.14 | -0.3% | 2 | 1 | 3 | | 3 |
| HC9113 | HC-HC-0028 | 0.12 | 0.14 | 0.13 | -10.5% | 3 | 0 | 3 | | 3 |
| HC9114 | HC-FP-0004 | 0.14 | 0.14 | 0.12 | -11.8% | 4 | 1 | 5 | | 5 |
| HC9115 | HC-HC-0028 | 0.12 | 0.14 | 0.14 | -0.7% | 2 | 1 | 3 | | 3 |
| HC9116 | HC-FP-0003 | 0.12 | 0.12 | 0.11 | -5.8% | 3 | 0 | 3 | | 3 |
| HC9117 | HC-FP-0004 | 0.14 | 0.14 | 0.14 | -0.1% | 2 | 1 | 3 | | 3 |
| HC9118 | HC-HC-0030 | 0.12 | 0.13 | 0.12 | -7.5% | 3 | 0 | 3 | | 3 |
| HC9119 | HC-FP-0005 | 0.13 | 0.13 | 0.14 | 1.6% | 2 | 1 | 3 | | 3 |
| HC9121 | HC-HC-0030 | 0.12 | 0.13 | 0.13 | -1.5% | 2 | 1 | 3 | | 3 |
| HC9122 | HC-HC-0030 | 0.12 | 0.13 | 0.12 | -7.0% | 3 | 1 | 4 | | 4 |
| HC9123 | HC-HC-0030 | 0.12 | 0.13 | 0.13 | -0.4% | 2 | 1 | 3 | | 3 |
| HC9124 | HC-FP-0005 | 0.13 | 0.13 | 0.14 | 0.9% | 2 | 2 | 4 | | 4 |
| HC9125 | HC-HC-0031 | 0.16 | 0.18 | 0.14 | -21.7% | 4 | 0 | 4 | | 4 |
| HC9126 | HC-HC-0034 | 0.14 | 0.14 | 0.13 | -5.4% | 3 | 0 | 3 | | 3 |
| HC9127 | HC-FP-0003 | 0.12 | 0.12 | 0.11 | -4.7% | 3 | 0 | 3 | | 3 |
| HC9128 | HC-HC-0031 | 0.16 | 0.18 | 0.13 | -27.2% | 4 | 0 | 4 | | 4 |
| HC9129 | HC-HC-0034 | 0.14 | 0.14 | 0.12 | -14.4% | 4 | 0 | 4 | | 4 |
| HC9130 | HC-HC-0031 | 0.16 | 0.18 | 0.14 | -20.0% | 4 | 1 | 5 | | 5 |
| HC9131 | HC-HC-0035 | 0.14 | 0.14 | 0.13 | -7.8% | 3 | 0 | 3 | | 3 |
| HC9132 | HC-HC-0032 | 0.17 | 0.17 | 0.17 | -2.9% | 3 | 0 | 3 | | 3 |
| HC9133 | HC-CR-0001 | 0.16 | 0.16 | 0.15 | -10.9% | 3 | 0 | 3 | | 3 |
| HC9134 | HC-HC-0033 | 0.03 | 0.03 | 0.02 | -38.9% | 4 | 0 | 4 | | 4 |

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| *Total Suspended Solids (TSS)* | | Existing | Future w/o Project | Future w/Project | % Change Future w/o to Future w/project | Adjusted Existing Score | FXB Adjustment (+1, 0, -1) | Preliminary Indicator Score | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|---|---|
| **Project No.** | **Subwatershed** | **Metric** | **Metric** | **Rev Metric** | | | | | | |
| HC9135 | HC-CR-0001 | 0.16 | 0.16 | 0.16 | -4.2% | 3 | 0 | 3 | | 3 |
| HC9136 | HC-HC-0037 | 0.03 | 0.03 | 0.03 | -1.2% | 2 | 0 | 2 | | 2 |
| HC9137 | HC-HC-0039 | 0.15 | 0.15 | 0.02 | -87.5% | 4 | 0 | 4 | | 4 |
| HC9138 | HC-CR-0001 | 0.16 | 0.16 | 0.16 | -4.8% | 3 | 0 | 3 | | 3 |
| HC9139 | HC-HC-0039 | 0.15 | 0.15 | 0.02 | -87.3% | 4 | 0 | 4 | | 4 |
| HC9140 | HC-HC-0037 | 0.03 | 0.03 | 0.03 | -1.5% | 2 | 0 | 2 | | 2 |
| HC9142 | HC-HC-0040 | 0.09 | 0.09 | 0.02 | -75.1% | 4 | 0 | 4 | | 4 |
| HC9143 | HC-CR-0003 | 0.15 | 0.15 | 0.14 | -9.7% | 3 | 0 | 3 | | 3 |
| HC9146 | HC-CR-0003 | 0.15 | 0.15 | 0.15 | -3.8% | 3 | 0 | 3 | | 3 |
| HC9148 | HC-HC-0039 | 0.15 | 0.15 | 0.02 | -88.1% | 4 | 0 | 4 | | 4 |
| HC9149 | HC-HC-0040 | 0.09 | 0.09 | 0.02 | -77.0% | 4 | 1 | 5 | | 5 |
| HC9200 | HC-HC-0020 | 0.19 | 0.19 | 0.17 | -8.5% | 3 | 1 | 4 | | 4 |
| HC9201 | HC-HC-0037 | 0.03 | 0.03 | 0.03 | 0.0% | 2 | | - | | - |
| HC9202 | HC-HC-0039 | 0.15 | 0.15 | 0.02 | -86.4% | 4 | | - | | - |
| HC9302 | HC-CR-0001 | 0.16 | 0.16 | 0.14 | -11.9% | 4 | | - | | - |
| HC9400 | HC-HC-0019 | 0.21 | 0.22 | 0.20 | -10.0% | 3 | 0 | 3 | | 3 |
| HC9401 | HC-HC-0018 | 0.11 | 0.11 | 0.11 | 0.0% | 2 | | - | | - |
| HC9500 | HC-HC-0026 | 0.13 | 0.15 | 0.15 | -0.3% | 2 | 1 | 3 | | 3 |
| HC9501 | HC-HC-0028 | 0.12 | 0.14 | 0.14 | -3.1% | 3 | 0 | 3 | | 3 |
| HC9502 | HC-HC-0028 | 0.12 | 0.14 | 0.14 | -2.4% | 2 | 0 | 2 | | 2 |
| HC9503 | HC-FP-0001 | 0.12 | 0.14 | 0.14 | -3.9% | 3 | 1 | 4 | | 4 |
| HC9505 | HC-HC-0035 | 0.14 | 0.14 | 0.13 | -9.2% | 3 | 0 | 3 | | 3 |
| SU9001 | SU-FF-0001 | 0.18 | 0.18 | 0.18 | -0.3% | 2 | 0 | 2 | | 2 |
| SU9002 | SU-RI-0003 | 0.10 | 0.10 | 0.09 | -14.0% | 4 | 0 | 4 | | 4 |
| SU9005 | SU-SU-0026/27 | 0.21 | 0.21 | 0.18 | -13.8% | 4 | 0 | 4 | | 4 |
| SU9007 | SU-FF-0002/03/04 | 0.41 | 0.41 | 0.33 | -18.43% | 4 | 1 | 5 | | 5 |
| SU9100 | SU-SU-0008 | 0.07 | 0.07 | 0.07 | -9.03% | 3 | 0 | 3 | | 3 |
| SU9101 | SU-SU-0012 | 0.06 | 0.06 | 0.06 | -6.38% | 3 | 1 | 4 | | 4 |
| SU9103 | SU-SU-0018 | 0.08 | 0.08 | 0.06 | -22.24% | 4 | 0 | 4 | | 4 |
| SU9105 | SU-SU-0013 | 0.06 | 0.07 | 0.05 | -28.56% | 4 | 0 | 4 | | 4 |
| SU9106 | SU-SU-0021 | 0.08 | 0.08 | 0.08 | -0.21% | 2 | 1 | 3 | | 3 |
| SU9107 | SU-SU-0028 | 0.36 | 0.37 | 0.15 | -58.36% | 4 | 1 | 5 | | 5 |
| SU9108 | SU-SU-0028 | 0.36 | 0.37 | 0.15 | -58.92% | 4 | 1 | 5 | | 5 |
| SU9110 | SU-SU-0028 | 0.36 | 0.37 | 0.15 | -58.24% | 4 | 1 | 5 | | 5 |
| SU9111 | SU-SU-0029 | 0.08 | 0.08 | 0.08 | -1.88% | 2 | 0 | 2 | | 2 |

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| *Total Suspended Solids (TSS)* | | Existing | Future w/o Project | Future w/Project | % Change Future w/o to Future w/project | Adjusted Existing Score | FXB Adjustment (+1, 0, -1) | Preliminary Indicator Score | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|---|---|
| **Project No.** | **Subwatershed** | **Metric** | **Metric** | **Rev Metric** | | | | | | |
| SU9112 | SU-SU-0030 | 0.14 | 0.14 | 0.12 | -18.73% | 4 | 0 | 4 | | 4 |
| SU9115 | SU-MB-0001 | 0.08 | 0.08 | 0.07 | -14.15% | 4 | 0 | 4 | | 4 |
| SU9117 | SU-FL-0002 | 0.15 | 0.15 | 0.13 | -11.53% | 3 | 0 | 3 | | 3 |
| SU9118 | SU-FL-0001 | 0.15 | 0.15 | 0.14 | -6.10% | 3 | 0 | 3 | | 3 |
| SU9120 | SU-SU-0032 | 0.21 | 0.21 | 0.16 | -22.65% | 4 | 0 | 4 | | 4 |
| SU9121 | SU-FL-0002 | 0.15 | 0.15 | 0.13 | -13.01% | 4 | 0 | 4 | | 4 |
| SU9122 | SU-FL-0002 | 0.15 | 0.15 | 0.14 | -6.92% | 3 | 0 | 3 | | 3 |
| SU9123 | SU-FL-0003 | 0.03 | 0.03 | 0.02 | -45.45% | 4 | 0 | 4 | | 4 |
| SU9124 | SU-RI-0001 | 0.21 | 0.21 | 0.21 | -0.91% | 2 | 0 | 2 | | 2 |
| SU9127 | SU-FL-0003 | 0.03 | 0.03 | 0.03 | -4.96% | 3 | -1 | 2 | | 2 |
| SU9128 | SU-RI-0002 | 0.08 | 0.08 | 0.08 | -4.60% | 3 | -1 | 2 | | 2 |
| SU9129 | SU-RI-0002 | 0.08 | 0.08 | 0.08 | -4.46% | 3 | 1 | 4 | | 4 |
| SU9130 | SU-SU-0034 | 0.19 | 0.20 | 0.15 | -22.25% | 4 | 0 | 4 | | 4 |
| SU9133 | SU-FL-0006 | 0.13 | 0.13 | 0.13 | 0.45% | 2 | 0 | 2 | | 2 |
| SU9135 | SU-SU-0039 | 0.17 | 0.18 | 0.17 | -2.92% | 3 | 0 | 3 | | 3 |
| SU9136 | SU-SU-0039 | 0.17 | 0.18 | 0.16 | -6.40% | 3 | 0 | 3 | | 3 |
| SU9137 | SU-SU-0038 | 0.13 | 0.13 | 0.12 | -11.69% | 4 | 0 | 4 | | 4 |
| SU9138 | SU-FL-0008 | 0.14 | 0.15 | 0.15 | -0.07% | 2 | 0 | 2 | | 2 |
| SU9139 | SU-SU-0040 | 0.20 | 0.20 | 0.19 | -2.97% | 3 | 1 | 4 | | 4 |
| SU9140 | SU-SU-0041 | 0.19 | 0.20 | 0.16 | -18.17% | 4 | -1 | 3 | | 3 |
| SU9141 | SU-SU-0041 | 0.19 | 0.20 | 0.19 | -4.26% | 3 | -1 | 2 | | 2 |
| SU9142 | SU-FL-0009 | 0.13 | 0.14 | 0.14 | -0.51% | 2 | 0 | 2 | | 2 |
| SU9143 | SU-SU-0041 | 0.19 | 0.20 | 0.20 | -0.23% | 2 | 0 | 2 | | 2 |
| SU9144 | SU-SU-0037 | 0.03 | 0.16 | 0.03 | -82.48% | 4 | 0 | 4 | | 4 |
| SU9146 | SU-SU-0041 | 0.19 | 0.20 | 0.20 | -2.47% | 2 | 1 | 3 | | 3 |
| SU9147 | SU-SU-0046 | 0.18 | 0.18 | 0.18 | -1.15% | 2 | -1 | 1 | | 1 |
| SU9149 | SU-SU-0047 | 0.04 | 0.04 | 0.03 | -10.83% | 3 | 0 | 3 | | 3 |
| SU9150 | SU-SU-0049 | 0.14 | 0.14 | 0.13 | -3.83% | 3 | 0 | 3 | | 3 |
| SU9200 | SU-SU-0028 | 0.36 | 0.37 | NA | - | - | 5 | 5 | | 5 |
| SU9201 | SU-FL-0004 | 0.17 | 0.17 | NA | - | - | 5 | 5 | | 5 |
| SU9202 | SU-FL-0006 | 0.13 | 0.13 | NA | - | - | 3 | 3 | | 3 |
| SU9203 | SU-SU-0039 | 0.17 | 0.18 | NA | - | - | 4 | 4 | | 4 |
| SU9204 | SU-FL-0006 | 0.13 | 0.13 | NA | - | - | 3 | 3 | | 3 |
| SU9205 | SU-SU-0035 | 0.13 | 0.13 | NA | - | - | 3 | 3 | | 3 |
| SU9206 | SU-SU-0040 | 0.20 | 0.20 | NA | - | - | 5 | 5 | | 5 |

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| *Total Suspended Solids (TSS)* | | Existing | Future w/o Project | Future w/Project | % Change Future w/o to Future w/project | Adjusted Existing Score | FXB Adjustment (+1, 0, -1) | Preliminary Indicator Score | County Adjustment | Applied Score |
|---|---|---|---|---|---|---|---|---|---|---|
| **Project No.** | **Subwatershed** | **Metric** | **Metric** | **Rev Metric** | | | | | | |
| SU9207 | SU-SU-0042 | 0.19 | 0.20 | NA | - | - | 4 | 4 | | 4 |
| SU9208 | SU-SU-0049 | 0.14 | 0.14 | NA | - | - | 4 | 4 | | 4 |
| SU9209 | SU-SU-0051 | 0.11 | 0.11 | NA | - | - | 4 | 4 | | 4 |
| SU9210 | SU-SU-0050 | 0.17 | 0.17 | NA | - | - | 3 | 3 | | 3 |
| SU9400 | SU-SU-0013 | 0.06 | 0.07 | 0.05 | -36.51% | 4 | 0 | 4 | | 4 |
| SU9500 | SU-SU-0032 | 0.21 | 0.21 | 0.17 | -19.07% | 4 | 0 | 4 | | 4 |
| SU9501 | SU-RI-0002 | 0.08 | 0.08 | 0.08 | -1.15% | 2 | 1 | 3 | | 3 |
| SU9502 | SU-SU-0039 | 0.17 | 0.18 | 0.17 | -0.76% | 2 | 1 | 3 | | 3 |
| SU9503 | SU-FL-0008 | 0.14 | 0.15 | 0.15 | -0.46% | 2 | 0 | 2 | | 2 |
| SU9504 | SU-SU-0035 | 0.13 | 0.13 | 0.14 | 1.63% | 2 | 0 | 2 | | 2 |
| SU9505 | SU-SU-0041 | 0.19 | 0.20 | 0.19 | -3.75% | 3 | 0 | 3 | | 3 |
| SU9509 | SU-SU-0035 | 0.13 | 0.13 | 0.13 | -1.31% | 2 | 1 | 3 | | 3 |
| SU9510 | SU-SU-0040 | 0.20 | 0.20 | 0.19 | -2.32% | 2 | 0 | 2 | | 2 |
| SU9511 | SU-FL-0007 | 0.14 | 0.14 | 0.14 | 2.17% | 2 | 0 | 2 | | 2 |
| SU9512 | SU-SU-0037 | 0.03 | 0.16 | 0.03 | -82.23% | 4 | 0 | 4 | | 4 |
| SU9513 | SU-SU-0043 | 0.20 | 0.23 | 0.23 | -0.67% | 2 | 0 | 2 | | 2 |
| SU9514 | SU-SU-0045 | 0.22 | 0.23 | 0.18 | -21.77% | 4 | 0 | 4 | | 4 |
| SU9515 | SU-SU-0045 | 0.22 | 0.23 | 0.22 | -3.56% | 3 | 0 | 3 | | 3 |

# F. X. Browne, Inc.
# Memorandum

To: Fairfax County
From: F. X. Browne, Inc.
Date: July 8, 2010
RE: Task 3.6 Model Analysis and Evaluation of Alternative Scenarios for Sugarland Run and Horsepen Creek Watersheds

## 1.0 Introduction

Task 3.6 requires that proposed 10-yr implementation projects be further analyzed using SWMM and HEC-RAS to evaluate hydrologic and hydraulic (H&H) benefits. The H&H analyses allows for an assessment of potential impacts as well as evaluation of the objectives met by implementing the projects.

The following represents occasions where modeled output is essential:

- Water quality retrofits that have strong potential to create or exacerbate upstream or downstream flooding conditions
- Projects where the objective is to reduce/mitigate erosive downstream velocities
- Projects where the objective is to reduce/mitigate downstream flooding

In these cases, modeled SWMM and HEC-RAS analysis have been performed to quantify whether adverse impacts were avoided or that objectives were met. This memo summarizes the setup, calibration and results of the hydrologic and hydraulic modeling performed in Task 3.6. A costs and benefits analysis was performed as part of Task 3.6 and is summarized below as well. Results from the final STEPL pollution model from Task 3.4 are also summarized in this memo.

### 1.1 Design Storms

Storm events are classified by the amount of rainfall, in inches, that occurs over the duration of a storm. The amount of rainfall depends on how frequently the storm will statistically occur and how long the storm lasts. In general, smaller storms occur more frequently than larger storms of equal duration. Hence, a 2-year, 24hr storm (having a 50 percent chance of happening in a given year) has less rainfall than a 10-year, 24hr storm (having a 10 percent chance of happening in a given year).

Modeling is a way to mathematically predict and spatially represent what will occur with a given rainfall event. Hydrologic and hydraulic models were used to achieve this goal and are briefly described below:

- *Hydrologic models* take into account several factors including the particular rainfall event of interest, the physical nature of the land area where the rainfall occurs, and how quickly the resulting stormwater runoff drains this given land area. Hydrologic models can describe both the quantity of stormwater runoff and resulting pollution, such as nutrients (nitrogen and phosphorus) and sediment that are transported by the runoff.

- *Hydraulic models* represent the effect the stormwater runoff from a particular rainfall event has on both man-made and natural systems. These models can predict both the ability man-made culverts/channels have in conveying stormwater runoff and the spatial extent of potential flooding.

Table 1 provides modeling rationale for the three storm events that were modeled for this project.

**Table 1**
**Modeling Rationale**

| Storm Event | Modeling Rationale |
|---|---|
| 2-year, 24hr | Represents the amount of runoff that defines the shape of the receiving streams. |
| 10-year, 24hr | Used to determine which road culverts will have adequate capacity to convey this storm without overtopping the road. |
| 100-year, 24hr | Used to define the limits of flood inundation zones |

## 1.2 Selection of Projects

As shown in Table 2, thirty-six (36) projects from the ten year implementation plan were selected for SWMM and/or HEC-RAS modeling, and two (2) additional stream restoration and culvert retrofit projects were selected for changes to be modeled only in HEC-RAS through the subtask 3.6 modeling effort. Subprojects within a project group such as in the case of regional pond alternatives were analyzed individually but were assessed together per the guidance document entitled, Clarification of language from March 2009 WMP Standards Version 3.2 (Subtasks 3.4 & 3.6). A list of selected projects is attached with this memo.

### *1.2.1 Justification for selection of projects*

Projects were selected based on the criteria established at the Technical Team Meeting #6 and in accordance with the guidance document entitled, Clarification of language from March 2009 WMP Standards Version 3.2 (Subtasks 3.4 & 3.6). Based on these criteria, projects that were capable of providing meaningful increased quantity control, decreased downstream flow velocities or reduced flooding were selected for additional modeling in subtask 3.6.

All culvert retrofits that proposed increased conveyance capacities and/or the addition of micropool systems or additional storage capacity were included to be modeled within HEC-RAS. Stream restoration projects that significantly changed the morphology of the stream channel or

proposed changes that would have significant impact to downstream flow velocities were also included in the list of projects to be modeled within HEC-RAS.

### *1.2.2 Justification for projects not modeled in SWMM*

The TM-3 Guidance Update dated February 13, 2008, specifies that double-counting of treatment types is not considered due to wide variation in how treatment would be assigned in nested areas, due to limited availability of information and the number of assumptions that would need to be made.

To be consistent with this guidance, the modeling effort in subtask 3.6 did not include modeling subarea type C facilities in the SWMM model. Projects of this type include rain gardens, green roofs, infiltration trenches, water quality filters, infiltration basins and constructed wetlands. Projects of this class were generally smaller scale improvements to the local area, such as rain gardens, water quality filters, and infiltration trenches. Inherent in their limited scope, these low impact projects have high water quality benefits, but provide no meaningful quantity control and have little to no impact on reducing flooding conditions. Large scale projects that fall into this subtype such as infiltration basins, green roofs and constructed wetlands also were not selected for modeling. Constructed wetlands, green roofs and infiltration basins present modeling difficulties with limited availability of information which would lead to inaccurate assumptions without further detailed study. The current set up of SWMM models does not have mechanisms or capabilities to incorporate these large-scale type C projects without being inconsistent with previous guidance documentation. Although large in scale, these projects would not provide significantly higher water quantity control as standard design practice would have these projects control only the 2-year recurrence interval runoff volumes. In terms of water quantity, type C facilities, particularly those that incorporate bioretention or infiltration, generally reduce runoff volumes and will therefore not increase flooding downstream.

Ten additional projects that did not fall into subarea type C were not selected. These ten projects were all retrofits of existing stormwater facilities. In these cases, the existing SWMM model already indicated the proposed subtype that the proposed project would result in. Therefore, changes to these subareas would have minimal impacts on the water quantity capability already incorporated in the existing model.

### *1.2.3 Justification for projects not modeled in HEC-RAS*

The HEC-RAS model for Sugarland Run and Horsepen Creek contains only the main stem and major tributaries of the two watersheds. Culvert retrofits, in-line ponds, and stream restoration projects that are not located on a modeled channel cannot be incorporated into the model and were excluded from the selected projects list.

Culvert retrofit projects that did not expand the conveyance capability of the channel or increased storage capacity through a micropool or designed outlet structure were also excluded from the selected projects list. In these cases, modeling the culvert retrofit would not result in a change to the velocities within the stream channel.

Likewise, stream restoration projects that did not propose alterations to the channel cross sections or significant changes to the morphology and planform of the stream were also excluded from the modeling effort. These minor stream restoration projects, such as stream bank stabilization, do not significantly change the conveyance capability of the stream channel nor do they generally have a significant impact on channel velocities.

Table 2 below shows the final list of projects modeled in the hydrologic and hydraulic models.

**Table 2**
**List of Modeled Projects**

| Subwatershed | Project ID | Modeled in | | | SWMM RUN |
|---|---|---|---|---|---|
| | | STEPL | SWMM | HEC-RAS | |
| HC-CR-0002 | HC9007E | X | X | | 1 |
| HC-CR-0004 | HC9013F | X | X | | 1 |
| HC-CR-0005 | HC9013G | X | X | | 1 |
| HC-CR-0005 | HC9013K | X | X | | 1 |
| HC-CR-0005 | HC9013J | X | X | | 1 |
| HC-FP-0003 | HC9127A | X | X | | 1 & 2 |
| HC-FP-0003 | HC9127B | X | X | | 1 |
| HC-FP-0003 | HC9127A | X | X | | 1 & 2 |
| HC-FP-0004 | HC9114 | X | X | | 1 |
| HC-HC-0020 | HC9200B | X | X | | 1 |
| HC-HC-0026 | HC9102 | X | X | | 1 |
| HC-HC-0030 | HC9118A | X | X | | 1 |
| HC-HC-0030 | HC9118B | X | X | | 1 |
| HC-HC-0030 | HC9122 | X | X | | 2 |
| HC-HC-0031 | HC9128 | X | X | | 1 |
| HC-HC-0031 | HC9130 | X | X | | 2 |
| HC-HC-0032 | HC9132 | X | X | | 1 |
| HC-HC-0033 | HC9134A | X | X | | 1 |
| HC-HC-0034 | HC9126 | X | X | | 1 |
| HC-HC-0034 | HC9129A | X | X | | 2 |
| HC-HC-0037 | HC9140 | X | X | | 1 |
| HC-HC-0040 | HC9142B | X | X | | 1 |
| HC-MR-0004 | HC9107 | X | X | | 1 |
| HC-MR-0004 | HC9110 | X | X | | 2 |
| SU-FF-0002 | SU9007J | X | X | | 2 & 3 |
| SU-FF-0002 | SU9007J | X | X | | 2 & 3 |
| SU-FF-0004 | SU9007B | X | | | 1 & 3 |
| SU-FF-0004 | SU9007B | X | | | 1 & 3 |
| SU-FF-0004 | SU9007D | X | X | | 3 |
| SU-FF-0004 | SU9007I | X | X | | 3 |

| Table 2<br>List of Modeled Projects | | | | | |
|---|---|---|---|---|---|
| **Subwatershed** | **Project ID** | **Modeled in** | | | **SWMM RUN** |
| | | **STEPL** | **SWMM** | **HEC-RAS** | |
| SU-FF-0004 | SU9007L | X | X | | 3 |
| SU-FL-0002 | SU9117A | X | X | | 1 |
| SU-FL-0002 | SU9117B | X | X | | 1 |
| SU-FL-0003 | SU9123 | X | X | | 1 |
| SU-FL-0004 | SU9201B | X | X | | 1 |
| SU-FL-0004 | SU9201A | | | X | |
| SU-RI-0003 | SU9002A | X | X | | 1 |
| SU-RI-0003 | SU9002C | X | X | | 1 |
| SU-RI-0003 | SU9002D | X | | | |
| SU-SU-0008 | SU9100 | X | X | | 1 |
| SU-SU-0012 | SU9101A | X | X | | 1 |
| SU-SU-0012 | SU9101B | X | X | | 1 |
| SU-SU-0018 | SU9103A | X | X | | 1 |
| SU-SU-0028 | SU9108A | X | X | | 1 |
| SU-SU-0028 | SU9108B | X | X | | 1 |
| SU-SU-0032 | SU9120A | X | X | | 1 |
| SU-SU-0032 | SU9120B | X | X | | 1 |
| SU-SU-0034 | SU9130 | X | X | | 1 |
| SU-SU-0035 | SU9205 | | | X | |
| SU-SU-0037 | SU9144A | X | X | | 1 |
| SU-SU-0037 | SU9144B | X | X | | 1 |
| SU-SU-0037 | SU9144C | X | X | | 1 |
| SU-SU-0037 | SU9144D | X | X | | 1 |
| SU-SU-0039 | SU9135A | X | X | | 1 |
| SU-SU-0039 | SU9136 | X | X | | 2 |
| SU-SU-0041 | SU9141 | X | X | | 1 |
| SU-SU-0041 | SU9146B | X | X | | 2 |
| SU-SU-0046 | SU9147 | X | X | | 1 |
| SU-SU-0047 | SU9149A | X | X | | 1 |
| SU-SU-0047 | SU9149B | X | X | | 1 |
| SU-SU-0047 | SU9149D | X | X | | 1 |
| SU-SU-0047 | SU9149E | X | X | | 1 |
| SU-SU-0047 | SU9149F | X | X | | 1 |
| SU-SU-0047 | SU9149G | X | X | | 1 |
| SU-SU-0049 | SU9150 | X | X | | 1 |

## 2.0 Setup and Calibration of Stormwater Models

As discussed in the previous section, modeling is a way to mathematically predict and spatially represent what will occur during a given rainfall event. Hydrologic and hydraulic models are the two types of models that are used to achieve this.

Hydrologic and hydraulic models were created for three distinct scenarios as listed below:

- Existing conditions
- Future conditions without projects
- Future conditions with projects

For *Existing Conditions*, the models simulated the condition of the watersheds at the time the models were created by incorporating information on land use, soils, existing stormwater management and best management practice facilities, previous stream and watershed assessments, and actual field reconnaissance and site visits. The *Future Conditions without Projects* scenario simulated future conditions based on countywide future land use and development, derived from the county's comprehensive plan and build-out predictions. As the name implies, the *Future Conditions without Projects* models do not contain any of the watershed restoration strategies or projects identified in this plan. The *Future Conditions with Projects* scenario simulates the implementation of the projects discussed in the previous sections. The *Future Conditions with Projects* scenario uses the *Future Conditions without Projects* models as a base on which proposed restoration strategies are added and evaluated.

Comparison of modeling results from these three scenarios yielded pollutant loading and stormwater runoff reductions discussed below.

### 2.1 GIS Processing

A sequence of Geographical Information System (GIS) processing was required in preparation for pollution modeling with STEPL and hydrologic modeling with SWMM. The *Future Conditions with Projects* scenario was evaluated in two ways. First, each project was evaluated individually, in order to assess the benefits of each individual project. In order to isolate project benefits, the projects were divided into multiple 'runs' for modeling purposes. Each run contained no more than one project per subwatershed; projects with multiple subprojects and regional pond alternative scenarios were processed together in order to model the benefits of the entire group of projects. A final 'run' was also processed for each model in order to evaluate the benefits of the implementation plans as a whole.

For each run, drainage areas to each modeled project were delineated in GIS. Processing was conducted in GIS to break each subwatershed into subareas based on the existing and/or proposed stormwater controls. There are five distinct subareas, each representing a type of stormwater facility:

- Peak-shaving only (subarea A)
- Peak-shaving and water quality, wet pond (subarea B1)

- Peak-shaving and water quality, dry pond (subarea B2)
- Peak-shaving only (subarea C)
- No stormwater treatment (subarea D)

Subareas were delineated from subwatersheds to adequately characterize all of the stormwater treatment that was occurring in the subwatershed. In some cases, the *Existing Conditions* and *Future Conditions without Projects* subareas were calculated incorrectly. The treatment by some ponds was not included in the appropriate subarea because the pond was not included in the County's stormwater network and not identified until candidate project field reconnaissance, or the drainage area to the pond did not contain any parcels included in the County's controlled parcels GIS layer. The treatment of some other areas was overestimated either because the parcels were included in the County's controlled parcels GIS layer, but not located within the drainage area of an existing stormwater management facility, or because candidate project field reconnaissance indicated that an existing pond provided less treatment than was originally modeled. These inaccuracies inherent in the GIS processing methodology are minimal at the watershed scale; however, they are problematic at an individual project scale. Best professional judgment was used to determine whether individual project benefits were over or under estimated in pollution modeling. Some projects were excluded from hydrologic modeling due to these inconsistencies.

During the GIS processing, output tables were created for each 'run' that contain the land use and soils data for the proposed stormwater management areas for use in water quality and water quantity modeling.

## 2.2 Pollution Model

The Spreadsheet Tool for the Estimation of Pollutant Load (STEPL) model developed for the U. S. EPA was used to quantify the nutrient and sediment loads generated by stormwater runoff. The STEPL model calculates nutrient and sediment loads using simple algorithms based on the runoff volume and the pollutant concentrations in the runoff water as influenced by factors such as the land use distribution and management practices. The annual sediment load is calculated based on the Universal soil Loss Equation (USLE) and the sediment delivery ratio. Sediment and pollutant load reductions that result from the implementation of existing and/or proposed stormwater management facilities or best management practices (BMPs) are computed using known pollutant removal efficiencies.

### *2.2.1 Pollutant Model Setup*

A STEPL model was developed for each of three conditions as described above. The model for each scenario was generally set up in the same manner. Local data such as state name, county name, precipitation information, universal soil loss equation (USLE) parameters and nutrient concentration in runoff were entered into the model.

Land use and soils tables were developed and imported into the STEPL model based on the distribution of each land use type or soil hydrologic group within each subarea. Pollutant loads

and load reductions were automatically calculated for total nitrogen, total phosphorus, and sediment.

Because pollutant loads and load reductions were calculated at a subwatershed scale, each proposed project was modeled individually in order to show the water quality benefits for each specific project, and as a group to show the water quality benefits of watershed management plan as a whole.

Regional ponds were not modeled using the subarea classifications like smaller stormwater facilities because these facilities often drain larger areas that may include several subareas with additional stormwater controls. Therefore, regional facilities that were proposed for retrofit or construction were modeled by revising the regional pond pollutant removal efficiencies.

## 2.3 Hydrologic Model

The SWMM model was developed by the U. S. EPA and was used to model rainfall runoff relationships in the Sugarland Run and Horsepen Creek watersheds. Peak rate of runoff and total runoff volume values were generated from the SWMM models and describe the magnitude of stormwater runoff that results from each of the design storms.

### *2.3.1 Hydrologic Model Setup*

SWMM models were generally created in the same manner for all three scenarios. Delineated subwatersheds were imported into the model and subareas were added depending on the type of stormwater facility/restoration strategy. Subwatershed and subarea parameters were input into the model from existing data, updated with field reconnaissance data and calibrated against real world flow and runoff information.

Subareas were delineated from subwatersheds to adequately characterize all of the stormwater treatment that was occurring in the subwatershed. Subareas were representative of all stormwater facilities or restoration strategies of a single type within a subwatershed. Therefore, the area draining to the facilities of each type were summed up and modeled as a single subarea (i.e. sum of all areas draining to C type facilities are represented by a single C type subarea within the model).

Regional ponds listed in the 1989 County Regional Stormwater Management Plan have both the stage-area relationship and the orifice elevation and size available. These regional ponds were represented within the model separately from the subarea delineation described above. The stage-area table from the report was specified for the storage unit, and the sizes and crest heights were specified for the orifices.

SWMM models for the *Existing Conditions* and the *Future Conditions without Projects* scenarios were prepared by the County's Technical Consultant, updated with field reconnaissance data and calibrated using discharge relationships developed in D. G. Anderson's 1970 Water Supply Paper and/or flood frequency methods detailed in U.S.G.S. Fact Sheet 023-01.

The SWMM models for the *Future Conditions with Projects* scenario were developed using the *Future Conditions without Projects* as the base models into which the proposed 10-year structural projects would be added. The SWMM Updating Tool developed by the County's Technical Consultant and the methodology outlined in the "Tutorial for using the SWMM Updating Tool" provided by the Technical Consultant were used to build these SWMM models. Subareas delineated in the GIS processing described above were manually entered into the SWMM models and subarea parameters such as subarea width and storage unit surface areas were calculated and adjusted in the models. Orifice sizes for the various stormwater facilities were calculated per the "Tutorial for Orifice Sizing" provided by the Technical Consultant. During quality control checking of the SWMM models, it was determined that the SWMM Updating Tool replaced previously calibrated infiltration values in subareas that had no change in area. Infiltration values and routing parameters from the *Future Conditions without Projects* models were copied into the *Future Conditions with Projects* models and finalized.

## 2.4 Hydraulic Model

The Hydrologic Engineering Centers River Analysis System (HEC-RAS) hydraulic model was initially developed by the U.S. Army Corps of Engineers (USACE) in the early 1990s as a tool to manage the rivers and harbors in their jurisdiction. HEC-RAS has found wide acceptance as the standard for simulating the hydraulics of water flow through natural and/or manmade channels and rivers. HEC-RAS is commonly used for modeling water flowing through a system of open channels with the objective of computing water surface elevations.

### *2.4.1 Hydraulic Model Setup*

The geographic input data for the HEC-RAS model was extracted using HEC-GeoRAS. HEC-GeoRAS is a tool that processes the geospatial data within the County's Geographic Information System, specifically as it pertains to physical features such as stream geometry and flow path so that these features can be represented in the model. The HEC-RAS models were limited to the major tributaries and the main stem of Horsepen Creek and Sugarland Run and do not include intermittent streams in headwater areas. Low flows and undefined channels prevent the models from providing beneficial output in these areas. However, the flow contributions from these areas were considered in downstream areas within the model.

Using available County or Virginia Department of Transportation (VDOT) engineering data, bridge and culvert crossings were coded into the model to simulate the effect these facilities have on the water surface elevations or profile. Where data were not available, field reconnaissance was performed to obtain the crossing elevation data. This crossing data was determined relative to a point where the elevation could be estimated accurately from the County's topographic data. Manning's 'n' values, which represent surface roughness, were assigned to the channel and overbank portions of the studied streams based on field visits and aerial photographs.

The hydrologic flow input data and the locations where the flows change were extracted from SWMM. The 2-yr, 10-yr and 100-yr storm flow outputs were determined at several locations in order to provide a detailed flow profile for input into the HEC-RAS hydraulic model.

As stated previously, the 2-year storm discharge is regarded as the channel-forming or dominant discharge that transports the majority of a stream's sediment load and therefore actively forms and maintains the channel. A comparison of stream dynamics and channel geometry for the 2-year discharge provides insight regarding the relative stability of the system and helps to identify areas in need of restoration.

The 10-year storm discharge was included to analyze the level of service of bridge and culvert stream crossings. Occurring less frequently than the 2-year storm, the flood stage associated with this storm can result in more significant safety hazards to residents. All stream crossings (bridges and culverts) were analyzed against this storm to see if they performed at safe levels.

The 100-year storm discharge is used by the Federal Emergency Management Agency (FEMA) to delineate floodplain inundation zones in order to establish a Flood Insurance Rate Map (FIRM) for a given area. The 100-yr HEC-RAS models were built in compliance with FEMA standards and were included to map the limits of these floodplain inundation zones. This mapping provided a means to assess which properties are at risk to flooding by the 100-yr storm event.

## 3.0 Analysis of Stormwater Modeling Results

Results of the modeling efforts were compiled and analyzed to determine the magnitude and extent of flooding and flow changes caused by implementation of the modeled projects. Pollutant load reductions were evaluated for all projects in the watershed management plan.

### 3.1 STEPL Model Results

STEPL model results for the overall 10-year implementation plan are presented in Table 3. Overall, the 10-year implementation plan will reduce total nitrogen, phosphorus and suspended solids by 3,447 pounds per year, 568 pounds per year and 118 tons per year, respectively.

| Table 3<br>STEPL Model Results for 10-year Implementation Plan | | | | |
|---|---|---|---|---|
| | **Modeling Scenario** | **Total Nitrogen (lb/yr)** | **Total Phosphorus (lb/yr)** | **Total Suspended Solids (ton/yr)** |
| Sugarland Watershed, Folly Lick Branch WMA | Future Condition without Projects | 11,241 | 1,711 | 239 |
| | Future Condition with Projects | 11,049 | 1,680 | 233 |
| | Reduction | 191 | 30 | 5 |
| Sugarland Watershed, Headwaters WMA | Future Condition without Projects | 6,733 | 906 | 120 |
| | Future Condition with Projects | 6,545 | 880 | 116 |
| | Reduction | 188 | 26 | 4 |
| Sugarland Watershed, Lower WMA | Future Condition without Projects | 9,072 | 1,331 | 183 |
| | Future Condition with Projects | 8,885 | 1,299 | 178 |
| | Reduction | 187 | 33 | 6 |
| Sugarland Watershed, Lower Middle WMA | Future Condition without Projects | 16,065 | 2,375 | 335 |
| | Future Condition with Projects | 15,925 | 2,351 | 330 |
| | Reduction | 140 | 25 | 5 |
| Sugarland Watershed, Potomac WMA | Future Condition without Projects | 1,552 | 238 | 39 |
| | Future Condition with Projects | 1,551 | 238 | 39 |
| | Reduction | 0 | 0 | 0 |
| Sugarland Watershed, Upper WMA | Future Condition without Projects | 13,360 | 1,803 | 284 |
| | Future Condition with Projects | 12,930 | 1,735 | 266 |
| | Reduction | 430 | 68 | 18 |
| Sugarland Watershed, Upper Middle WMA | Future Condition without Projects | 13,315 | 1,919 | 258 |
| | Future Condition with Projects | 12,642 | 1,803 | 231 |
| | Reduction | 673 | 116 | 27 |
| Sugarland Watershed, Total | Future Condition without Projects | 71,337 | 10,283 | 1,459 |
| | Future Condition with Projects | 69,528 | 9,986 | 1,394 |
| | Reduction | 1,809 | 297 | 65 |
| Horsepen Watershed, Cedar Run WMA | Future Condition without Projects | 4,801 | 726 | 103 |
| | Future Condition with Projects | 4,556 | 674 | 91 |
| | Reduction | 245 | 52 | 12 |
| Horsepen Watershed, Frying Pan Branch WMA | Future Condition without Projects | 7,863 | 1,119 | 137 |
| | Future Condition with Projects | 7,596 | 1,073 | 126 |
| | Reduction | 268 | 46 | 11 |
| Horsepen Watershed, Indian Creek WMA | Future Condition without Projects | 7,200 | 1,023 | 144 |
| | Future Condition with Projects | 7,201 | 1,023 | 144 |
| | Reduction | -1 | 0 | 0 |
| Horsepen Watershed, Lower WMA | Future Condition without Projects | 15,944 | 1,937 | 445 |
| | Future Condition with Projects | 15,945 | 1,937 | 445 |
| | Reduction | -1 | 0 | 0 |
| Horsepen Watershed, Lower Middle WMA | Future Condition without Projects | 10,006 | 1,512 | 219 |
| | Future Condition with Projects | 9,535 | 1,439 | 205 |
| | Reduction | 472 | 73 | 14 |
| Horsepen Watershed, Merrybrook Run WMA | Future Condition without Projects | 5,236 | 756 | 63 |
| | Future Condition with Projects | 5,218 | 752 | 63 |
| | Reduction | 18 | 4 | 0 |

| Table 3<br>STEPL Model Results for 10-year Implementation Plan | | | | |
|---|---|---|---|---|
| | **Modeling Scenario** | **Total Nitrogen (lb/yr)** | **Total Phosphorus (lb/yr)** | **Total Suspended Solids (ton/yr)** |
| Horsepen Watershed, Middle WMA | Future Condition without Projects | 6,908 | 818 | 156 |
| | Future Condition with Projects | 6,788 | 810 | 155 |
| | Reduction | 120 | 8 | 1 |
| Horsepen Watershed, Stallion WMA | Future Condition without Projects | 5,517 | 700 | 159 |
| | Future Condition with Projects | 5,515 | 700 | 159 |
| | Reduction | 2 | 0 | 0 |
| Horsepen Watershed, Upper WMA | Future Condition without Projects | 9,325 | 1,323 | 126 |
| | Future Condition with Projects | 8,810 | 1,236 | 112 |
| | Reduction | 515 | 87 | 14 |
| Horsepen Watershed, Total | Future Condition without Projects | 72,802 | 9,914 | 1,552 |
| | Future Condition with Projects | 71,164 | 9,644 | 1,499 |
| | Reduction | 1,638 | 271 | 53 |
| Total Watershed Management Plan | Future Condition without Projects | 144,139 | 20,197 | 3,010 |
| | Future Condition with Projects | 140,692 | 19,629 | 2,893 |
| | Reduction | 3,447 | 568 | 118 |

### 3.2 SWMM Model Results

Tables 4 and 5 below presents the 2-Year and 10-Year peak rate of runoff flows from the SWMM model runs for Sugarland Run and Horsepen Creek. The tables below show the effects of the modeled projects individually and bundled in cases of subprojects or regional pond alternatives.

| Table 4<br>SWMM Model Results for Horsepen Creek | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Subbasin** | **Project ID** | **2-YR Total Flow (cfs)** | | | **10-YR Total Flow (cfs)** | | |
| | | **Future without Projects** | **Future with Projects** | **Difference** | **Future without Projects** | **Future with Projects** | **Difference** |
| HC-CR-0002 | HC9007E | 67.22 | 31.21 | -54% | 140.25 | 64.80 | -54% |
| | Overall | | 31.21 | -54% | | 64.80 | -54% |
| HC-CR-0004 | HC9013F | 147.05 | 133.73 | -9% | 306.27 | 271.24 | -11% |
| | Overall | | 133.77 | -9% | | 271.27 | -11% |
| HC-CR-0005 | HC9013G, HC9013K, HC9013J | 102.78 | 89.98 | -12% | 213.66 | 182.71 | -14% |
| | Overall | | 90.02 | -12% | | 182.73 | -14% |

| Table 4<br>SWMM Model Results for Horsepen Creek | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Subbasin** | **Project ID** | **2-YR Total Flow (cfs)** | | | **10-YR Total Flow (cfs)** | | |
| | | **Future without Projects** | **Future with Projects** | **Difference** | **Future without Projects** | **Future with Projects** | **Difference** |
| HC-FP-0003 | HC9127A & HC9127B | 65.41 | 64.71 | -1% | 130.35 | 129.21 | -1% |
| | HC9127A | | 64.74 | -1% | | 131.01 | 1% |
| | Overall | | 64.72 | -1% | | 129.25 | -1% |
| HC-FP-0004 | HC9114 | 183.11 | 141.22 | -23% | 371.71 | 297.77 | -20% |
| | Overall | | 141.20 | -23% | | 297.49 | -20% |
| HC-HC-0020 | HC9200B | 154.68 | 155.37 | 0% | 334.95 | 333.07 | -1% |
| | Overall | | 155.30 | 0% | | 331.96 | -1% |
| HC-HC-0026 | HC9102 | 65.42 | 57.43 | -12% | 126.72 | 112.32 | -11% |
| | Overall | | 57.44 | -12% | | 112.32 | -11% |
| HC-HC-0030 | HC9118A & HC9118B | 61.78 | 55.51 | -10% | 123.19 | 111.38 | -10% |
| | HC9122 | | 51.14 | -17% | | 102.81 | -17% |
| | Overall | | 44.96 | -27% | | 90.57 | -26% |
| HC-HC-0031 | HC9128 | 327.87 | 322.03 | -2% | 913.68 | 982.57 | 8% |
| | HC9130 | | 337.54 | 3% | | 1030.91 | 13% |
| | Overall | | 316.17 | -4% | | 928.39 | 2% |
| HC-HC-0032 | HC9132 | 99.00 | 97.09 | -2% | 201.71 | 204.67 | 1% |
| | Overall | | 97.10 | -2% | | 204.69 | 1% |
| HC-HC-0033 | HC9134A | 3.83 | 3.83 | 0% | 3.88 | 3.88 | 0% |
| | Overall | | 3.83 | 0% | | 3.88 | 0% |
| HC-HC-0034 | HC9126 | 56.92 | 58.30 | 2% | 116.69 | 121.79 | 4% |
| | HC9129A | | 50.46 | -11% | | 107.26 | -8% |
| | Overall | | 51.13 | -10% | | 108.61 | -7% |
| HC-HC-0037 | HC9140 | 121.27 | 104.90 | -13% | 242.36 | 213.42 | -12% |
| | Overall | | 104.89 | -14% | | 213.38 | -12% |
| HC-HC-0040 | HC9142B | 92.55 | 91.19 | -1% | 188.23 | 188.17 | 0% |
| | Overall | | 91.19 | -1% | | 188.17 | 0% |
| HC-MR-0004 | HC9107 | 126.11 | 106.62 | -15% | 254.96 | 208.58 | -18% |
| | HC9110 | | 119.98 | -5% | | 240.41 | -6% |
| | Overall | | 104.86 | -17% | | 206.55 | -19% |

In the Horsepen Creek watershed, HC9007E, a regional pond alternative project that consisted of a new in-line extended detention pond at the location of a proposed but never constructed regional pond, showed the greatest reduction in flows with a 54% reduction in flows from both

the 2-year and 10-year storm events. Projects HC9128 and HC9130 in subwatershed HC-HC-0031 resulted in increased flow in the 10-year storm event, indicating that these two proposed retrofits are releasing too much flow during the 10-year storm. The scope and design of these projects was reevaluated and their ranking in the priority list was affected.

**Table 5**
**SWMM Model Results for Sugarland Run**

| Subbasin | Project ID | 2-YR Total Flow (cfs) | | | 10-YR Total Flow (cfs) | | |
|---|---|---|---|---|---|---|---|
| | | Future without Projects | Future with Projects | Difference | Future without Projects | Future with Projects | Difference |
| SU-FF-0002 | SU9007J | 207.38 | 198.21 | -4% | 454.03 | 433.83 | -4% |
| | SU9007J | | 187.49 | -10% | | 394.65 | -13% |
| | Overall | | 186.15 | -10% | | 400.16 | -12% |
| SU-FF-0004 | SU9007B | 126.17 | 119.34 | -5% | 280.32 | 250.44 | -11% |
| | SU9007B, SU9007D, SU9007I, SU9007L | | 116.81 | -7% | | 244.43 | -13% |
| | Overall | | 115.26 | -9% | | 243.93 | -13% |
| SU-FL-0002 | SU9117A & SU9117B | 756.05 | 748.74 | -1% | 1538.91 | 1522.70 | -1% |
| | Overall | | 749.03 | -1% | | 1523.14 | -1% |
| SU-FL-0003 | SU9123 | 10.51 | 5.48 | -48% | 12.41 | 12.41 | 0% |
| | Overall | | 5.47 | -48% | | 12.41 | 0% |
| SU-FL-0004 | SU9201B | 702.38 | 701.67 | 0% | 1403.83 | 1408.42 | 0% |
| | Overall | | 701.60 | 0% | | 1408.30 | 0% |
| SU-RI-0003 | SU9002A & SU9002C | 58.69 | 52.43 | -11% | 122.24 | 107.74 | -12% |
| | Overall | | 52.41 | -11% | | 107.69 | -12% |
| SU-SU-0008 | SU9100 | 128.97 | 97.79 | -24% | 249.37 | 201.48 | -19% |
| | Overall | | 97.81 | -24% | | 201.55 | -19% |
| SU-SU-0012 | SU9101A & SU9101B | 85.39 | 83.38 | -2% | 173.17 | 168.60 | -3% |
| | Overall | | 83.36 | -2% | | 168.55 | -3% |
| SU-SU-0018 | SU9103A | 58.24 | 49.14 | -16% | 119.37 | 99.49 | -17% |
| | Overall | | 49.19 | -16% | | 99.61 | -17% |
| SU-SU-0028 | SU9108A & SU9108B | 149.88 | 140.84 | -6% | 263.51 | 246.20 | -7% |
| | Overall | | 140.88 | -6% | | 246.29 | -7% |

| Table 5<br>SWMM Model Results for Sugarland Run | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Subbasin** | **Project ID** | **2-YR Total Flow (cfs)** | | | **10-YR Total Flow (cfs)** | | |
| | | **Future without Projects** | **Future with Projects** | **Difference** | **Future without Projects** | **Future with Projects** | **Difference** |
| SU-SU-0032 | SU9120A & SU9120B | 1192.26 | 1141.09 | -4% | 2540.36 | 2424.46 | -5% |
| | Overall | | 1128.91 | -5% | | 2398.19 | -6% |
| SU-SU-0034 | SU9130 | 110.23 | 69.73 | -37% | 225.79 | 141.92 | -37% |
| | Overall | | 70.04 | -36% | | 142.49 | -37% |
| SU-SU-0037 | SU9144A, SU9144B, SU9144C | 3.57 | 3.57 | 0% | 3.58 | 3.57 | 0% |
| | Overall | | 3.57 | 0% | | 3.57 | 0% |
| SU-SU-0039 | SU9135A | 173.48 | 128.71 | -26% | 357.89 | 262.63 | -27% |
| | SU9136 | | 109.94 | -37% | | 224.72 | -37% |
| | Overall | | 105.07 | -39% | | 214.43 | -40% |
| SU-SU-0041 | SU9141 | 298.78 | 266.67 | -11% | 588.21 | 526.55 | -10% |
| | SU9146B | | 271.19 | -9% | | 531.91 | -10% |
| | Overall | | 259.38 | -13% | | 508.88 | -13% |
| SU-SU-0046 | SU9147 | 200.74 | 187.13 | -7% | 387.33 | 361.28 | -7% |
| | Overall | | 187.20 | -7% | | 361.42 | -7% |
| SU-SU-0047 | SU9149A, SU9149B, SU9149D, SU9149E, SU9149F, SU9149G | 401.21 | 378.75 | -6% | 769.91 | 728.36 | -5% |
| | Overall | | 379.13 | -6% | | 728.93 | -5% |
| SU-SU-0049 | SU9150 | 266.68 | 253.15 | -5% | 502.56 | 476.46 | -5% |
| | Overall | | 253.57 | -5% | | 477.08 | -5% |

The SWMM model results show that projects SU9130 and SU9136 yielded the greatest reduction in flows of projects in the Sugarland Run watershed that were modeled. Both projects are new enhanced extended detention basins where no stormwater treatment currently exists and the SWMM model indicates that implementation of both projects would result in a 37% reduction in flows from both the 2-year and 10-year storm events. Project SU9201B and project suite SU9144A-D resulted in no net change between the *Future Conditions without Projects* and *Future Conditions with Projects* scenarios. The results for project SU9201B is indicative of its relatively small size and drainage area. Project suite SU9144A-C is a series of small extended

detention basins with small drainage areas. The scope and design of these projects was reevaluated and their ranking in the priority list was affected.

### 3.3 HEC-RAS Model Results

Peak flow values from the SWMM models were used as inputs for HEC-RAS models. In general, *Future Conditions without Projects* models showed increased water surface elevations compared to *Existing Conditions* models, although the extent of flooding was generally the same. Peak flow values for *Future Conditions with Projects* models were generally lower and resulted in water surface elevations that were lower. In some cases where projects were targeted to alleviate flooding or to prevent roadway overtopping, water surface elevations were significantly lower and the goal of preventing damage to property from flooding was achieved. Figure 1 below depicts the magnitude of the difference in water surface elevations between the *Future Conditions with Projects* and *Future Conditions without Projects* scenarios in some sections.

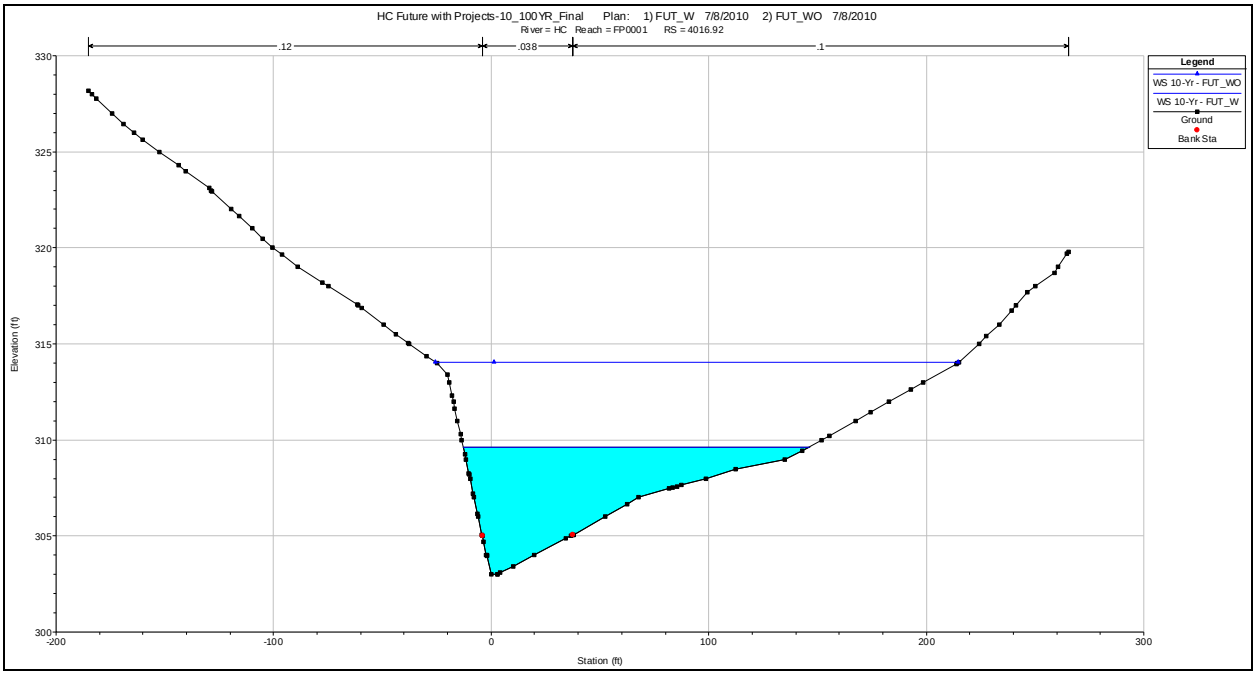



Figure 1: Plot of HEC-RAS cross-section located on Frying Pan Branch of the Horsepen Creek watershed showing reduction in flow from *Future Conditions without Projects* to *Future Conditions with Projects* scenario for the 10-year storm event.

## 4.0 Cost Benefits Analysis

An integral element to evaluating the benefits of restoration strategies and projects is associated costs. Cost estimates were calculated for all structural projects. Detailed cost estimates were determined for structural projects in the 0-10 year implementation phase. The total costs of implementing projects in this phase were calculated to be approximately $18 million and $13 million for the Sugarland Run and Horsepen Creek watersheds, respectively. Associated costs for structural projects in the 11-25 year phase were roughly approximated based on the overall costs

associated with similar projects in the 10 year implementation plan and estimated to total about $13 million. Cost estimates were not calculated for non-structural projects, because non-structural projects do not require traditional construction measures to be implemented and may be programmatic in nature.

In addition to the calculation of cost estimates for projects listed in the implementation plan, a cost benefit analysis was also performed. The project cost distribution for all projects listed in the 10-year implementation plan was evaluated. The evaluation of the project cost distribution allowed for a determination of outliers within the lists of projects. These outliers could be projects that were significantly more or less expensive than other projects in the lists. These projects were further scrutinized and evaluated to determine if they should remain in the 10-year list. Outliers determined to be kept in the list were evaluated separately from the other projects in the 10-year list. A cost to benefit ratio was calculated based on the subwatershed ranking composite score and the projects' associated costs. Using the cost to benefit ratio, all structural projects in the 10-year implementation plan were reordered based on this analysis. Best professional judgment will be used to determine the appropriateness of the ranking adjustments for each 10-year project. A table detailing the results of the cost benefits analysis and containing all 0-25 year projects is attached in Appendix B. The final adjusted rank will be reflected in the table for the final watershed management plan. Projects without a cost-benefit analysis score and rank are part of the 25-year implementation plan and were not included in the cost-benefit analysis.

## 5.0 Conclusions & Ranking Modifications

Based on the results presented in this memo, the overall impact of implementing the projects identified in the 10-year priority list is generally beneficial to reducing pollutant loads and stormwater runoff flows. These results were used to adjust the overall ranking of structural projects for the final watershed management plan. Projects showing significant reductions were weighted favorably whereas projects showing increased flows or potential for downstream flooding were further evaluated to determine viability in the 10-year priority list.

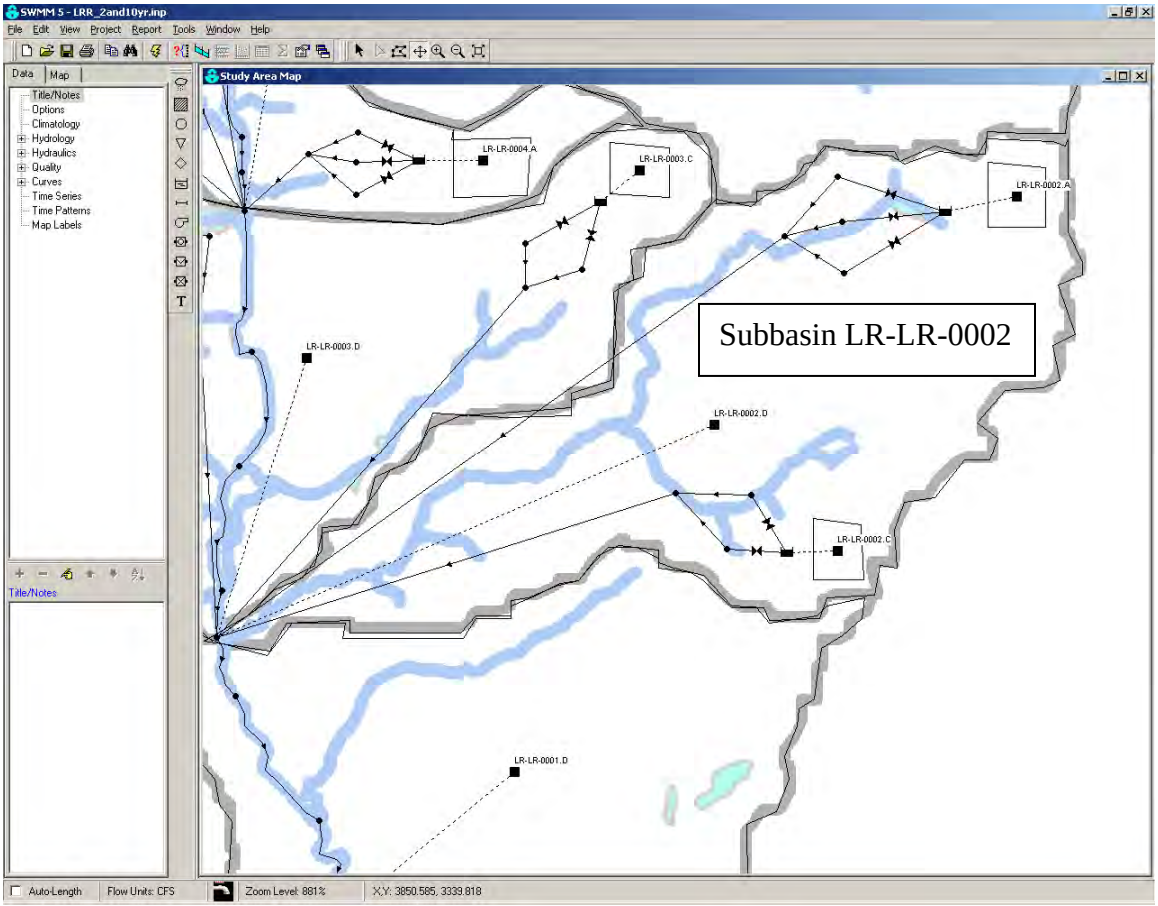
# Appendix A: Determination of SWMM Input Parameters

## Determination of SWMM input parameters

This short write-up explains how input parameters for the County SWMM models are developed. The LRR-SWMM model is used as an example in the following discussions.

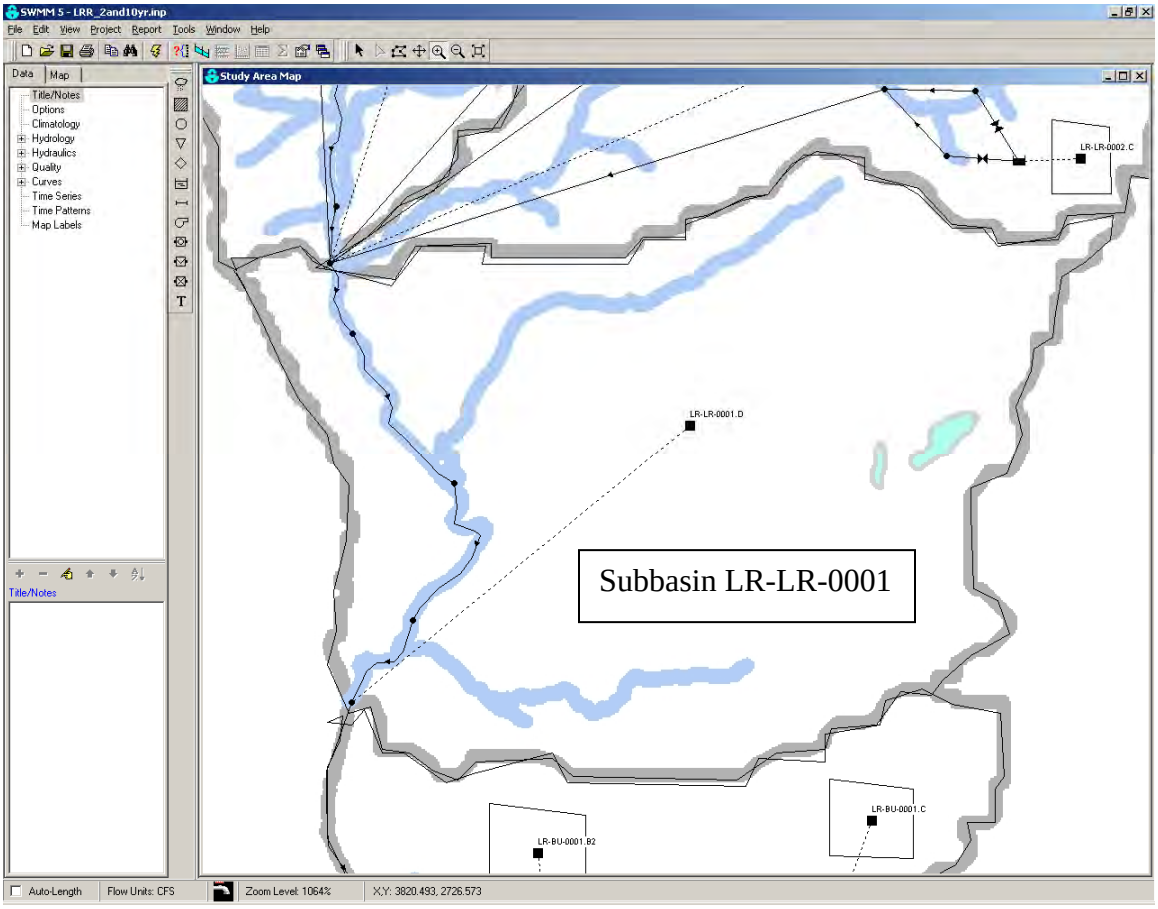
### 1. General model setup

When setting up SWMM, the subbasins and subareas are delineated. Since most subbasins always have subarea D (no-treatment) and may have one or more other subareas (i.e., A, B1, B2, and C), by default the delineation along the subbasin boundary is named as subarea "D." Other subareas, if any, are delineated as rectangular boxes within subarea "D." This delineation scheme only illustrates the subarea composition within a subbasin, and does not reflect the real location of subareas or influence the routing of surface runoff. The input parameters for each subarea is entered separately (discussed in Section 2) and flow is routed to downstream components, independent of the size or location of the delineation.




The screenshot above shows the delineation for several Little Rocky Run subbasins/subareas. As shown, in subbasin LR-LR-0002, there are three subareas of A, C, and D. By default the delineation along the subbasin boundary is named as subarea D, and subareas A and C are delineated as rectangles within. Surface runoff from each subarea is either routed to the subbasin outlet or the downstream stormwater facility (discussed in Section 3).

A subbasin may also contain only one subarea, as shown below for subbasin LR-LR-0001. The only subarea here, Subarea D, is delineated along the subbasin boundary and routed to subbasin outlet. Natural stream channel (discussed in Section 4) carries upstream runoff to downstream through the subbasin.




**2. Input parameters for subarea**

As shown in the SWMM input parameter window above for subarea LR-LR-0002.D, input parameters for a subarea include area, width, slope, percentage of impervious, Manning's *n* for both pervious and impervious surfaces, depression storage for both impervious and pervious surfaces, percentage of impervious surfaces with zero depression storage, subarea internal routing method and percentage, and the Horton infiltration parameters. The generation of each input parameter is discussed below.

**Area** – In a given subbasin, the aggregated area for one particular subarea type (i.e. sum all C subareas within LR-LR-0002) is the value to input for that subarea in SWMM.

**Width** – The width of a subbasin, as specified in SWMM User's manual, is calculated by dividing the subbasin area by the longest flow path. The longest flow path is automatically generated using ArcHydro. In subbasins consisting of more than one subareas, TM3 specifies that the width of the subbasin is divided among the subareas in proportion to the area percentage of each subarea in the subbasin. For example, the LR-LR-0002 subbasin has a total area of

145.66 acres and a longest flow path of 6792.02 ft. Thus, the width for the subbasin is 934.18 ft. Since the area of subarea D is 125.35 acre, or 86%, the width for subarea D is 934.18*86%=803.91 ft.

**Slope** – Slope for a subbasin is calculated as "rise over run," in which the "run" represents the longest flow path, and the "rise" is the elevation difference between the starting and ending points of the longest flow path. As is specified in TM3, slope is calculated for subbasins only, and all the subareas within a subbasin use the same slope.

**Percentage of imperviousness** – The percentage of imperviousness of a subarea is calculated as dividing the total planimetric impervious area (i.e. building, roadway, parking lot, and sidewalk) by the total area of the subarea.

**Manning's *n*** – The Manning's *n* for both impervious and pervious surfaces are calculated based on land use information following TM3 specifications (pp. 4-29). The area of each type of land use within a subarea is first tabulated and the percentage calculated. By referring to the Manning's *n* for each type of land use in TM3, an area-weighted Manning's *n* is calculated for the whole subarea.

**Depression storage** – The depression storage for pervious and impervious surfaces follows the TM3 recommendations, in which the depression storage for pervious surface is 0.2 in and impervious 0.1 in.

**Percentage of impervious surface with zero depression storage** – A default value of 25% suggested by TM3 is used in the initial model setup.

**Internal routing method and percentage** – This is a SWMM5 capability of allowing for internal routing of flow among pervious and impervious surfaces (SWMM has three categories of surfaces: DCIA, NDCIA, and pervious), which makes it possible to reflect runoff from NDCIA surfaces (by routing NDCIA runoff to neighboring pervious surfaces). When specifying the internal routing method, flow is routed to pervious surfaces, and the percentage routed is calculated as the NDCIA area divided by the total impervious area (DCIA+NDCIA).

**Horton infiltration parameters (WLMIN, WLMAX, and DECAY)** – The Horton infiltration parameters are generated based on the soils information within each subarea, following TM3 specifications (pp. 4-13). The area of each hydraulic soils group within a subarea is first tabulated, and area-weighted WLMAX, WLMIN, and DECAY are then calculated for the soils in the subarea.

## 3. Input parameters for stormwater facilities

There are four types of stormwater facilities: peak-shaving only (subarea A); peak-shaving and water quality, wet pond (subarea B1); peak-shaving and water quality, dry pond (subarea B2); and peak-shaving only (subarea C).

### ***3.1 Peak-shaving facilities***

The peak-shaving facilities serve the purpose of maintaining the pre-development peak flow for both 2-year and 10-year design storms. In the model representation, a storage unit with three orifices is used to represent the facility. Facing downstream, the three orifices are the 2-year orifice, 10-year orifice, and overflow orifice from left to right. The elevation of the orifices also increase as they change from 2-year to overflow. For example, the 2-year orifice is always located at the bottom of the storage unit (Crest Height=0). Dummy channels carries flow from the three orifices to a downstream converging point, before discharging the combined outflow to subbasin outlet.

The storage unit is initialized to have a surface area of 1/8 acre with uniform depth, and the maximum depth is set to be 20 ft. The surface area of the storage unit might change during the sizing process. The sizing process follows the procedures in Virginia Stormwater Management Handbook.

At the end of sizing process, the 2-year orifice has a maximum outflow rate that equals the pre-development subarea (Impervious percentage=0) peak runoff rate during the 2-year design storm. No flow occurs in the 10-year and overflow orifices during the 2-year event. During a 10-year design event, the combined flow from the 10-year and 2-year orifices equal the pre-development subarea peak flow rate, and no flow occurs in the overflow orifice. The overflow orifice is located at the maximum water depth in the storage unit during a 10-year storm, and the overflow orifice diameter is uniformly set to be 5 ft.

### ***3.2 Peak-shaving and water quality facilities, wet pond***

The wet pond facilities provide water quality benefits through the permanent pool of water. Except for the permanent pool, all other features are the same as the peak-shaving facilities.

Following the Virginia Stormwater Management Handbook guidelines, the volume of the permanent pool of water is four times the water quality volume. The water quality volume is defined as the first inch of runoff from the impervious surfaces of a subarea. After calculating the volume of permanent pool, the initial depth of water in the SWMM storage unit is calculated by dividing the volume with the storage unit surface area. The initial depth of water in the storage unit is the elevation for the 2-year outflow orifice. The sizing procedures followed for 2-year, 10-year, and overflow orifices are the same as those in the peak-shaving facilities case.

### ***3.3 Water quality only facilities***

The sizing for water quality only facilities observes the County regulations on water quality facilities, in which an imperviousness-based water quality volume has to be detained and released in 48 hours. The relationship between subarea imperviousness and the volume required for storage is specified in Plate No. 2-6 of the County Public Facilities Manual.

For water quality only facilities, one storage unit and two orifices (water quality orifice and overflow orifice) are used for the representation. Initial settings for the storage unit (surface area and maximum depth) are the same as in the peak-shaving only facilities. Similar to peak-shaving only facilities and wet pond type facilities, the two orifices are water quality orifice and overflow orifice from left to right when facing downstream.

Sizing of water quality orifice follows the Virginia Stormwater Management Handbook procedures. The final water quality orifice sizing ensures that the release time for the storage volume is 48 hours. The overflow orifice is uniformly set to be 5 ft in diameter.

### ***3.4 Peak-shaving and water quality facilities, dry pond***

The peak-shaving and water quality facilities functions like a combination of the peak-shaving only facility and the water quality only facility. In SWMM, the representation is one storage unit with four outflow orifices: water quality orifice, 2-year outflow orifice, 10-year outflow orifice, and overflow orifice. When facing downstream, the four orifices are arranged as water quality orifice, 2-year orifice, 10-year orifice, and overflow orifice from left to right.

During the sizing process, the water quality orifice is first sized following the same steps as those in the water quality only facilities. Then the 2-year, 10-year, and overflow orifices are sized as for the peak-shaving only facilities. The only difference here is that during a 2-year event, the peak rate of the combined flow from the water quality and 2-year orifices matches the pre-development subarea peak runoff rate. And in a 10-year design event, the combined flow from the water quality orifice, 2-year orifice, and 10-year orifice matches the pre-development subarea peak runoff rate. The overflow orifice diameter is uniformly set to 5 ft.

## 4. Input parameters for natural channels

Cross-sections are cut along the main channel stem following TM3 guidelines (pp. 6-5). The ArcGIS 3D Analyst is used to derive the cross-section channel profile based on the County TIN data. The cross-section data are then exported in Excel files, which are then loaded into SWMM.

All the natural channel cross-sections have the “irregular” shape, which has the cross-section from the TIN data. The channel lengths are measured from the County FHD layer. A SWMM5 default Manning’s *n* of 0.01 is used for all channels.

## 5. Input parameters for regional ponds

Regional ponds listed in the 1989 County Regional Stormwater Management Plan have both the stage-area relationship and the orifice elevation and size available. These regional ponds are represented within the model using one storage unit and two or three orifices depending on the design. The stage-area table from the report is specified for the storage unit, and the sizes and crest heights are specified for the orifices.

As for regional ponds that are not listed in the 1989 County Regional Stormwater Management Plan, some have as-built information available (i.e., Keene Mill Village regional pond in Pohick Creek) and some does not have any information (i.e. Lake Accotink in Accotink Creek, Burke Lake in Pohick). As for the ones that have the as-built information, the data are in the forms of elevation-outflow tables or curves for 2-year or 10-year design events (instead of stage-area for storage unit, and crest height and size for 2-year and 10-year orifices). That means that a separate representation needs to be created for both 2-year and 10-year design storms for these regional ponds (a total number of 10). Currently these ten regional ponds are not represented.

All regional ponds in the County are marked with text notation in the model, and the regional ponds that need addition information are noted in the “Description” of the pond.

# Appendix B: Cost Benefit Analysis Results

| Project Number | Composite Score | Comp. Score Rank | WAG Adj (#.##) | Revised Score | Adjusted Project Rank | CBA Score | CBA Scaled Score | Adjusted Project Rank |
|---|---|---|---|---|---|---|---|---|
| HC9007 | 3.63 | 32 | - | 3.63 | 32 | 3.91 | 0.93 | 38 |
| HC9013 | 3.87 | 12 | 0.25 | 4.12 | 5 | 4.77 | 0.86 | 57 |
| HC9100 | 3.12 | 97 | - | 3.12 | 101 | - | - | 101 |
| HC9101 | 3.22 | 84 | - | 3.22 | 89 | - | - | 89 |
| HC9102 | 3.70 | 24 | - | 3.70 | 26 | 3.66 | 1.01 | 18 |
| HC9103 | 2.90 | 113 | - | 2.90 | 112 | - | - | 112 |
| HC9104 | 3.04 | 102 | - | 3.04 | 105 | - | - | 105 |
| HC9105 | 2.85 | 116 | -0.50 | 2.35 | 121 | - | - | 121 |
| HC9106 | 3.60 | 39 | - | 3.60 | 39 | 3.98 | 0.90 | 49 |
| HC9107 | 3.92 | 10 | - | 3.92 | 13 | 3.78 | 1.04 | 13 |
| HC9108 | 3.30 | 71 | - | 3.30 | 76 | - | - | 76 |
| HC9109 | 3.63 | 33 | - | 3.63 | 33 | 4.17 | 0.87 | 56 |
| HC9110 | 3.52 | 45 | - | 3.52 | 45 | 3.68 | 0.96 | 27 |
| HC9111 | 3.25 | 80 | - | 3.25 | 85 | - | - | 85 |
| HC9113 | 2.74 | 119 | - | 2.74 | 117 | - | - | 117 |
| HC9114 | 3.53 | 44 | - | 3.53 | 44 | 4.04 | 0.87 | 55 |
| HC9115 | 2.95 | 110 | - | 2.95 | 110 | - | - | 110 |
| HC9116 | 3.65 | 30 | - | 3.65 | 30 | 3.80 | 0.96 | 24 |
| HC9117 | 2.93 | 111 | - | 2.93 | 111 | - | - | 111 |
| HC9118 | 3.73 | 23 | - | 3.73 | 25 | 3.59 | 1.04 | 12 |
| HC9119 | 3.02 | 105 | 0.50 | 3.52 | 45 | 4.27 | 0.82 | 64 |
| HC9121 | 3.63 | 33 | - | 3.63 | 33 | 4.55 | 0.80 | 67 |
| HC9122 | 4.02 | 7 | - | 4.02 | 10 | 3.49 | 1.15 | 1 |
| HC9123 | 3.90 | 11 | - | 3.90 | 14 | 3.66 | 1.07 | 6 |
| HC9124 | 3.15 | 93 | - | 3.15 | 98 | - | - | 98 |
| HC9125 | 3.25 | 80 | - | 3.25 | 85 | - | - | 85 |
| HC9126 | 3.65 | 30 | - | 3.65 | 30 | 3.72 | 0.98 | 21 |
| HC9127 | 3.75 | 22 | - | 3.75 | 24 | 3.72 | 1.01 | 19 |
| HC9128 | 3.40 | 56 | - | 3.40 | 59 | 4.23 | 0.80 | 66 |
| HC9129 | 4.25 | 2 | - | 4.25 | 3 | 4.35 | 0.98 | 22 |
| HC9130 | 3.45 | 54 | - | 3.45 | 56 | 3.68 | 0.94 | 34 |
| HC9131 | 2.85 | 116 | - | 2.85 | 115 | - | - | 115 |
| HC9132 | 3.48 | 47 | - | 3.48 | 48 | 3.78 | 0.92 | 42 |
| HC9133 | 3.30 | 71 | - | 3.30 | 76 | - | - | 76 |
| HC9134 | 3.80 | 18 | - | 3.80 | 20 | 3.98 | 0.95 | 29 |
| HC9135 | 3.25 | 82 | - | 3.25 | 87 | - | - | 87 |
| HC9136 | 3.40 | 57 | - | 3.40 | 60 | 3.66 | 0.93 | 36 |
| HC9137 | 3.45 | 53 | - | 3.45 | 55 | 4.23 | 0.82 | 65 |
| HC9138 | 3.30 | 76 | - | 3.30 | 81 | - | - | 81 |
| HC9139 | 3.20 | 87 | - | 3.20 | 91 | - | - | 91 |
| HC9140 | 3.40 | 57 | - | 3.40 | 60 | 4.10 | 0.83 | 63 |
| HC9142 | 4.10 | 3 | - | 4.10 | 6 | 3.80 | 1.08 | 4 |
| HC9143 | 3.30 | 71 | - | 3.30 | 76 | - | - | 76 |
| HC9146 | 3.20 | 88 | - | 3.20 | 92 | - | - | 92 |
| HC9148 | 3.10 | 99 | - | 3.10 | 103 | - | - | 103 |
| HC9149 | 4.05 | 6 | - | 4.05 | 9 | 3.90 | 1.04 | 11 |
| HC9200 | 3.78 | 21 | - | 3.78 | 22 | 4.07 | 0.93 | 39 |
| HC9201 | 3.87 | 13 | - | 3.87 | 15 | 3.82 | 1.01 | 17 |
| HC9202 | 3.37 | 64 | - | 3.37 | 68 | 3.99 | 0.84 | 60 |

| Project Number | Composite Score | Comp. Score Rank | WAG Adj (#.##) | Revised Score | Adjusted Project Rank | CBA Score | CBA Scaled Score | Adjusted Project Rank |
|---|---|---|---|---|---|---|---|---|
| HC9302 | 3.30 | 71 | - | 3.30 | 76 | - | - | 76 |
| HC9400 | 3.14 | 94 | - | 3.14 | 99 | - | - | 99 |
| HC9401 | 2.60 | 121 | - | 2.60 | 119 | - | - | 119 |
| HC9500 | 4.08 | 5 | - | 4.08 | 8 | 3.86 | 1.06 | 7 |
| HC9501 | 2.28 | 123 | - | 2.28 | 122 | - | - | 122 |
| HC9502 | 2.53 | 122 | - | 2.53 | 120 | - | - | 120 |
| HC9503 | 3.27 | 78 | 0.50 | 3.77 | 23 | 3.53 | 1.07 | 5 |
| HC9505 | 2.98 | 108 | - | 2.98 | 108 | - | - | 108 |
| SU9001 | 2.93 | 112 | 0.25 | 3.18 | 95 | - | - | 95 |
| SU9002 | 3.14 | 96 | 0.25 | 3.39 | 63 | 3.93 | 0.86 | 58 |
| SU9005 | 3.06 | 101 | 0.25 | 3.31 | 75 | - | - | 75 |
| SU9007 | 3.21 | 85 | 0.25 | 3.46 | 53 | 3.85 | 0.90 | 51 |
| SU9100 | 3.48 | 47 | - | 3.48 | 48 | 3.70 | 0.94 | 32 |
| SU9101 | 3.46 | 52 | - | 3.46 | 53 | 4.15 | 0.83 | 61 |
| SU9103 | 3.47 | 50 | - | 3.47 | 51 | 3.78 | 0.92 | 43 |
| SU9105 | 3.30 | 71 | - | 3.30 | 76 | - | - | 76 |
| SU9106 | 3.47 | 51 | - | 3.47 | 52 | 4.17 | 0.83 | 62 |
| SU9107 | 3.09 | 100 | - | 3.09 | 104 | - | - | 104 |
| SU9108 | 3.41 | 55 | - | 3.41 | 58 | 3.78 | 0.90 | 50 |
| SU9110 | 3.61 | 37 | - | 3.61 | 37 | 3.62 | 1.00 | 20 |
| SU9111 | 3.14 | 95 | - | 3.14 | 100 | - | - | 100 |
| SU9112 | 3.27 | 78 | - | 3.27 | 83 | - | - | 83 |
| SU9115 | 3.02 | 104 | - | 3.02 | 106 | - | - | 106 |
| SU9117 | 3.39 | 59 | - | 3.39 | 62 | 4.37 | 0.78 | 69 |
| SU9118 | 3.35 | 67 | - | 3.35 | 71 | - | - | 71 |
| SU9120 | 3.36 | 65 | - | 3.36 | 69 | 4.29 | 0.78 | 68 |
| SU9121 | 3.16 | 91 | - | 3.16 | 96 | - | - | 96 |
| SU9122 | 3.32 | 70 | - | 3.32 | 74 | - | - | 74 |
| SU9123 | 3.62 | 36 | - | 3.62 | 36 | 3.98 | 0.91 | 46 |
| SU9124 | 2.86 | 115 | - | 2.86 | 114 | - | - | 114 |
| SU9127 | 2.96 | 109 | - | 2.96 | 109 | - | - | 109 |
| SU9128 | 3.16 | 92 | - | 3.16 | 97 | - | - | 97 |
| SU9129 | 3.38 | 60 | - | 3.38 | 64 | 3.74 | 0.90 | 48 |
| SU9130 | 3.82 | 17 | - | 3.82 | 19 | 3.66 | 1.04 | 9 |
| SU9133 | 3.35 | 67 | - | 3.35 | 71 | - | - | 71 |
| SU9135 | 3.59 | 40 | - | 3.59 | 40 | 4.00 | 0.90 | 52 |
| SU9136 | 3.84 | 15 | - | 3.84 | 17 | 3.74 | 1.03 | 14 |
| SU9137 | 3.18 | 89 | - | 3.18 | 93 | - | - | 93 |
| SU9138 | 3.02 | 105 | - | 3.02 | 107 | - | - | 107 |
| SU9139 | 3.54 | 43 | - | 3.54 | 43 | 3.49 | 1.01 | 16 |
| SU9140 | 4.01 | 8 | -0.75 | 3.26 | 84 | - | - | 84 |
| SU9141 | 3.38 | 61 | - | 3.38 | 65 | 3.49 | 0.97 | 23 |
| SU9142 | 3.21 | 85 | - | 3.21 | 90 | - | - | 90 |
| SU9143 | 3.48 | 49 | - | 3.48 | 50 | 3.64 | 0.96 | 28 |
| SU9144 | 3.61 | 37 | - | 3.61 | 37 | 3.76 | 0.96 | 25 |
| SU9146 | 3.97 | 9 | - | 3.97 | 11 | 3.62 | 1.10 | 3 |
| SU9147 | 3.38 | 61 | - | 3.38 | 65 | 3.64 | 0.93 | 37 |
| SU9149 | 3.79 | 19 | 0.50 | 4.29 | 2 | 4.63 | 0.93 | 40 |
| SU9150 | 3.63 | 35 | - | 3.63 | 35 | 3.86 | 0.94 | 33 |
| SU9200 | 2.73 | 120 | - | 2.73 | 118 | - | - | 118 |

| Project Number | Composite Score | Comp. Score Rank | WAG Adj (#.##) | Revised Score | Adjusted Project Rank | CBA Score | CBA Scaled Score | Adjusted Project Rank |
|---|---|---|---|---|---|---|---|---|
| SU9201 | 3.65 | 29 | 0.50 | 4.15 | 4 | 3.96 | 1.05 | 8 |
| SU9202 | 3.11 | 98 | - | 3.11 | 102 | - | - | 102 |
| SU9203 | 4.09 | 4 | - | 4.09 | 7 | 4.47 | 0.91 | 45 |
| SU9204 | 3.48 | 46 | - | 3.48 | 47 | 4.60 | 0.76 | 70 |
| SU9205 | 3.27 | 77 | 0.15 | 3.42 | 57 | 3.90 | 0.88 | 54 |
| SU9206 | 3.34 | 69 | - | 3.34 | 73 | - | - | 73 |
| SU9207 | 3.03 | 103 | 0.25 | 3.28 | 82 | - | - | 82 |
| SU9208 | 3.69 | 25 | 0.25 | 3.94 | 12 | 4.13 | 0.95 | 30 |
| SU9209 | 3.78 | 20 | - | 3.78 | 21 | 3.94 | 0.96 | 26 |
| SU9210 | 3.66 | 28 | - | 3.66 | 29 | 3.51 | 1.04 | 10 |
| SU9400 | 2.84 | 118 | - | 2.84 | 116 | - | - | 116 |
| SU9500 | 3.55 | 42 | - | 3.55 | 42 | 3.92 | 0.90 | 47 |
| SU9501 | 3.25 | 83 | - | 3.25 | 88 | - | - | 88 |
| SU9502 | 3.83 | 16 | - | 3.83 | 18 | 4.53 | 0.85 | 59 |
| SU9503 | 3.00 | 107 | -1.00 | 2.00 | 123 | - | - | 123 |
| SU9504 | 3.37 | 63 | - | 3.37 | 67 | 3.62 | 0.93 | 35 |
| SU9505 | 3.69 | 26 | - | 3.69 | 27 | 4.12 | 0.89 | 53 |
| SU9509 | 3.68 | 27 | - | 3.68 | 28 | 4.02 | 0.91 | 44 |
| SU9510 | 2.90 | 114 | - | 2.90 | 113 | - | - | 113 |
| SU9511 | 3.35 | 66 | - | 3.35 | 70 | - | - | 70 |
| SU9512 | 3.56 | 41 | - | 3.56 | 41 | 3.76 | 0.95 | 31 |
| SU9513 | 3.18 | 90 | - | 3.18 | 94 | - | - | 94 |
| SU9514 | 4.41 | 1 | - | 4.41 | 1 | 3.94 | 1.12 | 2 |
| SU9515 | 3.86 | 14 | - | 3.86 | 16 | 3.76 | 1.03 | 15 |

| Project Number | Composite Score | Comp. Score Rank | WAG Adj (#.##) | Revised Score | Adjusted Project Rank | CBA Score | CBA Scaled Score | Adjusted Project Rank |
|---|---|---|---|---|---|---|---|---|
| SU9201 | 3.65 | 29 | 0.50 | 4.15 | 4 | 3.96 | 1.05 | 8 |
| SU9202 | 3.11 | 98 | - | 3.11 | 102 | - | - | 102 |
| SU9203 | 4.09 | 4 | - | 4.09 | 7 | 4.47 | 0.91 | 45 |
| SU9204 | 3.48 | 46 | - | 3.48 | 47 | 4.60 | 0.76 | 70 |
| SU9205 | 3.27 | 77 | 0.15 | 3.42 | 57 | 3.90 | 0.88 | 54 |
| SU9206 | 3.34 | 69 | - | 3.34 | 73 | - | - | 73 |
| SU9207 | 3.03 | 103 | 0.25 | 3.28 | 82 | - | - | 82 |
| SU9208 | 3.69 | 25 | 0.25 | 3.94 | 12 | 4.13 | 0.95 | 30 |
| SU9209 | 3.78 | 20 | - | 3.78 | 21 | 3.94 | 0.96 | 26 |
| SU9210 | 3.66 | 28 | - | 3.66 | 29 | 3.51 | 1.04 | 10 |
| SU9400 | 2.84 | 118 | - | 2.84 | 116 | - | - | 116 |
| SU9500 | 3.55 | 42 | - | 3.55 | 42 | 3.92 | 0.90 | 47 |
| SU9501 | 3.25 | 83 | - | 3.25 | 88 | - | - | 88 |
| SU9502 | 3.83 | 16 | - | 3.83 | 18 | 4.53 | 0.85 | 59 |
| SU9503 | 3.00 | 107 | -1.00 | 2.00 | 123 | - | - | 123 |
| SU9504 | 3.37 | 63 | - | 3.37 | 67 | 3.62 | 0.93 | 35 |
| SU9505 | 3.69 | 26 | - | 3.69 | 27 | 4.12 | 0.89 | 53 |
| SU9509 | 3.68 | 27 | - | 3.68 | 28 | 4.02 | 0.91 | 44 |
| SU9510 | 2.90 | 114 | - | 2.90 | 113 | - | - | 113 |
| SU9511 | 3.35 | 66 | - | 3.35 | 70 | - | - | 70 |
| SU9512 | 3.56 | 41 | - | 3.56 | 41 | 3.76 | 0.95 | 31 |
| SU9513 | 3.18 | 90 | - | 3.18 | 94 | - | - | 94 |
| SU9514 | 4.41 | 1 | - | 4.41 | 1 | 3.94 | 1.12 | 2 |
| SU9515 | 3.86 | 14 | - | 3.86 | 16 | 3.76 | 1.03 | 15 |

| Master Project List | | | | | | |
|---|---|---|---|---|---|---|
| **Priority Structural Projects (10 Year Implementation Plan)** | | | | | | |
| **Project #** | **Project Type** | **WMA** | **Location** | **Watershed Benefit** | **Land Owner** | **Cost** |
| HC9007 | Regional Pond Alternative Suite | Horsepen - Cedar | Between Ladybank Lane & Mother Well Court | Quality/ Quantity | County, Private | $820,000.00 |
| HC9013 | Regional Pond Alternative Suite | Horsepen - Cedar | Between Franklin Farm Road, West Ox Road & Ashburton Avenue | Quality/ Quantity | County, Private | $2,140,000.00 |
| HC9102 | New Stormwater Pond | Horsepen - Middle | Legacy Circle & Sunrise Valley Drive | Quality/ Quantity | Private | $150,000.00 |
| HC9106 | Stormwater Pond Retrofit | Horsepen - Frying Pan | Frying Pan Road & Centreville Road | Quality/ Quantity | State, County | $310,000.00 |
| HC9107 | New Stormwater Pond | Horsepen - Merrybrook | Palmer Drive & Dogwood Court | Quality/ Quantity | Local | $210,000.00 |
| HC9109 | Stormwater Pond Retrofit | Horsepen - Frying Pan | Between Coppermine Road, Thomas Jefferson Drive & Masons Ferry Drive | Quality/ Quantity | County | $400,000.00 |
| HC9110 | New Stormwater Pond | Horsepen - Merrybrook | Herndon Parkway & Campbell Way | Quality/ Quantity | Private | $160,000.00 |
| HC9114 | Stormwater Pond Retrofit | Horsepen - Frying Pan | Fox Mill Road & Cabin Creek Road | Quality/ Quantity | County | $340,000.00 |
| HC9116 | New Stormwater Pond | Horsepen - Frying Pan | Near Halterbreak Court & Curved Iron Road culs-de sac | Quality | County | $220,000.00 |
| HC9118 | Stormwater Pond Retrofit | Horsepen - Upper | Between Floris Lane & Merricourt Lane culs-de-sac | Quality/ Quantity | County, Private | $120,000.00 |
| HC9119 | Stormwater Pond Retrofit | Horsepen - Frying Pan | Colts Brook Drive & Fox Mill Road | Quality/ Quantity | County | $450,000.00 |
| HC9121 | Stormwater Pond Retrofit, BMP/LID | Horsepen - Upper | Centreville Road & Lake Shore Drive | Quality/ Quantity | State, County, Private | $590,000.00 |
| HC9122 | Stormwater Pond Retrofit | Horsepen - Upper | Lake Shore Drive & Running Pump Lane | Quality/ Quantity | Private | $70,000.00 |
| HC9123 | Stormwater Pond Retrofit | Horsepen - Upper | Near Point Rider Lane & Equus Court | Quality/ Quantity | County | $150,000.00 |
| HC9126 | Stormwater Pond Retrofit | Horsepen - Upper | Monterey Estates Drive & West Ox Road | Quality/ Quantity | County | $180,000.00 |

| Master Project List | | | | | | |
|---|---|---|---|---|---|---|
| **Priority Structural Projects (10 Year Implementation Plan)** | | | | | | |
| **Project #** | **Project Type** | **WMA** | **Location** | **Watershed Benefit** | **Land Owner** | **Cost** |
| HC9127 | Stormwater Pond Retrofit | Horsepen - Frying Pan | Near Medow Hall Drive & New Carson Drive | Quality/ Quantity | County | $180,000.00 |
| HC9128 | Stormwater Pond Retrofit | Horsepen - Upper | Korean Orthodox Presbyterian Church, Mclearen Road & Centreville Road | Quality/ Quantity | Private | $430,000.00 |
| HC9129 | Stormwater Pond Retrofit, BMP/LID | Horsepen - Upper | West Ox Road & New Parkland Drive | Quality/ Quantity | County | $490,000.00 |
| HC9130 | Stormwater Pond Retrofit | Horsepen - Upper | Middleton Farm Subdivision, between Middleton Farm Lane & Blue Holly Lane culs-de-sac | Quality/ Quantity | County | $160,000.00 |
| HC9132 | Stormwater Pond Retrofit | Horsepen - Upper | Highland Mews Subdivision, Hutumn Court & Highland Mews Court | Quality/ Quantity | County | $210,000.00 |
| HC9134 | Stormwater Pond Retrofit, BMP/LID | Horsepen - Upper | Kinross Circle & Scotsmore Way | Quality/ Quantity | County, Private | $310,000.00 |
| HC9136 | Stormwater Pond Retrofit | Horsepen - Upper | Near Viking Drive & Pinecrest Road | Quality/ Quantity | County, Private | $150,000.00 |
| HC9137 | Stream Restoration, New Stormwater Pond | Horsepen - Upper | Between Tewksbury Drive & Kettering Drive | Quality | Private | $430,000.00 |
| HC9140 | Stormwater Pond Retrofit | Horsepen - Upper | Huntington Drive cul-de-sac | Quality/ Quantity | County, Private | $370,000.00 |
| HC9142 | Stormwater Pond Retrofit, New Stormwater Pond | Horsepen - Upper | Quincy Adams Drive & Quincy Adams Court | Quality/ Quantity | County, Private | $220,000.00 |
| HC9149 | New Stormwater Pond | Horsepen - Upper | Chasbarb Terrace & Chasbarb Court | Quality | Private | $270,000.00 |
| HC9200 | Culvert Retrofit, Stream Restoration | Horsepen - Lower Middle | Near Parcher Avenue & Monaghan Drive, next to the Reflection Lake pool | Quality | County, Private | $1,070,000.00 |
| HC9201 | Stream Restoration | Horsepen - Upper | Between Claxton Drive & Conquest Place culs-de-sac | Quality | Private | $230,000.00 |
| HC9202 | Stream Restoration | Horsepen - Upper | Between Quincy Adams Court, Viking Court & Prince Harold Court culs-de-sac | Quality | Private | $950,000.00 |

| Master Project List | | | | | | |
|---|---|---|---|---|---|---|
| **Priority Structural Projects (10 Year Implementation Plan)** | | | | | | |
| **Project #** | **Project Type** | **WMA** | **Location** | **Watershed Benefit** | **Land Owner** | **Cost** |
| HC9500 | BMP/LID | Horsepen - Middle | Wellesley Subdivision, Stratford Glen Place | Quality | Private | $250,000.00 |
| HC9503 | BMP/LID | Horsepen - Frying Pan | Frying Pan Park/Kidwell Farm | Quality | County | $90,000.00 |
| SU9002 | Regional Pond Alternative Suite | Sugarland - Upper Middle | Near Wheile Avenue, between Pellow Circle Terrace & Reston Avenue | Quality/ Quantity | County, Private | $860,000.00 |
| SU9007 | Regional Pond Alternative Suite | Sugarland - Lower Middle | Between Leesburg Pike, Fairfax County Parkway & Wiehle Avenue | Quality/ Quantity | State, County, Private | $730,000.00 |
| SU9100 | Stormwater Pond Retrofit | Sugarland - Lower | Jackson Tavern Way cul-de-sac | Quality/ Quantity | County | $170,000.00 |
| SU9101 | Stormwater Pond Retrofit | Sugarland - Lower | Near Great Falls Way & Jackson Tavern Way | Quality/ Quantity | County | $390,000.00 |
| SU9103 | Stormwater Pond Retrofit | Sugarland - Lower | Thomas Run Drive | Quality/ Quantity | County, Private | $210,000.00 |
| SU9106 | Stormwater Pond Retrofit, BMP/LID | Sugarland - Lower Middle | Near Tralee Drive & Old Holly Drive | Quality/ Quantity | County | $400,000.00 |
| SU9108 | Stormwater Pond Retrofit | Sugarland - Lower Middle | Dranesville Road & Woodson Drive | Quality/ Quantity | County, Private | $210,000.00 |
| SU9110 | Stormwater Pond Retrofit | Sugarland - Lower Middle | Methven Court cul-de-sac | Quality/ Quantity | County | $130,000.00 |
| SU9117 | Stormwater Pond Retrofit | Sugarland - Folly Lick | Dranesville Road & Hiddenbrook Drive | Quality/ Quantity | County | $500,000.00 |
| SU9120 | Stormwater Pond Retrofit | Sugarland - Upper Middle | Near Eddyspark Drive & Kingsvale Circle | Quality/ Quantity | County, Private | $460,000.00 |
| SU9123 | Stormwater Pond Retrofit | Sugarland - Folly Lick | Near Philmont Drive & Judd Court | Quality/ Quantity | County | $310,000.00 |
| SU9129 | Stormwater Pond Retrofit | Sugarland - Upper Middle | Near Quail Ridge Court cul-de-sac | Quality | County, Private | $190,000.00 |
| SU9130 | New Stormwater Pond | Sugarland - Upper Middle | Near Jenny Ann Court cul-de-sac | Quality/ Quantity | Private | $150,000.00 |
| SU9135 | Stormwater Pond Retrofit, BMP/LID | Sugarland - Upper Middle | Trinity Presbyterian Church | Quality/ Quantity | County, Private | $320,000.00 |

| Master Project List | | | | | | |
|---|---|---|---|---|---|---|
| **Priority Structural Projects (10 Year Implementation Plan)** | | | | | | |
| **Project #** | **Project Type** | **WMA** | **Location** | **Watershed Benefit** | **Land Owner** | **Cost** |
| SU9136 | New Stormwater Pond | Sugarland - Upper Middle | Runnymede Park | Quality/ Quantity | State, Local | $190,000.00 |
| SU9139 | Stormwater Pond Retrofit | Sugarland - Upper | Towns at Stuart Pointe Subdivision, Stuart Pointe Lane | Quality/ Quantity | County | $70,000.00 |
| SU9141 | Stormwater Pond Retrofit | Sugarland - Upper | Substation near Grove Street & Grant Street | Quality/ Quantity | Private | $70,000.00 |
| SU9143 | Stormwater Pond Retrofit | Sugarland - Upper | Near Grove Street & Herndon Parkway | Quality/ Quantity | Private | $140,000.00 |
| SU9144 | New Stormwater Pond, BMP/LID | Sugarland - Upper Middle | Bowman Towne Drive & Fountain Drive | Quality/ Quantity | County, Private | $200,000.00 |
| SU9146 | Stormwater Pond Retrofit, New Stormwater Pond | Sugarland - Upper | Next to St. Timothy's Episcopal Church, Spring Street | Quality/ Quantity | County, Private | $130,000.00 |
| SU9147 | Stormwater Pond Retrofit | Sugarland - Upper | Near Edmund Halley Drive & Sunrise Valley Drive | Quality/ Quantity | County | $140,000.00 |
| SU9149 | New Stormwater Pond, Stream Restoration, Stormwater Pond Retrofit | Sugarland - Headwaters | Polo Fields Subdivision | Quality/ Quantity | State, County, Private | $1,930,000.00 |
| SU9150 | New Stormwater Pond | Sugarland - Headwaters | Near Nutmeg Lane cul-de-sac | Quality/ Quantity | Private | $250,000.00 |
| SU9201 | New Stormwater Pond, Stream Restoration | Sugarland - Folly Lick | Folly Lick stream corridor between Fantasia Drive & Monroe Street | Quality/ Quantity | County, Private | $910,000.00 |
| SU9203 | Stream Restoration | Sugarland - Upper Middle | Hunters Creek HOA & Runnymede Park | Quality/ Quantity | Local, Private | $550,000.00 |
| SU9204 | Stream Restoration | Sugarland - Folly Lick | Herndon Centennial Park golf course | Quality/ Quantity | Local | $1,880,000.00 |
| SU9205 | Stream Restoration | Sugarland - Upper Middle | Fairfax County Parkway & Walnut Branch Road | Quality/ Quantity | State, Private | $810,000.00 |
| SU9208 | Stream Restoration | Sugarland - Headwaters | Near Sanibel Drive & Tigers Eye Court culs-de-sac | Quality | Private | $1,170,000.00 |
| SU9209 | Stream Restoration | Sugarland - Headwaters | Pinecrest Road & Glade Drive | Quality | State, Private | $290,000.00 |
| SU9210 | Stream Restoration | Sugarland - Headwaters | Fox Mill Road & Keele Drive | Quality | Private | $80,000.00 |

| Master Project List | | | | | | |
|---|---|---|---|---|---|---|
| **Priority Structural Projects (10 Year Implementation Plan)** | | | | | | |
| **Project #** | **Project Type** | **WMA** | **Location** | **Watershed Benefit** | **Land Owner** | **Cost** |
| SU9500 | BMP/LID | Sugarland - Upper Middle | Herndon High School | Quality | County | $850,000.00 |
| SU9502 | BMP/LID | Sugarland - Upper Middle | Herndon Elementary School | Quality/ Quantity | County | $580,000.00 |
| SU9504 | BMP/LID | Sugarland - Upper Middle | Reston North Park | Quality/ Quantity | County | $130,000.00 |
| SU9505 | BMP/LID | Sugarland - Upper | Near Elden Street & Van Buren Street | Quality/ Quantity | Private | $380,000.00 |
| SU9509 | BMP/LID | Sugarland - Upper Middle | Trader Joe's | Quality | County, Private | $330,000.00 |
| SU9511 | BMP/LID | Sugarland - Folly Lick | Dulles Park Court & Alabama Drive | Quality | Private | $140,000.00 |
| SU9512 | BMP/LID | Sugarland - Upper Middle | Reston Hospital | Quality | Private | $200,000.00 |
| SU9514 | BMP/LID | Sugarland - Upper | Sunset Hills Road & Fairfax County Parkway | Quality | State, County | $290,000.00 |
| **10 Year Implementation Plan Total Cost:** | | | | | | ***$28,860,000.00*** |

| Master Project List | | | | | |
|---|---|---|---|---|---|
| **Long-Term Structural Projects (25 Year Implementation Plan)** | | | | | |
| **Project #** | **Project Type** | **WMA** | **Location** | **Watershed Benefit** | **Land Owner** |
| HC9100 | Stormwater Pond Retrofit | Horsepen - Lower Middle | Rock Hill Road & Turquoise Lane | Quantity/ Quality | County |
| HC9101 | Stormwater Pond Retrofit | Horsepen - Lower Middle | Near Spring Knoll Drive & Summerset Place | Quantity/ Quality | Private |
| HC9103 | Stormwater Pond Retrofit | Horsepen - Middle | Dulles Int'l Airport, near Sully Road & electric substation | Quantity/ Quality | Federal |
| HC9104 | New Stormwater Pond | Horsepen - Merrybrook | Centreville Road & McNair Farms Drive | Quality | Private |
| HC9108 | Stormwater Pond Retrofit | Horsepen - Middle | Near Copper Creek Road & Copper Creek Court | Quantity/ Quality | County |
| HC9111 | Stormwater Pond Retrofit | Horsepen - Frying Pan | Near Frying Pan Road & Coppermine Road | Quantity/ Quality | County |
| HC9113 | Stormwater Pond Retrofit | Horsepen - Middle | Towerview Road cul-de-sac | Quantity/ Quality | County |
| HC9115 | Stormwater Pond Retrofit, New Stormwater Pond | Horsepen - Middle | Near Mustang Drive & Maverick Lane | Quantity/ Quality | County, Private |
| HC9117 | Stormwater Pond Retrofit | Horsepen - Frying Pan | Monroe Manor Drive cul-de-sac | Quantity/ Quality | County |
| HC9124 | Stormwater Pond Retrofit | Horsepen - Frying Pan | Near Locksley Court cul-de-sac | Quantity/ Quality | County |
| HC9125 | New Stormwater Pond | Horsepen - Upper | Near Spring Chapel Court cul-de-sac | Quality | County |
| HC9131 | Stormwater Pond Retrofit, Culvert Retrofit | Horsepen - Upper | Near West Ox Road & Mclearen Road | Quantity/ Quality | County, Private |
| HC9133 | Stormwater Pond Retrofit, BMP/LID, Stream Restoration | Horsepen - Cedar | Near Glen Taylor Lane & Mother Well Court | Quantity/ Quality | County, Private |
| HC9135 | Stormwater Pond Retrofit | Horsepen - Cedar | Near Emerald Chase Drive & Rover Glen Court | Quantity/ Quality | County |
| HC9138 | New Stormwater Pond | Horsepen - Cedar | Near Emerald Chase Drive & Ruby Lace Court | Quality | County |
| **Long-Term Structural Projects (25 Year Implementation Plan)** | | | | | |

| Master Project List | | | | | |
|---|---|---|---|---|---|
| **Project #** | **Project Type** | **WMA** | **Location** | **Watershed Benefit** | **Land Owner** |
| HC9139 | New Stormwater Pond | Horsepen - Upper | Near Bradwell Road & Litchfield Drive | Quality | Private |
| HC9143 | Stormwater Pond Retrofit | Horsepen - Cedar | Off of Ashburton Avenue, near Thistlethorn Drive & Saffron Drive | Quantity/ Quality | County |
| HC9146 | Stormwater Pond Retrofit, BMP/LID | Horsepen - Cedar | Near Ashburton Avenue & Wheeler Way | Quantity/ Quality | County |
| HC9148 | Stormwater Pond Retrofit, New Stormwater Pond | Horsepen - Upper | Near Glenbrooke Woods Drive cul-de-sac | Quality | County |
| HC9302 | Area-wide Drainage Improvement | Horsepen - Cedar | Burchlawn Street cul-de-sac | Quality | N/A |
| HC9400 | Culvert Retrofit | Horsepen - Lower Middle | Near Rock Hill Road & Innovation Avenue | Quality | State, Private |
| HC9501 | BMP/LID | Horsepen - Middle | Along stream corridor between Floris Street & Mountainview Court | Quality | Private |
| HC9502 | BMP/LID | Horsepen - Middle | Floris Elementary School | Quality | County |
| HC9505 | BMP/LID | Horsepen - Upper | Near Emerald Chase Drive & Lazy Glen Court | Quality | County |
| SU9001 | Regional Pond Alternative Suite | Sugarland - Lower Middle | Near Rowland Drive & Heather Way | Quality | County, Private |
| SU9005 | Regional Pond Alternative Suite | Sugarland - Lower Middle | Near Leesburg Pike, between Rolling Holly Drive & Sugarland Road | Quality | County, Private |
| SU9105 | Stormwater Pond Retrofit | Sugarland - Lower | Air View Lane | Quantity/ Quality | Private |
| SU9107 | Stormwater Pond Retrofit | Sugarland - Lower Middle | Near Leesburg Pike & Fairfax County Parkway | Quantity/ Quality | County |
| SU9111 | Stormwater Pond Retrofit | Sugarland - Lower Middle | Dranesville Road & Woodson Drive | Quality | County, Private |

| Master Project List | | | | | |
|---|---|---|---|---|---|
| **Long-Term Structural Projects (25 Year Implementation Plan)** | | | | | |
| **Project #** | **Project Type** | **WMA** | **Location** | **Watershed Benefit** | **Land Owner** |
| SU9112 | Stormwater Pond Retrofit | Sugarland - Lower Middle | East of Dranesville Road & Butter Churn Drive | Quantity/ Quality | County |
| SU9115 | Stormwater Pond Retrofit | Sugarland - Lower Middle | Hastings Hunt Section 6 & Jenkins Ridge Subdivisions | Quantity/ Quality | County |
| SU9118 | Stormwater Pond Retrofit | Sugarland - Folly Lick | Near stream corridor in Dranesville Estate Section 1 & 2 | Quantity/ Quality | County |
| SU9121 | Stormwater Pond Retrofit, New Stormwater Pond | Sugarland - Folly Lick | East of Millikens Bend Road near Millbank Way & Westlodge Court | Quantity/ Quality | County |
| SU9122 | Stormwater Pond Retrofit | Sugarland - Folly Lick | Baptist Temple of Herndon | Quantity/ Quality | County |
| SU9124 | Stormwater Pond Retrofit | Sugarland - Upper Middle | Near Rosiers Branch Drive & Heather Down Drive | Quantity/ Quality | County |
| SU9127 | Stormwater Pond Retrofit | Sugarland - Folly Lick | Herndon United Methodist Church | Quantity/ Quality | Private |
| SU9128 | Stormwater Pond Retrofit | Sugarland - Upper Middle | Between the Fawn Ridge Lane culs-de-sac | Quantity/ Quality | County, Private |
| SU9133 | New Stormwater Pond, BMP/LID | Sugarland - Folly Lick | Near Crestview Drive & Bond Street | Quantity/ Quality | Private |
| SU9137 | New Stormwater Pond | Sugarland - Upper Middle | Walnut Branch Road & Purple Sage Court | Quantity/ Quality | County, Private |
| SU9138 | New Stormwater Pond | Sugarland - Folly Lick | Center Street & Vine Street | Quantity/ Quality | Private |
| SU9140 | New Stormwater Pond, Stormwater Pond Retrofit | Sugarland - Upper | Safeway; corner of Post Drive & Grove Street | Quantity/ Quality | Private |
| SU9142 | Stormwater Pond Retrofit | Sugarland - Folly Lick | Near Spring Street & Wood Street | Quantity/ Quality | Private |
| SU9200 | Stream Restoration | Sugarland - Lower Middle | Near Dranesville Road & Woodson Drive | Quality | County, Private |
| SU9202 | Stream Restoration | Sugarland - Folly Lick | Near Herndon Parkway & Stevenson Court | Quality | Private |
| **Long-Term Structural Projects (25 Year Implementation Plan)** | | | | | |

| Master Project List | | | | | |
|---|---|---|---|---|---|
| **Project #** | **Project Type** | **WMA** | **Location** | **Watershed Benefit** | **Land Owner** |
| SU9206 | Stream Restoration | Sugarland - Upper | Near Herndon Parkway & Tamarack Way | Quality | Private |
| SU9207 | Stream Restoration | Sugarland - Upper | Near Fairfax County Parkway & New Dominion Parkway | Quality | Private |
| SU9400 | Culvert Retrofit | Sugarland - Lower | Near Kentland Drive & Parrish Farm Lane | Quantity/ Quality | County, Private |
| SU9501 | BMP/LID | Sugarland - Upper Middle | Lake Newport Road & North Point Drive | Quality | County, Private |
| SU9510 | BMP/LID | Sugarland - Upper | Near Elden Street & Fairfax County Parkway | Quality | State, Private |
| SU9513 | BMP/LID | Sugarland - Upper | Near Old Dominion Avenue & Aspen Drive | Quality | Private |
| **Non-Structural Projects** | | | | | |
| **Project #** | **Project Type** | **WMA** | **Location** | **Watershed Benefit** | **Land Owner** |
| HC9901 | Buffer Restoration, Rain Barrel Programs | Horsepen - Cedar | Near Ashburton Avenue & Thistlethorn Drive | Quality/ Quantity | County, Private |
| HC9902 | Buffer Restoration | Horsepen - Frying Pan | Stream corridors near Copper Bed Road & Copper Hill Road | Quality | County |
| HC9903 | Buffer Restoration, Rain Barrel Programs | Horsepen - Lower Middle | Reflection Lake HOA & Four Season HOA (Herndon) | Quality/ Quantity | Private |
| HC9904 | Conservation Acquisition Project/ Land Conservation Coordination Project, Buffer Restoration | Horsepen - Middle | Stream corridors near Sully Road & Park Center Road | Quality | County, Private |
| HC9905 | Conservation Acquisition Project/ Land Conservation Coordination Project, Dumpsite/Obstruction Removal, Buffer Restoration | Horsepen - Upper | Stream corridors near Mclearen Road & Cobra Drive | Quality | County, Private |
| HC9906 | Rain Barrel Programs | Horsepen - Upper | Chantilly Highlands | Quantity | Private |
| **Non-Structural Projects** | | | | | |

| Master Project List | | | | | |
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| **Project #** | **Project Type** | **WMA** | **Location** | **Watershed Benefit** | **Land Owner** |
| HC9907 | Conservation Acquisition Project/ Land Conservation Coordination Project, Buffer Restoration | Horsepen - Merrybrook | Centreville Road & Woodland Park Road | Quality | County, Private |
| SU9900 | Rain Barrel Programs | Sugarland - Folly Lick | Westfield, Fortnightly Square, Haloyon of Herndon Sect 5, Van Vlecks, Ballou, Saubers, Herndon Station, Herndon Park Station, and Chandon Subdivisions | Quantity | Private |
| SU9901 | Buffer Restoration | Sugarland - Lower Middle | Near Leesburg Pike & Rolling Holly Drive | Quality | State, County, Private |
| SU9902 | Rain Barrel Programs | Sugarland - Lower Middle | Sugar Creek Sec. 1, Stuart Hills, Cedar Chase, Oak Creek Estates, Forest Heights Estates, Stoney Creek Woods, Hastings Hunt sec. 6, portion of Jenkins Ridge, Holly Knoll, and Crestbrook Subdivisions | Quantity | Private |
| SU9903 | Conservation Acquisition Project Land Conservation Coordination Project | Sugarland - Lower Middle | Stream corridor near Leesburg Pike & Holly Knoll Drive | Quality | County, Private |
| SU9904 | Community Outreach/ Public Education | Sugarland - Lower Middle | Near Heather Way cul-de-sac | N/A | Private |
| SU9905 | Rain Barrel Programs | Sugarland - Upper | Crestview Sec. 1, Runnymede Manor, Stuart Woods, Reston Sec. 49, and Towns at Stuart Pointe Subdivisions | Quantity | Private |
| SU9906 | Buffer Restoration | Sugarland - Upper | Near Fairfax County Parkway & Sunset Hills Road | Quality | County, Private |

| Master Project List | | | | | |
|---|---|---|---|---|---|
| **Non-Structural Projects** | | | | | |
| **Project #** | **Project Type** | **WMA** | **Location** | **Watershed Benefit** | **Land Owner** |
| SU9907 | Conservation Acquisition Project/ Land Conservation Coordination Project, Buffer Restoration | Sugarland - Upper | Stream corridors near Herndon Parkway & Fairbrook Drive | Quality | Private |
| SU9908 | Rain Barrel Programs | Sugarland - Upper Middle | Stuart Ridge, Shaker Woods, Shaker Grove, Kingstream, Hunters Creek, Potomac Fairways, Iron Ridge Sec. 2, Graymoor, Chestnut Grove, Old Drainsville Hunt Club, Jeneba Woods, Reston Sec. 49, and Sugar Land Heights Subdivisions | Quantity | Private |
| SU9909 | Rain Barrel Programs | Sugarland - Headwaters | Polo Fields Subdivision | Quantity | Private |
| SU9910 | Buffer Restoration | Sugarland - Headwaters | Fairfax County Parkway & Dulles Access Road | Quality | County |
| SU9911 | Conservation Acquisition Project/ Land Conservation Coordination Project | Sugarland - Headwaters | Sunrise Valley Wetland Park | Quality | Private |