

*Stormwater Impact Fund
Implementation Plan*

*Prepared for
Ramsey-Washington Metro Watershed District*

June 2008

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Storm Water Impact Fund Plan
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1.0 Introduction

This plan presents a summary of the Ramsey Washington Metro Watershed District (District) Stormwater Impact Fund Implementation Plan. This document is tailored for policymakers, managers, developers, and stakeholders interested in using infiltration for stormwater volume reduction in the District and more specifically, alternative compliance sequencing if infiltration is impracticable. District Rule C (3) (c) (2) (iii) describes a Stormwater Impact Fund that an applicant may pay into if unable to fully comply with the District volume reduction standard. The main purpose of this document is to detail the framework for the Stormwater Impact Fund Implementation Plan (Plan) which explains how money contributed to the Stormwater Impact Fund shall be allocated to volume reduction projects by the District.

1.1 Plan Goals

The goals of the Plan are to:

1. Encourage runoff volume reduction locally based on source funding
2. Use funding in areas of greatest needs (shortfalls in infiltration and/or water quality goals)
3. Provide transparency about how and where funding is allocated
4. Have flexibility to pool funding to implement large projects
5. Cost share with local governments and developers to improve/expand stormwater management features for planned capital improvement projects (CIP's) and private developments
6. Document fund contributions and project allocations based on the dollar amounts and location

This Plan also attempts to do the following:

1. Summarize District Rules C (3) (c) (1) and (2) which describe criteria for volume management of stormwater runoff and alternative compliance sequencing respectfully
2. Identify and evaluate how other local government units (LGUs) collect and allocate funds
3. Evaluate the costs to maintain stormwater volume reduction best management practices (BMP's)

1.2 Infiltration Practices

On-site infiltration as a stormwater management practice is desirable because infiltrating stormwater onsite reduces runoff rates and volumes while improving water quality by filtering sediment, pollutants, and nutrients from runoff. Infiltration practices also recharge local groundwater, reduce thermal impacts to surface waters, and minimize the need for larger stormwater infrastructure networks.

The highest levels of contaminant concentrations (sediment, pollutants, and nutrients) are typically found in stormwater runoff resulting from the first inch of rainfall events across impervious surfaces. This occurs because contaminants accumulate on impervious surfaces during dry periods and then are washed away in stormwater runoff during the early stages of a rainfall event. As a result, infiltrating the first inch of stormwater runoff from impervious surfaces is an effective method for limiting the migration of contaminants downstream and into receiving water bodies.

Rain events between 0.5 inches and 1.5 inches are responsible for about 75% of the runoff pollutant discharges (MPCA, 2000). 88% of the cumulative depth of rainfall that occurred between 1971 and 2000 using Minneapolis-St. Paul airport (MSP) rainfall data would be managed by a BMP sized to treat 1.05 inches of runoff (EOR, 2005). A similar evaluation of MSP rainfall data between 2000 and 2007 indicates that 84% of the cumulative rainfall depth would be managed by a BMP sized to treat 1.00 inch of runoff.

Minnesota Pollution Control Agency. March, 2000. *Protecting Water Quality in Urban Areas: Best Management Practices for Dealing with Storm Water Runoff from Urban, Suburban, and Developing Areas of Minnesota*. MPCA, St. Paul, Minnesota.

Emmons & Oliver Resources and the Center for Watershed Protection. 2005. Issue Paper "B", Precipitation Frequency Analysis and Use. In: *Minnesota Stormwater Manual*. Minnesota Pollution Control Agency, St. Paul, MN.

2.0 Rules and Regulations

The District's general statutory purpose as stated in Minnesota State Statute 103d.201 is to conserve the natural resources of the state through land use planning, flood control, and other conservation projects by using sound scientific principles for the protection of the public health and welfare and the provident use of the natural resources. To carry out its statutory purpose, the District has adopted a Watershed Management Plan, which contains the management framework and guiding principles for the District. The goals and policies of the District's Watershed Management Plan are implemented through District Rules.

2.1 District Rules

Stormwater management rules are described in Part C of the District Rules. Rule C (1) specifically describes the Board of Managers stormwater management policies. These policies are generally aimed at reducing runoff rates, limiting runoff volumes, and improving the quality of stormwater runoff to prevent degradation of the watershed. Rule C (2) specifies the implementation of the rule; it requires that a permit

be obtained from the District that incorporates and approves a stormwater management plan for all land disturbing activities and development of land one acre or greater unless specifically exempted in Rule C (5). Rule C (3) details the criteria that stormwater management plans must comply with including (a) Hydrograph Method, (b) Runoff Rates, (c) Runoff Volume, (d) Water Quality, and (e) Maintenance.

2.1.1 District Rule C (3) (c): Runoff Volume

Rule C (3) (c) details runoff volume criteria required for stormwater management plans within the District. Specifically C (3) (c) states, “Stormwater runoff volume retention shall be achieved onsite in the amount equivalent to the runoff generated from a one inch rainfall over the impervious surfaces of the development.”

District Rule C (3) (c) (1)

Rule C (3) (c) (1) lists requirements that must be met when using infiltration for volume reduction. The requirements generally include: (i) design criteria based on soil type; (ii) methods for determining soil type; (iii) a 48-hour time restriction to infiltrate the required volumes of runoff; (iv) limiting infiltration areas to horizontal areas subject to prolong wetting; (v) restricting permanent pools as an infiltration practice; (vi) pre-treatment (solids removal) prior to discharge into infiltration areas; (vii) design and placement criteria based on MN Department of Health guidance for Wellhead Protection Areas; and (viii) specific site conditions which may qualify an applicant for Alternative Compliance Sequencing.

Some of the site specific conditions that may make infiltration difficult, undesirable, or impossible and as a result may qualify an applicant for Alternative Compliance Sequencing are listed in the table below.

District Rule C (3) (c) (2) – Alternative Compliance Sequencing

Rule C (3) (c) (2) describes the steps for Alternative Compliance Sequencing if the volume reduction standard can not be fully met onsite. Direct from the District Rules the Alternative Compliance Sequencing steps shall be taken in the order shown:

- (i) First, the applicant shall comply or partially comply with the volume reduction standard to the maximum extent practicable on-site through alternative volume reduction methods as listed in the application guidance materials or as approved by the District.
- (ii) Second, for the remaining volume reduction required to fully meet the standard, the applicant shall comply or partially comply with the volume reduction standard at an offsite location or through the use of qualified banking credits as determined by Rule C (3) (c) (4).

- Volume reduction may be accomplished at another site outside of the project area or through the use of banked credits as long as it yields the same volume reduction benefit, and is approved by the District. When possible, offsite compliance and banking credits shall be achieved in the same drainage area or sub-watershed as the project site.

Table 1. Alternative Compliance Site Conditions*

Type	Specific Site Conditions	Submittal Requirements
Potential Contamination	Potential Stormwater Hotspots (PSHs)	PSH Locations and Flow Paths
	Contaminated Soils	State Permitted Brownfield Documentation, Soil Borings
Physical Limitations	Low Permeability (Type D Soils)	Soil Borings
	Bedrock within 3 Vertical Feet of Bottom of Infiltration Area	Soil Borings
	Seasonal High Groundwater within 3 Vertical Feet of Bottom of Infiltration Area	Soil Borings
	Karst Areas	Soil Borings
Land Use Limitations	Utility Locations	Site Map
	Adjacent Wells	Well Locations

*Alternative Compliance is allowed for the volume reduction portion of Rule C only.

(iii) Third, as a last alternative, for the remaining volume reduction required, the applicant shall pay into the District’s Stormwater Impact Fund to cover the cost of implementing equivalent volume reduction elsewhere in the watershed (Figure 1). The required amount to contribute to the Stormwater Impact Fund shall be set by the Board annually.

- Money contributed to the Stormwater Impact Fund from a local government unit shall be spent within that local government unit’s jurisdiction to the extent possible.
- Money contributed to the Stormwater Impact Fund shall be allocated to volume reduction projects by the District according to the Stormwater Impact Fund Implementation Plan as approved by the District Board. The volume reduction achieved by these projects shall offset the volume reduction that was not achieved on the permitted development.

District Rule C (3) (c) (3) - Volume Banking

Rule C (3) (c) (3) permits the banking of excess volume reduction for use on another project. However, excess banked volume reduction amounts shall not exceed the volume of two inches over the total drainage area to the BMP.

3.0 Stormwater Impact Fund Implementation Plan

Money contributed to the Stormwater Impact Fund (Fund) shall be allocated to volume reduction projects as described in this Section. Figure 2 depicts the process by which funds contributed to the Stormwater Impact Fund are used for project implementation.

3.1 Definitions

The following definitions shall apply to the Plan:

Adjacent Drainage Area: Drainage area that borders the Target Drainage Area within the same Region.

Local Government Unit (LGU): Municipalities and Counties fully or partially within the District including: Gem Lake, Landfall, Little Canada, Maplewood, North St. Paul, Oakdale, Vadnais Heights, White Bear Lake and Woodbury; Washington and Ramsey counties.

Project: Construction of BMP's that facilitate volume reduction of stormwater runoff or remove un-settable phosphorus, including but not limited to such volume reduction methods as impervious surface reduction, infiltration basins, bio-infiltration basins curb bump-outs with infiltration or bio-infiltration basins, permeable pavement and tree planting boxes; or phosphorus removal methods such as enhanced sand filtration and permeable lime barriers. Also included is the enhancement/expansion of developments and capital improvement projects (CIP's) that include BMP's that facilitate infiltration of stormwater runoff or remove un-settable phosphorus.

Special Interest Subwatershed: An area as shown on the map in application guidance materials in which protection or improvement of water quality has been given a high priority (shown on Figure 4 – Special Interest Subwatersheds).

Stormwater Impact Fund Implementation Plan (Plan): Process by which the District will allocate monetary contributions to the Stormwater Impact Fund and to projects for implementation.

Subwatershed Infiltration Study: An analysis of infiltration potential within a subwatershed that includes identifying an annual volume reduction goal and identifying specific infiltration opportunities for retrofit and redevelopment projects throughout the subwatershed.

Subwatershed Water Quality Study: An analysis of water quality improvement potential that includes identifying specific BMP implementation opportunities that can be implemented throughout the subwatershed to meet or exceed established water quality goals.

Subwatershed: Area draining to a specific watercourse or water basin.

Target Drainage Area: The Drainage Area containing the construction activity for which the applicant was unable to fully meet the District's volume reduction requirements and as a result paid into the Stormwater Impact Fund.

Watershed Regions: Grouping of District Subwatersheds into five areas based on common drainage to a specific watercourse or water basin as shown on Figure 3. Watershed Regions include: Phalen Chain Region, Beltline Region, Battle Creek Region, Mississippi River Bottomlands and Blufflands Region, and Fish Creek Region.

3.2 Stormwater Impact Fund Plan Summary

The following shall apply to the Stormwater Impact Fund Implementation Plan:

- 1) The District shall record the following information for each contribution to the Fund:
 - a) Fund contributor
 - b) Contribution date
 - c) Contribution amount paid into the fund and the percent of volume requirement
 - d) Project location (subwatershed, local government unit, region, range, township, and section)
- 2) The District shall record the following information for each allocation from the Fund:
 - a) Allocation date
 - b) Allocation amount
 - c) Project location (subwatershed, local governing unit, region, range, township, and section)
- 3) The District shall track all contributions to and allocations from the Fund by Subwatershed, LGU, and Region.
 - a) Table 2 suggests how the tracking shall occur.
- 4) The District may allocate contributions to the Fund between Regions only when funds are not from a Special Interest Subwatershed.
- 5) The District may supplement funding to any Project by allocating non-Fund money (including Clean Water Legacy Funding).

3.3 Allocation of Funds for Project implementation

The allocation of funds from the Stormwater Impact Fund for the implementation of projects will be directed at the remediation of water quantity and quality impacts within the District. The implementation of projects will be evaluated based upon several levels of priority criteria that are applied to the project selection process. All fund allocations for project implementation will be made to subwatersheds within

the regional subwatershed from which the contributions were collected. No Stormwater Impact Fund contributions can be allocated to projects across Watershed Region boundaries unless the funds are from a non-Special Interest Subwatershed.

The allocation of funds to projects will place a priority on implementing Stormwater Impact Fund projects in the target watershed with funds from the fund contributions in the target subwatershed. However, the Stormwater Impact Fund can also be used for the implementation of projects in other Watershed Regions by combining funds from adjacent subwatershed contributors within the same Watershed Region based upon the watershed location criteria. This will allow for the timely implementation of projects by the District.

3.3.1 Subwatersheds with an Identified Project – Selection Criteria

Subwatersheds with a completed District Infiltration Plan, an LGU identified capital improvement project, or some other previously funded project that meets the District’s water quality goals will be the top priority for allocation of funds. This process is outlined in Figure 2 – Implementation Watershed Priority.

The Stormwater Impact Fund may be supplemented by Clean Water Legacy funds, District-wide funds, or LGU funds to implement volume reduction projects or to increase the size of volume reduction projects, as appropriate and as available.

Watershed selection for an Identified Project is determined by the Watershed Location criteria listed in 3.3.2 below.

3.3.2 Watershed Location – Selection Criteria

Watershed location and proximity to the subwatershed location of the project(s) contributing to the fund will be the initial implementation criteria in the project selection process (Figure 2). In all cases, the first priority for allocation from the Stormwater Impact Fund will be allocated to projects within the same Watershed Region (see Figure 3).

The primary implementation preference will be for projects is geographic proximity and for location within the same Watershed Region as the contributory project; if the contribution is from a local government unit (LGU), this primary preference will be for a project within the boundaries of the LGU,

or in a location that provides treatment of stormwater from the LGU. The project location priority order is as follows:

- a) Target Drainage Area or within the LGU boundary when LGU contributions (or where the LGU's runoff can be treated);
- b) Adjacent Drainage Area within the same Watershed Region;
- c) Special Interest Subwatershed within the same Watershed Region;
- d) Elsewhere with the same Watershed Region; and
- e) Funding may be used at the District's discretion for projects when other implementation alternatives have been eliminated.

3.3.3 Water Quality Concerns – Selection Criteria

Implementation preference will be given to watersheds with an volume reduction goal shortfall, a watershed that drains to an impaired water body, or when water quality data suggests a statistically significant trend for increasing nutrient concentrations.

3.3.4 Subwatershed Stormwater Impact Fund Contributions Exceed \$150,000

At any time the contributions to the Stormwater Impact Fund from a subwatershed exceed \$150,000 and a project is not identified for the subwatershed, the District will then initiate a Subwatershed Water Quality or Infiltration Study. The study will be completed with District general funds to identify projects that can be implemented with contributed funds. The watershed study process is outlined in Figure 5.

The study selection process will place priority on subwatersheds with an infiltration goal shortfall, an impaired water body, or when water quality data suggests a statistically significant trend for increasing nutrient concentrations. If the study does not identify appropriate projects within the target subwatershed, other adjacent and special interest watersheds within the region would then be studied.

4.0 Plan Amendments

Periodically the District will use the Stormwater Impact Fund mechanisms to assess the fund balance action threshold and the project location criteria. If such an assessment indicates the need to adjust the action threshold or the need to revise the project and funding allocation strategies, this plan will be revised and updated to reflect such changes.

Table 2. Stormwater Impact Fund Information Tracking Examples

Table 2a. Stormwater Impact Fund Watershed and LGU Tracking

Region	Watershed	Total Contributions	Total Allocations	Net
Battle Creek Region	Battle Creek	\$ -	\$ -	\$ 20,000
	Battle Creek Lake	\$ 20,000	\$ -	
	Tanners Lake	\$ -	\$ -	
Beltline Region	Beaver Lake	\$ -	\$ -	\$ -
	St. Paul Beltline	\$ -	\$ -	
Bottomlands Region	Blufflands	\$ -	\$ -	\$ -
	Mississippi River Bottomlands	\$ -	\$ -	
Fish Creek Region	Carver Lake	\$ -	\$ -	\$ -
	Fish Creek	\$ -	\$ -	
Phalen Chain	Gervais Creek	\$ -	\$ -	\$ (20,000)
	Gervais Lake	\$ -	\$ -	
	Keller Lake	\$ -	\$ -	
	Kohlman Creek	\$ 40,000	\$ 60,000	
	Kohlman Lake	\$ -	\$ -	
	Twin Lake	\$ -	\$ -	
	Willow Creek	\$ -	\$ -	
	Lake Phalen	\$ -	\$ -	

Municipality/Township	Total Contributions	Total Allocations	Net
Gem Lake	\$ -	\$ -	\$ -
Lake Elmo	\$ -	\$ -	\$ -
Landfall	\$ -	\$ -	\$ -
Little Canada	\$ -	\$ -	\$ -
Maplewood	\$ 40,000	\$ 60,000	\$ (20,000)
Newport	\$ -	\$ -	\$ -
North St. Paul	\$ -	\$ -	\$ -
Oakdale	\$ -	\$ -	\$ -
Roseville	\$ -	\$ -	\$ -
Shoreview	\$ -	\$ -	\$ -
South St. Paul	\$ -	\$ -	\$ -
St. Paul	\$ -	\$ -	\$ -
Vadnais Heights	\$ -	\$ -	\$ -
White Bear Lake	\$ -	\$ -	\$ -
Woodbury	\$ 20,000	\$ -	\$ 20,000

Figures

Figure 1. Project Infiltration for Stormwater Volume Reduction for Alternative Compliance as per RWMWD Rules.

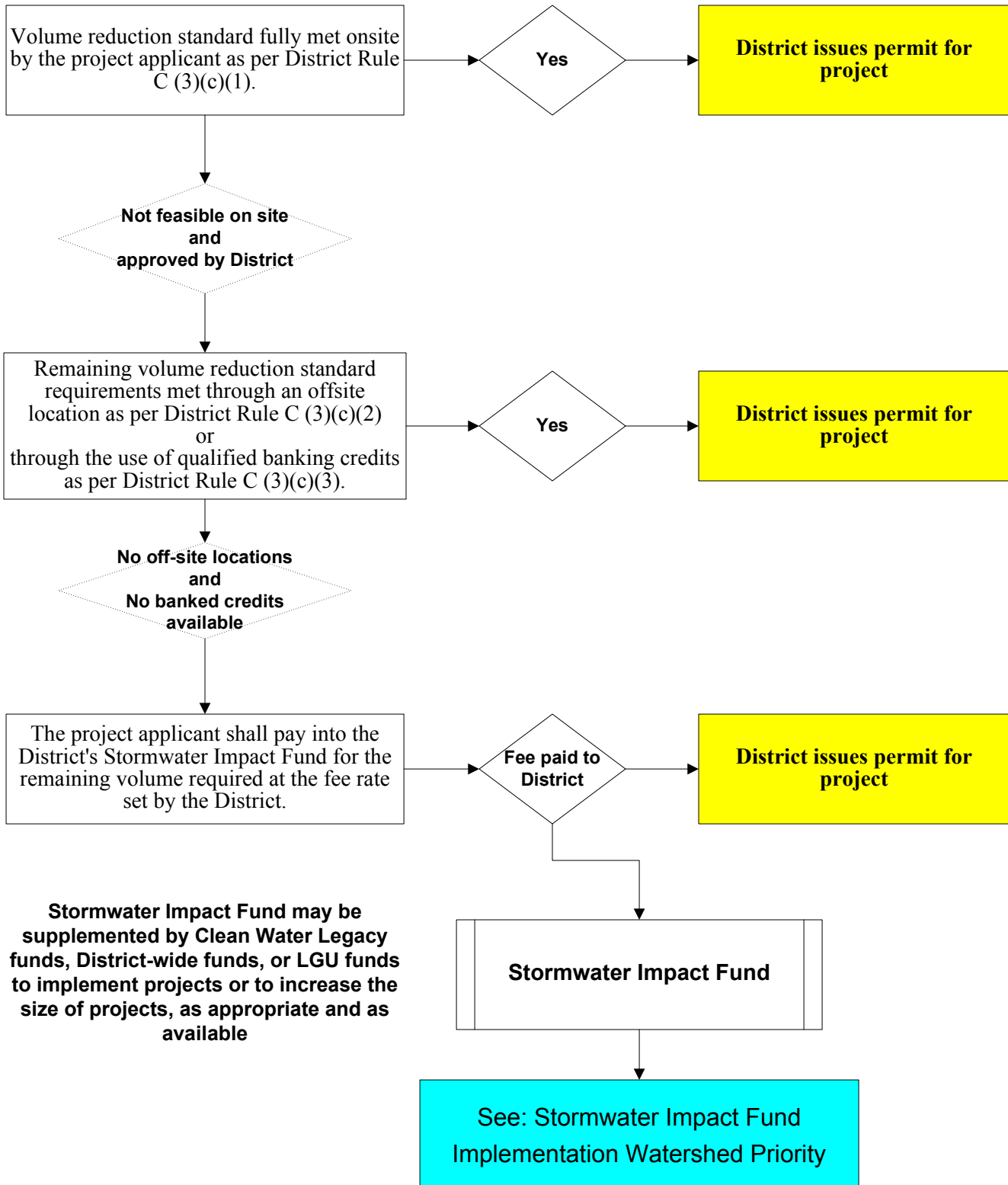
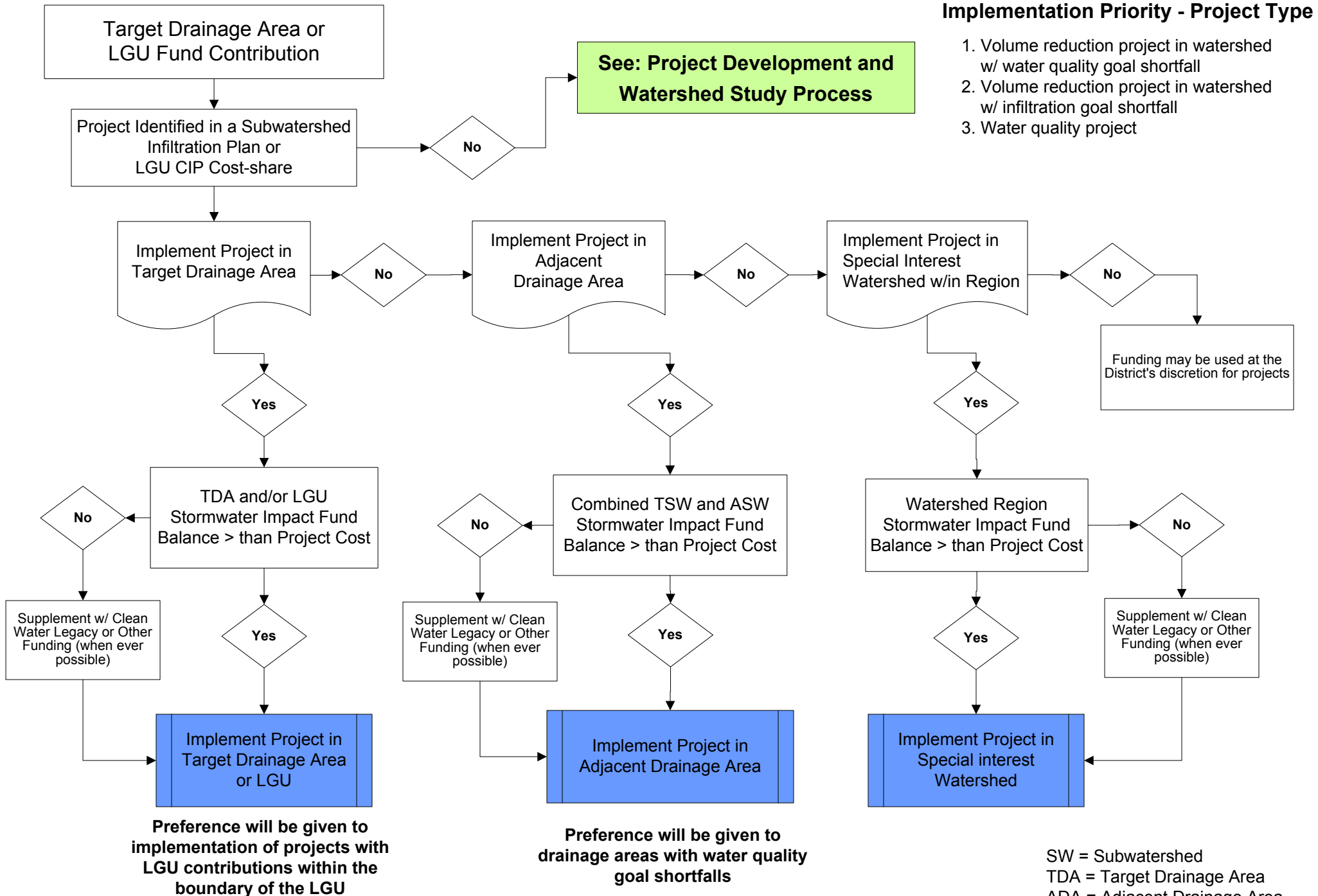


Figure 2. Stormwater Impact Fund Implementation Watershed Priority



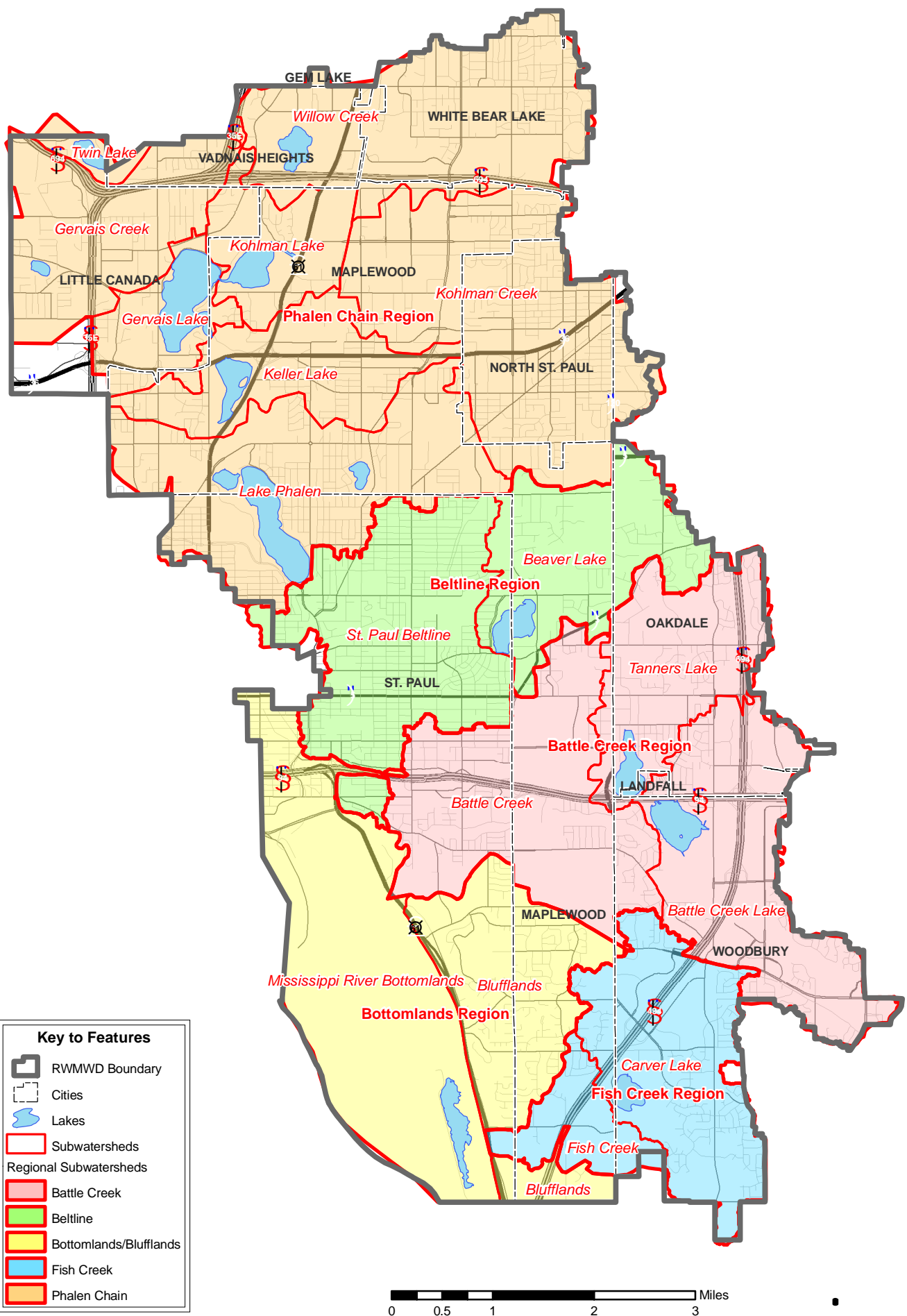


Figure 3. Watershed Regions

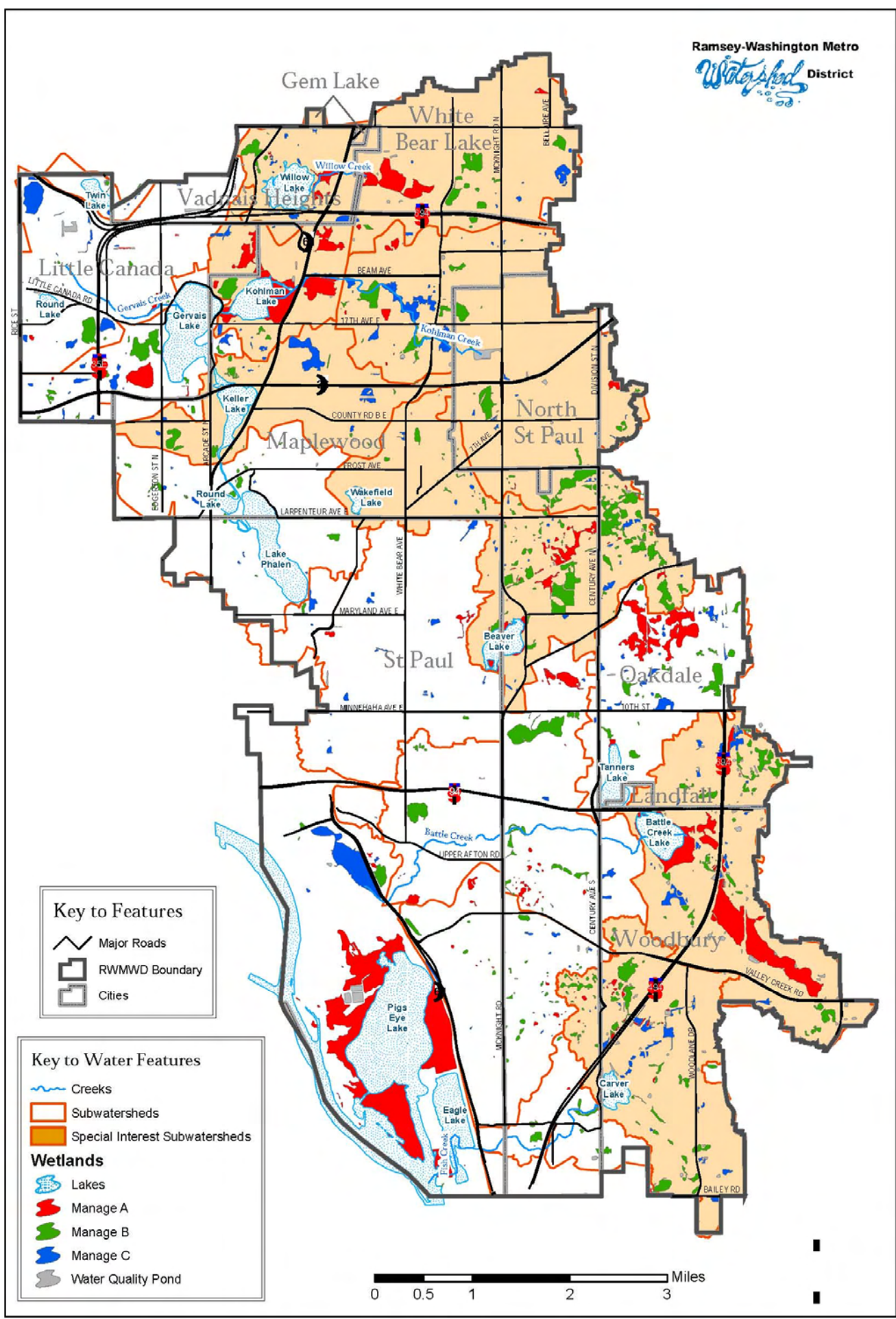
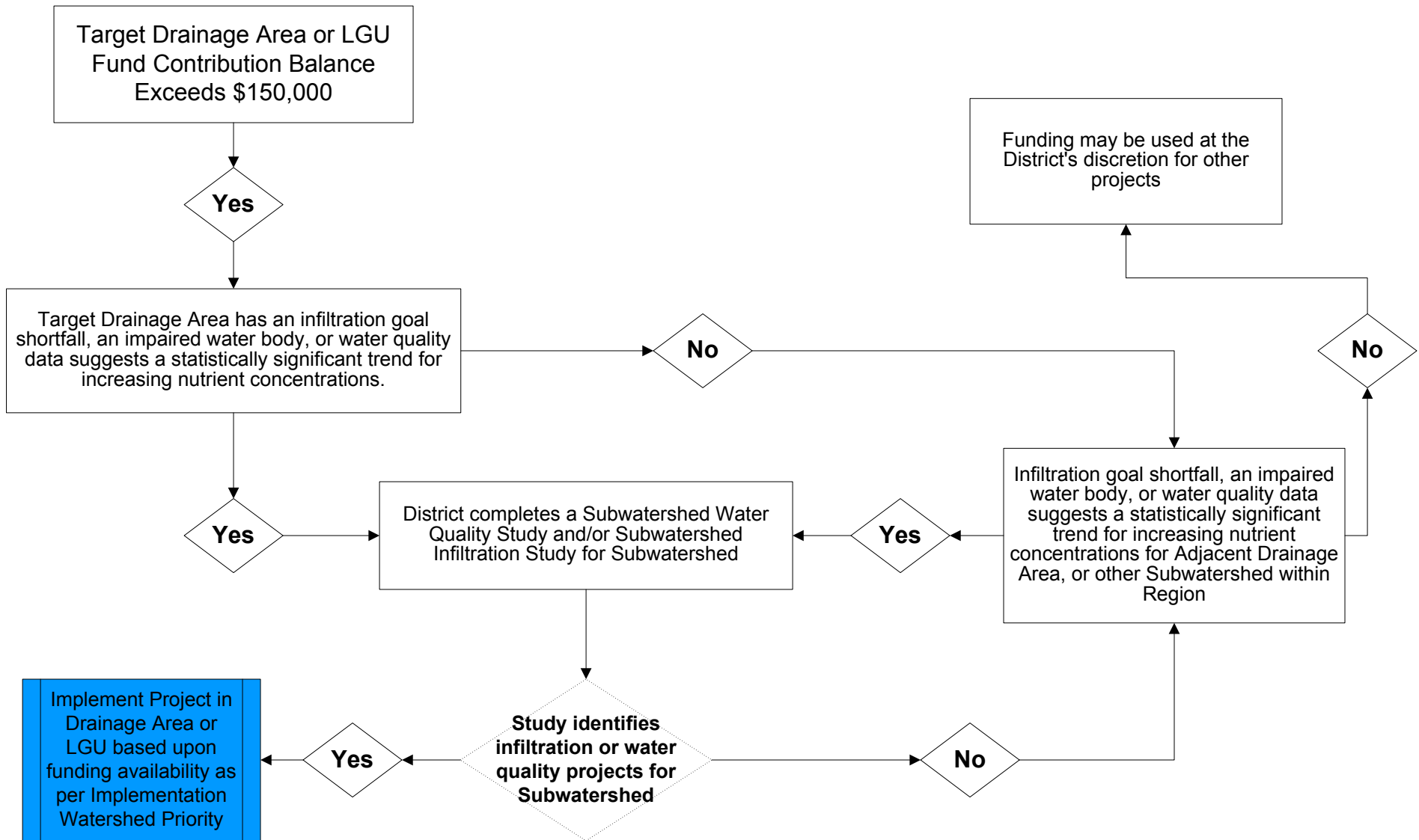


Figure 4. Special Interest Subwatersheds

Figure 5. Project Development and Watershed Study Process



Implementation preference will be given to subwatersheds with water quality goal shortfalls and then to subwatersheds with infiltration goal shortfalls