EXHIBIT B
SOUTHERN SARPY WATERSHED
STORMWATER MANAGEMENT POLICIES

POLICY GROUP #1: WATER QUALITY IMPROVEMENT

POLICY: Improve water quality from all contributing sources, including but not limited to, agricultural activities and urban stormwater, such that waters of the Southern Sarpy Watershed and other local watersheds can meet applicable water quality standards and community-based goals, where feasible.

REQUIREMENTS:

1) *Water Quality LID* shall be required on all *new developments* and *significant redevelopments*.

GOALS:

1) Protect surface and groundwater resources from soil erosion (sheet and rill, wind erosion, gully and stream bank erosion), sedimentation, nutrient and chemical contamination. Buffer strips and riparian corridors should be established along all stream segments.
2) Preserve and protect wetland areas to the fullest extent possible to maintain natural hydrology and improve water quality by minimizing the downstream transport of sediment, nutrients, bacteria, etc. borne by surface water runoff.
3) Support the Nebraska Department of Environment and Energy (NDEE) in an accelerated *TMDL* development process that addresses potential pollutant sources in a fair and reasonable manner based on sound technical data and scientific approach.
4) Implement *Best Management Practices (BMPs)*, as identified in the Lower Platte River Basin *Water Quality Management Plan (WQMP)*, to reduce both urban and rural pollution sources, maintain or restore designated beneficial uses of streams and surface water impoundments, minimize soil loss, and provide sustainable production levels.

SEE APPENDIX A – DEFINITIONS FOR *REFERENCED INFORMATION*

EXHIBIT B
SOUTHERN SARPY WATERSHED
STORMWATER MANAGEMENT POLICIES

POLICY GROUP #2: PEAK FLOW MANAGEMENT

POLICY: Maintain stormwater *peak discharge* during development and after *full build-out land use conditions* from that which existed under *baseline land use conditions*.

REQUIREMENTS:

1) All *new developments* and *significant redevelopments* shall maintain or reduce peak discharge rates during the 2- and 10-year storm event under baseline land use conditions.

GOALS:

1) Limit increases in *peak flow* for frequent storm events to prevent excessive flooding and erosion.
2) Reduce the potential risk of damage to infrastructure.

SEE APPENDIX A – DEFINITIONS FOR *REFERENCED INFORMATION*

EXHIBIT B
SOUTHERN SARPY WATERSHED
STORMWATER MANAGEMENT POLICIES

POLICY GROUP #3: STREAM CORRIDOR PRESERVATION

POLICY: Utilize landscape preservation, restoration, and conservation techniques to meet the multi-purpose objectives of enhanced aesthetics, quality of life, recreational and educational opportunities, pollutant reduction, and overall stormwater management.

REQUIREMENTS:

1) For *new development* or *significant redevelopment*, provide a *creek setback* of 3:1 plus a minimum 50 feet along all *watercourses* based upon a current channel survey (within 9 months of preliminary plat submission).
2) All landscape preservation features as required in this policy or other policies, including all stormwater and LID strategies, creek setbacks, existing or mitigated wetlands, etc., identified in new or significant redevelopment shall be placed into an outlot, within public right of way or otherwise approved easement.
3) All new or improved watercourse crossings of roads and utilities must incorporate grade control measures designed to prevent stream degradation of more than four (4) feet. Such measures shall be designed, permitted and installed according to the Guidance Document in this Plan. Site conditions shall be verified before construction. These road and utility crossings are not eligible for Partnership reimbursement.
4) Grade control measures shall be installed along all streams with a drainage area of at least 0.5 square miles as identified in the Southern Sarpy Watershed Management Plan. Beginning at the downstream end of all new developments and significant redevelopments, approved grade control structure(s) designed to prevent stream degradation of more than four (4) feet shall be designed, permitted and installed according to the Guidance Document in this Plan. Site conditions shall be verified before construction. Construction costs of grade control measures shall be reimbursed by the Partnership subject to the Grade Stabilization Reimbursement Policy, which is detailed in Policy Group #6: Stormwater Management Financing.
5) These policies are intended to provide a minimum requirement for new development or significant redevelopment. Site conditions may warrant additional setback distance or other stream stabilization measures.

GOALS:

1) Prevent stream degradation of more than four (4) feet along any watercourse with a drainage area of at least 0.5 square miles.
2) Develop a continuous stream corridor for multi-purpose benefits including ecosystem restoration and recreation.

SEE APPENDIX A – DEFINITIONS FOR *REFERENCED INFORMATION*

EXHIBIT B
SOUTHERN SARPY WATERSHED
STORMWATER MANAGEMENT POLICIES

POLICY GROUP #4: EROSION AND SEDIMENT CONTROL AND OTHER BMPs

POLICY: Promote uniform *erosion and sediment control* measures by implementing consistent rules for regulatory compliance pursuant to State and Federal requirements, including the adoption of the Omaha Regional Stormwater Design Manual.

REQUIREMENTS:

1) Construction site stormwater management controls shall include both erosion and sediment control measures.
2) The design and implementation of post-construction, permanent erosion and sediment controls shall be considered in conjunction with meeting the intent of other Stormwater Management Policies.

GOALS:

1) Protect valuable land resources, stream and drainage corridors, and other surface waters from excessive erosion and sedimentation.

SEE APPENDIX A – DEFINITIONS FOR *REFERENCED INFORMATION*

EXHIBIT B
SOUTHERN SARPY WATERSHED
STORMWATER MANAGEMENT POLICIES

POLICY GROUP #5: FLOODPLAIN MANAGEMENT

POLICY: Participate in the FEMA National Flood Insurance Program, update FEMA *floodplain* mapping throughout the Southern Sarpy Watershed and enforce floodplain regulations.

REQUIREMENTS:

1) Floodplain management coordination among all jurisdictions within the Southern Sarpy Watershed and the Papio-Missouri River Natural Resources District (Papio NRD) is required.
2) Filling of the *floodway fringe* associated with *new development* within the Southern Sarpy Watershed's creek system (Platte and Elkhorn Rivers not included) shall be limited to 25% of the floodway fringe in the floodplain development application project area unless approved mitigation measures are implemented. The remaining 75% of floodway fringe within the project area shall be designated as a *floodway* overlay zone. For redevelopment, these provisions may be modified or waived in whole or in part by the local jurisdiction.
3) The *low chord elevation* for bridges crossing all *watercourses* within FEMA designated floodplains shall be a minimum of one (1) foot above the *base flood* elevation for existing conditions hydrology using best available data.
4) Developments in areas with no FEMA Special Flood Hazard Area defined must provide hydrologic and hydraulic analyses to ensure new development will be reasonably safe from flooding during the base flood.

GOALS:

1) Holistic floodplain management applied throughout the watershed to protect its citizens, property, and natural resources.

SEE APPENDIX A – DEFINITIONS FOR *REFERENCED INFORMATION*

EXHIBIT B
SOUTHERN SARPY WATERSHED
STORMWATER MANAGEMENT POLICIES

POLICY GROUP #6: STORMWATER MANAGEMENT FINANCING

POLICY: Dedicated, sustainable funding mechanisms shall be developed and implemented to meet capital and operation and maintenance obligations needed to implement NPDES *Stormwater Management Plans*, Stormwater Management Policies, and the Southern Sarpy Watershed Management Plan.

REQUIREMENTS:

1) All *new development* and *significant redevelopment* will be required to fund the planning, implementation, and operation and maintenance of *Water Quality LID*.
2) A Watershed Management Fee System shall be established to equitably reimburse the construction cost of implementing the Southern Sarpy Watershed Management Plan in the watershed by the distribution of fees collected for that purpose. Such Watershed Management Fees shall only apply to new development or significant redevelopment within the Southern Sarpy Watershed and the initial framework shall consist of the following provisions:
    a. Collection of fees and public funding shall be earmarked specifically for the construction of projects called for in the Southern Sarpy Watershed Management Plan. Fees may also be used to fund tasks such as construction site inspection, water quality monitoring, and reporting activities. Furthermore, the fee may be used to commission studies for the purposes of watershed planning, flood hazard mapping, and other planning activities.
    b. Multiple fee classifications shall be established which fairly and equitably distribute the cost of these projects among all undeveloped areas in the Southern Sarpy Watershed.
    c. Watershed Management Fees shall be paid to the applicable local zoning jurisdiction with building permit applications.
    d. Watershed Management Fee revenues shall be transferred from the applicable local zoning jurisdiction to a special Papio NRD account via inter-local agreements.
    e. Watershed Management Fee revenues are intended to provide the construction costs of grade control measures required for new development and significant redevelopment. Revenues may also be used for Partnership led projects deemed necessary by the Partnership as defined in the Watershed Management Plan. On approximately three-year intervals, the Southern Sarpy Watershed Management Plan and Watershed Management Fee framework shall be reviewed with respect to availability of needed funds and rate of development within the Southern Sarpy Watershed by the parties involved (local zoning jurisdictions, Papio NRD, and the development community). Subsequent changes thereto shall be formally approved by the respective local zoning jurisdictions and the Papio NRD.

GOALS:

1) The Partnership will continue to work towards establishing a Stormwater Utility Fee System to equitably distribute the costs for ongoing operation and maintenance of all stormwater BMPs and infrastructure among all existing property owners within NPDES MS4 permittees.

EXHIBIT B
SOUTHERN SARPY WATERSHED
STORMWATER MANAGEMENT POLICIES

GRADE STABILIZATION REIMBURSEMENT POLICY *(see Policy 3)***:**

Grade control measures required for this policy for all new development and significant redevelopment are eligible for reimbursement of construction costs from Watershed Management Fee revenues. This does not apply to utility crossings, road crossings, or maintenance of existing crossings.

Partnership Responsibilities:

1) Each community will be responsible for review of the proposed grade control measures for each new development or significant redevelopment to ensure compliance with the guidelines of the Watershed Management Plan.
2) The Partnership will maintain a database of approved line items and reasonable unit costs for construction of approved grade control measures. This database will be regularly reviewed and updated as needed, no less than once per year.
3) The Papio NRD will accept applications for reimbursement of the construction costs of grade control measures. 100% reimbursement of construction costs will be paid based on review of project costs versus the database of reasonable costs, subject to availability of funding.
4) If funding is limited, the project will be placed on a waiting list for reimbursement when funds become available.

Sponsor Responsibilities:

1) The Sponsor shall obtain all land rights for the project at no cost to the Partnership.
2) The Sponsor shall follow design guidance provided or referenced within this document.
3) The Sponsor shall administer all contracts for design, construction, and construction inspection.
4) The Sponsor must obtain all local, state, and federal permits necessary for the project.
5) The Sponsor must execute a Maintenance and Easement Agreement for the project.
6) The Sponsor shall hold and save the Partnership Members free from damages or claims due to the design, construction, or operation and maintenance of the project.

Requesting Reimbursement:

1) Upon completion of construction, reimbursement may be requested by the sponsor by providing the following:
    a. Copies of final pay estimates which show total units, unit costs, and total component costs
    b. Signed and recorded Maintenance Agreements
    c. As-built plans
2) Project unit costs will be limited to a reasonable range to be determined by the Partnership, reviewable upon noticeable changes in unit costs provided on local, similar projects.
3) Progress payments on individual components will not be allowed.

SEE APPENDIX A – DEFINITIONS FOR *REFERENCED INFORMATION*

EXHIBIT B
SOUTHERN SARPY WATERSHED
STORMWATER MANAGEMENT POLICIES

APPENDIX A – DEFINITIONS

1 *Base Flood* – The flood having a one percent chance of being equaled or exceeded in magnitude in any given year (commonly called a 1% Annual Chance flood or 100-year flood). *[Adapted from Chapter 31 of Nebraska Statutes]*

2 *Baseline Land Use Conditions* – The pre-developed conditions which existed in Year 2022 based on the NIROC aerial photography and LiDAR survey.

3 *Best Management Practice (BMP)* – "A technique, measure or structural control that is used for a given set of conditions to manage the quantity and improve the quality of stormwater runoff in the most cost-effective manner." *[Source: U.S. Environmental Protection Agency (EPA)]*

4 *Channel Bottom Edge* – The physical transition of the channel bed to the channel bank where there is a noticeable change in slope. This is not intended to be the edge of any flowage in the channel at any one time, but rather the base of the vertical component of the channel bank.

5 *Comprehensive Development Plans* – Existing plans developed by local jurisdictions that serve as the basis for zoning and other land use regulations and ordinances. The Stormwater Management Policies are to be incorporated into the respective Comprehensive Development Plans.

6 *Creek Setback* – See Figure 1 below. A setback area (also referred to as a green space corridor) equal to three (3) times the channel depth plus fifty (50) feet (3:1 plus 50 feet) from the edge of the channel bottom on both sides of channel shall be required for any above or below ground structure exclusive of bank stabilization structures, poles, or sign structures adjacent to any watercourse defined within the watershed drainage plan. Grading, stockpiling, and other construction activities are not allowed within the setback area. The setback area must be protected with adequate erosion controls or other Best Management Practices (BMPs). The outer 30 feet adjacent to the creek setback limits may be credited toward meeting the landscaping buffer and pervious coverage requirements. The outer 30 feet of the setback area may be used for *passive recreation*.

A property can be exempt from the creek setback requirement upon a showing by a licensed professional engineer that adequate bank stabilization structures or slope protection will be installed in the construction of said structure, having an estimated useful life equal to that of the structure, which will provide adequate erosion control conditions coupled with adequate lateral support so that no portion of said structure adjacent to the stream will be endangered by erosion or lack of lateral support. In the event that the structure is adjacent to any stream which has been channelized or otherwise improved by any agency of government, then such certificate providing an exception to the creek setback requirement may take the form of a certification as to the adequacy and protection of the improvements installed by such governmental agency. If such exemption is granted, a 20-foot setback measured from the top of the bank is required.

EXHIBIT B
SOUTHERN SARPY WATERSHED
STORMWATER MANAGEMENT POLICIES

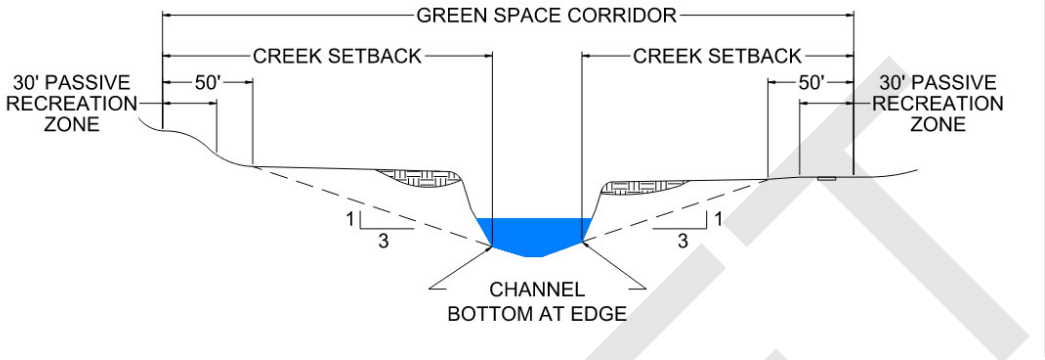


Figure 1 – Green Space Corridor Schematic

7 *Erosion Control* – Land and stormwater management practices that minimize soil loss caused by surface water movement.

8 *Floodplain* – See Figure 2 below. The area adjoining a watercourse, which has been or may be covered by flood waters. [Adapted from Chapter 31 of Nebraska Statutes]

9 *Floodway* – See Figure 2 below. The channel of a watercourse and the adjacent land areas that are necessary to be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot. [Adapted from Chapter 31 of Nebraska Statutes]. The Federal Emergency Management Agency (FEMA) provides further clarification that a floodway is the central portion of a riverine floodplain needed to carry the deeper, faster moving water.

10 *Floodway Fringe* – See Figure 2 below. That portion of the floodplain of the base flood, which is outside of the *floodway*. [Adapted from Chapter 31 of Nebraska Statutes]

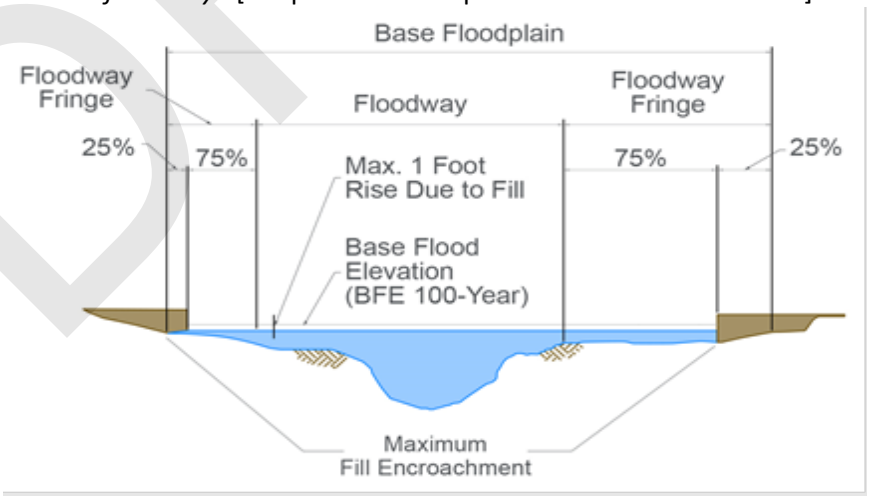


Figure 2 – Floodway Fringe Encroachment Schematic

11 *Full Build-Out Land Use Conditions* – Fully platted developable land use conditions for the Southern Sarpy Watershed are assumed to occur by the Year 2055; or as may be redefined through periodic updates to the respective community and county comprehensive plans.

12 *Low Chord Elevation* – The bottom-most face elevation of horizontal support girders or similar superstructure that supports a bridge deck.

13 *New Development* – New development shall be defined as that which is undertaken to any undeveloped parcel that existed at the time of implementation of this policy.

14 *Passive Recreation* – Passive recreation shall mean features that are constructed at grade and require minimal ground disturbance (no permanent structures or footings, de minimis cut/fill).

15 *Peak Discharge or Peak Flow* – The maximum instantaneous surface water discharge rate resulting from a design storm frequency event for a particular hydrologic and hydraulic analysis, as defined in the Omaha Regional Stormwater Design Manual. The measurement of the peak discharge shall be at the lower-most drainage outlet(s) from a new development or significant redevelopment.

16 *Sediment Control* – Land and stormwater management practices that minimize the transport and deposition of sediment onto adjacent properties and into receiving streams and surface water impoundments.

17 *Significant Redevelopment* – Land disturbing activity that results in the creation, addition, or replacement of at least five thousand (5,000) square feet of impervious surface area on an already developed site.

18 *Stable Slope Projection* – A channel bed slope of 0.08% in the Southern Sarpy Watershed. The stable slope projection is based on a hydraulic assessment which utilizes data from the USDA National Engineering Handbook and a field survey of the existing condition of stream segments in the Southern Sarpy Watershed as of May 2018. For more information, see the Southern Sarpy Watershed Management Plan Appendix X Section 3.0: Stream Stability Assessment Methodology.

19 *Stormwater Management Plan (SWMP*) – A SWMP is a required part of the NPDES Municipal Separate Storm Sewer System (MS4) permits for the urbanized portion of Sarpy County. Development of Stormwater Management Policies is an integral part of the SWMP, and such policies are to be adopted by respective SSWP partners.

20 *Total Maximum Daily Load (TMDL)* – A calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. Water quality standards are set by States, Territories, and Tribes. They identify the uses for each waterbody, for example, drinking water supply, contact recreation (swimming), and aquatic life support (fishing), and the scientific criteria to support that use. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and non-point sources. The calculation must include a margin of safety to ensure that the waterbody can be used for the purposes the State has designated. The calculation must also account for seasonal variation in water quality. The Clean Water Act, Section 303, establishes the water quality standards and TMDL programs, and for Nebraska such standards and programs are administered by the Nebraska Department of Environment and Energy. *[Source: EPA and Nebraska Surface Water Quality Standards, Title 117].*

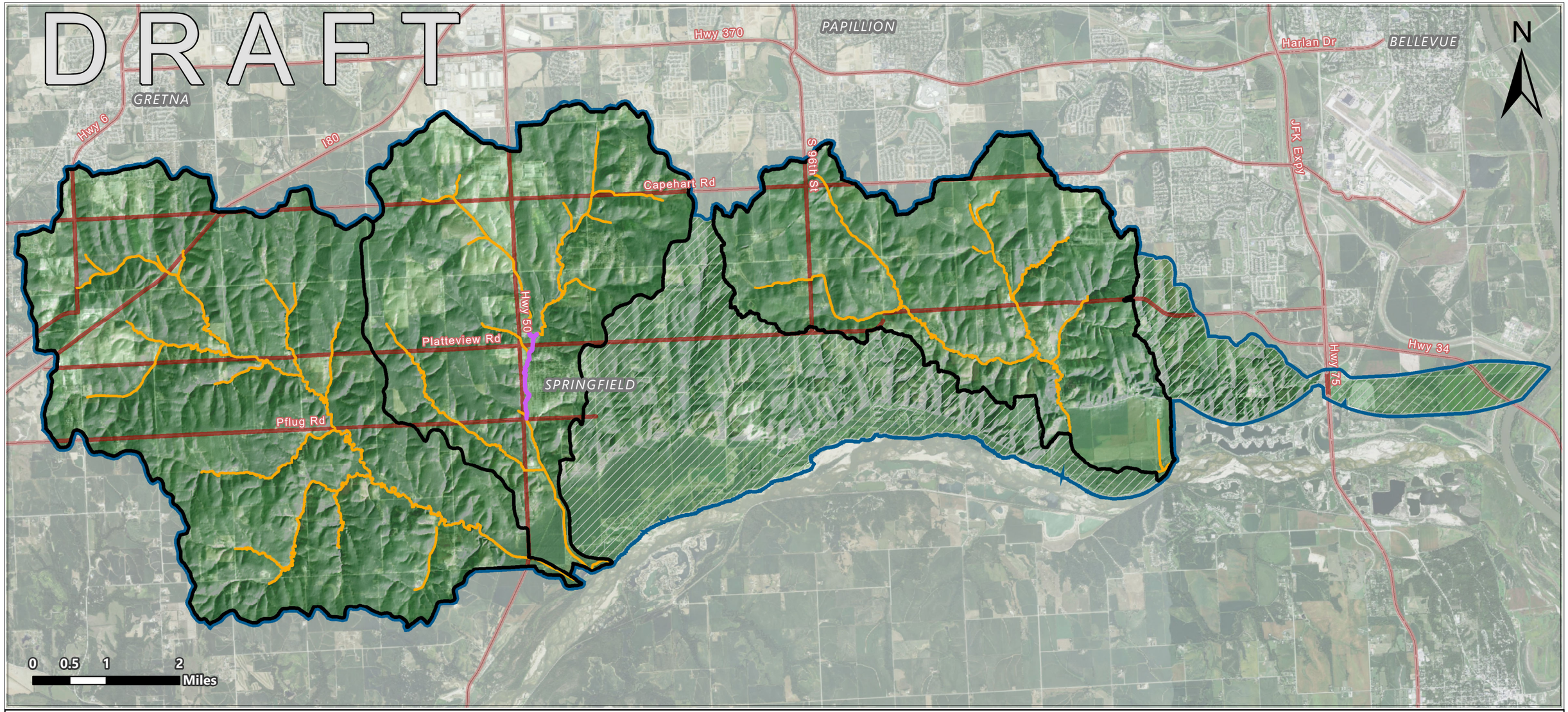
21 *Water Quality LID* – A level of Low-Impact Development (LID) using strategies designed to provide for water quality control of the first ½ inch of stormwater runoff generated from each

new development or significant redevelopment and to maintain the peak discharge rates during the 2-year storm event to baseline land use conditions, measured at every drainage (stormwater discharge) outlet from the new development or significant redevelopment.

22 *Water Quality Management Plan (WQMP)* – Plan based on EPA's nine key elements to achieve improvements in water quality. A WQMP for the Lower Platte River Basin, which includes the Southern Sarpy Watershed, was approved in April 2019 by the EPA and lays out a strategy to systematically address water resource deficiencies in the basin and allows for the management of individual watersheds or other targeted areas. The focus of the Plan is to address impaired waterbodies and satisfy the EPA requirements to be eligible for Section 319 funding. Implementation will be guided on a watershed scale by a comprehensive strategy to address water and land use deficiencies that contribute to the degradation of surface water resources, groundwater resources, and aquatic and terrestrial habitat. The ultimate goal is to delist impaired waterbodies from the 303(d) list.

23 *Watercourse* – Any depression two feet or more below the surrounding land which serves to give direction to a current of water at least nine months of the year and which has a bed and well-defined banks. [Adapted from Chapter 31 of Nebraska Statutes]

Southern Sarpy Watersheds Partnership (SSWP) Watershed Management Plan



- Watershed Boundaries
- Watershed Management Area [a.]
- Major Roads
- City of Springfield Channel Stabilization Project [b.]
- Stream Project Segments [c.]
- Future Planned Study Areas

KEY WATERSHED MANAGEMENT POLICIES

1) 2- and 10-year peak discharge maintained by new development

2) Green space corridors of 3:1 + 50' maintained along all watercourses (not mapped)

3) Grade control structures installed in all streams with a drainage area greater than 0.5 mi^2 as mapped by the Stream Project Segments.

WATERSHED MANAGEMENT COSTS: $70 Million (in 2022 Dollars)

NOTES

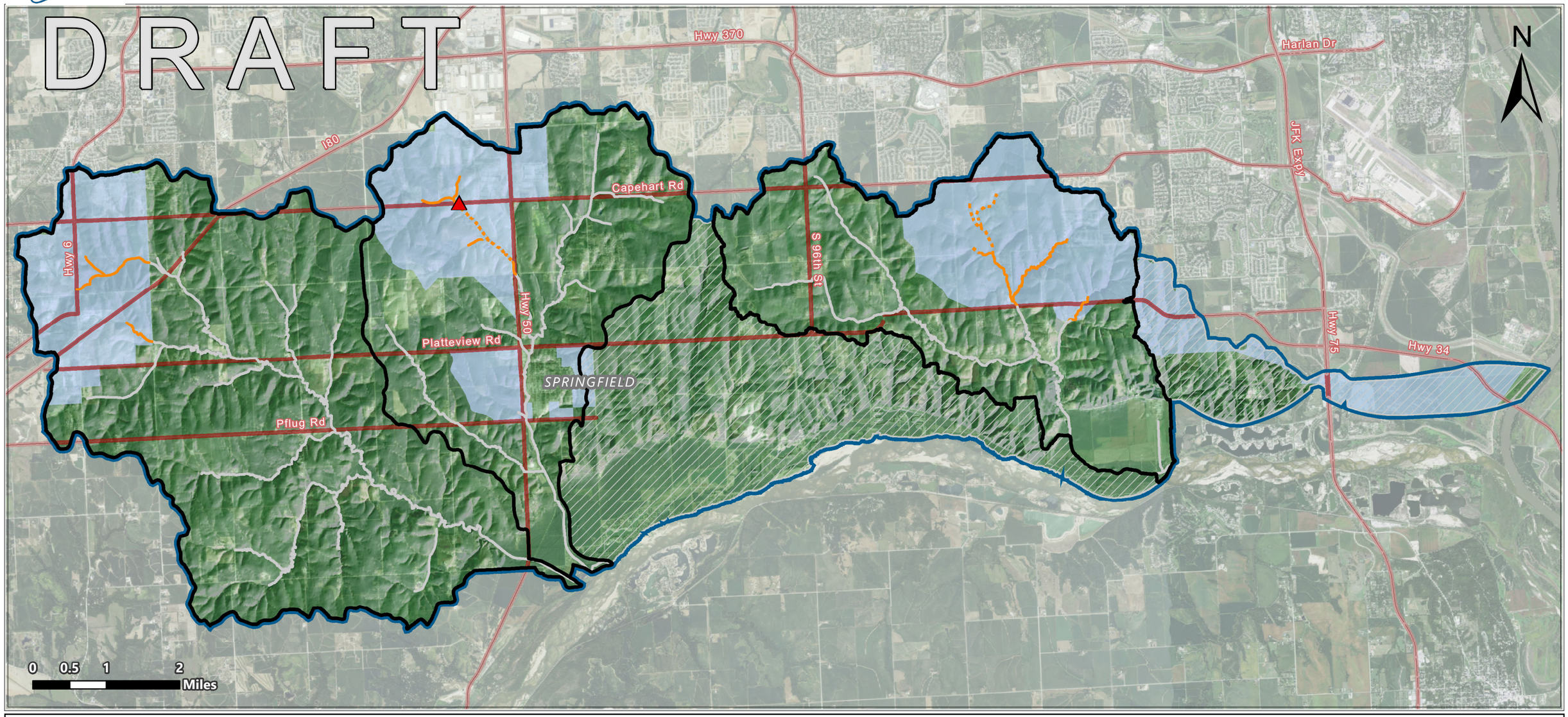
[a.] The Watershed Management Area is the area subject to the plans and policies defined in the Watershed Plan.

[b.] A proposed grade and bank stabilization project by the Partnership.

[c.] 65 miles of stream were identified based on having a drainage area greater than 0.5 mi^2. Grade stabilization projects designed to prevent more than 4 ft of degradation will be constructed or funded by the SSWP in these streams.

June 2023

Southern Sarpy Watersheds Partnership (SSWP) Five Year Implementation Plan (2024-2029)



- Watershed Boundaries
- Watershed Management Area [a.]
- Urban Development Zones [b.]
- 5-Yr Plan Stream Project Segments - Developor Led [c.]
- 5-Yr Plan Stream Project Segments - Partnership Led [c.]
- Stream Project Segments Outside 5-Yr Plan
- Proposed Partnership Project [c.]
- Future Planned Study Areas

KEY WATERSHED MANAGEMENT POLICIES

1) 2- and 10-year peak discharge maintained by new development

2) Green space corridors of 3:1 + 50' maintained along all watercourses (not mapped)

3) Grade control structures installed in all streams with a drainage area greater than 0.5 mi^2 as mapped by the Stream Project Segments.

IMPLEMENTATION PLAN COSTS: $9 Million (in 2022 Dollars)

NOTES

[a.] The Watershed Management Area is the area subject to the plans and policies defined in the Watershed Plan.

[b.] Sarpy County Sewer Agency projection of area anticipated for development used for five-year implementation planning purposes.

[c.] 10 miles of stream were identified based on having a drainage area greater than 0.5 mi^2 within the Urban Development Zone. Grade stabilization projects designed to prevent more than 4 ft of degradation will be led or funded by the SSWP in these streams.

June 2023