

WEST PLAINS – S3R3 SOLUTIONS

Stormwater Management Study

Background

The West Plains area is one of the fastest growing areas in Washington State. To accommodate this growth, S3R3 Solutions is conducting a study that will result in an action plan for expanding and improving stormwater management in the West Plains.

What is Stormwater Management? *Stormwater Management is the practice of controlling runoff from precipitation to prevent flooding and protect water bodies. This may include conveying runoff through pipes and ditches to “best management practices” (BMPs), which remove pollutants and either infiltrate runoff into the ground or discharge treated runoff to surface water bodies, such as rivers or lakes.*

Several unique challenges and opportunities with managing stormwater in the West Plains PDA include:

- **Soil Conditions:** Slow infiltrating soils and high groundwater result in limited options for BMPs and/or onsite BMPs may not be feasible on some parcels.
- **Wildlife Concerns:** The West Plains is located near the Spokane International Airport and Fairchild Airforce Base. Wildlife habitat must be handled with care near these airfields to limit the potential for aircraft bird strikes. Because of this, BMPs with ponded water are not feasible.
- **Paleochannels:** Within the West Plains, paleochannels are stream channels carved in basalt bedrock that were filled with sediment during the Glacial Lake Missoula floods of the most recent ice age. These channel sediments have significantly higher capacity for infiltration than the surrounding soils. Paleochannels are known to exist in the West Plains and further investigation is needed to determine their potential for infiltrating stormwater runoff.

Location

The West Plains PDA boundary is generally defined as I-90 to the southeast, Fairchild Airforce Base to the west, and the City of Airway Heights to the north. The boundary is shown in Figure 1 along with five areas where regional stormwater systems are planned, contributing basin areas, and the approximate location of the regional stormwater systems.

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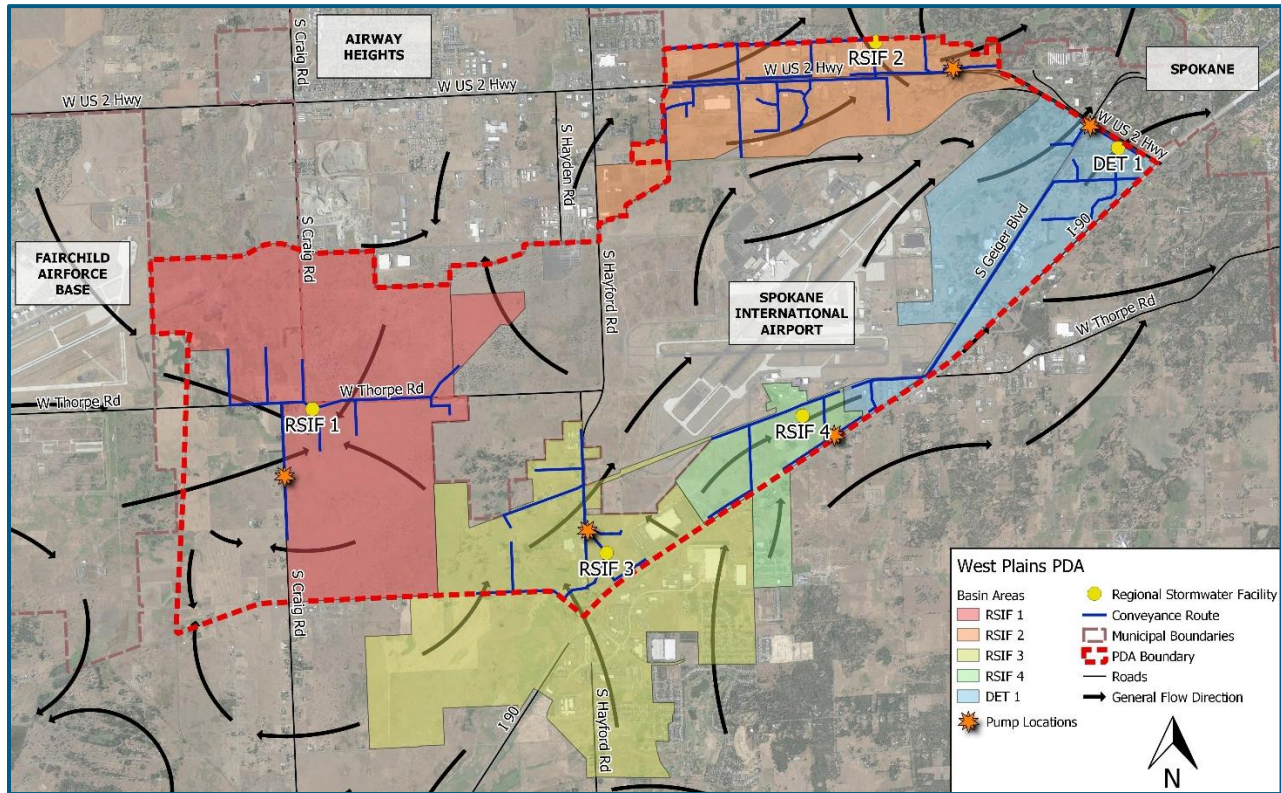


Figure 1: West Plains Stormwater Study Area

Goals & Approach

The goal of this study is to develop an action plan for expanding and improving Stormwater Management in the West Plains. The long-term vision is to construct new Regional Stormwater Infiltration Facilities (RSIFs) in the paleochannel areas, conveyance systems to route stormwater runoff to the RSIFs, and treatment best management practices (BMPs) upstream of the RSIFs.

The general steps of the study are noted below along with the status of this work.

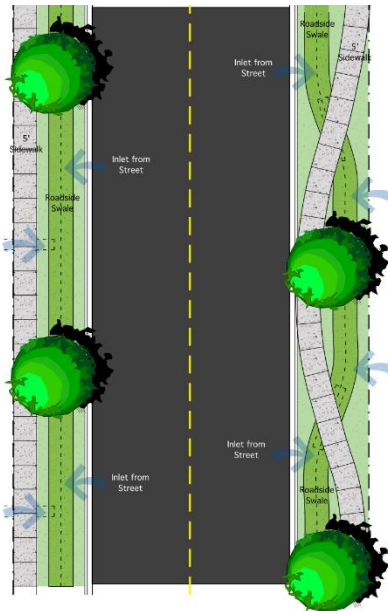
- Collect Data:** Collect data on contributing basin areas, runoff patterns, soils, groundwater, paleochannels, and drainage complaints.
- Identify RSIF and Conveyance Options:** Identify potential locations for the RSIFs in the paleochannel areas and routes for conveying runoff to the RSIFs including potential combined stormwater facility and open space / passive recreation opportunities within the PDA boundary.
- Identify Guidance for Developers:** Create stormwater management guidance to assist developers in evaluating whether onsite BMPs are feasible in specific areas or if runoff should discharge to the regional system.
- Evaluate Conveyance Options:** Calculate the expected runoff from developments, evaluate regional facilities, and determine whether gravity or pumped conveyance will be needed.
- Evaluate Paleochannels:** Study the capacity and feasibility for paleochannels to receive stormwater.
- Develop a Capital Improvement Plan (CIP) and Strategic Plan:** Incorporate RSIF and conveyance options into a CIP, develop a prioritized list of projects, and identify funding options to support the design and construction of projects.

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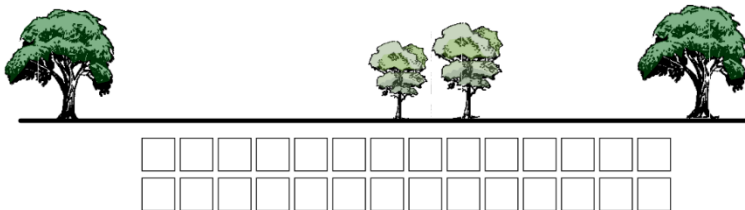
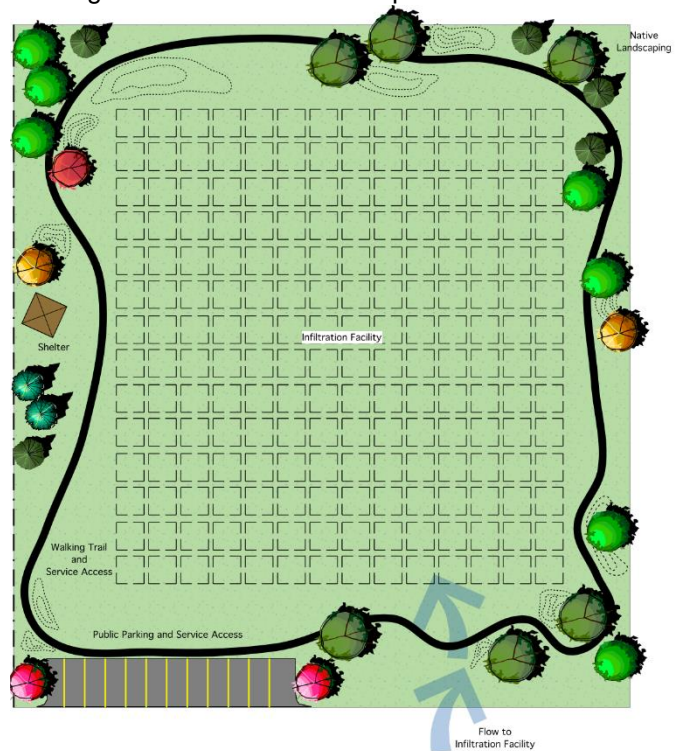
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Selected Alternatives

- Treatment BMPs:** Stormwater will be treated in roadside swales before entering stormwater conveyance systems. Multi-user paths are proposed as part of local roadway improvements.



- RSIFs:** Four regional infiltration facilities are proposed within presumed paleochannels, or areas with permeable soils. These facilities will be located below ground with recreational space located above the facilities.



- Public recreational space** may include: multi-user paths, exercise stations, athletic fields (soccer, football, etc.), passive open space, dog parks, and/or other amenities.

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- **Detention Facility:** One regional detention facility is proposed outside the paleo channel boundaries. The facility is proposed as an open-water pond. Wildlife deterrents such as cable grids, floating bird balls or covers, and netting or scare tape, will be installed at this facility to prevent bird-strikes near the airport.

Timeline

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|--------------------------------|--------------------------------------|
| • Summer 2019 thru Spring 2020 | Collect Data |
| • Summer 2020 thru Fall 2020 | Identify RSIF and Conveyance Options |
| • Winter 2021 | Identify Guidance for Developers |
| • Winter 2021 | Evaluate Conveyance Options |
| • Summer 2020 thru Spring 2021 | Evaluate Paleochannels |
| • Spring 2021 | Develop CIP and Strategic Plan |

Study Team

- S3R3 Solutions
- Spokane County
- City of Spokane
- Spokane International Airport
- Osborn Consulting, Inc.
- GeoEngineers
- SPVV Landscape Architects
- FCS Group
- T-O Engineers