

S3R3 SOLUTIONS

Stormwater Management Study

Background

The West Plains Airport 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. S3R3 Solutions is the Public Development Authority managing the development of the West Plains Airport Area.

What is Stormwater Management? *Stormwater Management is the practice of controlling runoff from precipitation to 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 Airport Area include:

- **Soil Conditions:** Slow infiltrating soils, high groundwater, and shallow depth to basalt result in limited options for BMPs and/or onsite BMPs may not be feasible on some parcels.
- **Wildlife Concerns:** The West Plains Airport Area is located near the Spokane International Airport and Fairchild Air Force 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 permissible.
- **Paleochannels:** Within the West Plains Airport Area, 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 Airport Area and further investigation is needed to determine their potential for infiltrating stormwater runoff. Water entering these paleochannels eventually make their way to and recharge existing water bodies like the Spokane River.

Location

The West Plains Airport Area is generally defined as I-90 to the southeast, Fairchild Air Force Base to the west, and the City of Airway Heights to the north. The boundary is shown below.



Goals & Approach of the Study

The goal of this study is to develop an action plan for addressing Stormwater Management in the West Plains Airport Area. The long-term vision is to construct conveyance systems that route treated stormwater runoff to new regional stormwater infiltration facilities (RSIFs) in the paleochannel areas to recharge existing water bodies.

The study will be accomplished through the following general steps:

- **Collect Data:** needed to conduct the study including contributing basin areas, runoff patterns, soil types, depth to groundwater and basalt, and identify paleochannels locations.
- **Identify RSIF and Conveyance Alternatives:** 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 West Plains Airport Area.
- **Identify Guidance for Developers:** Create stormwater management guidance to assist developers in evaluating whether onsite BMPs are feasible in specific areas.
- **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/feasibility for paleochannels to receive stormwater.
- **Select Alternatives:** Select feasible RSIF and conveyance alternatives which will include conducting a cost, benefit, and risk analysis.
- **Develop a Capital Improvement Plan (CIP):** Develop selected RSIF and conveyance alternatives into a CIP, develop a prioritized project list, and identify funding options to support the design and construction of projects.

Timeline

- Summer to Fall 2019 – Collect Data
- Fall to Winter 2019 – Identify Alternatives
- Winter 2019 to Spring 2020 – Evaluate and Select Alternatives
- Spring to Summer 2020 – Develop Capital Improvement Plan

Study Team

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