

AUGER FALLS HERITAGE PARK A CITY LEGACY IN THE MAKING

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J-U-B ENGINEERS, INC.



**THE
LANGDON
GROUP**

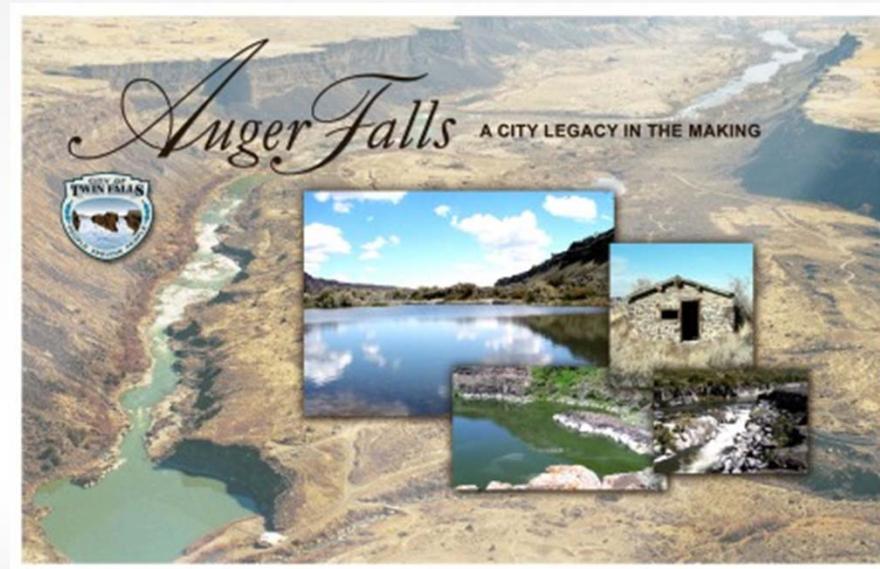


**GATEWAY
MAPPING
INC.**

OTHER J-U-B COMPANIES

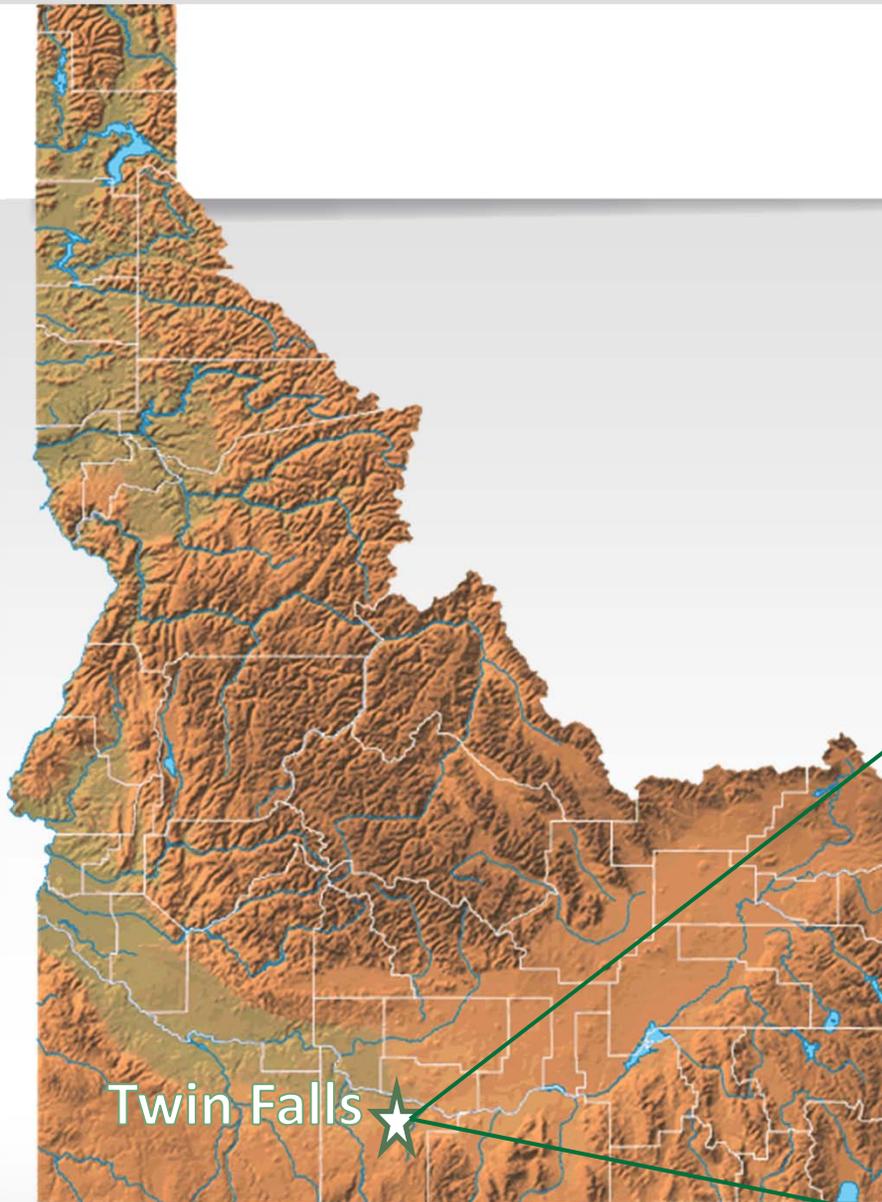
Presentation Outline

1. Project Background
2. Conceptual Planning
3. Reuse and Permitting
4. Phase 1 Construction
5. Conclusions

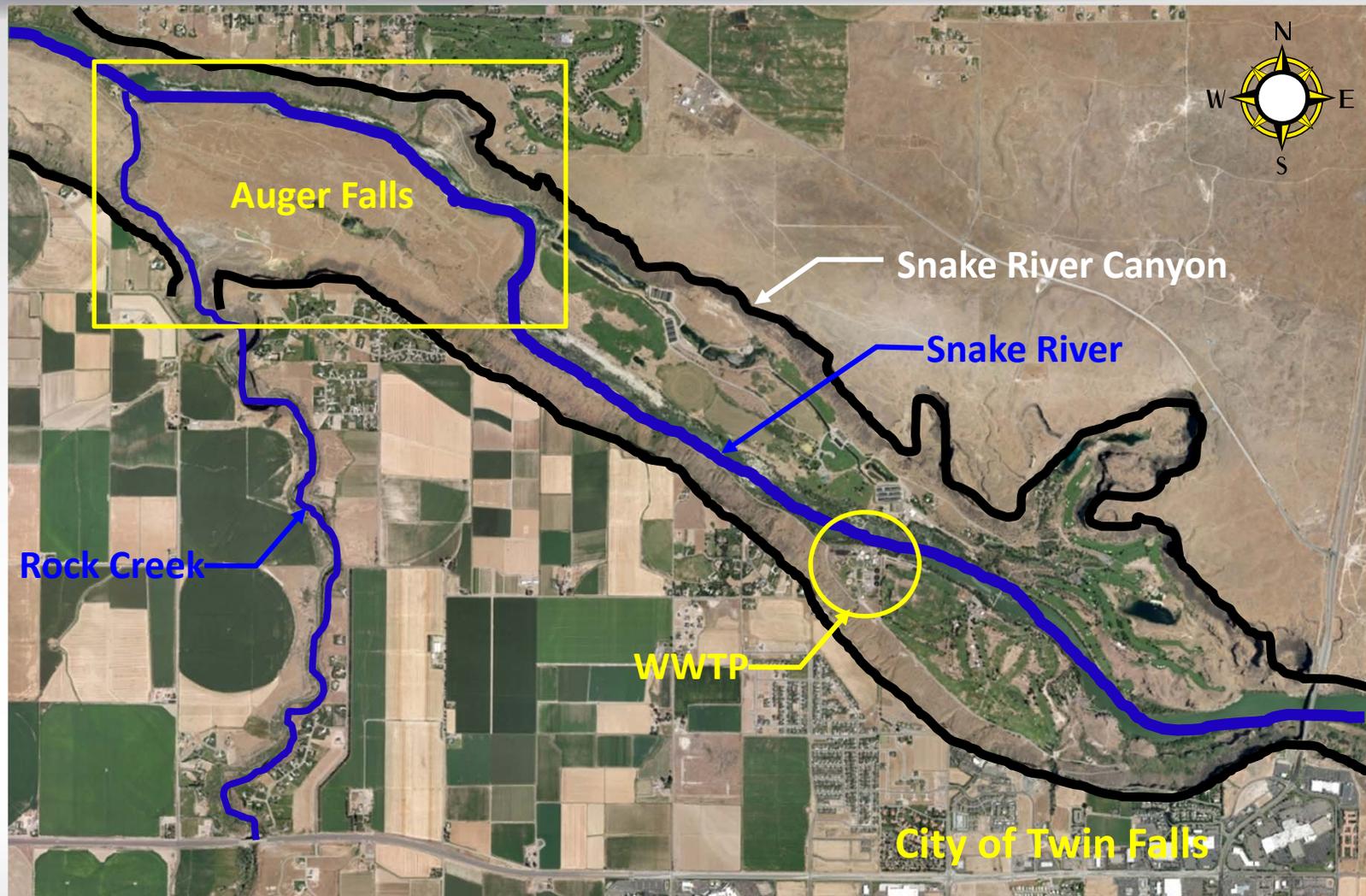


Project Location

- City of Twin Falls
- Snake River Canyon
- ~500 Acres



Overall Site Layout



1. Project Background

Auger Falls

Over 500 Acres Filled With Community Resources



Historic Sites



1. Project Background

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Hydraulic Gold Mining



1. Project Background

Rock Creek



1. Project Background

Paleo Channel



Blue Gill Pond



1. Project Background

Wildlife



1. Project Back

Waterfalls



1. Project Background

The Snake River



1. Project Background

Auger Falls



1. Project Background

Gravel Source



1. Project Background

Abandoned Rapid Infiltration Basins



1. Project Background

Abandoned Rapid Infiltration Basins



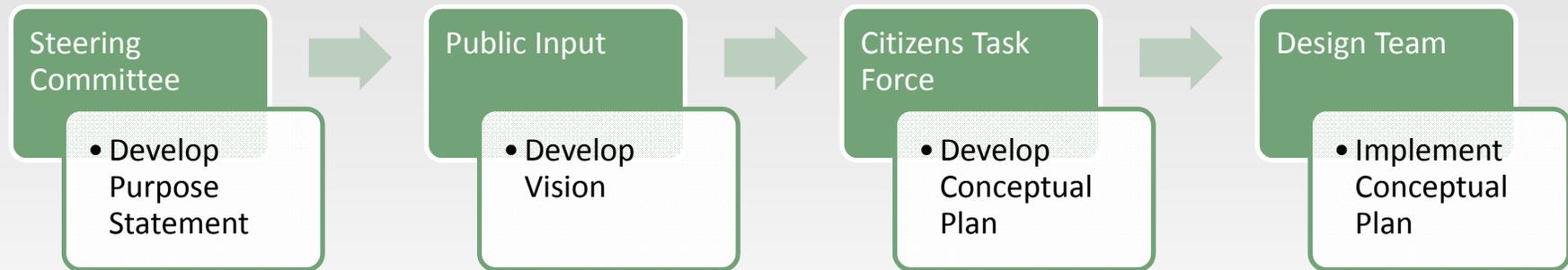
1. Project Background

Abandoned Rapid Infiltration Basins



1. Project Background

Site Development Process



Purpose Statement

*“Maximize the beneficial use of the City’s resources of unique land, treated wastewater and community foresight. Bringing these resources together, we will create a heritage project that will **protect, enhance, rehabilitate and preserve** the environment and provide an outdoor experience to be enjoyed by Twin Falls citizens and visitors now and in the future.”*

Public Ranking of Land Use Activities

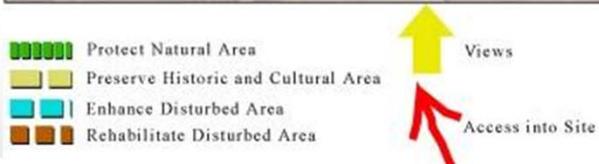
Activity	1 st Choice (6 points)	2 nd Choice (5 points)	3 rd Choice (4 points)	4 th Choice (3 points)	5 th Choice (2 points)	6 th Choice (1 point)	Total Points
Hiking	90	65	20	6	6	1	188
Biking	60	50	12	15	2	1	140
River Access	30	35	24	12	14	3	118
Observation Areas	24	15	36	15	14	3	107
Interpretive Areas	24	35	12	12	4	0	87
Fishing	12	15	28	9	6	3	73
Jogging	24	20	8	12	6	1	71
Open Park	24	5	4	12	4	3	52
Bird Watching	0	5	16	12	4	4	41
Outdoor Events	6	10	0	0	2	4	22
Playground	0	0	0	6	2	2	10
Farming	0	0	4	3	2	0	9
Horseback Riding	0	0	4	0	2	0	6
Sports Fields	0	0	0	0	4	0	4

2. Conceptual Planning

Public Ranking of Habitat

Habitat	1 st Choice (4 points)	2 nd Choice (3 points)	3 rd Choice (2 points)	4 th Choice (1 point)	Total Points
Constructed Emergent Marshlands	60	27	18	4	109
Dry Uplands – Tree Dominated	56	33	8	8	105
Dry Uplands – Native Grass Dominated	28	30	28	4	90
Dry Uplands – Sage Dominated	8	21	14	18	61

Site Analysis



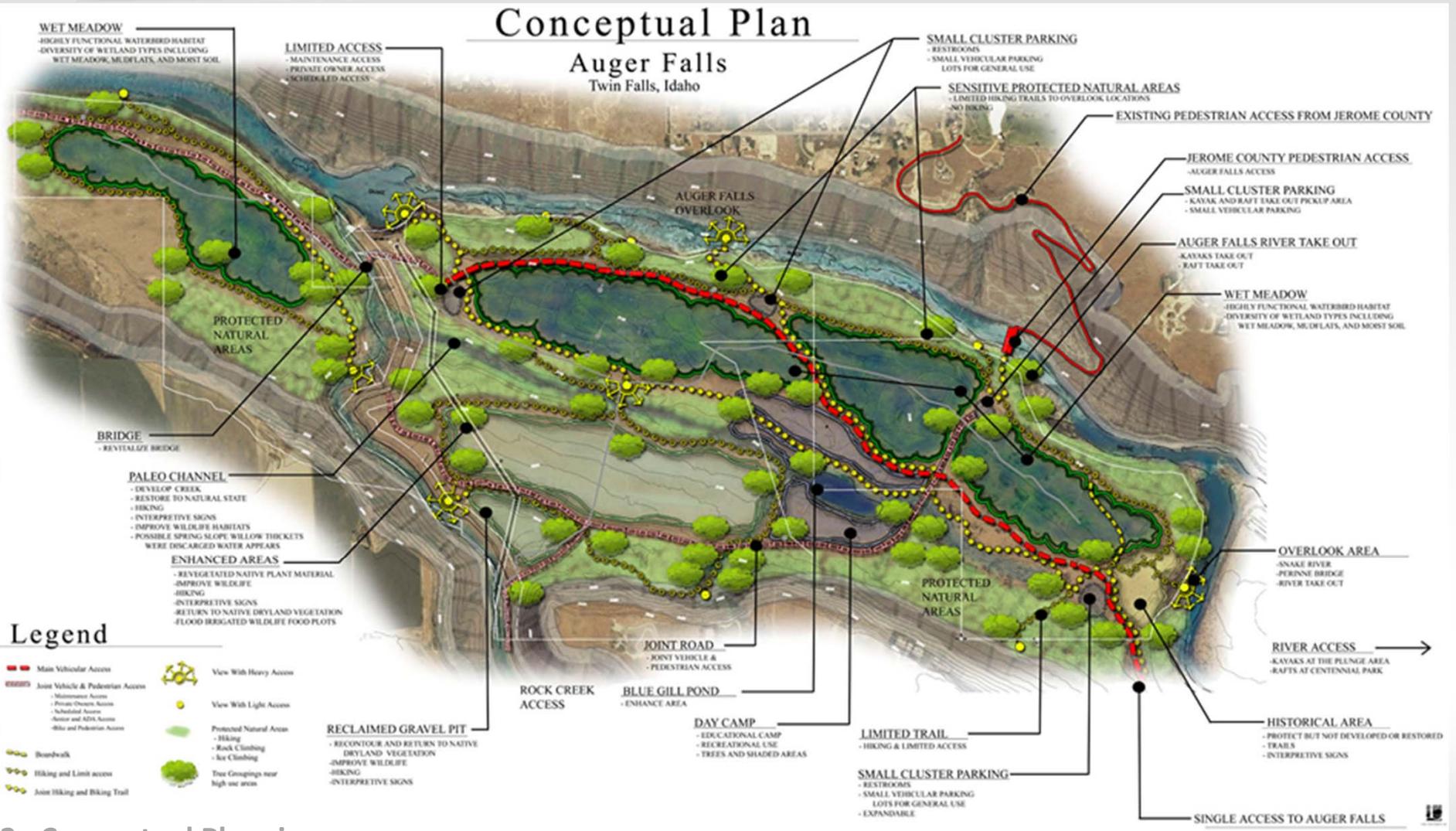
Site Analysis

Auger Falls
Twin Falls, Idaho

2. Conceptual Planning

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Conceptual Plan



2. Conceptual Planning

Wastewater Treatment

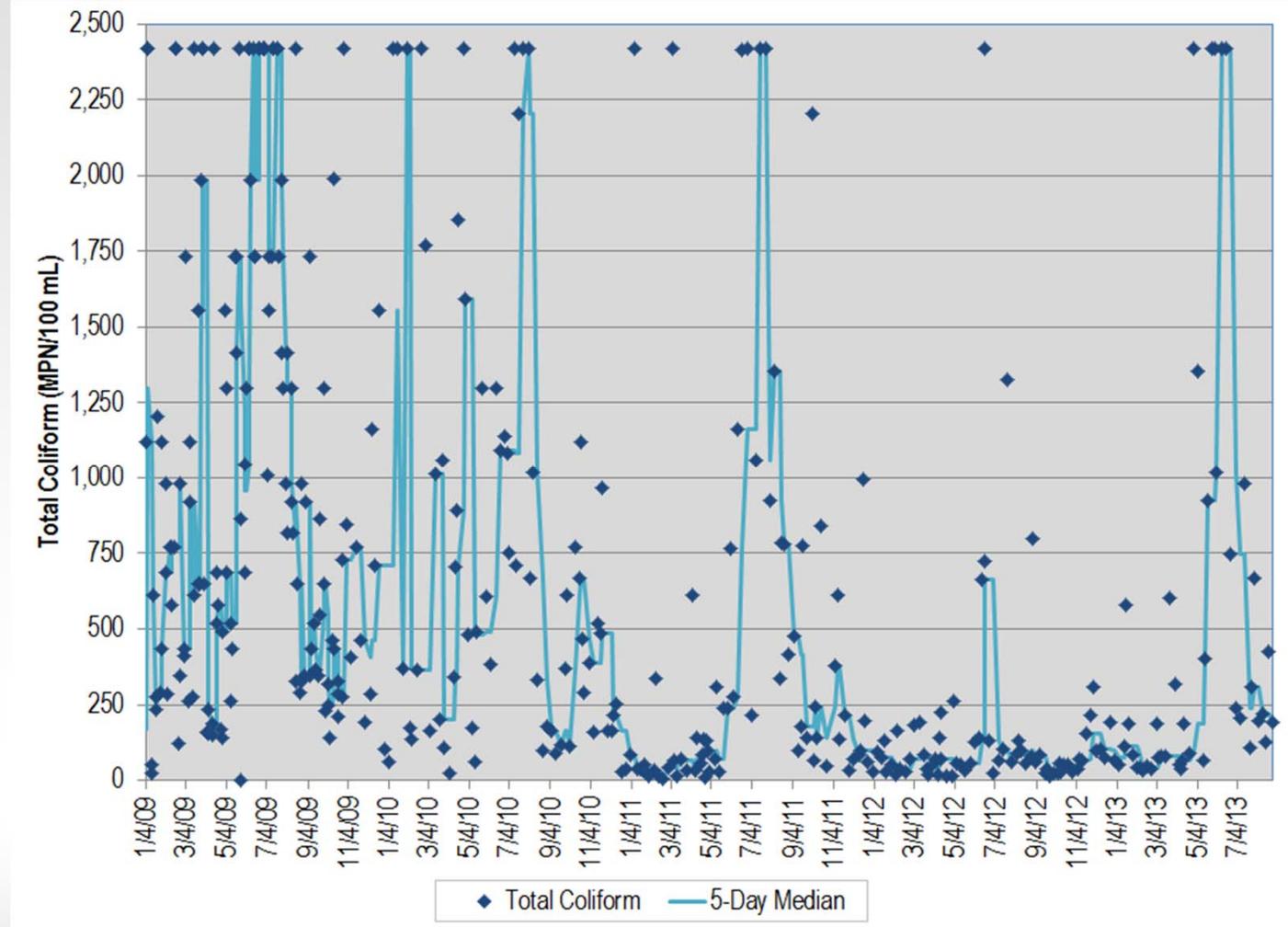
- Conventional Activated Sludge
 - 8.6 MGD ADF
 - 10.9 MGD PDF
- Discharge to Snake River (NPDES Permit)



Parameter	Annual Average Day
Flow	6.5 MGD
BOD ₅	12.0 mg/L
TSS	14.4 mg/L
TKN	3.7 mg/L
Ammonia-N	0.3 mg/L
Nitrate-N	36.9 mg/L
Total-P	7.4 mg/L
pH	7.7

Effluent Quality

- Class E Effluent



Early Regulatory Issues

Lined Ponds

- Needed for Class E Water

Flow Through Basins

- Secondary NPDES Discharge
- Lack of Control Over Treatment

**Primary Focus on
Treatment Performance**

Unlined Ponds

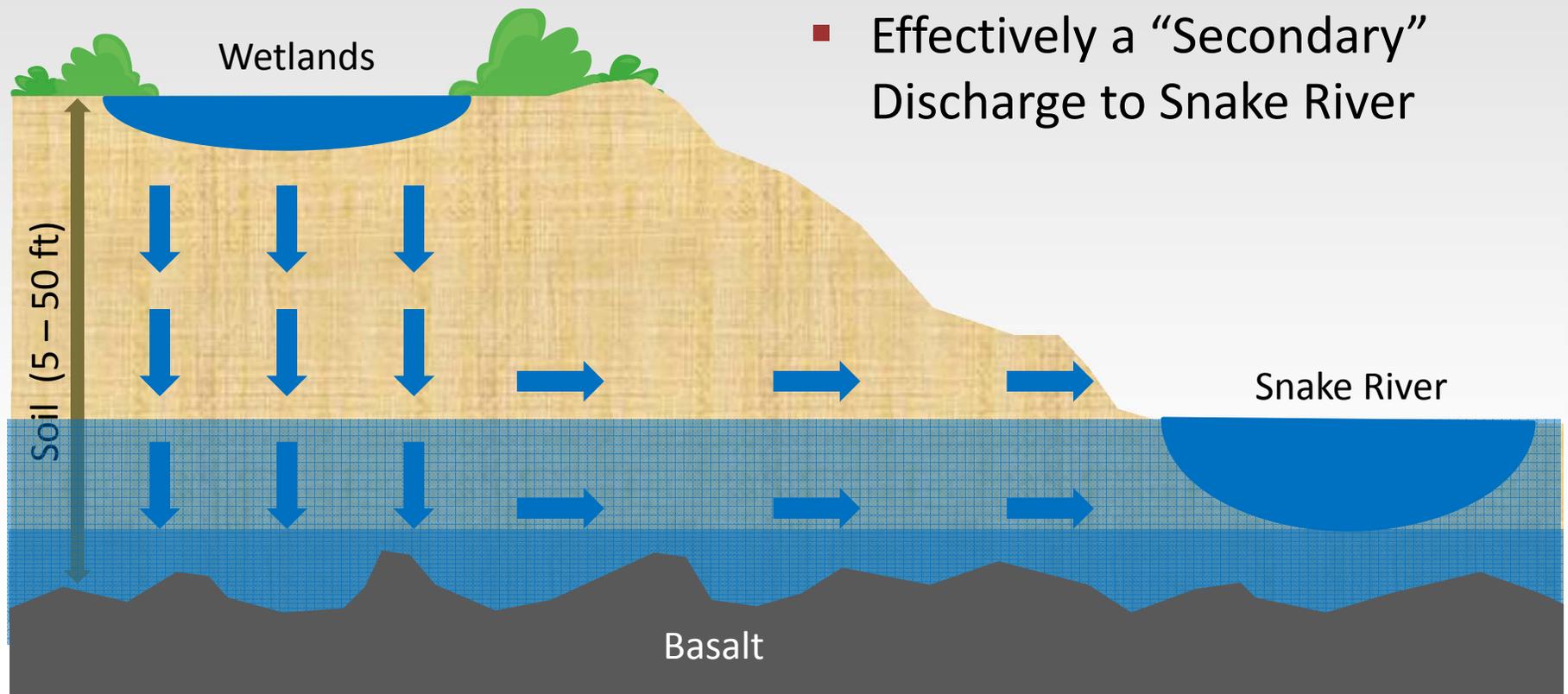
- Best for Wetland Plants

Infiltration Basins

- Additional Treatment Potential
- Reuse Permit Required

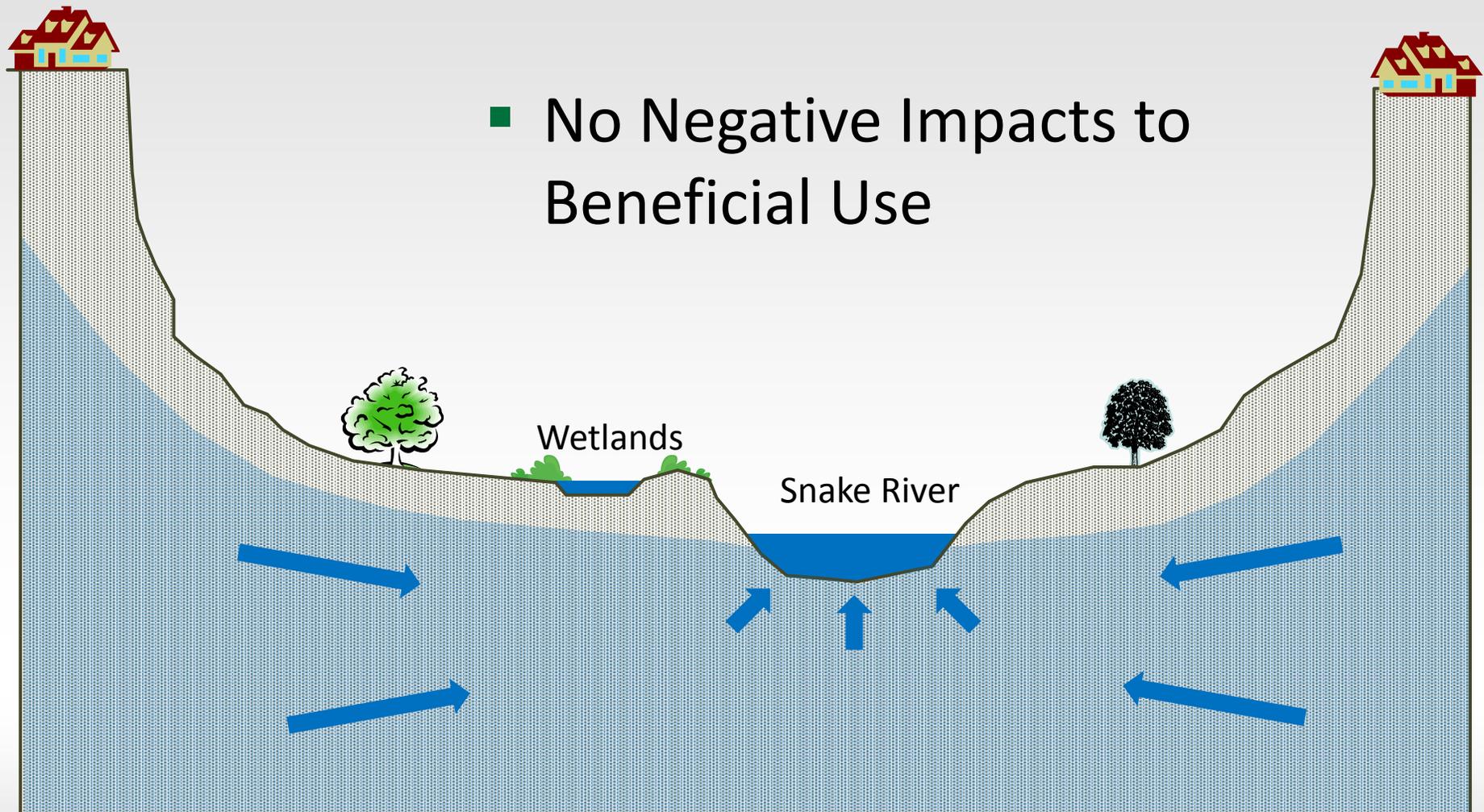
**Primary Focus on
Wetland/ Wildlife
Habitat**

Site Hydrogeology



Groundwater Quality

- No Negative Impacts to Beneficial Use



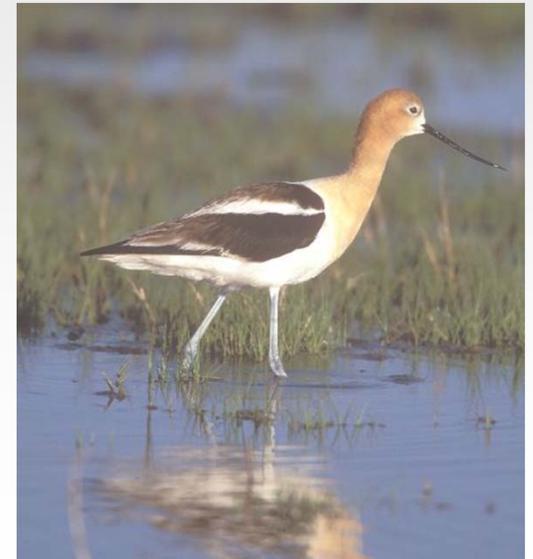
Other Reuse Permit Considerations

- Numerical Effluent Loading Limits
 - Must Comply with NPDES Permit Limits at WWTP Prior to Wetlands Diversion
 - No Treatment Credits Sought at This Time
- Buffer Zones
 - 50-Feet to Public Access Areas
 - Less than 50-Feet Where Natural Features Provided Barrier to Public
- Fencing
 - Barb-Wire and Woven Wire

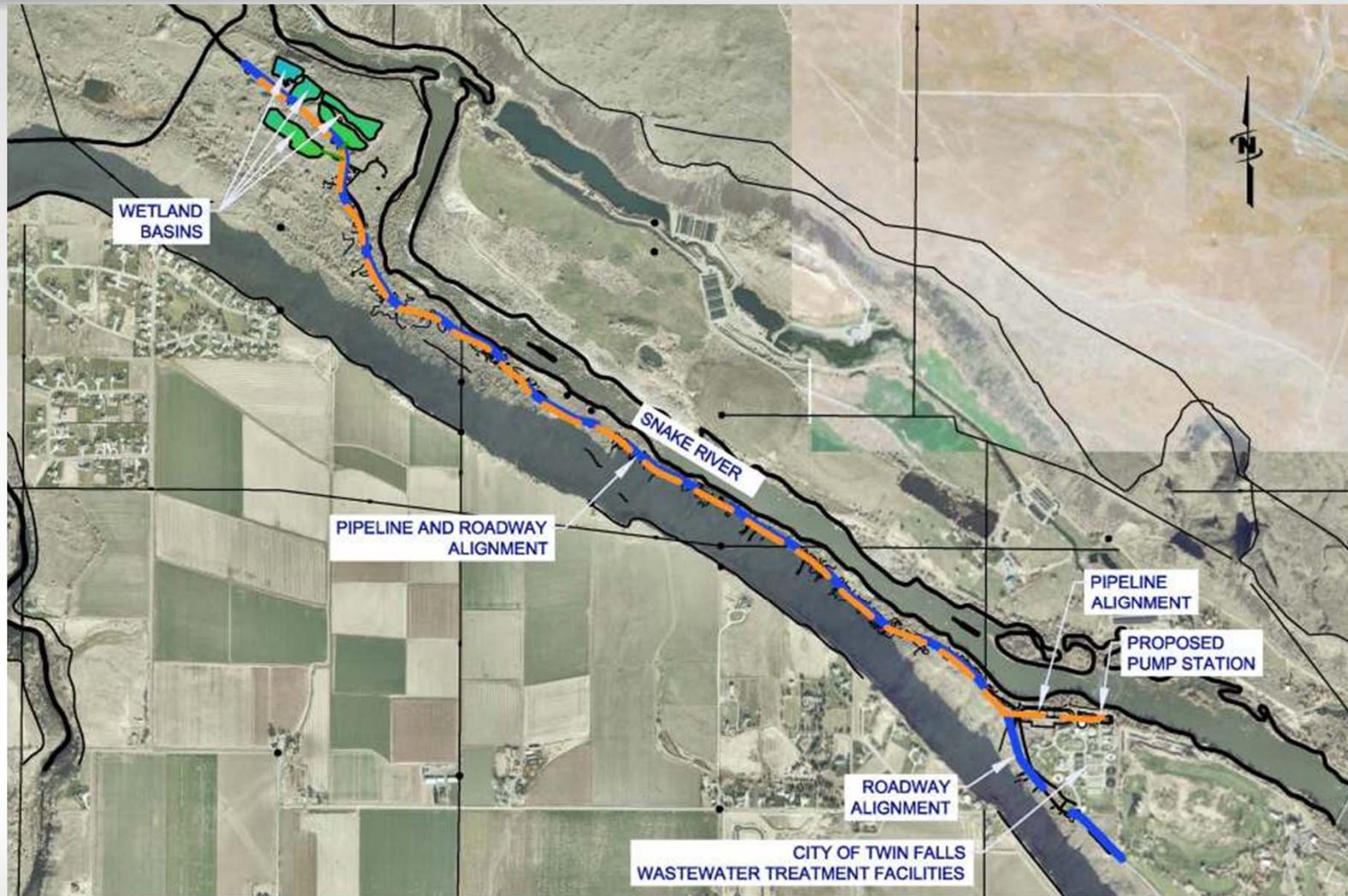


Operations and Maintenance

- Mosquito Management
 - Water Level Variations
 - Forebays Promote Growth of Macro-Invertebrates
 - Insectivorous Fish and Birds
 - Larvicides
- Algae Management
 - Water Level Variations
 - High Flow Through/Short Retention Times
 - Inundated Areas with Dense Vegetation
- No Seasonal Restrictions on Discharge
 - Cannot Exceed Infiltrative Capacity During Freezing Conditions
- Harvesting of Vegetation Not Anticipated Initially
 - Seed Stock for Future Basins
 - Potential Future Nutrient Removal Credits



Phase 1 Overall Layout



4. Phase 1 Improvements

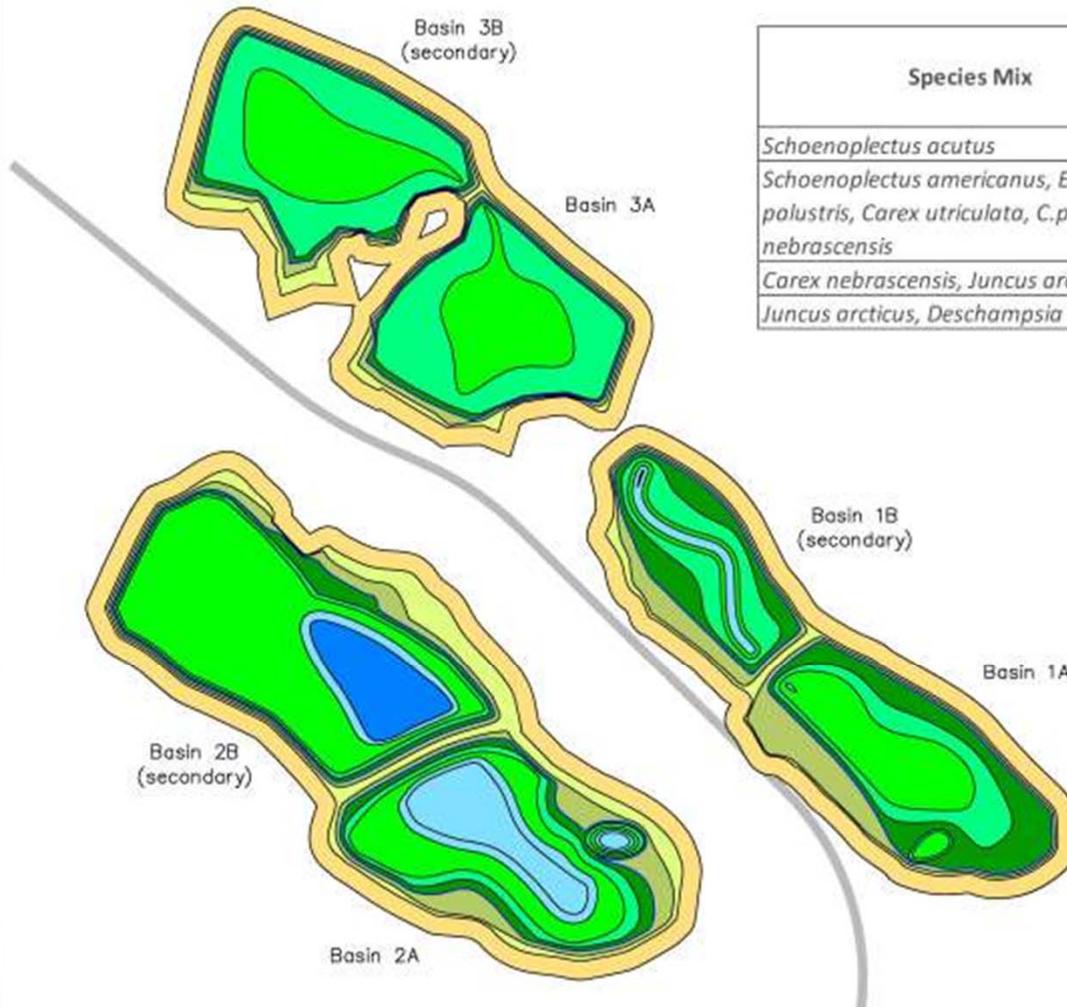
Pump Station and Pressure main

- 6 MGD Pump Station
 - 2 MGD Capacity in Phase 1
- 2 Miles of Purple Pipe



4. Phase 1 Improvements

Phase 1 Wetlands



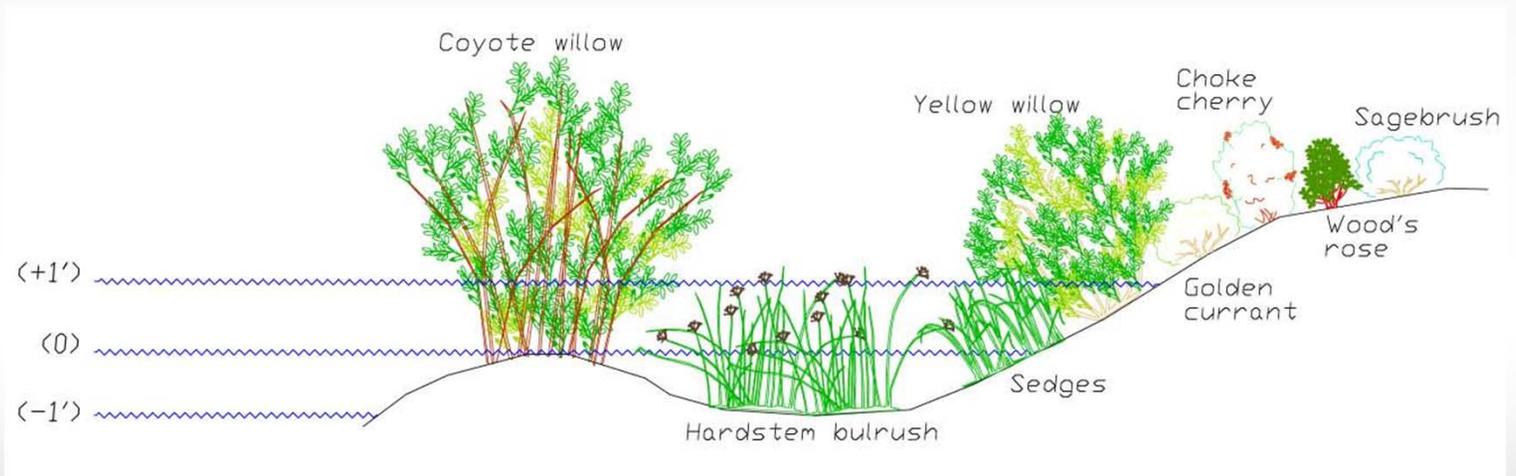
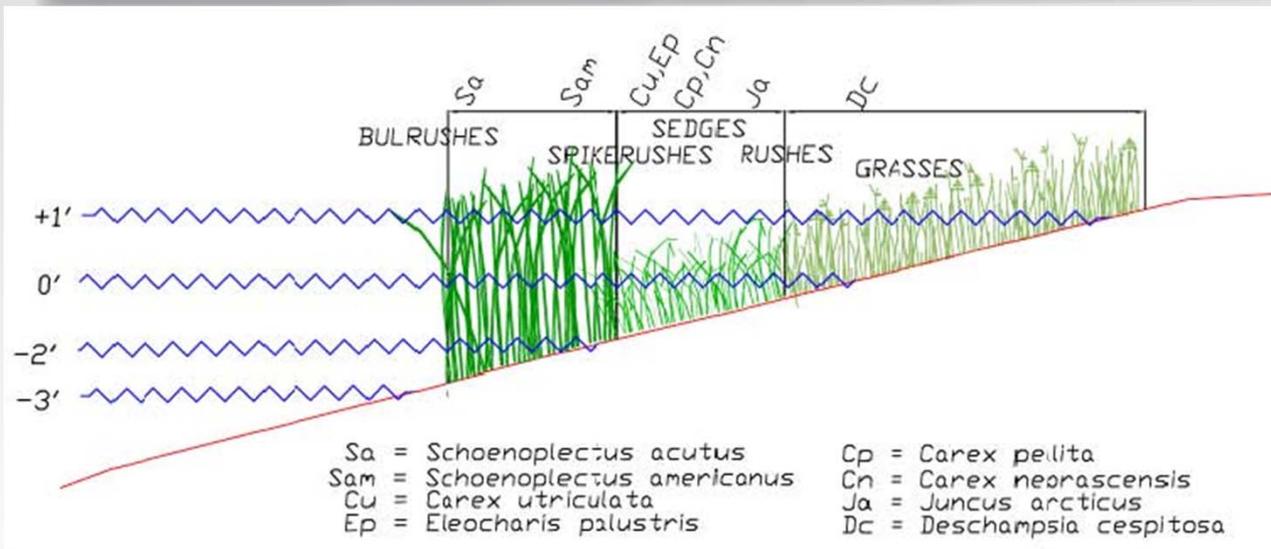
Species Mix	Hydrologic Zone (ft.) from 0 (0 = Design HWL)		Plant Spacing (ft.)	Approx. % of Zone
<i>Schoenoplectus acutus</i>	-2	-3	1.5	60
<i>Schoenoplectus americanus, Eleocharis palustris, Carex utriculata, C. pellita, C. nebrascensis</i>	-1	-2	1.5	60
<i>Carex nebrascensis, Juncus arcticus</i>	-1	0	1.5	60
<i>Juncus arcticus, Deschampsia cespitosa</i>	0	1	1.5	60

- BERM TOP & OUTSIDE (EST.)
- 1-2 FT ABOVE HWL
- 0-1 FT ABOVE HWL
- DESIGN HIGH WATER LEVEL
- 0-1 FT BELOW HWL
- 1-2 FT BELOW HWL
- 2-3 FT BELOW HWL
- 3-4 FT BELOW HWL
- 4-5 FT BELOW HWL

Basin	Acres
1A	0.87
1B	0.52
2A	1.04
2B	1.49
3A	0.93
3B	0.97

4. Phase 1 Improvements

Phase 1 Wetlands



4. Phase 1 Improvements

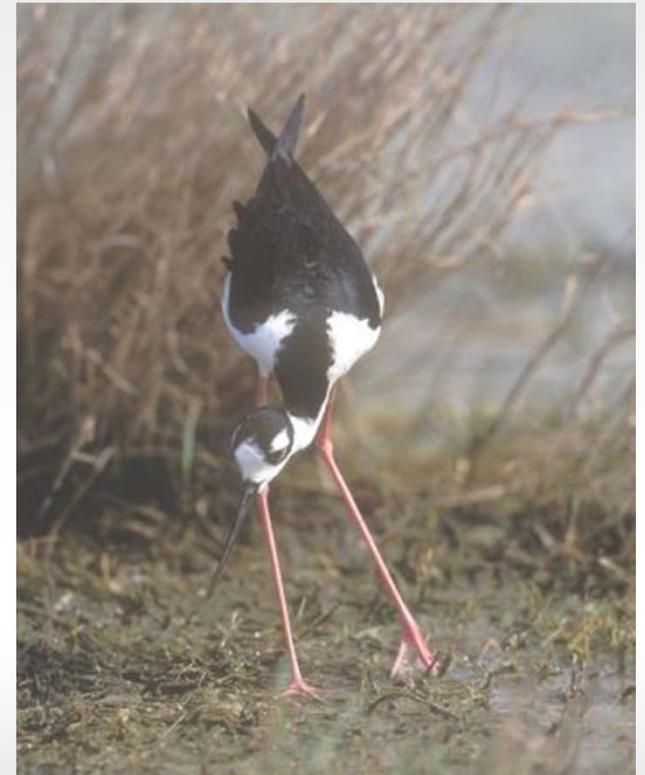
Phase 1 Wetlands



4. Phase 1 Improvements

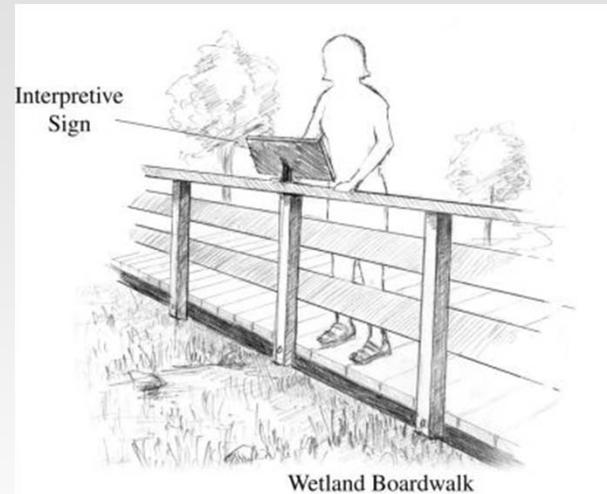
What's Next

- Hydrologic Testing of Wetlands
- Planting of Wetland Vegetation
- On-Going Permitting and Performance Monitoring
- Future Site Development



On-Going

- Parking and Roads
- Trails and Signs
- Overlooks and River Access



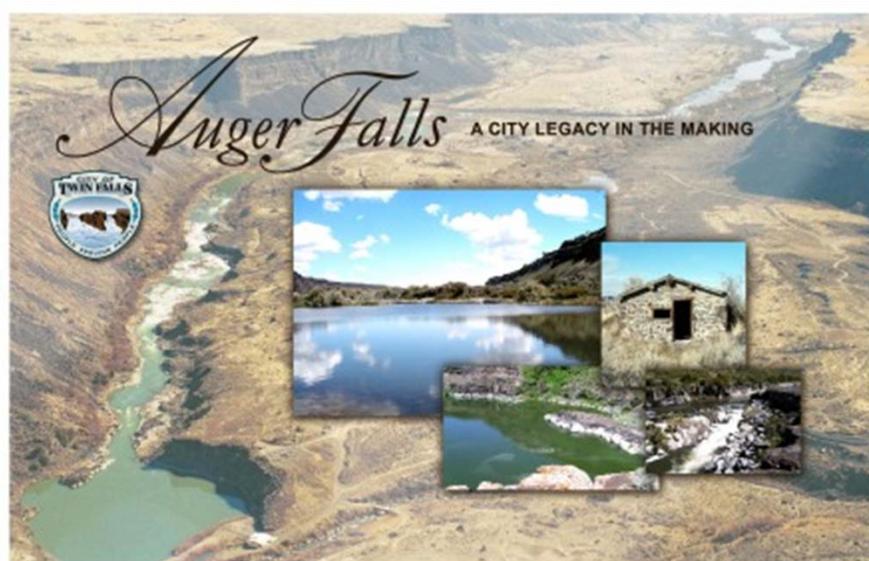
5. Conclusions

Lessons Learned

- Public Involvement is Key
- Get Creative with Reuse Opportunities
- Work with Your Regulators



QUESTIONS AND ANSWERS



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