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Topic: DRAFT Technical Memo #3: Existing Conditions

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From: Ken Pirie

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Basecamp

Technical Memo #3: Existing Conditions

The following memorandum serves as a summary of known existing conditions in the Innovation Gateway study area and includes a summary of smart growth concepts, existing zoning and city policies and opportunities and constraints for change in the study area.

SECTION 1 Review of existing background information

An extensive library of previous studies and existing data has been provided to the project team, listed on page 12 of the Statement of Work. These documents have been reviewed by the project team and they provide useful context and reference for the project under several broad categories:

Transportation

As an ODOT TGM project, a certain baseline level of analysis is required for this project, as described in Technical Memo #2, in order to meet State transportation policies. This includes an analysis of transit and active transportation potential for the project, to ensure that City and County TSPs are updated. Relevant documents provided are:

City

- Road Standards
- 1996 TSP
- 2009 John Day Local Street Network Plan
- Capital Improvement Plan
- Trail plans and location of informal/unimproved pathways
- Pending plans within Project Area
- GIS mapping data

County

- Grant County TSP
- Grant County Human Services Coordinated Plan
- People Mover transit route

State

- Oregon Transportation Plan
- Oregon Highway Plan

- Oregon Bicycle and Pedestrian Plan
- 2012 HDM
- Transportation Planning Rule and No Reduction of Vehicle-Carrying Capacity (ORS 366.215)

Land Use Planning (and Smart Growth)

This project will resolve a number of land use challenges through smart growth planning and will be implemented by amending the Comprehensive Plan and potentially proposing updated development standards. Relevant documents provided are:

City

- 2009 Comprehensive Plan
- Zoning, Land Use and Development Code
- GIS mapping data

County

- Comprehensive Plan
- County Zoning, existing land uses, and data related to Project Area.

Environmental Planning and Public Utilities

The project will envision the John Day River as a central, cohesive element for the Innovation Gateway. Through integrated site planning and green infrastructure design, we believe the river can become a beautiful, green corridor through the city - a recreational and environmental resource that attracts visitors and improves pedestrian safety and public health. The innovative reuse of treated wastewater is an important resource in realizing the vision. Relevant documents provided to guide this vision are:

City

- Water and Sewer Plan
- Wastewater Facilities Plan Update
- Reclaimed Water Feasibility Study
- FEMA flood remapping project information
- Historic photos
- Topography maps
- Oregon Pine environmental review
- GIS data

Economic Development and Workforce Housing

A parallel study performed by ECONorthwest will focus on economic redevelopment aspects of the City and Innovation Gateway. The two studies will be well-integrated, on similar schedules. Relevant documents provided to the team are:

City

- 2017 Housing Needs Analysis
- 2017 Oregon Kitchen Table Survey Summary
- City Economic Opportunities Analysis
- Chamber Strategic 3-Year Plan

SECTION 2

Development Potential and Feasibility

2.1 City Strategy for Growth

The City of John Day and Grant County is a distressed rural area that has experienced a number of socio-economic problems including the highest unemployment rate in Oregon since 2012 (Grant County 6.5% percent as of June 2018); low real market property values and assessed values and struggles to find sufficient revenue to fund basic public services. John Day's population, which peaked in the 1990s, is now at the same level it was in the 1970s and is primarily white with a median age of 40.5. Title VI population figures are as follows: White (93%); Latino (2.7%); Native American (1.5%); Asian (0.7%); Black (0.3%) and two or more races (1.6%). One of the primary drivers for this study and other related projects is to slow and reverse population decline.

As stated by the City in their "Strategy for Growth":

The intent of the strategy is to reverse the pattern of population and economic decline by achieving a modest and sustainable growth rate. While no specific population targets have been set, an annual growth rate of 0.5% would add nine new residents the first year. Even at an accelerated growth rate of 1.5%, the city would only add 26 new residents in the first year (roughly 8 new families). At the accelerated rate it would take over ten years to recover the population we've lost in the past three decades.

The strategy also includes an understanding of and sensitivity to our community's traditional values and culture.

Our desire is to grow in a balanced way so we can preserve our rural lifestyle and quality of life for generations to come. The strategy for growth focuses on recruiting and retaining three core demographics:

- 1. Digital commuters who have a choice about where they work;*
- 2. Active retirees with disposable income; and*
- 3. Young, working families that contribute to the local economy and tax base.*

Attracting these demographics will result in a more diversified and more resilient economy and will promote growth in supporting infrastructure and agencies, including the local hospital and schools. Targeting these demographics will require the City to focus its investments in four main areas:

- 1. Digital marketing and branding that promotes our rural quality of life;*
- 2. Recreational amenities that make for attractive, active-lifestyle communities;*
- 3. Competitive broadband infrastructure enabling residents to be digitally connected to friends, family and co-workers; and*
- 4. Housing and community development initiatives that create more housing options across a wider and more balanced price range and community spaces that enhance the economic value of our city.*

2.2 Study Area Location and Parcel Sizes

The Innovation Gateway study area encompasses 90 acres on the west and north edges of the city of John Day and includes the 53-acre former Oregon Pine mill site on two parcels. One of these parcels (tax lot 300) includes the John Day River (meaning, the river is entirely within the parcel) and a smaller 2-acre parcel is located on the western edge of the study area. The southeastern parcel line was recently adjusted to reflect property line adjustments with Mills Building Supply and JD Rents. To the east of the mill site is the 30 acre City wastewater treatment plant property on 5 parcels. An additional 2 parcels adjoining Davis Creek south of Valley View Drive have also been acquired by the City and are part of the study area.



--- Study Area

AERIAL



0 200' 400' 800'

January 2018

Figure 2.1. Study area

The study area sits in the valley bottom of the John Day River and slopes gently toward the John Day River. The elevation of the study area is approximately 3,040 feet above mean sea level, rising to 3140' where Davis Creek flows into the area from the north. The steep slopes in the vicinity of Davis Creek are the only topographic challenge in the study area, but this area will likely only have trail and other low-impact recreational improvements.

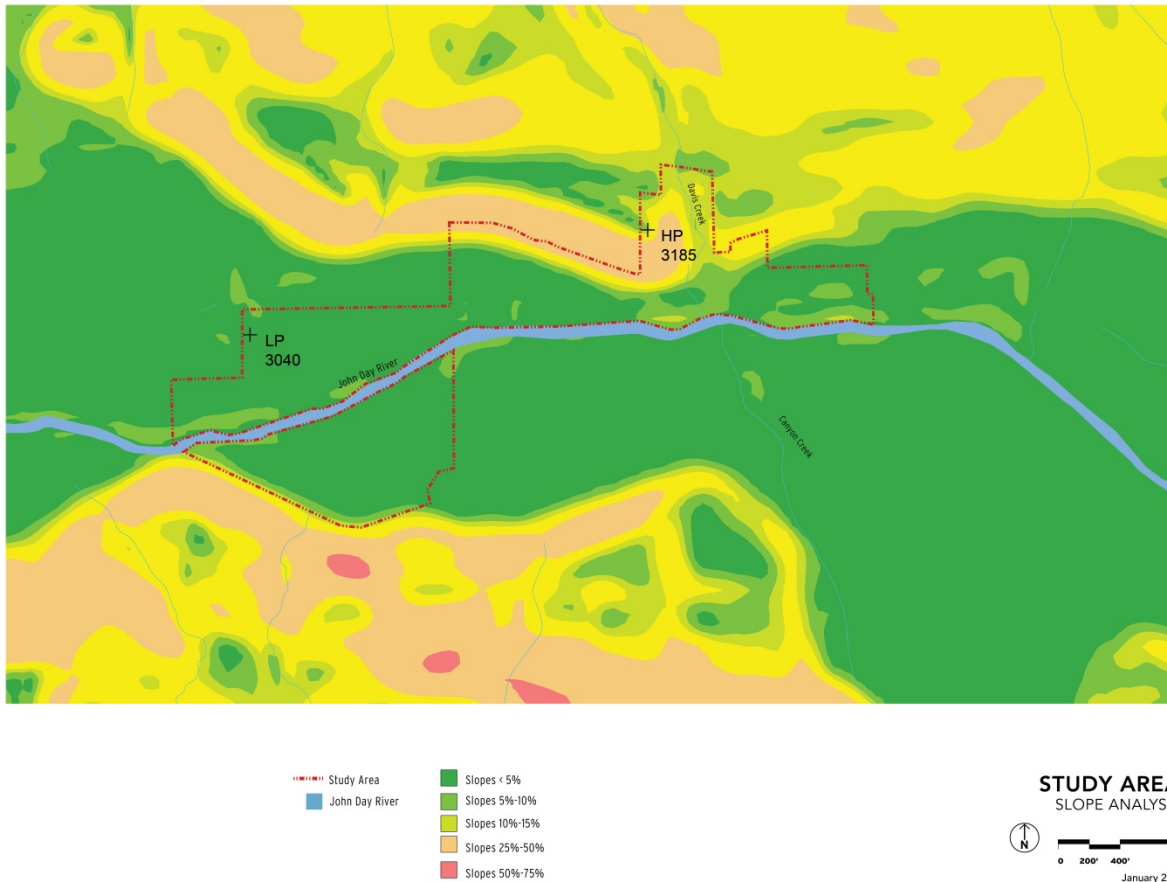


Figure 2.2. Slope analysis

2.3 Utilities and Urban Services

The former Oregon Pine mill site was fully served with potable water supply with lines extended from a trunk line under US 26 and these can potentially be reused. Electrical service is available from the east and southern edges of the property. It is assumed that wastewater produced by future development will be conveyed to the proposed new wastewater treatment plant. Gas and telecom service to the site is not currently known. The City will be seeking grant funding in 2019, building on state seed money to enhance the currently limited broadband service to the John Day area, partnering with Ortelco through the Grant County Digital Network Coalition. The existing wastewater plant is fully served with utilities.

2.4 New Wastewater Facility and Use of Treated Effluent

A primary tactic towards achieving the City's Growth Strategy at the Innovation Gateway project is the replacement of John Day's Wastewater Treatment Plant. The 2018 Wastewater Treatment Plant Plan Update proposes an innovative new strategy of constructing a membrane bioreactor with aerobic digestion and anticipated supply of treated effluent to new parks, gardens and most importantly, greenhouses. This treated water will be piped to a 6,200sf pilot-scale greenhouse, located east of the planar shed on the Oregon Pine mill site. The final design and manufacturing of the greenhouse has been awarded to EuroMex, with produce harvests beginning in 2019. With two full-time employees, the pilot-scale greenhouse should generate roughly 1,200 pounds of fresh produce per week. Local restaurants and grocers such as Chester's Thriftway intend to purchase produce from the City at wholesale prices. Revenue from the greenhouse will accrue to the Sewer fund to offset its operating expenditures and ultimately the cost of wastewater treatment. The innovative project will also become a tourist attraction in

its own right, while portraying evidence of an entrepreneurial public sector for companies potentially interested in investing in John Day.

2.5 Existing Zoning

The study area is now entirely within the urban growth boundary and city limits of John Day. The City recently annexed remaining portions of the Oregon Pine mill site which were previously outside of the city limits and still under county zoning. The City also applied city zoning designations to these areas which are generally consistent with the vision for the project area. A significant portion of the study area (primarily north of the John Day River) is zoned for industrial use. The majority of the project area south of the river, including the portion of the area recently annexed into the City, is zoned for commercial use. The area southeast of the confluence of the John Day River and Canyon Creek (planned for future river recreation access) was recently rezoned to the City's Park Reserve zone to ensure consistency with current use and future plans for the property. Existing zoning designations are shown in Figure 2.3 below, and allowed uses (permitted outright and conditionally) in the applicable industrial and commercial zones are summarized in Table 1.

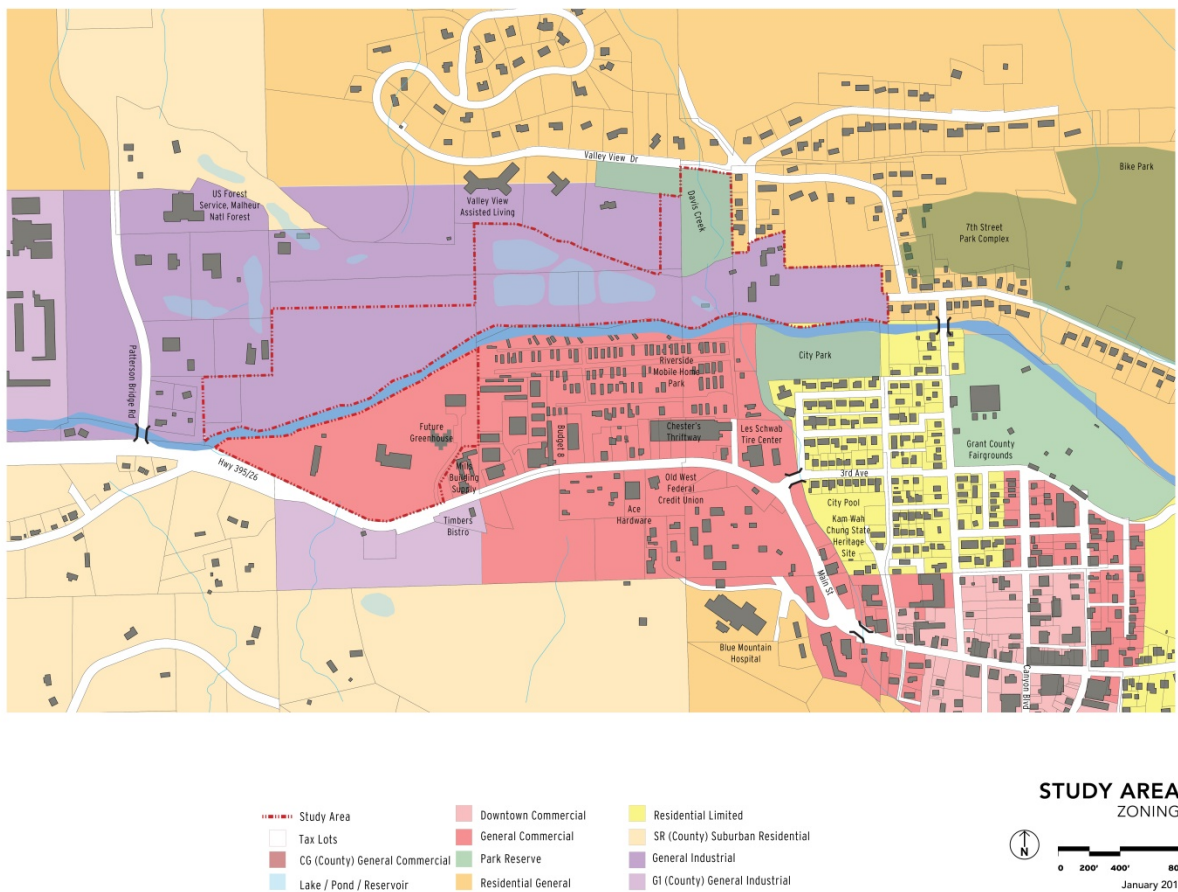


Figure 2.3. Zoning

In addition to establishing allowed uses in each zoning designation, the city and county development codes outline other design and development standards. In both the city and county industrial zones, development standards are generally limited to building setbacks and heights, and requirements associated with parking, landscaping fences, signs and stream setbacks. The city's commercial zones

include a variety of additional standards related to building orientation, block and lot layout, architectural design and pedestrian amenities.

Table 1:

Land Use Designation	Allowed Uses
General Industrial (City)	<p><u>Residential</u>: Existing as of 11/24/2005</p> <p><u>Commercial</u>: Drive-Up/Drive-In/Drive-Through, Offices, Parking lot (CU), Vehicle servicing and repair, Retail sales under 10,000 sf, Self-service storage</p> <p><u>Industrial</u>: Industrial services, Manufacturing, Warehouse and freight movement, Waste-related (CU), Wholesale sales</p> <p><u>Institutional</u>: Utilities, Public safety facilities, Parks and open space (CU)</p> <p><u>Other</u>: Accessory structures, Agriculture (existing as of 11/24/2005 and as an accessory to a permitted industrial use), Mining (CU)</p>
General Commercial (City)	<p><u>Residential</u>: Existing as of 11/24/2005 and/or (?) not occupying a ground floor space on Main Street</p> <p><u>Commercial</u>: Drive-Up/Drive-In/Drive-Through (CU), Bed and breakfast inn, Educational services, not a school, Entertainment – major event (CU), Offices, Outdoor recreation (CU), Parking lot (CU), Vehicle servicing and repair – fully enclosed (CU), Retail sales and commercial services</p> <p><u>Industrial</u>: Industrial services – fully enclosed, Manufacturing – fully enclosed, Wholesale sales – fully enclosed and under 20,000 sf (CU)</p> <p><u>Institutional</u>: Utilities, Community service, Family day care, Adult day care, Day care subject to state licencing (CU), Parks and open space (P/CU), Religious institutions – new (CU), Schools – new (CU)</p> <p><u>Other</u>: Accessory structures, Radio frequency transmission facilities (CU), Utility corridors (CU), Temporary uses (P/CU), Transportation facilities</p>

2.6 Potential Development Code Changes

As part of the process of adopting and implementing this plan and given the recent annexation and rezoning of remaining portions of the study area, the primary remaining land use actions for the study area will be to review and adjust specific development code requirements that apply to the area. For example, some future uses envisioned in the study area could be incompatible with existing standards for building height, setbacks, landscaping requirements, or architectural design standards. If so, modifications to those requirements may be needed. This could be done by amending the base zoning designations or by establishing an overlay zone or other mechanism that allows for variations in the standards applied within the study area.

2.7 Intergovernmental Agreements and Special Districts

Scarce planning resources need to be integrated to allow for appropriate transportation networks such as multimodal trails, sidewalks, and other important infrastructure to be developed in a coordinated fashion. Since 2011, Grant County and the City of John Day have had an Urban Growth Management Agreement, which stipulates that Grant County is responsible for administering land use for projects outside the John Day city limits, but within the UGB. Such areas are subject to the City Comprehensive Plan and when development is proposed, in order to receive city services, annexation and city zoning will be initiated.

Given the recent annexation of the portions of the study area that were previously located outside the city limits, this issue will no longer be directly applicable to development or provision of services within the study area. However, to the extent that future development occurs in areas outside the city limits but within the UGB adjacent to the area, the City will be responsible for commenting on proposals, since city development standards will be applied. In doing so, it will be important to ensure that such proposals are compatible with and support the vision of the project area. The City will be the preferred provider of urban services in such areas. Extensions will be permitted when consistent with the Comp Plan and city standards. New roads will also be built to city standards.

Park and recreation facilities and services are provided by the John Day Canyon City Parks and Recreation District. This district was established to help provide a dedicated funding source and agency to serve regional park and recreation needs. The City will need to continue to coordinate with the District for future planning of capital facility improvements and recreational programming that meets the needs of John Day residents and the goals for the project area.

No other special districts are located in the area. However, emergency services (fire and medical) and law enforcement are provided by Grant County. Similar to the JDCC Parks District, the City will need to continue to coordinate with the County regarding future provision of these services.

2.8 Urban Context and Existing Land Uses

Situated on the western outskirts of the City of John Day, the 83-acre study area is surrounded by a mixture of land uses, from residential to light industrial. US Highway 26 borders the 53-acre Oregon Pine mill portion of the study area on the south. The mill site has recently been annexed into the City and rezoned for consistency with the vision for the project area. One single-family residence is the only adjacent development on the south side of the highway. To the west, the study area is accessed from Patterson Bridge Road and along the west property line the adjacent properties are a residence, Clark's Disposal Services, Oregon Department of Forestry, and the Oregon Department of Fish and Wildlife. The Iron Triangle Logging Company offices, truck shop, and storage yard occupy the property adjacent to the north and on the hillside beyond is the Valley View Assisted Living facility and 7th Day Adventist Church. The adjacent land east of the study area, south of the John Day River, is occupied by Mills Building Supply, J D Rents, a warehouse, a UPS distribution site, storage units, and the Riverside Mobile Home Park. The study area includes a 30-acre City-owned property used for the current wastewater treatment facility. Other components of the planning area and adjacent uses include the area southeast of the confluence of the John Day River and Canyon Creek (within the study area currently identified as a city park and planned for future river recreation access). Existing land uses are illustrated in Figure 2.4.

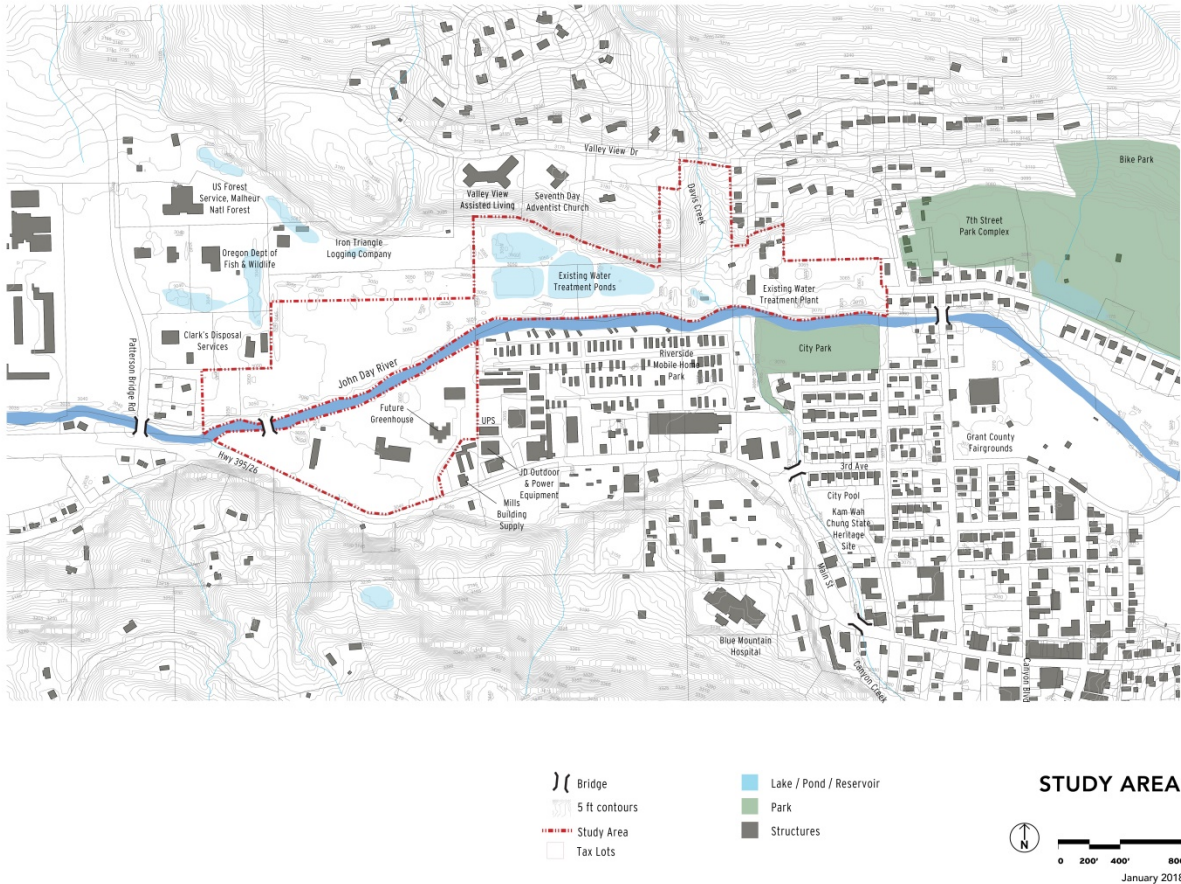


Figure 2.4. Study area with adjacent existing businesses and uses.

The study area has been vacant for 20 years, with no recent development on the site itself. A variety of uses are envisioned within the study area in the future, including relocation of the City’s wastewater treatment plant, an aquatic and recreation center, an academic and research campus, hydroponic agriculture and greenhouses, a renovated public works shop, mixed-use commercial development, and a system of trails and open spaces including botanical gardens. There are parallel efforts to protect and enhance downtown John Day and this study will recognize the importance of providing complementary land uses that don’t compete with the strengthening of the downtown core.

2.9 Existing Structures

The study area includes three buildings that were in the past actively used as part of the Oregon Pine mill lumber production (see Figure 2.5: Oregon Pine site map). The three buildings are the Chipper Shed, the Planer Shed and Lumber Sorter, and the Truck Shop. The majority of the machinery and equipment formerly used by the mill have been sold and removed. The Chipper Shed and the Planer Shed are open timber and steel structures with concrete floors. Some siding remains. The structural condition of these two shed buildings is unknown. The Truck Shop is a simple 4-bay garage shed with concrete floors, insulation and corrugated metal siding which is being converted for use as a City of John Day Public Works facility. Elsewhere in the study area are structures and sheds associated with the existing wastewater treatment plant, which is aging and will be demolished. The 2018 Wastewater Facilities Plan Update (Anderson Perry) notes that:

A portion of the existing components and treatment units were constructed during the original 1949

plant construction. Due to these units being approximately 70 years old, they are showing severe degradation and will not serve the long-term treatment needs of the City and need replacement. Additionally, most of the existing facilities were constructed as part of the 1978 construction project and have been in service for approximately 40 years. These 40-year-old components are at the end or have surpassed their expected service life and need rehabilitation and/or replacement.

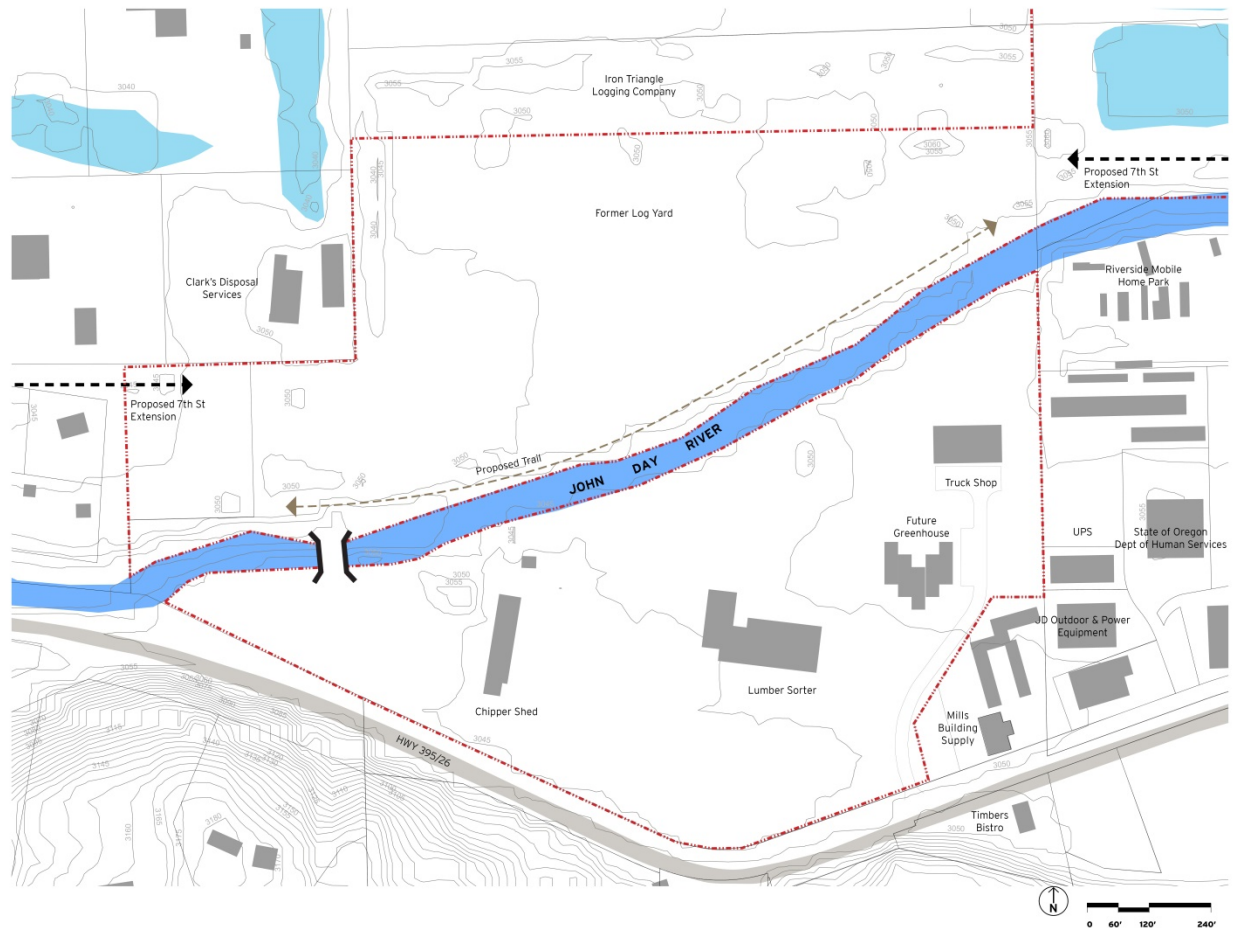


Figure 2.5. Oregon Pine mill site.

2.10 Parks and Open Space

The John Day-Canyon City Parks and Recreation District currently manages the ballfields at the 7th Street Parks Complex, the new adjacent mountain bike trail park and Gleason Pool, a facility which is 60 years old and open only 12 weeks per year. A 2017 survey of County residents indicated strong public support existed for a new aquatics center and more outdoor recreational opportunities. The Oregon Parks and Recreation Department owns about 1.5 acres at the Kam Wah Chung site, and a master plan was developed in 2009 and updated in 2012. Ultimately, the state wants to build a new interpretive facility at the Kam Wah Chung site to replace the current museum across the street. The plan calls for the state to acquire the three acres of city park land surrounding Kam Wah Chung in exchange for cash that could be used to leverage grants for a new city pool. A feasibility study by Councilman-Hunsaker and Opsis Architects has been commissioned to study options for a new aquatics and recreation facility, with two potential sites, at 7th Street Complex or on the former Oregon Pine mill site.

A 10-acre parcel between Valley View Drive and the river, including the Davis Creek ravine, has been acquired for open space uses related to the Innovation Gateway and could include a trail from Valley View Drive to an overlook with dramatic views of the city and mountain ranges to the south. The land could also be home to a future botanical garden. The newly-acquired land also includes 4 acres along the south side of river that could become a new City Park, served by the Canton Street extension. From this new park a trail will be extended along Canyon Creek to connect this new city park with a trail system to Kam Wah Chung. Currently, a rough discontinuous trail can be found in places along both sides of the John Day River, a result of informal efforts to access the river. This project will seek to formalize this trail alignment and include connections around the current wastewater evaporation ponds and to the proposed Davis Creek trail.

2.11 Smart Growth in John Day

The following is a list of 8 potential smart growth-oriented actions that should be considered as part of this study, and specifically relate to the challenges and opportunities in John Day. These refer broadly to the 10 Principles advocated by Smart Growth America (<https://smartgrowthamerica.org/our-vision/what-is-smart-growth/>) which are actions that inherently support sustainable development and the intelligent use of scarce public resources.

1. Strengthen Downtown

John Day's core is a distinctive, compact mixed-use area, at the crossroads of Main Street and US 395, with hotels, restaurants and small businesses in aging, relatively narrow structures. The businesses benefit from the visibility to traffic at this crossroads. Given the challenges of surviving in a small market, future redevelopment on the Innovation Gateway site should strive to complement and support Downtown, not compete with it.

2. Promote mixed-use, compact infill development

Any complementary new development on the Gateway site should strive to mix uses vertically or within the same structure to reduce the need for auto circulation and parking. The study area is a great opportunity for infill development on a 'brownfield' site within close proximity to existing urban services and with good potential for active transportation connections to the rest of John Day.

3. Create a range of housing options, including affordable, workforce housing

If housing is determined to be a feasible use in the study area, within the constraints of the floodplain, there should be opportunities for housing to support existing John Day residents with pricing that reflects local incomes.

4. Foster a strong sense of place

The John Day region has a very distinctive identity as a rural 'frontier' town with a long history of self-reliance and connection to natural resources. New development should recognize and strengthen the region's physical and social character. It may be appropriate to establish architectural design standards that promote this sense of character.

5. Capitalize on views and connections to John Day's natural assets

The John Day river flows through the study area and the City has long 'turned its back' to the river, an attitude which probably stems from the past degraded nature of the riverbanks due to dredge gold mining and subsequent use of the banks for lumber storage. The river can become a positive asset for the community and a focal point for new development and recreation that attracts visitors, employers and new residents. Views of the Strawberry Mountains and Aldrich Range are reminders of John Day's position within a remarkable context of natural beauty.

6. Build new complete streets

New street extensions in the study area should be designed for all potential uses, not just automobiles and should include safe walking and biking facilities, on-street parking, use by people with mobility limitations, and allow for future transit service.

7. Encourage walking and biking

In addition to the design of complete streets, new trails should be designed throughout the study area to link destinations and connect to the existing city trail system.

8. Coordinate City and County actions and foster collaboration and partnerships

A variety of local, regional and state organizations can partner with the City to help ensure implementation of the JDIG area. These include, among others, the John Day-Canyon City Parks and Recreation District, Oregon Parks and Recreation Department, Grant County, the Oregon Department of Transportation, the Oregon Department of Land Conservation and Development, Oregon State University, the Grant County School District, Business Oregon, local employers and others.

2.12 Local energy development

The John Day area has limited potential for traditional energy development. According to BLM resource mapping, there is no potential for oil and gas development. DOGAMI mapping suggests that there are untapped geothermal resources in the region. The City's electrical grid is served by OTEC, using Bonneville Power Administration energy from Columbia and Snake River dams and increasingly, wind power. Local winds are not strong enough to support wind energy generation. Solar power has potential, with over 200 sunny days in the City but generation will depend on the costs of installing infrastructure. The most promising use of locally-generated energy is the production of biomass by Ochoco Lumber's Malheur mill, which is replacing natural gas at several large local facilities such as the Blue Mountain Hospital. This biomass is created from the harvest of smaller trees in public forests, which helps reduce forest fire risk while supporting local mill employment.

2.13 Cultural Resources

A cultural resources assessment will be required for the site to demonstrate conformance with state and federal cultural resources requirements. At the federal level, this includes review under Section 106 of the National Historic Preservation Act. This requirement is triggered via a federal nexus, such as projects on federal land, with federal funding, or that require federal licensing or permitting. For the JDG Project, this would most likely be triggered through the application for the Section 404 (dredge and fill) permit through the US Army Corps of Engineers. The State of Oregon also requires that projects on public land, such as the City of John Day property, comply with Oregon Revised Statute 358.653, which pertains to cultural resources.

Cultural resources evaluation would be handled through the Oregon State Historic Preservation Office (SHPO). The survey would require a "below-ground" (i.e. archeological) survey for resources that have been abandoned for over 50 (federal) or 75 (state) years or more; and may also require an "above-ground" (e.g. for historic structures) survey for resources that are either still in use or have only been abandoned for less than 50 years and that may have historic significance. The cultural resources survey would need to be performed by professionals that meet minimum qualifications for archeology and historic preservation, as defined by SHPO. The evaluation first includes researching background information on what resources are potentially located at the site, and then follow-up field surveys.

The below-ground survey would require an archeological permit through SHPO to perform the survey because it would include shovel probes for resources, and if resources are found, the permit would specify the protocol required for their collection and curation. A permit application would need to be prepared, including providing an Area of Potential Effects (APE) map. The permit normally takes up to 33 days to complete the review process. Landowners, tribes, the local planning department, and the University of Oregon Museum of Natural and Cultural History are provided the opportunity to review the application. Once the permit is acquired, the survey can proceed. If an archeological site is found during the survey, then discussions will occur with SHPO on how to proceed. Ideally, archeological sites can be avoided. If avoidance is not possible, then a follow-up evaluation, issued under a separate permit, may be required to determine the significance of the site and any mitigation or documentation measures that would be necessary.

An initial conversation with a professional archaeologist (personal communication with Zach Windler, Dudek Inc, Dec 21, 2018) indicates that no below-ground survey or identification of archeological resources appear to have yet occurred in the project footprint (as outlined in the June 5, 2018 Concept

Plan). Based on the heavy impact from the entire site from dredge-mining during the 1930s, it is unlikely that below-ground resources would be found or impacted by project activities.

An above-ground survey and evaluation may also be required for the project, the scope of which would be determined in consultation with SHPO. This evaluation also includes background research as well as possibly field surveys. This evaluation could include areas beyond the APE map and that are outside but nearby the project footprint; the spatial extent is typically determined via consultation with SHPO. This evaluation is to ensure that components of the project would not detract (e.g. visually or otherwise) from eligible or listed historic buildings or other built features. For eligible buildings within the agreed-upon area, the evaluation would identify the type of historic value, the potential for the project to impact it, and if necessary, recommendations for how to configure the project or mitigate accordingly. An initial conversation with a professional archeologist (personal communication with Zach Windler, Dudek Inc, Dec 21, 2018) indicates that no above-ground survey or identification of historic structures appear to have yet occurred in the project footprint. However, there are several eligible and listed buildings in town. Based on a preliminary review of the National Register Database, there are a few buildings in John Day listed on the National Register of Historic Places, including the Kam Wah Chung Building, the Advent Christian Church (downtown), and the Supervisor's House and Warehouse just to the west of town. Although none of these are within the actual project footprint of the project, the Kam Wah Chung Company Building is the closest and is anticipated to be linked to the trail network associated with the project. This building is also designated a National Historic Landmark and is an important cultural component to the town, especially the associated Kam Wah Chung museum.

In general, cultural resources evaluation will be an important permitting consideration for this project, as review and consultation times can affect project implementation timing; and there are budget considerations as well. It is recommended to initiate consultation with SHPO as soon as possible and hire a professional archeologist to acquire the archeological permit and begin performing initial background assessments and site surveys. We also recommend consulting with the Warm Springs Tribe early on in the process. They may have particular interest (and likely support) of river habitat restoration work that would provide benefits to salmon and steelhead.

SECTION 3

John Day River Conditions and Opportunities

3.1 Introduction and Background on River Conditions

Approximately one mile of the John Day River flows through the project area. Canyon Creek, which is a significant tributary to the upper John Day, flows north through town and enters the mainstem within the project area. A smaller tributary, Davis Creek, flows from the north and enters the mainstem just across from the Canyon Creek confluence. The river and tributaries provide important aquatic and riparian habitats for fish and wildlife species, and also potential recreational benefits for people. The river, riparian zone, and adjacent floodplain areas have been heavily impacted by past and current land uses, which have substantially changed conditions compared to those that existed historically. The Innovation Gateway Project provides an opportunity to improve some of the river-related functions and features, including fish habitat, aesthetics, and recreation/access.

This portion of the upper John Day River is designated Critical Habitat for Middle Columbia Steelhead, which are listed as Threatened under the Endangered Species Act. The reach that flows through the project area is used for steelhead “rearing/migration” (*Carmichael et al. 2010*). Canyon Creek is also designated as Critical Habitat, with use type listed as “spawning/rearing”. Steelhead habitat in the upper mainstem John Day River was evaluated as part of the Middle Columbia Steelhead Recovery Plan (*Carmichael et al. 2010*). The plan lists the following as “Major Limiting Factors” for the Upper Mainstem John Day Population: degraded floodplain and channel structure (loss of cover, pools, LWD, overall habitat diversity, connectivity); water quality (temperature); altered sediment routing; degraded riparian communities; altered hydrology; and impaired fish passage. The listed “Threats” to habitat are agricultural practices, livestock grazing, removal of large trees from the riparian corridor, wetland draining and conversion, stream channelization and diking, mining and dredging, and irrigation withdrawals. These limiting factors and threats have all occurred to some degree within the study area, either in the past and/or currently.

This reach of river, and the surrounding valley bottom, was especially impacted by dredge mining for gold and silver in the early 1900s. This was bucketline dredge mining, which is extremely damaging to the river, riparian zones, and floodplains. It involved a barge-mounted dredge that sits within a pond excavated in the floodplain. The dredge was winched back and forth across the valley bottom, excavating, sifting, and depositing material as it went. This area is within an area known as the “Canyon District” mining area (*Brooks and Ramp 1968*). Prior to 1916, most of the mining occurred further up Canyon Creek near Canyon City, which was one of the earliest mining camps in eastern Oregon. In 1916, a dredge was installed near the town of John Day by the Empire Dredge Company (*Brooks and Ramp 1968*). The dredge operated almost continuously until 1929, when it was moved up to Prairie City. New dredging began again in 1935 and in 1937 and ran until 1942. Heavy dredge impacts can be seen in the earliest aerial photos (Figure 3.1) and in the historic site photo from 1939 (Figure 3.2). The piles of material seen in the photos are the dredge spoils placed by the barge-mounted dredge as it moved back and forth across the valley floor dredging and then re-depositing material as it went.

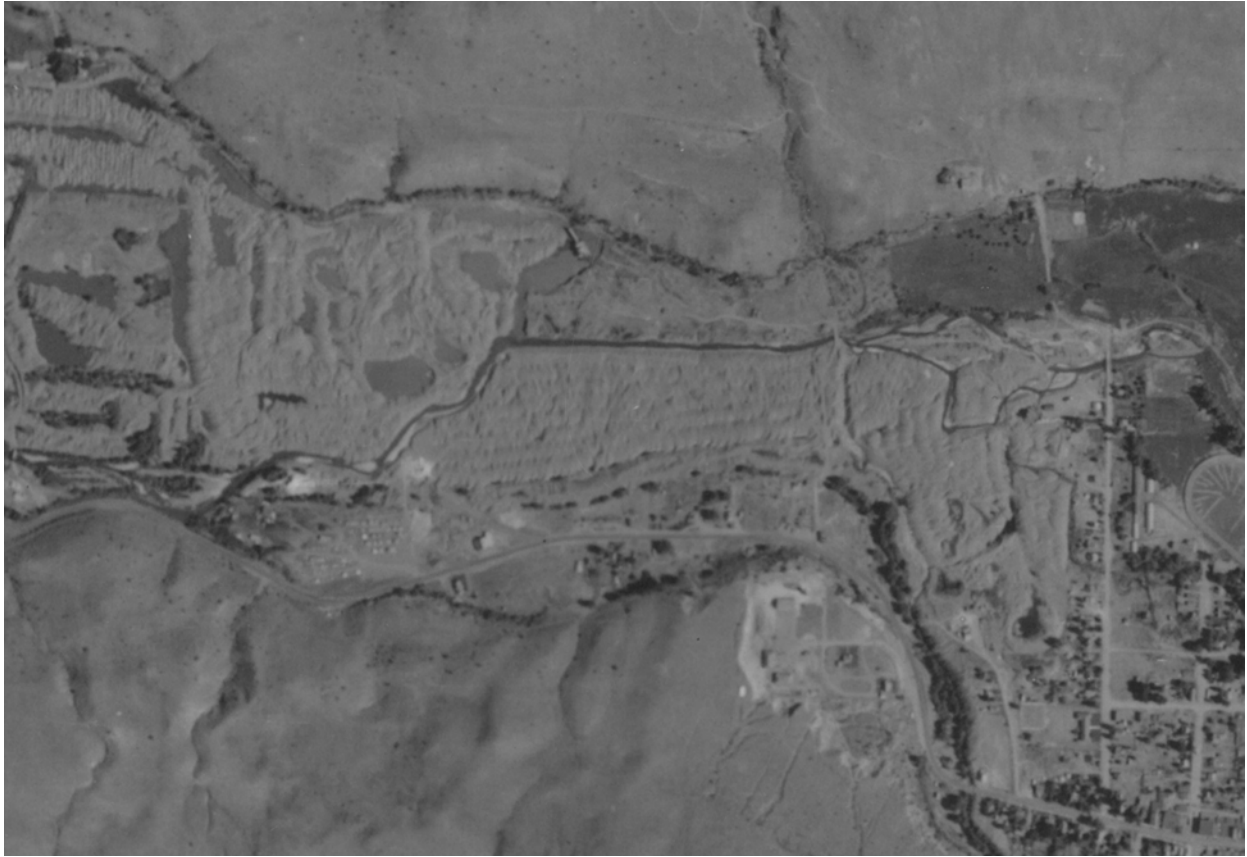


Figure 3.1. 1939 aerial photo showing ditched stream channel and floodplain dredge mining impacts throughout the study area.

As can be seen in the photos, the dredge mining severely damaged river, riparian, and floodplain habitats. The river was relocated from its original position and essentially left in a ditch through the project area. Dredge mining not only directly damages habitat, but it also changes the way that the river and floodplain function. The river was straightened, and so no longer has the meandering pattern that helps maintain pools and riffles in natural rivers. Much of the habitat is now comprised of straightened sections with very little variation in habitat types that are necessary to support multiple life stages of salmonids and other aquatic species. The connectivity of the river with its floodplain was also impaired. The river was left in a ditched condition, in a deep channel. The river now inundates its floodplain much less frequently than it would have prior to dredging impacts. Natural rivers of this type typically inundate their floodplains at least every year or two, and sometimes more frequently. Floodplain inundation is important in that it provides access to off-channel slow water rearing habitat for fish during high flows, and results in dynamic channel changes that are necessary for creating and maintaining habitat over time. Reducing floodplain inundation results in a much less complex channel with poorer habitat conditions for fish. Furthermore, reducing floodplain inundation can also increase flow velocities, potentially increasing flood levels and associated damage to human infrastructure in downstream areas.



Figure 3.2. 1939 photograph of the site looking south towards town and up Canyon Creek. This is a photo of a hard copy photograph located at the Kam Wah Chung museum. The note with "KWC" is the current location of Kam Wah Chung.

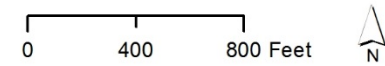
Following dredge mining, the dredge spoils were gradually flattened as the City of John Day, the Oregon Pine Mill, and other commercial, industrial, and residential uses expanded into the formerly dredge-mined areas; areas that were historically occupied by river channels, vegetated riparian zones, and extensive lowland floodplain areas (Figure 3.3). Water withdrawals were also put in place, primarily to support agricultural uses. There is currently one major diversion within the project area and a diversion upstream of the project area that reduces instream flows in portions of the study area. A Point-of-Diversion and Point of Use map based on data from the Oregon Water Resources Department (WRD) is included in Figure 3.4.



Figure 3.3. Photo of historical photograph displayed at The Corner Cup coffeeshop, John Day, OR.



City of John Day - Innovation Gateway Planning Area
Points of Diversion and Points of Use



Point of Diversion

- GW , INDUSTRIAL/MANUFACTURING USES
- GW , IRRIGATION
- GW , MUNICIPAL USES
- GW , SUPPLEMENTAL IRRIGATION
- ST , INDUSTRIAL/MANUFACTURING USES
- SW , DOMESTIC
- SW , DOMESTIC INCLUDING LAWN AND GARDEN
- SW , INDUSTRIAL/MANUFACTURING USES
- SW , IRRIGATION
- SW , IRRIGATION AND DOMESTIC
- SW , LIVESTOCK
- SW , MULTIPLE INSTREAM USES
- SW , SUPPLEMENTAL IRRIGATION

Point of Use

- DOMESTIC
- DOMESTIC INCLUDING LAWN AND GARDEN
- INDUSTRIAL/MANUFACTURING USES
- IRRIGATION
- IRRIGATION AND DOMESTIC
- LIVESTOCK
- MULTIPLE INSTREAM USES
- MULTIPLE PURPOSE
- MUNICIPAL USES
- SUPPLEMENTAL IRRIGATION

GW = groundwater; ST = storage; SW = surface water

Source: Oregon Water Resources Department - Water Rights Information System

Figure 3.4. Point of Diversion and Point of Use map.

Contemporary river conditions include an incised (i.e. deepened) river channel with a lack of habitat complexity (Figure 3.5). Many of the components that are important for fish habitat are missing. This includes deep pools with cover, instream large wood, and vegetated riparian zones. A lack of shading from streamside vegetation results in higher stream temperatures, which negatively impact steelhead. The riverbanks have also been treated with bank armoring in numerous locations. This riprap and concrete armoring reduces channel complexity, limits the ability of vegetation to establish, and prevents the river from being able to migrate (i.e. move around as natural rivers do) and develop a natural meandering pattern. Overall, aquatic habitat has been significantly impaired in this once dynamic and complex reach of river.



Figure 3.5. Typical section of the John Day River at the site. The channel has been straightened, there is only a narrow forested riparian buffer, and there is a lack of pools, riffles, instream large wood, and overall habitat complexity.

At the downstream end of the site, there is a low-head boulder and concrete dam that diverts flow into a buried pipe that feeds an irrigation canal. This structure, and the associated bank armoring, fixes the river in place and limits the growth of a forested riparian zone. Although adult steelhead can ascend the dam, the structure likely affects passage for juvenile steelhead and other fish.



Figure 3.6. Low head boulder and concrete weir and irrigation diversion at downstream end of site.

This section of the John Day, as well as lower Canyon Creek, also have impaired water quality conditions. The reach of the John Day that flows through the project area is on the State's list of impaired waterbodies (OR DEQ 2012). This list includes impaired streams that fail to meet basic water quality criteria. It is listed because it does not meet standards for Dissolved Oxygen, Biological Criteria, Temperature, Fecal Coliform, and E. Coli. The reach is also listed as impaired due to Flow Modifications. Lower Canyon Creek is on the list for Biological Criteria and Temperature.

3.2 Opportunities for River Restoration

The Innovation Gateway Project offers an opportunity to integrate river habitat improvements with other components of the waterfront redevelopment plan. These improvements could be mutually beneficial to fish/wildlife and human recreational uses. From a habitat perspective, actions could improve components of the natural river system that will provide important benefits to ESA-listed steelhead and other aquatic, avian, and terrestrial species. From a human perspective, actions could benefit recreational uses, including wildlife/bird watching, swimming and floating, and aesthetics. There have been many river habitat improvement projects in the John Day Basin and throughout the region that can be used to help guide river improvement efforts, including other projects in previously dredge-mined valleys. However, actions here will be unique because of the location adjacent to the City of John Day urban area and also the integration with the larger Innovation Gateway project.

River habitat improvement can be thought of as two interrelated approaches: 1) long term process-based approaches, and 2) short term habitat-based approaches. Both of these are important with any habitat

improvement effort, and should be integrated to achieve multiple objectives over multiple time scales. The first one restores natural ecosystem processes that will help the system to create and maintain habitat on its own over the long term, essentially improving how the river functions. The second provides immediate habitat benefits that will address critical short-term needs. These two approaches are described in more detail below.

3.3 Restoring River Functions

This includes restoring ecosystem processes that will help to create and maintain habitat conditions over the long term. This includes restoring river, floodplain, and riparian functions that are compatible with the site and with the other goals of the Innovation Gateway Project. Because of the past impacts, on-going uses, and future development plans, there is a limit to the degree to which these functions can be reasonably improved, but they should nevertheless be considered, and there may be opportunities for at least partial restoration and for improving human recreational uses as part of it. There are 3 primary considerations: 1) Reconnect portions of the channel migration zone (CMZ) – This could occur by removing streambank armoring in select locations where the river can be allowed to move around and re-create a meandering pattern, which is important for the long-term creation of new habitats and for other related functions. The CMZ will obviously be limited in width and will be much narrower than under historical conditions. Set-back protections will likely be necessary to protect existing or proposed infrastructure; 2) Improve floodplain connectivity – This will most likely be accomplished by lowering the floodplain in certain areas and planning uses for those areas to be compatible with seasonal inundation; this may include trails, parks, or natural areas, and could incorporate creation of bird and wildlife habitat. Improving floodplain connection benefits aquatic habitat through creation of new habitats in the floodplain over time (e.g. off-channel wetland habitat) and it also provides area for velocity refuge for fish during floods. There can also be a reduction in downstream flood impacts; and 3) Re-establish native vegetation conditions – This will include planting streambanks, riparian zones, and floodplain areas with native vegetation appropriate for site conditions. Over time, native vegetation communities will provide bank stability; stream shade to lower temperatures: habitat and food for fish and wildlife; and a future source of large wood (i.e. important fish habitat) to the channel.

3.4 Direct Habitat Improvements

Direct habitat improvements are performed to make sure that important habitat types are provided for sensitive species over the short-term. These include addressing spawning, rearing, and migration conditions for steelhead, as well as addressing habitat for other species. Habitat improvement elements may also be configured to benefit human uses.

First, the type and distribution of habitat types can be improved. If space allows, this could be accomplished by increasing the sinuosity of the main channel. This would involve creating more meanders (e.g. curves) in the river. There are a few locations where this might be accomplished at the site and where it could be integrated with other components of the Innovation Gateway Project. This action would help to create pool and riffle sequences that are used by both juvenile and adult steelhead. Creating meanders could also be combined with lowering/reconnecting the floodplain (described previously) at the inside of the meander bends – this action would also allow for some narrowing and raising of the channel, which would increase ease of public access and possibly make the river more floatable by tubers/rafters during the summer. Pools could be further enhanced by deepening them to improve juvenile salmonid rearing habitat, which would also enhance swimming opportunities by humans.

Side channels and alcoves could be created. These are features that are connected to the mainstem at their upstream and downstream ends (side channels) or just at a single location (alcoves). Off-channel areas provide important rearing, feeding, and flood refuge habitat for juvenile salmonids; they also can provide high quality wetland habitat for numerous other species. Portions of the existing wastewater treatment lagoons at the site could potentially be converted to floodplain wetlands or connected side

channel or alcove habitat; and Davis Creek could possibly be routed into this floodplain wetland complex to provide a source of cool water and to increase the amount of available tributary habitat.

Large wood could also be added to the stream. Large wood in rivers is a critical component of salmonid habitat in Pacific Northwest streams. It provides cover from predators, helps to retain spawning gravels, creates velocity shadows (e.g. eddies) for fish to rest, and increases the overall complexity of the stream system, which is good for fish and other aquatic species. Large wood could be added in various locations to serve multiple purposes. This includes within pools to provide cover and complexity, and along stream margins, especially where complexity can be added to or replace existing bank armoring. Wood can also be used in select areas to trap and sort spawning gravels, particularly in Canyon Creek, which is likely to be used more heavily for steelhead spawning than the mainstem. Wood can also be used to increase the stability of rapidly eroding streambanks that are providing inputs of harmful fine sediment into the channel.

There may be opportunities to improve fish passage and habitat at the diversion structure at the downstream end of the site. Assuming this water right will remain, this point of diversion will need to remain operable. This low-head dam structure could be replaced with a constructed riffle (aka "roughened channel") in order to maintain the grade of the streambed to maintain the diversion; but this alteration would provide a more natural looking and natural functioning streambed that is better for fish passage. The condition of screening, if any, and the potential for fish entrainment into the irrigation canal should be investigated, and addressed if necessary as part of the project.

3.6 Project Examples

A few project examples are provided below that demonstrate approaches that could be employed at the City of John Day site. The first is the Middle Fork John Day Oxbow Project, located approximately 21 miles northeast of John Day, OR on the Middle Fork John Day River. This project was led by the Warm Springs Tribe, with design assistance from the US Bureau of Reclamation and Inter-Fluve. Similar to the City of John Day site, the valley bottom had been dredge-mined in the 1930s and the stream had been relocated into a straightened channel. The project re-created a meandering pattern (Figure 3.7), reconnected the floodplain, created off-channel habitat features, and installed large wood for habitat. This project is different in that there was very little infrastructure that needed protection from flooding, but it demonstrates some of the types of actions that could be implemented at the Innovation Gateway site.

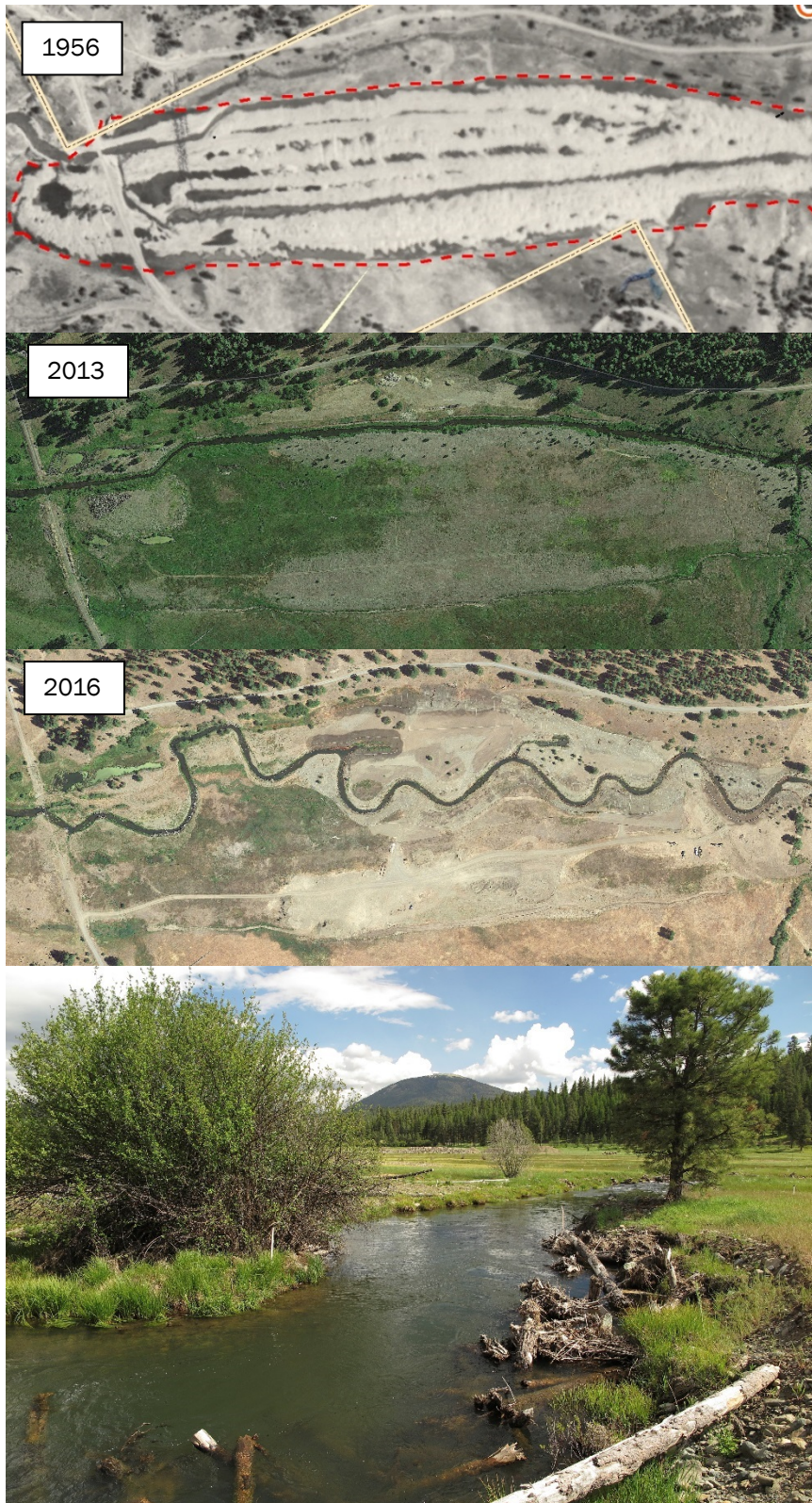


Figure 3.7. Aerial views of the Middle Fork John Day Oxbow Project showing dredge mine tailings (1956), pre-project conditions (2013), post-project conditions (2016), and a created pool with large wood (2015 photo).

Another example is the Johnson Creek Schweitzer Natural Area Project in Portland, OR. This project, led by the City of Portland and designed by Inter-Fluve, is located adjacent to Powell Butte in suburban Portland along the Springwater Corridor Trail. In the 1930s, the stream was straightened, ditched, and lined with stone armoring. The project re-created a meandering pattern, created pools and riffles, added large wood for habitat, and created off-channel alcoves, wetlands, and side channels. The project also included extensive planting of native vegetation. The project also included extensive excavation of material to lower and reconnect the floodplain, which was not only good for habitat but also provided 108 acre-feet of additional flood storage to lessen downstream nuisance flooding in residential areas. This approach to floodplain reconnection could potentially be used at the City of John Day site to accomplish multiple ecological and human objectives.



Figure 3.4. Aerial photos of the Johnson Creek Project, pre-project (left, 2006) and post-project (right, 2014).

Inter-Fluve has worked with the Minnehaha Creek Watershed District and various partners to perform restoration design work on Minnehaha Creek in a highly urbanized area of Minneapolis, MN (Figure 9). Similar to the previous project examples, this project re-meandered and added habitat enhancement features to a formerly straightened and impaired stream. However, this site is more urban than the previous examples, and therefore had more constraints, similar to the situation with the City of John Day project. There was significant nearby infrastructure to work around, including residential and commercial development. It was also highly integrated with recreational uses, including a pedestrian/bike trail, a new city park, and river recreational floating during the summer; all of which will be encountered with the City of John Day effort.

A final example worth considering is the success of the City of Pagosa Springs, CO in re-connecting the small city of 1700 people to its San Juan riverfront, creating a new recreational destination for fishing and floating from a formerly degraded and hidden channel. A city that was oriented solely to timber production was able to build on a growing attractiveness as a second-home market 280 miles from the nearest large city, Denver and attract new employment and infill development, while marketing its riverfront to recreational tourists and fishing enthusiasts.



Figure 3.9. Minnehaha Creek in Minneapolis, MN. Pre-project (top), past-project (middle), and a photo of the pedestrian boardwalk trail along a restored section of Minnehaha Creek.

3.7 Restoration Design Considerations

The considerations described in Sections 3.3 and 3.4 can be used as a basis to develop more detailed river improvement objectives for the site. In order to develop a plan for river improvements, more detailed analysis will be required. This will include various types of engineering, biologic, and geomorphology analyses. One of the primary requirements for design will be the collection of topographic and bathymetric survey data and development of a hydraulic model for the site. The survey data will be used to run the hydraulic model. Combined with proposed conditions, the hydraulic model will be used to evaluate how potential restoration actions would affect habitat as well as flooding and erosion that could affect human infrastructure. The model will be a critical design tool and will be used in an iterative fashion to explore the effects of various alternatives. The survey would also be used to develop a grading plan for the design. We recommend performing an alternatives analysis that evaluates multiple potential approaches. For this effort, an alternatives analysis would provide an explicit way to evaluate project options against potential benefits, constraints, and compatibility with other components of the Innovation Gateway Project.

The plan for the river should be viewed as a core component of the Innovation Gateway Project, especially since other features associated with the plan may be affected by what happens with the river. For example, creating new meanders could affect the location of other project features, such as trails or infrastructure; and changes to the river depth and width could affect flooding conditions in nearby areas. For these reasons, the plan for the river should be developed as early as possible. The cost of design, construction, and the timing for permitting are also important considerations. Costs can vary considerably depending on the final approach, and could range from approximately \$200,000 for very simple habitat improvements (e.g. adding large wood to the channel) to over \$2,000,000 for creating new meanders, side-channels, and improving floodplain connectivity. Engineering design costs typically range from 15-30% (or more for very complex projects) of construction costs for river restoration projects.

3.8 Environmental Permitting

There are several environmental permits that are likely to be required for the project. These are described in the subsections that follow. Environmental permitting can be a long and potentially costly process and it is therefore recommended to begin consultations with permit agency staff early in the planning process to make sure that the project is designed with the permitting requirements in mind.

Permitting agencies typically prefer that projects are permitted as a whole, rather than breaking up into components. However, for large complex efforts where there are very distinct pieces, or where the project will be phased over several years, it may be possible to permit separate components. Separating out the permitting could be considered with respect to permitting the river habitat improvement work versus other components of the Innovation Gateway Plan. This is because, oftentimes, habitat restoration work will fall under more streamlined permitting processes. If the restoration work is to happen in the early phases of the effort, this work could be permitted first and implementation could potentially move forward on a more expedited schedule.

3.8.1 US Army Corps of Engineers 404 Permit

A US Army Corps of Engineers 404 Permit is required when there will be removal or placement of material within "waters of the US". This includes wetlands, rivers, and other waterways that are present at the John Day project area. Where there is the potential for wetlands, a wetland delineation is required, which will be the case for the John Day site. Information on wetlands delineation is included below in Section 0. It will also be necessary to delineate the boundaries of other waterways, including the John Day River and Canyon Creek. This is performed by conducting a delineation of the Ordinary High Water (OHW) line on either side of the stream or waterbody. The OHW defines the extent of jurisdictional waterbodies that are subject to the requirements of the 404 permit.

The 404 permit application is through the Joint Permit Application (JPA) process through the Oregon Department of State Lands (DSL). The USACE will issue either an Individual permit or a Nationwide permit for the project. Nationwide permits are programmatic (i.e. more streamlined) permits for certain types of pre-approved activities, such as river habitat restoration. For the JDG project at a whole, falling within a Nationwide Project may not be possible, but if the river habitat work is split out as a separate effort, then the project may be able to fall under Nationwide Permit 27, which covers stream habitat restoration work. Falling under Nationwide 27 also helps to streamline the 401 Certification process (described below).

3.8.2 Oregon Removal-Fill Permit

Similar to the 404 permit, a Removal-Fill permit is required from Oregon DSL for work within waters of the state, which includes the river and wetland areas at the site. The wetlands and OHW delineations described above for the 404 permit will also satisfy the requirements of the Removal-Fill permit, and the application for a Removal-Fill permit is also through the JPA process.

3.8.3 401 Certification

The Oregon Department of Environmental Quality (DEQ) will review the project for conformance with the Clean Water Act's Section 401 requirements related to water quality impacts, and if required, will issue a 401 Certification. As with the 404 and Removal-Fill permit, this also occurs through the JPA process. If the activities being permitted go through a USACE Nationwide 27 permit, then 401 certification is not required as long as the project involves less than ½ acre of fill in waters of the US.

3.8.4 Construction Stormwater Permit

The project will likely require a construction stormwater permit as part of the National Pollution Discharge Elimination System (NPDES). This would apply to work that is outside the river and riparian zone but that may affect water quality via stormwater runoff. This will likely be a 1200-C permit, issued through the Oregon DEQ. The application requires a description of the project and an Erosion and Sediment Control Plan (ESCP) for how runoff will be addressed and managed during construction to protect waters of the state.

3.9 Floodplain Regulations

A study was recently completed to revise the existing FEMA flood maps for the John Day River and lower Canyon Creek within the study area. This was performed by the Corps of Engineers in support of the City of John Day, Canyon City, and Grant County. The flood mapping is used by the City to administer the City's code related to development in flood hazard areas and to manage their responsibilities under the National Flood Insurance Program. The study used updated survey data and hydraulic modeling to adjust the boundaries of the Special Flood Hazard Area (SFHA), which is the area that is subject to flooding during the Base Flood, also known as the 100-year flood, or the flood that has a one-percent chance of occurring every year. The SFHA includes two sub-units, the regulatory Floodway and the Floodway Fringe. The Floodway is defined as "The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot" (City of John Day Code of Ordinances, Title 4, Chapter 2). This is essentially the portion of the river and adjacent floodplain where floodwaters are deepest and swiftest and where features would be in the greatest danger during a flood. The Floodway Fringe is the remaining area within the SFHA that is typically in less danger during floods and where reasonable development can occur so long as certain measures are taken.

Information on the revised flood mapping is shown in Figure 3.10, which shows the changes from the old mapping. On this map, the old SFHA is referred to as the “effective” area and the Floodway Fringe is denoted as Zone AE. A few significant changes can be seen in this map as it relates to the project area. First is the removal from the SFHA of the mobile home park neighborhood just north of the supermarket. There are also some significant changes to the mapping at the west end of the study area, with a reduction of area in the SFHA on the north side of the river at the former Pine Mill log yard site, and then a substantial increase in area within the SFHA further to the north and west, including privately owned land as well as the US Forest Service, OR Dept of Fish and Wildlife, and OR Dept of Forestry compounds. Other areas have seen minor additions or reductions of land within the SFHA. Many of the proposed features associated with the Innovation Gateway Project are within the Floodway Fringe, and some may be within the Floodway.

Typical of most jurisdictions throughout the country, development activities are allowed within the SFHA, but activities that occur within the SFHA must adhere to the rules specified for Flood Hazard Areas in the City’s Code of Ordinances. Following these rules also allows for the City to participate in the National Flood Insurance Program, which provides federally-backed flood insurance for residents in participating communities. For development projects within the SFHA, the City requires a Development Permit that shows the elevation of structures in relation to the Base Flood Elevation (BFE), floodproofing methods and elevations, and the extent of any alteration to a watercourse. This information must be provided by a registered professional engineer.

There is also a provision in the City Code that prohibits any encroachments within the regulatory Floodway that results in any increase in flood levels during the occurrence of the base flood discharge. This is commonly referred to as a “no-rise” condition. This no-rise condition will apply to any of the proposed features associated with the Innovation Gateway Project that are located within the Floodway, which could include roadways, trails, and portions of the new park. These features are likely to be low profile and to not provide encroachments that cause a rise in the BFE, but this will nevertheless be an important consideration. Any changes to the river, including potential restoration work that has been described previously, will also need to consider flood rise. For river restoration projects, FEMA Region 10 has developed a “Policy on Fish Enhancement Structures in the Floodway” (FEMA 2009). This policy recognizes that a strict interpretation of the no-rise standard could incur costly analyses for restoration projects that are providing an overall benefit to the river and to aquatic species, and therefore allows for floodplain managers to rely on hydraulic or hydrologic professionals to provide a less formal “feasibility analysis and certification that the project was designed to keep any rise in 100-year flood levels as close to zero as practically possible and that no structures would be impacted by a potential rise” (FEMA 2009). For more significant alterations that go beyond what this policy covers, then a more formal no-rise analysis may be required for the river restoration work. This could even potentially include a revision to the flood maps through the Letter of Map Revision (LOMR) process. As mentioned previously, hydraulic modeling will be necessary for design of river restoration features. This model can also be used in the evaluation of the effects of proposed alternatives on flood levels.

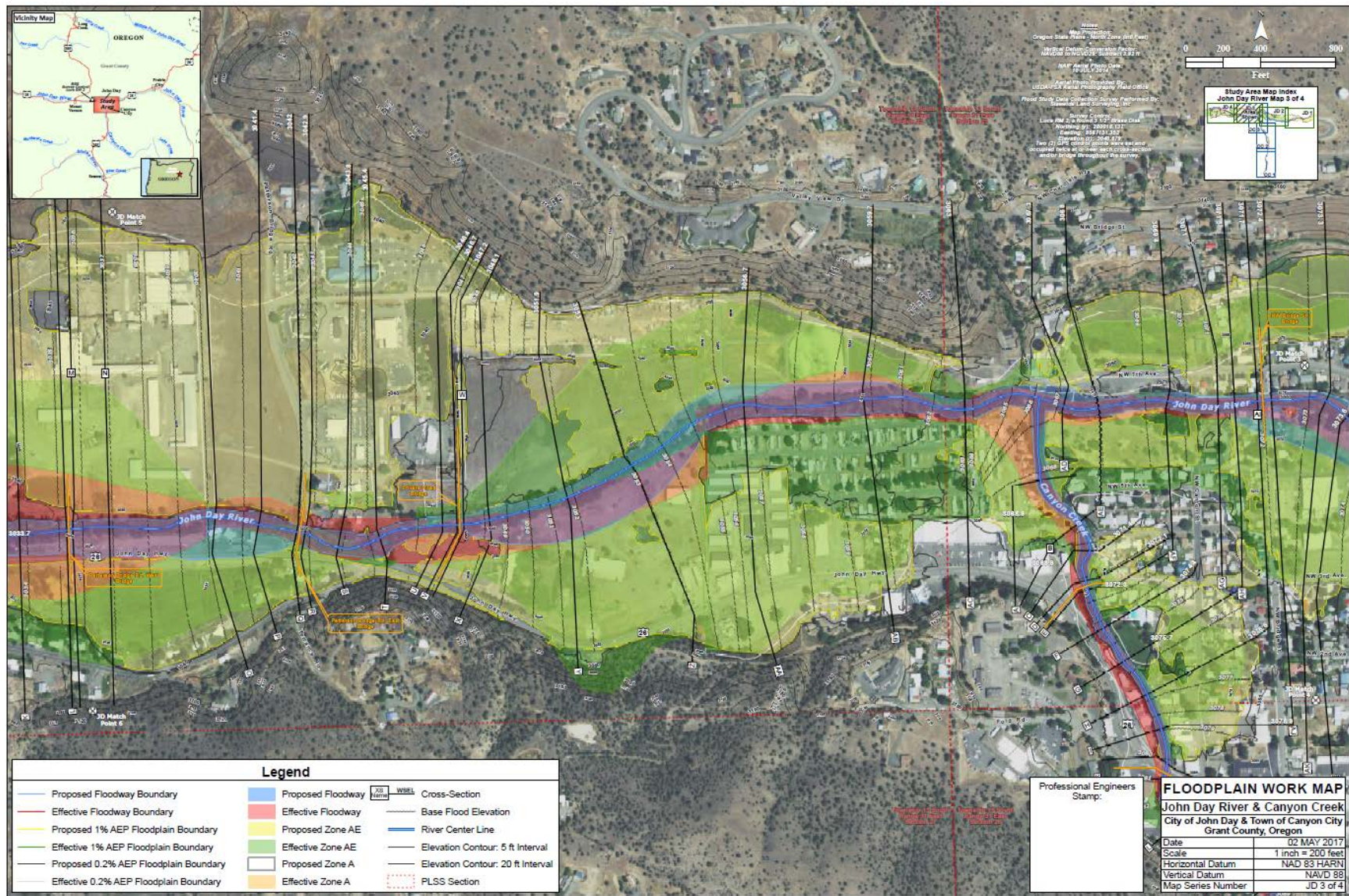


Figure 3.10. Revised floodplain mapping for the project area. (USACE 2017)

3.10 Wetlands

A wetland delineation and assessment will be necessary for the site since river modifications and other project features have the potential to affect wetlands. A wetlands field delineation will need to be performed and a report prepared that satisfies US Army Corps of Engineering and Oregon DSL requirements. This would include completion of the OR Wetland Rapid Assessment Protocol (ORWAP) forms. The delineation and assessment will need to be performed by someone with approved qualifications, ideally a Professional Wetlands Scientist. The wetlands delineation and assessment work would likely cost \$15,000-\$20,000 for the site. The site is large (80-90 acres), but there is easy access and many areas that are unlikely to have potential for wetlands. These costs do not include additional field time to obtain regulatory concurrence for the assessment results, which is unlikely to be required, but is a possibility.

If the project has the potential to impact wetlands, wetland mitigation may be required. If needed, this would ideally occur on-site to reduce costs, but could occur off-site if necessary. A wetland mitigation plan would be required, which varies in level of effort depending on the amount, type, and location of mitigation that is required.

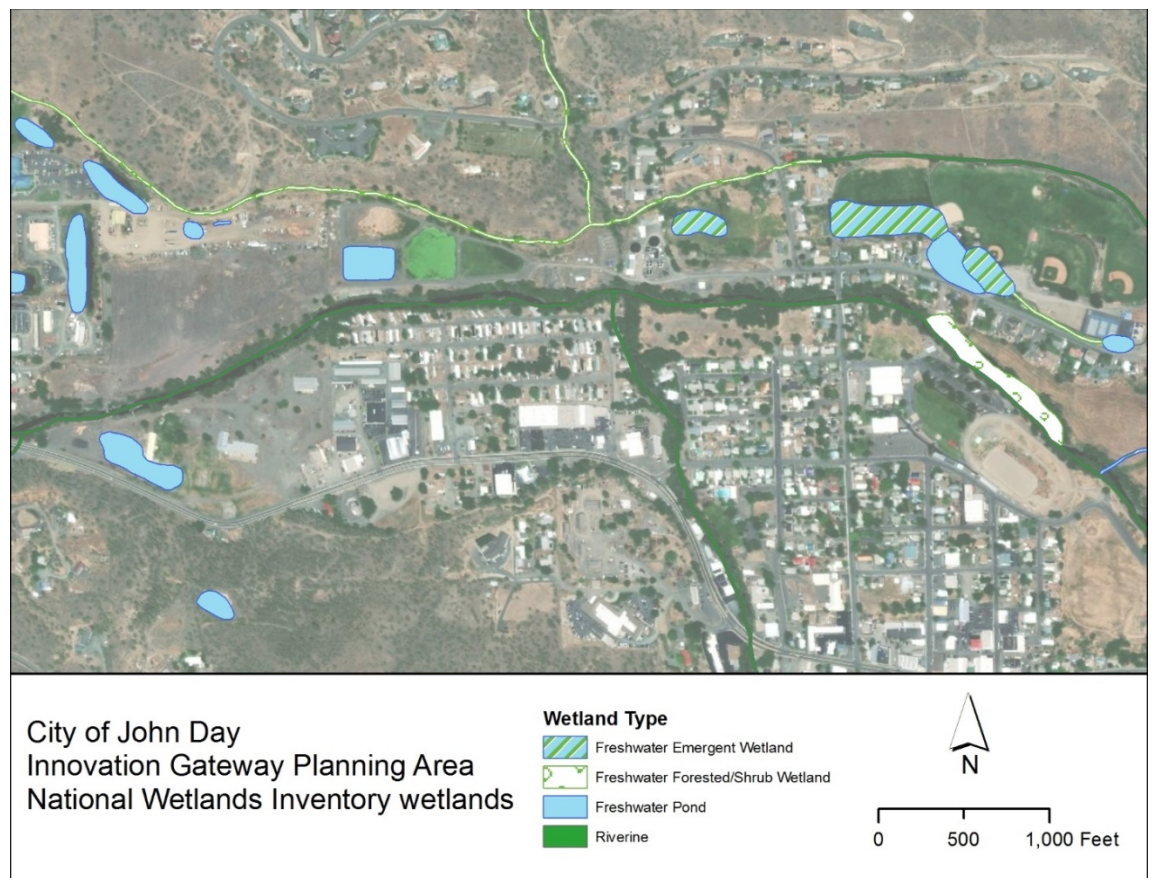


Figure 3.11. Location of wetlands from the National Wetlands Inventory. These represent a coarse-scale estimate of wetlands at the site. The actual location and type of wetlands will need to be identified through performance of a wetlands delineation.

3.11 Endangered Species Act Compliance

The project will need to be reviewed with respect to the impact on ESA-listed species. For the river-related work, this will primarily apply to Middle Columbia River Steelhead, which are listed as Threatened under the ESA. This project will likely require ESA consultation with NOAA Fisheries (NOAA) under Section 7 of the ESA, which applies to projects either on federal land, funded with federal dollars, or that go through federal permitting. The USACE 404 permit is the likely nexus for Section 7 consultation for this project, thus the USACE will consult with NOAA regarding the impact of the project on ESA-listed steelhead. ESA consultation typically results in the issuance of a Biological Opinion (BO) from NOAA, which specifies whether the project can proceed as planned and any specific measures that need to be taken for protection of ESA-listed species. For river restoration projects, activities can typically follow a programmatic consultation, which is a more streamlined review process for pre-approved restoration activities. In Oregon, the USACE has a pre-approved BO for restoration, termed the Standard Local Operating Procedures for Endangered Species (SLOPES; USACE 2013). There may also be other potential programmatic consultation pathways available depending on funding sources and other factors.

If the project cannot fall within a programmatic BO, then informal or formal consultation will be required and a BO may need to be prepared. Early communication with the USACE and NOAA Fisheries staff is recommended to determine what will be required with respect to ESA consultation, especially since preparation of a BO and moving through the consultation process could affect costs and construction timing.

3.12 Environmental Contamination

The former Oregon Pine Mill site was evaluated and treated for contaminated soils multiple times since 2009 and has been given a determination of No Further Action (NFA) needed (letter from OR DEQ to Nicholas Green, dated February 14, 2018). This site was originally identified by OR DEQ as potentially having contaminated soils, leading to the investigations, treatments, and eventual NFA determination. We are unaware of other sites within the Innovation Gateway plan area that would be expected to have contamination. If further investigations suggest the presence of contaminated soils, or if there are signs of potential contamination found during site surveys, then additional Phase 1 assessment may be required.

3.13 Water Withdrawals

Any actions proposed for the site must consider potential effects on existing water rights and points of diversion. The location of points of diversion and use in the study area are included in Figure 3.4. The primary diversion point in the study area is near the downstream end of the site near the former Pine Mill site where there is a diversion dam and intake on river-left that feeds an irrigation ditch with multiple downstream users. This is described previously in Section 3.1.

Section 4 Opportunities and Challenges

4.1 Sustainable and Interpretive Features

There is an inherently sustainable nature to smart growth-oriented planning efforts described earlier in this memo, which aim to focus urban development on efficiently-served infill sites and encourage walking to reduce carbon emissions from private auto use and improve public health. The strategy of restoring the heavily degraded John Day River to promote habitat and floodplain protection is also inherently sustainable, enhancing citizen's daily access to nature. Perhaps the best illustration of sustainable innovation can be found in the City's strategy to build a new membrane bioreactor, outside the floodplain, pipe the treated water to greenhouses and build local produce that is then sold in John Day, creating a positive internal support loop for the City.

Educating visitors and residents on these sustainable features and on aspects of John Day's natural and cultural history is an excellent way of strengthening the City's sense of place and encouraging people to stay in the study area longer. Specific interpretive opportunities include:

- Riverbank restoration
- History of gold dredge mining and effects on the river
- Oregon Pine Mill history
- Native American history
- The biota (birds, animals, plants) of the John Day River
- Innovative wastewater treatment and greenhouse development

4.2 Opportunities & Challenges

As the consulting team begins to consider potential alternatives for change at the Gateway site, the following is a list of Opportunities and Challenges that will drive and guide concept plan development. This list will be refined in Technical Memo #5:

Opportunities:

- Building on John Day's existing identity, values and resources
- Access to the John Day River
- A sustainable local economy, based on competitive advantages of John Day's location and resources
- Improved aesthetics for this western gateway to John Day
- Creating room for natural floodwater storage, reducing flood impacts
- Health benefits from improved access to nature and opportunities for active recreation
- Utility and public infrastructure upgrades
- Encouraging community connection and interaction

Challenges:

- Costs of improvements and limited public resources
- State and National competition for grant funding
- Maintaining local community support through time needed to realize improvements
- Creating a careful phasing strategy to ensure efficiency in new improvements
- Market feasibility of supporting envisioned hotel and public market uses
- The John Day River floodplain and restraints on development

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https://www.nwp.usace.army.mil/Portals/24/docs/regulatory/SLOPES_V_restoration.pdf