

## Amazon Creek Planning Area Key Observations

Draft, February 1, 2006

The following are the key observations that have been drawn from the preliminary draft of the *Metro Waterways Study Without-Project Condition Report* (February 2006) and are meant to be a summary of the most important points from this report. This list will be updated as additional information becomes available and the *Without-Project Condition Report* is updated. The key observations are sorted by the following topic areas: physical conditions; land use and population; biological resources; water resources; and parks, open space, and recreation.

### Physical Conditions

- The waterways of the Amazon Creek Planning Area can be divided into five major categories based on similar characteristics. These include:
  - Headwater tributaries within upper Amazon Basin;
  - Disconnected side tributaries (Braeburn, Videra, Timberline)
  - Amazon Creek Main Stem;
  - Willow Creek, and
  - the Soil Conservation Service excavated channels (A1, A2, A3).
- The soil permeability rating for the vast majority of soils within the planning area is moderately to very slow.
- Over the past decade, a number of major segments of the Main Stem of Amazon Creek and its immediate tributaries have undergone major enhancement efforts such as channel widening, levee removal, addition of side channels, and riparian and wetland restoration. Significant efforts include the Amazon Creek Enhancement Project (1996), the Oak Patch Channel Enhancement Project (2002), the Dragonfly Bend Habitat Enhancement Project (2004), and the Corps Section 1135 Lower Amazon Creek Restoration Project – Meadowlark Prairie (1999), which also included portions of Dead Cow Creek, the A-3 Channel, and the Diversion Channel. When combined, these efforts have accounting for approximately 5.8 miles of channel enhancement since 1996.
- Upper Amazon Creek from Fox Hollow Road to 24<sup>th</sup> Avenue is experiencing downcutting and toe cuts, although bank sloughing has been minor thus far.
- The segment of the Amazon Main Stem between Jefferson Street and Bailey Hill Road is experiencing significant scour that has created an almost continuous toe cut of between 2 to 5 feet along both banks. This in turn has resulted in bank sloughing, rotational slumping of the channel banks in multiple locations, and channel down cutting. Portions of the Amazon Diversion Channel between Greenhill Road and Fern Ridge Reservoir are also experiencing similar problems.
- The three primary headwater streams to Amazon Creek (Braeburn, Videra, Timberline) are very similar in that they all are used as the discharge point for hillside residential piped stormwater collection systems, and they all are suffering extensive and severe erosion, scouring and large scale bank failure.
- Although they vary somewhat in depth and width, the three trapezoidal drainage channels named the A1, A2, and A3 all appear to have excess capacity for any observed storm events since construction in the mid 1970s. As such, they exhibit almost no toe cut, bank failure, or scouring problems.
- Originating outside the urban area, Willow Creek generally does not suffer the extent of erosion and bank failure problems as other tributaries of Amazon Creek. As such, the creek

bed is relatively stable and there is only marginal sloughing or bank stability problems above 18<sup>th</sup> Avenue. However, between 18<sup>th</sup> Avenue and 11<sup>th</sup> Avenue, there are significant bank failure issues.

- As directed under the Comprehensive Stormwater Management Plan adopted in 1993, the City has moved toward a multiple objective approach to managing waterways and flood channels. Water quality, natural resource values, and recreation opportunities are considered when assessing what type and what frequency of maintenance should be performed.
- Following the multiple objective management approach, the City has moved to more selective vegetation removal techniques in recent years. This approach emphasizes leaving significant vegetation along the channel banks, especially near the toe, while at the same time keeping a central flow channel free from any woody vegetation and cross branching that could snag debris and create an impediment to flow. This technique is informally called *green piping*.
- The majority of the Amazon mainstem has the capacity for at least a 25-year storm event and portions of the mainstem can accommodate a 50-year storm event.

### Land Use and Population

- Significant concentrations of commercial and industrial land uses currently occur along the Highway 99 corridor (adjacent to the A1 Channel) and between West 13<sup>th</sup> Avenue and Roosevelt Avenue. Residential land uses dominate the upper watershed.
- A significant block of land in the planning area (nearly 3,000 acres) is currently in public or land trust ownership for park uses or permanent habitat protection. A significant portion of this land is located in west Eugene along lower Amazon Creek, the Amazon Diversion Channel, and lower Willow Creek.
- Approximately 4,800 acres of land (13 percent of total planning area) will convert from an undeveloped, forest, or agricultural land use to a developed land use at projected build-out based on current Metro Plan designations and Lane County zoning. The most notable conversion of vacant lands to developed land uses will occur in the following locations:
  - Industrial development in the Highway 99 corridor along the northern edge of the UGB and the lands east of the airport;
  - Residential development in the Amazon and Willow Creek headwaters including several large undeveloped parcels; and
  - Residential development in the Bethel area adjacent to the Greenhill tributary, A-3 Channel, and Amazon Creek ("A" Channel).
- The most notable increases in impervious surface area will occur in the following locations:
  - The area along the Highway 99 corridor at the northern end of the UGB and adjacent to the A1 Channel will convert from largely undeveloped land (agricultural use) to uses with impervious surface areas in excess of 40 percent.
  - Impervious surface area in the lands immediately adjacent to the Roosevelt Channel, the Santa Clara area, and central Amazon Creek will increase as remaining vacant parcels are developed for commercial and industrial uses.
  - Impervious surface area in the upper Amazon basin will increase as the remaining vacant parcels in the hills are developed for residential uses.
- The most significant increases in impervious surface outside of the UGB are likely to occur in the upper Willow Creek basin and in the vicinity of Alvadore as rural residential development occurs and in the area to the east of the airport as airport-related industry is expanded.

- The Amazon planning area has a slightly lower level of owner occupied households (57.7 percent) than either Lane County (62.0 percent) or the State (64.0 percent).
- Of the 31 census block groups contained within the Amazon Creek planning area, approximately half exceeded the Lane County and State median incomes, while half were less than the median amount.
- Fewer households were occupied by families in the Amazon Creek planning area (57.1 percent) than either Lane County (63.0 percent) or the State (66.0).

### Biological Resources

- Lack of contiguous public ownership or easements along waterways throughout the Amazon Creek planning area creates management challenges.
- Existing streamside areas in public ownership or easements are often quite narrow and/or share space with other facilities, such as bike paths, limiting biological enhancement efforts and management options.
- The West Eugene Wetlands partnership - formed to enhance and manage wetlands in the West Eugene Wetlands Plan area - has purchased and manages large tracts of wetlands in the Amazon Creek planning area. These large patches of high quality wetlands, together with the nearby Willow Creek Natural Area owned by The Nature Conservancy and the Corps of Engineers ownership along Fern Ridge Reservoir, serve as opportunity areas for improving habitat value for plants and animals whether within or as connections to these larger patches.
- *Connectivity/Fragmentation:* Historically, most of the waterways in this planning area functioned as migration corridors for plants and wildlife. In today's landscape, these corridors have been fragmented by different land uses and practices and no longer provide the complete habitat continuity needed for some historic plant and wildlife communities.
- *Connectivity/Fragmentation:* In general, existing habitat conditions and connectivity are greater in upstream headwater areas and in downstream rural areas than in the intervening urban areas; however, opportunities exist for improving the connectivity between and among these existing, high quality sites.
- *Plant and Animal Communities:* In the future, increased development within the watershed will diminish available habitat required by native species. Increased fragmentation, new invasive species, and other structural and functional changes to existing habitat (i.e. flood control, fire repression, succession, soil nitrification, etc.) will likely impact native plant and animal populations.
- *Plant and Animal Communities.* The Ridgeline Park area and the West Eugene Wetlands areas could serve as ecological anchors to increase the size and connectivity of habitat areas between them, including the pockets of native plant populations and animals still found along existing waterways and in smaller natural areas.
- *Rare Species:* There are many rare and endangered plant and animal populations throughout the planning area, particularly in west Eugene.
- *Water Quality:* Most of the waterways within this planning area do not meet State water quality standards for *dissolved oxygen*, *water temperature*, and *suspended solids*. Fish and macro-invertebrate communities found in these waterways are species that can tolerate poor water quality conditions. Species that are less tolerant of these water quality conditions are not present.
- *Water Quality:* Reversing water quality degradation and improving existing conditions in order to specifically restore and increase populations of sensitive aquatic life in the Amazon

Creek planning area will require a variety of concerted efforts across all sectors of the community.

- *Water Quantity:* Higher runoff volumes and runoff rates associated with urban hydrology tend to harm sensitive, riparian species more than invasive species such as reed canary-grass.
- *Water Quantity:* Where multiple objectives may be at cross-purposes for a given area, balancing the need to protect people and property from flooding while improving habitat and water quality conditions will require a decision-making framework for establishing priorities, integrating solutions, and selecting the most appropriate tools.
- *Soils and Bed Material:* Bed material throughout the priority planning area is dominated by clay based soils, which remain suspended in the water column longer when disturbed than most other soil types. Water quality is more easily degraded, which can have a negative effect on aquatic habitat and organisms.
- *Soils and Bed Material:* Future development will likely increase runoff volumes and rates, which will exacerbate issues related with clay soils and its negative effect on water quality and habitat conditions.
- *Natural Resources Assessment Results – Overall Condition:* 23 major waterway segments within the planning area were evaluated for existing natural resources condition. The results indicate there is significant capacity for enhancing and improving natural resources conditions in all waterway segments.
- *Reference Condition:* Amazon Creek (Martin to Snell) and Willow Creek East Branch (18th to Gimpl Hill Rd) rated highest for existing natural resources condition. These could serve as potential reference sites for future natural resources improvement projects.
- *Future Condition – Aquatic/Riparian Habitat:* Existing acres related to open water, riparian and wetland habitats are projected to decrease from 1,117 acres to 890 acres at time of build-out for the planning area.

## Water Resources

### Existing Surface Water Resources

- *Water Quality:* Four of the 10 major waterway corridors – representing over half of the total waterway miles in the priority planning area – do not meet current State of Oregon water quality standards. The remaining six waterways have not been evaluated to determine if they meet State standards, but most have very similar issues as the four which do not meet the standards.
- *Water Quality – Beneficial Uses:* The degraded water quality conditions affect the following beneficial uses: *Drinking Water, Fisheries & Aquatic Life, and Recreation.*
- *Water Quality:* “Pollutants of Concern” within the priority planning area include: *Bacteria/Fecal Coliform/E Coli, Dissolved Oxygen, Toxins, Temperature, and Turbidity.* Each of these pollutants can be reduced through a variety of measures including on-ground projects.
- *Water Quality Assessment Results – Overall Condition:* 23 major waterway segments within the planning area were evaluated for existing water quality condition. These results indicate there is significant capacity for improving water quality conditions within all waterway segments.
- *Water Quality Protection:* Seven of the 10 major waterway corridors within the UGB are afforded some degree of protection for riparian function. The remaining three corridors (A2

Channel, West Beltline Floodway, and Roosevelt Channel) remain at risk to urban encroachment and loss of water quality function.

- *Water Quality – Regional TMDL's*: The Upper Willamette Basin Total Maximum Daily Loads (TMDL) requirements are scheduled to be implemented in 2006, which will affect the management of uses along most of the waterways for *Bacteria and Temperature*.
- *Water Quality – Regional TMDL's*: The Draft TMDL for Fern Ridge Reservoir will eventually affect Amazon Diversion Channel, which discharges directly into the reservoir. The parameter of concern is *Turbidity*.
- Downstream irrigators are the only major water extractors from these surface water resources within this priority planning area.

#### Existing Groundwater Resources

- There are no public drinking water suppliers relying upon the groundwater resources within the priority planning area.
- Existing wells serve either irrigation purposes or other domestic uses in rural lands.

#### Projected Surface and Groundwater Resources

- Where protection measures have been adopted for specific water resources, the risk of major impact, such as the piping of open waterways, are relatively low.
- Future pollutant loads associated with new development are expected to be addressed by the city of Eugene's new stormwater development standards (expected adoption 2006)
- Based on current and projected trends, water quality function for the major waterway corridors will likely remain in their current condition: poor-to-fair.

### **Parks, Open Space, and Recreation Observations**

- The Amazon Creek planning area contains over 3,000 acres of land in public or land trust ownership (8.8 percent of the total planning area). The West Eugene Wetland Partnership owns and manages over 2,000 acres of land.
- The City of Eugene is in the process of adopting the Parks, Recreation, and Open Space (PROS) Comprehensive Plan. This plan identifies a number of needed facilities within the Amazon Creek planning area.
- A total of 11.3 miles of multi-use paths are currently found within the planning area, including the 6.4-mile Fern Ridge Path, which runs between the Lane County Event Center and Meadowlark Prairie.
- Based on the Central Lane Metropolitan Planning Organization *Regional Transportation Plan* (2004) and the *Rivers to Ridges* vision (2002), the Fern Ridge multi-use path will continue from its current terminus at Greenhill Road, westward along the Amazon Diversion Channel to Fern Ridge Reservoir.
- The Lane County Event Center, Westmoreland Community Center, and Amazon Community Center are all in close proximity to Amazon Creek and receive heavy year-round use. The BLM wetland field office, which is located adjacent to Amazon Creek on Danebo Avenue, houses the wetland partnership and provides facilities for the wetland education program.
- A total of three high schools, six middle schools, and fourteen elementary schools are situated within the Amazon Creek planning area.