Scope of Project and Methods:

The City contracted with Siskiyou BioSurvey, LLC ("SBS") to conduct pre-construction surveys. The surveys were designed to identify potential conflicts and impacts to the existing vegetation relative to the proposed construction and future canal maintenance. SBS also evaluated wildlife use and impacts from the removal of the canal as a water source.

SBS conducted surveys along the canal trail in July, 2018. SBS personnel walked the full 2.4 mile length of the canal from the Starlight Monitoring Station to the Terrace Street Pumping Station; field surveys included the approximate 40 foot upslope and 60 foot downslope linear area along the canal. Data gathered by SBS included: (i) mapping and descriptions of large mature trees with potential to be impacted directly by construction, or indirectly impacted from a change in underground subsurface water quantity, (ii) identification of stands where thinning and other improvement opportunities exist to reduce project-related impacts; (iii) mapping of noxious weed sites; and (iv) an evaluation of wildlife use of the open canal and an assessment of impacts to wildlife from the loss of water.

The need for vegetation surveys is based on the supposition that seepage from breaks in the canal have augmented sub-surface water availability to adjacent vegetation. The piping of the canal would therefore eliminate the augmented water source and impact vegetation negatively. Survey evidence that vegetation is receiving augmented sub-surface water was not observed either through surface water or the presence of riparian vegetation. Instead, it was extrapolated from an ecological analysis of tree species, size and vigor adjacent to and below the canal.

Summary of Results and Recommendations:

- While numerous cracks and breaches were observed in the concrete canal liner, evidence of water seepage along the canal is not apparent.
- Significant large conifer and hardwood trees occur along the canal right of way. These trees are expected to be negatively impacted from construction because their roots are under the current canal liner. Large conifers growing within the canal right of way should be removed prior to construction, rather than risk substantial damage and costs dealing with them later. The hardwoods have a much better chance of surviving both the construction process and subsequent changes in hydrology, so should be assessed on a case by case basis.
- Large conifers, and to a lesser extent, hardwood trees that occur downslope of the canal will be negatively impacted when sub-surface water is eliminated. These trees will need to be evaluated regularly by a qualified arborist or forester following construction to determine tree health and public safety concerns.
- A list of mitigation measures can be employed to encourage forest health following construction.

- Dense stands of understory conifers and/or hardwoods occur adjacent to the canal; thinning of the understories is recommended to reduce competition and lessen the impacts to adjacent larger trees when sub-surface water is eliminated. The thinning will also increase fire resiliency of the forest adjacent to the canal.
- Identify a City staff to act as, or contract for a construction steward to oversee the project and make the multitude of judgement calls required throughout construction.
- Multiple noxious weed sites occur along the open canal and will need to be eradicated prior to construction to reduce or eliminate increased infestations.
- The canal currently provides incidental summer watering opportunities for wildlife, and does not function as a forested riparian corridor. Wildlife in the watershed will shift to alternate water sources as occurs when the canal is not flowing.
- Develop the piped canal corridor as an improved fuel break to increase wildfire resilience within the urban/wildland interface and maintain it as such through strategic clearing and maintenance.
- Use trail softening techniques to help the road associated with the piped canal blend aesthetically with the existing landscape.

Conclusion:

The piping of Ashland Canal can improve the forest resilience along this corridor, helping to meet the environmental stresses associated with climate change by selecting for more appropriate species composition and spacing. The completed construction corridor can provide a significant fuel break on the urban/wildland interface and increase the staging potential for firefighting activities. It also helps prepare for periodic water scarcity in the Rogue Valley by eliminating water leaked inadvertently from the canal, intended for drinking water and farm use.