

## **STAFF REPORT**

### **Potential environmental impacts of providing wastewater service to 11900 Buckner Road (Service Extension Request #3407)**

At the August 28, 2014, regular meeting of the Austin City Council, Austin Water submitted a service extension request (SER #3407, Council agenda item #12) for wastewater service to a 25.5 acre tract at 11900 Buckner Road located within the Drinking Water Protection Zone and the City's limited purpose jurisdiction. Both the Environmental Board and the Water and Wastewater Commission recommended approval of the item. The Austin City Council requested additional information about the relative environmental impacts of providing centralized wastewater service to the tract versus development with only on-site sewage facilities (OSSF).

Staff from the Watershed Protection Department (WPD) and Austin Water evaluated the potential environmental impacts of three general scenarios (Table 1). Determination of the potential environmental impacts between scenarios is difficult. The resulting land use decisions by the developer as a result of the limitations imposed by not providing water or wastewater service are not definitively known and may affect environmental impacts.

Table 1. Utility service scenarios evaluated for potential environmental impact based upon the proposed development configuration of the tract as submitted with SER 3407

	Scenario A	Scenario B	Scenario C
Wastewater disposal	No City service, developer utilizes OSSF	No City service, developer utilizes OSSF	City service
Water supply	No City service, developer utilizes private groundwater well	City service	City service
Assumed resulting land use on the site	Likely to be entirely commercial (e.g., self-storage complex) with much lower wastewater generation rates or possibly no development	Up to 20 large single-family townhomes, one existing single-family home, and approximately 14,300 ft <sup>2</sup> of commercial development which does not include restaurant use	Up to 35 single-family townhomes, with 26,000 ft <sup>2</sup> of commercial development which includes restaurant use

#### **Assumptions and Issues Considered**

The overall amount of impervious cover (20%) is likely to be generally equivalent between the three scenarios. The primary differences between the scenarios are the specific land uses and the number of people working or living on the site.

#### **Nutrient Impacts**

OSSF permitting for the portion of the tract proposed for residential development would fall within the jurisdiction of Travis County, which does not currently require tertiary nitrogen reduction over the recharge zone of the Edwards Aquifer as the City of Austin does. The developer has stated that spray irrigation of effluent from OSSF would be utilized. Because of the shallow soils in the area, limited vegetation, shallow depth to groundwater, and less stringent wastewater treatment requirements, use of OSSF in lieu of centralized City wastewater service could possibly contribute to some level of water quality contamination of local sensitive surface water resources as a result of utilizing OSSF for wastewater disposal. The extent of the impacts depends on the volume of wastewater disposed of through this method and how well the private OSSF system is operated and maintained.

OSSF permitting for the portion of the tract proposed for commercial development would fall within the jurisdiction of the City. Tertiary nitrogen reduction would be required for the commercial OSSF because of the location of the tract over the recharge zone of the Edwards Aquifer. City OSSF regulations do not allow for spray irrigation of effluent from commercial properties. Even with the additional nutrient removal required by City regulations, the shallow soils and shallow depth to groundwater could contribute to water quality contamination of local groundwater resources. Such an impact as well can be related to how well the private OSSF system is operated and maintained, but some level of environmental impact may occur even with a well maintained system.

#### Groundwater Flow

It was assumed that additional, and likely deeper, trenching would be required to install centralized wastewater collection lines and a lift station which could intercept and alter subterranean groundwater flow pathways. Trenching required for centralized City wastewater service lines would be conducted according to the City Environmental Criteria Manual, and thus voids or groundwater flow paths, if encountered, would be mitigated to some extent by compliance with current City rules to limit impacts to groundwater resources. It is difficult to predict whether or not trenching with a high level of confidence would actually interrupt groundwater flow paths, but there are seeps on site and shallow groundwater is known to occur in this area. Trenching also would be required for OSSF but may have a lesser impact on groundwater flows as compared to a centralized wastewater system due to the likely shallower depth and smaller diameter of those lines.

#### Surface Water Flow

Centralized wastewater service would require a lift station to be constructed by the developer. The lift station would be a public lift station operated by the City with SCADA systems sufficient to notify Austin Water in case of lift station failure to limit potential wastewater spills. OSSF systems are also equipped with audio/visual alarms to notify the property owner of component failure. Some potential for increased environmental impacts as a result of possible lift station failure could result in surface water contamination and adverse impacts on threatened Jollyville Plateau Salamander habitat downstream (approximately one mile) of the proposed development. Improper operation and maintenance of an OSSF may also result in contamination, but could be less immediately apparent until sufficient impairment occurred.

Denial of City water service would require the developer to install a Trinity Aquifer well. To meet potable water and fire flow requirements, substantial on-site water storage would likely be required. It is not completely clear whether an on-site well is an economically viable development alternative. Even if development was viable, it is possible that the development would generate much less wastewater.

#### **Analysis:**

While City Council did not request an analysis of impacts of providing water service, whether or not City water service is provided effects the analysis of OSSF impacts. Therefore, staff included an analysis of denying both water and wastewater service (Scenario A) and concluded that it would likely result in somewhat less overall adverse environmental impacts relative to other options because the intensity of use and volume of wastewater would probably be most limited and could have the least subsurface disturbance. This is consistent with initial Watershed Protection Department staff recommendations for these service requests and typical for service extension requests located in the Drinking Water Protection Zone.

Scenario B, providing only City water service, could mitigate, in part, impacts to groundwater flow and quantity, but could most likely result in the worst potential adverse surface water quality impacts relative to the other two options. Use of OSSF in this scenario could generate higher potential contaminant loads to surface water resources than Scenario C.

Scenario C, providing both City water and wastewater service, could have the highest potential for adverse impacts to groundwater flow paths but could potentially degrade surface water quality less than Scenario B.

**Summary:**

It should be kept in mind that actual environmental impacts of any option are difficult to predict at this stage of the development proposal and installation of either system will have some level of environmental impacts. Any development of this tract would be subject to current City Code, including the Watershed Protection Ordinance. The centralized wastewater system would be owned, operated, and maintained by the City. The OSSF system would be owned, operated, and maintained by the property owner.

Based on the level of analysis possible at this stage, WPD stands by its original recommendation to the Environmental Board, which recommended against approval of the request for water and wastewater service. However, if City Council decided to provide City water service to the property, then both Austin Water and WPD staff support centralized wastewater service.

If you have any questions, please contact Chuck Lesniak of WPD at 512-974-2699 or Bart Jennings of Austin Water at 512-972-0118.