



Alternatives Analysis

To: City of Vernonia Staff & Grace Coffey, AICP
From: Lower Columbia Engineering, Vernonia City Engineer
Date: February 15th, 2023
Subject: City of Vernonia Public Improvements to the “Boot”- Alternatives Analysis
Project: Urban Growth Boundary Extension

Introduction

The following alternatives analysis has been prepared in correlation with the summary of the anticipated ability to connect roadway access and public utilities to an area outside of city limits known as the “Boot”. Please reference Figure 1 on page 3 for further information on areas analyzed in this report. For this assessment, only the feasibility and anticipated cost of extending public facilities to the specific areas identified have been considered.

Area A1

This area is aligned with the existing Noakes Rd ROW and protrudes southwest of city limits. Many large lots with single residences in this area have existing access through the established roadway. Several residences within 500’ of the city’s UGB are currently connected to the city’s water system, however the remaining majority of the area is not served by any public utilities. Though the topography in this area is not extreme, there is a rolling hillside that would inhibit typical sewer connection to the city system and would likely require the installation of a sanitary pump station. Though there is no existing stormwater infrastructure in the area, Bear Creek would act as a decent channel for receiving stormwater runoff. There is however the concern that additional runoff added to this creek will inundate the city with more flow and cause potential damage- particularly in the downtown area where Bear Creek currently impacts residences and roads during high flow events.

Given this information, the feasibility of providing public facilities to this area is reasonable and the cost would be average.

Area A2

This area is aligned with HWY 47 as it exits the city to the southwest. A few residences and businesses are located along the highway however no public utilities are in place to provide service. Existing topography is not extreme however the area is essentially split in two with a higher and lower side straddling the highway. Several ravines are noticeable in the area’s topography and would be impediments to the installation of public facilities. This area’s lower elevated half is in the Nehalem River’s floodplain which poses further danger and limitations to installing infrastructure. The area’s main grade (along the highway) slopes away from the city and would thus require the installation of a new pump station. This sewer station would likely need to service the majority of the area and so sewer infrastructure would be doubled up on for sewer collection and then conveyance back to the city.

Given this information, the feasibility of providing public facilities to this area is challenging and the cost would be high.

Area B1

This area connects to the city through the Stony Point Rd and Keasey Rd ROW’s. The City’s major waterline feeding Stony Point Reservoir runs along Stony Point Rd and a mainline connecting to the eastern portion of the town runs



through Mellinger Rd. Thus, water lines to this area would be easily accommodated. State Ave and Louisiana Ave are both downhill of the area's western half and could provide sewer connections. However, the eastern half of the area has no adjacent sewer infrastructure to tie to and would need to develop a long connection to the existing sewer mains to the south in Texas Ave or southwest in Riverside Dr. Topography in the western half is more rugged with a couple of major ravines and continuing rolling hills that would make public facilities difficult to install. Topography in the eastern half slopes continuously toward the Nehalem River. Stormwater drainage would also be split between the two halves.

Given this information, the feasibility of providing public facilities to this area is poor and the cost would be high.

Area B2

This area is surrounded to the East, South, and West by areas already within city limits and already developed or currently being developed. Major utilities and roadway access are available through all of these directions as well as the possibility of connecting to the watermain and roadway in Mellinger Rd to the North. There is a ridgeline that splits the area's topography into a northern and southern half. Gravity fed utilities would similarly need to be split into these two halves which would aid in not inundating any one existing system too much. Sewer and storm infrastructure in Texas Ave would provide a connection point for the southern half whereas Riverside Dr would provide a sanitary connection for the northern half. The northern half's topography contains a couple of seasonal drainage paths which would accommodate storm drainage for this area as well as the development underway in the Louisiana Ave area. There is currently no developed roadway within the area however Mellinger Rd, Riverside Dr, Texas Ave, and E St/Louisiana Ave provide several avenues to which roadway access could be developed.

Given this information, the feasibility of providing public facilities to this area is good and the cost would be minimal.

Area C

This area is northeast of town and straddles HWY 47. This area begins a long distance away from town and would require an extreme sanitary sewer extension along with a sanitary pump station and a long watermain extension. Topography in the area is not extreme however the western half of the area is within the Nehalem River's floodplain posing further danger and limitations on developing public infrastructure.

Given this information, the feasibility of providing public facilities to this area is very challenging and the cost would be very high.

Summary

Areas A1, A2, B1, B2, and C have been assessed separately for the feasibility and anticipated cost of having public facilities provided. Areas B2 and A1 prove to be the most reasonable and lowest costing areas for public facility connections. It would cost more and pose greater difficulty to provide resources to areas A2, B1, and C. Area B2 stands out as the most effective area to which public facilities could be connected and from which the greatest benefits could be gained. Please let us know if further information or assessment is necessary.

Andrew Niemi, PE
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2/15/2023

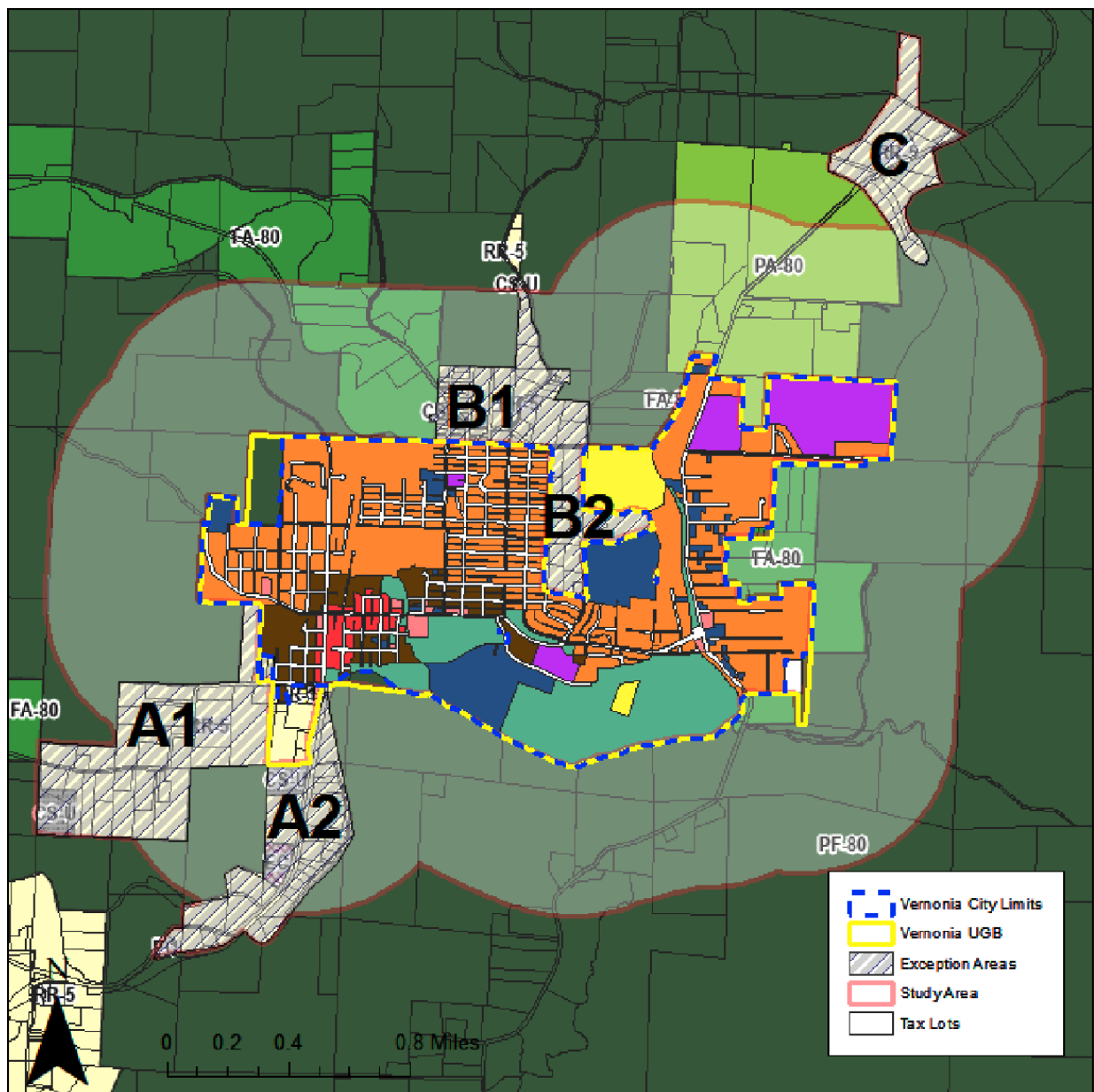


Figure 1. Map of Alternative Area (from Winterbrook Planning)