

EXECUTIVE SUMMARY

Proposed NE UGB Interceptor and Alternative Plant Interceptor

MacKay & Sposito, Inc. (“M & S”) has been retained by Newland Communities, LLC (“Newland”) to perform a detailed civil engineering and survey analysis in support of a proposed amendment to the City of Bend’s (“City”) Collection System Master Plan (“CSMP”). Specifically, M & S has analyzed alternative alignment opportunities for sanitary sewer service for properties located within the NE quadrant of the area under study by the City for inclusion in the expanded Urban Growth Boundary (“UGB”). M & S developed a conceptual alignment and presented our findings to the City at a meeting. In response to the information provided in our analysis, the City requested M & S further study the proposed alignment, along with capacity and basin analysis.

The intent of M & S in completing the scope of work is to build on the initial findings in the draft CSMP and provide additional technical analysis in support of Newland’s commitment to work with the City. The goal is to address infrastructure needs for the NE Bend UGB area and to develop solutions that result in the timely and economical provision of sanitary sewer service to lands within the City’s proposed UGB.

We have shown that gravity service can be provided to 1,665 acres of proposed UGB expansion area in the northeast by a regional trunk line extended from the Water Reclamation Facility (“WRF”) to NE Butler Market Road. Service to the NE UGB expansion area does not preclude the City from proceeding with the existing draft CSMP as this regional trunk, ranging from 12”-21” in diameter, is specific to the NE UGB basin and would tie into the proposed CSMP Plant Interceptor near the WRF. Further analysis and refinement of these initial conclusions demonstrated that strategic upsize of this regional trunk by the City can provide an adaptive City-wide sewer solution as well.

The refinement worked to meet the needs of the City to serve properties already within the UGB that were facing service challenges, eliminated redundancies in service provision that were associated with the initial concept, and optimized the function of the entire system. This upsized NE UGB Interceptor with the proposed Alternative Plant Interceptor alignment are presented in this report as Figure 1 “Proposed NE UGB Interceptor with Alternative Plant Interceptor”.

At the conclusion of our analysis, we determined that the Proposed NE UGB Interceptor and Alternative Plant Interceptor provides improved sewer service, benefiting the entire City more quickly and at a lesser cost than the current draft CSMP. In addition, the alternative provides the following specific benefits:

- Relieves existing core system capacity issues and continues to serve all users within the existing UGB and UAR (identified in the City’s draft CMSP), including providing service for approximately 6,880 acres within the existing UGB that have identified service deficiencies (SE Service Area).
- Provide operational flexibility through potential interties with the remaining CSMP interceptors.

- Cost comparisons show that the proposed alignment can be built for approximately \$0.5 million less than the alignment shown in the draft CMSP, this cost analysis is detailed in the attached Cost Comparison document.
- Provides gravity sewer service for roughly an additional 1,600 acres of newly expanded UGB and, depending on sizing decisions made by the City, can provide service to at least another 1,400 acres of future Urban Area Reserve located to the south of the expanded UGB area along Hamby Road (See Detail A) to meet the long-term service goals of the City.
- Inclusion of 1,665 acres of expanded UGB service area provides an immediate additional funding source for the construction of capital sewer improvements through Systems Development Charges associated with new development.
- The downstream facilities associated with the Proposed NE Bend UGB Interceptor and Alternative Plant Interceptor can be built sooner than envisioned for the original Plant Interceptor alignment, because of the leverage of private development dollars, which can assist in expediting the provision of sewer to the UGB expansion area associated with Juniper Ridge, at a lower cost than originally anticipated
- The proposed alignment reduces the required length of the new Plant Interceptor by approximately ¼ mile and provides the opportunity for an intertie structure which enhances the overall operational flexibility of the municipal system

Each of these benefits are supported in detail within the report.

In completing this analysis, M &S has utilized best technical practices to design a well thought out urban service alternative for NE Bend that will benefit not only Newland and neighboring properties, but also assist with the City's identified service challenges and existing deficiencies. As noted in our Technical Assumptions Memo (attached) we used the same assumptions in our study that the City used for the CMSP. Our review of the proposed alignment did not reveal any significant engineering barriers or physical constraints to efficient provision of sanitary sewer service. Attached also please find our Cost Comparison analysis supporting our finding that this alternative can be provided at an estimated savings of \$0.5 million.

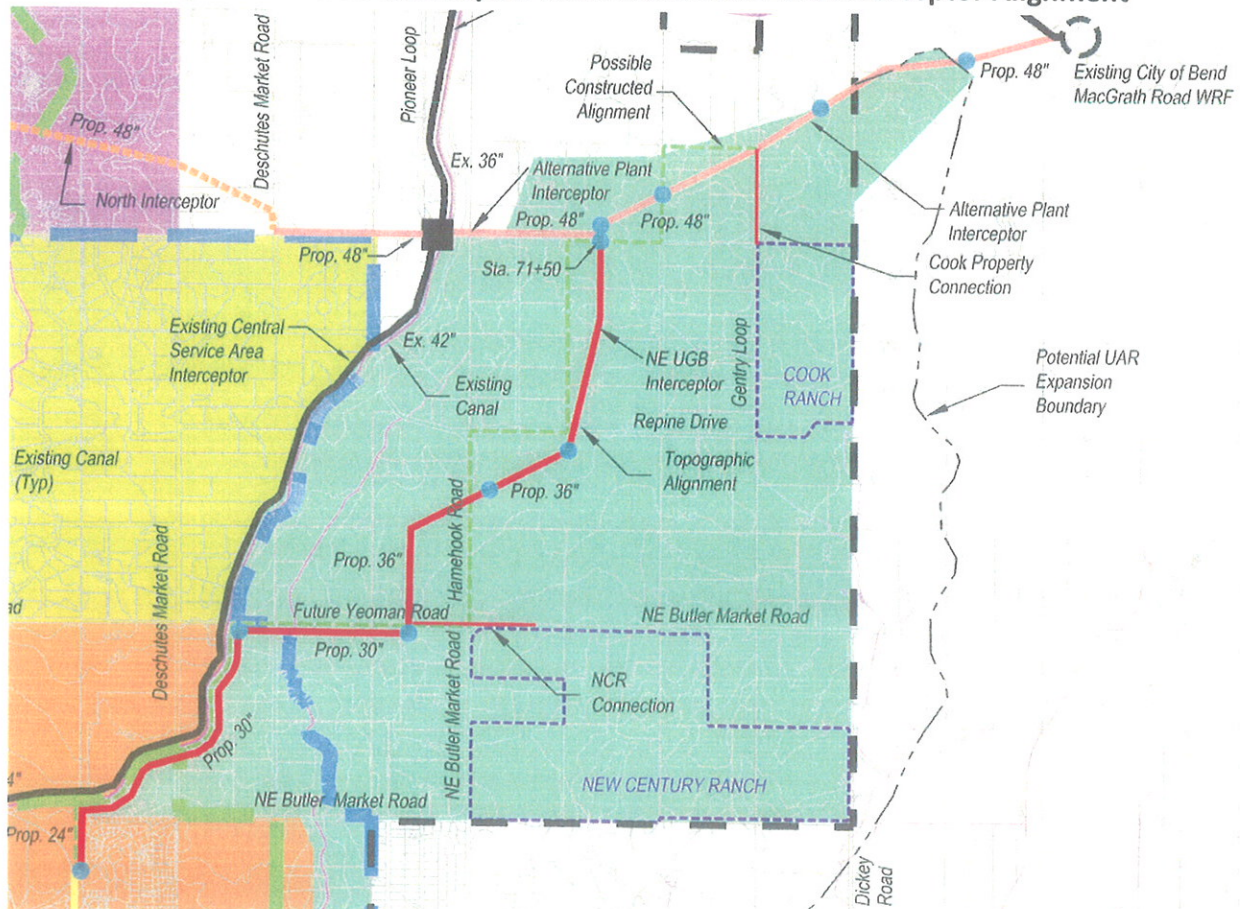
Based on the above summary as well as our detailed analysis and findings enumerated in this technical memorandum regarding the proposed NE UGB Interceptor and Alternative Plant Interceptor, this sewer service alternative is a cost effective and timely approach to meeting the City's needs for sanitary sewer service provision to approximately 6,880 acres of lands within the existing UGB, 1,665 acres proposed for inclusion in the latest expansion, as well as provides a plan to serve over 1,400 acres in additional future Urban Area Reserve east of Hamby Road (see Figure 1 of this report). Furthermore, this sewer service alternative reduces the required length of the new Plant Interceptor, while maintaining service to the North Interceptor Service Area and all other areas served by the proposed CSMP Plant Interceptor. Therefore, we respectfully recommend that the City amend the CMSP to adopt the alignment shown in Figure 1 as an improved alternative alignment for serving the core area and expanded UGB. However, the expanded NE UGB area can be served without amending the draft CSMP with the smaller NE UGB Regional Trunk connecting directly to the WRF. This recommendation recognizes this alternative's

options for service, opportunities for substantial future capacity and flexibility to meet sanitary sewer demands both in service and operations.

We appreciate the City being receptive to reviewing the alternative alignment and supporting documentation and look forward to continuing to work with City staff on implementation of the CSMP. M & S strives to find innovative solutions to challenging service issues faced by developers and municipalities and we seek to identify opportunities for public/private partnerships that benefit all parties.

Below is a detail of the improved City sewer service alternative with the NE UGB Interceptor and Alternative Plant Interceptor alignments. A complete version can be found in the Alternative Technical Analysis (Figure 1).

Detail A - Proposed NE UGB Interceptor with Alternative Plant Interceptor Alignment



Thank you for your attention to this matter and please feel free to contact our corporate headquarters at (360) 695-3411 if you have any questions.