

June 30, 2021

City of Roseburg
ATTN: Ricky Hoffman
612 NW Cecil Avenue
Roseburg, OR 97470

RE: Charter Oaks Urban Growth Boundary Swap
Stormwater Feasibility

Dear Mr. Hoffman,

The City of Roseburg has contracted with i.e. Engineering, Inc. to provide a feasibility analysis of the "Charter Oaks" area of Roseburg, as depicted in Exhibits 1 and 2. The purpose of this analysis is to determine what, if any, areas of the area to be annexed into the City of Roseburg will have potential stormwater drainage concerns.

The boundary of the Charter Oaks area proposed to be annexed into the City of Roseburg was divided into two drainage basins based on aerial contours. As depicted on Exhibits 1 and 2, Charter Oaks Drive divides the Charter Oaks area into a west basin and an east basin.

The west basin drains generally to the southwest. There is an existing low point with a culvert that collects stormwater upstream of Felt Air Field and discharges on the downstream side of the landing strip. The stormwater then discharges to the South Umpqua River through an open ditch. This existing system is indicated on Exhibits 1 and 2. The existing topography of the west basin slopes gradually up in elevation to the northeast portion providing ideal conditions for a storm system to collect stormwater and discharge via the existing discharge path. Unusually deep storm pipes or structures would not be anticipated based on these conditions. The existing culvert and ditches were not analyzed for capacity.

The east basin generally drains to the east and south east. The existing topography of the east basin slopes up from the South Umpqua River to its peak along Charter Oaks Drive. Charter Oaks Drive has a low point located in the middle of the east basin and slopes upward to the north and the south. There are two potential discharge points that do not have existing structures and would be feasible options to obtain easements for discharge piping. One of these locations is located near the low point in Charter

Oaks Drive. These two potential locations are indicated on Exhibits 1 and 2. Unusually deep storm pipes or structures would not be anticipated based on these conditions.

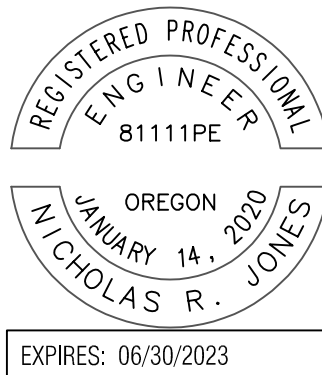
Additionally, exhibits 3 and 4 were developed to identify feasible storm trunk lines based on probable early development due to the proximity of existing public utilities. The exhibits depict three (3) potential storm trunk lines that discharge to the South Umpqua River. Unusually deep storm pipes or structures would not be anticipated based on these conditions.

Based on the analysis of the Charter Oaks area, a storm sewer system could be designed and constructed to service the entire area without requiring unusually deep storm pipes or structures, or requiring pumps.

Sincerely,

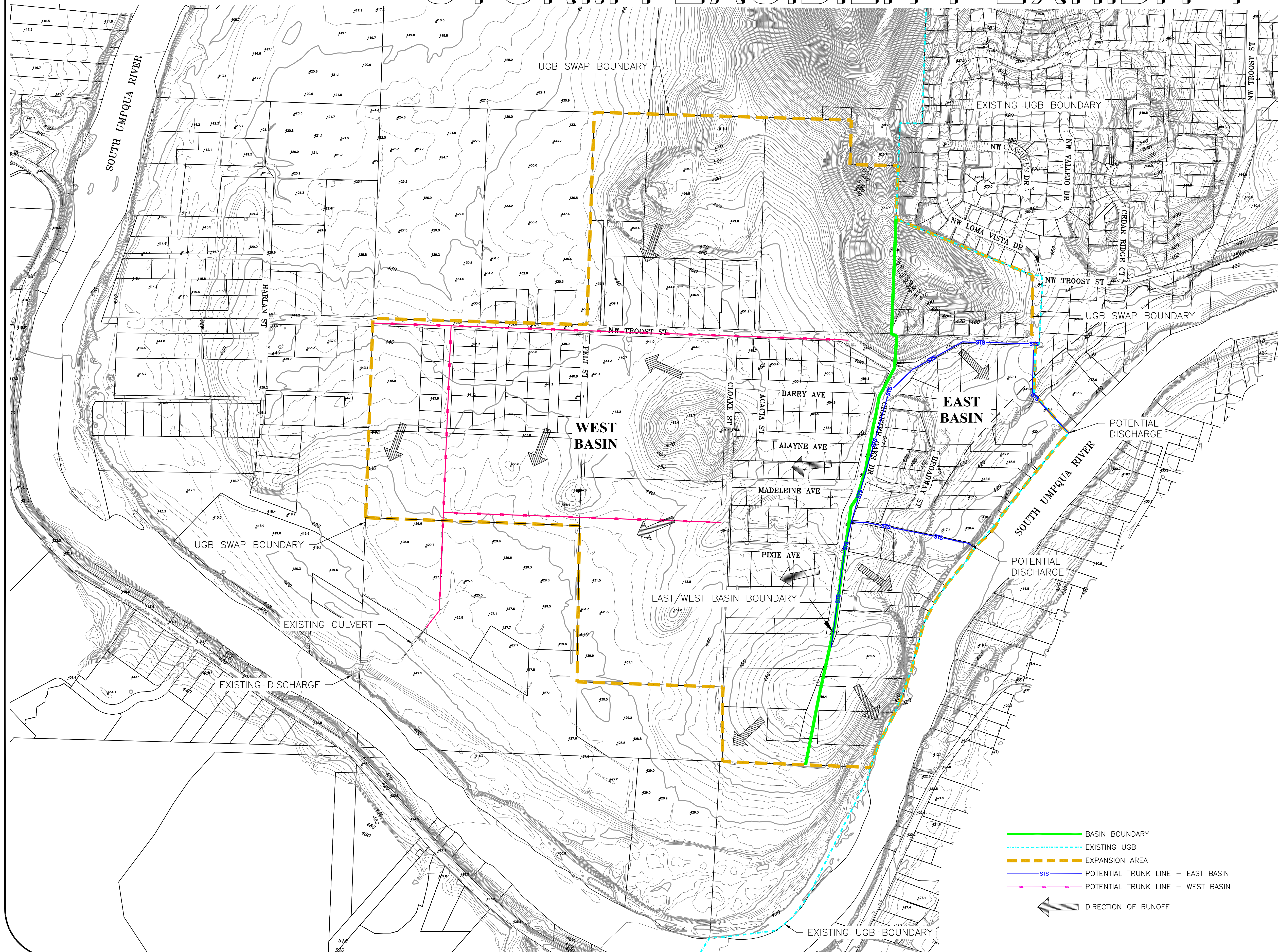
Nicholas R. Jones, PE

Enclosed: Exhibits 1, 2, 3, & 4



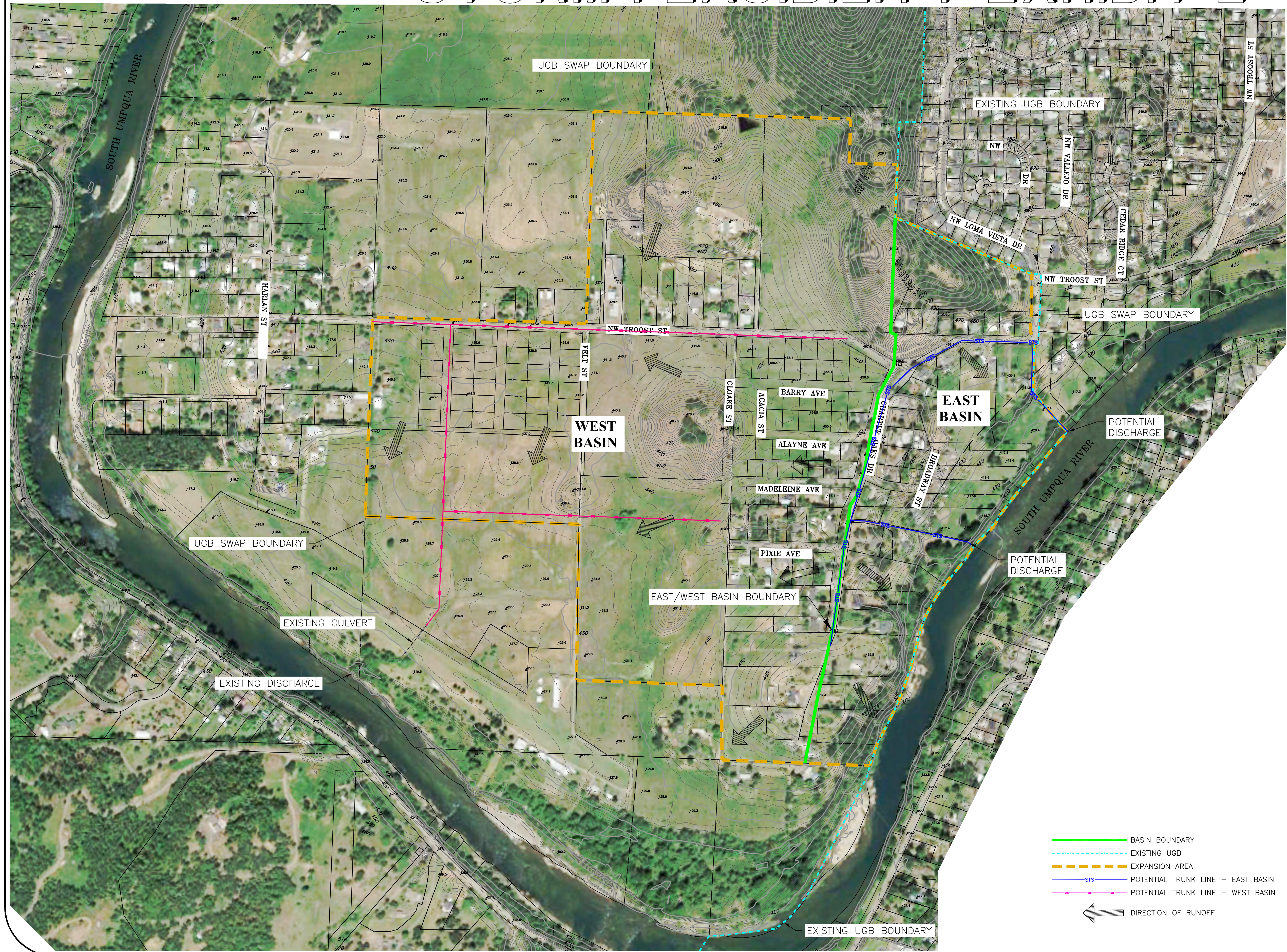
TROOST/CHARTER OAKS EXPANSION AREA

STORM FEASIBILITY EXHIBIT 1

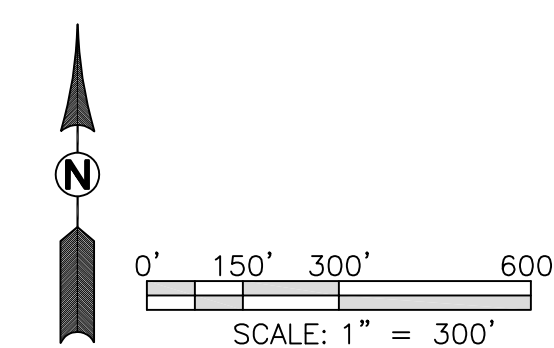


TROOST/CHARTER OAKS EXPANSION AREA

STORM FEASIBILITY EXHIBIT 2



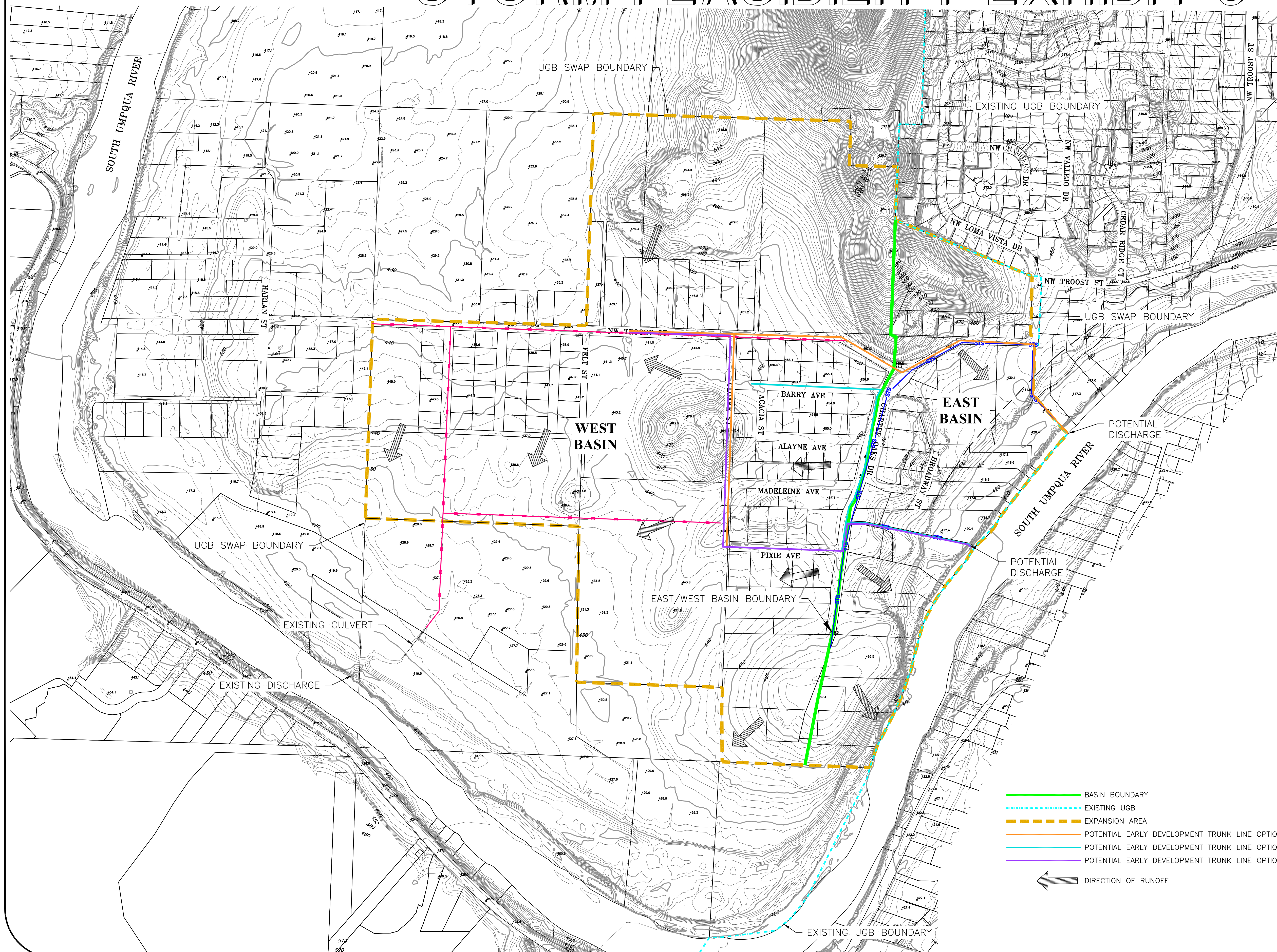
- BASIN BOUNDARY
- - - EXISTING UGB
- - - EXPANSION AREA
- - - STS
- - - POTENTIAL TRUNK LINE - EAST BASIN
- - - POTENTIAL TRUNK LINE - WEST BASIN
- ← DIRECTION OF RUNOFF



ie
809 SE Pine Street
Roseburg, Oregon 97470
PHONE (541) 673-0166
FAX (541) 440-3392
iemail@ieengineering.com
PROJECT NO. 0149-216
DWG BY: DTM

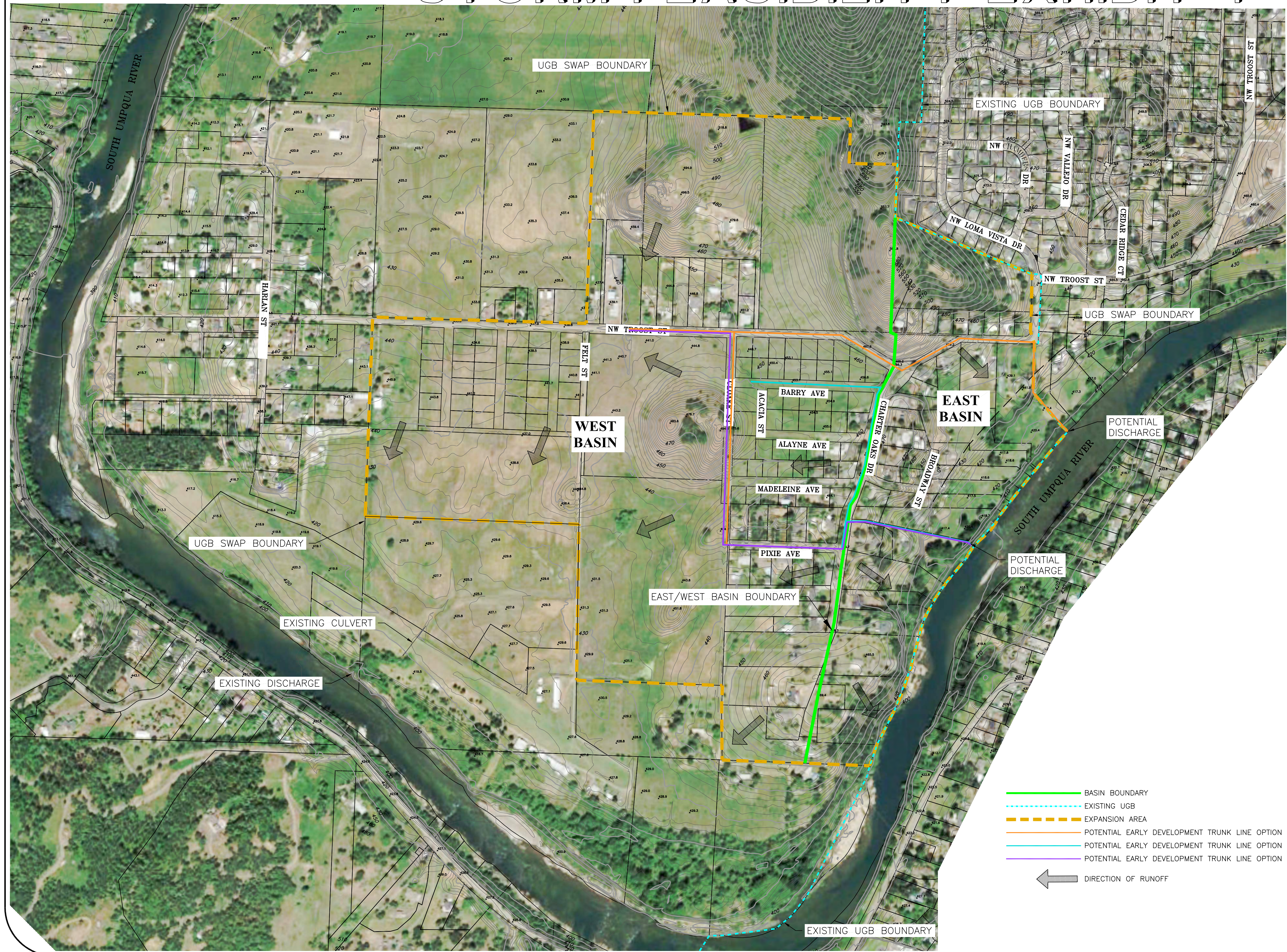
TROOST/CHARTER OAKS EXPANSION AREA

STORM FEASIBILITY EXHIBIT 3

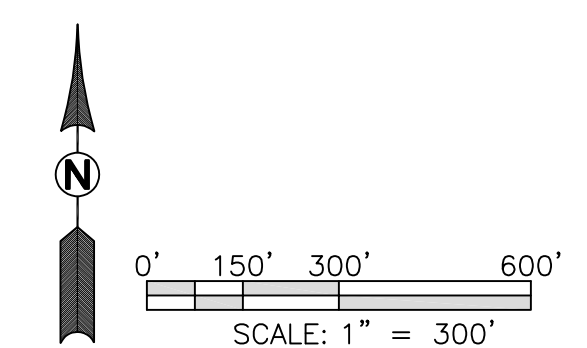


TROOST/CHARTER OAKS EXPANSION AREA

STORM FEASIBILITY EXHIBIT 4



- BASIN BOUNDARY
- EXISTING UGB
- EXPANSION AREA
- POTENTIAL EARLY DEVELOPMENT TRUNK LINE OPTION 1
- POTENTIAL EARLY DEVELOPMENT TRUNK LINE OPTION 2
- POTENTIAL EARLY DEVELOPMENT TRUNK LINE OPTION 3
- DIRECTION OF RUNOFF



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