

Dan,

Roy and I completed some preliminary modeling for the proposed layout you asked about using an 8 inch water main connected to the Terracita Pressure Zone. Couple items to note:

- We used the 2015 calibrated model so there are system demands that are not accounted for from 2015 to 2019.
- We used existing contours to approximate water main elevation as there was no proposed grading.
- We used IDCM peak day demands to approximate the demand from the proposed subdivision.

Available fire flow is as follows in the proposed 8" water main along West Minnesota Street related to J-RC19-74

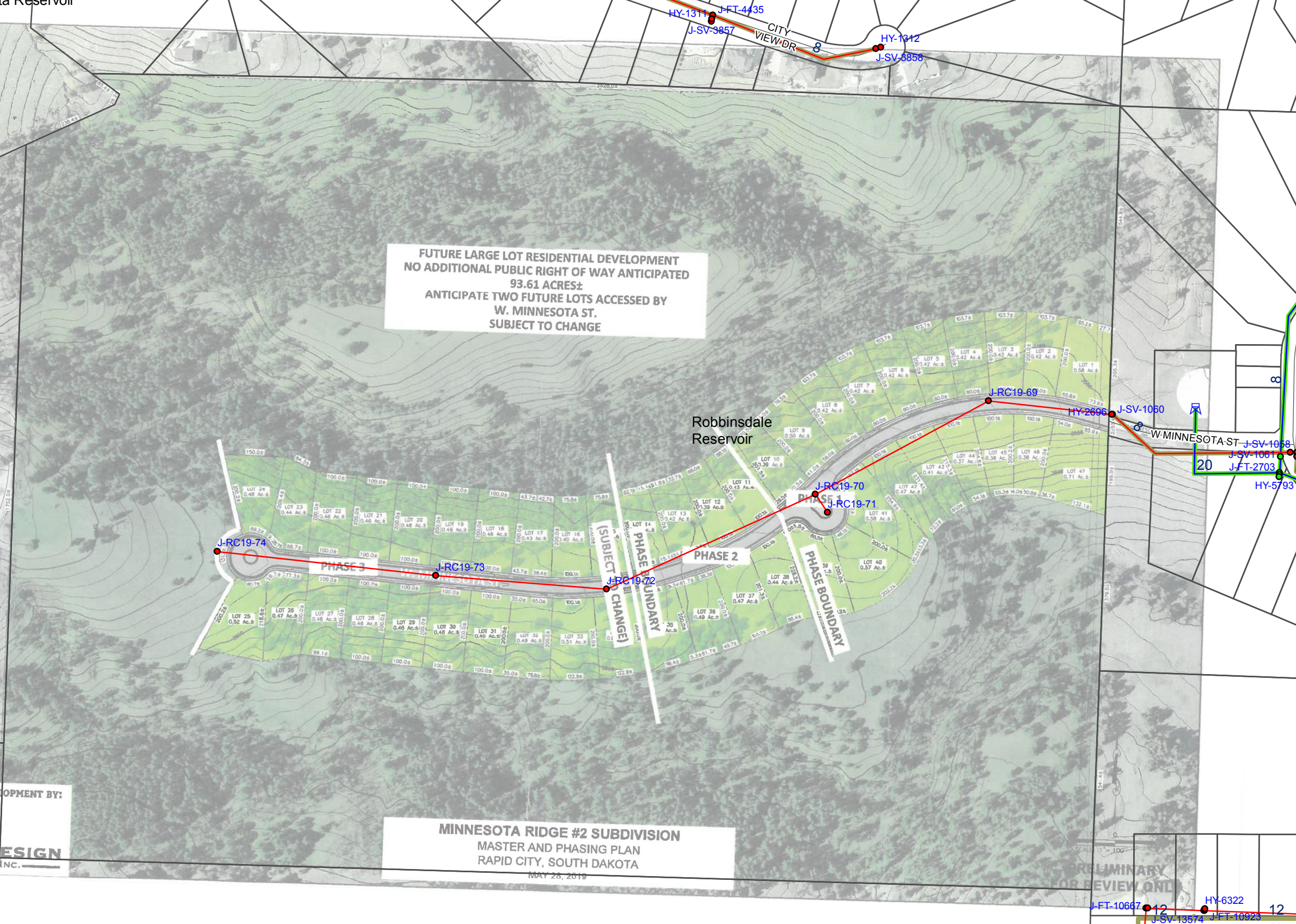
- The available fire flow in the water main at 50% reservoirs is approximately ~380 gpm @ ~20 psi residual. This flow provides for a velocity less than 12 fps in the 8 inch main and satisfies minimum pressure requirements in the area. This is topographically limited by node J-RC19-74.

Keep in mind, constructing this dead end as proposed will reduce the fire flows for many existing homes in the Terracita zone as pressures should not be less than 20 psi in the system (meaning all the existing homes fire flows that may be adequate now will be reduced and may not meet requirements). I would recommend that KTM evaluate some looping options to bolster available flow in this area.

Kind Regards,

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FUTURE LARGE LOT RESIDENTIAL DEVELOPMENT  
NO ADDITIONAL PUBLIC RIGHT OF WAY ANTICIPATED  
93.61 ACRES±  
ANTICIPATE TWO FUTURE LOTS ACCESSED BY  
W. MINNESOTA ST.  
SUBJECT TO CHANGE

Robbinsdale  
Reservoir

PHASE 1

PHASE 2

PHASE 3

(SUBJECT TO CHANGE)

PHASE BOUNDARY

PHASE BOUNDARY

DESIGN  
INC.

MINNESOTA RIDGE #2 SUBDIVISION  
MASTER AND PHASING PLAN  
RAPID CITY, SOUTH DAKOTA  
MAY 28, 2019

PRELIMINARY  
FOR REVIEW ONLY