Review of Ground Water Impacts from Development on the Hogan-Pancost Property

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City of Boulder Planning Board
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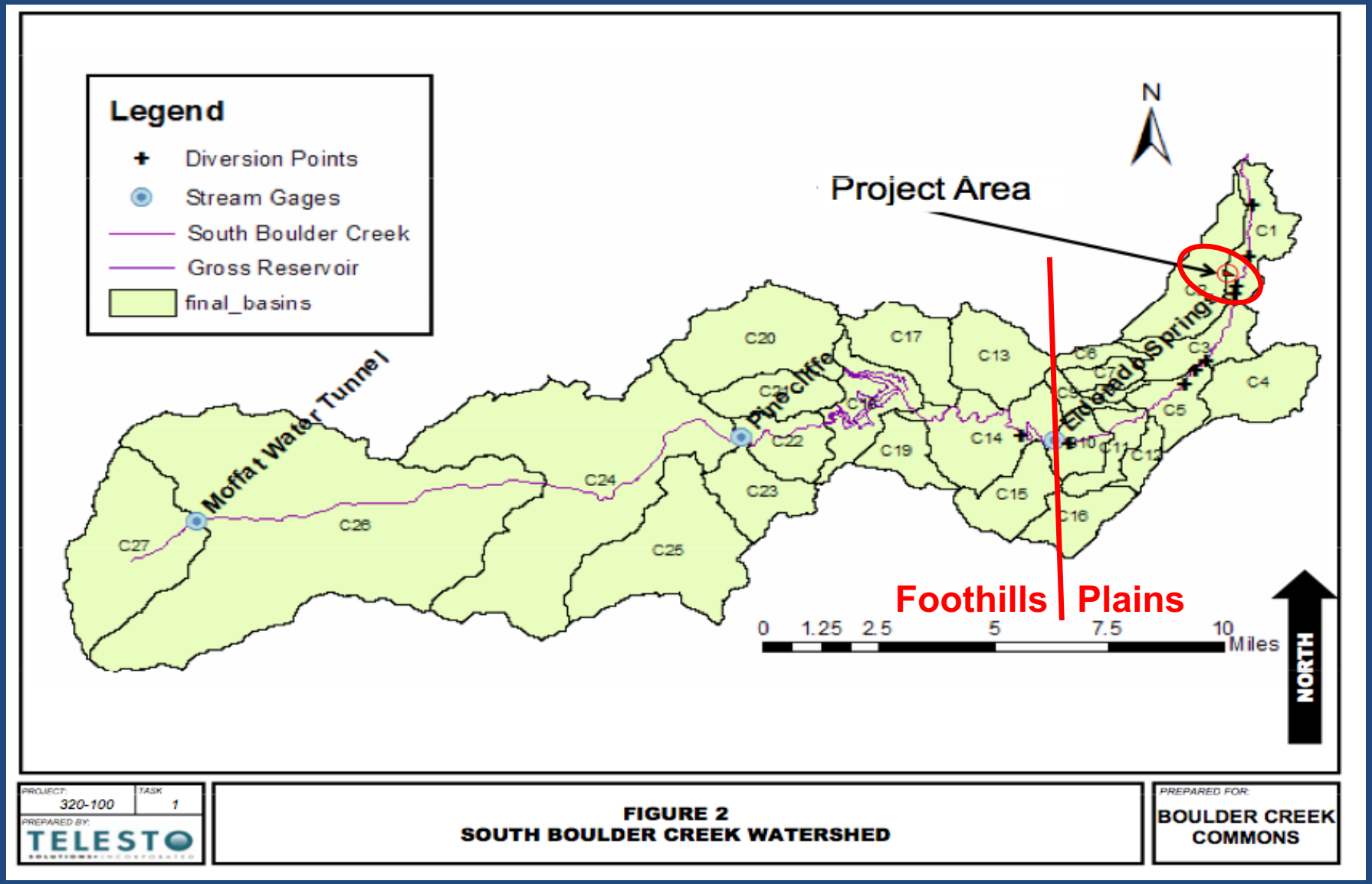
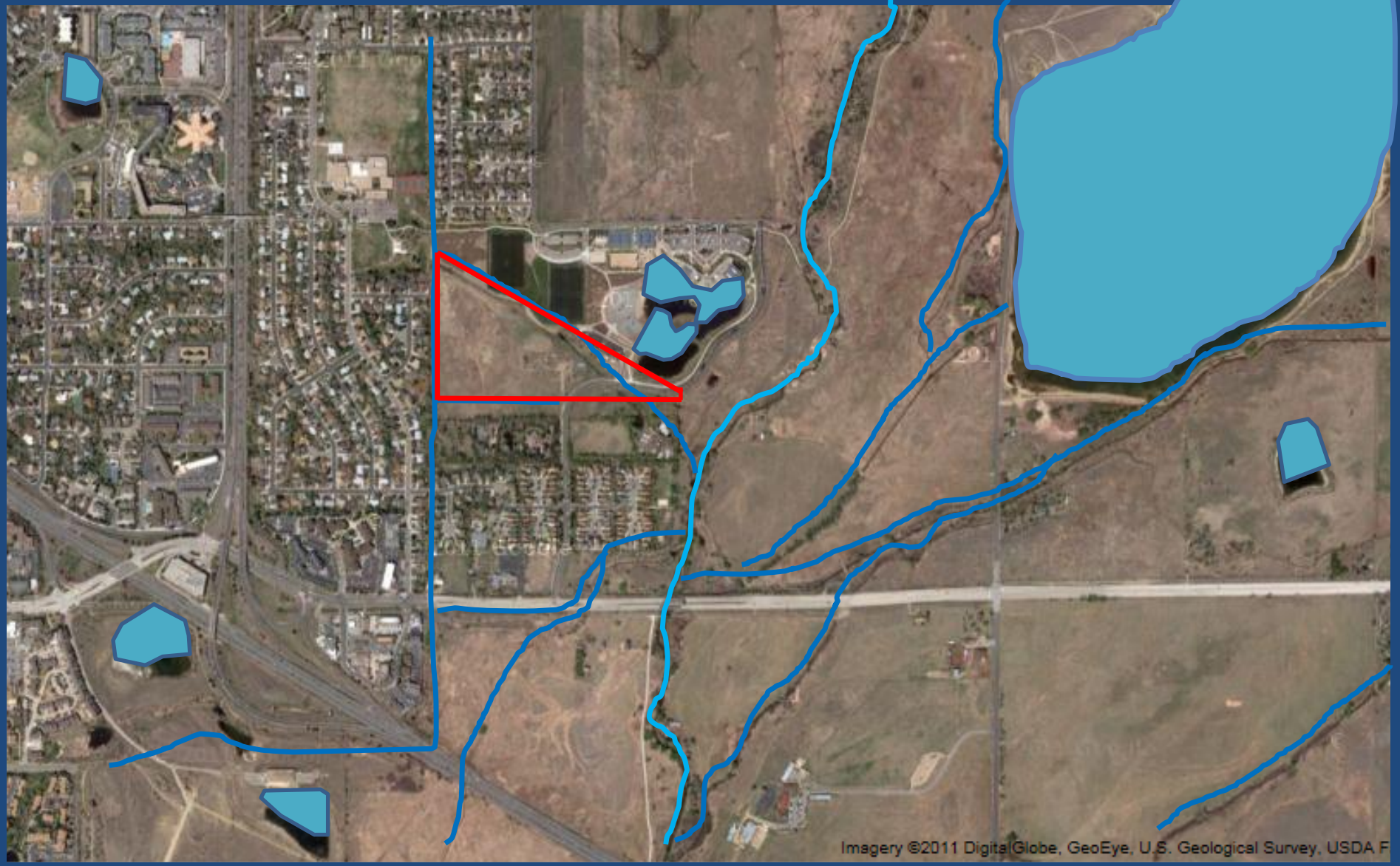
Site is at a constriction in the watershed

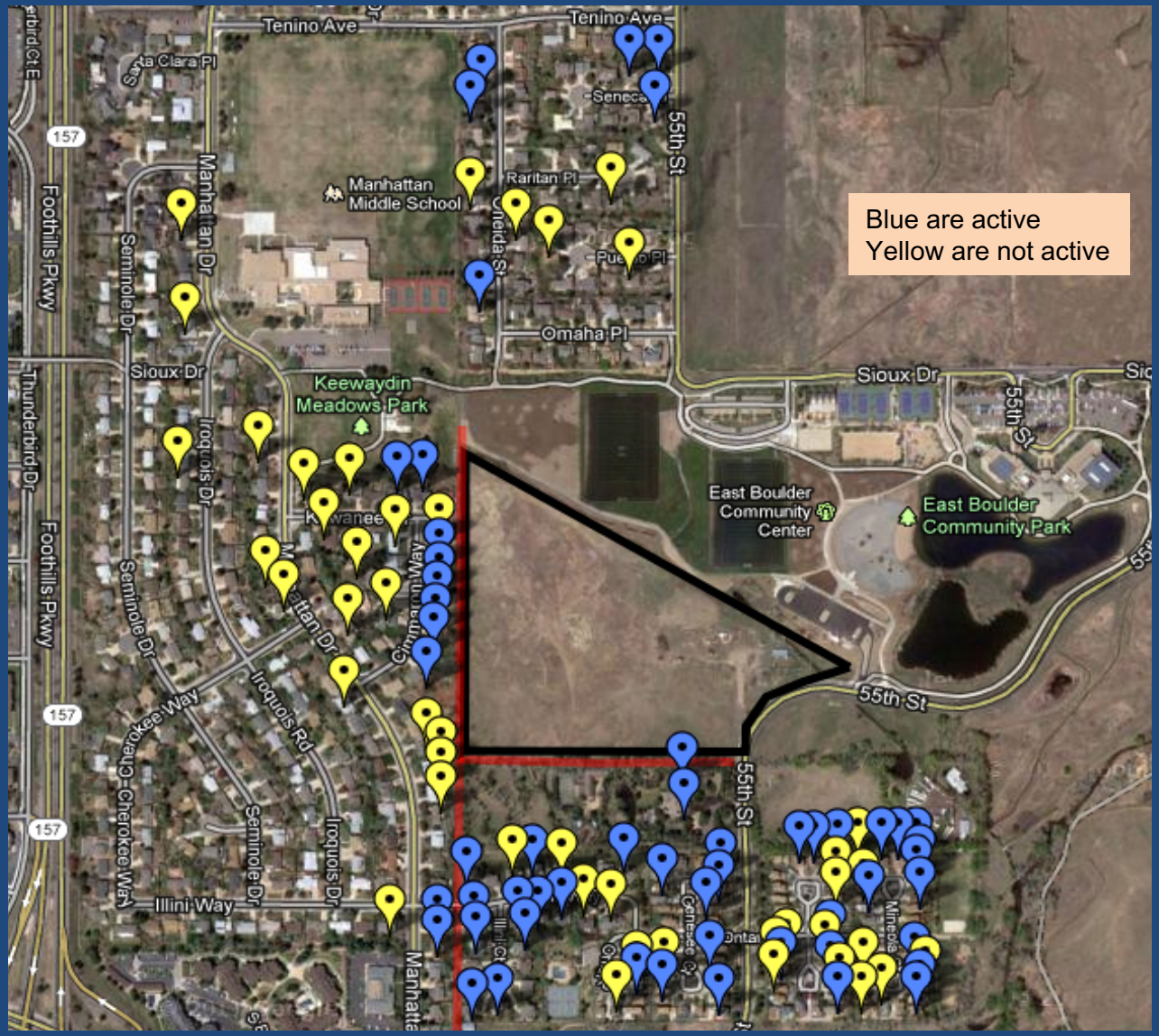


Local Hydrologic Features Lead to High Groundwater Levels



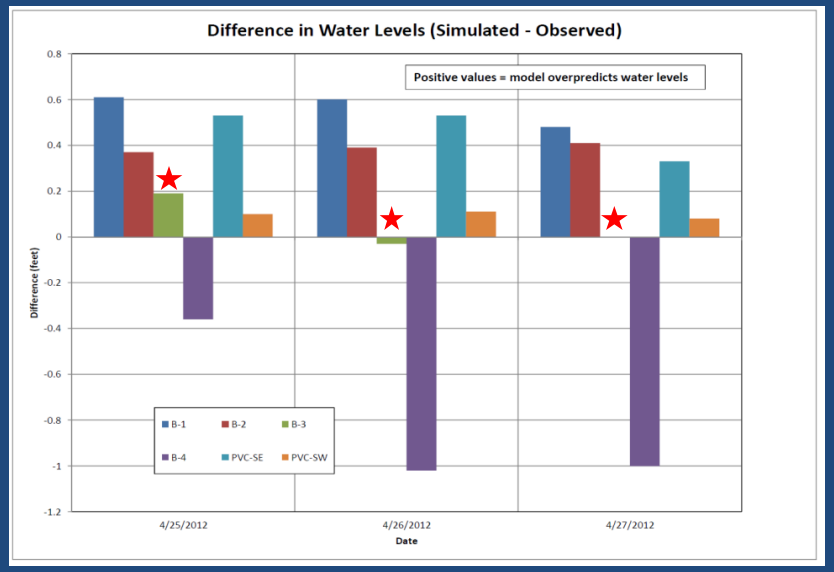
The Area Has Very Shallow Ground Water

Many Sump Pumps Indicate Shallow Groundwater is Common in This Area



Fundamental Errors in Developer's Modeling Led to Wrong Conclusions

- Ignored leakage from ditches that surround the property
- Ignored inflow from high water-use property to the South
- Leakage from DCD # 2 significantly over-estimated.
- Selected only 1 well to justify leakage rate of DCD #2
- Result was development shown to have lower leakage. When corrected, development has twice the leakage, greater flooding risk.
- City's 3rd party Engineer agreed.



Errors in Calculations Lead to Wrong Conclusions about Recharge

Recharge Summary From Table 5, Telesto, June 2012	Developed (gpm)	**Corrected Developed** (gpm)	Current (gpm)	**Corrected Current** (gpm)
Summer				
Areal Recharge	17.8	23.5	0	0
Dry Creek Ditch No 2 Leakage	0	0	64.7	5 - 10
Summer Total	17.8	23.5	64.7	5 - 10
Winter				
Areal Recharge	12.5	15.4	10.2	10.2
Dry Creek Ditch No 2 Leakage	0	0	0	0
Winter Total	12.5	15.4	10.2	10.2
Annual Total	30.3	**38.9**	74.9	**15 - 20**

Summary and Conclusions

- Ground water levels are very high and will remain so due to many factors.
- Development as proposed is likely to:
  - increase recharge,
  - increased ground water levels and
  - increase in flooding problems in surrounding homes.
- The development is not compatible with site conditions; the more development the greater the impacts.
- Independent reviews of the developer's reports are needed to identify errors.