

Analysis of remaining water line replacement in Ruby Ranch

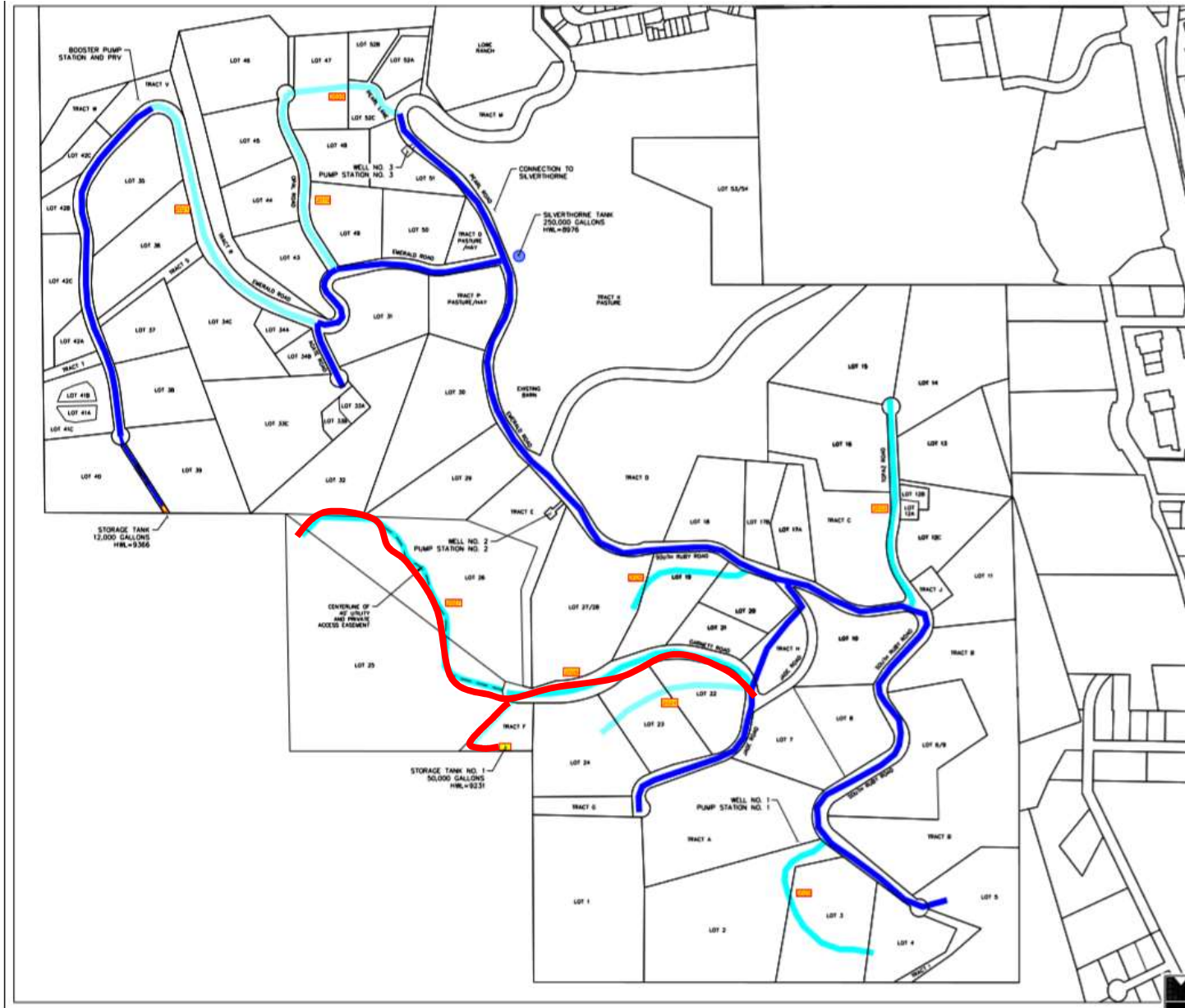
August 21, 2018
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Reasons for analysis

- **Miro Engineering Study stated that if Ruby Ranch continues with a paygo (which would require an extension of the \$140,000/yr (max) mill levy that the costs would range from \$3,100,000 to \$3,700,000.**
 - No attribution was given for these numbers
- **Miro also stated that in a single phase (presumably in 2019) costs would be \$1,800,000 to \$2,200,000.**
 - No detailed breakout given

One reason for high numbers

- **While Eric gave them multiple times what areas needed to be replaced and what areas were complete, at least two areas in Miro are incorrectly shown to be needing replacement.**
- **Next page is Miro's graphic in Cyan (light blue) for needing replacement and Blue (dark blue) for complete. I have overlaid in Red what is already complete**



Input from 10 Mile Engineering (Joe)

- **Looking through my records I have data from 2014 and 2018 on each of the phases**
 - There may be more that I could not find
 - These pages from Joe also contain areas that are already done
 - Joe's pages available upon request
 - These pages match what EJ put in the RFP to Miro
- **In the analysis that follows, only areas actually remaining to be done are included**

Input from 10 Mile Engineering (Joe)

- **There are still some questions on the numbers from Joe that I need answered so this analysis is to be considered preliminary only**
- **The assumptions in this analysis are the “paygo” at a max of \$140,000/yr**
- **Analysis allows that if there is not enough \$\$ in one year that it becomes a savings year (which we have done at least twice so far) and we have 2x the \$\$ the following year**
- **Analysis does not attempt to optimize the order of the phases given that some years are savings years**
- **The higher the inflation, the longer the project goes on**

Conclusions first, detail later if you want

- **7 phases left to complete**
- **Numbers include \$100,000 for well #3 as well as 10% contingency**

Inflation Assumption	Totals	Num Years
0%	\$1,345,727	9
2%	\$1,478,866	9
4%	\$1,637,677	10
6%	\$1,854,039	12

Detail – Spreadsheet Avail Upon Request

Item	Description	BY	2/18	2019	2020	2021		2022		2023		2024		2025		2026	2027		
				const	Opal	All of Pearl Ln		Booster		Rowick		Benum		Lot 19/20/27 Foster		Pass	Topaz		
1	6" c900 305 water main	LF	\$90.50		0	\$0	0	\$0	1750	\$158,375	0	\$0	0	\$0	0	\$0		0	\$0
2	6" Bend and Thurst Block	EA	\$550.00		0	\$0	0	\$0	4	\$2,200	0	\$0	0	\$0	0	\$0		0	\$0
3	6x6x6 Tee, 6x3 Reducer, 6" Plug & TB	EA	\$450.00		0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0		0	\$0
4	6" Gate Valve	EA	\$1,950.00		0	\$0	0	\$0	2	\$3,900	0	\$0	0	\$0	0	\$0		0	\$0
5	Connection to existing 6" system	EA	\$1,950.00		1	\$1,950	1	\$1,950	1	\$1,950	1	\$1,950	1	\$1,950	1	\$1,950		1	\$1,950
6	Connection to existing water service	EA	\$1,650.00		4	\$6,600	3	\$4,950	3	\$4,950	3	\$4,950	3	\$4,950	4	\$6,600		7	\$11,550
7	Connection to existing 3" system	LS	\$2,100.00		1	\$2,100	1	\$2,100	0	\$0	0	\$0	0	\$0	0	\$0		1	\$2,100
8	2" or 3" Gate Valve	EA	\$1,000.00		2	\$2,000	2	\$2,000	0	\$0	2	\$2,000	2	\$2,000	2	\$2,000		2	\$2,000
9	2" or 3" Water Main	LF	\$78.00		1250	\$97,500	950	\$74,100	0	\$0	825	\$64,350	900	\$70,200	810	\$63,180		1250	\$97,500
10	2" or 3" Fittings or Bends	EA	\$450.00		4	\$1,800	4	\$1,800	0	\$0	4	\$1,800	4	\$1,800	3	\$1,350		3	\$1,350
11	Connect to existing Well and Booster Pumps	LS	\$10,000.00		0	\$0	0	\$0	1	\$10,000	0	\$0	1	\$10,000	0	\$0		0	\$0
12	Misc Road and Ditch Repair	LS	\$3,000.00		1	\$3,000	1	\$3,000	1	\$3,000	1	\$3,000	1	\$3,000	1	\$3,000		1	\$3,000
13	Haul off Excess Material - offsite	LS	\$4,000.00		1	\$4,000	0	\$0	1	\$4,000	1	\$4,000	1	\$4,000	1	\$4,000		1	\$4,000
14	Remove and Replace existing 18" Culvert	LS	\$5,400.00		2	\$10,800	1	\$5,400	2	\$10,800	1	\$5,400	2	\$10,800	1	\$5,400		2	\$10,800
15	Revegetation	SY	\$0.96		2500	\$2,400	10000	\$9,600	3000	\$2,880	1750	\$1,680	2000	\$1,920	1750	\$1,680		3500	\$3,360
16	Mobilization and Staging	LS	\$7,000.00		1	\$7,000	1	\$7,000	1	\$7,000	1	\$7,000	1	\$7,000	1	\$7,000		1	\$7,000
17	Insulation 4"	LF	\$6.00		200	\$1,200	200	\$1,200	200	\$1,200	100	\$600	200	\$1,200	200	\$1,200		200	\$1,200
18	Traffic Control	LS	\$3,000.00		1	\$3,000	1	\$3,000	1	\$3,000	1	\$3,000	1	\$3,000	1	\$3,000		1	\$3,000
19	Remove and Replace unsuitable soil	CY	\$44.95		100	\$4,495	50	\$2,248	100	\$4,495	50	\$2,248	75	\$3,371	50	\$2,248		100	\$4,495
20	Air Relief/Blowoff	EA	\$2,200.00		0	\$0	1	\$2,200	0	\$0	1	\$2,200	1	\$2,200	1	\$2,200		1	\$2,200
21	Recycled Base	TON	\$49.00		365	\$17,885	0	\$0	475	\$23,275	185	\$9,065	245	\$12,005	185	\$9,065		340	\$16,660
22	Engineering/Const Management/Testing	EA	\$9,500.00		1	\$9,500	1	\$9,500	1	\$9,500	1	\$9,500	1	\$9,500	1	\$9,500		1	\$9,500
totals no inflation						\$175,230	\$130,048	\$250,525	\$122,743	\$148,886	\$123,373		\$181,665	\$1,132,479					
Balance before construction					\$0	\$140,000	\$104,770	\$114,723	\$4,198	\$21,455	\$12,559	\$29,186	\$169,186						
Tax income					\$140,000	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000						
Balance after construction					\$140,000	\$104,770	\$114,723	\$4,198	\$21,455	\$12,559	\$29,186	\$169,186							

Rough swag on doing all 7 phases in 1 year

- **Assuming Ruby Ranch decides to go into debt this is a rough swag at the reduction in cost**
- **Assumption is the savings is in “Staging & Mobilization”**
 - Would use the same resources as year 2018, at about 3 weeks per phase, do the project over 21 weeks
 - I assume that if additional resources were to be used that the Staging & Mobilization costs would go up
 - No reason to think any of the other line items would have significant savings

Results Single vs Multi Year

- **Financing costs not contained in this**
- **10% Contingency and \$100,000 Well 3 are in this**
 - As start is 2019, the 2018 numbers are adjust for inflation

Inflation Assumption	Multi Year Totals	Single YearTotals	Savings Delta
0%	\$1,345,727	\$1,299,527	\$46,200
2%	\$1,478,866	\$1,325,517	\$153,349
4%	\$1,637,677	\$1,351,508	\$286,169
6%	\$1,854,039	\$1,377,498	\$476,541