

SEWER INFRASTRUCTURE ADVISORY GROUP MEETING 13

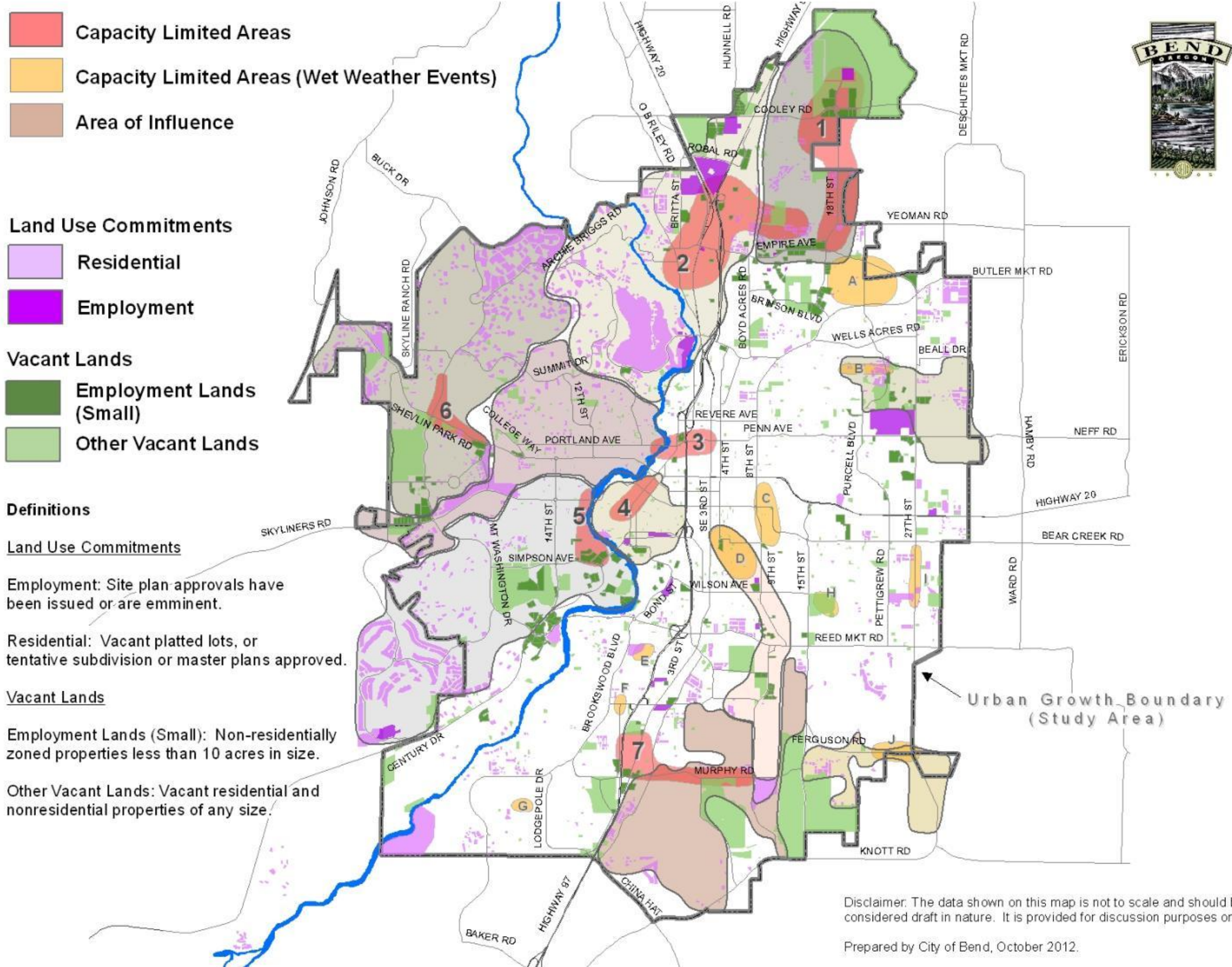
July 25, 2013



PURPOSE OF TODAY'S MEETING

1. Review of Immediate Problems and Solution Development
2. Summarize 4 scenarios for Colorado LS
3. SIAG will identify preferred lift station capacity for 20-year horizon
4. Answer questions regarding lift station design and construction

IMMEDIATE TERM PROBLEMS



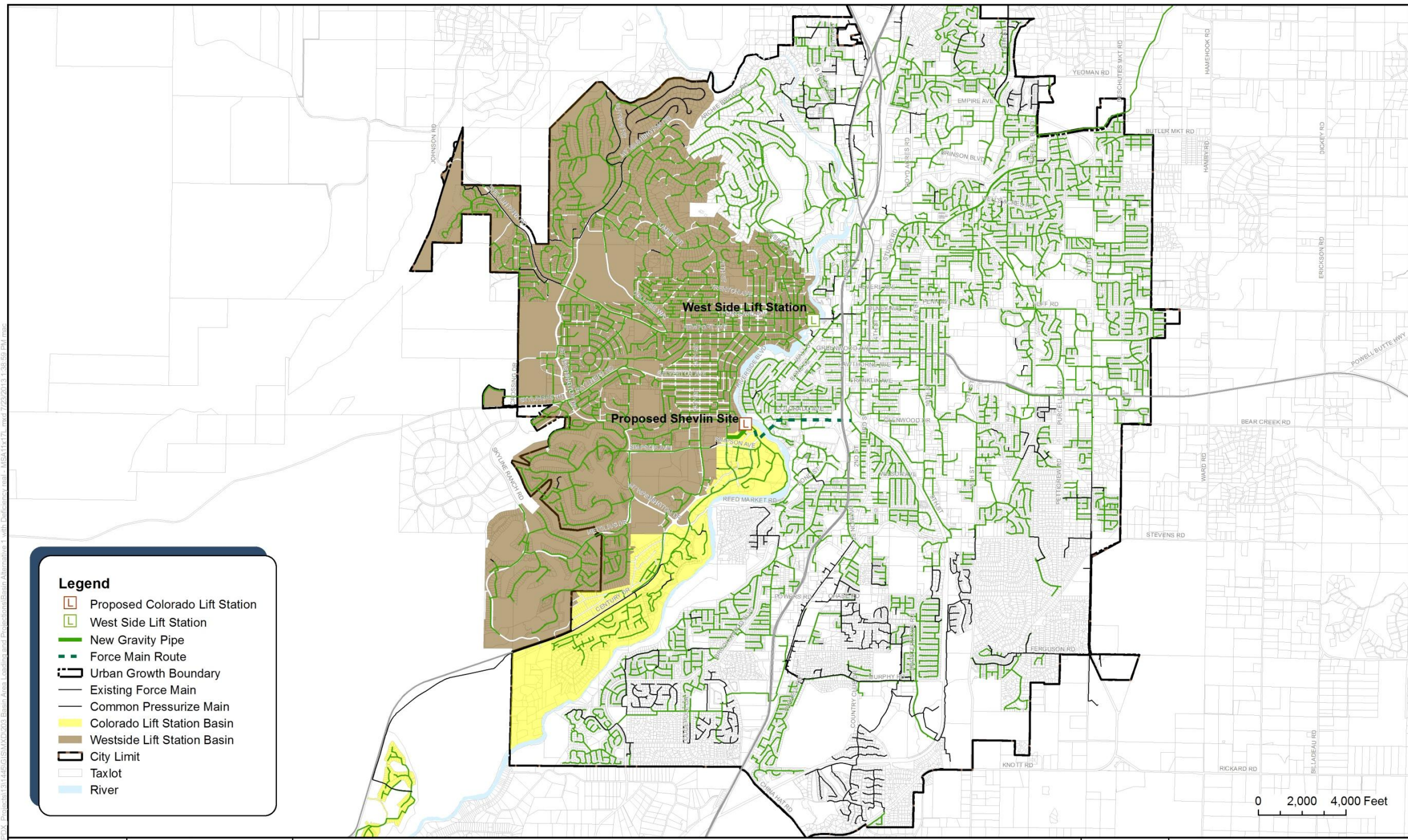
REVIEW OF IMMEDIATE PROBLEMS AND SOLUTIONS DEVELOPMENT

1. SIAG selected 3 areas of limited capacity for analysis (areas 2, 3, and 5)
2. Issues to be managed in the selected Study Areas
 1. Capacity limitations under existing conditions
 2. Potential for sewer overflows
 3. Inadequate capacity to support projected 5-year development
 4. Existing corrosion and odor issues
3. Area 2 solution will be delivered as 2 projects.
 1. First Area 2 project RFP scheduled to be released by early August

COLORADO LS PROJECT DEVELOPMENT

1. Colorado LS was selected by SIAG as the project to address capacity issues in areas 3 and 5.
2. 700 gpm LS with a total project cost of \$4.1 Million was developed as an option to address capacity issues in areas 3 and 5 in the next 5 years (pipeline and Westside LS).
3. “5-Year” project concept is being further developed into an approach that can serve 20-year buildout.

COLORADO LS LOADING SCENARIO 1



Legend

- Proposed Colorado Lift Station
- West Side Lift Station
- New Gravity Pipe
- Force Main Route
- Urban Growth Boundary
- Existing Force Main
- Colorado Lift Station Basin
- Westside Lift Station Basin
- City Limit
- Taxlot
- River

0 2,000 4,000 Feet



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City of Bend Colorado Lift Station
 WORK IN PROGRESS - SUBJECT TO CHANGE



Colorado Lift Station Loading Scenario 1

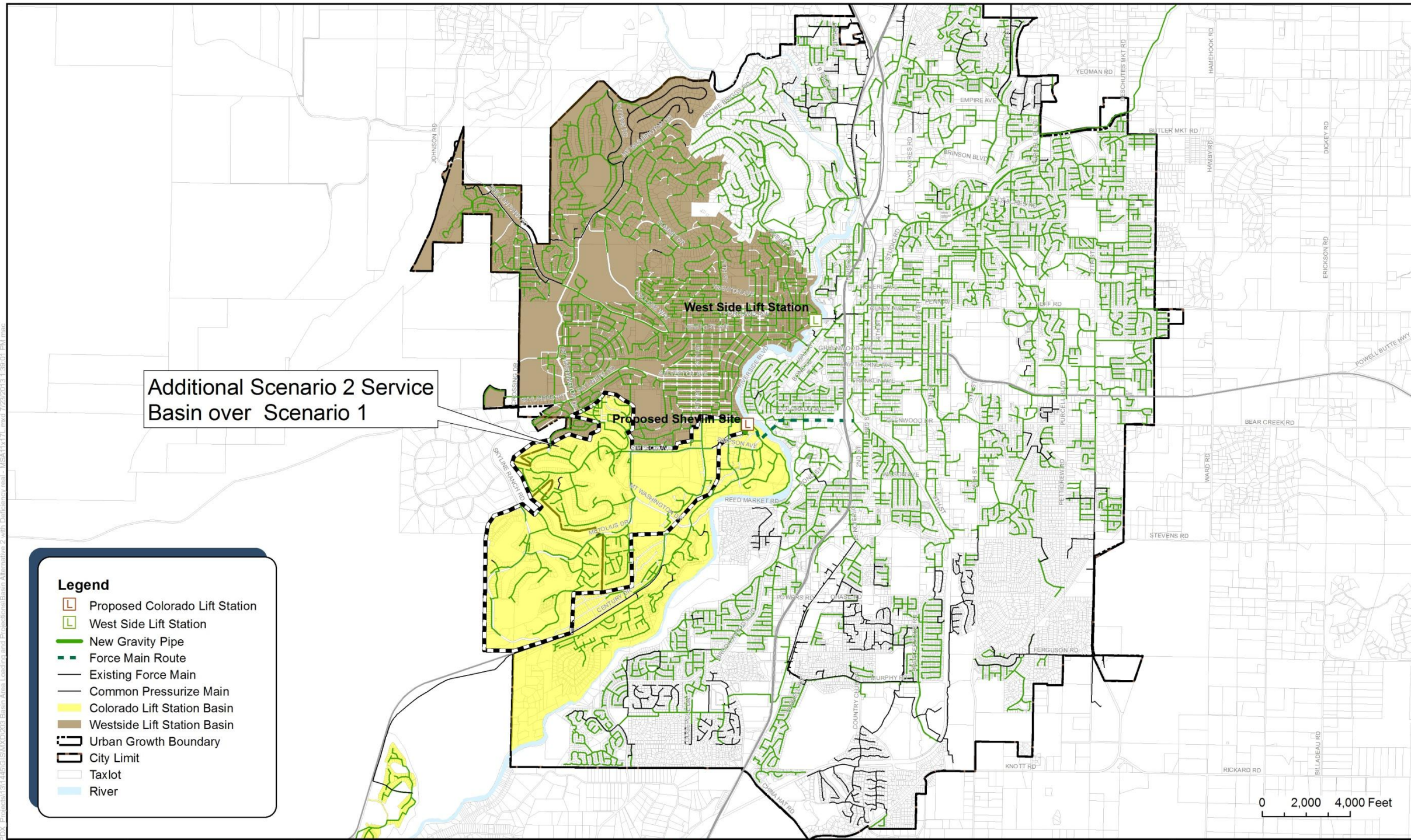
COLORADO LS LOADING SCENARIO 1

1. 1,000 - 1,200 gpm capacity to serve 20-year buildout (yellow basin)
2. Westside LS capacity potentially exceeded in existing condition (with diversion to Colorado LS). Upgrades needed immediately.
3. Additional major renovation needed at Westside LS by Year 10

COLORADO LS LOADING SCENARIO 1

Flow Loading	Description of Required Improvements					Total Cost
	Colorado Lift Station	Upstream Gravity	Force Main	Westside Lift Station	Downstream Gravity	
CSMP Short Term Project for 5-year	Build Colorado LS with firm capacity of 700 gpm \$1.37 Million	-	Build 6,700 LF 8" \$1.97 Million	-	1,100 LF 30"-48" \$765k	\$4.10 Million
Existing	Build Colorado LS with firm capacity of 1,200 gpm \$3.30 Million	Build 1,300 LF 10" \$540k	Build 5,500 LF 10" \$2.60 Million	Replace pumps 3 and 4 to increase firm capacity to 3,900 gpm \$400k	TBD	\$6.84 Million
5-year	-	-	-	-	TBD	-
10-Year	-	-	-	Expand Westside LS firm capacity to 5,200 gpm \$1.77 Million	TBD	\$1.77 Million
20-Year	-	-	-	-	TBD	
Total 20-Year Investment = \$8.61 Million						

COLORADO LS LOADING SCENARIO 2



Legend

- Proposed Colorado Lift Station
- West Side Lift Station
- New Gravity Pipe
- Force Main Route
- Existing Force Main
- Common Pressurize Main
- Colorado Lift Station Basin
- Westside Lift Station Basin
- Urban Growth Boundary
- City Limit
- Taxlot
- River



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**Colorado Lift Station
 Loading Scenario 2**

COLORADO LS LOADING SCENARIO 2

1. 1,800 - 2,000 gpm capacity to serve 20-year buildout
2. Pump replacements at Westside LS by year 5
3. Major renovation required at Westside LS by year 20

COLORADO LS LOADING SCENARIO 2

Flow Loading	Description of Required Improvements					Total Cost
	Colorado Lift Station	Upstream Gravity	Force Main	Westside Lift Station	Downstream Gravity	
Existing	Build Colorado LS with firm capacity of 2,000 gpm \$4.20 Million	Build 1,300 LF 10" \$1.15 Million	Build 5,500 LF 12" \$3.00 Million	Replace pumps 3 and 4 to increase firm capacity to 3,900 gpm \$400k	TBD	\$8.75 Million
5-year	-	-	-	-	TBD	-
10-Year	-	-	-	-	TBD	-
20-Year	-	-	-	Expand Westside LS firm capacity to 4,400 gpm \$1.27 Million	TBD	\$1.27 Million
Total 20-Year Investment = \$10.02 Million						

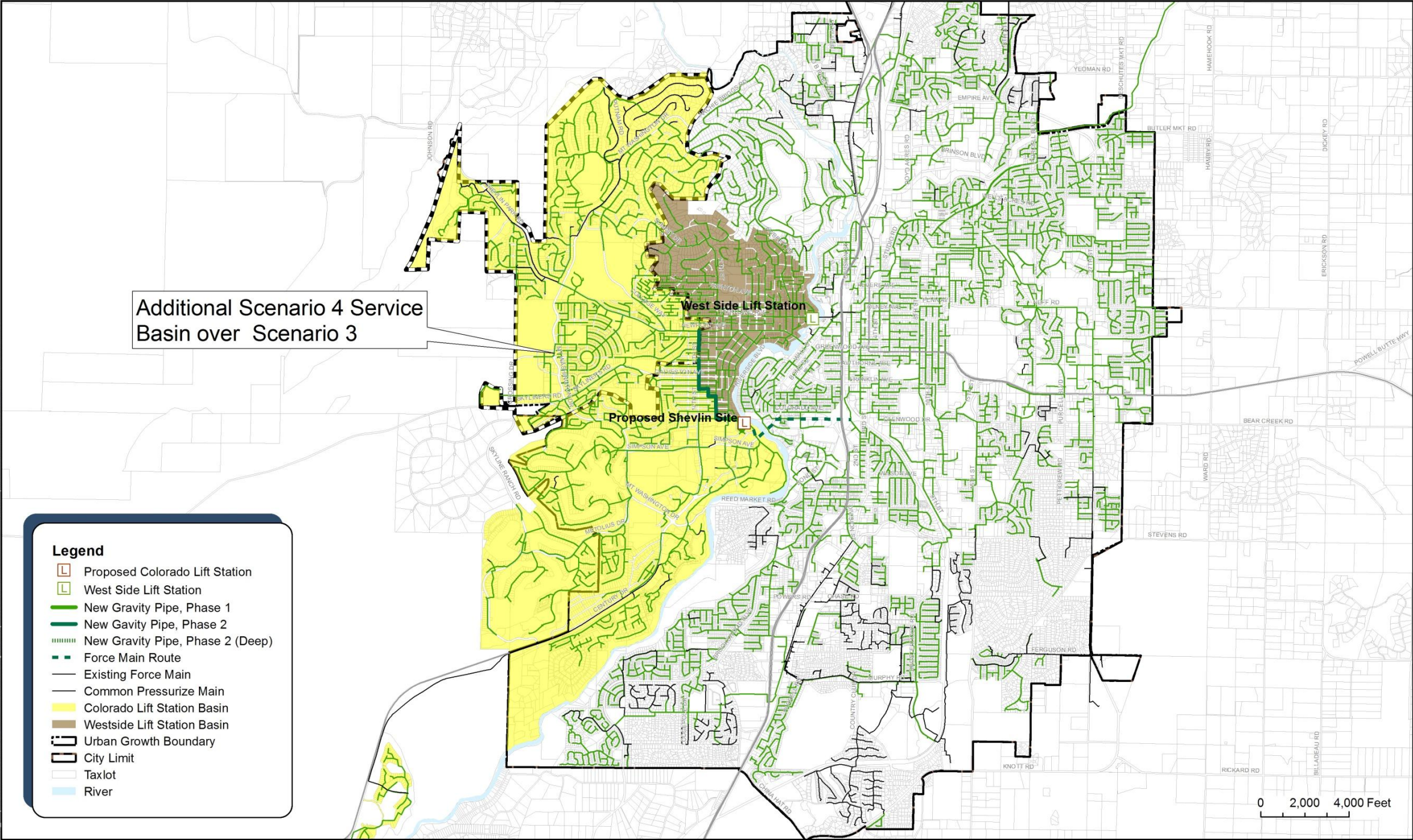
COLORADO LS LOADING SCENARIO 3

1. 2,100 – 2,300 gpm capacity to serve 20-year build-out
2. Pump replacement required at Westside LS in year 5

COLORADO LS LOADING SCENARIO 3

Flow Loading	Description of Required Improvements					Total Cost
	Colorado Lift Station	Upstream Gravity	Force Main	Westside Lift Station	Downstream Gravity	
Existing	Build Colorado LS with firm capacity of 2,300 gpm \$ 5.60 Million	Build 1,800 LF 18" \$960k	Build 5,500 LF of twin 10" and use one \$ 4.00 Million	-	TBD	\$10.56 Million
5-year	-	Build 3,700 LF 8" (phase 2) \$2.40 Million	Start using second 10"	Replace pumps 3 and 4 to increase firm capacity to 3,900 gpm \$400,000	TBD	\$2.80 Million
10-Year	-	-	-	-	TBD	-
20-Year	-	-	-	-	TBD	-
Total 20-Year Investment = \$13.36 Million						

COLORADO LS LOADING SCENARIO 4



Legend

- Proposed Colorado Lift Station
- West Side Lift Station
- New Gravity Pipe, Phase 1
- New Gravity Pipe, Phase 2
- New Gravity Pipe, Phase 2 (Deep)
- Force Main Route
- Existing Force Main
- Common Pressurize Main
- Colorado Lift Station Basin
- Westside Lift Station Basin
- Urban Growth Boundary
- City Limit
- Taxlot
- River



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City of Bend Colorado Lift Station

WORK IN PROGRESS - SUBJECT TO CHANGE



Colorado Lift Station Loading Scenario 4

COLORADO LS LOADING SCENARIO 4

1. 3,500 - 4,000 gpm capacity to serve 20-year build-out
2. No pump replacement required at Westside LS to serve 20-year build-out

COLORADO LS LOADING SCENARIO 4

Flow Loading	Description of Required Improvements					Total Cost
	Colorado Lift Station	Upstream Gravity	Force Main	Westside Lift Station	Downstream Gravity	
Existing	Build Colorado LS with firm capacity of 1,800 gpm \$ 7.40 Million	Build 1,400 LF 24" \$ 1.23 Million	Build 5,500 LF of twin 12" and use one \$ 4.90 Million	-	TBD	\$13.53 Million
5-year	Add pump 4 to increase firm capacity to 4,000 gpm \$150k	Build 5,300 LF 18" (phase 2) \$ 5.62 Million	Start using second 12"	-	TBD	\$5.77 Million
10-Year	-	-	-	-	TBD	
20-Year	-	-	-	-	TBD	
Total 20-Year Investment = \$19.30 Million						

COLORADO LS LOADING SCENARIO 5

1. Hybrid option that can be used to select Loading Scenario 3 initially and provide flexibility to select Loading Scenario 4 with future investment.
2. 3,500 - 4,000 gpm capacity to serve 20-year build-out
3. No pump replacement required at Westside LS to serve 20-year build-out

COLORADO LS LOADING SCENARIO 5

Flow Loading	Description of Required Improvements					Total Cost
	Colorado Lift Station	Upstream Gravity	Force Main	Westside Lift Station	Downstream Gravity	
Existing	Build Colorado LS with firm capacity of 2,300 gpm \$ 5.60 Million	Build 1,400 LF 24" \$ 1.23 Million	Build 5,500 LF of twin 12" and use one \$ 4.90 Million	-	TBD	\$11.73 Million
5-year	-	Build 5,300 LF 18" (phase 2) \$5.62 Million	-	-	TBD	\$5.62 Million
10-Year	-	-	Start using second 12"	-	TBD	-
20-Year	Add pumps 4 and 5 to increase firm capacity to 4,000 gpm \$1.95 Million	-	-	-	TBD	\$1.95 Million

Total 20-Year Investment = \$19.30 Million

COLORADO LS LOADING SCENARIO SUMMARY

1. All scenarios address need to serve development over the next 5 years while providing different levels of service for the next 20-years (industry standard for lift station design).
2. Timeline for design and construction of 1st phase of all loading scenarios is the same.
3. Higher cost options decrease flow to and amount of expansion needed at Westside LS.
4. Higher cost options increase flexibility for City to deal with variability in timing and location of future flows.
5. Design will be checked against 1st run Optimization results in the late fall

Flow Loading Scenario	Colorado LS Design Capacity (gpm)	Required Improvements at Westside LS	Flexibility for Changes in Future Flow Projections	Investment
1	1,200	Upgrades needed immediately Additional major upgrades needed by year 10	None	Initial: \$6.8 Million Year 5: \$0 Year 10: \$1.8 Million Year 20: \$0 Total \$8.6 Million
2	2,000	Upgrades needed by year 5 Additional major upgrades needed by year 20	Low	Initial: \$8.7 Million Year 5: \$0 Year 10: \$0 Year 20: \$1.3 Million Total \$10.0 Million
3	2,300	Upgrades needed by year 5	Medium	Initial: \$10.6 Million Year 5: \$2.8 Million Year 10: \$0 Year 20: \$0 Total \$13.36 Million
4	4,000	None	High – Provides Complete Redundancy for Westside LS	Initial: \$13.5 Million Year 5: \$5.8 Million Year10: \$0 Year 20: \$0 Total \$19.30 Million
5	4,000	None	High – Combination of Scenario 3 and 4	Initial: \$11.7 Million Year 5: \$5.6 Million Year10: \$0 Year 20: \$2.0 Total \$19.3 Million



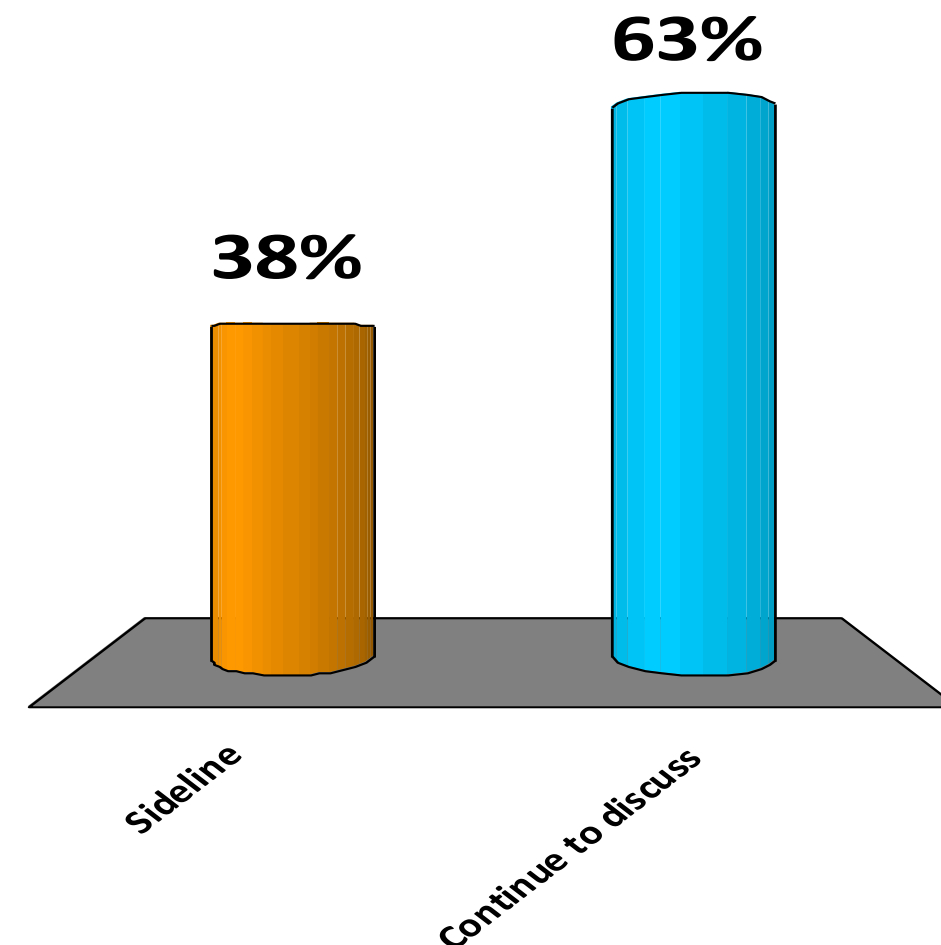
Straw Poll



What should we do with scenario 1: sideline or continue to discuss?

Capacity (gpm)	Required Improvements at Westside LS	Flexibility	Total 20-Year Investment
1,200	<ul style="list-style-type: none">• Upgrades needed immediately• Additional major upgrades needed by year 10	None	\$8.6 Million

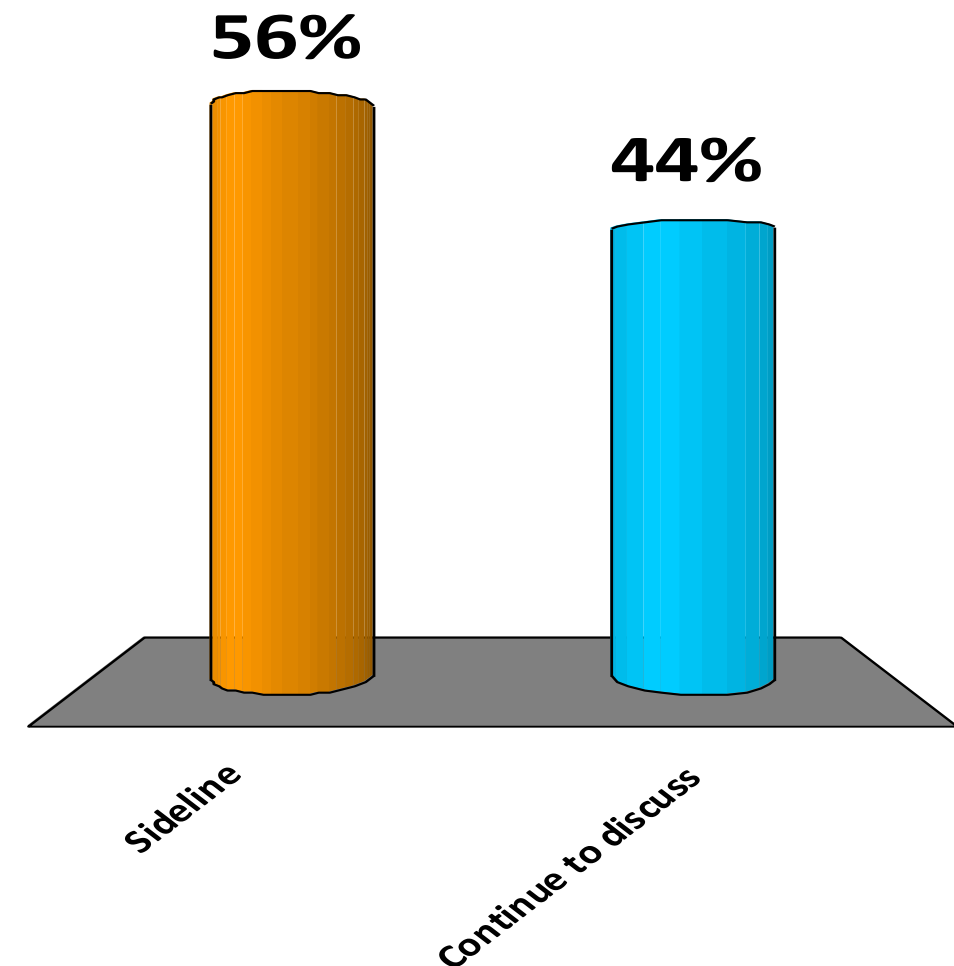
1. Sideline
2. Continue to discuss



What should we do with scenario 2: sideline or continue to discuss?

Capacity (gpm)	Required Improvements at Westside LS	Flexibility	Total 20-Year Investment
2,000	<ul style="list-style-type: none">• Upgrades needed by year 5• Additional major upgrades needed by year 20	Low	\$10.0 Million

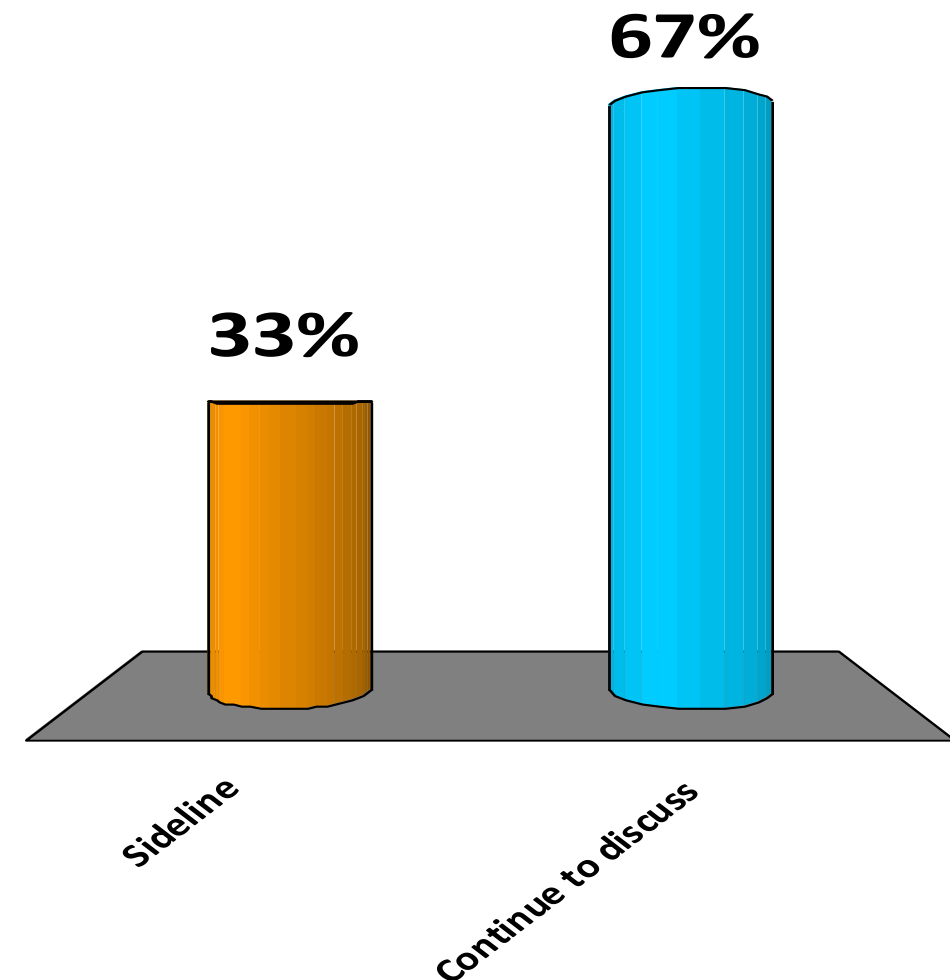
1. Sideline
2. Continue to discuss



What should we do with scenario 3: sideline or continue to discuss?

Capacity (gpm)	Required Improvements at Westside LS	Flexibility	Total 20-Year Investment
2,300	Upgrades needed by year 5	<ul style="list-style-type: none">• Medium• High if combined with Scenario 4	\$13.4 Million

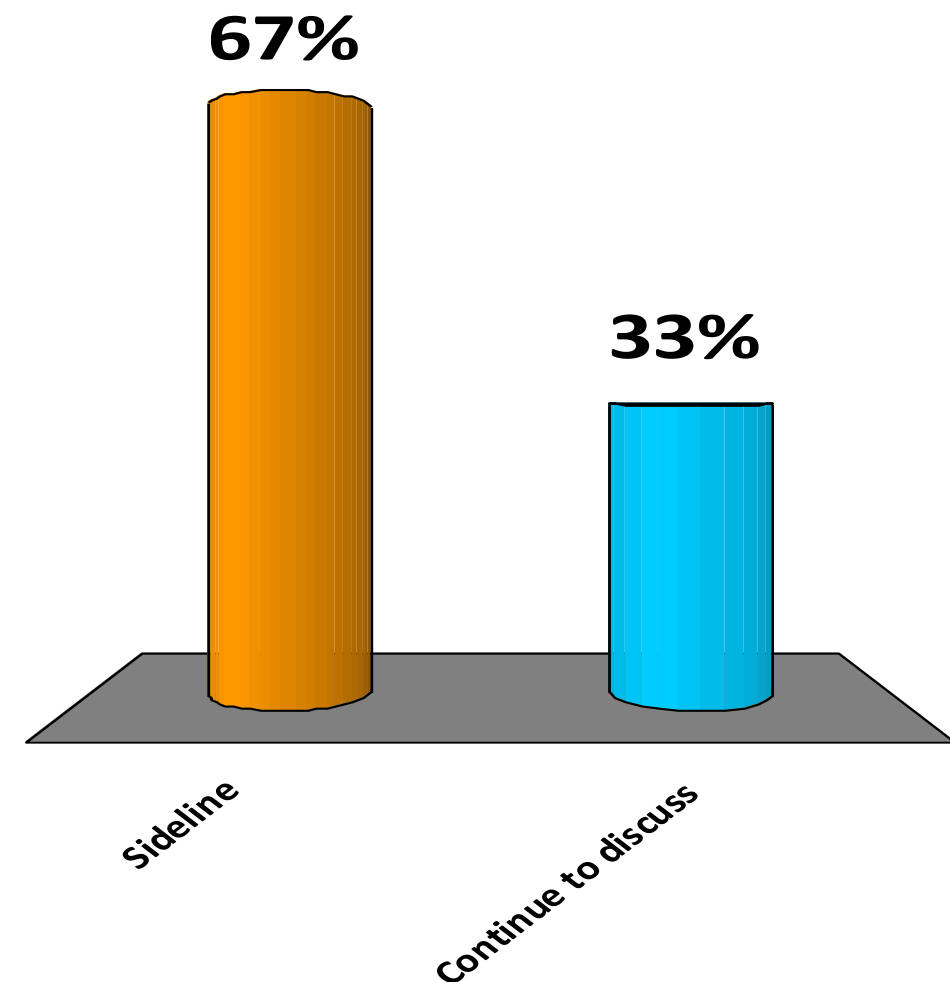
1. Sideline
2. Continue to discuss



What should we do with scenario 4: sideline or continue to discuss?

Capacity (gpm)	Required Improvements at Westside LS	Flexibility	Total 20-Year Investment
4,000	None	High – Can be phased with Scenario 3	\$19.3 Million

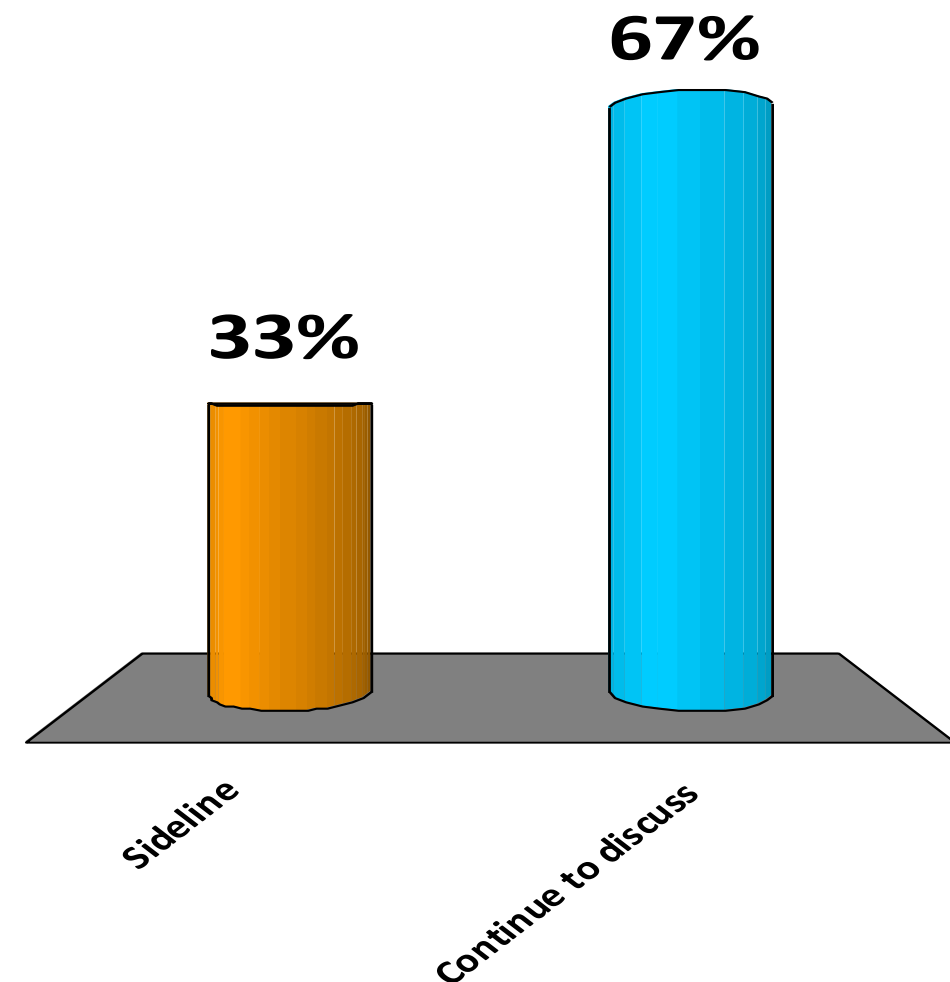
1. Sideline
2. Continue to discuss



What should we do with scenario 5: sideline or continue to discuss?

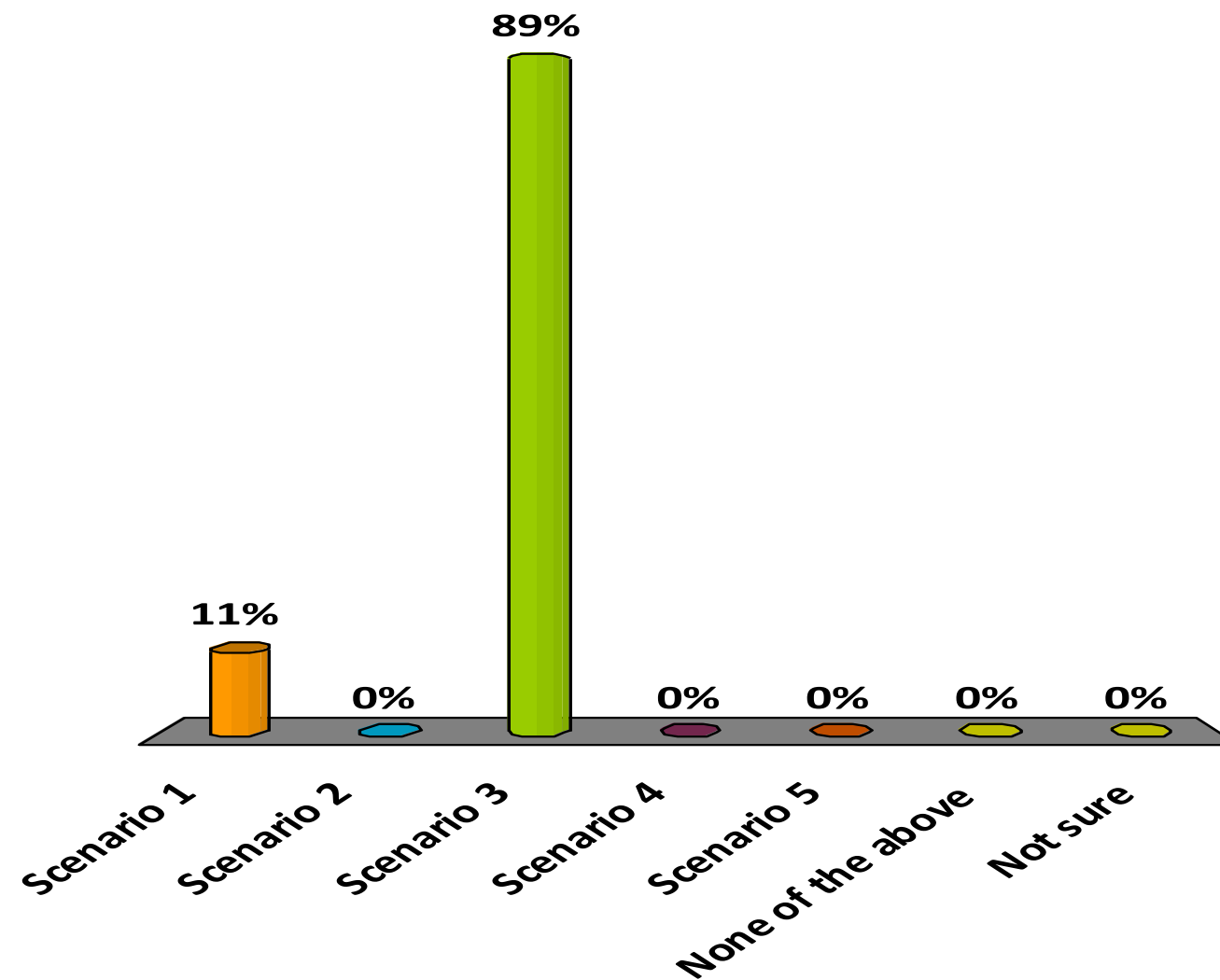
Capacity (gpm)	Required Improvements at Westside LS	Flexibility	Total 20-Year Investment
4,000	None	High – Combination of Scenario 3 and 4	\$19.3 Million

1. Sideline
2. Continue to discuss



Which scenario do you think should be selected for design?

1. Scenario 1
2. Scenario 2
3. Scenario 3
4. Scenario 4
5. Scenario 5
6. None of the above
7. Not sure



Your recommendation...

COLORADO LS NEXT STEPS

1. Concept design in August to determine lift station location and type and force main alignment
 1. Cost
 2. Availability of land/ROW
 3. Impact to adjacent property owners
 4. River crossing construction methods
 5. Pipe type
 6. Lift station type (e.g. submersible pumps, wetwell/drywell)
2. Preliminary Design September-November 2013
3. Final design Winter 2013 - Spring 2014
4. Construction Summer 2014 – Summer 2015