

RESOLUTION NO. R-15-2018

**A RESOLUTION OF EAGLE MOUNTAIN CITY, UTAH,
APPROVING THE EAGLE MOUNTAIN/POLE CANYON SEWER PROJECT
PRELIMINARY ENGINEERING REPORT UPDATE**

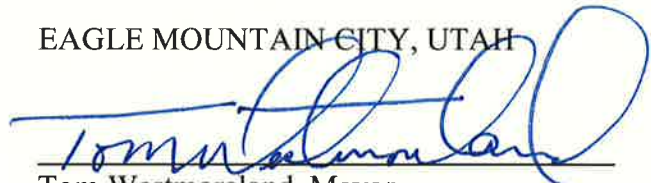
WHEREAS, the City Council of Eagle Mountain City, Utah finds it is in the public interest to approve the Eagle Mountain/Pole Canyon Sewer Project Preliminary Engineering Report Update submitted to the Division of Water Quality by Jackson Engineering;

NOW THEREFORE, BE IT RESOLVED by the Eagle Mountain City Council that:

1. The Eagle Mountain/Pole Canyon Sewer Project Preliminary Engineering Report Update, attached to this Resolution as Exhibit A, be approved.
2. This Resolution shall be effective on the date it is adopted.

ADOPTED by the City Council of Eagle Mountain City this 7th day of August, 2018.

EAGLE MOUNTAIN CITY, UTAH


Tom Westmoreland, Mayor

ATTEST:


Fionnuala B. Kofoed, MMC
City Recorder



CERTIFICATION

The above Resolution was adopted by the City Council of Eagle Mountain City on this 7th day of August, 2018.

Those voting aye:

Donna Burnham

Melissa Clark

Colby Curtis

Stephanie Gricius

Ben Reaves

Those voting nay:

Donna Burnham

Melissa Clark

Colby Curtis

Stephanie Gricius

Ben Reaves

excused



Fionnuala B. Kofoed, MMC
City Recorder

Exhibit A



EAGLE
M O U N T A I N

**Eagle Mountain/Pole Canyon
Sewer Project**

Preliminary Engineering Report Update

Submitted to:

Division of Water Quality

JACKSON ENGINEERING

3376 EAST 8125 SOUTH
COTTONWOOD HEIGHTS, UT 84121
(801) 558-5293

April 2014



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ENVIRONMENTAL MEMORANDUM

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SECTION I

INTRODUCTION

BACKGROUND AND PROJECT SUMMARY

Eagle Mountain is located in the Cedar Valley in Utah County, Utah. The White Hills and White Hills Country Estates subdivisions are located approximately 4 miles to the west of Eagle Mountain adjacent to State Hwy 73. In 2010 these existing subdivisions were part of an annexation into Eagle Mountain City. The sanitary sewer service for the White Hills subdivision is provided by the White Hills Special Service District (WHSSD). Constructed in the mid-1970's the collection system consists of primarily 8" sewer line in roadways with one section of back-lot pipeline with associated manholes and a 12" collector line in Wilson Avenue with associated manholes. Pipeline materials include concrete and PVC. The present treatment system for the WHSSD consists of a three-cell total containment lagoon facility. The lagoons are presently in disrepair and not functioning properly with a failed clay liner allowing for sewage to infiltrate into the ground of the first cell. The primary purpose of this project is to address the failing lagoon facility.

The proposed project address the following primary issues:

1. Resolve the present environmental concern of sewage flows infiltrating into the ground at the failing lagoon facility.
2. Convey sewer flows to the regional wastewater treatment facility thereby eliminating the lagoon treatment facility.
3. Problem sections of collection system due to cracked pipe, groundwater infiltration, root blockages, and "belly's".

The proposed project would provide for the following:

- A. a sewer interceptor pipeline to convey sewage flow from the White Hills Subdivision to the Eagle Mountain Wastewater Treatment Facility. The project includes approximately 24,800 lineal feet of 6" dr17 HDPE, and a sewer lift station including manholes, electrical, etc. This sewer interceptor line would allow for delivery of sewage flows to the regional Eagle Mountain wastewater treatment facility and abandonment of the failing lagoon treatment facility.

- B. Repair of problem sections of collection system due to cracked pipe, groundwater infiltration, root blockages, and "belly's".

The project costs are to borne by the current customers of the WHSSD to address the failed treatment facility and needed repairs to the collection system which serves them. With the annexation of the WHSSD service area into Eagle Mountain, there is an agreement between WHSSD and Eagle Mountain dated September 14, 2010 allowing for the conveyance of the sewer collection and treatment facilities from White Hills Special Service District to Eagle Mountain City. As stated, the proposed project eliminates the lagoon treatment facility and in turn provides for delivery of sewage flows to the regional Eagle Mountain Wastewater Treatment Facility. It is anticipated that the project will be funded with financing assistance from the Utah Water Quality Project Assistance Program (WQPAP). The sewer rate structure for the customers served by the current collection system and a new sewer interceptor will provide for the payback on the WQPAP funding, treatment costs at the Eagle Mountain wastewater treatment facility, and operation and maintenance for the collection system which serves their area.

Treatment System Alternatives

As part of the investigation as to how best resolve the failed sewer lagoon treatment facility four alternatives were considered:

1. No action.
2. Repair and rehabilitation of existing sewer lagoon treatment facility.
3. Installation of a new mechanical treatment facility.
4. Construction of sewer interceptor to convey sewage flows to the Eagle Mountain regional wastewater treatment facility.

Alternative 4 was selected because it conveys sewage flows to the Eagle Mountain Wastewater Treatment Facility, and eliminates the failed lagoon facility. This alternative provides a long term solution with least amount of added operational and maintenance costs for the treatment of sewage flows from this community while promoting the regional treatment of sewage flows within Eagle Mountain.

Collection System Alternatives

As part of the investigation as to how best resolve the deficiencies in the collection system facilities three alternatives were considered:

1. No action.
2. Provide "Spot Repairs" at problems areas.
3. Reconstruct a new collection system.

Alternative 2 was selected due to minimizing impact to existing roadways and surface improvements, and less cost than reconstruction. Down line cleaning and slip-line technologies can be implemented at many locations eliminating the need for excavation.

**SECTION II
EXISTING AND FUTURE CONDITIONS**

The White Hills subdivision was constructed in the late 1970's and early 1980's. There are presently 115 active connections of 135 residential home lots. The existing WHSSD facilities were installed as part of the White Hills subdivision. The system consists of 8-inch to 12-inch gravity flow pipelines and a total containment lagoon treatment facility, as shown in Figure 1. The system is currently owned and operated by the White Hills Special Service District (WHSSD). With the annexation of the WHSSD service area into Eagle Mountain, there is an agreement between WHSSD and Eagle Mountain to convey the sanitary sewer facilities to Eagle Mountain City. Current and future population projections are shown in Table 1. An Equivalent Residential Connection (ERC) equals 3.5 persons.

Table II-1 - Equivalent Residential Connections

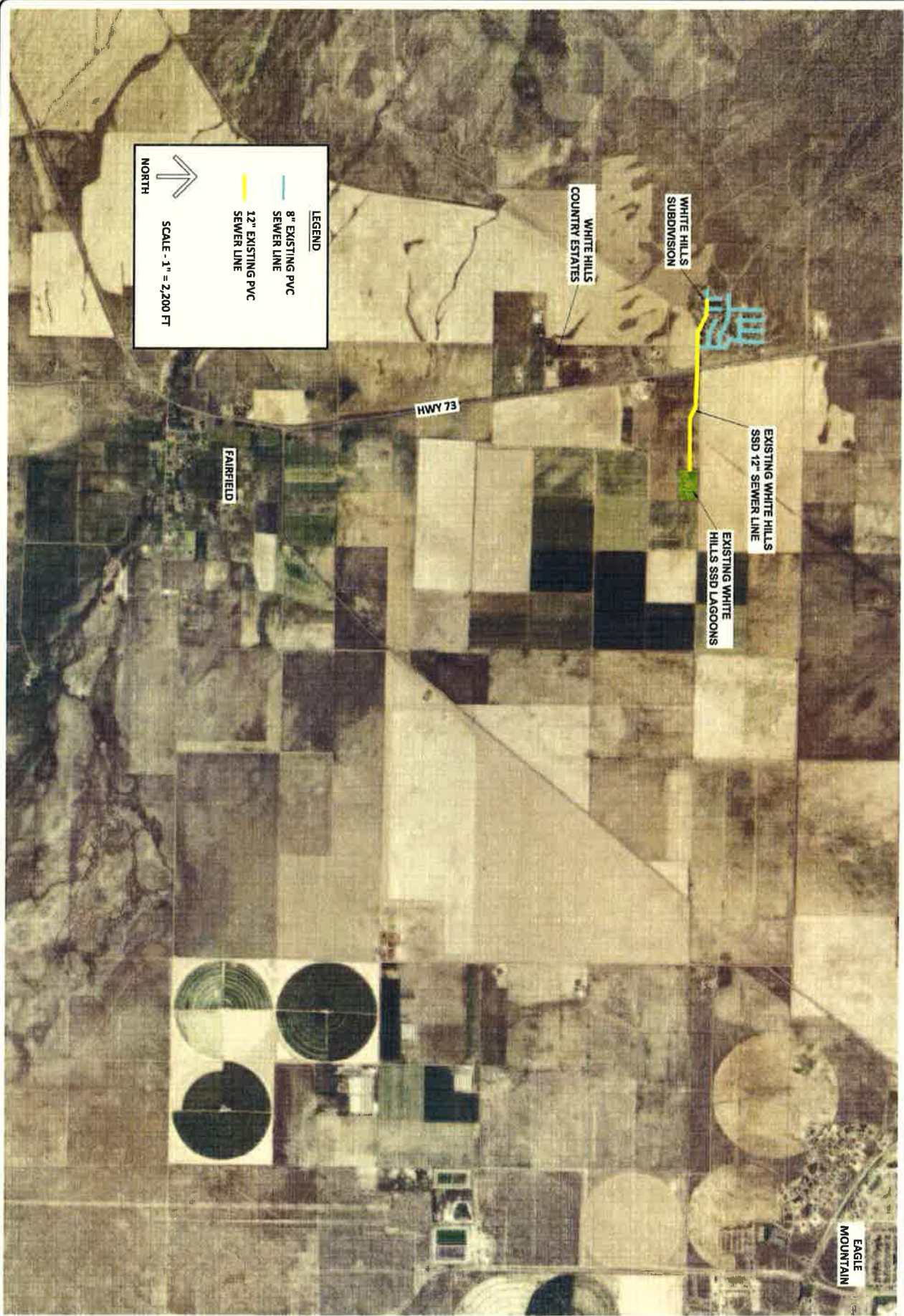
Current		Build-out	
ERC	Population	ERC	Population
115	403	135	473

Treatment System

As stated previously, the WHSSD has a three-cell lagoon facility. The total combined area is approximately 292,000 square feet or 6.7 acres. These lagoons have a design hydraulic capacity of approximately 45,000 gallons per day assuming typical infiltration, evaporation and precipitation rates for the area. The lagoon cells have not been maintained with heavy brush growth present in each cell and non-functioning liner. The lagoons are presently in disrepair and not functioning properly.



Existing Treatment Lagoon Cell One and Two respectively



LEGEND

- 8" EXISTING PVC SEWER LINE
- 12" EXISTING PVC SEWER LINE

SCALE - 1" = 2,200 FT

NORTH

FIGURE 1

**EAGLE MOUNTAIN / POLE CANYON SEWER PROJECT
EXISTING SEWER SYSTEM
PHASE 1 SEWER INTERCEPTOR TO EAGLE MOUNTAIN
WASTE WATER TREATMENT FACILITY**

JACKSON ENGINEERING, LLC
 3376 BYONEMILL LANE, SALT LAKE CITY UTAH 84121
 (801) 558-8293



Collection System

As stated previously, the existing collection system consists of 8-inch and 12-inch gravity flow pipelines and concrete manholes. The pipeline materials include concrete and PVC. This includes approximately 7,900 lineal feet of 8-inch and 4,800 lineal feet of 12-inch pipeline. The interior collection system of the subdivision is 8-inch piping. The main collector line in Wilson Ave is a 12-inch pipeline and continues from the subdivision to the east approximately 2,700 feet to the lagoon treatment facility. The main collector located along Wilson Ave. is a 12-inch diameter pipe laid at 2.7% to 4.0% slope. For this analysis, total pipe capacity will be taken as flowing 75% full. Thus according to original construction drawings, the total capacity of the Wilson Ave. collector is **1900 gallons per minute (gpm)**. Assuming a load of 340 gallons per day per ERC (gpd/ERC) and peak factor of 1.5 for the 12-inch main collector the current and build-out flow conditions for the 12-inch main collector are detailed in Table 2.

Table II-2 - Sewer Flows

Current		Build-out	
ERC	Flow (gpm)	ERC	Flow (gpm)
115	41	135	48

Video inspection of the collection system conducted in May 2013 identified many locations within the collection system in need of repair. Common repair needs include cracks in concrete pipe with root penetration and migration, cracks in PVC pipe, root penetration at joints, buried manhole access, and belly's in pipe causing restriction of flow and settlement of solids.



Root penetration into concrete sewer line



Belly in PVC sewer line



Cracked concrete sewer line

SECTION III

ENVIRONMENTAL REVIEW

A. TREATMENT SYSTEM

For treatment system alternatives 2 and 3, project impacts would be contained within the existing lagoon facility property. For alternative 4, the proposed pipeline corridor was evaluated as part of the environmental review.

FLOOD PLAINS AND WETLANDS

A memorandum attached in the Appendix details findings of wetlands evaluation for the Alternative 4 pipeline alignment. The evaluation found that none of the information reviewed indicated that wetlands are likely in the project study area. Specific field inspection of the alignment will be conducted as part of the project design to confirm no wetlands are impacted by the project. If encountered, wetlands will be handled in accordance with applicable regulations.

The project area is not located within any special flood hazard area.

HISTORICAL AND ARCHAEOLOGICAL SITES

A memorandum attached in the Appendix details findings of cultural resources survey conducted along the proposed Alternative 4 pipeline alignment. The evaluation found that the proposed pipeline alignment would cross the route of the Pony Express Trail. Although the segment of the trail that would be affected has not been listed as an archaeological site the entire trail has been nominated for listing in the National Register. Specific field inspection of this crossing point will be conducted as part of the project design and special measures taken as needed at this crossing location.

AGRICULTURAL LANDS

The Alternative 4 pipeline alignment crosses agricultural lands. Activities for construction will include excavation and backfill of a utility trench. The surface will be restored and returned to historical use.

BIOLOGICAL RESOURCES

It is anticipated that risk to wildlife, fish, and plants will be minimal as disturbed areas will be reseeded with appropriate mix for native plant, shrubs, forbs, grasses the first fall

following construction activities. A revegetation plan will include measures to control noxious weeds. Monitoring would be provided to ensure success of the mitigation.

AIR QUALITY

The Contractor constructing the project will be required to develop and submit a Fugitive Dust Control Plan to the Division of Air Quality in compliance with the requirements of R307-309-4 of the State of Utah Air quality Rules. The Contractor will be required to implement that plan and provide a positive means to prevent or minimize air-borne dust from dispersing into the atmosphere.

WATER QUALITY

The construction contractor will provided needed erosion control measures in accordance with the SWPPP for the project.

DIRECT AND INDIRECT IMPACTS

Potential direct and indirect impacts associated with each of the environmental categories above have been addressed in their respective sections above. In summary potential impacts from the proposed project could include:

1. Crossing of Pony Express Trail. Specific care and special measure of construction at this crossing point will be implemented as needed.
2. Potential pollution from storm water or dust suppression activities during the project construction.
3. Impacts to air quality from fugitive dust created by construction activities.

MITIGATING ADVERSE IMPACTS

The potential adverse impacts will be mitigated as follows:

1. Contractors constructing the sewer interceptor line will be required to obtain required permits to comply with City, State, and Federal storm water management regulations and requirements, including submitting the Notice of Intent to the Division of Water Quality and preparing and implementing a Storm Water Pollution Prevention Plan.
2. Contractors that will be constructing the project will be required to develop and submit a Fugitive Dust Control Plan to the Division of Air Quality in compliance

with the requirements of R307-309-4 of the State of Utah Air quality Rules. The Contractor will be required to implement that plan and provide a positive means to minimize air-borne dust related to construction activities from dispersing into the atmosphere.

B. COLLECTION SYSTEM REPAIRS

For collection system alternatives 2 and 3, project impacts would be contained within the existing White Hills Subdivision.

FLOOD PLAINS AND WETLANDS

The project area or White Subdivision is not located within any special flood hazard area. Sewer lines are located primarily in improved roadways. A section of sewer line runs along a back lot line of the subdivision through improved private lots. Although unlikely, if encountered, wetlands will be handled in accordance with applicable regulations.

HISTORICAL AND ARCHAEOLOGICAL SITES

The project area or White Subdivision is not located within any historical and archaeological areas. Sewer lines are located primarily in improved roadways. A section of sewer line runs along a back lot line of the subdivision through improved private lots.

AGRICULTURAL LANDS

The project area or White Subdivision is not on agricultural lands. Sewer lines are located primarily in improved roadways. A section of sewer line runs along a back lot line of the subdivision through improved private lots.

BIOLOGICAL RESOURCES

It is anticipated that risk to wildlife, fish, and plants will be minimal as disturbed areas as the project area is within the White Subdivision. Sewer lines are located primarily in improved roadways. A section of sewer line runs along a back lot line of the subdivision through improved private lots. Vegetation consists of sod and residential landscaping which will be restored if disturbed.

AIR QUALITY

The Contractor constructing the project will be required to develop and submit a Fugitive Dust Control Plan to the Division of Air Quality in compliance with the

requirements of R307-309-4 of the State of Utah Air quality Rules. The Contractor will be required to implement that plan and provide a positive means to prevent or minimize air-borne dust from dispersing into the atmosphere.

WATER QUALITY

The construction contractor will provided needed erosion control measures in accordance with the SWPPP for the project.

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2. Contractors that will be constructing the project will be required to develop and submit a Fugitive Dust Control Plan to the Division of Air Quality in compliance with the requirements of R307-309-4 of the State of Utah Air quality Rules. The Contractor will be required to implement that plan and provide a positive means to minimize air-borne dust related to construction activities from dispersing into the atmosphere.

SECTION IV ALTERNATIVES ANALYSIS

A. TREATMENT SYSTEM

With the primary purpose of the project being to address the failing existing treatment system, the following four alternatives were evaluated:

1. No action.
2. Repair and rehabilitation of existing sewer lagoon treatment facility.
3. Installation of a new mechanical treatment facility.
4. Construction of sewer interceptor to convey sewage flows to the Eagle Mountain regional wastewater treatment facility.

Alternative 1. No Action

Under the No Action Alternative repair or replacement of the failing lagoon facility would not occur. Sewage flows would continue to infiltrate in the ground creating environmental problem and potential water quality issues as well as public health risk due to improper treatment of domestic sewage flows.

No Action Alternative Costs

There is no cost associated with the No Action alternative.

Non-monetary Pros and Cons

Pros

1. None.

Cons

1. Continued discharge of untreated sewage flows into ground.
2. Potential groundwater quality impacts.
3. Health concerns relating to unmaintained open air lagoon facility.

Alternative 2. Repair and Rehabilitation of Existing Lagoon Treatment Facility

This alternative involves the repair and rehabilitation of the existing treatment lagoons. The lagoons would be used exclusively by the White Hills Subdivision due to the fact that the treatment lagoons currently operate at or near hydraulic capacity. The existing treatment lagoons are adequately sized to store and treat the current flow conditions;

however, through the years they have fallen into disrepair. The lagoons contain original clay liners which have dried and cracked allowing partially treated wastewater to percolate into the substrata which could pose serious health issues in regards to groundwater supplies. This is an issue that must be rectified. While rehabilitating the ponds would protect groundwater supplies, this option would most likely be classified as a maintenance issue and therefore any previously collected impact fees may not be available to assist in funding. In order to keep the treatment lagoons in operation for the existing White Hills Subdivision residents, some repairs and rehabilitation will need to be performed. Each cell of the lagoons will need to be grubbed, regraded, and re-surfaced with rip-rap in order to meet State requirements. To insure that the lagoons are able to independently contain the wastewater, they will need to be relined and/or resealed using either a synthetic or natural liner. The headworks to the lagoons will also need to be upgraded with flow metering capabilities. In addition to construction efforts, permitting efforts will be required in order to comply with State standards.

Repair and Rehabilitation Alternative Costs

Estimated cost for this alternative are outlined as follows:

Initial Construction Costs

1. Clear, grub, and re-grade lagoon cells	6.7 ac	\$150,000
2. Import and compact new clay liner	11,000 cy	\$250,000
3. Upgrade headworks	1 EA	\$30,000
4. Permit Compliance	1EA	\$15,000
5. Mobilization	1 EA	5,000
6. 20% Contingency	1 EA	<u>\$90,000</u>
	Total Construction	\$540,000

Operation and Maintenance Costs

1. 20 year operations and maintenance	\$5,000/yr @2%	\$123,000
2. 10 year clay liner Replacement	11,000 cy	\$300,000
3. 20 year clay liner replacement	11,000 cy	\$360,000

ALTERNATIVE #2 TOTAL 20 YEAR COST \$1,323,000

Non-monetary Pros and Cons

Pros

1. Relatively low initial cost.

Cons

1. Any future increase in capacity requires more ground.
2. Continual maintenance of clay liner system.
3. Continued satellite treatment facility within Eagle Mountain.

Alternative 3. Installation of a New Mechanical Treatment Facility

This alternative involves changing the treatment process to a new mechanical treatment system. For the flow volumes a packaged treatment system has been considered. This new mechanical treatment system could be located at the existing lagoon treatment facility location. There would be a need for reworking of the headworks and metering facilities as with Alternative 2.

New Mechanical Treatment Facility Alternative Costs

Estimated cost for this alternative are outlined as follows:

Initial Construction Costs

1. Site Preparation	1 EA	\$10,000
2. Package Treatment System	1 EA	\$450,000
3. Additional Support Facilities	1 EA	\$80,000
4. 3 Phase Electrical Service to Site	1.1 miles	\$50,000
5. Headworks and Metering	1 EA	\$30,000
6. Mobilization	1 EA	\$10,000
7. 20% Contingency	1 EA	<u>\$126,000</u>
	Total Construction	\$756,000

Operation and Maintenance Costs

1. 20 year operations and maintenance	\$35,000/yr @2%	\$850,000
2. 15 year replacement	1 ea	\$590,000

ALTERNATIVE #3 TOTAL 20 YEAR COST \$2,196,000

Non-monetary Pros and Cons

Pros

1. Replacement of lagoon treatment system.

Cons

4. Any future increase in capacity requires expansion of package treatment plant.
5. Continual operations and maintenance costs.
6. Haul and disposal of sludge.
7. Continued satellite treatment facility within Eagle Mountain.

Alternative 4. Installation of a Sewer Interceptor to Eagle Mountain Wastewater Treatment Plant

This alternative involves abandonment of the local treatment lagoons and constructing a sewer interceptor pipeline to the Eagle Mountain Wastewater Treatment Plant. The pipeline would consist of approximately 24,800 lineal feet of 6" DR17 HDPE forcemain, air/vac manholes, a sewer lift station, and electrical service. The alignment for this sewer interceptor is depicted on Figure 2. This alternative provides for "regional" treatment of sewage flows from the White Hills Subdivision. Due to the distance across the low area of the Cedar Valley it is not possible to gravity flow all the way to the Eagle Mountain Wastewater Treatment Facility. As such a sewer lift station will convey the flows through a 4-inch pressure force main. This lift station location is proposed at the existing treatment facility. The lift station design capacity will be for the build-out peak flow from White Hills Subdivision of 48 gpm.

New Sewer Interceptor Pipeline Alternative Costs

Estimated cost for this alternative are outlined as follows:

Initial Construction Costs

1. 6" HDPE Force Main	24,800 LF	\$566,000
2. Sewer Lift Station	1 EA	\$95,000
3. 1 Phase Electrical Service	1 EA	\$15,000
4. Sewer Air/Vac Manholes	2 EA	\$10,600
5. Mobilization	1 EA	\$26,000
6. 20% Contingency	1 EA	<u>\$142,500</u>
	Total Construction	\$855,100

Operation and Maintenance Costs

1. 20 year operations and maintenance	\$8,000/yr @2%	\$195,000
2. 10 year replacement (Lift Station Pumps)	1 EA	\$8,000
3. 20 year replacement (Lift Station Pumps)	1 EA	\$9,600

ALTERNATIVE #4 TOTAL 20 YEAR COST \$1,327,600

Non-monetary Pros and Cons

Pros

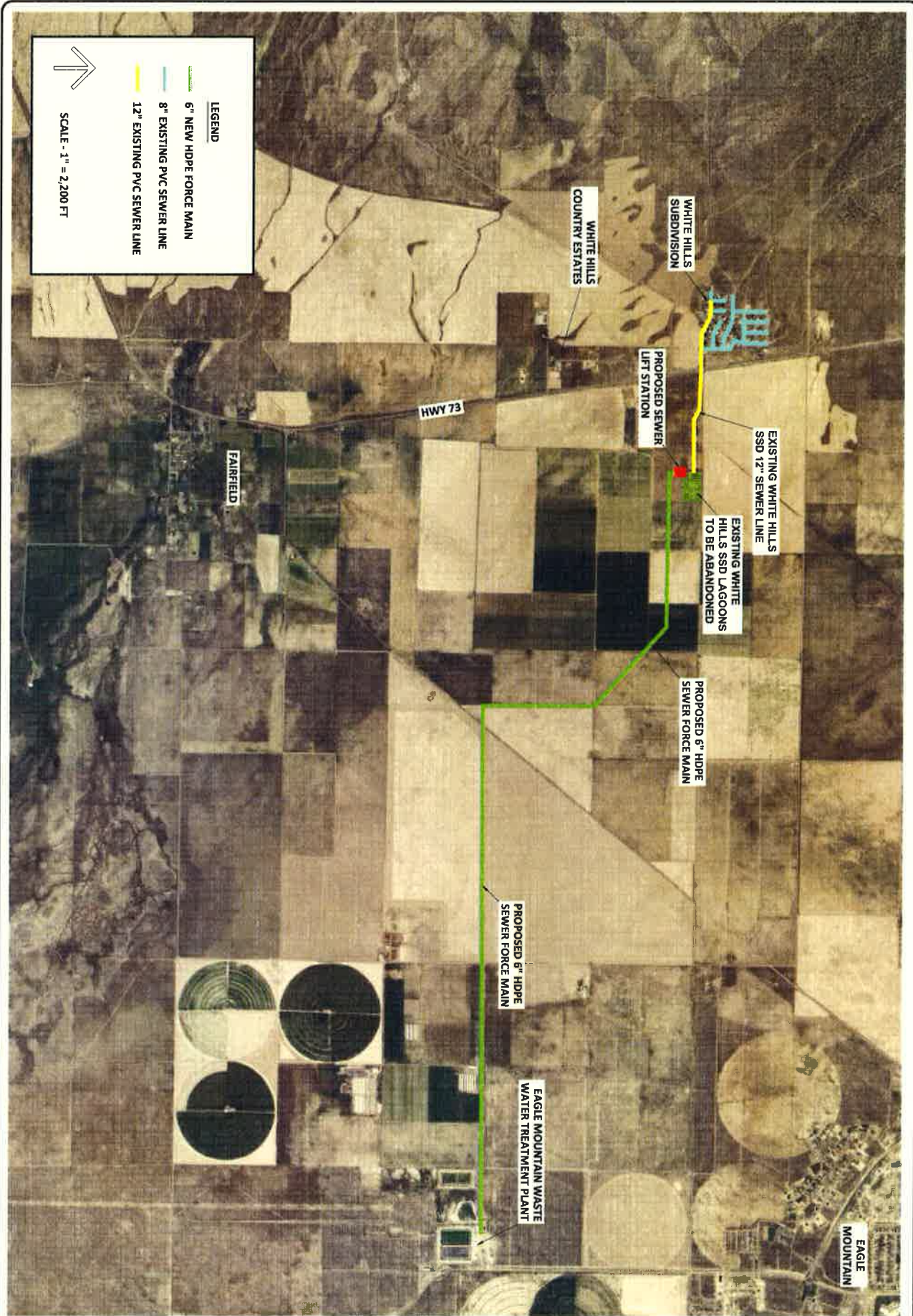
1. Elimination of lagoon treatment system.
2. Sewage treated at region wastewater treatment facility.
3. Low maintenance and operations costs.
4. Use of 1 Phase power.
5. Establishes precedent for conveyance of sewage to regional plant.
6. Establishes utility corridor through the Cedar Valley.

Cons

1. Obtaining easements for sewer pipeline.
2. Adds a sewer Lift Station for operations and maintenance.

SELECTION OF PREFERRED ALTERNATIVE

Alternative 4 - Installation of a Sewer Interceptor to Eagle Mountain Wastewater Treatment Plant, was selected as the preferred alternative because it offers several advantages in that it is one to the most cost efficient alternatives and eliminates the failing lagoon facility as well as a satellite treatment facility within the Eagle Mountain service area. This alternative conveys sewer flows to the regional Eagle Mountain Wastewater Treatment Facility.



LEGEND

- 6" NEW HDPE FORCE MAIN
- 8" EXISTING PVC SEWER LINE
- 12" EXISTING PVC SEWER LINE

SCALE - 1" = 2,200 FT

EAGLE MOUNTAIN / POLE CANYON SEWER PROJECT
 PROPOSED SEWER EXTENSION
 PHASE 1 SEWER INTERCEPTOR TO EAGLE MOUNTAIN
 WASTE WATER TREATMENT FACILITY

JACKSON ENGINEERING, LLC
 3376 STONEHILL LANE, BALT LAKE CITY UTAH 84121
 (801) 558-5223



B. COLLECTION SYSTEM

With the primary purpose of the project being to address deficiencies and problem sites within the existing collection system, the following three alternatives were evaluated:

1. No action.
2. Provide "Spot Repairs" at problems areas.
3. Reconstruct a new collection system.

Alternative 1. No Action

Under the No Action Alternative repair or replacement of the problems areas within the collection system would not occur. Infiltration of groundwater would continue, settlement of solids, and increased potential for blockage and backup would continue.

No Action Alternative Costs

There is no cost associated with the No Action alternative.

Non-monetary Pros and Cons

Pros

1. None .

Cons

1. Continued infiltration of groundwater into sewer collection system.
2. Continued buildup of solids within the collection system.
3. Increased potential for sewage blockage and/or backup.

Alternative 2. Provide "Spot Repairs" at problem areas

This alternative involves the repair of approximately 31 locations within the sewer collection system. These locations were identified from video inspection of the collection system in May 2013. Figure 3 is the location map provided as part of the video inspection. These spot repairs include:

- repair of cracked concrete sewer pipe
- repair of cracked PVC sewer pipe
- removal of root penetration at joints
- removal of root penetration at cracks
- raise sewer line to eliminate belly's
- clean collection system of settled solids and debris
- uncover buried manhole access



Figure 3
WHSSD Video Map

Many of these repairs can be address using down-hole technologies which allow for cutting of roots, cleaning of sewer lines, and placing of spot liner repair materials. These methods do not require excavation of surface improvements minimizing construction impacts and greatly reducing costs. There is one section of pipeline where it is recommended to relay the sewer line due to the length of belly in the existing sewer line.

Spot Repair Alternative Costs

Estimated cost for this alternative are outlined on the following page:

VIDEO	SEG #	SIZE	MATL	FROM MH	TO MH	ISSUE	REPAIR	COST
13-1	8	8	PVC	5	3	Camera under water	excavate and raise 10' length	\$3,400
13-1	10	8	PVC	14	6	Crack in PVC pipe	install repair liner	\$1,700
13-1	11	8	PVC	14	14A	MH 14A lid buried	excavate and uncover manhole lid	\$600
13-2	1	8	CONC	22	23	crack in conc pipe	install repair liner	\$1,700
13-2	1	8	CONC	22	23	crack in conc pipe	install repair liner	\$1,700
13-2	2	8	CONC	22	21	separated conc pipe	clean out gasket, install repair liner	\$1,700
13-2	2	8	CONC	22	21	crack in conc pipe	install repair liner	\$1,700
13-2	2	8	CONC	22	21	crack in conc pipe	install repair liner	\$1,700
13-2	3	8	CONC	25	24	crack in conc pipe	install repair liner	\$1,700
13-2	3	8	CONC	25	24	crack in conc pipe	install repair liner	\$1,700
13-2	3	8	CONC	25	24	crack in conc pipe	install repair liner	\$1,700
13-2	4	12	CONC	25	26	root & crack in pipe	clear roots, install repair liner	\$2,600
13-2	4	12	CONC	25	26	crack in conc pipe	install repair liner	\$2,600
13-2	4	12	CONC	25	26	crack in conc pipe	install repair liner	\$2,600
13-2	4	12	CONC	25	26	MH 26 lid buried	excavate and uncover manhole lid	\$2,600
13-2	11	8	CONC	27	28	root & crack in pipe	clear roots, install repair liner	\$1,700
13-2	11	8	CONC	27	28	root & crack in pipe	clear roots, install repair liner	\$1,700
13-2	11	8	CONC	27	28	{2} cracks in conc pipe	install repair liner	\$1,700
13-2	11	8	CONC	27	28	crack in conc pipe at wye	install repair liner	\$1,700
13-2	11	8	CONC	27	28	crack in conc pipe	install repair liner	\$1,700
13-2	12	8	CONC	31	21	root & crack in pipe	clear roots, install repair liner	\$1,700
13-2	13	8	CONC	21	20	crack just outside MH	grout from inside MH 21	\$600
13-2	13	8	CONC	21	20	roots at joint	clear roots, install repair liner	\$1,700
13-2	13	8	CONC	21	20	roots at joint	clear roots, install repair liner	\$1,700

13-2	13	8	CONC	21	20	roots at joint	clear roots, install repair liner	\$1,700	
13-2	13	8	CONC	21	20	gasket into pipe at joint	clean out gasket, install repair liner	\$1,700	
13-2	18	12	CONC	33	34	crack in conc pipe	install repair liner	\$2,600	
13-2	18	12	CONC	33	34	crack in conc pipe	install repair liner	\$2,600	
13-2	19	12	CONC	34	35	matl to be cleaned	clean line	(see #32)	
13-3	2	12	CONC	36	35	crack in conc pipe	install repair liner	\$2,600	
13-3	6	12	CONC	40	MtrBox	submerged camera	relay 119' of 12 pipe	\$4,800	
								Clean all lines	\$14,000
								20% Contingency	\$14,780

ALTERNATIVE #2 TOTAL PROJECT COSTS \$88,680

Alternative 3. Reconstruct New Collection System

This alternative involves the abandonment of the existing sewer collection system and reconstruction of a new collection system within the White Hills Subdivision.

Collection System Reconstruction Costs

Estimated cost for this alternative are as follows:

1. New 8" PVC Sewer Line	7,900 LF	\$189,600
2. New 12" PVC Sewer Line	4,800 LF	\$172,800
3. New Sewer Manholes	40 EA	\$160,000
4. Connection of Laterals	135 EA	\$202,500
5. Asphalt Pavement Repair	101,600 SF	\$406,400
6. Concrete Curb Replacement	100 lf	\$2,000
7. Mobilization	1 EA	\$56,000
8. 20% Contingency	1 EA	<u>\$238,000</u>
Total Construction		\$1,427,300

Non-monetary Pros and Cons

Pros

1. White Hills Subdivision will have a new sewer collection system.
2. Reduced maintenance for sewer collection system.

Cons

1. Cost of construction, financial burden on the community.

2. Disturbance to community during construction.
3. Impact to existing roads and private property.

SELECTION OF PREFERRED ALTERNATIVE

Alternative 2 - Spot Repairs at problem areas, was selected as the preferred alternative because it addresses the primary deficiencies of the sewer collection system with very low impact to the roadways, private properties, and sewer service to customers. The cost is 6.2% of Alternative 3 total reconstruction.

SECTION V
DESCRIPTION OF SELECTED PLAN AND IMPLEMENTATION ARRANGMENTS

A. TREATMENT SYSTEM

DESCRIPTION OF SELECTED PLAN

The selected plan is shown in Figure 2 and includes:

1. Approximately 24,800 lineal feet of 6" HDPE
2. Concrete air/vac manholes
3. Sewer lift station with capacity of 48 gpm
4. Electrical service to the lift station

PLANNING ACTIVITIES

This preliminary engineering report has identified existing deficiencies in failed lagoon treatment system and identified alternatives for addressing the sanitary sewage treatment needs of the system.

COST ESTIMATES FOR THE SELECTED PLAN

As presented in Section IV - Alternative Analysis, the total estimated construction costs for selected alternative is \$855,100.

ENVIRONMENTAL IMPACTS OF SELECTED PLAN

Environmental impacts associated with the selected plan are discussed in Section III - Environmental Review.

LAND ACQUISITION

Portions of the project will be constructed in public right-of-way. The sewer lift station and 8,900 lineal feet of 6" HDPE will be constructed on properties already available for this project. Approximately 15,900 lineal feet of the 6" HPDE pressure force main will be constructed within easements already acquired by Eagle Mountain City.

B. SEWER COLLECTION SYSTEM

DESCRIPTION OF SELECTED PLAN

The selected plan includes "Spot Repair" at approximately 31 location within the White Hills subdivision including 8" and 12" sewer line repairs.

PLANNING ACTIVITIES

Video inspection of the sewer collection was conducted in May 2013 to identify the needed location for repair.

COST ESTIMATES FOR THE SELECTED PLAN

As presented in Section IV - Alternative Analysis, the total estimated construction costs for selected alternative is \$88,680.

ENVIRONMENTAL IMPACTS OF SELECTED PLAN

Environmental impacts associated with the selected plan are discussed in Section III - Environmental Review.

LAND ACQUISITION

The proposed repairs will occur primarily in improved roads within public right-of-way and within existing public utility easements. No additional land acquisition or easements will be required.

C. SELECTED PLAN FINANCING

COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG)

Funding assistance has been explored with the Utah County CDBG through the Mountainland Association of Governments but project was not approved for financial assistance.

UTAH BOARD OF WATER QUALITY

The project is to be presented to the Board of Water Quality for consideration of funding assistance.

D. PROJECT IMPLEMENTATION COSTS

The total project cost including construction, planning, engineering, during construction service of engineer, legal and bonding, and potential financing fees are outlined as follows:

Eagle Mountain/Pole Canyon Sewer Project Costs Summary	
Engineering-Planning	\$6,000
Engineering-Design	\$54,000
Engineering- Const. Mngmnt Services	\$20,000
DWQ Loan Fees	\$11,000
Legal/Bonding	\$40,000
Construction - Lift Station and Forcemain	\$712,600
Construction - Collection System Repairs	\$73,900
20% Contingency	\$157,280
Total Project Costs	\$1,074,780

E. PROJECT IMPLIMENTATION SCHEDULE

The overall project schedule is summarized as follows:

Apply to WQB for Funding	May 2014
WQB Funding Authorization:	June, 2014
Final Public Hearings:	July, 2014
Advertise EA (FONSI):	July, 2014
Facility Plan Approval:	August, 2014
Commence Design:	July, 2014
Issue Construction Permit:	September, 2014
Advertise for Bids:	October, 2014
Bid Opening:	October, 2014
Loan Closing:	November, 2014
Commence Construction:	December, 2015
Complete Construction:	February, 2015

APPENDIX

- Facilities and Service Obligation Transfer Agreement Between
White Hills Special Service District and Eagle Mountain City

- Environmental Memorandum

FACILITIES AND SERVICE OBLIGATION TRANSFER AGREEMENT
BETWEEN
WHITE HILLS SPECIAL SERVICE DISTRICT
-AND-
EAGLE MOUNTAIN CITY

THIS AGREEMENT is made and entered into the 14th day of September, 2010, by and between White Hills Special Service District ("the District"), and Eagle Mountain City ("the City").

This Agreement is entered with reference to the following facts.

The City has granted Annexation Petitions which have been filed with the City requesting that the City annex, among other properties, the entire Service Area of the District, including the area occupied by the trunkline and treatment lagoon system owned by the District. The execution of this Agreement is a condition of the proposed Annexation.

The City and the District anticipate that the transfer of facilities from the District to the City and the concurrent transfer of service obligations from the District to the City will occur following the effective date of the annexation in accordance with the terms of this Agreement.

The District and the City further anticipate that following the transfer of the real property, improvements, and funds owned and under the control of the District to the City, the District will proceed to be dissolved as provided by law.

The City and the District desire to facilitate and transfer the sewer facilities and land owned by the District and the service obligations of the District to the City.

NOW, THEREFORE, in consideration of the promises and covenants hereinafter contained, the Parties agree as follows:

1. **Commencement and Termination.** This Agreement shall commence upon execution and shall continue in full force and effect after the annexation described above as long as the District is in operation within the City municipal boundaries, unless otherwise agreed by and between the Parties. Notwithstanding anything herein or elsewhere to the contrary, the provisions of this Agreement establishing the continuing obligation of the City to perpetually serve the area of the District and grant impact fee credit to parties connected to the District system shall survive in perpetuity. Otherwise, this Agreement may be terminated only by mutual agreement between the Parties.

2. **District's Representations.** The District represents to the City that it was formed by the Utah County Commission pursuant to the laws of the State of Utah and that its existence as a Special Service District of the State of Utah has continued in full force and effect from the date of its formation. The District further represents that all actions of the Administrative Control Board or the Utah County Commission have been taken in compliance with the laws of the State of Utah and that the District has the legal authority and is empowered

to execute this Agreement. The District represents to the City that the District system has never knowingly accepted regulated hazardous waste and that to the best of the knowledge of the Administrative Control Board and the Utah County Commissioners, no regulated hazardous waste is present in the collection system or the lagoons owned by the District which would require classification, remediation, transportation, or disposal of any materials in the possession of the District as regulated hazardous waste. The District represents that all funds held by the District now, and in the future, until the termination of the District, are and shall be lawfully imposed, collected and disbursed and are not subject to lawful claims for refund. The District represents that it is the judgment of the Administrative Control Board and the Utah County Commission that it is in the best interests of the public served by the District to enter into this Agreement to provide for the transfer of all of the assets of the District to Eagle Mountain City in return for the City assuming all service obligations of the District and the responsibility for the assets of the District.

3. **Representations of the City.** The City represents that it is a municipal corporation of the State of Utah legally incorporated and existing under the laws of the State of Utah and that it has the full power and legal authority to enter into this Agreement and to construct, own, and operate sewer collection and treatment facilities, including the types of facilities which are owned by the District at the date of this Agreement. The City represents that it has completed an appropriate degree of due diligence with respect to the facilities of the District and is prepared to accept the facilities and funds of the District under the terms of this Agreement. The City hereby irrevocably commits to the District and the owners of property within the District to perpetually provide wastewater collection and treatment service to the persons and properties currently served by the District upon transfer of the District system and assets to the City as required by this Agreement and in accordance with the laws of the State of Utah. The City covenants and agrees to provide perpetual wastewater collection and treatment services to the persons and properties served by the District at the date of Closing and will treat the residents of the properties and property owners in all respects as all other persons and properties in Eagle Mountain City are treated with respect to conditions of service and the payment of fees and costs for wastewater collection and treatment service, particularly in the South Service Area of the City. In particular, but not by way of limitation, all properties connected to the District's wastewater collection system as of the effective date of this Agreement and/or as of the date of Closing shall receive an impact fee and hookup fee credit and shall not be required to pay an impact fee, a hookup fee, or equivalent to the City.

4. **Property and Facilities.** The District is the owner of the wastewater collection system described generally and specifically in Exhibit 1 to this Agreement. The District also owns the land upon which the treatment lagoon system used by the District is planned, constructed and operating and described in Exhibit 2. The collection system, the land, and other assets of the District are not encumbered as collateral for the repayment of any financial obligation and the revenue stream produced by the payment of user charges to the District by those served by the District is not encumbered or pledged for the repayment of any bonds, notes, contracts or other obligations of any nature. The physical facilities of the District described on Exhibits 1 and 2 will be transferred to the City by the District upon the Closing date described in this Agreement.

5. **Financial Assets.** The District holds financial assets that, as of August 4, 2010, are fully disclosed in Exhibit 3 which reflects that the District held the amount of \$105,094.87 in

cash as of that date. At the date of Closing cash assets of the District in a minimum amount of \$90,000.00 will be transferred by the District to the City in cash and deposited in the Sewer Enterprise Fund of the City to be applied to the impact fee credit granted under this Agreement to the properties identified on Exhibit 4 in consideration of the cost for existing collection and treatment capacity incurred by the City to perpetually serve the persons and properties now served by the District. The other assets delivered to the City pursuant to this Agreement serve as additional partial consideration for the referenced impact fee credit. The parties acknowledge that the District will retain cash in an amount estimated to be sufficient to pay the costs of (i) repairs to and operation of the District's system until Closing, (ii) winding up the District's affairs, and (iii) completing the dissolution referenced in paragraph 8 below. Upon dissolution, all remaining cash held by the District will be delivered to and become the property of the City.

6. **Closing of Transfer.** At the Closing of the transaction required by this Agreement, the District will convey to the City by special warranty deed all right, title, and interest of the District in and to all easements and real property and by Bill of Sale or assignment all equipment, accounts receivable, books, records, and other tangible or intangible assets of the District, if any, by executing such deeds, assignments, and other instruments which are approved by Counsel for the Parties. The City will execute a receipt and acknowledgement in a form approved by Counsel for the Parties acknowledging receipt of the funds, properties and all other tangible or intangible assets and liabilities of the District and stating the unequivocal obligation of the City to accept the system reserving only the right of the City to seek recourse for any fraud or intentional misrepresentation resulting in inducement to the City to accept the facilities and service obligations of the District.

7. **Closing Date.** The transfer of facilities and the closing obligations of the Parties shall occur at a date mutually agreed by the Parties, but in any event, no later than fifteen (15) days following the occurrence of the first of any one of the following events:

7.1. The date the District or the City receives notice from the State of Utah Water Quality Board that the treatment system operated by the District must be shut down and the use of the treatment lagoon discontinued.

7.2. The date a trunkline is completed to connect the current District collection system to the South Service Area treatment plant owned and operated by the City.

7.3. The date the lagoon treatment system is connected to service which will require the use of eighty five (85%) percent of the treatment lagoon system designed capacity.

7.4. The Date the Administrative Control Board or the Governing Board of the District finds and gives notice to the City that it is in the public interest to transfer the District's facilities and assets to the City.

Upon the first occurrence of any of the events described above, the Parties shall schedule Closing of the transaction described in this Agreement within fifteen (15) days and complete the transfer of assets and facilities of the system to the City at Closing.

8. **Dissolution of the District.** After the transfer of assets and service obligations defined herein are completed and no further purpose exists for which the District was formed, the Legislative Body of Utah County shall proceed to initiate and conclude the process of dissolution of the District as provided by law.

9. **Counterparts.** This Agreement may be executed in counterparts by the City and the District.

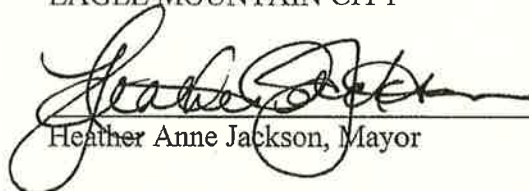
10. **Governing Law.** This Agreement shall be governed by the laws of the State of Utah both as to interpretation and performance.

11. **Utah County Not a Party.** The parties agree that Utah County is not a party to this Agreement and the approval of this Agreement by the Utah County Commission shall not constitute Utah County as a party.

12. **Integration.** This Agreement embodies the entire agreement between the Parties and shall not be altered except in writing signed by both Parties.

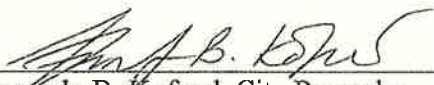
IN WITNESS WHEREOF, the Parties have executed this Agreement on the day and year first above written.

EAGLE MOUNTAIN CITY


Heather Anne Jackson, Mayor

[SEAL]

Attest:


Fionnuala B. Kofoed, City Recorder



Approved as to form and compliance
with applicable law:


City Attorney

Date: 9/29/10

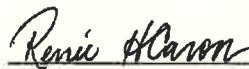
Administrative Control Board of the
WHITE HILLS SPECIAL SERVICE
DISTRICT, a Special Service
District of the State of Utah

By: 
Its Chairman

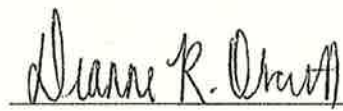
BOARD OF COMMISSIONERS OF
UTAH COUNTY, UTAH

By: 
Chair

ATTEST:


Clerk - Deputy

Approved as to form and compliance
with applicable law:


Attorney

Date: 9/14/2010

EXHIBIT

1

**WHITE HILLS SPECIAL SERVICE DISTRICT
COLLECTION SYSTEM DESCRIPTION**

All of the wastewater collection system facilities, including pipelines, manholes, manhole covers, and other associated appurtenances owned by the White Hills Special Service District and lying under and within the public right-of-way and roads as set forth in the recorded plats of the White Hills Subdivision Plat A Amended, Plat B and Plat C including all phases, as recorded in the official plats recorded in the office of the County Recorder of Utah County, Utah.

All of the underground pipelines owned by the White Hills Special Service District lying under and within the right-of-way of State Road 73 adjacent to the intersection of SR73 and the public dedicated roads of the White Hills Subdivision Plat A Amended, according to the official plat thereof in the office of the Utah County Recorder.

All of the District's interest in the underground wastewater collection system used by the District located in the northeast quarter of Section 18, Township 6 South, Range 2 West, Salt Lake Base and Meridian adjacent to or within White Hills Subdivision Plat A, amended; White Hills Subdivision Plat B and White Hills Subdivision Plat C as recorded in the Office of the County Recorder of Utah County, Utah.

All of the interest of the District in and to the wastewater collection facilities located along and under the centerline of the property described below:

Trunkline Centerline Legal Description

BEGINNING FROM THE WEST QUARTER CORNER OF SECTION 17, TOWNSHIP 6 SOUTH, RANGE 2 WEST, SALT LAKE BASE AND MERIDIAN THENCE SOUTH 89°51'20" EAST 644.38 FEET ALONG A SECTION LINE THENCE SOUTH 08°46'45" EAST 61.95 FEET TO A CENTERLINE WHICH BEARS SOUTH 89°34'43" EAST 616.55 FEET; THENCE SOUTH 65°00'00" EAST 350.00 FEET; THENCE SOUTH 89°52'18" EAST 1589.39 FEET TO THE END OF SAID CENTERLINE.

EXHIBIT

2

EXHIBIT 2

Recorded at Request of _____
at _____ M. Fee Paid \$ _____
by _____ Dep. Book _____ Page _____ Ref. _____
Mail tax notice to _____ 40239 _____ Address _____

RECEIVED
UTAH COUNTY RECORDS
NOV 24 11 22 AM '86
40239

WARRANTY DEED
[CORPORATE FORM]

WHITE HILLS LAND COMPANY, a corporation organized and existing under the laws of the State of Utah, with its principal office at _____ of County of Salt Lake, State of Utah, grantor, hereby CONVEYS AND WARRANTS to WHITE HILLS SPECIAL SERVICE DISTRICT

2449 Newcastle Drive
of Sandy, Utah 84092

TEN DOLLARS AND OTHER GOOD AND VALUABLE CONSIDERATION

grantee
for the sum of
TEN DOLLARS

the following described tract of land in _____ Utah _____ County, State of Utah:

BEGINNING at a point, said point being 3,178.37 feet South 89°52'18" East from the Northwest corner of the Southwest Quarter of Section 17, Township 6 South, Range 2 West, Salt Lake Base and Meridian; and running thence South 89°52'18" East 815.00 feet, thence South 0°23'32" West 1,339.12 feet, thence North 89°32'53" West 815.00 feet, thence North 0°23'32" East 1,334.52 feet to the point of BEGINNING. (Contains 25.01 Acres.)

The officers who sign this deed hereby certify that this deed and the transfer represented thereby was duly authorized under a resolution duly adopted by the board of directors of the grantor at a lawful meeting duly held and attended by a quorum.

In witness whereof, the grantor has caused its corporate name and seal to be hereunto affixed by its duly authorized officers this 10th day of November, A. D. 1986

Attest: Gloria W. Halliday Secretary }
WHITE HILLS LAND Company
By Gary H. White President

STATE OF UTAH
County of Salt Lake

On the 20th day of November, A. D. 1986 personally appeared before me Gary H. White and Gloria W. Halliday who being by me duly sworn did say, each for himself, that he, the said Gary H. White is the president, and he, the said Gloria W. Halliday is the secretary of White Hills Land Company, and that the within and foregoing instrument was signed in behalf of said corporation by authority of a resolution of its board of directors and said Gary H. White and Gloria W. Halliday each duly acknowledged to me that said corporation executed the same and that the seal affixed is the seal of said corporation.



L. Fletcher W. Washburn
Notary Public
My residence is Salt Lake City, Utah

My commission expires 12-21-87

MR 2359 ME 785

EXHIBIT

3

8:18 pm
08/04/10
Cash Basis

WHITE HILLS SPECIAL SERVICE DISTRICT
Balance Sheet
As of August 4, 2010

	<u>Aug 4, 10</u>
ASSETS	
Current Assets	
Checking/Savings	
WCB Capital Improvement	98,170.46
WCB Checking	5,754.85
WCB Savings	1,169.56
Total Checking/Savings	<u>105,094.87</u>
Accounts Receivable	
Accounts Receivable	-170.00
Total Accounts Receivable	<u>-170.00</u>
Total Current Assets	<u>104,924.87</u>
TOTAL ASSETS	<u>104,924.87</u>
LIABILITIES & EQUITY	
Equity	
Opening Bal Equity	122,613.59
Retained Earnings	-19,552.22
Net Income	1,863.50
Total Equity	<u>104,924.87</u>
TOTAL LIABILITIES & EQUITY	<u>104,924.87</u>

EXHIBIT

4

Exhibit 4

Attached are Plat A (amended), Plat B and Plat C of the White Hills Subdivision. All lots having houses and installed sewer connections are reflected on the Plat maps. All previously connected lots are entitled to an impact fee credit as provided in paragraph 3 of the Agreement to which this Exhibit is attached. The only lots on which construction has not started and which, therefore, will be subject to impact fees assessed by the City are: Lots # 9 and # 10 in Plat A (amended) and Lot # 37 in Plat C. All other lots in Plat A (amended), Plat B and Plat C are entitled to receive an impact fee credit as provided in said paragraph 3 and shall not be required to pay a sewer impact fee, a sewer hookup fee, or equivalent, to the City.

Page 1 of 1 3075

WHITE HILLS LAND CO.

15 *White Hills* 4-22-22
 28 *White Hills* 8-12-22
 30 *White Hills* 4-12-22
 4 *White Hills* 8-12-22
 4 *White Hills* 8-12-22
 1, 2, 3 *White Hills* 8-12-22
 4 *White Hills* 8-12-22
 1, 2, 3 *White Hills* 8-12-22
 4 *White Hills* 8-12-22

OWNER'S DECLARATION

KNOW ALL MEN BY THESE PRESENTS THAT WE, ALL OF THE UNDERSIGNED OWNERS OF ALL OF THE PROPERTY DESCRIBED IN THE SANBORN'S COMPANIES RECORDS AND SHOWN ON THE MAP HAVE CAUSED THE SAME TO BE PLATED AS A SUBDIVISION UNDER THE SUPERVISION OF JOHN EDWARDS, SURVEYOR TO THE COMMISSION OF THE UNDERSIGNED, COMMISSIONERS AND AFFIDAVITS ISSUED BY THE COUNTY RECORDERS OFFICE ON JUNE 1, 1922 AND IN BOOK 122, PAGE 212 TO BE AS FOLLOWS TO-WIT:

1. FOR THE PURPOSES SET OF THE PUBLIC OF THE STREETS, EASEMENTS AND OTHER PUBLIC USES AS SHOWN ON THIS MAP.

2. TO THE WHITE HILLS REGION, BECAUSE THE WHITE HILLS DESCRIBED IN THE EASEMENT ATTACHED TO THIS PLAT AS PG. 10 490-511 BEING SAID EASEMENT IN THE 12TH CLERK'S RECORDS BOOK AS ENTRY NO. 10048 AND THE EASEMENT PLUNG AND ALL NECESSARY APPOINTMENTS DESCRIBED IN THE EASEMENT ATTACHED AS PG. NO. 10048-511 BEING SAID EASEMENT AS PG. NO. 10048.

3. TO THE 14TH COUNTY FILE NUMBER 1922 AND TO ALL EASEMENTS DESCRIBED IN THE EASEMENT ATTACHED AS PG. NO. 10048-511.

4. TO THE 14TH COUNTY FILE NUMBER 1922 AND TO ALL EASEMENTS DESCRIBED IN THE EASEMENT ATTACHED AS PG. NO. 10048-511.

5. TO THE 14TH COUNTY FILE NUMBER 1922 AND TO ALL EASEMENTS DESCRIBED IN THE EASEMENT ATTACHED AS PG. NO. 10048-511.

SUBJECT TO THE TERMS OF THE EASEMENT ATTACHED TO THIS PLAT AS PG. 10 490-511 BEING SAID EASEMENT IN THE 12TH CLERK'S RECORDS BOOK AS ENTRY NO. 10048 AND THE EASEMENT PLUNG AND ALL NECESSARY APPOINTMENTS DESCRIBED IN THE EASEMENT ATTACHED AS PG. NO. 10048.

DESCRIPTIONS OF CURVED PORTIONS OF PROPERTY LINES

NO.	BEARING	DISTANCE	BEARING	DISTANCE	BEARING	DISTANCE	BEARING	DISTANCE
1	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
2	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
3	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
4	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
5	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
6	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
7	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
8	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
9	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
10	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
11	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
12	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
13	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
14	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
15	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
16	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
17	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
18	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
19	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
20	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
21	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
22	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
23	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
24	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
25	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
26	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00
27	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00	S 89° 50' 00" W	100.00



3075-30

STATE OF MICHIGAN

County of Wayne

RECORDS SECTION

FILE NO. 3075-30

DATE OF PLAT: _____

BY: _____

FOR RECORD: _____

RECORDED: _____

INDEXED: _____

FILED: _____

Plat A

WHITE HILLS SUBDIVISION PLAT (B)

A SUBDIVISION OF SECTION 18 T6S, R2W, SLB&M



DATA INFORMATION BY LOT

LOT	AREA	PERCENTAGE	REMARKS
60A
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80

EXISTING IMPROVEMENTS

NO.	DESCRIPTION	DATE
1
2
3
4
5

NOTES
 1. CITY OF BIRMINGHAM FIRE DEPARTMENT REQUIREMENTS
 2. ALL LOTS SHALL BE 100 FEET WIDE BY 150 FEET DEEP
 3. SEE ALSO CITY OF BIRMINGHAM ORDINANCE NO. 11-10-100
 4. ALL LOTS SHALL BE 100 FEET WIDE BY 150 FEET DEEP
 5. SEE ALSO CITY OF BIRMINGHAM ORDINANCE NO. 11-10-100

OWNER'S CERTIFICATE

I, the undersigned, being the owner of the above described premises, do hereby certify that the above is a true and correct copy of the original plat of the above described premises, as the same appears in the office of the City Engineer of the City of Birmingham, Alabama.

DEED DESCRIPTION

...

DATE OF THIS DEED
 ...

DEED NO.
 ...

BOOK AND PAGE
 ...

RECORDED IN THE OFFICE OF THE CITY ENGINEER

NOTARIAL PUBLIC

WHITE HILLS SUBDIVISION PLAT (B)

SECTION 18 T6S, R2W, SLB&M

62162-75

Plat B

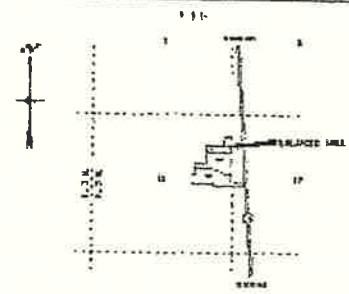




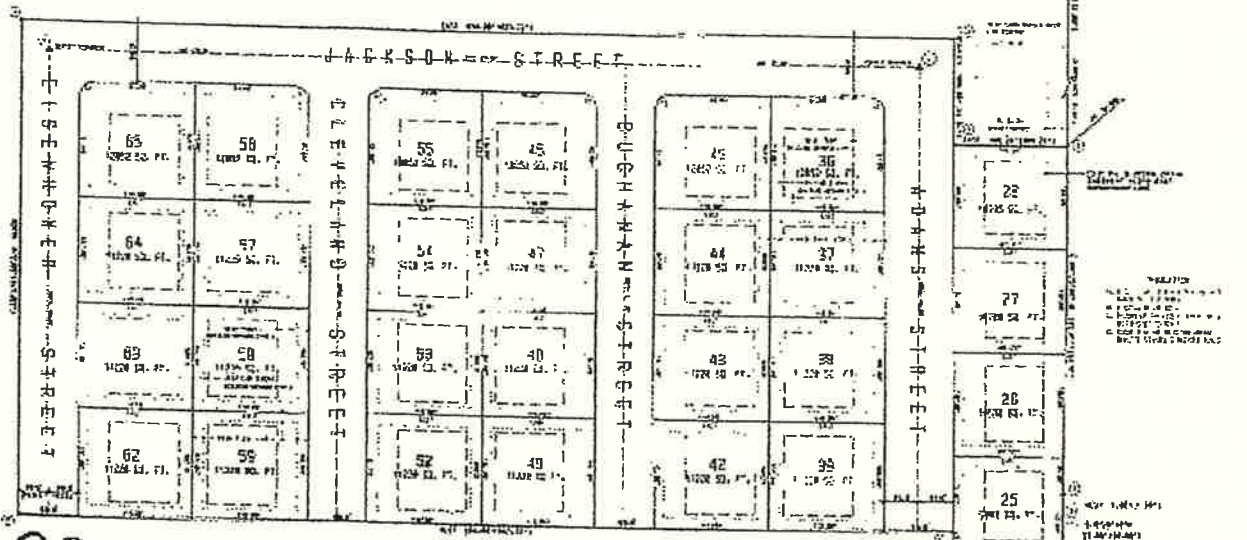
NO.	NAME	RESIDENCE
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

NOTE: All Lots are to be ...
 1. ...
 2. ...
 3. ...

NO.	NAME	RESIDENCE
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20



STEAK COUNTY
 NEAR LEON FORT
 VICINITY MAP



DEED CERTIFICATE

...
 ...
 ...

DEED DESCRIPTION

...
 ...
 ...

CONVEYANCE

...
 ...
 ...

ACCEPTANCE BY LEGAL TITLE

...
 ...
 ...

BOARD OF HEALTH

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WHITE HILLS

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7746-90
 2024 Surveying & Eng. Ph (804) 423-1040

Plat C

To: Steve Jackson	
From: HDR	Project: Eagle Mtn/Pole Canyon Sewer
CC:	
Date:	Job No:

I:\templates\HDR_Memo.doc

Summary of Wetland Potential within the White Hills Sewer Pipeline Alignment Area

Jackson Engineering contracted HDR to conduct a preliminary wetland evaluation for the Eagle Mountain, Pole Canyon Development Phase I Sewer Interceptor project. HDR reviewed available desktop information to determine if wetlands or other waters of the United States were likely to occur within the study area. Formal wetland delineation was not conducted.

Project Study Area

The project study area is in Cedar Valley, Utah County, near the towns of Fairfield and Eagle Mountain and is shown on the attached figure. The proposed pipeline is approximately 5.25 miles long. The area evaluated for wetlands is approximately 400 acres and encompasses a 600-foot buffer width centered on the pipeline alignment to account for minor shifts in the alignment and construction disturbance.

Sources of Information

HDR biologists reviewed 2012 high resolution (6 inch) aerial photography of the project study area, downloaded from the Utah GIS Portal (AGRC 2012), in a Geographic Information System (GIS). An experienced wetland delineator reviewed the aerial photography to identify areas characteristic of wetlands.

National Wetland Inventory (NWI) mapping was downloaded for GIS from the Utah GIS Portal (AGRC 2001). NWI mapping provides the extent and types of wetlands across the country and is considered screening-level data. NWI mapping was reviewed in GIS to see if wetlands have been identified within the project study area or vicinity.

Soils were investigated using the NRCS Web Soil Survey (websoilsurvey.nrcs.usda.gov/app/HomePage.htm) and a custom soil report was prepared for the project study area. Web Soil Survey provides a map of soil units and their characteristics. Soils were evaluated to see if any hydric (wetland) soils were present in the project study area.

Conclusion

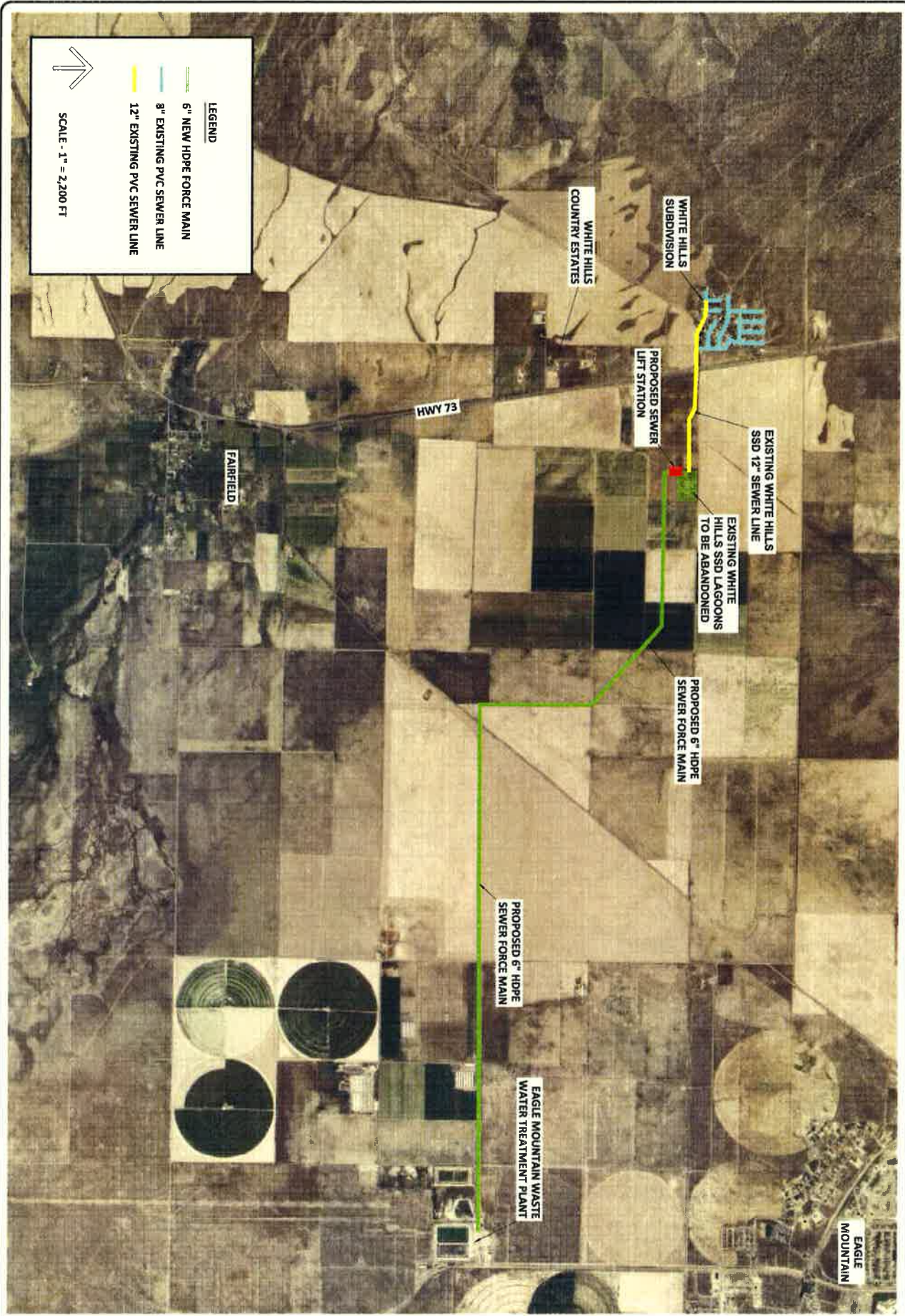
HDR biologists reviewed the information described above for evidence of potential wetlands. None of the information reviewed indicated that wetlands are likely in the project study area. NWI mapping did not show wetlands and there are no hydric soils in or near the project study area. Further, high resolution aerial imagery did not show any of the characteristic features of wetlands.

Although the available desktop information indicates that the presence of wetlands is not likely, this does not constitute a wetland delineation and is not a guarantee. Conditions can change rapidly, especially in areas of

agricultural irrigation, and wetlands are not always shown on NWI mapping or aerial imagery. A field survey would be required to ensure that wetlands are not present. Other jurisdictional features, such as streams or canals, are unlikely to be present due to the closed basin, but may be present upon field inspection.

References

- Automated Geographic Reference Center (AGRC). 2001. Wetlands (SGID93 Water) GIS Data Layer. Utah Department of Technology Services. Available online at <http://gis.utah.gov/data/water-data-services/wetlands/>, accessed February 5, 2013.
- AGRC. 2012. High Resolution Orthophotography (HRO) 6-inch resolution 4-band aerial photography. Utah Department of Technology Services. Available online at <http://gis.utah.gov/data/aerial-photography/2012-hro-6-inch-color-orthophotography/>, accessed February 5, 2013.



LEGEND

- 6" NEW HDPE FORCE MAIN
- 8" EXISTING PVC SEWER LINE
- 12" EXISTING PVC SEWER LINE

SCALE - 1" = 2,200 FT

EAGLE MOUNTAIN / POLE CANYON SEWER PROJECT
 PROPOSED SEWER EXTENSION
 PHASE 1 SEWER INTERCEPTOR TO EAGLE MOUNTAIN
 WASTE WATER TREATMENT FACILITY

JACKSON ENGINEERING, LLC
 3376 STONEHILL LANE, SALT LAKE CITY UTAH 84121
 (801) 558-5293



CULTURAL RESOURCES

A review of the archaeological site files was undertaken at the Antiquities Section of the Utah office of State History and included a complete search of archaeological site records and previously conducted cultural resources studies within a one-mile buffer of the proposed sewer interceptor corridor (an area referred to in this document as the study area). This search identified two prehistoric archaeological sites within the study area. Area maps also indicate that two linear historic sites are crossed by the proposed project corridor. Eight previous cultural resources studies have been conducted within or intersecting the study area. However, none of these studies directly cover the proposed sewer interceptor corridor itself. Based on the findings of this literature and map search, the likelihood that previously undiscovered or unrecorded cultural resources—especially prehistoric and historic period archaeological sites—is considered to be high. In addition, the literature and map search found that segments of two known linear historic sites will face direct effects from the project, although the nature and extent of those effects cannot be determined until the affected portions of those sites are evaluated.

Previous Cultural Resource Studies

U83BL0806 & U00PD0808

Two overlapping surveys have been conducted in the northwest end of the study area. The first, conducted in 1983 by the Bureau of Land Management (BLM), used a mix of systematic and unsystematic reconnaissance methods and recorded no sites (Neily 1983). A later study undertaken in 2000 re-surveyed the area not systematically surveyed by Neily (Tipps and Birnie 2000). That survey recorded 11 prehistoric sites in the 235 acre resurveyed area. Interesting in the context of the present analysis is Neily's decision not to intensively survey the sage flats east of the juniper-covered foothills of the Oquirrh Mountains. The 11 sites recorded by the Tipps and Birnie study demonstrate that Neily's unsystematic and non-intensive survey strategy is inadequate for the area. Although Tipps and Birnie recommended all 11 sites as not eligible for listing on the National Register of Historic Places (NRHP), the relatively dense cultural landscape (1 site per 20 acres) suggests a high probability that archaeological sites could be impacted by the present proposed project.

The current study area just intersects the southeast corner of both previous survey areas. Two of the sites recorded by Tipps and Birnie, sites **42UT1150** and **42UT1152**, are within the study area for the proposed project. Both of these sites are small lithic artifact scatters. The other nine sites recorded by Tipps and Birnie are north of the study area.

U91AK0670

Another relatively large survey conducted at the northeast end of the study area in 1994 also yielded evidence of prehistoric human use (Norman 1991). This study was conducted on the flats of eastern Cedar Valley, about two miles from the foothills of Lake Mountain. Slightly less than half of the 760 acre survey area intersects the current study area. The study recorded four prehistoric archaeological sites, all of which were described as prehistoric camps. Although none of these four sites is within the present study area, their presence suggests that prehistoric human settlement extended into the middle Cedar Valley, though it was not as dense as in areas closer to

the Oquirrh Mountains. The presence of archaeological sites at both ends of the study area suggests that similar unrecorded sites may be impacted by the proposed project.

U00UA0179 & U02EP0084

Two previous cultural resources surveys were conducted in the central portion of the study area, just north of the proposed sewer interceptor corridor (Billat 2002; Metcalfe 2000). No cultural resources were recorded by either of these surveys, although the southeastern edge of the Billat survey area was close to, but did not include, the route of the Pony Express National Historic Trail (see below). The much smaller Metcalfe survey overlaps a small portion of Billat's survey area (Metcalfe 2000). The absence of archaeological resources in this part of the study area is probably the result of disturbance to sites by the considerable recent agricultural activity in this area as seen in modern satellite imagery of the area.

U85BC0430, U08HO0086, & U98ST0766

Three cultural resources surveys have been conducted for linear projects along SR-73. These surveys include a highway upgrade project (Wilde, et al. 1985), a natural gas pipeline from Eagle Mountain to Cedar Fort (Helton and Herrmann 1999), and a fiber optic line between Cedar Fort and SR-73's intersection with SR-36 (Baxter, et al. 2008). The 2008 project recorded a segment of a linear site that also crosses the project corridor (see below).

Affected Cultural Resources

The proposed corridor for the current project would cross the route of the **Pony Express National Historic Trail**. Although the segment of the trail that would be affected has not been evaluated, the historic importance of the trail as a whole is well known. A segment of the trail northeast of the study area was recorded as archaeological site **42UT1546** and was recommended eligible for listing on the NRHP. The entire trail has been nominated for listing in the National Register.

USGS topographic maps indicate that the proposed sewer line corridor will also cross a historic railroad grade. Other segments of this linear site, the remains of the **Salt Lake & Western Railway**, have been recorded by various projects throughout Utah County as site **42UT0948**—including a segment that was recorded about 1.5 miles southwest of the study area. The site has been determined eligible for the NRHP by the Utah State Historic Preservation Office (SHPO).

Recommendations

The results of the literature search reported here suggest that significant cultural resources could be affected by the Eagle Mountain/Pole Canyon sewer interceptor project. A review of USGS topographic maps indicates that two, NRHP eligible, historic-era linear sites cross the proposed project corridor and will thus be affected by the current alignment. Further, review of two thorough cultural resources surveys conducted at either end of the study area indicates that prehistoric use and settlement of Cedar Valley was considerable. Prehistoric use of the valley may have been more intense near the valley edges along the Oquirrh Mountains to the west and Lake Mountain to the east. Intensive, systematic **cultural resources survey** of the project corridor is **recommended** in order to discover whether previously unrecorded prehistoric sites

will be affected by the project and to evaluate the proposed project's effects on the segments of 42UT0948 and 42UT1546 that cross the project area.

REFERENCES CITED

Baxter, Jon R., et al.

2008 A Cultural Resource Inventory of the Cedar Fort to SR-36 Fiber Optic Project, Utah and Tooele Counties, Utah. Bighorn Archaeological Consultants, LLC.

Billat, Scott

2002 A Cultural Resource Inventory of the Eagle Mountain 290 Acre Parcel in Cedar Valley, Utah. EarthTouch LLC.

Helton, Clint J., and Robert Herrmann

1999 Class III Cultural Resources Inventory for Questar Natural Gas Pipeline from Eagle Mountain to White Hills Development, Utah County, Utah. SWCA, Inc.

Metcalf, Duncan

2000 Eagle Mountain Tower. Utah Museum of Natural History.

Neily, Robert

1983 Cedar Fort R&PP/Quantity Grant. BLM.

Norman, V. Garth

1991 Cultural Resources Survey of Cedar Valley Phase I Ranch Development, Utah County, Utah. ARKON Archaeological Research Consultants.

Tipps, Betsy L., and Robert I. Birnie

2000 Class III Cultural Resource Inventory of the Cedar Fort Parcel, Utah County, Utah. P-III Associates, Inc.

Wilde, James D., Susan M. Young, and Don D. Southworth

EAGLE MOUNTAIN/POLE CANYON DEVELOPMENT—UTAH COUNTY

1985 A Cultural Resource Inventory of the Proposed SR-73 Upgrade, Tickville Wash to South of Fairfield, and Associated Borrow Pit. Cultural Resources Management Division, Museum of Peoples and Cultures, Brigham Young University.