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IN THE DISTRICT COURT OF THE THIRD JUDICIAL DISTRICT

IN AND FOR TOOELE COUNTY, STATE OF UTAH

GRANTSVILLE CITY Plaintiff, v. TOOELE COUNTY, UTAH and DESERET PEAK SPECIAL SERVICE DISTRICT, Defendants.	**COMPLAINT** Civil No. 170300595 Judge: Robert Adkins (Tier 3) *(JURY DEMANDED)*

Plaintiff Grantsville City (the "City" or "Plaintiff") hereby complains against defendants Tooele County (the "County"), and Deseret Peak Special Service District (the "District") (collectively "Defendants"), and alleges as follows:

PARTIES

1. The City is a municipal corporation of the State of Utah with offices located at 429 East Main Street, Grantsville City, Utah.

2. The County is a county duly organized under the laws of the State of Utah with offices located at 47 South Main Street, Tooele, Utah.

3. The District is a local district duly organized under the Utah Limited Purpose Local Government Entities—Local Districts Act, with offices located at 47 South Main Street, Tooele, Utah.

JURISDICTION AND VENUE

4. Jurisdiction is proper in this Court pursuant to UTAH CODE § 78A-5-102(1).

5. Venue is proper in this Court pursuant to UTAH CODE §§ 78B-3-304 and 78B-3-307.

6. This case falls under Tier 3 for standard discovery purposes as this Complaint seeks non-monetary relief and monetary damages in excess of $300,000.

GENERAL ALLEGATIONS

BACKGROUND

7. The County established the Midvalley Recreation and Technology Park (the "MRTP'), consisting of Sections 1, 2, 3, 10, 11 and 12, Township 3 South, Range 5 West, SLB&M, within the unincorporated portion of the County. *See* Exhibit A.

8. The County was successful in locating the Deseret Peak Complex, the Miller Motorsports Park and a large manufacturing facility within the MRTP.

9. The location within the MRTP of the Deseret Peak Complex, the Miller Motorsport Park, and future recreational, industrial and commercial facilities has created and will continue to create a demand for water and wastewater services within the MRTP.

10. The County created the District for the purpose, among others, of providing public water services and wastewater collection and treatment services to residents, businesses and other users within the MRTP.

11. The County owns water rights sufficient to meet the water needs of the District. However, neither the County nor the District have, or anticipate having, the resources necessary to provide either water treatment and delivery services, or wastewater collection, transportation and treatment services, within the MRTP.

12. Previously, the County requested that the City provide water treatment and transmission services to the MRTP, and contracted for such services through a water contract between the City and the County dated January 28, 2003, and otherwise through certain informal agreements between the City and the County (collectively, the "Prior Agreements"). Wastewater service to the MRTP has been provided by Tooele City, Utah.

13. The County failed to meet its obligations under the Prior Agreements. Among other things, facilities that were to be installed or provided by the County were partially, but not fully, installed or provided; the County's water consumption exceeded the agreed upon amount; the County did not provide water rights to the City sufficient to support the water deliveries to the MRTP; and the County failed to read meters and bill water users within the MRTP.

14. For the foregoing reasons, the City notified the County that the continued provision of water services by the City to the MRTP under the Prior Agreements was not viable in the long-term.

15. Given the Defendants' complete reliance on the City's infrastructure for water service to the MRTP, and the uncertainty of continued sewer service by Tooele City, Defendants determined that such utility needs were best served on a permanent basis by the City.

16. Accordingly, on March 5, 2014, the City, the County and the District entered into that certain Interlocal Agreement—Deseret Peak Area Water and Sewer Services (the "Contract") (*see* Exhibit B). The Contract provided, among other things, that the City would entertain an annexation petition for the MRTP and the area immediately west of the MRTP contiguous with the City (the "Annexation Area") (see Exhibit A), and the City would provide water and sewer service to the Annexation Area on a permanent basis.

17. Consistent therewith, one or more annexation petitions were filed with the City, the City Council adopted an Annexation Ordinance on November 5, 2014, and the Annexation of the Annexation Area became complete and effective on November 14, 2014, the date the Certificate of Annexation was signed by the Lieutenant Governor.

18. In addition, the Contract called for the construction of various water and wastewater facilities, and the conveyance of those facilities to the City.

19. Specifically, Section 5(b) of the Contract provides that the City "shall . . . at the sole cost and expense of the County and/or the District . . . iii) connect the Annexation Area to the Giza lift station by installing a new sewer main along Sheep Lane, meeting City specifications."

20. On March 24 2014, the City awarded an engineering contract to design the new sewer main in Sheep Lane (the "Sheep Lane Project"), in accordance with the Contract. The

design was completed, invoiced to the City for the amount of $12,152.50, and paid by the City in full.

21. On December 9, 2015, the City awarded the construction contract for the Sheep Lane Project. Construction and installation began on approximately January 4, 2016.

22. As of the date of this Complaint, the City has completed approximately 99% of the Sheep Lane Project, with the only remaining work being a short connection between the sewer line and the lift station.

23. On February 3, 2016, the completion of Sheep Lane Project was halted when the City received a letter from the County (the "Stop Work Notice") demanding that "no connection occur of the new sewer line to the sewer line on the Deseret Peak property without the prior approval of the Commissioners." (*see* Exhibit C).

24. The County had no right under the Contract to issue the "Stop Work Notice," having approved the Sheep Lane Project in the Contract, and therein directing the City to proceed.

25. The City incurred construction costs of $190,270.90 related to the Sheep Lane Project. The City sent invoices to the County for $169,734.80 on May 12, 2016, and for $20,536.10 on June 20, 2016.

26. On July 15, 2016, and having received no payment, the City, exercising its rights under Section 13 of the Contract, sent a Notice of Default to both the County and the District (the "Notice of Default"), demanding that payment be made within thirty (30) days.

27. On August 22, 2016, over three months after the date of the invoice, and after threat of a law suit, the County paid the City $172,880. The County paid the remaining balance of $17,390.90 on August 29, 2016.

28. Furthermore, in Section 2 of the Contract, the City and the District agreed to follow the necessary procedures set forth in UTAH CODE §§ 17B-1-417 and 503, to effect a boundary line adjustment that resulted in the Annexation Area being withdrawn from the District. The District did not follow such procedures and effect the boundary line adjustment.

29. In the Notice of Default to the District, the City included failure to effect the boundary line adjustment as a breach of the Contract, to be cured within thirty (30) days. As of the date of this Complaint, the boundary line adjustment has not been completed, and the District is therefore in default under the Contract.

30. In Section 3(a) of the Contract, Defendants agreed to transfer to the City "all existing and to be constructed wells, casings, pumps, sources of electrical supply, SCADA equipment, meters, pipelines, conduits, structures, tools, equipment and materials . . . currently used or useful in connection with the provision of water service to and within the Annexation Area" (the "Water Facilities"). Defendants did not convey the Water Facilities to the City.

31. In the Notice of Default, the City included failure to convey the Water Facilities as a breach of the Contract, to be cured within thirty (30) days. As of the date of this Complaint, the Water Facilities have not been conveyed to the City, and both the County and the District are therefore in default under the Contract.

32. Also in Section 3(a) of the Contract, Defendants agreed to transfer all easements across public and private property, including county roads, necessary for the construction,

access, operation, maintenance and repair of the Water Facilities (the "Water Easements"). Defendants did not convey the Water Easements to the City.

33. In the Notice of Default, the City included failure to convey the Water Easements as a breach of the Contract, to be cured within thirty (30) days. As of the date of this Complaint, the Water Easements have not been conveyed to the City, and both the County and the District are therefore in default under the Contract.

34. In Section 3(b) of the Contract, Defendants agreed to convey to the City the Hunsaker Well and facilities, the Deseret Peak Water Transmission line and the Sheep Lane Lift Station and associated force main, and to otherwise perform certain obligations. Defendants did not convey such facilities to the City or otherwise perform their obligations under Section 3(b).

35. In the Notice of Default, the City included failure to convey such facilities, and to perform such other obligations, as a breach of the Contract, to be cured within thirty (30) days. As of the date of this Complaint, the facilities have not been conveyed to the City and the obligations have not been performed, and both the County and the District are therefore in default under the Contract.

36. In Section 5(a) of the Contract, Defendants agreed to transfer all existing and to be constructed lift stations, pipelines, conduits, structures, tools, equipment and materials, and all facilities functionally related to or appurtenant to the foregoing, then in place, or to be constructed or installed pursuant to the Contract, and used or useful in connection with the provisions of sewer service to and within the Annexation Area (the "Sewer Facilities"). Defendants did not convey the Sewer Facilities to the City.

37. In the Notice of Default, the City included failure to convey the Sewer Facilities as a breach of the Contract, to be cured within thirty (30) days. As of the date of this Complaint, the Sewer Facilities have not been conveyed to the City, and both the County and the District are therefore in default under the Contract.

38. In Section 5(a) of the Contract, Defendants also agreed to transfer to the City all easements across public and private property, including county roads, necessary for the construction, access, operation, maintenance and repair of the Sewer Facilities (the "Sewer Easements"). Defendants did not convey the Sewer Easements to the City.

39. In the Notice of Default, the City included failure to convey the Sewer Easements as a breach of the Contract, to be cured within thirty (30) days. As of the date of this Complaint, the Sewer Easements have not been conveyed to the City, and both the County and the District are therefore in default under the Contract.

40. Section 6 of the Contract requires Defendants to deliver to the City (i) a comprehensive list of all active water and sewer accounts within the Annexation Area, including names, addresses and contract information, (ii) any and all accounting statements, balance sheets, statement of accounts, and other similar documents and information, showing a complete and accurate status of the finances of Defendants relating to water and sewer operations within the Annexation Area, and (iii) all other records, reports, maps, photos, GPS information, maintenance logs, repair records, construction information, equipment manuals, warranty materials, correspondence and any other documentation of any kind relating to the Water Facilities, Sewer Facilities, Water Easements, Sewer Easements, and water rights (the "Intangibles"). Defendants did not deliver any of the Intangibles to the City.

41. In the Notice of Default, the City included failure to convey the Intangibles as a breach of the Contract, to be cured within thirty (30) days. As of the date of this Complaint, the Intangibles have not been conveyed to the City, and both the County and the District are therefore in default under the Contract.

42. Section 4(a) of the Contract requires the County to transfer 312.16 acre-feet of water to the Hunsaker Well, specifically Water Right Nos. 15-381, 15-638 and 15-639 (the "Water Rights"). Under City Ordinance, it is also necessary for title to the Water Rights to be transferred to the City. Title to the Water Rights has not been transferred to the City.

43. To the extent possible, the City has fully performed all of its obligations under the Contract.

44. Despite negotiating and entering into the Contract with the City, annexing into the City, and paying over $200,000 to implement the design and construction of the required sewer facilities, and despite the City being ready, willing and able to provide sewer service to the County, the County began actively pursuing an extension of its temporary wastewater treatment contract with Tooele City.

45. Effective February 1, 2017, the County and Tooele City entered into an Interlocal Agreement for Wastewater Treatment Services (the "Tooele City Agreement") (Exhibit D). Under the Tooele City Agreement, temporary sewer service is continued to December 31, 2017, and the County is required to pay, in addition to regular sewer fees, a sewer "premium" of $5,000 per month.

46. In addition, the Tooele City Agreement requires the County to obtain, as required by Utah law, the written consent of Grantsville City to the use by Tooele City of effluent

generated from Grantsville City water delivered to the County property. Such consent must be delivered to Tooele City not later than March 17, 2017. As of the date of this Complaint, the County has not requested such consent from the City, and the City has granted no such consent. Accordingly, the County appears to already be in breach of the Tooele City Agreement.

47. Furthermore, the Tooele City Agreement requires the County, on or before March 15, 2017, to enter into "a new interlocal agreement with Grantsville City, or another governmental entity capable of providing wastewater collection and treatment services," for the purpose of providing such services on a long-term basis. Again, notwithstanding its existing rights to such long-term services from Grantsville City under the Contract, the County negotiated with Stansbury Park Improvement District ("Stansbury Park District") and entered into that certain Interlocal Agreement for the Collection and Treatment of Wastewater, dated as of March 15, 2017, between the County and Stansbury Park District (the "Stansbury Park Agreement") (Exhibit E).

48. By the terms of the Stansbury Park Agreement, Defendants agreed to receive sewer and wastewater services from the Stansbury Park District.

49. The Stansbury Park Agreement explicitly states that Defendants are entering into that Agreement to avoid performance under the Contract. *See* Exhibit E at Recital E (noting that the Stansbury Park Agreement is in lieu of "lift[ing] and pump[ing] its Wastewater for treatment services from Grantsville City").

50. On information and belief, the cost to the County to construct the infrastructure required to connect to the Stansbury Park District facilities will be not less than $2,600,000, or approximately *13 times* the amount the County has already paid to connect to the Grantsville

system. On information and belief, the alternative route to the Stansbury Park District facilities will not require fewer lift stations than are required for service from Granstville.

51. The material terms of the Stansbury Park Agreement conflict with the Contract such that Defendants cannot perform under both agreements.

52. Under both the Tooele City Agreement and the Stansbury Park Agreement, water based on Grantsville City water rights will be transported outside of Grantsville City boundaries for treatment. In the case of the Tooele City Agreement, such water will expressly be reused, upon treatment, within Tooele City under Tooele City's reuse program. In the case of the Stansbury Park Agreement, reuse of such treated water, while not expressly addressed, is certainly foreseeable. Such reuse is not consistent with the City's underlying water rights, and is therefore not permitted under the Utah Wastewater Reuse Act, Title 73, Chapter 3c, Part 1. Furthermore, the discharge of treated effluent outside of the boundaries of the City, whether or not part of a reuse program, may violate the terms of the City's water rights, and has not been approved by the Utah State Engineer by way of an approved change application. Finally, any change application required in connection with the treatment and/or reuse of the City's water by Tooele City or the Stansbury Park District may violate the terms of the Utah State Engineer's Tooele Valley Groundwater Management Plan, and therefore would not be approved.

53. The City is entitled to receive privilege taxes under Title 59, Chapter 4, Part 1 of the Utah Code, with respect to all County property within the Annexation Area possessed or beneficially used by any person in connection with a business conducted for profit. Upon information and belief, certain County property within the Annexation Area became liable for

such privilege tax after the effective date of the annexation of such property. As of the date of this Complaint, the City has received no privilege tax remittances from the County.

FIRST CLAIM FOR RELIEF
(Breach of Contract)

54. The City realleges and incorporates by reference the foregoing allegations of this Complaint as though fully set forth herein.

55. The March 5, 2014 Interlocal Agreement constitutes a valid and enforceable contract, legally binding the City, the County and the District to perform their respective obligations set forth therein.

56. The City has fully performed its obligations under the Contract, except to the extent it has been prevented from doing so by the County.

57. Notwithstanding the City's performance, Defendants have breached the terms of the Contract by failing to: (a) follow the procedures set forth in UTAH CODE §§ 17B-1-417, 503, to effect a boundary line adjustment that results in the Annexation Area being withdrawn from the District as required by Section 2; (b) transfer to the City the Water Facilities and Water Easements as required by Section 3(a); (c) execute and deliver deeds and other documents transferring the Hunsaker Well and facilities, the Deseret Peak Water Transmission Line and the Sheep Lane Lift Station and associated force main, and otherwise perform the obligations set forth in Section 3(b); (d) transfer to the City the Sewer Facilities and Sewer Easements identified in Section 5(a); (e) provide an inventory of, and transfer to the City, the Intangibles referred to in Section 6; and (f) otherwise perform its duties and obligations as detailed in the Contract.

58. Defendants' breach of its agreement under the Contract to receive sewer service from the City is further evidenced by both the Tooele City Agreement and the Stansbury Park

Agreement, whereby Defendants have demonstrated a positive and unequivocal intent not to render performance under the Contract.

59. As a result of the Defendants' breaches, the City has suffered injury and damages in an amount to be proven at trial, but not less than $300,000, together with interest, costs and attorneys' fees incurred in this action.

SECOND CLAIM FOR RELIEF
(Breach of the Duty of Good Faith and Fair Dealing)

60. City realleges and incorporates by reference all of the foregoing allegations of this Complaint as though fully set forth herein.

61. The City entered into the Contract with Defendants to provide water and sewer service to the County in return for the County's agreement to annex into the City, to pay for the required facilities, to convey those facilities to the City, to provide certain intangibles, and to obtain sewer service from the City, as alleged herein.

62. The City's Contract with Defendants, as do all contracts, contains an unwritten or implied promise that the parties would deal with each other fairly and in good faith.

63. The City has performed its obligations under the Contract by providing the services detailed in the Contract and dealing with Defendants fairly and in good faith.

64. Defendants, however, have breached their implied duty to deal fairly and in good faith with the City by issuing the "Stop Work Notice" and refusing to allow the City to complete the Sheep Lane Project. Defendants have further breached their covenant of good faith and fair dealing by failing to perform obligations detailed in this Complaint as required by the Contract.

65. Upon information and belief, Defendants have taken affirmative actions to deprive the City of its right to receive the benefits of the Contract by concealing and

misrepresenting its intentions to prevent completion of the Sheep Lane Project or otherwise perform as required under the Contract, and by its conduct describe above in relation to the Tooele City Agreement and the Stansbury Park Agreement.

66. The City has suffered injury and damages in an amount to be proven at trial, but not less than $300,000, together with interest, costs and attorneys' fees incurred in this action.

THIRD CLAIM FOR RELIEF
(Declaratory Relief, UTAH CODE §§ 78B-6-401, 408; Enforceability of Contract)

67. The City realleges and incorporates by reference the foregoing allegations of this Complaint as though fully set forth herein.

68. The City has performed all obligations owed to Defendants under the Contract as detailed in the Contract.

69. The City's rights are being affected by Defendants' failure to perform as required by the Contract and detailed in this Complaint.

70. The City is entitled to have the Court determine the construction and validity of the Contract, and obtain a declaration of its rights and obligations in relation to the Contract.

71. The City believes that a judicial determination is necessary and proper to determine whether Defendants' obligations as required by the Contract are enforceable.

FOURTH CLAIM FOR RELIEF
(Quantum Meruit/Unjust Enrichment—Quasi Contract)

72. The City realleges and incorporates by reference the foregoing allegations of this Complaint as though fully set forth herein.

73. The City conferred a benefit upon Defendant by performing in accordance with the Contract as detailed in the Contract.

74. Defendants knew of and appreciated the benefit it was receiving from City, and has continued to accept water service from the City.

75. Defendants received and accepted such benefit under the circumstances alleged herein, which circumstances make it inequitable for it to retain the benefit without compensating the City for its value.

76. The City is entitled to judgment against Defendants for the value of the benefit Defendants obtained from City without consideration, which is not less than $300,000, together with interest, costs and attorneys' fees incurred in this action.

FIFTH CLAIM FOR RELIEF
(Promissory Estoppel)

77. The City realleges and incorporates by reference the foregoing allegations of this Complaint as though fully set forth herein.

78. Defendants were aware of all pertinent facts related to the City's performance under the Contract and the costs the City was incurring.

79. Defendants promised to reimburse the City for the costs of constructing or improving the sewer infrastructure in the Annexation Area, and to transfer all water and sewer related infrastructure, rights, and accountings to the City.

80. Defendants knew or should have known that such promise would induce the City to perform construction and facility upgrades and continue to provide water service to the Annexation Area.

81. The City reasonably relied on Defendants' promise by performing the work described in the Contract.

82. The City suffered damages because it did not receive the assets promised to it by Defendants.

SIXTH CLAIM FOR RELIEF
(Transfer of Water Rights)

83. The City realleges and incorporates by reference the foregoing allegations of this Complaint as though fully set forth herein.

84. City ordinance requires the owner of land within the City to convey water rights to the City sufficient to support water service to such land.

85. The County has failed to convey the water rights to the City, in support of water service provided by the City to County land and facilities within the Annexation Area.

86. The City is entitled to a judgement ordering the County to convey the water rights to the City.

SEVENTH CLAIM FOR RELIEF
(Injunction—Specific Performance)

87. City realleges and incorporates by reference the foregoing allegations of this Complaint as though fully set forth herein.

88. The Contract between the City and Defendants is equitable and enforceable.

89. The City has performed all of the obligations that it is required to perform as detailed in the Contract.

90. The Defendants have failed to perform the obligations they are required to perform as detailed in this Complaint.

91. Moreover, the Defendants have anticipatorily breached the Contract by entering into the Tooele City Agreement and the Stansbury Park Agreement.

92. There is no adequate remedy at law to compensate the City for its injuries relating to the County's breach.

93. The City is entitled to an order requiring the County to perform under the Contract, including without limitation the requirement to connect to the City's sewer and wastewater system, accept sewer service from the City, and pay City rates for such service.

EIGHTH CLAIM FOR RELIEF
(Injunction)

94. City realleges and incorporates by reference the foregoing allegations of this Complaint as though fully set forth herein.

95. The City, as a municipal corporation of the State of Utah and by statute, including without limitation Utah Code Section 10-8-14, has the right and power to construct, maintain, operate, mandate connections to, and otherwise control sewage facilities within its boundaries, and to authorize the construction and operation of such works by others.

96. The City has not authorized others, including Tooele City or Stansbury Park District, to construct and operate sewage and wastewater collection and other facilities within the City's boundaries.

97. The City, as a municipal corporation of the State of Utah and in exercise of its police power, has the right to control the utilities within its borders and to ensure the safety, health, prosperity, moral well-being, peace, order, comfort, and convenience of its inhabitants. In exercise of such police power, the City is the sole and exclusive provider of sewer and wastewater service within its boundaries.

98. The Annexation Area is within the City's boundaries.

99. The City is entitled to an order enjoining the County from obtaining sewer service for its property within the Annexation Area from any provider other than the City.

NINTH CLAIM FOR RELIEF
(Injunction)

100. The City realleges and incorporates by reference the foregoing allegations of this Complaint as though fully set forth herein.

101. Defendants' delivery of sewage and wastewater to either Tooele City or Stansbury Park District constitutes a misappropriation of the City's water.

102. As evidenced by the Tooele City Agreement and the Stansbury Park Agreement, Defendants have delivered and seek to continue to deliver sewage and wastewater for treatment outside of the City to Tooele City and Stansbury Park District, respectively.

103. Defendants' delivery of sewage and wastewater to either Tooele City or Stansbury Park District facilitates a reuse of the City's water, contrary to the requirements of the Utah Wastewater Reuse Act.

104. Defendants' delivery of sewage and wastewater to either Tooele City or Stansbury Park District violates the terms of the City's water rights, including without limitation place of use, allowable depletion and return flow requirements.

105. Defendants' delivery of sewage and wastewater to either Tooele City or Stansbury Park District may violate the Utah State Engineer's Tooele Valley Groundwater Management Plan.

106. Defendants conduct violates the City's contractual and property rights and will cause the City irreparable harm.

107. The harm to the City clearly outweighs any harm to Defendants of having to abide by their agreements with the City and otherwise comply with Utah law.

108. Public policy encourages the enforcement of contractual rights and State laws and regulations with respect to the use of water.

109. Accordingly, the City is entitled to an order of the Court enjoining Defendants from delivering sewage and wastewater for treatment and possible reuse outside of the boundaries of the City.

TENTH CLAIM FOR RELIEF
(Alternative Claim—Injunction)

110. The City realleges and incorporates by reference the foregoing allegations of this Complaint as though fully set forth herein.

111. To the extent the Court does not order Defendants to connect to the City's sewer facilities pursuant to the Contract, the City's statutory rights, the City's police powers, or otherwise, and to otherwise comply with the terms of the Contract, the City is entitled to an order enjoining Defendants from obtaining water service from the City, and authorizing the City to terminate the Contract and permanently discontinue water service to the County's property.

ELEVENTH CLAIM FOR RELIEF
(Privilege Tax)

112. The City realleges and incorporates by reference the foregoing allegations of this Complaint as though fully set forth herein.

113. Defendants own property within the Annexation Area.

114. All property owned by Defendants within the City's boundaries that is possessed or beneficially used by any person in connection with a business conducted for profit is subject to payment of a privilege tax.

115. Upon information and belief, portions of Defendants' property within the Annexation Area are used by persons in connection with a business conducted for profit. Such property became liable for the payment of privilege taxes upon the effective date of the annexation of that property.

116. Defendants have not paid any privilege taxes to the City.

117. The City is, therefore, entitled to damages from Defendants for the full amount of the privilege taxes owed, an amount to be determined at trial.

PRAYER FOR RELIEF

WHEREFORE, the City prays for judgment in its favor and against Defendants as follows:

1. Under the First Claim for Relief, an award of damages in an amount to be proven at trial, but not less than $300,000, plus interest and attorney' fees;

2. Under the Second Claim for Relief, an award of damages in an amount to be proven at trial, but not less than $300,000, plus interest and attorney' fees;

3. Under the Third Claim for Relief, an order declaring Plaintiff's right to enforce the Contract and Defendants' obligation to perform under the Contract, plus attorneys' fees;

4. Under the Fourth Claim for Relief, an award of damages in an amount to be proven at trial, but not less than $300,000, plus interest and attorney' fees;

5. Under the Fifth Claim for Relief, an award of damages in an amount to be proven at trial, but not less than $300,000, plus interest and attorney' fees;

6. Under the Sixth Claim for Relief, a judgment ordering the County to convey the Water Rights to the City;

7. Under the Seventh Claim for Relief, an order requiring the County to perform under the Contract, including without limitation the requirement to connect to the City's sewer and wastewater system, accept sewer service from the City, and pay City rates for such service;

8. Under the Eighth Claim for Relief, an order enjoining the County from obtaining sewer service for its property within the Annexation Area from any provider other than the City;

9. Under the Ninth Claim for Relief, an order of the Court, enjoining Defendants from continuing or taking any further action to deliver sewage and wastewater for treatment and possible reuse outside of the boundaries of the City;

10. Under the Tenth Claim for Relief, an order for enjoining Defendants from obtaining water service from the City, and authorizing the City to terminate the Contract and permanently discontinue water service to the County's property;

11. Under the Eleventh Claim for Relief, an award of damages for the full amount of the privilege taxes owed, in an amount to be determined at trial, plus interest and attorney's fees;

12. Under all Claims for Relief, an award of its attorney's fees and costs incurred in this action; and

13. Under all Claims for Relief, such further and other relief that the Court deems just and proper.

JURY DEMAND

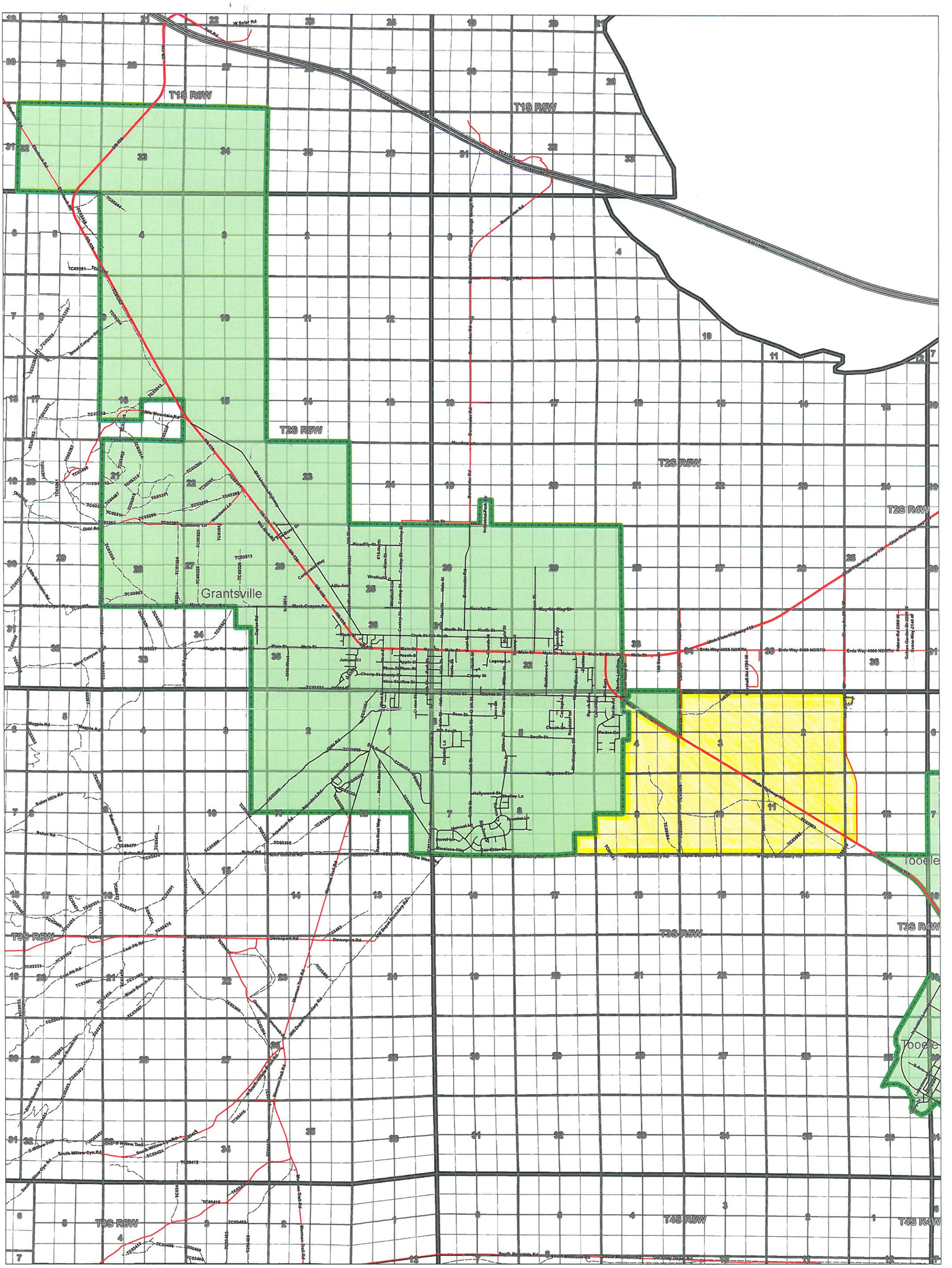
The City requests a jury for all issues so triable and has tendered the required jury fee.

DATED this 14th day of April, 2017.

KIRTON McCONKIE

/s/ Christopher E. Bramhall
Christopher E. Bramhall
Peter C. Schofield
Adam D. Wahlquist
Attorneys for Plaintiff Grantsville City

Exhibit A



GRANTSVILLE MUNICIPAL BOUNDARY

PLSSTownships_GCDB
PLSS Sections_GCDB
PLSSQuarterSections_GCDB
Municipalities

RdsMasterClass
<all other values>

CLASS
Interstate
State Highway
B Road
C Road
D Road

N
W E
S

GIS Map Disclaimer:

TOOELE COUNTY

This is not an official map but for reference use only. The data was compiled from the best sources available, but various errors from the sources may be inherent on the map. All boundaries and features therein should be treated as such. For boundary information, the pertinent County Departments or Municipalities should be contacted. This map is a representation of ground features and is not a legal document of their locations. The scale represented is approximate, so this is NOT a Survey or Engineering grade map and should by no means be used as such. This map is not intended for all uses. Tooele County is not responsible or liable for any derivative or misuse of this map.

Exhibit B

TOOELE COUNTY CORPORATON
CONTRACT # 14-03-01

INTERLOCAL AGREEMENT

(Deseret Peak Area
Water and Sewer Services)

THIS INTERLOCAL AGREEMENT (Deseret Peak Area Water and Sewer Services) (this "Agreement"), entered into as of this 5th day of March, 2014, by and among GRANTSVILLE CITY, a municipal corporation of the State of Utah (the "City"), TOOELE COUNTY, a county duly organized under the laws of the State of Utah (the "County"), and DESERET PEAK SPECIAL SERVICE DISTRICT, a local district duly organized under the Utah Limited Purpose Local Government Entities – Local Districts Act, Title 17A, Chapter 2 Part 13, Utah Code (now recodified under Title 17B, Chapter 1 (the "District"),

W I T N E S S E T H:

WHEREAS, the County established the Midvalley Recreation and Technology Park (the "MRTP"), consisting of Sections 1, 2, 3, 10, 11 and 12, Township 3 South, Range 5 West, SLB&M, within the unincorporated portion of the County, as depicted on Exhibit A attached hereto, for the purpose of creating recreational opportunities for the residents of Tooele County, and attracting developers and businesses to the area to stimulate growth, create jobs and generate increased tax revenues; and

WHEREAS, the County has been successful in locating the Deseret Peak Complex, the Miller Motorsports Park and the Reckitt Benckiser manufacturing facility within the MRTP; and

WHEREAS, the location within the MRTP of the Deseret Peak Complex, the Miller Motorsport Park, Reckitt Benckiser and future recreational, industrial and commercial facilities has created and will continue to create a demand for water and wastewater services within the MRTP; and

WHEREAS, the County created the District for the purpose, among others, of providing public water services and wastewater collection and treatment services to residents, businesses and other users within portions of the MRTP; and

WHEREAS, the County owns water rights sufficient to meet the water needs of the District, but neither the County nor the District have, or anticipate having, the resources necessary to provide either water treatment and delivery services, or wastewater transportation and treatment services, within the District or the greater MRTP; and

WHEREAS, historically the County has contracted with the City to provide culinary water treatment and transmission services to the MRTP, in part through a water contract between the City and the County dated January 28, 2003 (the "Deseret Peak Water Supply Agreement"), and otherwise through certain informal agreements between the City and the County; and

WHEREAS, the facilities required to be installed or provided by the County pursuant to the Deseret Peak Water Supply Agreement and such informal agreements, which facilities are necessary to provide reliable long-term water service to the MRTP, have been partially, but not fully, installed or provided; and

WHEREAS, the City is delivering water to the County and/or the District for use within the MRTP beyond the scope of the Deseret Peak Water Supply Agreement; and

WHEREAS, the County has not provided to the City water rights in a quantity sufficient to support City water deliveries to the MRTP; and

WHEREAS, the City has notified the County and the District that the continued provision of water services by the City for the MRTP under existing conditions and contractual arrangements is not viable in the long-term; and

WHEREAS, historically the County has contracted with Tooele City, Utah, to provide wastewater collection, transmission and treatment services within the MRTP; and

WHEREAS, Tooele City has notified the County that the wastewater capacity of "Interceptor B", presently being utilized by the County, is limited and that "Interceptor B" was constructed for the purpose of supporting the Industry Depot not MRPT; and

WHEREAS, the County has requested that the City provide wastewater collection, transmission and treatment services to customers within the MRTP pursuant to this Agreement; and

WHEREAS, Miller Motorsports Park, which leases land from the County within the MRTP, has approached the City seeking a commitment to provide wastewater services to Miller Motorsports Park following the termination of that service by Tooele City; and

WHEREAS, the City is willing to consider annexing a portion of the MRTP, and providing water, sewer and certain other public services to such area on a permanent basis, on generally the same terms as are applicable to other similarly situated property owners within the City; and

WHEREAS, the MRTP is contiguous to the City, and the portion thereof west of, and including, Sheep Lane (referred to herein as the "Annexation Area"), as depicted on Exhibit A attached hereto, is included within the expansion area in the City's current annexation policy plan; and

WHEREAS, given the heavy reliance by the County and the District on the City's water and sewer infrastructure for the provision of current and future water and sewer service to the Annexation Area, the County and the District have determined that such utility needs are best served on a permanent basis by the City through the annexation of the Annexation Area into the City; and

WHEREAS, the City's Engineer, Aqua Engineering, has prepared, and the County and the District have reviewed, a report dated January 2014, and updated concurrent with this Agreement, analyzing the relative values of the assets to be conveyed to the City and the impact fees to be waived by the City; and

WHEREAS, the City, the County and the District desire to provide for the orderly transition of water and sewer service within the Annexation Area to the City, for the transfer of adequate infrastructure and water rights to the City, for the payment of all requisite impact fees, and all other matters relating to the foregoing,

NOW THEREFORE, for and in consideration of the premises, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties do hereby agree as follows:

SECTION 1. Annexation of Annexation Area by City.

(a) The City anticipates the receipt of an annexation petition (the "Petition"), pursuant to Section 10-2-403(3) of the Utah Code, signed by one or more owners of private property within the Annexation Area that, collectively, own property that (i) covers a majority of the private land area within the Annexation Area, and (ii) is equal in value to at least 1/3 of the value of all private real property within the Annexation Area.

(b) City staff shall cause the Petition to be submitted to the City Council for action pursuant to Section 10-2-405 of the Utah Code.

(c) The County and the District, as affected entities under Section 10-2-401 of the Utah Code, agree not to protest the Petition.

(d) The City reserves full legislative and police power to either reject the Petition or accept the Petition for further consideration and, following such further consideration, to either approve or deny the Petition, all in accordance with applicable Utah law. All obligations of the City under this Agreement are conditioned upon and subject to the submission of the Petition to the City, the approval by the City Council of the Petition, and the actual annexation of the Annexation Area into the City.

(e) City staff shall defer presentation of the Petition to the City Council for final approval until after receipt by the City of the notice referenced in Section 7 below, and may recommend conditioning annexation on successful completion of the Closing (as hereinafter defined).

SECTION 2. Boundary Adjustment. Following annexation by the City of the Annexation Area, the boundaries of the City and the District will overlap. The City and the District agree to follow the procedures set forth in Sections 17B-1-503 and 17B-1-417 of the Utah Code to effect a boundary line adjustment that results in the Annexation Area being withdrawn from the District. The effect of such boundary adjustment and withdrawal shall be that after the effective date thereof, the District shall no longer have authority to provide the services within the Annexation Area that were heretofore authorized to be provided by the District, and the City shall provide such services as described in Section 9 below. Closing shall not occur until after approval of the boundary adjustment by the governing bodies of both the City and the District.

SECTION 3. Conveyance of Water Facilities to City; Additional Work.

(a) Prior to Closing, the County and the District shall transfer, or cause to be transferred, into escrow, for conveyance to the City, all existing and to be constructed wells, casings, pumps, sources of electrical supply, SCADA equipment, meters, pipelines, conduits, structures, tools, equipment and materials, and all facilities functionally related or appurtenant to the foregoing, currently used or useful in connection with the provision of water service to and within the Annexation Area (collectively, the "Water Facilities"). The Water Facilities shall include all facilities from and including the water source. In addition, the County and the District shall transfer into escrow all easements across both public and private property, including County roads, necessary for the construction, access, operation, maintenance and repair of the Water Facilities (the "Water Easements"). The Water Facilities and Water Easements shall include, but are not limited to, the facilities and easements identified on Exhibit B attached hereto. Such transfer shall be accomplished in such a manner and using such documentation as shall be approved by the City's legal counsel.

(b) In addition, the County and the District or the City, at the County and the District's expense, shall, prior to Closing:

i) Complete repairs to the Sheep Lane Lift Station and have it tied to Grantsville's SCADA system

ii) Deed The Hunsaker Well and Facilities to Grantsville City

iii) Deed the Deseret Peak Water Transmission line to Grantsville City.

iv) Deed the Sheep Lane lift Station and associated Force Main to Grantsville City.

v) Extend the Sheep Lane gravity sewer main to the South to enable connection of the Deseret Peak lift station to this line.

vi) Make contractual arrangements, for a two-year period, for a functional and fully fueled portable 75kw electric generator to be delivered to any well serving the Annexation Area within four (4) hours after a request therefore by the City.

SECTION 4. Conveyance of Water Rights to City.

(a) Prior to Closing, the County has transferred 312.16 acre feet of water to the Hunsaker Well, specifically Water Rights #15-381, 638 & 639. These water rights shall be held in the Hunsaker Well in perpetuity.

(b) Of such 312 acre-feet, 312 acre-feet shall be allocable to, and are deemed sufficient to fully satisfy, the existing water needs of the Annexation Area, as described in applicable City ordinance.

(c) The City shall have a period of sixty (60) days from and after the date hereof to conduct a due diligence review of the Water Rights. The County shall immediately provide to the City any and all documentation (the "Evaluation Materials") in its possession relating to the chain of title, beneficial use, water quality, environmental reviews, regulatory actions, or any other relevant information relating to the Water Rights, including but not limited to the items identified on Exhibit C attached hereto.

(d) All change applications necessary to qualify the Water Rights to meet the requirements of this Section 4 shall be prepared, filed and pursued through approval by the County, at its sole cost and expense. The City reserves the right to reject a proposed Water Right, and demand substitution of a different Water Right meeting the requirements of this Section 4, if the change application approval is subject to conditions that impose a material cost on the City, or which are otherwise materially detrimental to the City.

(e) In addition, the City shall, and at an expense equally borne by both the County and the City:

i) Install, at the location of the South Willow Water Tank a water line to the South Water Tank of City known as the West Bench waterline Project (WBWP) to provide for more redundancy in the system insuring the deliverance of water to the annexation area which, meeting the City specifications;

ii) Install in line a pump in the WBWP to allow for the transfer of the water from the South Tank to the South Willow Tank; and

iii) Connect the Annexation Area to the Giza lift station by installing a new sewer main along Sheep Lane, meeting City specifications.

iv) This project shall be budgeted for and constructed in 2015.

SECTION 5. Conveyance of Sewer Facilities to City; Additional Work.

(a) Prior to Closing, the County and the District shall transfer, or cause to be transferred, into escrow, for conveyance to the City, all existing and to be constructed lift stations, pipelines, conduits, structures, tools, equipment and materials, and all facilities functionally related or appurtenant to the foregoing, currently in place, or constructed or installed pursuant to subsection (b) below, and used or useful in connection with the provision of sewer service to and within the Annexation Area (collectively, the "Sewer Facilities"). The Sewer Facilities shall include all facilities from and including the City's sewage treatment works to (but not including) the lateral line serving each connection. In addition, the County and the District shall transfer or cause to be transferred into escrow for conveyance to the City all easements across both public and private property, including County roads, necessary for the construction, access, operation, maintenance and repair of the Sewer Facilities (the "Sewer Easements"). All facilities situated between the connection of a lateral line to the distribution line and the place of use, as describe in City Code, shall be owned, operated and maintained by and at the sole cost and expense of the property owner. The Sewer Facilities and Sewer Easements shall include, but not be limited to, the facilities and easements identified on Exhibit D attached hereto. The Sewer Facilities and Sewer Easements shall be free and clear of all liens and encumbrances. Such transfer shall be accomplished in such a manner and using such documentation as shall be approved by the City's legal counsel.

(b) In addition, the City shall, prior to Closing and at the sole cost and expense of the County and/or the District:

i) Install, at the location of the Deseret Peak sewer lift station, pump control electronics, SCADA telemetry equipment and wet well level monitoring equipment and alarms that meet the specifications approved by the City, all within a weatherproof enclosure adjacent to the power service;

ii) Retrofit the Sheep Lane sewer lift station to bring controls above grade level and provide pump control electronics, SCADA telemetry equipment compatible with the City's existing system, and wet well level monitoring equipment and alarms that meet the specifications approved by the City, all within a weatherproof enclosure adjacent to the power service; and

iii) Connect the Annexation Area to the Giza lift station by installing a new sewer main along Sheep Lane, meeting City specifications.

iv) This project shall be budgeted for and constructed in 2016.

SECTION 6. Assignment of Accounts and Other Materials.

(a) At Closing, The County and the District shall deliver to the City a comprehensive list of all active water and sewer accounts within the Annexation Area, including names, addresses and contact information. All documents and information relating to such accounts in the possession of the County and the District shall be delivered to the City.

(b) At Closing, The County and the District shall deliver to the City any and all accounting statements, balance sheets, statement of accounts, and other similar documents and information, showing a complete and accurate status of the finances of the County and the District relating to water and sewer operations within the Annexation Area.

(c) At Closing, The County and the District shall deliver to the City any and all other records, reports, maps, photos, GPS information, maintenance logs, repair records, construction information, equipment manuals, warranty materials, correspondence and any other documentation of any kind relating to the Water Facilities, Sewer Facilities, Water Easements, Sewer Easements, and Water Rights.

(d) All amounts, documents and items referred to in this Section 6 are referred to collectively herein as the "Intangibles."

(e) Any third party who connects to the herein stated infrastructure is subject to annexation into Grantsville City, City Impact Fees, City municipal tax and other applicable fees of Grantsville City.

(f) The County and City have no further obligations outside of this agreement regarding the herein described infrastructure and area. If the County moves to have property they own annexed into Grantsville City or connect to said infrastructure it shall be subject to all applicable fees of Grantsville City.

SECTION 7. Closing. The City shall provide the County and the District an invoice showing estimated costs for all work to be done by the City under this agreement. The County and the District shall have 30 days to review the estimated costs and shall diligently work with the City to resolve any disputes or discrepancies with respect to this invoice within said 30 days. The County and the District shall pay any sum due to the City within 60 days of receiving the

invoice from the City. At such time as the City has determined, in good faith and to its reasonable satisfaction, that all such improvements and transfers have been made and all conditions satisfied, City staff shall cause the Petition to be presented to the City Council for approval or disapproval. If the City Council approves the Petition and annexes the Annexation Area, the City and the District shall then commence the boundary adjustment process described in Section 2. Upon completion of the boundary adjustment, and withdrawal of the Annexation Area from the District, escrow shall close, and the escrow agent shall release all of the conveyance documents and other items, amounts and materials in escrow, to the City. The City, the County and the District shall cooperate in the preparation of mutually satisfactory escrow instructions to the escrow agent. The Closing shall occur on a date mutually agreeable to the City, the County and the District, within thirty (30) days after completion of the boundary adjustment; provided, however, that if the Closing does not occur within sixty (60) days after execution of this Agreement, the City reserves the right to terminate this Agreement.

SECTION 8. Representations of County and District. The County and the District represent and warrant to the City, as of the date hereof and again as of the Closing Date, that:

(a) The County and the District are the sole owners of the Water Facilities, Sewer Facilities, Water Easements, Sewer Easements, Water Rights and Intangibles (sometimes referred to collectively herein as the "Transferred Property"). No other individual, including any partnership, corporation, or other entity, owns either a legal or equitable ownership interest or partial ownership interest in the Transferred Property or any portion thereof.

(b) Neither the County nor the District has used any of the Transferred Property as security for any loan or other obligation, and has not pledged, mortgaged, hypothecated or otherwise created a lien in or other encumbrance against the Transferred Property, or any portion thereof.

(c) Neither the County nor the District has entered into any lease, permit, license or similar agreement, that is currently in force and effect, relating to the Transferred Property or any portion thereof, nor entered into any agreements, other than this Agreement, to sell any interest in any of the Transferred Property.

(d) Since acquiring the Water Rights, the County has never failed to put the Water Rights to full beneficial use, within the meaning of the laws of the State of Utah, for a consecutive period of years that would subject such Water Rights to forfeiture or abandonment.

The County has never been notified by the State Engineer that the County is not entitled to use the water represented by the Water Rights, or any portion thereof. The County has never had a change or other application to the State Engineer relating to the Water Rights denied on the basis of non-use or similar grounds.

(e) The County's use of the water represented by the Water Rights has been consistent with the terms of the Water Rights, including point of diversion, place of use, manner of use, quantity of use and time of use.

(f) Neither the County nor the District has received notice of, or are aware of, any adverse claim in or against any of the Transferred Property made by any other person or entity. There are no actions, suits, proceedings or investigations, at law or in equity, or before any governmental agency, pending, or to the best knowledge of the County or the District, threatened, affecting or involving the Transferred Property or any portion thereof, nor are the County or the District aware of any facts or circumstances that might form the basis for any such actions, suits, proceedings or investigations.

(g) The County and the District have full legal power and authority to transfer and convey the Transferred Property to the City. Such transfer and conveyance has been approved by the respective governing bodies of the County and the District. Such transfer and conveyance does not contravene the provisions of any contract or agreement to which either the County or the District are a party. Such transfer and conveyance does not contravene the provisions of Section 17-50-303, Utah Code Annotated, or any similar provision applicable to the District. Such transfer and conveyance does not contravene any rules, regulations, ordinances or policies of either the County or the District. Upon execution of this Agreement by the County and the District, this Agreement shall be binding and enforceable against the County and the District in accordance with its terms, and upon execution by the County and the District of the additional documents contemplated by this Agreement, such documents shall be binding and enforceable against the County and the District in accordance with their respective terms. The execution, delivery and performance of this Agreement by the County and the District have been duly and validly authorized by all necessary action and proceedings, and no further action or authorization is necessary on the part of the County or the District in order to consummate the transactions contemplated hereby.

(h) Neither the County nor the District has received any notice of condemnation or eminent domain proceedings with respect to any of the Transferred Property, and no condemnation or eminent domain proceedings or negotiations have been commenced or, to the best knowledge of the County or the District, threatened, in connection with any of the Transferred Property.

(i) The Evaluation Materials that have been delivered or that, prior to Closing, will be delivered, to the City shall constitute, as of the date of delivery and as of Closing, and after due inquiry on the part of the County and the District, all of the documents, showings and information called for in Section 4 hereof.

SECTION 9. Provision of Water and Sewer Services to Annexation Area.

(a) Beginning on the date of Closing, and thereafter, the City shall assume operation of the Water Facilities and Sewer Facilities, and shall provide water and sewer service to the Annexation Area. THE PROVISION OF WATER AND SEWER SERVICE BY THE CITY TO CUSTOMERS LOCATED WITHIN THE ANNEXATION AREA SHALL BE PROVIDED BY THE CITY IN ACCORDANCE WITH CITY ORDINANCES AND APPLICABLE UTAH LAW, AND NOT AS A MATTER OF CONTRACT RIGHT TO SUCH CUSTOMERS UNDER THIS AGREEMENT OR OTHERWISE. SUCH CUSTOMERS SHALL BE ENTITLED TO SERVICE FROM THE CITY SOLELY BY VIRTUE OF BEING LOCATED WITHIN THE CITY, AND SUCH SERVICE SHALL BE SUBJECT TO ALL VALID ORDINANCES, RULES AND REGULATIONS OF THE CITY, AND ALL APPLICABLE STATE STATUTES AND CASE LAW. The City shall initially charge water and sewer rates within the Annexation Area as provided in subsection (b) below, but shall not be bound to or limited by such rate structure, and reserves the right to adjust rates, adopt rates similar to or different from other rates applicable within the City, to impose conditions upon connections within the Annexation Area, and to otherwise manage the delivery of water, sewer and other services within the Annexation Area as determined by the City Council in the exercise of its legislative discretion and police power.

(b) All water and sewer service within the Annexation Area shall initially be billed at the same rates as service to similar customers within the City; provided that a surcharge may be imposed by the City on sewer rates to account for the increased costs to lift sewage.

SECTION 10. Termination of Deseret Peak Water Supply Agreement. Upon the commencement of the provision of water and sewer service by the City within the Annexation Area, the Deseret Peak Water Supply Agreement shall terminate and be of no further force and effect. The County and the City each hereby release each other from, and hereby waive, any and all claims either may have against the other arising out of the performance or non-performance of their respective obligations under the Deseret Peak Water Supply Agreement. Such waiver shall be effective upon the termination of the Deseret Peak Water Supply Agreement as provided above.

SECTION 11. Entire Agreement/Amendment. This Agreement sets forth the entire understanding of the parties with respect to the matters set forth herein as of the date hereof, and supersedes all prior oral and written agreements, discussions and understandings of the parties hereto as to the matters set forth herein, and cannot be altered or amended except pursuant to an instrument in writing signed by the City, the County and the District.

SECTION 12. Interlocal Cooperation Act. In satisfaction of the requirements of the Utah Interlocal Cooperation Act in connection with this Agreement, the parties agree as follows:

(a) This Agreement shall be authorized and adopted by resolution of the legislative body of each party, pursuant to and in accordance with the provisions of Section 11-13-202.5 of the Interlocal Cooperation Act;

(b) This Agreement shall be reviewed as to proper form and compliance with applicable law by a duly authorized attorney on behalf of any party pursuant to and in accordance with the Section 11-13-202.5(3) of the Interlocal Cooperation Act;

(c) A duly executed original counterpart of this Agreement shall be filed immediately with the keeper of records of each party pursuant to Section 11-13-209 of the Interlocal Cooperation Act;

(d) The Mayor of the City is hereby designated as the administrator for all purposes of the Interlocal Cooperation Act, pursuant to Section 11-13-207 of the Interlocal Cooperation Act; and

(e) The term of this Agreement shall commence on the date of full execution of this Agreement by all parties and shall continue through the Closing; provided that the representations and warranties herein, and the provisions of Sections 4, 9, 10 and 21 shall survive the Closing.

SECTION 13. Default. A default ("Default") shall occur under this Agreement if any party fails to perform its obligations hereunder where those obligations are due and the defaulting party has not performed the delinquent obligations within thirty (30) days following delivery to the delinquent party of written notice of such delinquency. Notwithstanding the foregoing, if the Default cannot reasonably be cured within that 30-day period, a party shall not be in default so long as that party commences to cure the Default within that 30-day period and diligently continues such cure in good faith until complete.

SECTION 14. Remedies. Upon the occurrence of a Default, the non-defaulting party, except as otherwise provided below, shall have the right to exercise any right or remedy available at law and in equity, including injunctive relief and specific performance. The parties acknowledge their obligations under this Agreement are unique and that monetary damages may not be sufficient to compensate for any defaults hereunder. The rights and remedies of the parties shall be cumulative.

SECTION 15. Notices. Any notice, confirmation or other communication hereunder shall be given in writing by certified mail, postage prepaid, or personally or by nationally-recognized overnight courier, at the following addresses, or by facsimile to the following facsimile numbers provided the transmitting facsimile machine shall automatically prepare a confirmation of successful facsimile transmission:

To City: Grantsville City
Attn: Mayor
429 East Main
Grantsville, Utah 84029
Email: jlinare@grantsvilleut.gov

To County: Tooele County Commission
Attn: Chairperson
47 South Main Street
Tooele, Utah 84074
Email: dhogan@co.tooele.ut.us

To District: Deseret Peak Special Service District
Attn: Chairperson
47 South Main Street
Tooele, Utah 84074
Email: dhogan@co.tooele.ut.us

Notice shall be deemed to have been given on the date on which notice is delivered, if notice is given by personal delivery or facsimile, on the date of delivery to the overnight courier service, if such a service is used, and on the date of deposit in the mail, if mailed. Notice shall be deemed to have been received on the date on which the notice is actually received or delivery is refused.

SECTION 16. Force Majeure. Any prevention, delay or stoppage of the performance of any obligation under this Agreement which is due to strikes; labor disputes; inability to obtain labor, materials, equipment or reasonable substitutes therefore; acts of nature; governmental restrictions, regulations or controls; judicial orders; enemy or hostile government actions; war; civil commotions; fires or other casualties or other causes beyond the reasonable control of the party obligated to perform hereunder shall excuse performance of the obligation by that party for a period equal to the duration of that prevention, delay or stoppage.

SECTION 17. Counterparts. This Agreement may be executed in multiple counterparts, each of which shall be deemed an original, and all of which taken together shall constitute one and the same document and agreement.

SECTION 18. Time. Time is expressly made of the essence with respect to the performance of each and every obligation under this Agreement.

SECTION 19. Cooperation. The parties shall cooperate together, take such additional actions, sign such additional documentation, and provide such additional information as reasonably necessary to accomplish the objectives set forth in this Agreement.

SECTION 20. Execution Voluntary. The parties have read this Agreement and have executed it voluntarily after having been apprised of all relevant information and risks and having had the opportunity to obtain legal counsel of their choice.

SECTION 21. Attorneys' Fees. If there is any litigation between City, County, and the District to enforce or interpret any provisions or rights under this Agreement, the unsuccessful party in such litigation, as determined by the court, shall pay to the successful party, as determined by the court, all costs and expenses, including but not limited to reasonable

attorneys' fees, incurred by the successful party, such fees to be determined by the court sitting without a jury.

SECTION 22. Additional Acts. The parties agree to promptly execute and deliver such other documents and perform such other acts as may be reasonably necessary to carry out the purposes and intent of this Agreement.

SECTION 23. Governing Law; Jurisdiction. This Agreement shall be governed by, and construed and enforced in accordance with, the laws of the state of Utah.

SECTION 24. Waiver. The waiver by any party hereto of any right granted to it hereunder shall not be deemed to be a waiver of any other right granted hereunder, nor shall the same be deemed to be a waiver of a subsequent right obtained by reason of the continuation of any matter previously waived.

SECTION 25. Survival. Only where specifically so provided herein shall any of the covenants, agreements, representations, warranties and indemnities set forth in this Agreement survive the Closing. Any such matters that survive Closing pursuant to the terms of this Agreement shall be subject to any time limitations set forth herein, and shall not merge into any deed, assignment or other instrument executed or delivered pursuant hereto. All claims for breach of the covenants, agreements or warranties or for material misrepresentation and indemnity made in writing during the applicable time period limitation shall survive such period.

SECTION 26. Construction. This Agreement is the result of negotiations between the parties, neither of whom has acted under any duress or compulsion, whether legal, economic or otherwise. Accordingly, the terms and provisions hereof shall be construed in accordance with their usual and customary meanings. The City, the County, and the District hereby waive the application of any rule of law which otherwise would be applicable in connection with the construction of this Agreement that provides in effect that ambiguous or conflicting terms or provisions should be construed against the party who (or whose attorney) prepared the executed Agreement or any earlier draft of the same.

SECTION 27. Interpretation. If there is any specific and direct conflict between, or any ambiguity resulting from, the terms and provisions of this Agreement and the terms and

provisions of any document, instrument or other agreement executed in connection herewith or in furtherance hereof, including any exhibits hereto, the same shall be consistently interpreted in such manner as to give effect to the general purposes and intentions as expressed in this Agreement, which shall be deemed to prevail and control.

SECTION 28. Headings. The headings in this Agreement are for reference only and shall not limit or define the meaning of any provision of this Agreement.

SECTION 29. No Third-Party Beneficiary. No term or provision of this Agreement or the Exhibits hereto is intended to be, nor shall any such term or provision be construed to be, for the benefit of any person, firm, corporation or other entity not a party hereto (including, without limitation, any broker), and no such other person, firm, corporation or entity shall have any right or cause of action hereunder.

SECTION 30. Severability. If any provision of this Agreement or any portion of any provision of this Agreement shall be deemed to be invalid, illegal or unenforceable, such invalidity, illegality or unenforceability shall not alter the remaining portion of such provision, or any other provision hereof, as each provision of this Agreement shall be deemed severable from all other provisions hereof so long as removing the severed portion does not materially alter the overall intent of this Agreement.

IN WITNESS WHEREOF, the City, the County and the District have executed this Agreement as of the date first above written.

(Signature Page Follows on Next Page)

ENTERED into as of the day and year first above written.

GRANTSVILLE CITY

By: _____
Mayor, Grantsville City

ATTEST AND COUNTERSIGN:

_____
City Recorder

Attorney Review for Grantsville City:

The undersigned, as counsel for Grantsville City, has review the foregoing Interlocal Agreement and finds it to be in proper form and in compliance with applicable state law.

By: _____
Grantsville City Attorney

TOOELE COUNTY

By: _____
Chair

Attorney Review for Tooele County:

The undersigned, as counsel for Tooele County, has review the foregoing Interlocal Agreement and finds it to be in proper form and in compliance with applicable state law.

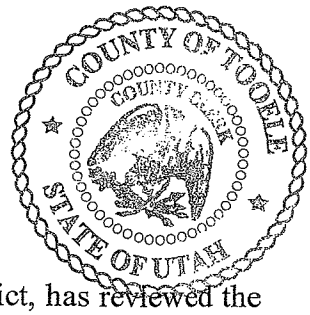
By: _____
Tooele County Attorney

DESERET PEAK SPECIAL SERVICE DISTRICT

By: _____
Chair, DPSSD

By: Marilyn K. Dillette
Secretary, DPSSD

ATTEST:



Attorney Review for DPSSD:

The undersigned, as attorney for Deseret Peak Special Service District, has reviewed the foregoing Interlocal Agreement and finds it to be in proper form and in compliance with applicable state law.

By: _____
DPSSD Attorney

EXHIBIT A

[Here attach map depicting the boundaries of the MRTP and the Annexation Area.]

DESERET PEAK ANNEXATION TO GRANTSVILLE CITY
FINAL LOCAL ENTITY PLAT

SECTIONS 3, 10, AND 11, AND A PORTION OF SECTIONS 1, 2, 4, 8, 9, AND 12,
TOWNSHIP 3 SOUTH, RANGE 5 WEST, SALT LAKE BASE AND MERIDIAN.
COUNTY OF TOOELE, STATE OF UTAH

SURVEYOR'S CERTIFICATE:

I, D. CRAIG MEYERS, DO HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR AS PRESCRIBED BY THE LAWS OF THE STATE OF UTAH, AND THAT I HOLD CERTIFICATE NO. 312770. I FURTHER CERTIFY THAT THIS ANNEXATION PLAT HAS BEEN PREPARED UNDER MY DIRECT SUPERVISION PURSUANT OF INFORMATION FOUND IN THE TOOELE COUNTY RECORDER'S OFFICE.

DATE: MAY 3, 2012

D. CRAIG MEYERS
P.L.S. NO 312770
FOR AND ON BEHALF OF BINGHAM ENGINEERING INC

DESCRIPTION OF LAND TO BE ANNEXED

LAND TO BE ANNEXED INTO GRANTSVILLE CITY LOCATED IN SECTIONS 1, 2, 3, 4, 8, 9, 10, 11 AND 12 ALL IN TOWNSHIP 3 SOUTH, RANGE 5 WEST, SALT LAKE BASE AND MERIDIAN TOOELE COUNTY, UTAH, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SECTION 3, SAID TOWNSHIP AND RANGE, AND RUNNING THENCE ALONG THE NORTH LINE OF SAID SECTION 3 THE FOLLOWING TWO (2) COURSES: 1) NORTH 89°46'35" EAST 2661.22 FEET TO THE NORTH QUARTER CORNER OF SAID SECTION 3 AND 2) NORTH 89°46'33" EAST 2661.23 FEET TO THE NORTHEAST CORNER OF SAID SECTION 3; THENCE ALONG THE NORTH LINE OF SECTION 2, SAID TOWNSHIP AND RANGE THE FOLLOWING TWO (2) COURSES: 1) NORTH 89°46'35" EAST 2,661.02 FEET TO THE NORTH QUARTER CORNER OF SAID SECTION 2 AND 2) NORTH 89°41'01" EAST 834.79 FEET MORE OR LESS TO AN EXTENSION OF THE SOUTH LINE OF THE LOS ANGELES AND SALT LAKE RAILROAD PARCEL PER THE MILLER MOTOR SPORTS BUSINESS PARK P.U.D. NO. 1 AS RECORDED IN THE OFFICE OF THE TOOELE COUNTY RECORDER AS ENTRY NO. 324139; THENCE SOUTH 84°23'36" EAST ALONG SAID RIGHT-OF-WAY 2,188.65 FEET MORE OR LESS TO THE EAST RIGHT-OF-WAY LINE OF SHEEP LANE; THENCE SOUTH 00°38'35" EAST ALONG SAID RIGHT-OF-WAY 1,707.49 FEET TO THE NORTHWEST CORNER OF LOT 2, MILLER MOTOR SPORTS BUSINESS PARK P.U.D. NO. 1; THENCE ALONG SAID LOT THE FOLLOWING THREE (3) COURSES: 1) NORTH 89°40'28" EAST 1,313.38 FEET; 2) SOUTH 00°19'32" EAST 1,055.00 FEET; AND 3) SOUTH 89°40'28" WEST 1,305.87 FEET TO THE EAST RIGHT-OF-WAY LINE OF SHEEP LANE; THENCE ALONG SAID RIGHT-OF-WAY THE FOLLOWING FIVE (5) COURSES: 1) SOUTH 00°38'35" EAST 490.40 FEET; 2) SOUTHERLY ALONG THE ARC OF A 3,050.00 FOOT RADIUS TANGENT CURVE TO THE LEFT, THE CENTER OF WHICH BEARS NORTH 89°30'04" EAST, THROUGH A CENTRAL ANGLE OF 23°52'31", A DISTANCE OF 1,270.28 FEET; 3) SOUTH 24°32'28" EAST 450.87 FEET; 4) SOUTHERLY ALONG THE ARC OF A 3,050.00 FOOT RADIUS TANGENT CURVE TO THE RIGHT, THE CENTER OF WHICH BEARS SOUTH 65°27'34" WEST THROUGH A CENTRAL ANGLE OF 24°10'13", A DISTANCE OF 1,286.64 FEET; AND 5) SOUTH 00°23'13" EAST 3,538.49 FEET MORE OR LESS TO THE NORTH RIGHT-OF-WAY LINE OF STATE HIGHWAY 112; THENCE SOUTH 65°36'36" WEST 111.94 FEET TO THE SOUTH RIGHT-OF-WAY LINE OF SAID STATE HIGHWAY 112 AND THE EAST LINE OF DESERET PEAK COMMERCIAL P.U.D. AS RECORDED IN THE OFFICE OF THE TOOELE COUNTY RECORDER'S OFFICE AS ENTRY NO. 273358; THENCE SOUTH 00°07'40" EAST ALONG SAID EAST LINE 747.18 FEET TO THE SOUTH LINE OF SECTION 12 SAID TOWNSHIP AND RANGE; THENCE SOUTH 89°30'40" WEST ALONG SAID SOUTH LINE 863.08 FEET TO THE SOUTHWEST CORNER OF SAID SECTION 12; THENCE, ALONG THE SOUTH LINE OF SECTION 11, SAID TOWNSHIP AND RANGE, THE FOLLOWING TWO (2) COURSES: 1) SOUTH 89°30'22" WEST 2664.70 FEET TO THE SOUTH QUARTER CORNER OF SAID SECTION 11 AND 2) SOUTH 89°30'41" WEST 2691.12 FEET TO THE SOUTHWEST CORNER OF SAID SECTION 11; THENCE ALONG THE SOUTH LINE OF SECTION 10, SAID TOWNSHIP AND RANGE, THE FOLLOWING TWO (2) COURSES: 1) SOUTH 89°30'41" WEST 2691.12 FEET TO THE SOUTH QUARTER CORNER OF SAID SECTION 10 AND 2) SOUTH 89°30'41" WEST 2691.12 FEET TO THE SOUTHWEST CORNER OF SAID SECTION 10; THENCE ALONG THE SOUTH LINE OF SECTION 9 SAID TOWNSHIP AND RANGE THE FOLLOWING TWO (2) COURSES: 1) SOUTH 89°30'00" WEST 2642.00 FEET TO THE SOUTH QUARTER CORNER OF SAID SECTION 9 AND 2) SOUTH 89°30'00" WEST 2634.98 FEET TO THE SOUTHWEST CORNER OF SAID SECTION 9; THENCE SOUTH 89°30'00" WEST ALONG THE SOUTH SECTION LINE OF SECTION 8, SAID TOWNSHIP AND RANGE 1320.60 FEET TO THE EXISTING BOUNDARY LINE OF GRANTSVILLE CITY AS CREATED BY THAT CERTAIN HILL AND ARGYLE ANNEXATION PLAT RECORDED IN THE OFFICE OF THE TOOELE COUNTY RECORDER AS ENTRY NO. 324468 IN BOOK 831 AT PAGE 5295; THENCE ALONG SAID BOUNDARY LINE THE FOLLOWING THREE (3) COURSES: 1) NORTH 00°28'37" EAST 1,340.87 FEET; 2) NORTH 89°46'00" EAST 1,321.01 FEET AND 3) NORTH 00°27'03" EAST 1,338.63 FEET TO THE EAST QUARTER CORNER OF SAID SECTION 8 AND THE ORIGINAL GRANTSVILLE CITY BOUNDARY; THENCE ALONG SAID GRANTSVILLE CITY BOUNDARY THE FOLLOWING THREE (3) COURSES: 1) NORTH 89°09'58" EAST 1,817.03 FEET; 2) NORTH 00°30'40" EAST 3,632.80 FEET AND 3) NORTH 89°16'24" EAST 2,143.57 FEET MORE OR LESS TO THE SOUTH LINE OF THE ANDERSON RANCH PHASE 4 ANNEXATION TO GRANTSVILLE CITY AS RECORDED IN THE OFFICE OF THE TOOELE COUNTY RECORDER AS ENTRY NO. 287814; THENCE ALONG SAID BOUNDARY THE FOLLOWING THREE (3) COURSES: 1) SOUTH 89°33'31" EAST 356.72 FEET; 2) NORTH 00°06'09" EAST 1,820.63 FEET AND 3) SOUTH 89°40'28" WEST 350.83 FEET TO THE EXISTING GRANTSVILLE CITY LIMITS; THENCE NORTH ALONG SAID EXISTING GRANTSVILLE CITY LIMITS 820.54 FEET MORE OR LESS TO THE NORTHERLY RIGHT OF WAY OF STATE HIGHWAY 112, SAID LINE ALSO BEING THE SOUTHERLY LINE OF THE JOHNSON CATTLE CO. ADDITION TO GRANTSVILLE CITY AS RECORDED IN THE OFFICE OF THE TOOELE COUNTY RECORDER AS ENTRY NO. 202728; THENCE ALONG SAID ADDITION THE FOLLOWING FIVE (5) COURSES: 1) SOUTH 50°09'31" EAST 2,360.17 FEET; 2) SOUTHEASTERLY ALONG THE ARC OF A 11,428.36 FOOT RADIUS TANGENT CURVE TO THE LEFT, THE CENTER OF WHICH BEARS NORTH 39°47'49" EAST THROUGH A CENTRAL ANGLE OF 04°18'00", A DISTANCE OF 857.32 FEET; 3) SOUTH 59°30'31" EAST 1,145.01 FEET MORE OR LESS TO THE WEST LINE OF SECTION 3, SAID TOWNSHIP AND RANGE; 4) NORTH 00°07'30" EAST 290.81 FEET TO THE WEST QUARTER CORNER OF SECTION 3 AND 5) NORTH 00°06'25" EAST 2,654.43 FEET TO THE POINT OF BEGINNING.

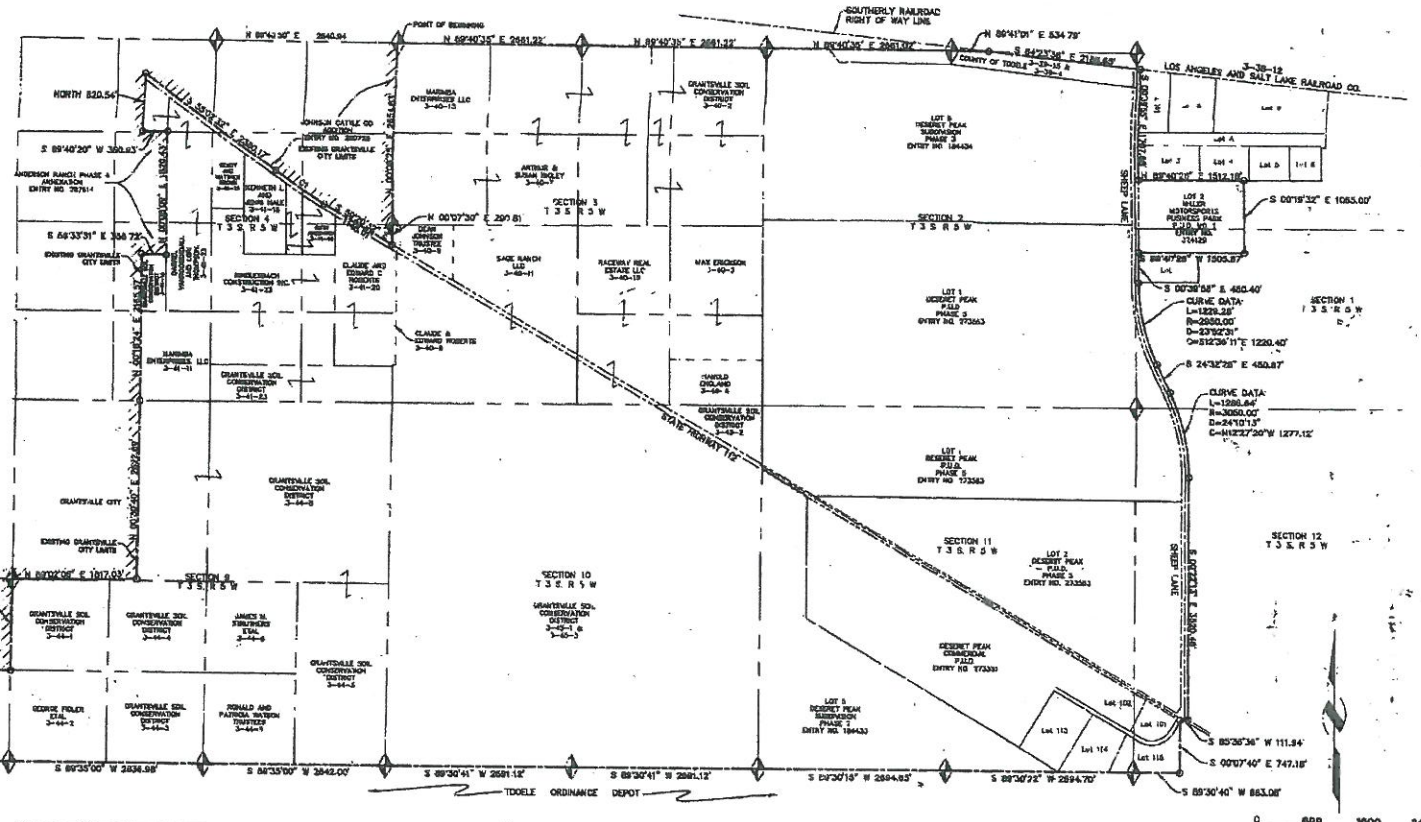
CONTAINING APPROXIMATELY 3,821 ACRES:

SURVEYOR'S NARRATIVE:

THIS ANNEXATION WAS PREPARED AT THE REQUEST OF GRANTSVILLE CITY. THE NORTH LINE ALONG THE NORTH SECTION LINES OF SECTIONS 3 AND 2 WERE ESTABLISHED FROM THE DEPENDANT RESURVEY OF PORTIONS OF TOWNSHIP 3 SOUTH, RANGE 5 WEST, SALT LAKE BASE AND MERIDIAN PERFORMED BY THE TOOELE COUNTY SURVEYOR. THE RIGHT OF WAY LINE FOR THE LOS ANGELES AND SALT LAKE RAILROAD COMPANY WAS ESTABLISHED BY THE EXTENSION NORTHEASTERLY FROM THE MILLER MOTOR SPORTS BUSINESS PARK P.U.D. NO 1 RIGHT OF WAY. THE EAST LINE OF THAT PLAT WAS ESTABLISHED BY THE EAST LINE OF SHEEP LANE. LOT 2 OF THE MILLER MOTOR SPORTS BUSINESS PARK P.U.D NO 1 AND DESERET PEAK COMMERCIAL P.U.D. THE SOUTH LINE ALONG SECTIONS 12, 11, 10, 9 AND 8 WERE ESTABLISHED FROM SAID DEPENDANT RESURVEY. THE WEST LINES WERE ESTABLISHED USING THE PREVIOUSLY RECORDED ANNEXATION PLATS PREPARED BY HILL AND ARGYLE, AND THE ANDERSON RANCH PHASE 4 ANNEXATION PLAT PREPARED BY DAVIS PETERSON PLS, AND THE JOHNSON CATTLE COMPANY ADDITION PREPARED BY ENSIGN ENGINEERING.

SURVEY REFERENCE DOCUMENTS:

- STATE COORDINATE AND DEPENDANT RESURVEY OF PORTIONS OF TOWNSHIP 3 SOUTH, RANGE 5 WEST, SALT LAKE BASE AND MERIDIAN AS RECORDED IN THE OFFICE OF THE TOOELE COUNTY RECORDER AS ENTRY NO. 91055-S IN BOOK 258 AT PAGE 824
- ANDERSON RANCH PHASE 4 ANNEXATION PLAT, AS RECORDED IN THE OFFICE OF THE TOOELE COUNTY RECORDER AS ENTRY NO. 287814
- JOHNSON CATTLE CO. ADDITION, AS RECORDED IN THE OFFICE OF THE TOOELE COUNTY RECORDER AS ENTRY NO 202728.
- ANNEXATION TO GRANTSVILLE CITY PREPARED BY HILL AND ARGYLE, AS RECORDED IN THE OFFICE OF THE TOOELE COUNTY RECORDER AS ENTRY NO. 22466, IN BOOK 831 AT PAGE 330
- MILLER MOTOR SPORTS BUSINESS PARK P.U.D NO. 1, AS RECORDED IN THE OFFICE OF THE TOOELE COUNTY RECORDER AS ENTRY NO. 324429
- DESERET PEAK COMMERCIAL P.U.D. AS RECORDED IN THE OFFICE OF THE TOOELE COUNTY RECORDER AS ENTRY NO. 273358
- DESERET PEAK SUBDIVISION PHASE 3 AS RECORDED IN THE OFFICE OF THE TOOELE COUNTY RECORDER AS ENTRY NO. 184434, IN BOOK 788 AT PAGE 11
- DESERET PEAK P.U.D. PHASE 3 AS RECORDED IN THE OFFICE OF THE TOOELE COUNTY RECORDER AS ENTRY NO. 273363



CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	CHORD	LENGTH
C1	857.32'	11,428.36'	4°18'00"	S 59°51'11" E	857.32'

PLAT PREPARED FOR:
GRANTSVILLE CITY
429 EAST MAIN STREET
GRANTSVILLE, UTAH 84029

Plat Prepared By:

BINGHAM ENGINEERING
5225 West Post Way Salt Lake City UT 84116
(801) 532-2520 www.binghameng.com

Design: ASA
Drawn: ASA
Checked: DGM
Reviewed: JRL

GRANTSVILLE CITY COUNCIL

THIS IS TO CERTIFY THAT WE THE UNDERSIGNED GRANTSVILLE CITY COUNCIL HAVE ADOPTED A RESOLUTION OF ITS INTENT TO ANNEX THE TRACT OF LAND SHOWN HEREON AND SUBSEQUENTLY ADOPTED AN ORDINANCE ANNEXING SAID TRACT INTO GRANTSVILLE CITY, UTAH AND THAT A COPY OF THE ORDINANCE HAS BEEN PREPARED FOR FILING HEREWITH ALL IN ACCORDANCE WITH UTAH CODE SECTION 10-2-403 AS REVISED AND THAT WE HAVE EXAMINED AND DO HEREBY APPROVE AND ACCEPT THE ANNEXATION OF THE TRACT AS SHOWN AS A PART OF SAID CITY AND THAT SAID TRACT OF LAND IS TO BE KNOWN HEREAFTER AS THE DESERET PEAK ANNEXATION TO GRANTSVILLE CITY.

ATTEST: GRANTSVILLE CITY CLERK

GRANTSVILLE CITY MAYOR

GRANTSVILLE CITY ATTORNEY

I HEREBY CERTIFY THAT THIS OFFICE HAS EXAMINED THIS PLAT AND IT IS CORRECT IN ACCORDANCE WITH THE INFORMATION ON FILE WITH THIS OFFICE

CITY ATTORNEY

TOOELE COUNTY SURVEYOR

APPROVED THIS 6TH DAY OF NOVEMBER, 2012

TOOELE COUNTY SURVEYOR

TOOELE COUNTY RECORDER

ENTRY NO. _____ FEE PAID _____
FILED FOR RECORD AND RECORDED THIS _____ DAY OF _____, 20__ AT _____
IN BOOK _____ OF OFFICIAL RECORDS PAGE _____

COUNTY RECORDER

BY: _____
DEPUTY RECORDER

Date 05/03/2012 | Proj. # 5150 | Sht 1 of 1

DESERET PEAK ANNEXATION TO GRANTSVILLE CITY
FINAL LOCAL ENTITY PLAT
SECTIONS 3, 10, AND 11, AND A PORTION OF SECTIONS 1, 2, 4, 8, 9, AND 12
TOWNSHIP 3 SOUTH, RANGE 5 WEST, SALT LAKE BASE AND MERIDIAN
COUNTY OF TOOELE, STATE OF UTAH

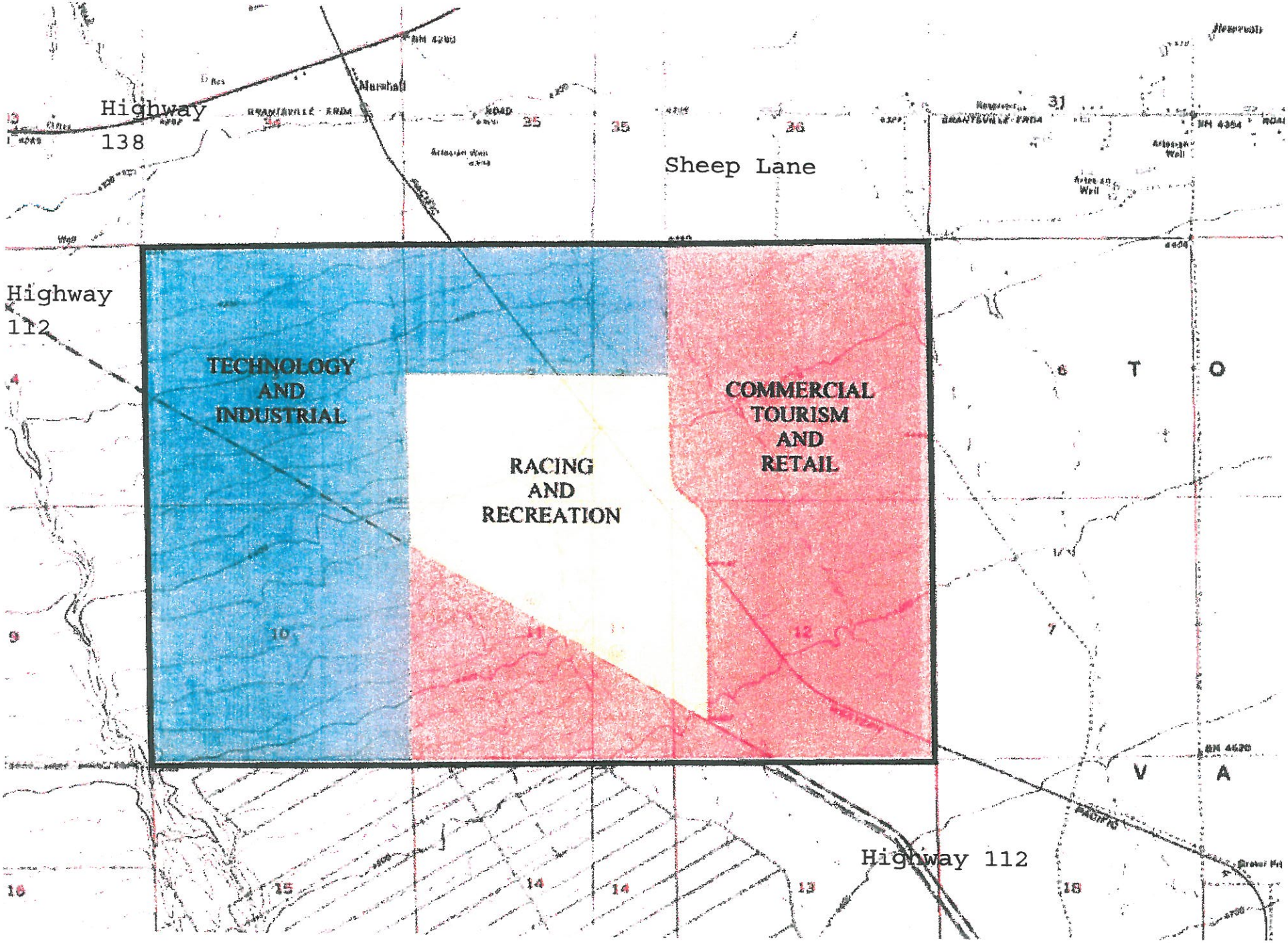

Highway 138
Sheep Lane
Highway 112
TECHNOLOGY AND INDUSTRIAL
RACING AND RECREATION
COMMERCIAL TOURISM AND RETAIL
Highway 112

EXHIBIT B

[Here describe all known Water Facilities and Water Easements.]

Exhibit B

The County shall convey to Grantsville City:

- The Hunsaker Well
- The Hunsaker Waterline from the Hunsaker Well to South Willow Water Tank
- The South Willow Waterline from South Willow Water Tank to Deseret Peak Complex
- The sewer Giza Lift Station
- Realty Income Incorporation Sewage Line to the Giza Lift Station
- High pressure sewage line from Giza Lift Station to Grantsville Sewage Plant
- Sewage line from Deseret Peak Complex to Realty Income Incorporation Sewage Line (To be built in January 2016)

EXHIBIT C

Evaluation Materials

1. Any and all documents evidencing County's title in and to the Water Rights, including without limitation the deed by which County acquired the Water Rights, and any other deeds in the chain of title;

2. (i) All filings with the State Engineer relating to the Water Rights, including by way of example, and without limitation, all change applications, segregation applications, exchange applications, and non-use applications, and (ii) all Memorandum Decisions or other rulings or decisions by the State Engineer in connection with such filings;

3. All minutes of hearings, or recordings thereof, relating to the Water Rights;

4. Any published notices relating to the Water Rights;

5. All correspondence (including email correspondence), between the State Engineer and the County relating to the Water Rights, including letters and notices;

6. All records, photographs, testimony, affidavits, statements, engineering reports, drilling reports, flow records, or other documentation relating to proofs of beneficial use of the water represented by the Water Rights;

7. All notes, memorandum, or records of any kind relating to the Water Rights;

8. Any correspondence or other documentation concerning pending or threatened actions, suits or proceedings, either judicial or administrative, with respect to the Water Rights;

9. Any correspondence with or notices from any governmental agencies, including local, State and federal, relating to the Water Rights or the water represented thereby;

10. Any leases relating to the Water Rights;

11. Any documents evidencing liens, encumbrances, mortgages, deeds of trust, pledges or security interests of any kind relating to the Water Rights; and

12. Any and all documentation regarding unrecorded rights, agreements, licenses, certificates, authorizations permits, land use approvals between the County and/or various governmental entities, quasi-governmental entities (i.e., water and sewage districts/companies), public utilities, neighboring landowners, homeowner associations, private companies, and private individuals affecting the Water Rights.

The County shall be under a continuing obligation, to and including the Closing Date, to deliver to the City any and all Evaluation Materials which the County discovers, or which otherwise come to the attention of the County, after the initial delivery of Evaluation Materials to the City, as provided above.

Should this Agreement be terminated for any reason before Closing, the City shall return to the County within ten (10) business days all of the Evaluation Materials furnished by the County to the City.

EXHIBIT D

[Here describe all known Sewer Facilities and Sewer Easements.]

Exhibit C

TOOELE COUNTY ATTORNEY'S OFFICE

cott A. Broadhead, County Attorney
Gary K. Searle, Chief Deputy Attorney
Spencer P. Call, Deputy Attorney

Robert L. Clegg, Deputy Attorney
Wayne A. Freestone, Deputy Attorney
Scott Shields, Deputy Attorney

February 3, 2016

Joel Linares
Grantsville City Attorney
429 East Main
Grantsville, Utah 84029

Re: Sewer line, Interlocal Agreement dated March 5, 2014

Sent via mail and email to jlinares@grantsvilleut.gov

Dear Joel:

The Tooele County Commissioners have asked me to write you in regards to the sewer line which is being constructed pursuant to the Interlocal Agreement dated March 5, 2014. The Commissioners are concerned about the connection of the new sewer line to the sewer line on the Deseret Peak property and the possible disruption to the facility. The Commissioners request that no connection occur of the new sewer line to the sewer line on the Deseret Peak property without the prior approval of the Commissioners.

If you have any questions, please let me know.

Sincerely,

Scott A. Broadhead
Tooele County Attorney

Exhibit D

INTERLOCAL AGREEMENT
FOR WASTEWATER TREATMENT SERVICES

THIS AGREEMENT, entered into by and between TOOELE COUNTY ("County"), the DESERET PEAK SPECIAL SERVICE DISTRICT, ("District") and TOOELE CITY CORPORATION ("City") (individually and collectively a "Party" and the "Parties") as of February 1, 2017 (the "Effective Date").

RECITALS

WHEREAS, District, County, and City are public agencies of the State of Utah, and City is a Charter city of the State of Utah; and,

WHEREAS, County owns and operates public recreation and convention facilities called the Deseret Peak Complex (the "Complex") and a racetrack facility called Utah Motorsports Campus ("UMC") (collectively the "Combined Complex") that require wastewater treatment services (the "Services") (the words "sewer" and "wastewater" are equivalent for purposes of this Agreement); and,

WHEREAS, the Parties entered into an agreement, dated July 15, 2009, entitled "Interlocal Agreement Between Tooele County, Deseret Peak Special Service District, and Tooele City Corporation, Regarding Connection of Deseret Peak Facilities to Tooele City Sewer System" (the "2009 Interlocal Agreement"); and,

WHEREAS, the 2009 Interlocal Agreement expired under its terms on July 14, 2012; and,

WHEREAS, City continued to provide the Services to the Complex under an unwritten month-to-month agreement (the "Month-to-Month Agreement"), on the same payment terms as the 2009 Interlocal Agreement, which Month-to-Month Agreement expired on December 31, 2016, pursuant to a September 13, 2016, letter from City; and,

WHEREAS, Exhibit A to the 2009 Interlocal Agreement listed the facilities that comprised, and were anticipated to comprise, the Complex. The Complex was illustrated in Exhibit B to the 2009 Interlocal Agreement; and,

WHEREAS, City presently has a wastewater main line or interceptor known as "Interceptor B," located to the east of the Complex. The location of Interceptor B in relation to the Complex was illustrated in Exhibit C to the 2009 Interlocal Agreement; and,

WHEREAS, Interceptor B was installed, in part with federal Economic Development Administration (EDA) grant funds, to support development located on the excessed and realigned maintenance and upper administration areas of the Tooele Army Depot (TEAD); and,

WHEREAS, Interceptor B, at the present time, has the capacity to accept a limited quantity of wastewater flow from the Combined Complex; and,

WHEREAS, the City's water reclamation facility (the "Plant"), at the present time, has the capacity to accept a limited quantity of wastewater flow from the Combined Complex. The location of the Plant in relation to the Complex was illustrated in Exhibit C to the 2009 Interlocal Agreement; and,

WHEREAS, County and District acknowledge that, at some point in the future, the entire capacity of Interceptor B will be utilized by City customers, and that any use of Interceptor B and the Plant by County and District under this Agreement is strictly temporary, under the terms thereof; and,

WHEREAS, the Parties desire to set forth in this Agreement the terms upon which County and District will be allowed to convey wastewater from the Combined Complex, or any portion thereof, through Interceptor B to the Plant for treatment:

NOW, THEREFORE, in exchange for the mutual promises and performances described herein, District, County, and City hereby agree as follows:

SECTION 1. PURPOSE. The purpose of this Agreement is to set forth the terms and conditions upon which County and District will be allowed, on a strictly temporary basis, and subject to the limitations of this Agreement, to convey wastewater from the Combined Complex, or any portion thereof, through Interceptor B to the Plant for treatment. This Agreement shall not be construed to allow access to Interceptor B or the Plant from any public or private property that is not currently part of the Combined Complex.

SECTION 2. FEES AND CHARGES. County and District shall pay all of the following fees and charges to City.

(a) Impact Fees.

(A) Impact fees for Complex and UMC facilities existing as of the Effective Date were paid pursuant to Tooele City Code Chapter 4-15 and pursuant to the 2009 Interlocal Agreement.

(B) Impact fees for new or expanded facilities within the Complex and UMC shall be paid by County, District, or other party prior to the issuance of any building permit for any given facility within the Combined Complex, and will be based upon anticipated daily peak wastewater flows from each facility.

(b) Inspection Fees. Inspection fees shall be paid by County and District for City inspections of County or District wastewater facilities associated with the Combined Complex as deemed necessary by City for the protection of Interceptor B and the Plant, including, for example, grease interceptors, temporary storage tanks, manholes, and aerators. Inspection fees shall be at the rate of $100 per hour per City inspector.

(c) Sewer User Fees. County and District shall be jointly and severally liable to pay sewer user fees to City upon invoice from City. Sewer user fees shall be those charged to regular City customers at the time of billing, based on City meter readings, plus 15%.

(d) Past Due Sewer User Fees. County and District shall be jointly and severally liable to pay to City all past due sewer user fees accrued under the 2009 Interlocal Agreement and Month-to-Month Agreement, totaling $4,398.38, upon invoice.

(e) Sewer Premium. County shall pay to City a sewer premium of $5,000 per month, beginning February 1, 2017, and ending upon termination of this Agreement, prorated for partial months. The sewer premium represents that portion of property, sales, and other taxes anticipated to be collected by Tooele County from the Combined Complex that would otherwise flow to City were the Combined Complex located within City's corporate limits.

SECTION 3. COUNTY AND DISTRICT WASTEWATER FACILITIES. County and District shall construct, operate, and maintain all wastewater facilities (the "Facilities") in conformance with the Tooele City Code and International Building Codes, American Public Works Association ("APWA") standards and specifications, and Tooele City amended APWA standards and specifications, each as enacted and adopted by Tooele City Code Title 4. The Facilities shall include lift stations, pipelines, holding tanks, aeration facilities, grease interceptors, sampling manholes, valves, connections, pumps, meters, etc. The Facilities shall not include Interceptor B and the Plant. County and District shall not increase the peak instantaneous pumping capacity of County and District Facilities beyond 120 gallons per minute. County and/or District shall own, operate, and maintain all the Facilities, and City shall have no ownership, operation, or maintenance obligation or liability associated with the Facilities.

SECTION 4. NEW INTERLOCAL AGREEMENT. County and/or District shall enter into a new interlocal agreement with Grantsville City, or another governmental entity capable of providing wastewater collection and treatment services, on or before March 15, 2017.

SECTION 5. WASTEWATER PRE-TREATMENT. County and District shall comply with City's wastewater pre-treatment regulatory program ("Pre-Treatment Program") and shall diligently take measures to prevent the discharge into Interceptor B and the Plant of any substances that are not permitted by, or that exceed the tolerances identified by, the Pre-Treatment Program. City may amend the Pre-Treatment Program from time to time as law or prudent Plant operations may warrant, in City's discretion.

SECTION 6. WATER RIGHTS. County shall obtain written consent from the owners of the parent water rights for water being utilized at the Combined Complex, which consent will allow City to treat and reuse all wastewater flows delivered to the Plant from the Combined Complex. The consent shall be delivered to the City within 45 days of the Effective Date of this Agreement. Should City's reuse of treated effluent from the Combined Complex wastewater flows be challenged in court or before the State Engineer, County shall indemnify and hold City harmless, and City shall have the right immediately both to terminate this Agreement and to cease accepting wastewater flows from any and all facilities at the Combined Complex.

SECTION 7. DURATION AND TERM; AUTOMATIC TERMINATION.

(a) This Agreement shall remain in full force and effect between the Effective Date and December 31, 2017 (the "Termination Date"), except that this Agreement shall terminate before the Termination Date:

(1) upon termination by any Party under Section 8 (Voluntary Termination); or,

(2) 30 days after the Third District Court rules against County's petition to disconnect the Combined Complex from the Grantsville City corporate limits.

(b) City's obligation to provide the Services under this Agreement shall cease automatically upon the Termination Date or upon earlier termination as provided herein.

(c) Except for termination under Section 8 (Voluntary Termination), no notice of termination shall be required for termination under this Section.

SECTION 8. VOLUNTARY TERMINATION.

(a) District and/or County may terminate this Agreement, with or without cause, upon 90 days written notice to City.

(b) City may terminate this Agreement for cause upon 30 days written notice to County. Cause shall include any of the following.

(1) Failure to pay all fees and charges under Section 2 (Fees and Charges).

(2) A determination made by City that the daily peak capacity of Interceptor B or the Plant has been or imminently will be consumed by sewer customers located within the City's corporate limits.

(3) Failure to enter into the agreement required by Section 4 (New Interlocal Agreement).

(4) Failure to deliver to City the written consent required by Section 6 (Water Rights) within 45 days of the Effective Date.

(5) Notice received by City of a challenge to City's reuse of treated effluent from Combined Complex wastewater flows.

(6) Allowing the placement of prohibited substances, or substances in excess of allowable tolerances, into the Facilities, Interceptor B, or the Plant, contrary to Section 5 (Wastewater Pre-Treatment) or the Pre-Treatment Program.

(7) Any increase beyond the 120-gallon-per-minute capacity established in Section 3 (County and District Wastewater Facilities).

(8) Failure to deliver any notice required by Section 10 (Notices).

(c) Upon termination of this Agreement, either under Section 7 (Duration) or pursuant to this Section 8 (Voluntary Termination), District and County shall have no right to receive a reimbursement or refund of any amounts paid pursuant to this Agreement.

SECTION 9. DISCONNECTION.

(a) Within 30 days of termination of this Agreement for any reason, County and District, at their cost, shall promptly disconnect the Combined Complex from Interceptor B in accordance with written instructions provided by City and with standard engineering and construction standards approved by City.

(b) County and District shall be jointly and severally liable for any damage to Interceptor B or the Plant resulting from District's or County's failure to follow the disconnection instructions or standards provided and approved by City.

SECTION 10. NOTICES.

(a) All notices provided under this Agreement shall be given by regular U.S. mail or by personal delivery to:

COUNTY / DISTRICT:
Board of County Commissioners
47 South Main
Tooele, UT 84074

CITY:
Tooele City Mayor
90 North Main
Tooele, Utah 84074

(b) Within 45 calendar days after the Effective Date, County shall deliver a copy of this Agreement to all tenants doing business at the Combined Complex.

(c) Within 5 business days after the date of termination of this Agreement, County shall sign and deliver a letter to all tenants doing business at the Combined Complex, the form of which letter is attached hereto as Exhibit A.

SECTION 11. INDEMNIFICATION. County and District shall each indemnify, release, and hold City harmless from and against any suit, claim, or liability resulting from, or otherwise arising out of, the provision of and the termination of the Services to all or any portion of the Combined Complex.

SECTION 12. CONTINUING OBLIGATIONS: SURVIVAL. The following provisions shall survive the termination of this Agreement:

(a) County's and District's obligations to be responsible for fees and charges under Section 2 (Fees and Charges).

(b) County's and District's obligations to comply with City's Pre-Treatment Program.

(c) County's and District's obligations to disconnect from Interceptor B under Section 9 (Disconnection).

(d) County's and District's obligations to deliver notice of termination of Services under Section 10c (Notices).

(e) County's and District's obligations to indemnify City under Section 11 (Indemnification).

(f) County's and District's waiver of jury trial under Section 13 (Waiver of Jury Trial).

(g) County's and District's limitation of remedies under Section 16 (Limitation of Remedies).

SECTION 13. WAIVER OF JURY TRIAL. The Parties expressly waive any and all right to trial by jury in any legal proceeding arising out of this Agreement or out of City providing or not providing the Services.

SECTION 14. CONSIDERATION. The Parties acknowledge the various considerations described in this Agreement, individually and in their aggregate, as being sufficient and acceptable for the agreements and promises contained in this Agreement.

SECTION 15. RECITALS. The above Recitals are incorporated into and made a part of this Agreement.

SECTION 16. LIMITATION OF REMEDIES. Except as otherwise specifically provided in this Agreement, County's and District's sole and exclusive remedy for any City non-performance or breach of the express or implied covenants of this Agreement is declaratory relief construing

this Agreement's rights and obligations and specific performance of this Agreement. Under no circumstances shall City be liable to County or District for any monetary damages, including, but not limited to, costs, fees, special, general, direct, indirect, delay, compensatory, expectancy, consequential, reliance, out-of-pocket, restitution, or other damages.

SECTION 17. NO WAIVER. The failure by City to insist upon the strict performance of any covenant, duty, agreement, or condition of this Agreement, or to exercise any right or remedy consequent upon a failure to perform thereof, shall not constitute a waiver of any such failure to perform or any other covenant, agreement, term, or condition.

SECTION 18. AUTHORITY. The individuals executing this Agreement represent and warrant that they possess the legal authority to execute this Agreement pursuant to its terms, such authority being granted and evidenced by duly adopted Resolutions of each Party.

SECTION 19. NO THIRD PARTY BENEFICIARIES. Nothing in this Agreement is intended for the benefit of any party except for the named Parties. The execution and delivery of this Agreement shall not be deemed to confer any rights upon, nor obligate any of the Parties to, any person or entity other than to each other.

SECTION 20. ATTORNEYS' FEES. If any formal action or proceeding (e.g., law suit, arbitration) is brought by any Party to enforce this Agreement, the prevailing Party shall be entitled to recover its related costs and reasonable attorneys' fees, whether such sums are expended at trial, at arbitration, or on appeal.

SECTION 21. ENTIRE AGREEMENT. This Agreement constitutes the final expression of the Parties as to the terms of this Agreement and the subject matter hereof, and supersedes all prior agreements, understandings, negotiations, and discussions between the Parties and/or their respective counsel with respect to the subject matter covered hereby. Except as expressly stated in this Agreement, no Party hereto has made any statement or representation to any other Party hereto regarding the facts relied upon by said Party in entering into this Agreement, and each Party hereto specifically does not rely upon any statement, representation, or promise of any other party hereto in executing this Agreement, except as expressly stated in this Agreement. Each Party and their attorneys, if the Party so chose, had the opportunity to make such investigation of the facts pertaining to this Agreement, and all of the matters appertaining thereto, as they deemed necessary.

SECTION 22. EXECUTION. The Parties shall execute three originals of this Agreement, in accordance with the requirements of applicable state law, with one original being delivered to each of the Parties.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed on the date indicated with the signatures pursuant to proper Resolutions duly passed and adopted by each party in accordance with their applicable law.

DATED this 1st day of February, 2017.

ATTEST:

MARILYN K. GILLETTE, County Clerk

(SEAL)

COUNTY:

WADE BITNER, Chair
Board of County Commissioners

DISTRICT:

WADE BITNER, Board Member

APPROVED AS TO FORM:

SCOTT BROADHEAD, Attorney for District and County

ATTEST:

MICHELLE Y. PITT, City Recorder

(SEAL)

CITY:

PATRICK H. DUNLAVY, Mayor

APPROVED AS TO FORM:

ROGER EVANS BAKER, City Attorney

Exhibit A

[Tooele County letterhead]

[Tenant name]
[Tenant address]

Dear [Tenant]:

The purpose of this letter is to notify you that the agreement between Tooele County and Tooele City under which you have received sewer service has been terminated, effective _____. Beginning _____, you will receive sewer service from _____ at the following rate: _____.
Your continued business operation at the Deseret Peak Complex or the Utah Motorsports Campus is important to us, and we will make every effort to see that your utility services are uninterrupted.

Please contact _____ at Tooele County at this phone number _____ with any questions.

Sincerely,

Tooele County Commission

Exhibit E

TOOELE COUNTY

Date: March 08, 2017

On behalf of Tooele City I received a copy of the following agreement:

INTERLOCAL AGREEMENT FOR THE COLLECTION AND TREATMENT OF WASTE WATER

Signed:_____ Date:03/08/2017

Wade Bitner
Chairman

Myron E. Bateman

Shawn Milne

TOOELE COUNTY COMMISSION
Tooele County Office Bldg. 47 South Main Street Suite# 300 Tooele, Utah 84074
[Office] 435-843-3150 [fax] 435-843-3400 [toll free] 866-704-3443 www.co.tooele.ut.us

INTERLOCAL AGREEMENT
FOR THE COLLECTION AND TREATMENT OF WASTEWATER
by and among Stansbury Park Improvement District and
Tooele County and Deseret Peak Special Service District

THIS INTERLOCAL AGREEMENT ("Agreement"), is made and entered into as of this 15th day of March, 2017 (the "Effective Date"), by and among STANSBURY PARK IMPROVEMENT DISTRICT, a body politic of the State of Utah (the "District"), TOOELE COUNTY, a body politic of the State of Utah (the "County"), and DESERET PEAK SPECIAL SERVICE DISTRICT, a body politic of te State of Utah (the "DP District"). The County and the DP District are sometimes referred to herein as the "County Entities"). The District, the County and the DP District are sometimes referred to hereafter individually as a "Party" and collectively as the "Parties."

RECITALS

A. The County, pursuant to the provisions of §17-34-1(c)(xii), 17-34-1(2) and 17-36-6(1)(e) Utah Code Ann., is authorized to provide sewer service outside the limits of cities and towns; and the District, pursuant to the provisions of §17B-2a-401 et seq. Utah Code Ann., is expressly authorized to acquire and operate systems for the collection, treatment and disposition of wastewater emanating from residences, commercial buildings, industrial plants, and institutions, excluding, to the extent possible, unintentionally admitted groundwater, surface water, and stormwater that may be present. The term "Wastewater" is defined herein to mean all spent water generated within the area to be served, including but not limited to, a combination of the water and other liquid-carried sewage and other wastes deemed acceptable for treatment by the District at its treatment facility pursuant to its rules, regulations and policies, and in compliance with all applicable state, local and federal statutes and regulations.

B. Pursuant to the provisions of §17B-1-103(2)(l) Utah Code Ann. the District is empowered to enter into contracts that the District's board of trustees considers necessary, convenient or desirable to

carry out the district's purposes, including a contract to do any act to exercise District powers, which would include, specifically, contracts for Wastewater treatment and disposal services.

C. The District owns, operates and maintains a Wastewater collection and treatment system (the "District Wastewater System) which, in addition to being utilized to provide Wastewater treatment services for its citizens within the District, has capacity, subject to the limitations set forth herein, which could be utilized in providing Wastewater treatment services to areas within the County.

D. The County, through its Department of Health, has determined that certain locations within the Erda area of the County (the "Erda Sewer Impacted Area"), are becoming oversaturated with septic tanks, thereby threatening contamination of not only the individual wells and sources of water supply of the inhabitants in the Erda Sewer Impacted Area, but also wells and sources of water supply owned and utilized by the District in providing municipal water to its citizens in Stansbury Park. Therefore, in the interest of the public health, safety and welfare of the citizens of Erda and Stansbury Park, the County has determined that is necessary to provide for sanitary Wastewater treatments service in the threatened area.

E. Moreover, the County owns certain real property which has been developed into the County's Deseret Peak Complex and the UMC Motor Sports Campus (collectively, the "County Property"), situated in close proximity to the area of Erda requiring sanitary Wastewater treatment service. The County, based upon the analysis of its consulting engineers, has represented to the District that receipt of sanitary Wastewater treatment service from the District will enable County Property to be served by gravity flow to the District sewer treatment facility, obviating the power costs and other immediate and long-term expenses which would be incurred by the County if it is required to lift and pump its Wastewater for treatment services from Grantsville City in its Wastewater treatment facility.

F. Wastewater treatment service for the County Property has heretofore been provided by temporary contract with Tooele City, which contract will soon terminate pursuant notice recently served on

the County by Tooele City.

G. Pursuant to the provisions of the Utah Interlocal Cooperation Act, §11-13-1, et seq., Utah Code Ann., 1953, as amended (the "Interlocal Act"), any power or powers, privileges or authority exercised or capable of exercise by a public agency of the state (defined to include any political subdivision of the state), may be exercised and enjoyed jointly with any other public agency, and any two or more public agencies may enter into agreements with one another for joint or cooperative action pursuant to the Interlocal Act.

H. The County and the District have mutually determined and agreed that it is in the mutual benefit of both Parties, and in the interest of the health, safety and welfare of their respective citizens to enter this Agreement, under authority of the Interlocal Act, pursuant to which the District would hereafter provide sanitary Wastewater treatment service to the County Property and the impacted areas in Erda, subject to the terms, covenants and conditions hereof.

NOW, THEREFORE, in consideration of the mutual terms, covenants and conditions contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

AGREEMENT

1. **Wastewater Regionalization Plan; Acceptance and Treatment of County Wastewater by the District**

1.1. Wastewater Regionalization Plan for Northern Tooele Valley. Tooele County commissioned commissioned a study to (i) evaluate alternatives for providing wastewater service to the Northern Tooele Valley; (ii) consider alternative locations and types of treatment, possible service areas, and types and sizes of conveyance facilities; (iii) to estimate population growth, future population densities and wastewater loading parameters; and (iv) to develop a master plan for wastewater collection, conveyance and treatment.

A copy of the Final Report, prepared by Hansen Allen & Luce, Inc. Engineers, entitled "*Wastewater Regionalization Plan for Northern Tooele Valley,*" (the "Master Plan"), is attached as EXHIBIT "A" hereto. This Agreement is in furtherance of the desire of the Parties to facilitate the preferred alternative and recommendation of the Master Plan.

1.2. Acceptance and Treatment of County Wastewater by the District. To facilitate the preferred alternative and recommendation set forth in the Master Plan, and subject to the terms and provisions of this Agreement, the District shall accept and treat the Wastewater generated within the Erda Service Area, defined for purposes of this Agreement to mean: (i) the County Property, (ii) the Erda Sewer Impacted Area, and (iii) those undeveloped lands in the vicinity of the County Property and the Erda Sewer Impacted Area to which Wastewater trunk, collector and individual service lines are extended by the County and other developers, as determined by the District, in its sole discretion (collectively, the "Erda Service Area"), subject to the terms and provisions of this Agreement. The County shall fully cooperate with the District and have input on the initial determination of the Erda Service Area,; however, it is mutually agreed that the District shall have the sole right, in its discretion, upon consultation with the County, to determine the composition and scope of the Erda Service Area, which may be altered from time-to-time as provided in Section 6.4 herein. The terms and conditions of this Agreement shall at all times continue to apply to Wastewater service to property within the Erda Service Area, notwithstanding any modification in the Erda Service Area by the District.

2. **Annexation.**

2.1. Mandatory Annexation. The Parties hereby acknowledge that although the District may, pursuant to §17B-2a-403(1)(d) Utah Code Ann., provide service to the Erda Service Area and the County Property which are situated outside the Districts legal boundaries, the District shall require that the County Property, and all other properties within the Erda Service Area that are to receive Wastewater

treatment service from the District, shall be required to be duly annexed into the boundaries of the District as a condition to said service. It is further acknowledged and agreed that under the authority of §17B-1-§17B-1-402(2) Utah Code Ann., such annexations to the District may occur notwithstanding the boundaries are not contiguous to existing District boundaries.

2.2. District Master Plan Updates. If the District's own internal master plan does not then address any property within the Erda Service Area, and the District determines that its master plan needs to be updated for any reason in connection with service to be provided to the property to be annexed, then the District, shall as a condition to the annexation of said property, prepare and perform such reports, studies and analysis as may be required to properly amend or update the District's master plan. All costs incurred by the District in amending and updating its master plan shall be reimbursed by the owner of the property proposed to be annexed as billed by the District, as a condition to annexation of said property.

3. **District to be the Sole Wastewater Service Provider; Mandatory Connection.**

3.1. District – Wastewater Service Provider. Subject to and in conformance with the provisions of Section 4.1 herein, the District shall be the sole Wastewater service provider within the Erda Service Area. For the purpose of this Agreement, "Wastewater Service" shall mean all services related to sanitary Wastewater, including, without limitation, the administration and regulation of sanitary Wastewater service and the collection, transportation and treatment of Wastewater at the District's Wastewater treatment facility.

3.2. Mandatory Connection. The County, on its own, or by and through the County Department of Health, shall enact or provide for the enactment of such resolutions, ordinances and regulations, as the case may be, pursuant to which: (i) all new developments of real estate within the Erda Service Area shall be required, as a condition to development approval, by the County, to connect to the District sanitary Wastewater system and receive sanitary Wastewater service from the District; and (ii)

consistent with the requirements of §15A-2-103 and 15A-3-307, Utah Code Ann., and Administrative Rule R317-4-3, every building in which plumbing fixtures are installed and all premises having sanitary sewer drainage piping, shall be required to connect to the District sanitary Wastewater system as and when the District's sanitary Wastewater system has been extended to within 300 feet of the property line of said premises. The enforcement of such resolutions, ordinances and regulations required to be promulgated in this Section, shall be the sole and separate responsibility of the County and/or the County Health Department, and not the District.

4. **Construction and Installation of Erda Wastewater System; Operation and Maintenance.**

4.1. Construction and Installation; Reimbursement.

4.1.1. Prior to the commencement of any development or construction related to this Agreement, the County shall be required to enter into a development agreement with the District pursuant to which the County shall agree, among other things: (i) to assume full responsibility for the financing, design, engineering, bidding, construction, supervision, completion, inspection and approval of any and all components of the Erda Wastewater System, including, without limitation, the main Wasterwater trunk line, collector lines and individual service lines, and all related facilities and equipment as shall be necessary to enable the District to provide Wastewater retail and treatment services within the Erda Service Area (collectively, the "Erda Wastewater System"); (ii) to be responsible for the design and engineering of the Erda Wastewater System in full conformance with the District's standard design criteria and specifications; (iii) to obtain, at its sole cost and expense, all easements and rights-of-way necessary to construct, operate, maintain, repair and replace the Erda Wastewater System; (iii) to perform all design, engineering and construction of the Erda Wastewater System in conformance with all applicable District standards and specifications, subject to review, inspection of all construction and final approval of all construction by the District; (iv) upon completion and final approval of all components of the Erda

Wastewater System, to transfer and dedicate all such components to the District, at no cost or expense to the District, subject to all improvement assurances as provided for in the Development Agreement; and (v) to perform all obligations of the County hereunder at the County's sole cost and expense. The County shall consult with the District and the District shall have input on all design and engineering aspects and components of the Erda Wastewater System. The Master Plan, Exhibit "A" hereto, does not identify the composition and scope of the Erda Service Area, which is defined and to be determined for purposes of this Agreement in conformance with the provisions of Sections 1 and 6.4 herein.

4.1.2. Notwithstanding the County's obligations hereunder, the District shall have the right to approve the consulting design and engineering firm and the construction contractor for the Erda Wastewater System.

4.1.3. The County shall reimburse the District for all costs and expenses incurred by the District in relation to all matters pertaining to this Agreement, as billed by the District.

4.2. Operation and Maintenance. Subject to the provisions of Section 9 herein, upon transfer and dedication of the Erda Wastewater System to the District, the District shall assume and thereafter be and remain solely and separately responsible for the operation, maintenance, repair and replacement of the Erda Wastwater System as an integral part of the District Wastewater System.

4.3. Late-comer Reimbursement Agreements. The County, and/or such other developers as may participate with the County, shall be obligated to design and construct the Erda Wastewater System with capacity to serve the Erda Service Area as defined, and subject to the limitations set forth in Sections 1 and 6.4 herein, recognizing that such capacity shall be in excess of that required by the County for the County Property. In consideration of the required upsizing, the District agrees to enter into an appropriate agreement with the County (a "Late-comer Reimbursement Agreement"), which shall provide, among other things, that any developer of property who is required by the County as a condition to development

approval, to connect to the Erda Wastewater System, and who will thus utilize and benefit from the same without having shared in the initial construction cost thereof (each an "Applicant"), shall be required to pay an amount equal to the Applicant's pro-rata share of the cost of that portion of the Erda Wastewater System which will benefit the Applicant's development (the "Sewer Reimbursement Charge"). The Sewer Sewer Reimbursement Charge shall be based upon the actual costs of construction of the improvements, as certified to by the County to the District, calculated on a per acre basis or such other equitable basis as determined by the District or its designated consulting engineers, in their sole discretion. The Sewer Reimbursement Charge shall be calculated and collected by the District from the Applicant prior to and as a condition to physically connecting the Applicant's property to the system. Upon collection, the District shall pay over the Sewer Reimbursement Charge to the County within thirty (30) days of collection. Sewer Sewer Reimbursement Charges shall continue to be collected by the District and reimbursement made to the County until: (i) such time as the total capacity of Erda Wastewater System has been allocated as provided herein; (ii) twenty (20) years from the Effective Date; and/or (iii) such time as the District has determined, in its sole discretion, that the capacity available in any component of the District Wastewater System which is necessary in providing service to the Erda Service Area has been fully committed to District customers or otherwise utilized within the District. To the extent other developers participate in the cost of construction of the Erda Wastewater System, the County shall have the sole responsibility of paying from the Sewer Reimbursement Charge received from the District, the pro-rata amount of the Sewer Reimbursement Charge to which said developer is entitled, if any, as determined between the County and said developer, without any participation by or recourse against the District.

5. **New Developments**. In addition to all applicable requirements imposed by the County in connection with any new real estate development ("New Development"), intended to be served through the Erda Wastewater System, the construction, installation, inspection, testing approval of Wastewater system

improvements to be utilized in providing Wastewater service to such New Development, and Wastewater service by the District to the New Development, shall be provided subject to and in conformance with the terms and provisions of this Agreement, including, without limitation, the payment of all applicable impact fees and Sewer Reimbursement Charges, and all District standards, practices, rules, regulations and policies, in the same manner as any new development occurring within the District.

6. **Wastewater Service**. Upon transfer and dedication of the Erda Wastewater System to the District, the District shall provide Wastewater Service to the County Property and the Erda Service Area, subject to the following:

6.1. Equal Service Priority. The County with respect to the County Property, and all customers within the Erda Service Area, shall be entitled to receive Wastewater Service from the District in the same manner and at all times on an equal priority basis with all other customers of the District, subject to all District rules, regulations, policies and procedures.

6.2. Applications for Service. All new customers desiring Wastewater Service through the Erda Wastewater System shall be required to make application to the District and otherwise comply with the District's standard start-up and all other service rules, regulations, policies and procedures as a condition to such service.

6.3. Fees and Charges. All persons connected to and receiving sewer collection and treatment services from the District shall be obligated to pay when due all applicable impact fees, sewer collection and treatment service fees, and other charges levied and imposed by the District subject to and in conformance with State law and the District's rules, regulations, policies and procedures in the same manner as any other customer of the District.

6.4. Capacity Limitations. The Parties hereby acknowledge and agree that the Erda Service Area, as determined by the District pursuant to Section 1 herein, shall change from time-to-time

based upon constantly varying factors including the relative timing and density of development and resulting sewer capacity demands in the Erda area of Tooele County as opposed to the timing and density of development and resulting sewer capacity demands within Stansbury Park as contemplated in the District's own internal master plan and capital facilities plan. Given the capacity limitations of the District's connecting trunk lines and treatment facilities, notwithstanding anything herein to the contrary, the District shall have the right to modify and limit the scope of the Erda Service Area from time-to-time, as necessary, in its sole and absolute discretion.

6.5. District Consultation in County Zoning Decisions. Inasmuch as the capacity available in the Erda Wastewater System, and in particular, the capacity available in the District Wastewater System, is limited and directly impacted by the timing and density of development within the Erda Service Area and within the Stansbury Park, as set forth in Section 6.4 herein, the County shall provide to the District all relevant information pertaining to any application for a zoning change within the Erda Service Area, and the County agrees, prior to any final action by the County with respect to the proposed change, to directly consult with the District, and receive input from the District, among other things, with respect to densities allowable under the proposed zoning change and the impact of increased densities on the District's ability to provide Wastewater service hereunder based upon the Master Plan, Exhibit "A" hereto. It is acknowledged and agreed that any zoning change approving densities beyond that that which the capacity of any component of the Erda Wastewater System, including the District's wastewater treatment facilities, as set forth in the Master Plan, is designed to accommodate, shall require the County, at its expense, to update the Master Plan and construct and install such additional facilities as may be required by the District to serve the additional density. Notwithstanding the foregoing, nothing herein shall divest the County of its sole jurisdiction over zoning and its legal right and responsibility to approve all zone change applications in conformance with State and County laws and ordinances.

6.6. District Master Plan and Capital Facilities Plan Updates to Provide for Future Facilities. The District reserves the right to at any time update and/or otherwise modify its master plan and capital facilities plan, and to impose and/or adjust impact fees, and other fees, charges, and requirements as shall be necessary to provide for the planning, design, construction and installation of future facilities, in addition to the Erda Wastewater System facilities as presently contemplated herein, which may be required in order for the District to continue to provide Wastewater service within the Erda Service Area. All costs and expenses incurred by the District in updating its master plan and capital facilities plan, as it deems necessary to address future facilities related to the Erda Wastewater System, shall be reimbursed by the County as billed by the District.

7. **Authority of the District's Board of Trustees; Rules, Regulations, Policies and Procedures.** The Wastewater Services to be provided by the District under this Agreement, including all services provided by the District not specifically enumerated which may hereafter be requested of the District by the County, shall be subject, in all respects, to the ultimate approving authority of the District's board of trustees (the "District Board"). All District rules, regulations, policies and procedures shall apply in connection with Wastewater Services provided to customers within the Erda Service Area, and the District Board shall promulgate such other and additional policies and procedures for the management and the conduct of its affairs relative to the Erda Wastewater System, as it shall deem necessary and proper in accomplishing the purposes of this Agreement. All services to be provided by the District hereunder shall be performed subject to and in conformance with said policies, procedures, rules and regulations promulgated by the District Board.

8. **Term; Termination.** The respective obligations of the District and the County as enumerated enumerated in this Agreement shall be and remain in full force for a term of fifty (50) years from the Effective Date, which is the maximum term authorized by the Statute.

9. **Indemnification; Waiver and Release.**

9.1. Indemnification. The County shall indemnify, defend, and otherwise hold the District, and its officers, agents, employees, consultants and contractors, harmless from and against any and all liability, losses, damages, claims, demands, suits, and proceedings, of whatsoever kind or nature, as well as any and all costs and expenses incurred in connection therewith, including court costs and reasonable attorney's fees, resulting from any injury to persons or damage to property, whether real or personal, which arise out of or are otherwise attributable, in any way, to the financing, design, engineering, bidding, supervision, construction, completion, inspection, installation and approval of the Erda Wastewater System, and fulfillment of any District right or obligation hereunder with respect thereto. Notwithstanding the foregoing, the County shall have no obligation to indemnify, defend or hold the District, and its agents, employees and officers, harmless from and against any liability, losses, damages, claims, demands, suits, and proceedings, of whatsoever kind or nature, which arise out of or are otherwise attributable to the negligence or misconduct of the District, or its officers, agents, employees, consultants and contractors.

9.2. Waiver and Release. The County hereby waives any and all liability on the part of the District and forever releases the District and its officers, directors, employees, consultants, agents and assigns, from liability for any and all claims, losses or damages of every description or kind whatsoever, real or personal, which arise out of or are otherwise attributable, in any way, to the District's obligation with respect to the District's participation in the design, supervision, construction, installation and approval of the Erda Wastewater System, water service provided by the District to customers within the Erda Service Area, and/or otherwise pertaining to the District's obligations with respect to the Erda Wastewater System under this Agreement; provided, that nothing in this Agreement shall be construed as releasing the District from liability for its own negligence.

9.3. Governmental Immunity Act. The provisions of this Section are subject to all applicable provisions of the Utah Governmental Immunity Act, and neither Party waives any right they may each have with respect thereto.

10. **Default**. The failure by either Party to observe and perform any of the terms and provisions of this Agreement, where the failure to perform shall continue for a period of ten (10) days after written notice from the non-breaching Party, shall constitute a material default in breach of this Agreement; however, in the event the default is such that it cannot be cured within said ten day period, there shall be no event of default if breaching Party shall commence to cure the default with the ten day period and proceeds thereafter to cure the default with all possible diligence, and the default is cured within a reasonable period. In the event the default is not cured as provided herein, the non-breaching Party shall have, in its sole and absolute discretion, the right to elect to terminate this Agreement upon the delivery of written notice thereof to the breaching Party, or to continue to enforce this Agreement and seek any legal or equitable remedies for breach. In the event the non-breaching Party elects to terminate this Agreement, the non-breaching Party shall also have the right to seek damages and other legal and/or equitable remedies recoverable at law which are caused by or result from the default of the breaching Party.

11. **Waiver of Jury Trial**. To the fullest extent permitted by law, each of the Parties hereto expressly and knowingly waives any right it may have to a trial by jury in respect to any litigation directly or indirectly arising out of, under or in connection with this Agreement, the transactions contemplated hereby, or the actions of such party in the negotiation, administration, performance and enforcement hereof. Each Party further waives any right to consolidate any action in which a jury trial cannot be or has not been waived. This provision shall survive any termination of this Agreement.

12. **Miscellaneous Provisions**.

12.1. No Assignment. Neither Party may assign its interest in this Agreement.

12.2. No Third-Party Beneficiaries. This Agreement shall not confer any rights or remedies upon any Person other than the Parties and their respective successors-in-interest.

12.3. Inducement. The making and execution of this Agreement has not been induced by any representation, statement, warranty or agreement other than those herein expressed.

12.4. Binding Effect. This Agreement shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and assigns.

12.5. Severability. If any term or provision of this Agreement shall, to any extent, be determined by a court of competent jurisdiction to be void, voidable, or unenforceable, such void, voidable or unenforceable term or provision shall not affect the enforceability of any other term or provision of this Agreement; and the Parties agree to attempt in good faith to reform such void or unenforceable provision to the extent necessary to render such provision enforceable and to carry out its original intent.

12.6. Entire Agreement. This Agreement constitutes the entire understanding and agreement by and between the Parties hereto, and supersedes all prior agreements, representations or understandings by and among them, whether written or oral, pertaining to the subject matter hereof.

12.7. Construction. As used herein, all words in any gender shall be deemed to include the masculine, feminine or neuter, all singular words shall include the plural, and all plural words shall include the singular, as the context may require.

12.8. Amendment. This Agreement may be amended upon the mutual written agreement of the Parties.

12.9. Further Action. The Parties hereby agree to execute and deliver such additional documents and to take such further action as may become necessary or desirable to fully carry out the provisions and intent of this Agreement.

12.10. Expenses of Enforcement. In any proceeding to enforce, interpret, rescind or

terminate this Agreement or in pursuing any remedy provided hereunder or by applicable law, the prevailing Party shall be entitled to recover from the other Party all costs and expenses, including a reasonable attorney's fee, whether such proceeding or remedy is pursued by filing suit or otherwise, and regardless of whether such costs, fees and/or expenses are incurred in connection with any bankruptcy proceeding. For purposes of hereof, the term "prevailing Party" shall include, without limitation, a Party who agrees to dismiss an action or proceeding upon the other's payment of the sums allegedly due or performance of the covenants allegedly breached, or who obtains substantially the relief sought. The provisions set forth in this paragraph shall survive the merger of these provisions into any judgment.

12,11 References to District Rules, Regulations and Policies. Any reference herein to standards, rules, regulations, policies, practices and procedures of the District shall apply to those applicable as of the Effective Date and to all additions, amendments and/or other modifications thereto as may be promulgated from time-to-time by the District Board.

12.12. Warranty of Authority. The individuals executing this Agreement on behalf of the Parties hereby warrant that they have the requisite authority to execute this Agreement on behalf of the respective Parties and that the respective Parties have agreed to be and are bound hereby.

13. **Incorporation of Recitals and Exhibits**. The Recitals first set forth above, and all Exhibits referenced herein, are hereby incorporated into and made a part of the Agreement.

14. **Attorney's Approval**. In conformance with the provisions of §11-13-202.5(3) of the Act, as a condition precedent to its entry into force, this Agreement shall be submitted to an attorney authorized by each Party who shall approve the same as to its property form and compatibility with State law.

IN WITNESS WHEREOF the Parties have caused this instrument to be executed as of the day and year first above written.

STANSBURY PARK IMPROVEMENT DISTRICT

By _____
General Manager

APPROVED AS TO FORM:

_____
Attorney for Stansbury Park Improvement District

TOOELE COUNTY, UTAH

By _____
Chair, County Commission

APPROVED AS TO FORM:

_____
Attorney for Tooele County

DESERET PEAK SPECIAL SERVICE DISTRICT, acting by and through the Board of County Commissioners, of Tooele County, Utah, as its governing board

By _____
Chair

APPROVED AS TO FORM:

_____
Attorney for Deseret Peak Special Service District

ATTEST:

_____
MARILYN K. GILLETTE
TOOELE COUNTY CLERK/AUDITOR

COUNTY OF TOOELE
COUNTY CLERK/AUDITOR
STATE OF UTAH

EXHIBIT "A"

WASTEWATER REGIONALIZATION MASTER PLAN FOR NORTHERN TOOELE VALLEY

TOOELE COUNTY

WASTEWATER REGIONALIZATION PLAN FOR NORTHERN TOOELE VALLEY

HAL Project No.: 283.02.100

Final report

March 2017

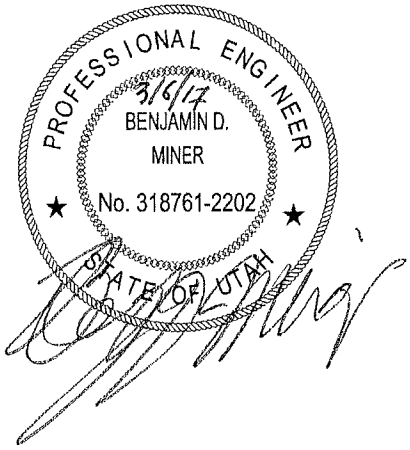
HANSEN ALLEN & LUCE inc
ENGINEERS

TOOELE COUNTY

WASTEWATER REGIONALIZATION PLAN FOR NORTHERN TOOELE VALLEY

(HAL Project No.: 283.02.100)

Final Report



HANSEN ALLEN & LUCE inc
ENGINEERS

March 2017

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CHAPTER 1 - INTRODUCTION

BACKGROUND

The Tooele Valley is located between the Oquirrh and Stansbury Mountains south of the Great Salt Lake. Growth within the valley has been rapid over the past 20 years, and has included significant residential, commercial and industrial development. This growth has placed increasing demand and pressure on available resources and existing infrastructure, and has created the need for additional facilities.

A critical aspect of existing and future development is waste water collection, conveyance and disposal. Waste water treatment plants exist for Tooele City, Grantsville City, Stansbury Park Improvement District (Stansbury Park ID) and the Lake Point Improvement District (LPID). For unincorporated portions of Tooele County that are not within a special district, on-site waste water disposal systems (septic tanks) have been used.

Tooele County recently became concerned that the number of septic tanks within the unincorporated areas of the county will exceed the number of tanks that can be supported by the existing natural geological and biological systems. This concern lead the Tooele County Commission and Health Department to begin investigating the current status of septic tanks within the unincorporated areas of the county and to begin planning for waste water collection, conveyance and disposal.

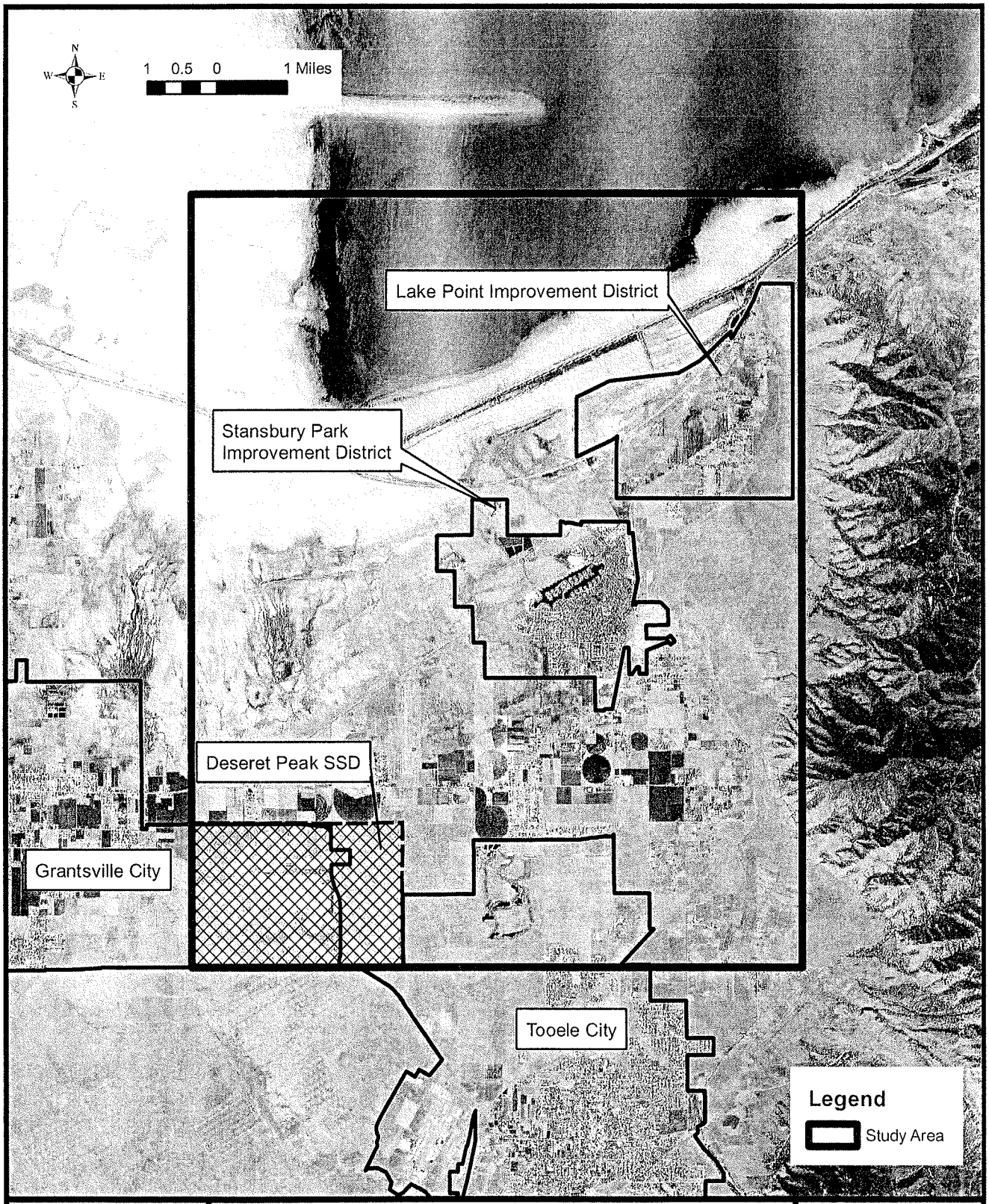
STUDY AREA

The general study area was initially identified by Tooele County as the unincorporated areas not served by a sanitary sewer system within the northern portion of the Tooele Valley. The study area was further refined during the study. A discussion of regionalized treatment has been included for the northern Tooele Valley. A more detailed treatment and conveyance evaluation is provided in the study for specific areas. The Deseret Peak Special Service District area is also included in the study. Figure 1-1 shows the study area, including the areas served by an existing sanitary sewer system.

PURPOSE

The purpose of this study is to evaluate alternatives for providing waste water service to the northern Tooele Valley. The study considers alternative locations and types of treatment, possible service areas, and types and sizes of conveyance. The study also estimates population growth, future population densities and wastewater loading parameters.

The first step of the evaluation, which is described in Chapter 2, is the septic tank density study. The septic tank density study confirmed concerns that ground water is at risk with continued development. Given the identified risk to groundwater, it was decided to explore the possibility of collecting and treating waste water. Stakeholders were contacted to gage support for creation of a waste water collection and treatment system. Several alternative collection and



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TOOELE COUNTY
NORTHERN TOOELE VALLEY
WASTE WATER REGIONALIZATION PLAN
STUDY AREA

FIGURE 1-1

CHAPTER 2 – SEPTIC SYSTEM DENSITY

SEPTIC SYSTEM DENSITY STUDY

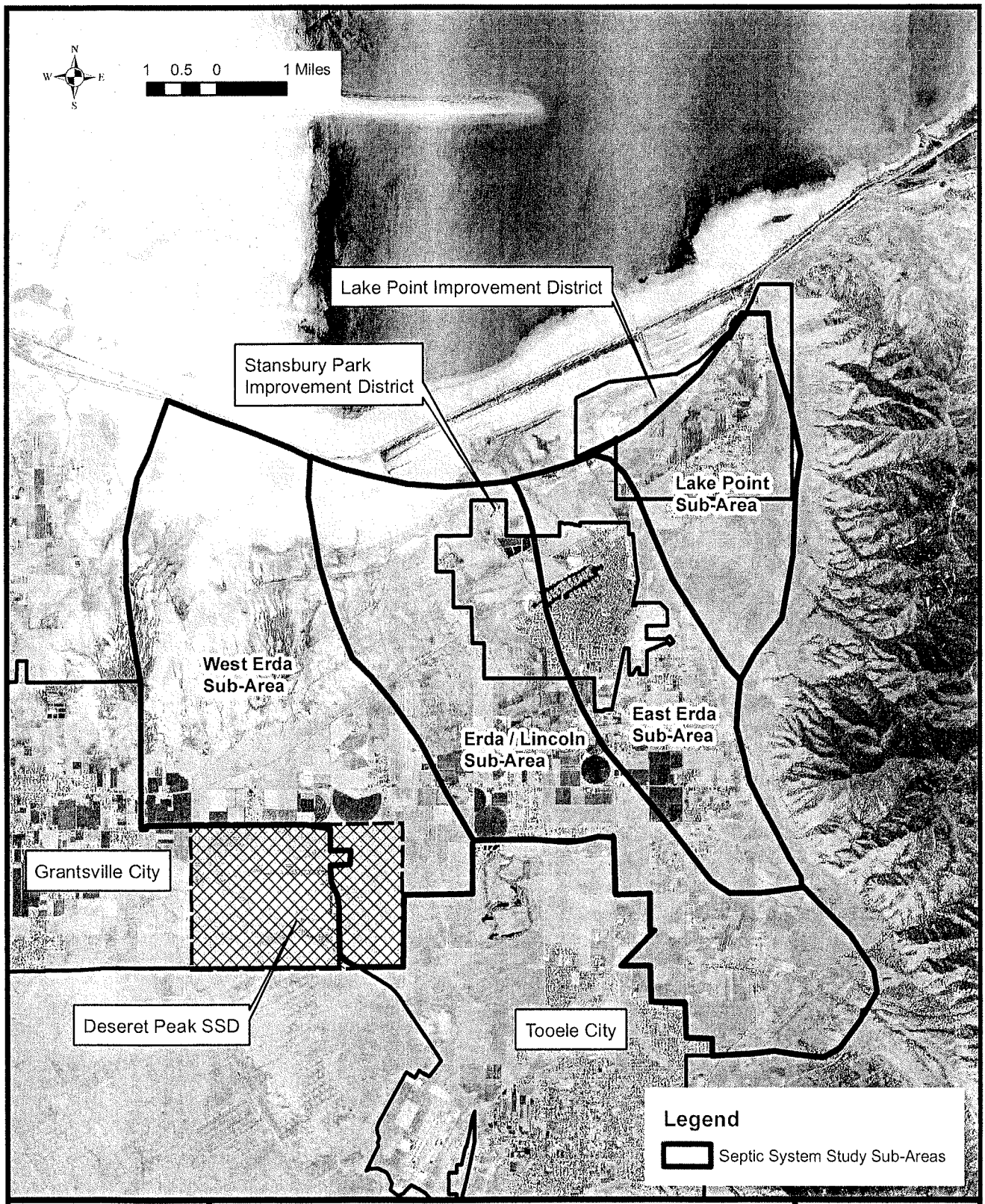
As part of this study, a septic tank density study was prepared under separate cover (HAL, March 2016). A summary of the results and findings of the septic tank density study are as follows:

The septic tank density study report summarizes the results of an evaluation of the impact of septic system discharges into groundwater within the Tooele Valley. The study area includes the unincorporated areas north and east of Tooele City and Grantsville. The purpose of the septic tank report was to recommend septic system densities that will protect groundwater for drinking water supplies.

A review of septic system density related studies demonstrates that throughout the United States, high septic system densities often result in degradation of groundwater quality. Existing regulations promulgated by the Utah Division of Drinking Water and the Division of Water Quality provide a basis for Tooele County to implement septic system density limitations for the protection of groundwater.

Nitrate was used as an indicator of septic system groundwater pollution because it is persistent in the groundwater, is easy to monitor, and because there is a reliable historical record from existing groundwater sources. Groundwater in Tooele Valley has been classified by the U.S. Geological Survey as Class I-A Pristine and Class II Drinking Water quality. Background nitrate concentrations in the mountain areas up gradient from human development in the Tooele Valley are less than 1 mg/L based on available information. Areas within Tooele Valley that are downgradient of development (including septic systems) have nitrate concentrations from 2 to 5 mg/L.

The study area was divided into 4 smaller subareas based upon hydrogeological conditions and groundwater flow paths within the valley. These include the Lakepoint Subarea, East Erda Subarea, Erda / Lincoln Subarea, and West Erda Subarea. Hydrogeological data for each subarea was used in a mass balance approach with risk analysis to determine septic system densities that would prevent nitrate concentrations from degrading to above 5 or 6 mg/L. The recommended septic system density is 6 acres per septic system in the Lakepoint Subarea and 5 acres per septic system in the other 3 subareas. Consideration should be made for existing subdivisions that currently exceed these densities (as dense as 1.2 acres per septic system). The boundaries of each of these subareas are included as Figure 2-1.



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TOOELE COUNTY
NORTHERN TOOELE VALLEY
WASTE WATER REGIONALIZATION PLAN
SEPTIC SYSTEM SUB-AREAS MAP

FIGURE 2-1

CHAPTER 3 – REGIONALIZATION

INTRODUCTION

Given the findings of the septic tank density study, which indicate that prolonged reliance on septic tanks will likely lead to degradation of ground water, it is recommended that alternative waste water treatment technologies be evaluated and considered for implementation. Tooele County agreed with the recommendation and requested that a regionalization study be performed. This regionalization study looks at alternatives for the collection, conveyance and treatment of wastewater by means other than septic tanks.

REGIONALIZATION

Use of Existing Facilities at Neighboring Communities

Several alternatives for regionalized collection and treatment of waste water were considered. Nearby communities with infrastructure were contacted to determine whether they had available excess capacity or expandable facilities. The primary goal was to identify waste water treatment options, but conveyance was also considered, in case any existing pipelines had remaining capacity Since sewer service has not been provided in most of the unincorporated parts of the study area, little conveyance infrastructure is in place for these areas. New sewers will need to be constructed. Detailed descriptions of collection alternatives are included in Chapter 6. A detailed description of treatment alternatives is included in Chapter 7.

Administrative Structure

In order to manage a public waste water collection and treatment system, it is necessary to incorporate waste water system users within a political subdivision (body politic). This allows the collection of fees, management of the system and enactment of policies and ordinances. Given that much of the area within the study area isn't currently being served by a waste water collection system, it will be necessary to create an administrative framework by which to provide service. Tooele County is working with legal counsel to determine how to pursue the administrative structure. The following are potential alternatives for the administrative structure:

New Local District

Areas that are not currently served by a city or existing local district or improvement district could potentially be served by formation of a new local district. The new local district could provide collection services and/or treatment services. A new local district could also manage wastewater collection, but could contract with a city or other local district for treatment services.

Enlargement of an Existing Local District or City

Another alternative to provide waste water service is to expand the service area of an existing district or city. If an existing district or city has excess capacity or the ability to grow, and if they are willing to provide the service, the service boundary could be expanded and service provided.

TRANSITION FROM SEPTIC TANKS TO A WASTE WATER COLLECTION SYSTEM

For areas that are currently served by septic tanks, as development reaches the allowable development density limits, or as developers wish to build to higher densities, it will be necessary to transition from the septic tank system to a piped collection system. The following alternatives for transitioning should be considered:

New Development

Zoning ordinances and/or Health Department policies should be enacted that limit new development densities to the limits recommended by the 2016 HAL Septic Tank Density Study, if the developers and land owners intend to utilize septic tanks. These densities are either 5 acres per typical residential septic tank or 6 acres per typical residential septic tank (See Chapter 2). If greater densities are desired, sewers should be constructed to convey the waste water to treatment facilities.

Service Lateral and Connection Cost

It is anticipated that the cost of connecting to the sewer system will be borne by the developer.

Connection / Impact Fee

It is anticipated that an impact fee for the conveyance system and treatment will be paid by the developer.

Existing Development

It is recommended that once a sewer is installed near an existing developed lot, the lot owner should be required to connect to the sewer. In many communities, a connection will be required once the sewer line is within 300-feet of the sewer.

Service Lateral Cost

When new sewers are installed in a community with septic tanks, often the cost of lateral construction between the existing building and the "after the fact" sewer is borne by the property owner. However, in some instances, the community may provide funding for the connection in the form of a grant or loan.

Connection Fee

It is typical to charge a connection to cover the capital facilities costs. It is anticipated that Stansbury Park ID will charge a connection fee for access to the waste water treatment lagoons. A fee may also be required to pay for portions of the pipelines. However, if existing residents are actively paying off a bond, their contribution should be considered in the fee amount.

Schedule of Improvements

A critical aspect of building a waste water system is construction timing. One option is to obtain funding and then construct the facilities for the entire service area within a short time frame (1 to 3 years). This requires the initial connection of a relatively large number of customers as soon as the construction is done so that adequate fees can be collected and used to fund debt and operating expenses. This approach is effective as long as the number of users is in proper proportion with the capital expense. This approach is often used in small developed cities.

Another approach is to require developers to construct improvements as needed. Often, they are required to install the waste water facilities that are relevant to their development (i.e. sewers required to convey their waste to a connection point with the treatment plant), including facilities as shown in the master plan. When developers construct master planned facilities larger than they need, they may be eligible to receive compensation from later developers. The collection system will spread geographically as development continues. Existing buildings are usually required to connect once a sewer is constructed nearby. This approach often limits development of some properties until the collection system has been expanded to a reasonable distance from the proposed property for development.

STAKEHOLDER CONSULTATION

Key stakeholders were contacted to discuss the wastewater collection, conveyance and treatment needs in the northern Tooele Valley. Meetings or phone conferences were held with the Erda Acres, Grantsville City, Lake Point ID, Stansbury Park ID, Kennecott Utah Copper and Tooele City. Invitations were also extended to the Tooele Valley Airport but they declined to participate. A description of each participating stakeholder and a summary of the discussion is as follows:

Erda Acres

Erda Acres is a private water company in the Erda area. While the company doesn't provide sewer service, it is a key stakeholder because of the effects that a waste water collection system could have on existing and future residents, and because of the significance that a waste water collection system could have on water use and water quality. If a waste water collection system is created, greater land use densities would be possible. This could create a greater demand for water, some of which may be provided by Erda Acres if they approve additional connections.

A meeting was held with the Erda Acres Board of Directors and other interested members of the public. The discussion was informal in that no public vote or resolutions occurred, but several key ideas were expressed. Most Board members expressed an interest in maintaining control over the water system, and also expressed an interest in having a greater degree of input over planning and zoning issues. Some people expressed an interest in maintaining the rural nature of the Erda area and were opposed to higher density development.

Grantsville City

Grantsville is located in the northwestern part of the Tooele Valley. Grantsville provides water and wastewater service to residential, commercial and industrial development. Collection and treatment services are provided, with treatment being provided by wastewater lagoons. The lagoon facility was recently upgraded and has a design capacity of 1.9 million gallons per day (MGD), with current average day loadings of about 0.8 MGD.

Grantsville indicated that with the recent upgrade in capacity, they anticipate that they will have adequate capacity for many years. As a result, they indicated that there isn't a need to partner with other entities at this time. However, they indicated that they are willing to discuss any specific request or proposal related to water or waste water and consider ways they may be able to participate.

Lake Point ID

The Lake Point ID is located in the northeastern portion of the Tooele Valley and provides wastewater collection and treatment for residential and commercial development in the Lake Point area. Treatment is performed with wastewater lagoons. The waste water lagoons are effective in treating the wastewater in accordance with permit requirements. The lagoons have the capacity to serve about 900 equivalent residential units (ERUs). The approximate number of ERUs currently being served is 550.

There is a considerable amount of land available for additional development. Depending on zoning approvals and the real estate market, the future growth could exceed the lagoon capacity. The Lake Point ID has considered expansion of the lagoon system to accommodate the growth but has not prepared specific plans to expand at this time.

The Lake Point ID indicated that they support the idea of a regionalized treatment facility. They recognize that as the existing lagoons age or as additional capacity is needed, it may be beneficial to connect to a regionalized facility.

Stansbury Park ID

The Stansbury Park ID is located at the northern end of the Tooele Valley and provides water and wastewater service to about 12,000 people. The Stansbury Park ID has a collection and treatment system, with treatment being provided by a lagoon system. The lagoon system has been an effective treatment option. The lagoons currently are permitted for a monthly average flow of 1.5 MGD.

The Stansbury Park ID recognizes that their waste water collection system is located at the downstream portion of the Tooele Valley, and is therefore well positioned to receive wastewater from upstream development. The Stansbury Park ID also recognizes that their water sources could be at risk of contamination if the numbers of septic systems continue to increase. Stansbury Park ID indicated that they are willing to accept flow from existing and future

development for the northern Tooele Valley. However, a critical aspect of accepting flow from areas outside of the current Stansbury Park ID service area is that current residents not be required to pay costs associated with the new service areas.

Kennecott Utah Copper

Kennecott Utah Copper (UKC) is a major land holder in the northern Tooele Valley. Kennecott was generally supportive of the concept of providing treatment in the area. UKC does not have conveyance or treatment facilities and would possibly participate as any land owner during land development.

Tooele City

Tooele City is located in the southern portion of the valley and provides water and waste water service to residential, commercial and industrial development. Tooele City recently completed an upgrade to the wastewater treatment plant so that the current capacity is approximately 3.4 MGD. Average daily flows are approximately 2.1 MGD.

The Tooele City Waste Water Treatment Plant (WWTP) currently receives flow from the Deseret Peak and Utah Motor Sports Park facilities via lift stations and a force main. It is understood that this may change as additional plans for conveyance and treatment are developed.

Since the Tooele City WWTP is located at the southern end of Tooele Valley, it is higher in elevation than most of the unincorporated area to be served. It may be possible to serve a few areas by gravity conveyance. It is also possible to pump the waste to the treatment plant, but the pumping costs increase substantially with distance from the treatment plant and with elevation.

Tooele City indicated that given the recent upgrades to the City treatment plant and given that the treatment plant is on the uphill side of the valley, it would not likely be feasible to participate in a regional plan. Tooele City has committed the excess treatment capacity to growth within the City so that the capacity won't be available for unincorporated areas. Notwithstanding this discussion, Tooele City is willing to entertain requests from the County and consider ways that they may be able to participate. Tooele City indicated a willingness to consider continuing to receive wastewater from the Deseret Peak and Utah Motor Sports Campus facility on a limited basis, although additional negotiations may be necessary.

Land Development Companies

Several land developers provided input. The developers expressed support for a waste water collection and treatment system since it would allow greater flexibility in development density and since it would allow greater potential for commercial and industrial development.

Overview of Stakeholder View Points

Generally, the stakeholders appeared supportive of the concept of creating a waste water collection and treatment system for northern Tooele Valley. Stansbury Park indicated an interest in protecting the existing groundwater sources that serve as the supply to their public water system. Stansbury Park also indicated that they are willing to expand their boundaries to include the new service area. Tooele City appeared supportive of the concept of providing waste water service to the area, but acknowledged that given Tooele City's location at a higher elevation and given the fact that the City recently completed a long term expansion of their own treatment plant, it would be unlikely that they would participate in any significant way. Grantsville City indicated that the City has recently upgraded their treatment facility, so moving operations to a new location would be unlikely in the near future. Lake Point Improvement District indicated that they have additional capacity, but that they are interested in discussing their potential role in waste water regionalization. Land developers were supportive of the creation of waste water collection infrastructure.

SUMMARY OF REGIONALIZATION ALTERNATIVES

The location of the Stansbury Park Improvement District (Stansbury Park ID) is geographically well suited to provide waste water treatment service, and is well suited to begin maintenance operations of new lines constructed in the study area. The geographical advantage applies both to its relatively low elevation and to its central location. This makes it easier to route flow from upstream sub-basins and will make it easier in the future to receive flow from neighboring communities, if connections with the additional service areas are made.

CHAPTER 4 – GROWTH, DENSITY AND FLOW PROJECTIONS

As noted previously, significant growth pressures exist within Tooele Valley. These pressures are due to the economic growth within the valley and due to pressures from the neighboring Wasatch Front area. While increased residential and commercial growth is occurring as a result of local economic development, growth is also occurring as a result of economic influence from the Wasatch Front. This includes many people who work in Wasatch Front communities and commute from their residences in Tooele Valley.

Because of proximity to the Wasatch Front, the northern Tooele Valley area is expected to continue as a prime growth area. Recognizing this growth pattern and the limited availability of waste water conveyance and treatment facilities in the area, Tooele County requested that this study include estimates of population growth and density. The estimates are not intended to involve complex land planning efforts, but are intended to provide population projections that can serve as basis for hydraulic loading predictions. This allows for pipe sizing estimates and for estimates of waste water treatment capacity expansions.

ASSUMED DENSITIES AND SERVICE AREA

A meeting was held with Tooele County personnel to establish a service area for population estimates. During this meeting, the types of future build-out land use and land use densities were assumed for planning purposes. The meeting focused on unincorporated areas not currently served by a waste water collection system. The land use types and densities were not based on existing land use zoning, since it is recognized that zoning may change. In fact, once a waste water collection system is available, there will likely be increased interest in densities higher than the current zoning. Therefore, Tooele County personnel based estimates on their judgement of possible future land use type and densities. Estimates of existing densities are based on aerial photography.

Figure 4-1 provides the service area, land use types and densities assumed for future build-out conditions in the northern Tooele Valley. Essentially, it is anticipated that there will be an expansion of waste water collection and treatment service for the land area between Stansbury Park ID on the north, Tooele City on the south, SR-36 on the east and Sheep Lane on the West. Additionally, a commercial area along SR-36 between the Stansbury Park ID and the Lake Point ID in included, as is the Deseret Peak Special Service District (including the portion within Grantsville City).

GROWTH PROJECTIONS

The number of existing and build-out (future) equivalent residential units (ERUs) was predicted based on the assumed densities and land areas. An ERU represents the hydraulic loading of the average residence. Commercial and industrial developments are quantified in terms of ERUs so that a single consistent method of loading quantification can be used. Growth projections were prepared so that anticipated densities could be estimated for different time

periods. Growth rates were based growth rate estimates included in previous recently prepared master plans. The detailed breakdown and growth assumptions are provided in Appendix A.

Growth projections are primarily based on anticipated ERUs, however, an equivalent population estimate is provided. This is based on the US Census data for Tooele County which identifies the average number of people per household as 3.2. Therefore, it is assumed that an ERU includes 3.2 people.

Table 4-1 provides the estimated number of existing and future buildout ERUs, as well as intermediate years and assumed associated population.

Table 4-1. Estimated Existing and Future Build-Out Equivalent Residential Units

Area[1]	ERUs Existing	ERUs 30 Years	ERUs 50 Years	ERUs Build Out	Equivalent Buildout Population
Erda	518	2,836	4,926	12,874	41,200
Sheep Lane	58	318	552	1,602	5,100
Deseret Peak	549	1,333	2,407	3,449	11,000
TOTAL	1,125	4,487	7,885	17,925	57,300

[1]Area boundaries are provided on Figure 4-1.

It may be observed in Table 4-1 that based on the current projections, build-out may occur beyond a time period of 50 years. The equivalent population is predicted to be 57,300 people.

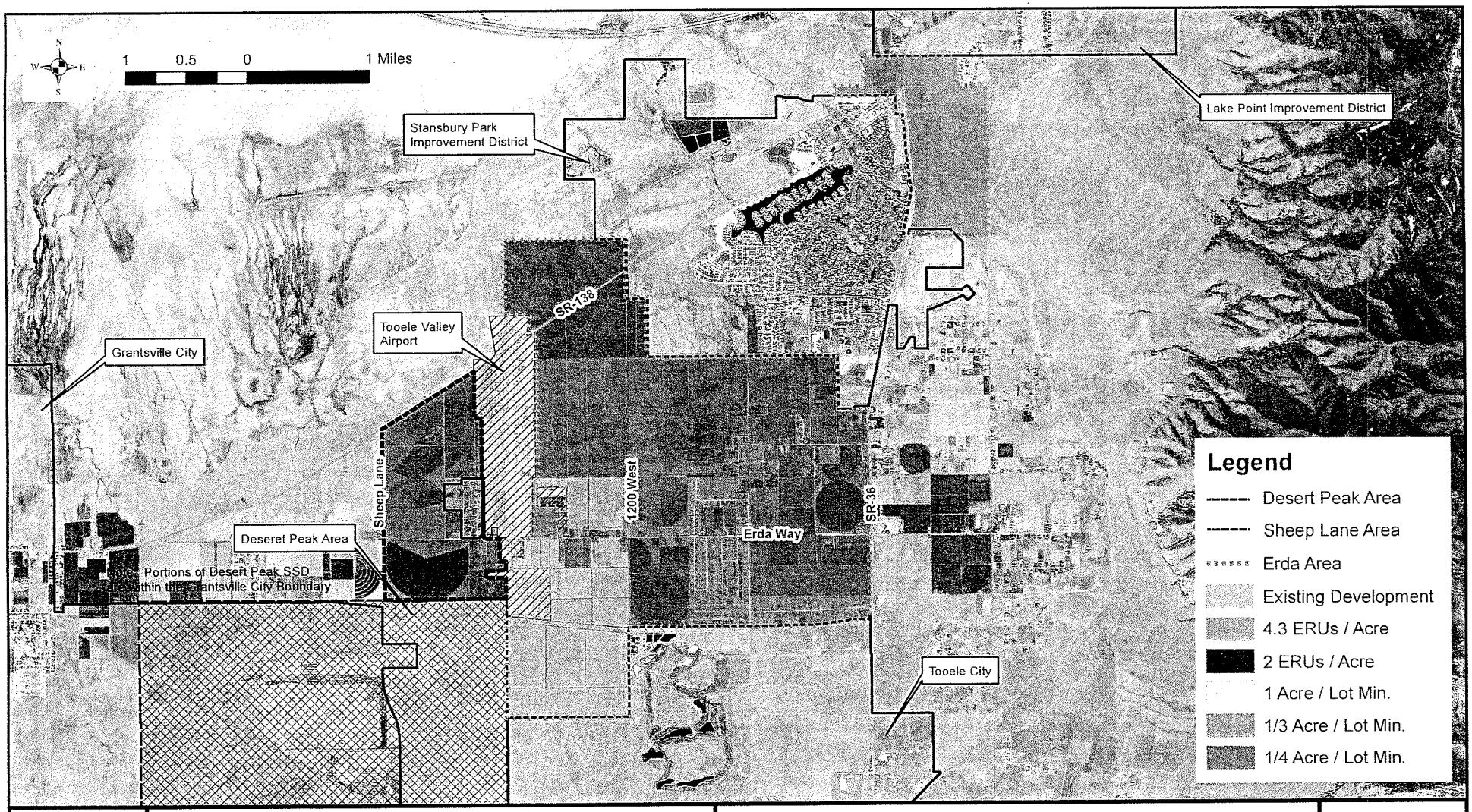
ESTIMATED WASTE WATER LOADING

Based upon the estimated number of ERUs and the population, hydraulic loading values have been calculated. An average hydraulic loading of 100 gallons/person/day is assumed. This information is provided in Table 4-2.

Table 4-2. Average Day Hydraulic Loading for the 50-Year and Build Out Alternatives

Area	Avg. Day Hydraulic Loading (Gal/ERU/Day)	50 Year Avg. Day Hydraulic Loading (MGD)	Build-Out Avg. Day Hydraulic Loading (MGD)
Erda	320	1.58	4.12
Sheep Lane	320	0.18	0.51
Deseret Peak	320	0.77	1.10
TOTAL		2.53	5.73

In Table 4-2, it may be observed that the build-out average day loading is approximately twice the predicted 50-year loading. This is a reflection of the fact that the future planning density is much larger than the existing rural condition of the areas.



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TOOELE COUNTY
NORTHERN TOOELE VALLEY
WASTE WATER REGIONALIZATION PLAN

BUILD-OUT LAND USE DENSITY ESTIMATES
UNINCORPORATED AREAS

FIGURE 4-1

CHAPTER 5 – WASTE WATER CHARACTERIZATION

INTRODUCTION

It is anticipated that the waste water will consist primarily of residential wastes, with minor amounts of commercial and industrial waste. The commercial and industrial wastes are expected to be similar in nature to the residential waste or will be pre-treated.

INDUSTRIAL PRE-TREATMENT

Commercial and industrial facilities that contribute waste water to the conveyance and treatment system, and whose waste is different from typical residential waste, need to participate in an industrial pre-treatment program. This program will establish discharge parameters. The commercial or industrial facility will need to establish its own treatment processes so that the discharge parameters are met and so that the Stansbury Park ID system operations will not be affected.

DAILY FLOW VARIATION

Since a waste water collection system has not been constructed for the service area yet, specific patterns of daily flow variation do not exist. However, similar to other communities, it is anticipated that the flow will vary continuously throughout the day. The minimum flow generally occurs during the early morning between 2:00 and 4:00 AM. Maximum or peak week day flows will likely occur during the morning between 7:00 and 9:00 AM with a smaller peak in the evening between 8:00 and 10:00 PM.

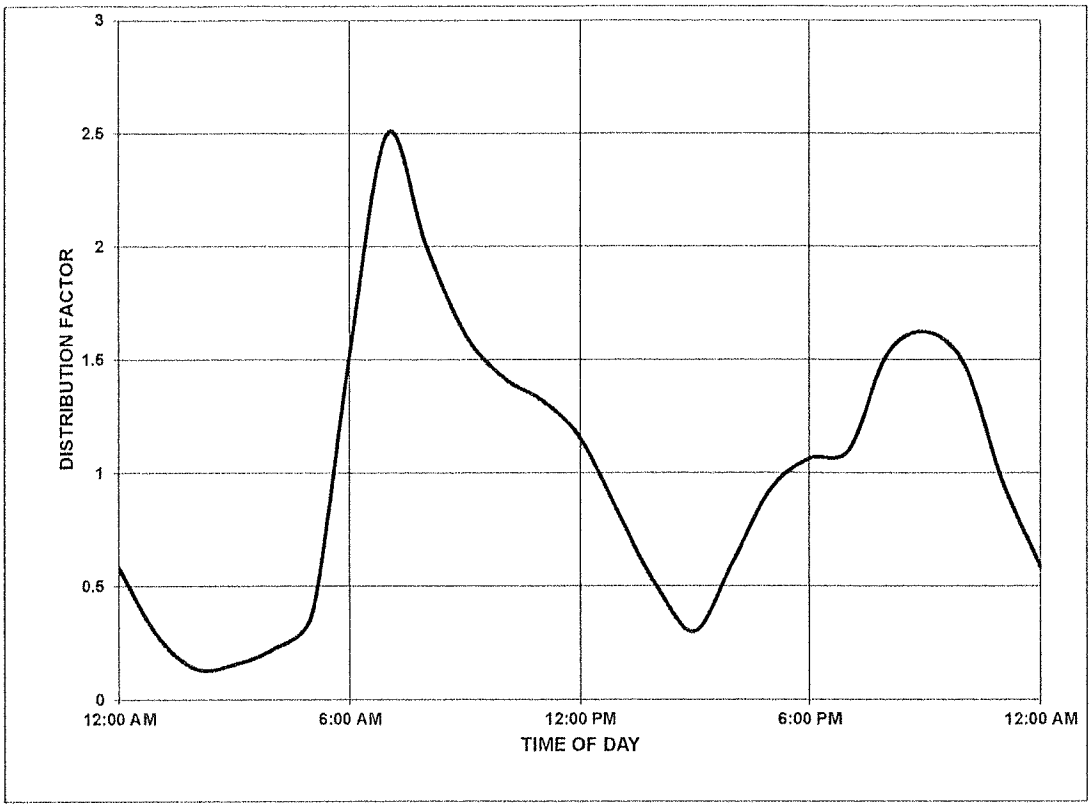
Peaking Factor for Conveyance

The modeled conveyance facilities are considered to be interceptors and outfall sewers. The peaking factor for modeling these facilities was assumed to be 2.5 times the average day values in accordance with state standards {R317-3-2.2 B 2 b U.A.C}.

Hydraulic Flow Distribution

A synthetic hydraulic flow distribution was developed for use in modeling. The flow distribution shape was based on data collected from waste water collection systems at other Utah locations. The shape was adjusted to include the desired peaking factor. The flow distribution is included as Figure 5-1.

Figure 5-1. Synthetic Hydraulic Loading Distribution



The loading distribution provided in Figure 5-1 is the fraction of the average daily flow that occurs at the indicated time. The peak flow of 2.5 times the average day flow occurs at 8:00 am.

ANNUAL FLOW VARIATION

Wastewater systems can experience annual flow variation due to seasonal inflow and infiltration. Each is discussed below.

Infiltration

Infiltration is defined as groundwater which enters a sewer system through pipe joints, cracks in the pipe, and leaks in manholes or building connections. Infiltration rates typically fluctuate throughout the year depending on the level of groundwater. Some cities, particularly in the western United States, where irrigation is commonly practiced, are subject to significant increases in infiltration during the irrigation season. Sewers constructed near irrigation canals and rivers or streams are particularly prone to infiltration. Sewers constructed in areas of high groundwater are susceptible to to infiltration.

Infiltration of groundwater into a waste water collection system can be a significant problem since the water consumes flow capacity of the sewer, increases the amount of waste water that

CHAPTER 6 – COLLECTION AND CONVEYANCE

INTRODUCTION

Collection and conveyance alternatives were developed and evaluated for the service area. The alternatives were based on the anticipated collection areas and treatment locations. For each alternative, a computer model was developed for the selection of pipe sizes and identification of flow velocities and predicted flow depths.

COLLECTION AREAS

The service area was divided into smaller collection areas. A collection area is defined as a geographic area that contributes flow to a common point in the collection system. The purpose of collection areas is to identify the hydraulic loading that is expected for each portion of the service area. This allows the amount of waste water flow and its discharge point into the sewers to be identified. Determination of the size of pipes needed throughout the system is then possible. The prediction of flow velocities and times of waste water travel is also possible. The locations of the collection areas are provided as Figure 6-1.

MODELING

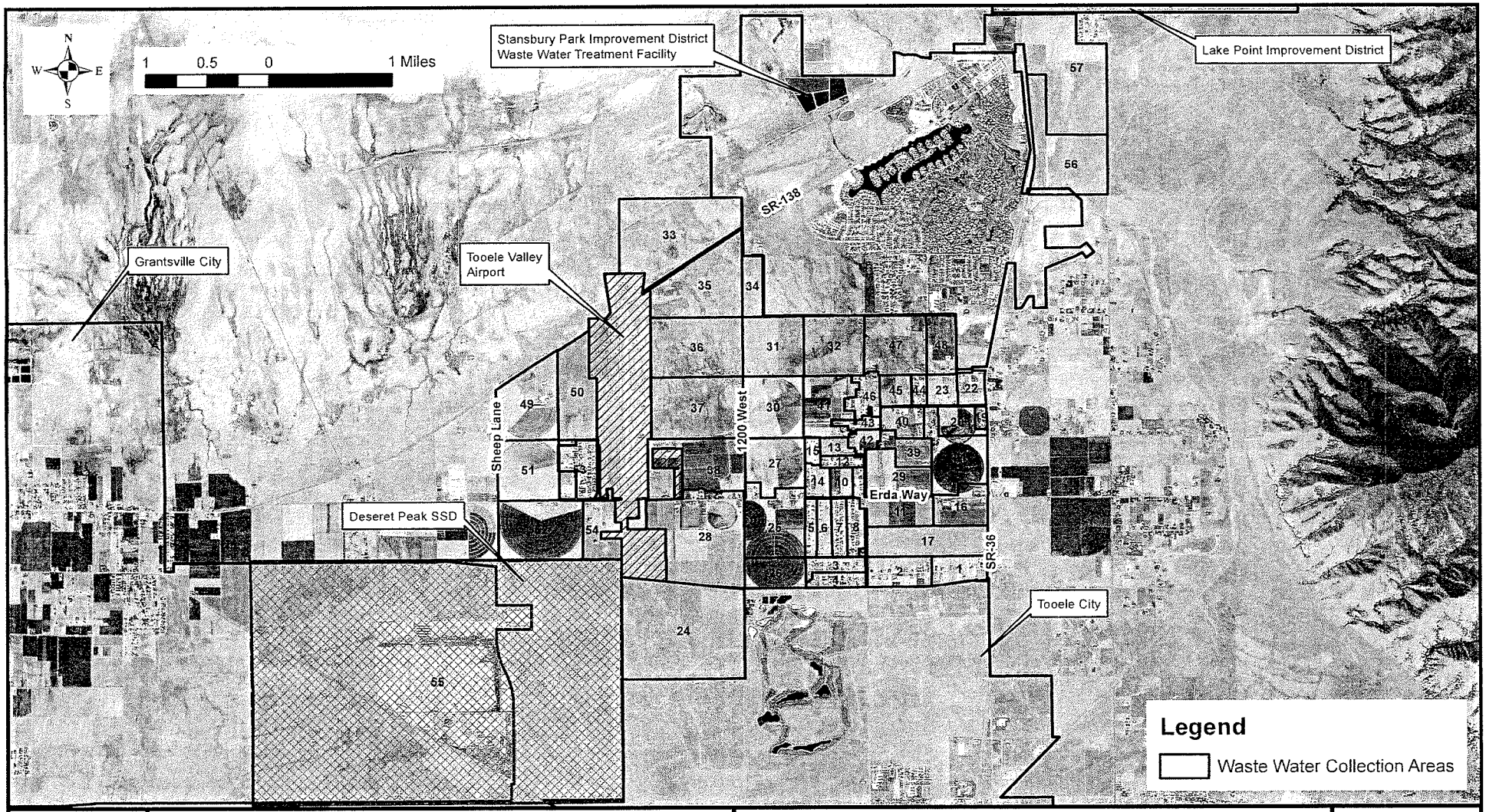
Model Selection

The Autodesk Storm and Sanitary Analysis (SSA) Model was selected by HAL for the modeling. SSA runs on an Environmental Protection Agency (EPA) SWMM Model platform and is free with the purchase of an AutoCAD Civil 3D license. Additionally, the model is readily exportable to the EPA SWMM software package which is available for downloadable from the EPA website without cost. The SSA and SWMM packages are specifically designed for sanitary sewer and storm water flows.

Basis of Elevation Data

The computer hydraulic models required topographic elevation data to determine the relative slopes of the ground surface and the pipes. These slopes, along with the pipe sizes determine the flow carrying capacity of the sewers. For this study, the primary elevation data used is the USGS National Elevation Dataset (NED) 10 Meter data available from the Utah Automated Geographic Reference Center (AGRC). While the elevation data are of good quality, are available at no cost and cover the entire study area, it is not as accurate as field surveying or project specific aerial photography. The accuracy of the data is considered adequate for this regional master plan study. However, land surveying will be required for design and construction. It is also important to note that a land survey may reveal differences between the NED and more accurate elevation data. Adjustments to the modeling may be necessary once more accurate data are obtained for design and construction.

After the study was initiated, Tooele County commissioned a survey of properties along what will be 1200 West, north of Erda Way. The survey also included portions of State Route 138



HANSEN ALLEN & LUCE inc ENGINEERS	TOOELE COUNTY NORTHERN TOOELE VALLEY WASTE WATER REGIONALIZATION PLAN	WASTE WATER COLLECTION AREAS	FIGURE 6-1

and key infrastructure at the Stansbury Park ID lagoon headworks. The survey was conducted by Ensign Engineering and provided property boundary and topographic data. Once this data became available, elevations were adjusted to match the NED 10 data datum. Master plan sewer hydraulic modeling was also updated to include the more accurate data where available.

COLLECTION AND CONVEYANCE ALTERNATIVES

Collection and conveyance alternatives were developed in coordination with the Tooele County Board of Commissioners, Tooele County Staff, Stansbury Park Improvement District Board and Staff and the Tooele County Health Department. Alternatives were discussed in meetings and workshops. The key alternatives are provided as follows:

Do Nothing Alternative

The Do Nothing Alternative assumes that a conveyance system will not be constructed and that sewer service will continue to be provided by septic tanks. While this will continue to be the case in many parts of the service area for several years as the collection system is constructed, it is anticipated that septic tanks will function as transitional infrastructure. As indicated in the septic tank density study, the on-site waste water disposal approach is reaching a limit due to the density of development and the ground water aquifer formation's ability to absorb the waste. Therefore, if land development growth is going to continue, it will be necessary to collect and treat the waste. For this reason, the "Do Nothing" Alternative was not selected at the preferred alternative.

Conveyance to a New Local Waste Water Treatment Lagoon

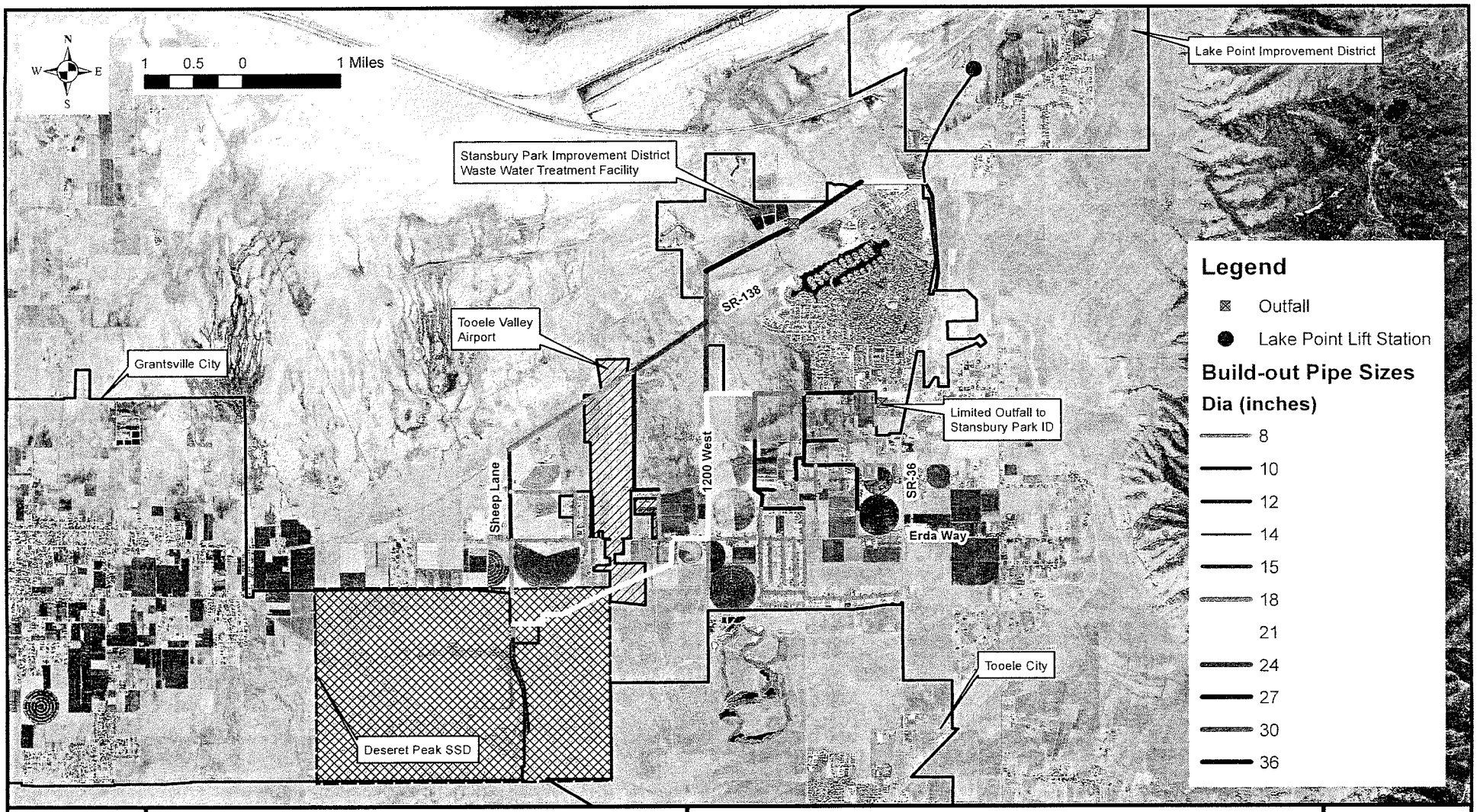
During the initial phases of the study, the possibility of conveying waste water to a new treatment lagoon was considered and a conveyance plan was developed. However, given the early commitment of the Stansbury Park ID Board to accept new flows, this alternative eliminated the need for the considerable additional upfront expenditure of a new lagoon.

Build-Out Alternative

The build-out alternative provides a plan for the collection and conveyance of waste water assuming that development reaches the densities provide as Figure 4-1 and described in Table 4-1 and Table 4-2. The sewer sizes and locations are provided on Figure 6-2. In Figure 6-2, it may be observed that the planned pipe sizes range from a minimum of 8 inches, in accordance with {R317 U.A.C.} to a maximum size of 36-inches for the outfall to the Stansbury Park ID lagoon headworks.

50-Year Alternative

It may be observed in Table 4-1 that the 50-year ERU population projection is approximately half of the build-out projection. Based on this, there was concern that constructing the build-out infrastructure may cause too great of an expense on the initial users (as opposed to the cost of future capacity being paid by future users) and may not be needed within the design life of the



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TOOELE COUNTY
NORTHERN TOOELE VALLEY
WASTE WATER REGIONALIZATION PLAN

CONCEPTUAL COLLECTION AND CONVEYANCE PLAN
BUILDOUT ALTERNATIVE

FIGURE 6-2

facilities. As a result, the 50-Year alternative was developed. This provides a plan for the collection and conveyance of waste water assuming that development reaches the 50-year ERU levels provided in Table 4-1. The sewer sizes and locations are provided as Figure 6-3. In Figure 6-3, it may be observed that the planned pipe sizes range from a minimum of 8 inches, in accordance with {R317 U.A.C.} to a maximum size of 27-inches for the outfall to the Stansbury Park ID lagoon headworks.

50-Year Alternative (Temporary to Existing Stansbury Park ID Collector)

This alternative is the same of the previous alternative except that it recognizes the ability to temporarily utilize the recently installed existing "Basin 7 Sewer Trunk Line" constructed by the Stansbury Park ID. The trunk line was constructed in 2016 and will not be fully utilized for several years. If the trunk line were solely committed to the new study service area, and if growth occurs as projected, the sewer would be adequate for at least 10 years. However, it is more likely that the line capacity will be shared with both the Basin 7 users (as designed) and the new service area users. In this case, the ability to share the line will be less than 10-years although the exact time frame is difficult to predict. The sewer sizes and locations are provided on Figure 6-4. This alternative is the preferred alternative with the understanding that once the Basin 7 Trunk Line is nearing capacity, additional capacity will need to be constructed.

POSSIBLE INITIAL PROJECTS

Two initial projects have been identified that would serve immediate needs and could provide a starting point for the conveyance system. Additional sewer projects would be completed as the need arises. The initial projects are as follows:

1200 West Sewer

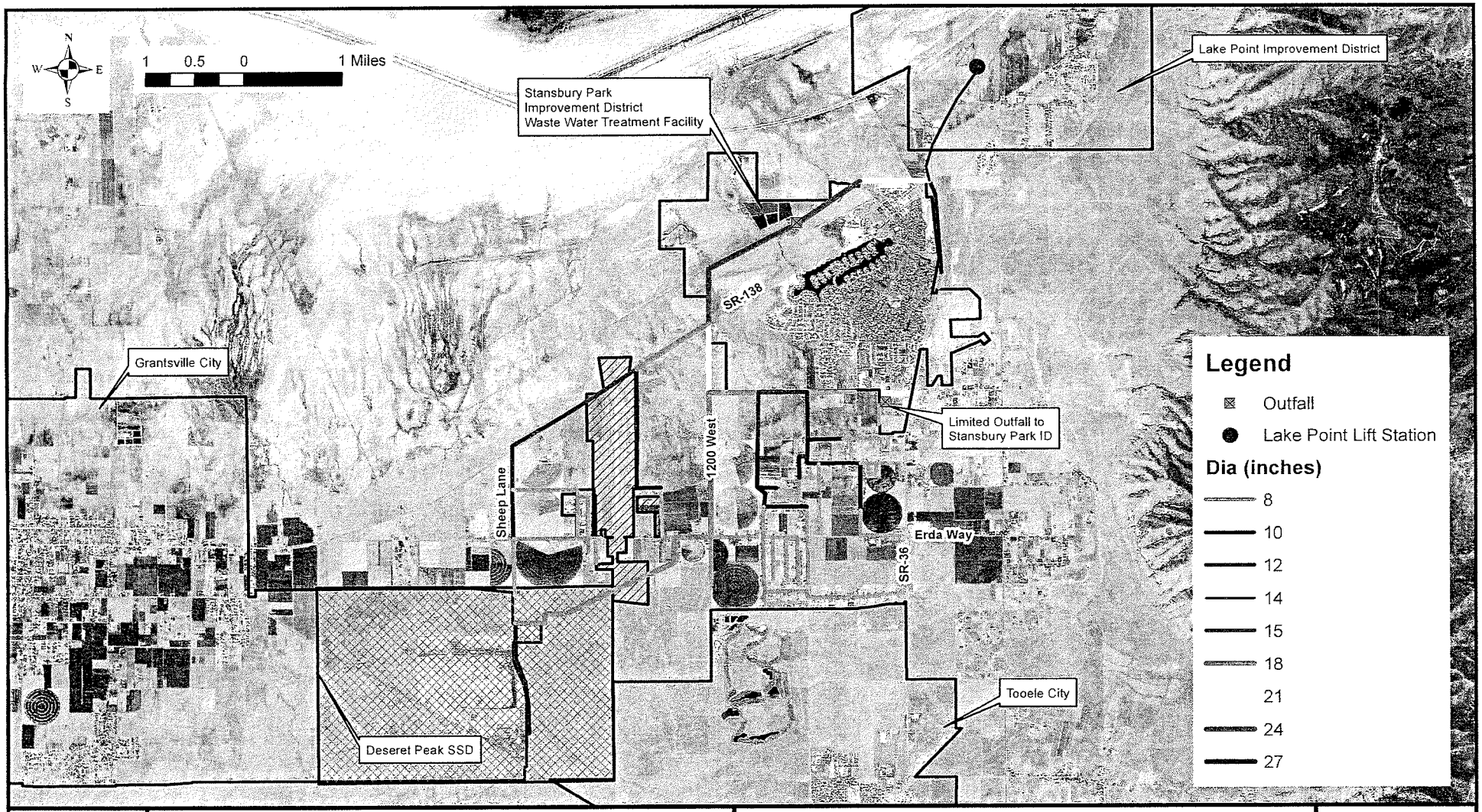
A possible initial project along 1200 West has been identified. This project, the 1200 West sewer would establish a primary collector which could serve as a starting point for the collection and conveyance system. This sewer would go north from 1200 West Erda Way to a connection point with the existing lagoon inlet. As a temporary measure, a connection with the existing Basin 7 Trunk Line in SR-138 could be made. The location of this project is shown on Figure 6-5.

Deseret Peak Connection

One feature of the master plan is a possible connection to the Deseret Peak Special Service District. This project would connect with the above noted 1200 West Sewer, and would continue the sewer to Sheep Lane and provide service to Deseret Peak SSD. The location of this project is shown on Figure 6-5.

ENERGY EFFICIENCY

The efficient use of energy was considered as part of the planning effort. A key goal was to minimize the use of lift stations, a primary consumer of energy in wastewater treatment

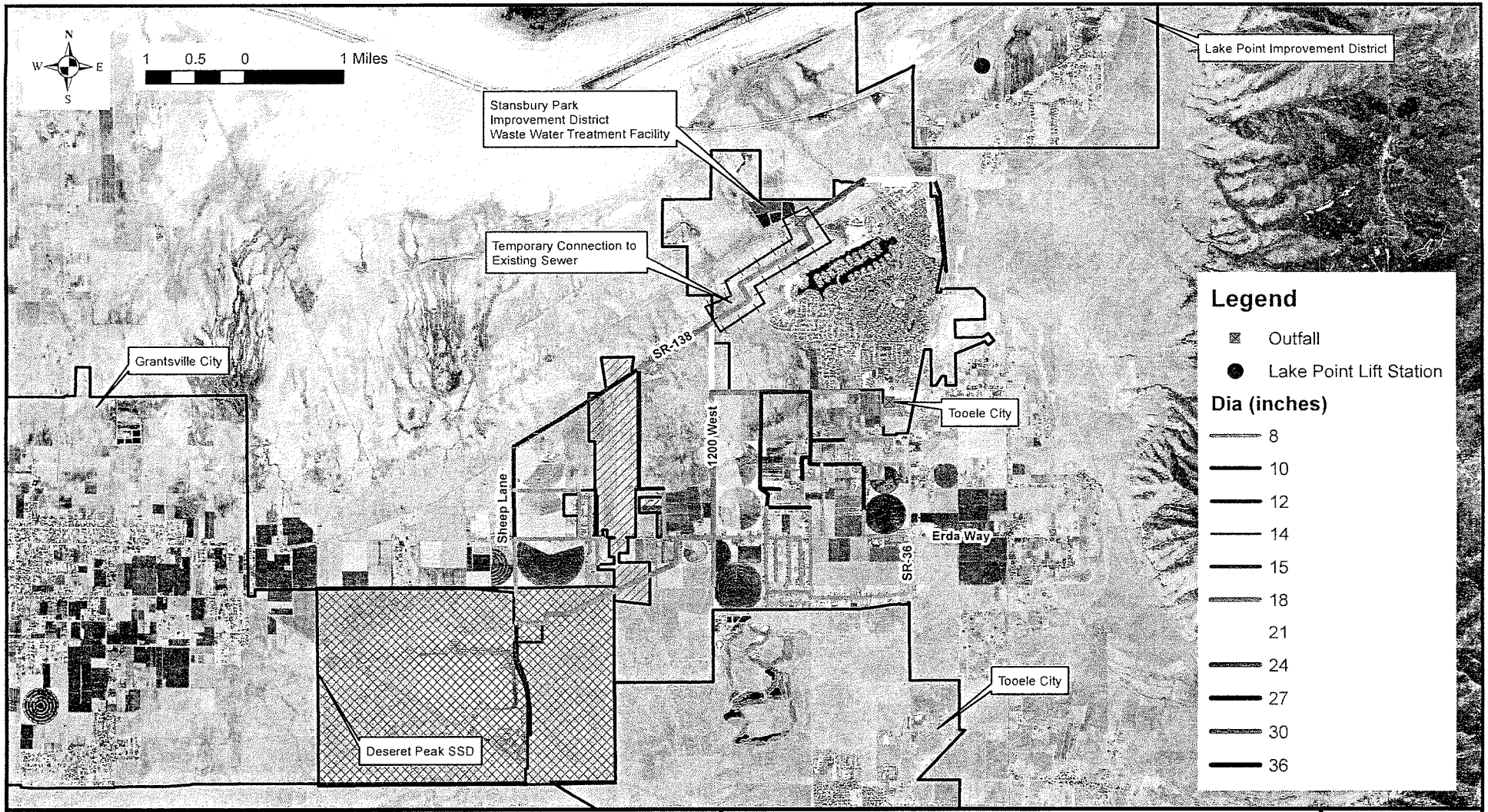


HANSEN ALLEN & LUCE inc ENGINEERS

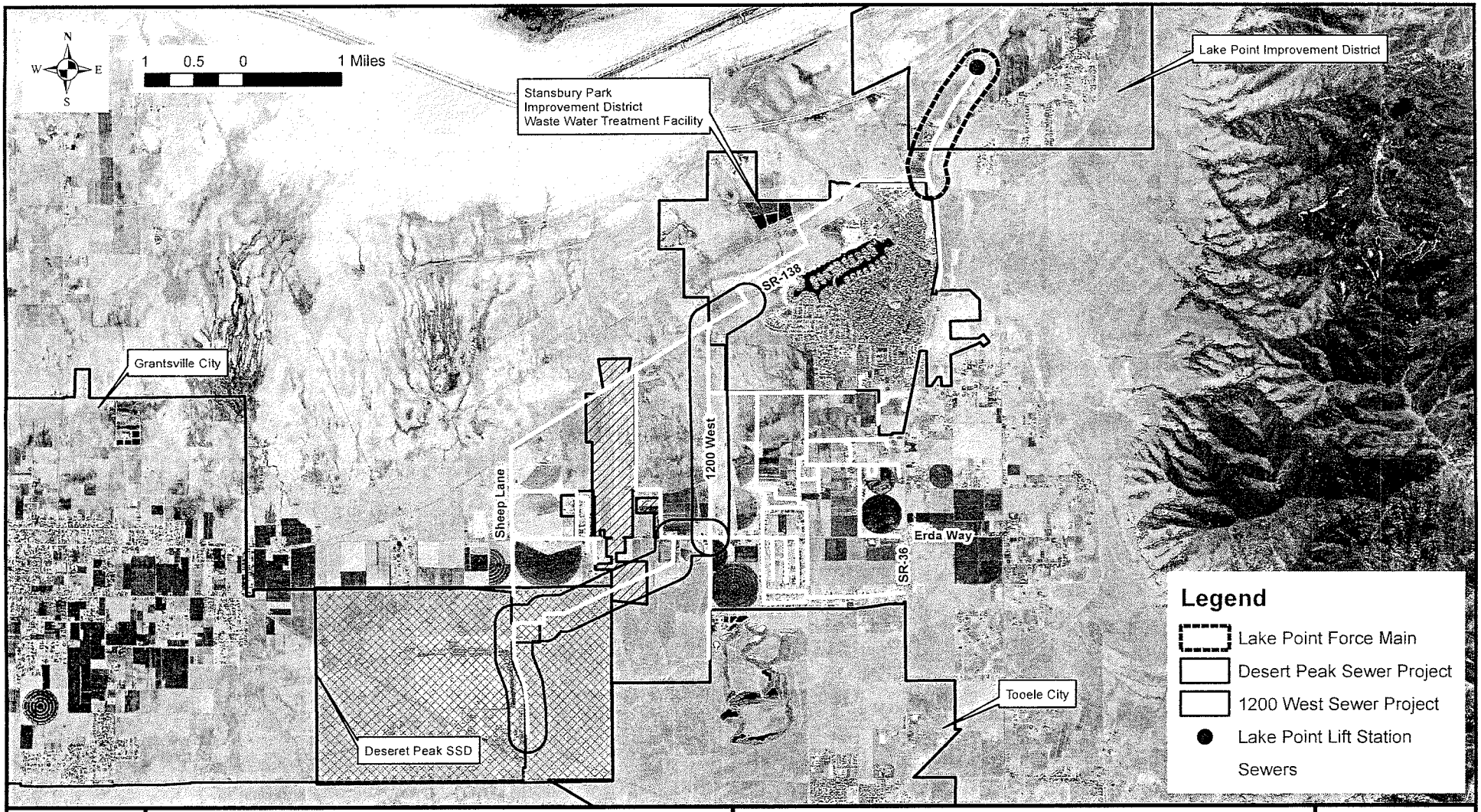
TOOELE COUNTY
NORTHERN TOOELE VALLEY
WASTE WATER REGIONALIZATION PLAN

CONCEPTUAL COLLECTION AND CONVEYANCE PLAN
50 YEAR ALTERNATIVE

FIGURE 6-3



HANSEN ALLEN & LUCE inc ENGINEERS	TOOELE COUNTY NORTHERN TOOELE VALLEY WASTE WATER REGIONALIZATION PLAN	CONCEPTUAL COLLECTION AND CONVEYANCE PLAN 50 YEAR ALTERNATIVE (TEMPORARY CONNECTION TO EXISTING LINE)	FIGURE 6-4



HANSEN ALLEN & LUCE inc ENGINEERS	TOOELE COUNTY NORTHERN TOOELE VALLEY WASTE WATER REGIONALIZATION PLAN	PROJECTS MAP	FIGURE 6-5

systems. The system modeling demonstrated that waste water can be conveyed by gravity in most instances. It is also may be possible to eliminate a number of existing lift stations that are currently operating in the Deseret Peak area.

There are at least two instances that pumping may be required. All flow entering the waste water treatment facility will be pumped several feet at the headworks. The flow enters the headworks at an elevation below the lagoons and must be conveyed and lifted to the required elevation by pumping.

Flows also may need to be pumped from the Lake Point ID, if its current lagoon system is to be phased out and treatment provided by Stansbury Park ID. However, once the connection is being designed and once additional topographic survey data are available, further study should be conducted to determine if a gravity route is available.

HYDROGEN SULFIDE PRODUCTION

Hydrogen sulfide (H_2S) is a chemical byproduct of wastewater, under certain conditions, that can be dangerous to human health and can be corrosive to wastewater conveyance and storage systems. H_2S typically occurs as a gas which can occupy wastewater manholes, vaults, wet wells and pipes, and can cause corrosion. Facilities made of concrete are often damaged in H_2S environments through the formation of sulfuric acid.

While the science of H_2S is complex and the occurrence can be difficult to predict, it is most likely to occur in pipes with very mild slopes and flow velocities less than about 2 feet/second. Since gravity pipes in the northern Tooele Valley must conform to the existing mild slopes, the velocities are expected to be low, particularly when the collection system is new and growth has not yet occurred. As a result, there is concern that H_2S generation may occur. In order to assess whether H_2S is likely to occur, modeling results from several typical pipes were examined according to a methodology described in *Gravity Sanitary Sewer Design and Construction, ASCE Manual No. 60*. The assessment confirmed that there is a marginal chance of H_2S generation.

Given that the generation of H_2S has a marginal chance of occurring in the planned conveyance system, it is recommended that waste water operators enact safety measures to protect themselves during times they access the facilities. Air monitoring of sewers should be performed before entry. Personal protective safety equipment should also be used. Additionally, periodic testing the manholes should be performed to determine which areas, if any, are susceptible to H_2S production.

Pipes, manholes, wet wells and other equipment should be constructed of materials that are H_2S resistant. If concrete manholes are used, these should either be lined or constructed with concrete additives to mitigate the corrosive effects.

LOW SLOPE SEWERS AND MAINTENANCE

All of the sewers are planned with slopes that meet the minimum state standards. When flowing full, the flow velocity is expected to be high enough to maintain a clean pipe. However, before the full development occurs, flow velocities will be relatively low and maintenance levels will likely be higher than for typical sewers. This is particularly true for sewers generally oriented in an east-west direction since these sewers are expected to have relatively lower flow velocities. Sewers sloping to the north have steeper slopes and should have normal levels of maintenance.

Sewers with mild slopes area expected to have higher levels of H_2S build-up, as indicated previously, and higher levels of sediment build-up. Sewer videos should be performed on a regular basis to identify the locations and levels of sediment build-up. Sewers should be cleaned as needed.

CHAPTER 7 – WASTE WATER TREATMENT EVALUATION

INTRODUCTION OF TREATMENT ALTERNATIVES

Once waste water is collected and conveyed, it needs to be routed to a waste water treatment facility. An evaluation of water treatment options was considered as part of this study. Options for wastewater treatment are listed in Table 7-1.

Table 7-1. Treatment Alternatives

Item	Alternative
1	No Treatment Alternative
2	Treatment at Stansbury Park Improvement District Lagoons
3	Treatment at Lake Point Improvement District Lagoons
4	Treatment at Grantsville Lagoons
5	Treatment at Tooele City Waste Water Treatment Plant
6	Treatment at New Lagoons
7	Regional Treatment Plant Serving Northern Tooele County

DISCUSSION OF TREATMENT ALTERNATIVE LOCATIONS

A description and discussion of each alternative is provided.

No Treatment Alternative

The method of waste water treatment for existing development is on-site waste water disposal (i.e. septic tanks). As indicated in the septic tank density study, the on-site waste water disposal approach is reaching a limit due to the density of development and the ground water formations' ability to absorb the waste. Therefore, if land development growth is going to continue, it will be necessary to treat the waste. For this reason, the "no treatment" alternative is not identified as the preferred alternative.

Treatment at the Stansbury ID Lagoons

In the initial phases of the study, the Stansbury Park ID agreed to expand its service area and receive flows from the unincorporated portions of northern Tooele Valley. In additional to Stansbury Park ID's willingness to accept flows, the facilities are in a favorable location since they are downstream of much of northern Tooele Valley. This makes conveyance more efficient

with gravity flow possible for most of the area. Treatment at the Stansbury Park ID Lagoons is the preferred alternative for treatment.

Treatment at the Lake Point ID Lagoons

The Lake Point ID lagoons were considered as a possible location for treatment. However, the lagoons would require additional piping, as well as pumping in order to convey waste water to the treatment site. Additionally, the lagoons are smaller than other options, with less room for expansion. The Lake Point ID lagoons were not selected as a feasible location for treatment expansion for the purpose of regionalized treatment.

Treatment at the Grantsville Lagoons

Treatment at the Grantsville Lagoons was considered and is feasible. However, the distance to the Grantsville Lagoons is greater for much of the service area and would require additional piping and possibly pump stations. This would lead to greater cost. Treatment at the Grantsville City lagoons was not selected as the preferred option for land within the planned growth areas.

Treatment at the Tooele City Waste Treatment Plant

The Tooele City waste water treatment plant was considered as an alternative to provide treatment of the northern Tooele Valley waste water. However, the Tooele City WWTP is higher in elevation than most of the service area and would require significant pumping, resulting in the related energy expense. Tooele City also expressed concern about using capacity of the City treatment plant. For these reasons, the Tooele City WWTP has not been identified as the preferred alternative for treatment.

Treatment at New Waste Water Lagoons

The construction of new waste water lagoons was considered and is possible, but less feasible than connecting with the Stansbury Park ID WWTP. In the short term, existing capacity can be used from the Stansbury Park ID lagoons, avoiding the expense and permitting effort required to construct a new facility. As actual growth occurs, fees can be collected and improvements can be made as the need arises.

Regional Treatment Plant Serving Northern Tooele County

The possibility of establishing a single mechanized treatment plant for the entire valley was considered. The assumption with this alternative is that existing treatment plants would cease operations, with all flows being routed to a common location. A specific location wasn't selected, but based on topography; the regional treatment plant would likely be located between Stansbury Park and Grantville and would be located 1 or 2 miles north of State Route 138. A regional treatment plant would require pumping to convey flows from outlying areas.

One factor that limits the feasibility of a single regional treatment plant is that Tooele City and Grantsville City have recently completed major improvements at their respective facilities. These improvements provide capacity for substantial future growth and have required significant capital investment. Both Tooele City and Grantsville City indicated that they are unwilling to dispose of the current facilities in order to incur additional expense at a new facility.

While a single regional treatment plant for all waste flows in the northern Tooele Valley remains an option in the long term, it likely won't be feasible for a couple decades.

DISCUSSION OF TREATMENT TECHNOLOGIES

In addition to reviewing the possible locations for waste water treatment, several treatment types were investigated. The type of treatment is relevant because of the costs, land requirements, and discharge characteristics of different treatment technologies. For example, waste water lagoons are a common choice among small and rural communities, including the communities in Tooele County, since they are relatively low cost and low maintenance. The lagoons are also popular in small and rural communities because the large land area required for the lagoons is usually available. However, as the amount of flow increases and as stricter discharge limits are applied by regulators, more sophisticated technologies are often required.

Water Works Engineers (WWE) evaluated the advantages and limits of various waste water treatment technologies. WWE reviewed the proposed population estimates, existing technologies being used within Tooele County and technologies used at other locations in Utah. Based on this information, WWE provided technology recommendations. A copy of the WWE study is included as Appendix B.

Summary of WWE Recommendations

WWE found that lagoons remain a feasible treatment technology as long as new more restrictive discharge limits for nitrogen, phosphorus or other constituents are not enacted. If needed, new nitrogen limits could likely be met by additional aeration or fixed film processes. Chemical addition would likely be needed to meet phosphorus limits. However, chemical addition would likely result in the need for more mechanical processes to handle new increases in solids production.

CHAPTER 8 – COST ESTIMATION

INTRODUCTION

Cost estimates have been prepared for the key alternatives. The purpose of the cost estimates is to provide guidance for funding planning and to allow cost comparison of different alternatives. Administrative and engineering costs are estimated as percentages. Cost estimates for treatment technologies are included within the Water Works Engineers Memorandum in Appendix B.

ACCURACY OF COST ESTIMATES

When considering cost estimates, there are several levels or degrees of accuracy, depending on the purpose of the estimate and the percentage of detailed design that has been completed. The following levels of are typical goals:

Type of Estimate	Precision
Master Plan	-50% to +100%
Preliminary Design	-30% to +50%
Final Design or Bid	-20% to +20%

For example, at the master plan level (or conceptual or feasibility design level), if a project is estimated to cost $1,000,000, then the precision or reliability of the cost estimate would typically be expected to range between approximately $500,000 and $2,000,000. While this may not seem very accurate, the purpose of master planning is to develop general sizing, location, cost and scheduling information on a number of individual projects that may be designed and constructed over a period of many years. Master planning also typically includes the selection of common design criteria to help ensure uniformity and compatibility among future individual projects. Details such as the exact capacity of individual projects, the level of redundancy, the location of facilities, the alignment and depth of pipelines, the extent of utility conflicts, the cost of land and easements, the construction methodology, the types of equipment and material to be used, the time of construction, interest and inflation rates, permitting requirements, etc., are typically developed during the more detailed levels of design.

At the preliminary design level, some of the aforementioned information will have been developed. Major design decisions such as the size of facilities, selection of facility sites, pipeline alignments and depths, and the selection of the types of equipment and material to be used during construction, will typically have been made. At this level of design the precision of the cost estimate for the same $1,000,000 project would typically be expected to range between approximately $700,000 and $1,500,000.

After the project has been completely designed, and is ready to bid, all design plans and technical specifications will have been completed and nearly all of the significant details about the project should be known. At this level of design, the precision of the cost estimate for the

same $1,000,000 project would typically be expected to range between approximately $800,000 and $1,200,000.

At times, the cost estimating accuracy goals are not achievable. Factors such as availability of labor and materials, contractor perceived levels of competition, contractor assumptions, unidentifiable sub-surface conditions and other factors are not apparent until bidding. However, the costs provided are based upon actual construction costs and bids for similar work and represent the best currently available estimate.

COST ESTIMATES

Construction Cost Estimate

Construction cost estimate summaries are provided in Table 8-1. A detailed breakdown is included in Appendix C.

Table 8-1 Construction Cost Estimate Summary

Item	Build-Out Alternative	50-Year Alternative	50-Year Alternative (With SPID Line)
1200 West Sewer Project	$3,400,000	$3,000,000	$3,300,000 (See Note)
Deseret Peak Sewer Project	$2,600,000	$2,400,000	$2,400,000
Lake Point Lift Station	$1,100,000	$1,100,000	$1,100,000
Lake Point Force Main	$800,000	$800,000	$800,000
Other Sewers	$17,400,000	$16,900,000	$16,900,000
Sub-Total	$25,300,000	$24,200,000	$24,500,000
Engineering (@15%)	$3,795,000	$3,630,000	$3,675,000
Administration (@10%)	$2,530,000	$2,420,000	$2,4505,000
TOTAL	**$31,625,000**	**$30,250,000**	**$30,625,000**

Note: This 1200 West sewer project cost includes pipe along 1200 West, the 50-year permanent connection north of SR-138 to the lagoons and the temporary connection to the existing Basin 7 trunk sewer. The 1200 West project cost to the existing Basin 7 sewer trunk line (not including future sewers north of SR-138) is $2,400,000.

In Table 8-1, it may be observed that constructing the 50-Year Alternative is expected to cost between about $1 million and 1.5 million less than constructing the Build-out Alternative. The 50-Year Alternative with the SPID line is higher because it requires an additional temporary line to tie in with the existing Basin 7 Trunk Line.

It is notable that the cost difference between the build-out alternative and the 50-year alternative are predicted to only be about 4%. This is due to few factors. First, many of the smaller sewers (8-inches diameter) are the same for all alternatives since this is the state minimum size). Also, the cost of the pipe represents a small portion of the total cost of trench construction and so an increase in pipe size has a substantial increase in flow capacity, but a relatively small increase in cost.

Operations and Maintenance Cost Estimate

An estimation of annual operations and maintenance (O&M) costs has been prepared to assist with cost planning for the expansion. The costs include treatment and equipment maintenance costs, but not capital costs. The annual waste water budget for operations and maintenance was obtained for Stansbury Park ID and was divided by the number of ERUs to determine the O&M cost per ERU. The waste water cost per ERU for O&M is as follows:

Estimated Annual O&M Cost Per ERU = $120

This value was compared with other Utah Cities which were within the $120 to $150 range. Therefore, the estimated cost provided above appears to be reasonable.

Comparison of Costs

All of the preferred alternatives convey flows by gravity except for the lift station at Lake Point. The lift station is needed in all of the key alternatives. Therefore, O&M costs are not expected to change significantly between the alternatives and the cost comparison of alternatives can be based on construction costs.

CHAPTER 9 – MASTER PLAN

MASTER PLAN

A master plan has been developed for waste water collection, conveyance and treatment for the northern Tooele Valley. This plan has been developed based on the technical analyses and evaluations by Hansen, Allen & Luce, Inc., discussions with stakeholders and consultation with the Tooele County Board of Commissioners, the Tooele County Health Department and Tooele County staff. Key components of the plan are as follows:

Collection and Conveyance

It is recommended that either the Build-out Alternative provided in Figure 6-2 or the 50-Year Alternative provided on Figure 6-3 be selected by Tooele County as the preferred alternative. Currently {R317-3-2.2 U.A.C} requires that sewers be designed for the "ultimate tributary population or the 50-year planning period, whichever requires a larger capacity." This rule appears to require that the build-out plan be selected unless a waiver is approved by the Director of the Utah Division of Water Quality.

For local (smaller) pipes, the Build-out Alternative and the 50-year Alternatives are identical so with either alternative, effectively the Build-Out Alternative will be selected. However, for the collector and outfall (larger) lines, Tooele County should consider seeking approval of the 50-year Alternative for the following reasons:

1. Given that the interceptors and outfalls are expected to be located within streets or easement corridors, the capacities of the lines should be readily expandable in the future.

2. If additional capacity is needed in the future beyond 50-years, it will be easier to fund additional capacity at that time since a larger user base will exist and greater impact fees are anticipated. This will reduce costs to current users and will more equitably distribute costs to the future users.

3. Conservative peaking factors have been applied to pipe sizing. This includes a peaking factor of 2.5 which has been applied to collectors and outfall lines in accordance with state rules. In actuality, data from other communities suggests that the peaking factor will likely be less than 2. Additionally, the pipelines with diameters of 15-inches or less have been master planned with a depth/diameter of generally about 0.5 or less, with larger interceptor lines at 0.75 or less. This is in accordance with ASCE Manual No. 60 recommendations. Based on these two conservative assumptions, it is predicted that the pipelines have significant reserve capacity in comparison with full pipe flow.

Waste Water Treatment

The preferred alternative is that waste water treatment be provided by Stansbury Park Improvement District. The District has agreed to accept the waste water as long as the funding can be arrange such that the existing customers will not be required to pay the cost of improvements or treatment for new development.

Operations and Maintenance

The preferred option is for the Stansbury Park ID to provide operations and maintenance. The District will expand its service area to include the area identified in the study and will provide O&M. It would also be possible to provide O&M service through a separate new special district that has not yet been established, if needed.

Connection of Existing Septic Tanks to New Collection Areas

It is anticipated that Tooele County will require sewer service connections for existing buildings when a sewer line passes within 300-feet of the building. At the time of connection, the existing septic tank will be abandoned. It is anticipated that the building owner will pay the costs associated with the septic tank abandonment and connection. However, it is recommended that alternative funding methods and grants be sought to reduce the burden on the property owners if possible.

Schedule of Implementation

It is anticipated that the construction of the 1200 West sewer and the Deseret Peak sewer will proceed first. These projects will be the beginning of the system. Other pipelines will be added later. It is anticipated that the construction schedule of specific pipelines will depend on the rate of development. As developments are planned at densities higher than 5 acres/lot, the developers will need to connect to the waste water collection system. It is anticipated that developers will construct local sewers as needed for the development and will connect the local sewers to the system for conveyance to the Stansbury Park ID lagoons. The interceptors and collectors shown in the master plan should be constructed at the indicated size by development. Additionally, Tooele County and the Stansbury Park ID may choose to construct sewers to help establish the system and to facilitate improvements to groundwater quality. In any case, development densities will be limited to 5 acres/residential septic system unless a connection can be made to an existing sewer that conveys flow to the waste water treatment facility.

OTHER RECOMMENDATIONS

Distance for Connection to Existing Sewers by New Subdivisions

Tooele County and the Tooele County Health Department are coordinating on interim policies for connection of new subdivisions to the collection system. One criterion for new development is to check whether there is an existing sewer nearby and if there is, the development must connect. For this criterion, the subdivision is considered to be nearby if a sewer is located within a distance equal to the 150-feet multiplied by the number of lots.

New Developments to Provide Dry Stubs

Given that the waste water collection system will develop over time and may not be available during the construction of new developments, it is recommended that Tooele County consider how to implement the connection of new developments with future sewers. One option would be to require all new buildings within the service areas to provide building piping to the front of the lot (and possibly to the property line) so that a connection can be easily constructed once sewers become available.

REFERENCES

1. American Society of Civil Engineers/Water Pollution Control Federation. (1982). Gravity Sanitary Sewer Design and Construction. Manuals and Reports on Engineering Practice No. 60.

2. Hansen, Allen & Luce, Inc. (May 2016). Tooele County - Septic System Density Study.

3. RSMeans. (2016). Heavy Construction Cost Data. Construction Publishers and Consultants.

4. State of Utah Administrative Code. (2016). {R317-3 Design Requirements for Wastewater Collection, Treatment and Disposal Systems}.

5. Janae Wallace & Mike Lowe. The Potential Impact of Septic Tank Soil-Absorption Systems on Water Quality in the Principal Valley-Fill Aquifer, Tooele Valley, Tooele County, Utah - Assessment and Guidelines. Report of Investigation 235. Utah Geological Survey. March 1998.

APPENDIX A
Population and ERU Estimates

Tooele County
Waste Water Master Plan
283.02.100
January 18, 2017

EQUIVALENT RESIDENTIAL CONNECTION AND POPULATION PROJECTIONS

Area	Existing	5 years	15 years	20 years	30 years	50 years	Build-Out ERUS	Build-Out Population	Notes
Unincorporated Erda Area (Study Area, Not SPID)	518	711	1,328	1,760	2,836	4,926	12,874	41,197	Assumes growth from Jones and Demille 2015 Regional Water Study[1]
Unincorporated Sheep Lane Area (West of Airport	58	80	149	197	318	552	1,602	5,126	Assumes growth from Jones and Demille 2015 Regional Water Study[1]
Stansbury Park ID	3,545	4,253	5,903	6,841	9,331	9,611	9,611	30,755	Build-out date is projected to be 2047. Growth rates from the Stanbury Park 2013 Waste Water Master Plan was used.[2]
Lake Point ID	550	638	857	993	1,335	2,411	7,570	24,224	Assumes 3% growth, for comparison
Deseret Peak SSD	549	636	855	992	1,333	2,407	3,449	11,037	Assumes 3% growth, for comparison
Total	**5,220**	**6,318**	**9,092**	**10,783**	**15,152**	**19,907**	**35,106**	**112,339**	

1. The specific growth rates were 6.5% through 2024, 6.4% through 2034, 4.9% through 2046, and 2.8 through 2066. These rates were applied to the Erda and Sheep Lane Area
2. The Stansbury Park growth rate was projected to be 3% in 2016. It was projected to climb to 4% by 2020 and then drop back to 3% by 2030 and stay at 3% untill reaching buildi-out in 2047.

Tooele County
Waste Water Master Plan
283.02.100
March 2017

Summary of Existing and Future ERUs and Demands
BUILD-OUT SCENARIO

SubZone	Existing ERUs	Future ERUs	Loading/ERU (Gal/ERU)	Existing Average Daily Loading (Gallon/day)	Future Average Daily Loading (Gallon/day)	MH	Existing Average Daily Loading (MGD)	Future Average Daily Loading (MGD)
1	12.0	23.7	320	3,840.00	7,575.20	Jun-40	0.00384	0.00758
2	16.0	16.0	320	5,120.00	5,120.00	Jun-41	0.00512	0.00512
3	20.0	20.0	320	6,400.00	6,400.00	Jun-37	0.00640	0.00640
4	17.0	17.0	320	5,440.00	5,440.00	Jun-39	0.00544	0.00544
5	27.0	27.0	320	8,640.00	8,640.00	Jun-14	0.00864	0.00864
6	17.0	17.0	320	5,440.00	5,440.00	Jun-34	0.00544	0.00544
7	35.0	35.0	320	11,200.00	11,200.00	Jun-35	0.01120	0.01120
8	31.0	31.0	320	9,920.00	9,920.00	Jun-36	0.00992	0.00992
9	2.0	2.0	320	640.00	640.00	Jun-27	0.00064	0.00064
10	4.0	42.0	320	1,280.00	13,424.00	Jun-32	0.00128	0.01342
11	9.0	219.7	320	2,880.00	70,312.00	Jun-28	0.00288	0.07031
12	19.0	19.0	320	6,080.00	6,080.00	Jun-43	0.00608	0.00608
13	27.0	27.0	320	8,640.00	8,640.00	Jun-60	0.00864	0.00864
14	26.0	73.5	320	8,320.00	23,520.00	Jun-15	0.00832	0.02352
15	26.0	26.0	320	8,320.00	8,320.00	Jun-44	0.00832	0.00832
16	6.0	243.3	320	1,920.00	77,864.00	Jun-74	0.00192	0.07786
17	0.0	454.2	320	-	145,336.44	Jun-96	0.00000	0.14534
19	4.0	4.0	320	1,280.00	1,280.00	Jun-70	0.00128	0.00128
20	14.0	103.9	320	4,480.00	33,232.00	Jun-66	0.00448	0.03323
21	22.0	414.7	320	7,040.00	132,711.99	Jun-48	0.00704	0.13271
22	12.0	69.0	320	3,840.00	22,084.00	Jun-78	0.00384	0.02208
23	3.0	95.1	320	960.00	30,416.00	Jun-77	0.00096	0.03042
24	2.0	463.4	320	640.00	148,282.88	Jun-105/Jun-118	0.00064	0.14828
25	15.0	383.3	320	4,800.00	122,656.00	Jun-81	0.00480	0.12266
26	0.0	200.7	320	-	64,232.00	Jun-97	0.00000	0.06423
27	0.0	329.6	320	-	105,456.00	Jun-103	0.00000	0.10546
28	29.0	421.1	320	9,280.00	134,755.84	Jun-119	0.00928	0.13476
29	3.0	270.6	320	960.00	86,584.00	Jun-59	0.00096	0.08658
30	0.0	390.0	320	-	124,800.00	Jun-100	0.00000	0.12480
31	0.0	400.0	320	-	128,000.00	Jun-101	0.00000	0.12800
32	4.0	409.5	320	1,280.00	131,048.00	Jun-18	0.00128	0.13105
33	0.0	1260.0	320	-	403,200.00	Jun-11	0.00000	0.40320
34	0.0	193.4	320	-	61,873.92	Jun-102	0.00000	0.06187
35	0.0	799.9	320	-	255,962.88	Jun-80	0.00000	0.25596
36	0.0	584.8	320	-	187,120.00	Jun-99	0.00000	0.18712
37	0.0	600.0	320	-	192,000.00	Jun-84	0.00000	0.19200
38	4.0	158.2	320	1,280.00	50,611.20	Jun-82	0.00128	0.05061
39	3.0	135.9	320	960.00	43,496.00	Jun-71	0.00096	0.04350
40	9.0	109.8	320	2,880.00	35,142.40	Jun-50	0.00288	0.03514
41	19.0	268.0	320	6,080.00	85,761.60	Jun-17	0.00608	0.08576
42	5.0	59.2	320	1,600.00	18,936.00	Jun-55	0.00160	0.01894
43	18.0	18.0	320	5,760.00	5,760.00	Jun-57	0.00576	0.00576
44	15.0	17.0	320	4,800.00	5,440.00	Jun-61	0.00480	0.00544

SubZone	Existing ERUs	Future ERUs	Loading/ERU (Gal/ERU)	Existing Average Daily Loading (Gallon/day)	Future Average Daily Loading (Gallon/day)	MH	Existing Average Daily Loading (MGD)	Future Average Daily Loading (MGD)
45	0.0	104.0	320	-	33,280.00	Jun-63	0.00000	0.03328
46	27.0	70.7	320	8,640.00	22,632.00	Jun-53	0.00864	0.02263
47	3.0	373.1	320	960.00	119,400.00	Jun-52	0.00096	0.11940
48	2.0	172.9	320	640.00	55,320.00	Jun-104	0.00064	0.05532
49	0.0	381.4	320	-	122,044.80	Jun-07	0.00000	0.12204
50	0.0	290.8	320	-	93,068.80	Jun-08	0.00000	0.09307
51	0.0	305.9	320	-	97,894.40	Jun-06	0.00000	0.09789
52	0.0	435.8	320	-	139,468.80	Jun-04	0.00000	0.13947
53	57.0	75.9	320	18,240.00	24,288.00	Jun-88	0.01824	0.02429
54	1.0	111.8	320	320.00	35,779.20	Jun-93	0.00032	0.03578
Deseret Peak SSD (55)	549.0	3449.0	320	175,680.00	1,103,680.00	Jun-113 & Jun-114	0.17568	1.10368
Gravel Pit Commercial (56 & 57)	0.0	1000.0	320	-	320,000.00	Jun-107	0.00000	0.32000
	0.0	1630.0	320	-	521,600.00	Jun-109	0.00000	0.52160
						TOTAL =	0.36	5.71

Tooele County
Wastewater Master Plan
Treatment Evaluation Technical Memo

Date: October 18, 2016
Prepared by: Scott Teeters
Checked by: Cory Christiansen, P.E.
Michelle Barry, P.E., PhD

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Introduction

Tooele County includes both incorporated and unincorporated communities located in the area South of Interstate 80 between the Oquirrh and Stansbury mountain ranges. The County currently houses a population of close to 69,000 people but is expected to grow significantly in the coming years. Specifically, the Northern portion of Tooele County, including Stansbury Park, which currently includes an estimated 5,220 equivalent residential units (ERUs), is projected to grow to approximately 31,610 ERUs in the next thirty years (Hansen, Allen & Luce, Inc). Infrastructure improvements will be necessary to accommodate the needs of this growing population, including construction of a wastewater collection system and the development of additional wastewater treatment capacity. Currently, the Stansbury Park Improvement District (SPID) owns and operates a system of facultative lagoons to treat the wastewater collected within its collection system. Many of the residences and businesses in the unincorporated portion of the County utilize septic systems for wastewater treatment and disposal. It is assumed that these septic systems will be eliminated in the future and the unincorporated portion of the County will be included in the SPID service area. The purpose of this technical memorandum (TM) is to provide an evaluation of the treatment capacity of the existing treatment lagoons and evaluate future treatment alternatives to provide both increased capacity and treatment to meet State discharge limits.

Lagoon Treatment

The SPID currently uses facultative discharging lagoons to treat municipal wastewater. This is a low-cost, low-operation treatment option that has been historically used in many communities to meet municipal wastewater treatment needs. In general, these types of lagoons consist of excavated basins that are lined to prevent leaching into the surrounding soils. One of the existing lagoons is equipped with aeration equipment. The other lagoons are left open to the atmosphere (open-air lagoons) and do not contain aeration or mixing equipment. This arrangement allows the environment's natural processes to treat the wastewater as aerobic, anaerobic, and anoxic layers form within the lagoons. This type of lagoon system is capable of providing five-day biochemical oxygen demand (BOD_5) removal up to 95%, significant nitrogen removal, and approximately 50% phosphorus removal[1]. However, the treatment capacity and capabilities of these lagoons is dependent on several factors. Winter time residence times must be longer than summertime residence times to provide sufficient time for treatment to occur at colder temperatures. Sludge accumulation at the bottom of lagoons can reduce the available volume, resulting in lower residence times and associated treatment capacity. For this reason, lagoons typically require periodic dredging and disposal of accumulated solids. Total Suspended Solids (TSS) concentrations from lagoon effluent can range from ≤ 30 mg/L to more than 100 mg/L depending on the algal concentration and design of discharge structures[1]. Typically, overflow cells are included to prevent the discharge of insufficiently treated wastewater during high flows associated with wet weather events.

[1] EPA Wastewater Technology Fact Sheet – Facultative Lagoons

Discharge Requirements

Discharge quality requirements are governed by the Utah Division of Water Quality. This department protects drinking and surface water bodies by regulating the quality of water entering these bodies. The Stansbury Park NPDES limits and pending nutrient limits on phosphorus and nitrogen as discussed below.

Current UPDES Permit

The lagoons are currently permitted to treat a design flow of 1 MGD with an operational flow of 0.75 MGD. The lagoons currently discharge to an unnamed ditch that flows to the North through a gravity flow pipeline beneath I-80. The discharge location is controlled by a manual gate that is operated to direct the effluent to either a wetland or a rapid infiltration basin. The water from the wetland eventually enters a playa that is separated from the Great Salt Lake by railroad tracks. The lagoons currently have a weekly maximum effluent limit of 65 mg/L BOD and 65 mg/L TSS.

Pending Nutrient Regulations

Phosphorus

In January 2015, the Technology-Based Phosphorus Effluent Limits (TBPEL) Rule, R317-1-3.3 went into effect for municipal wastewater treatment facilities in Utah. This rule establishes a maximum phosphorus discharge limit of 1.0 mg/L. The purpose of this rule is to reduce nutrient loading and subsequent algal blooms in waters of the State. The rule includes guidelines and requirements for lagoon-based treatment systems. Lagoons will be monitored to determine the annual load of phosphorus discharged from the facility. The rule indicates that the maximum annual amount of phosphorus that a lagoon will be allowed to discharge will be 125 percent of the current annual total phosphorus loading to the lagoon's receiving stream. Once this phosphorus cap is reached, the owner will have five years to construct treatment processes or implement treatment alternatives to prevent the lagoon from exceeding this phosphorus cap. It is assumed from the review of this rule that if a lagoon facility is replaced by a mechanical facility, the new facility will be required to meet the 1.0 mg/L total phosphorus discharge limit. It should be noted that the TBPEL Rule includes language indicating that the phosphorus limit may be reduced below 1.0 mg/L for a facility based on the assessment of the facility's receiving waters.

TBPEL and Phosphorus Loading Cap Exceptions

Variances regarding the implementation of the TBPEL rule were also specified by the Utah Division of Water Quality (UDWQ). Three exceptions that may apply to the SPID facility are summarized briefly below:

- The rule can be delayed if sewer costs that, as a result of implementing the TBPEL rule, result in a value greater than 1.4% of the median adjusted gross household income of the service area based on data from the Utah State Tax Commission after inclusion of grants, loans, and other funding.
- If the owner of a discharging treatment works can demonstrate that the TBPEL rule and associated phosphorus cap are unnecessary to protect water bodies downstream of the point of discharge, no limit will be applied. Wastewater effluent discharge to the wetlands and playa may reduce the need for phosphorus reduction in the effluent if it can be demonstrated to the State's satisfaction that higher phosphorus inputs to these areas will have minimal impact. Currently a consortium of wastewater treatment facilities and water districts is conducting a study to show that reducing phosphorus loading to

the Great Salt Lake will provide no environmental benefit. The results of this study may be useful in showing that the phosphorus cap for the SPID lagoons is not necessary, but the study results are several years from being finalized and it is not clear how the State will react to the study findings.

- The phosphorus cap can be avoided if the owner of a treatment works can demonstrate that phosphorus reduction can also be achieved using approaches such as water quality trading, seasonal offsets, effluent reuse, or land application.

These variances may be possible to avoid the phosphorus load cap established in the TBPEL, however, it must be noted that these variances must be revisited periodically to verify that the conditions for the variance remain applicable.

Nitrogen

The State of Utah is working towards implementing a similar effluent limit for nitrogen. Currently, the State is considering the establishment of an effluent nitrogen limit of 10 mg/L total inorganic nitrogen (TIN). As of 2016, no exact criteria or variances have been developed, but nitrogen removal capabilities must be considered for the North Tooele County wastewater treatment system since it is highly probable that a nitrogen limit will be imposed in the next five years. It is expected that the limit will be imposed on treatment lagoons similar to the phosphorus limit, with the establishment of the cap on nitrogen loading.

One possibility for nitrogen removal includes retrofitting the lagoons currently in place. Lagoons can be equipped with aeration equipment or integrated fixed film to allow for a higher removal of Total Kjeldahl Nitrogen (TKN) than facultative lagoons without nutrient removal upgrades. Aerated lagoons have been shown to remove an average of 74% of influent TKN through nitrification and denitrification[2]. In addition, integrated fixed film processes can be incorporated to naturally increase nitrogen removal. This process includes plastic media, which provides additional surface area for attachment of nitrifying and denitrifying bacteria. As a result, more TKN removal occurs without increasing the mixed liquor suspended solids concentration of the lagoon.

Both retrofit solutions could enable the SPID to remove enough nitrogen from the municipal wastewater to meet future regulations. However, simply retrofitting the lagoons will provide little capability for phosphorus removal. Based on the TBPEL limits, it is likely the SPID WWTP will need to be converted to a mechanical treatment plant at some point in the future to meet the lower phosphorous limits and capacity requirements of a growing population.

Service Area

Figure 1 shows North Tooele County and the anticipated development within this area. It is expected that a new collection system will be created to service the newly developed areas as the development occurs. It is also expected that the existing treatment lagoons will be expanded as needed to increase their treatment capacity.

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[2] Middlebrooks, Joe, et al. "Nitrogen Removal in Wastewater Stabilization Lagoons." 6th National Drinking Water and Wastewater Treatment Technology Transfer Workshop. 1999

As noted above, expansion of the lagoon system will be limited by their ability to address nutrient limits established by new State regulations.

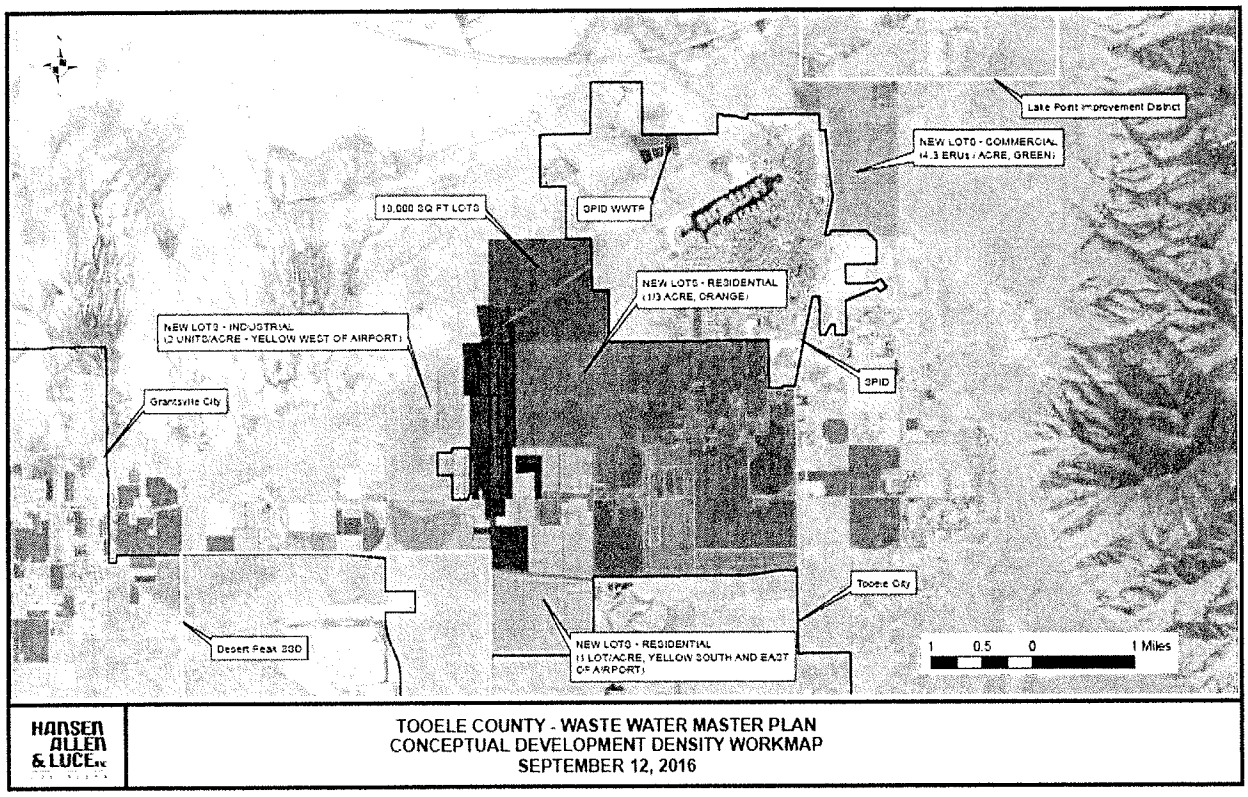

Figure 1. Stansbury Park Development Plan

Flows and Loads

Hansen, Allen & Luce provided the current and future flow estimates from each area of the County. Table 1 summarizes the estimated current and projected ERUs and associated wastewater flows for the service area. Estimated and projected BOD_5 and TSS loads were calculated based on guidelines of 0.22 lbs/capita-day and 0.25 lbs/capita-day respectively, and are also summarized in Table 1.[3] Utah Administrative Code R317-3-10 specifies a maximum loading rate for lagoons of 35 lb BOD/acre/day for treatment. This loading rate was used to calculate the minimum acres of lagoons required for each service. This information is also summarized in the table below.

[3] Utah Administrative Code R317-3-4

Table 1. Wastewater Flows and Loads Estimates and Lagoon Area Requirements

Area of SPID	ERUs[2]	Avg. Day Flows[2] (MGD)	BOD Load[1] (lbs/day)	TSS Load[1] (lbs/day)	P Load (lbs/day) [4]	N Load (lbs/day) [4]	Minimum Lagoon Area[3] (acres)
Estimated 2016 Values							
Unincorporated Erda Area	518	0.17	374	425	10	60	10.5
Unincorporated Sheep Lane Area	58	0.02	44	50	1.2	7	1.3
Stansbury Park	3545	1.13	2,486	2,825	68	400	71.0
Lake Point	550	0.18	396	450	11	63	11.3
Deseret Peak	549	0.18	396	450	11	63	11.3
TOTAL	**5,220**	**1.68**	**3,700**	**4,200**	**102**	**590**	**106**
Projected 2046 Values							
Unincorporated Erda Area	12,827	4.1	9,020	10,250	249	1450	258
Unincorporated Sheep Lane Area	1,602	0.51	1,122	1,275	31	180	32
Stansbury Park	9,611	3.08	6,776	7,700	187	1086	193
Lake Point	900	0.29	638	725	18	102	18
Deseret Peak	6,670	2.13	4,690	5,325	129	751	134
TOTAL	**31,610**	**10.1**	**22,240**	**25,280**	**613**	**3570**	**635**

[1] Utah Administrative Code R317-3-4 recommends use of 0.22 lbs/capita-day BOD5 and 0.25 lbs/capita-day TSS and 100 gal/capita-day
[2] Data provided by Hansen, Allen, and Luce (2016)
[3] Utah Administrative Code R317-3-10 recommends maximum loading rate of 35 lb BOD/acre/day for non-aerated lagoons
[4]Sedlak, Richard. Phosphorus and Nitrogen Removal From Municipal Wastewater Principles and Practice, 2nd edition. Lewis Publishers, 1991. Values of 16 g N/capita-day and 1 kg P/capita-year taken to estimate nitrogen and phosphorus load.

The current SPID lagoons are 121 acres, sufficient area to treat flows up to 1.92 MGD (approx. 5,900 ERUs). If lagoon treatment is continued at the SPID WWTP, more than five times the current acreage of lagoons will be needed by 2046. Additionally, State regulations may prevent expansion of the lagoons. Utah State Code R317-3-10 requires a minimum buffer of 0.25 miles between lagoons and areas developed for residential, commercial, or institutional purposes. This regulation will likely limit the expansion of the SPID treatment lagoons to the east or the south. Additional land appears to be available to the west and north of the existing plant, however pending nutrient removal limits may also restrict expansion of the lagoon system.

It is also reasonable to consider the construction of a new lagoon treatment system located in the County. The lagoon system will require approximately 106 acres for the near term and 635 acres at build-out. The development of a new lagoon system will also require the 0.25-mile buffer area discussed above. This option may be viable if the expansion of the SPID facility proves to be undesirable, or if a location is available that can create enough cost savings for conveyance and operations to cover the cost of the development of a new site.

Mechanical Treatment Alternatives

Based on the phosphorus cap rules included in the TBPEL for lagoon systems, a mechanical treatment plant upgrade will likely be required in the future for the SPID WWTP. The timing of this upgrade is impacted by both the potential rule exemptions discussed previously, and the growth rate of the service area. There are several treatment alternatives available for future upgrade of the SPID WWTP to meet pending nutrient limits, including conventional activated sludge, extended aeration (oxidation ditches), sequencing batch reactors (SBRs) and membrane biological reactors (MBRs).

Conventional Activated Sludge

Conventional activated sludge treatment consists of a biological reactor where microorganisms responsible for treatment are aerated and kept in suspension, a liquid/solids separation process (e.g., sedimentation), and a recycle system for returning a portion of the separated solids (i.e., return activated sludge, RAS) back to the reactor. Various configurations can be utilized to achieve biological nutrient removal (BNR) sufficient to meet pending nutrient limits. A common configuration is the Modified Ludzack-Ettinger (MLE) process, which consists of an anoxic zone located ahead of aeration basins (Figure 2).

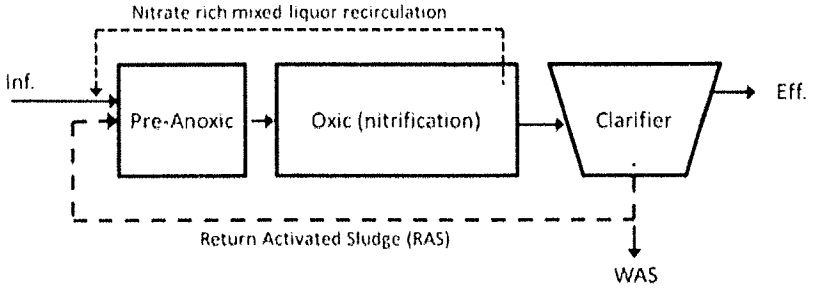

Figure 2. Modified Ludzack-Ettinger Process

The anoxic zone receives influent wastewater, RAS, and recycled mixed liquor from the end of the aerobic zone. Using this configuration, nitrates produced in the aeration basins through nitrification are denitrified in the anoxic

zone. Additionally, MLE allows for swing zones that can be used to meet nitrogen limits as wastewater characteristics vary. There are various adaptations and configurations of the MLE process that can be employed to meet the treatment requirements of the facility. The configuration utilized is typically selected based on the evaluation and modeling of the wastewater characteristics.

Extended Aeration

Extended aeration processes include similar treatment strategies as the activated sludge process, but utilize larger tankage to achieve much higher residence times in the system. Larger aeration tanks (e.g., oxidation ditches) with longer (> 20 days) solids retention times (SRTs) are used. This process is best employed where space is not limited and less complex operation is preferred. Large aeration tank volumes provide good equalization for flow and load variations and produce a high-quality effluent. The systems can be configured to promote both nitrogen and phosphorus removal through the use of anoxic and anaerobic zones. Mixed liquor recycle is often achieved using a flow control gate located in the aeration zone, eliminating the need for mixed liquor recycle pumps. Similar to the activated sludge process, solids are separated from the liquid stream using final clarifiers. A portion of the solids are returned to the reactor using RAS pumps. The solids not recycled are wasted and must be dewatered and hauled away for disposal.

Sequencing Batch Reactors

Sequencing batch reactors operate as fill-and-draw reactors with non-aerated mixing, aeration, and clarification occurring in the same tank. The operational sequence includes the following steps: (1) fill, (2) react (aeration), (3) settle (sedimentation/clarification), (4) decant, and (5) idle. Normal cycle time is approximately 5 hours. For continuous flow applications, a minimum of two SBR tanks must be used. Sludge wasting is not included as one of the five steps, but is a vital step in the SBR process. SBRs are typically used for smaller (<10 MGD) capacity plants due to the equipment and tank requirements inherent in the fill/draw operation. There is no need for RAS pumping because aeration and settling occur in the same chamber. SBR systems can be difficult to operate during periods of rapid changes in flow such as significant wet weather events. This difficulty in operation can be addressed through the inclusion of more units, or the use of flow equalization basins if flow variations are expected to be significant and common.

Membrane Biological Reactors

Membrane biological reactor processes are activated sludge processes that utilize membranes rather than clarifiers for solids separation. MBR treatment processes consist of suspended growth biological reactors with solids separation via microfiltration membranes (nominal pore size ranging from 0.1-0.4 μm). Membranes are typically submerged in the biological reactor, but can be a separate unit process similar to secondary clarifiers in a conventional activated sludge process as well. MBRs produce an effluent quality similar to a combination of secondary clarification and effluent microfiltration, and can therefore be used to produce reuse quality effluent. Similar to conventional activated sludge, MBRs can be operated in an MLE configuration. MBR systems allow operation at much higher mixed liquor suspended solids (MLSS) concentrations, which reduces the necessary volume of the aeration basins. MBR systems do not respond well to rapid changes in flow, thus equalization basins are often included onsite for MBR systems to provide equalization of wet weather flows.

Biological Nutrient Removal and Chemical Phosphorus Removal

BNR is accomplished in a similar manner for each of the technologies described above. This includes an anaerobic zone/cycle to condition the biology for phosphorous uptake, and anoxic and aerobic zones/cycles to facilitate phosphorus uptake, nitrification and denitrification. Due to the pending nutrient regulations for phosphorus and nitrogen in the State of Utah, each of the above processes was considered to require BNR processes, as well as the ability to feed chemical for phosphorus removal if necessary. It is important to note that while BNR can be utilized to bring phosphorus to below 1 mg/L as required in the TBPEL, reliably reaching a lower concentration of 0.1 - 0.6 mg/L of phosphorus will require chemical addition followed by tertiary filtration for conventional activated sludge, extended aeration, and SBR systems. MBRs have been shown to be capable of meeting a lower phosphorus limit (<0.1 mg/L) with chemical addition[4].

Alternative Selection

Cost Comparison of Technologies

A comparison of capital and operating costs ($ 2016) for each treatment technology is shown in Table 2, which also describes the assumptions made for each estimate. Cost comparisons were included for facilities designed to meet a 1 mg/L phosphorus effluent limit and potential future lower phosphorus effluent limit. All capital costs were estimated assuming a design flowrate of 5 MGD, as this is the design flowrate of the referenced studies. While the SPID WWTP currently requires less capacity than 5 MGD, estimates by Hansen, Allen & Luce, Inc. projected a wastewater flowrate of 10.1 MGD by 2046. Additional costs include solids handling and disposal costs, which are estimated at $53 per wet ton. Assuming that a 5 MGD treatment plant creates an average of 4 tons of sludge per day, an estimate of $78,000 per year for solids handling and disposal has been included for each treatment option.[5] These costs are anticipated to be similar for the four treatment alternatives discussed herein (approximately $3M capital and $128k/yr annual operating for 5 mgd treatment capacity).[6]

[4] Young, Thor, et al. "When does building an MBR make sense? How variations of local construction and operating cost parameters impact overall project economics." GE Water and Process Technologies, 2013.
[5] EPA. "Handbook Estimating Sludge Management Costs." National Service Center for Environmental Publications. 1985.
[6] Based on cost comparisons between cited sources, capital costs for anaerobic digestion are estimated at roughly $3 million for a 5 MGD plant, with an estimated associated annual operating cost of $128,000 per year. California Environmental Protection Agency. "Current Anaerobic Digestion Technologies Used for Treatment of Municipal Organic Solid Waste". 2008.

Table 2. Comparative Costs for Treatment Alternatives (based on 5 MGD average flow/treatment capacity)

Treatment Technology	Units Included	Design Phosphorus Limit	Estimated, Comparative Capital Costs ($ 2016)	Estimated, Comparative Capital Costs with Solids Handling ($ 2016)	Estimated Annual O&M Costs ($ 2016)	Estimated Annual O&M Costs with Solids Handling ($ 2016)
Conventional Activated Sludge	Screening Grit Removal Primary Clarifiers Reactor Secondary Clarifiers Disinfection	1 mg/L Phosphorus Effluent Limit	$36M - $44M[1]	$39M - $47M[1]	$1.1M - $1.3M[1]	$1.2M - $1.4M[1]
		0.1 mg/L Phosphorus Effluent Limit (Filtration Included)	$41M - $50M[1]	$44M - $53M[1]	$1.2M - $1.4M[1]	$1.3M - $1.5M[1]
Extended Aeration	Screening Grit Removal Bioreactors Secondary Clarifiers Disinfection	1 mg/L Phosphorus Effluent Limit	$37M - $45M[1][2]	$40M - $48M[1][2]	$1.0M - $1.2M[1][2]	$1.1M - $1.3M[1][2]
		0.1 mg/L Phosphorus Effluent Limit (Filtration Included)	$42 - $51M[1][2]	$45 - $54M[1][2]	$1.1M - $1.3M[1][2]	$1.2M - $1.4M[1][2]
Sequencing Batch Reactor	Screening Equalization Basin Reactors Filtration Disinfection	1 mg/L Phosphorus Effluent Limit	$40M - $48M[1][2]	$43M - $51M[1][2]	$1.0M - $1.3M[1][2]	$1.1M - $1.4M[1][2]
		0.1 mg/L Phosphorus Effluent Limit (Filtration Included)	$45M - $54M[1][2]	$48M - $57M[1][2]	$1.2M - $1.4M[1][2]	$1.3M - $1.5M[1][2]
Membrane Bioreactor	Screening Grit Removal Reactor Primary and Secondary Clarifiers Disinfection	1 mg/L Phosphorus Effluent Limit	$34M - $41M[1]	$37M - $44M[1]	$1.3M - $1.5M[1]	$1.4M - $1.6M[1]
		0.1 mg/L Phosphorus Effluent Limit	$34M - $41M[1]	$37M - $44M[1]	$1.4M - $1.6M[1]	$1.5M - $1.7M[1]
Lagoons[3]	Screening Lagoons Chem Addition[4] Solids Separation[4]	1 mg/L Phosphorus Effluent Limit[4]	$15M - $16m	$17M - $18M	$0.8M - $1.0M	$0.9M - $1.1M

[1] Young, Thor, et al. "When does building an MBR make sense? How variations of local construction and operating cost parameters impact overall project economics." GE Water and Process Technologies, 2013. This includes costs of conventional activated sludge with and MBR, both with and without meeting a 0.1 mg/L effluent phosphorus limit. This same price difference for conventional activated sludge (i.e., difference with and without tertiary filtration) was used to estimate the cost of tertiary filtration for SBR and extended aeration units as well.

Table 3. Treatment Technology Comparison

Selection Criteria	Description	Treatment Technology			
		Conventional Activated Sludge	Extended Aeration	SBR	MBR
Financial					
Capital Costs	Fixed costs incurred for the initial purchase of land, buildings, construction, and equipment [1]	**3** Variable, based on nutrient removal needs. Would require aerobic, anaerobic, and anoxic zones, and secondary clarifiers. Tertiary filtration would be required to meet a lower P limit.	**2** Relatively high capital costs for tankage (e.g., oxidation ditches, secondary clarifiers). Less equipment intensive than other alternatives (i.e., does not require a blower system for aeration). Tertiary filtration required to meet a lower P limit.	**1** Large batch reactors must be constructed. However, no secondary clarifiers and RAS pumping required. Requires equalization basins based on the nature of batch processing – continuous feed alternatives are available typically for lower capacity plants (i.e., less than 4 MGD). Tertiary filtration required to meet a lower P limit.	**3** Does not require secondary clarifiers or tertiary filtration. Filtration system is sized based on hydraulic capacity of the membrane system, thus, peak wet weather flow equalization is typically used.
O&M Costs	Costs associated with the operation and maintenance of facilities including electrical, chemicals, and solids disposal costs	**2** Operation intensive due to high number of processes involved, but not maintenance intensive.[1]	**3** Low operational costs due to simple design. Low maintenance. Facility does not require a blower system for aeration.	**2** Sequencing operation requires more operational controls and operator oversight. Requires more blower capacity due to the lack of organic removal in primaries.	**1** Membrane cleaning and replacement costs significant. Membrane fouling can lead to higher O&M costs and high energy demand.

Selection Criteria	Description	Treatment Technology			
		Conventional Activated Sludge	Extended Aeration	SBR	MBR
Public Perception	Associated odor, noise, vehicular traffic	**2** Odors can be controlled using covered primaries. Blowers require sound enclosures	**2** Use of mechanical aerators rather than blowers reduces noise. Aerators require sound enclosures.	**3** Elimination of primary clarifiers reduces potential for odors. Blowers require sound enclosures	**3** Odors can be controlled using covered primaries. Blowers require sound enclosures
Environmental					
Nutrient Removal	Ease and efficiency of implementing BNR processes with technology	**2** Effective in achieving nutrient removal with appropriate design features.	**2** Effective in achieving nutrient removal with appropriate design features.	**2** Effective in achieving nutrient removal with appropriate design features.	**3** Effective in achieving nutrient removal with appropriate design features. Can achieve very low P discharge with chemical addition.
Solids Handling Requirements	Consideration of the amount, biodegradability and/or stability of solids generated	**2** Secondary clarifier required. Well stabilized sludge produced. However, lighter, fluffy sludge flocs require larger clarifiers.	**3** Secondary clarifier required. High effluent suspended solids. Well stabilized sludge.	**3** Well-stabilized sludge produced, less biosolids production. No RAS stream needed.	**2** Low amounts of solids released in effluent. Mixed liquor is much more concentrated than activated sludge.

Selection Criteria	Description	Treatment Technology			
		Conventional Activated Sludge	Extended Aeration	SBR	MBR
Sustainability	Technology lends itself to opportunities to recover resources including reuse water, composting, phosphorus recovery, co-gen facilities	**2** Phosphorus and nitrogen recovery possible, along with co-gen facilities if anaerobic digestion is used. Additional treatment requirement to meet reuse requirements.	**2** Phosphorus and nitrogen recovery possible, along with co-gen facilities if anaerobic digestion is used. Additional treatment requirement to meet reuse requirements.	**2** Phosphorus and nitrogen recovery possible, along with co-gen facilities if anaerobic digestion is used. Additional treatment requirement to meet reuse requirements.	**3** Effluent quality sufficient for water reuse with proper disinfection. Processes can be added upstream to accommodate co-gen facilities and phosphorus recovery with primaries and anaerobic digesters.[3]
Emissions	Generation of pollutant air emissions	**3** Low aeration and cogeneration capabilities make for lower emissions. [2]	**3** Mechanical aeration. Improved flow equalization and well stabilized sludge help limit emissions.[2]	**2** High aeration energy, but well-settled solids allow for more efficient solids removal, causing less emissions.[2]	**2** High aeration energy, more energy intensive method for removing solids.[2]
Energy Consumption	Energy requirements for operation	**2** Estimate: 1250-4250 kW-Hr/million gallons[1]	**3** Average amount of energy required for aeration. Lowest mechanical equipment and associated energy consumption of alternatives.	**2** Estimate: 1250-4250 kW-Hr/million gallons[1]	**1** Estimate: 2000-7000 kW-Hr/million gallons[1]

Selection Criteria	Description	Treatment Technology			
		Conventional Activated Sludge	Extended Aeration	SBR	MBR
Chemical Usage	Chemical requirements for operation	**3**	**3**	**3**	**1**
		Chemical addition may be used for phosphorus removal or to improve BNR. Carbon addition may be required for denitrification.	Chemical addition may be used for phosphorus removal or to improve BNR. Carbon addition may be required for denitrification.	Chemical addition may be used for phosphorus removal or to improve BNR. Carbon addition may be required for denitrification.	Chemical addition may be used for phosphorus removal or to improve BNR. Carbon addition may be required for denitrification. Additional chemicals required for membrane cleaning processes including a variety of acids, sodium hypochlorite and hydrogen peroxide depending on the type of fouling contaminant.[1]
TOTAL SCORE		**28**	**31**	**29**	**25**

[1] Hazen and Sawyer. "Wastewater Treatment Capacity and Effluent Disposal Study." Technical Memorandum 3 – Evaluation of Treatment Technologies. 2011.
[2] Metcalf and Eddy. Wastewater Engineering Treatment and Resource Recovery. McGraw-Hill. 2014.
[3] California Environmental Protection Agency. "Current Anaerobic Digestion Technologies Used for Treatment of Municipal Organic Solid Waste". 2008.

Table 2. Comparative Costs for Treatment Alternatives (based on 5 MGD average flow/treatment capacity)

Treatment Technology	Units Included	Design Phosphorus Limit	Estimated, Comparative Capital Costs ($ 2016)	Estimated, Comparative Capital Costs with Solids Handling ($ 2016)	Estimated Annual O&M Costs ($ 2016)	Estimated Annual O&M Costs with Solids Handling ($ 2016)
Conventional Activated Sludge	Screening Grit Removal Primary Clarifiers Reactor Secondary Clarifiers Disinfection	1 mg/L Phosphorus Effluent Limit	$36M - $44M[1]	$39M - $47M[1]	$1.1M - $1.3M[1]	$1.2M - $1.4M[1]
		0.1 mg/L Phosphorus Effluent Limit (Filtration Included)	$41M - $50M[1]	$44M - $53M[1]	$1.2M - $1.4M[1]	$1.3M - $1.5M[1]
Extended Aeration	Screening Grit Removal Bioreactors Secondary Clarifiers Disinfection	1 mg/L Phosphorus Effluent Limit	$37M - $45M[1][2]	$40M - $48M[1][2]	$1.0M - $1.2M[1][2]	$1.1M - $1.3M[1][2]
		0.1 mg/L Phosphorus Effluent Limit (Filtration Included)	$42 - $51M[1][2]	$45 - $54M[1][2]	$1.1M - $1.3M[1][2]	$1.2M - $1.4M[1][2]
Sequencing Batch Reactor	Screening Equalization Basin Reactors Filtration Disinfection	1 mg/L Phosphorus Effluent Limit	$40M - $48M[1][2]	$43M - $51M[1][2]	$1.0M - $1.3M [1][2]	$1.1M - $1.4M [1][2]
		0.1 mg/L Phosphorus Effluent Limit (Filtration Included)	$45M - $54M[1][2]	$48M - $57M[1][2]	$1.2M - $1.4M[1][2]	$1.3M - $1.5M[1][2]
Membrane Bioreactor	Screening Grit Removal Reactor Primary and Secondary Clarifiers Disinfection	1 mg/L Phosphorus Effluent Limit	$34M - $41M[1]	$37M - $44M[1]	$1.3M - $1.5M[1]	$1.4M - $1.6M[1]
		0.1 mg/L Phosphorus Effluent Limit	$34M - $41M[1]	$37M - $44M[1]	$1.4M - $1.6M [1]	$1.5M - $1.7M [1]
Lagoons[3]	Screening Lagoons Chem Addition[4] Solids Separation[4]	1 mg/L Phosphorus Effluent Limit[4]	$15M - $16m	$17M - $18M	$0.8M - $1.0M	$0.9M - $1.1M

[1] Young, Thor, et al. "When does building an MBR make sense? How variations of local construction and operating cost parameters impact overall project economics." GE Water and Process Technologies, 2013. This includes costs of conventional activated sludge with and MBR, both with and without meeting a 0.1 mg/L effluent phosphorus limit. This same price difference for conventional activated sludge (i.e., difference with and without tertiary filtration) was used to estimate the cost of tertiary filtration for SBR and extended aeration units as well.

[2]Jafarinejad, Shahryar. "Cost estimation and economical evaluation of three configurations of activated sludge process for a wastewater treatment plant (WWTP) using simulation." Appl. Water Sci. 2016

[3] As discussed previously in this report, a lagoon system is not expected to be capable of meeting the anticipated Nitrogen and Phosphorus limits using biological processes only. This may be addressed for Phosphorus removal with the use of chemical addition and solids separation. Nitrogen removal will require a process that includes sequential anoxic and aeration zones. Although it is possible to create these zones in lagoons, it is difficult to control the system and the volumes required for Nitrogen removal result in the need for very large lagoons that are not viable. The information for lagoons is provided for comparison purposes and does not represent a system that is capable of meeting anticipated Nitrogen limits.

[4] A lagoon system will not be capable of meeting the proposed 1.0 mg/L Phosphorus limit without chemical addition. The addition of chemicals (metal salts) for Phosphorus removal will result in the creation of significant solids that will need to be removed. Dosing of chemicals to the lagoons will result in the accumulation of significant chemical solids in the lagoons, which will reduce the residence time and decrease the lagoons' ability to treat the wastewater. It is assumed that chemical will be added to the lagoon effluent and a solids separation (clarifiers) step will be required to remove the solids formed. The lagoon system does not provide a viable option for meeting a lower Phosphorus limit (0.1 mg/L) since this limit will require filtration in addition to chemical addition and sedimentation, and the costs and operational requirements of the system will be significantly higher than the cost of a mechanical system.

Triple-Bottom Line Comparison of Treatment Technologies

Triple-bottom line analysis consists of comparing alternatives on the basis of their social, environmental, and economic considerations. Table 3 summarizes the triple-bottom line analysis for each of the treatment technologies evaluated for use at the SPID WWTP. A score is shown for each treatment train based on the financial, social, and environmental factors considered. The scoring utilizes the following scale: 1 = Fair, 2 = Good, and 3 = Superior. The scores are shown in the green boxes and summed in the bottom row of the table. This primarily qualitative analysis is intended to provide a sense of the relative preference of each strategy in comparison to one another.

Table 3. Treatment Technology Comparison

Selection Criteria	Description	Treatment Technology			
		Conventional Activated Sludge	Extended Aeration	SBR	MBR
Financial					
Capital Costs	Fixed costs incurred for the initial purchase of land, buildings, construction, and equipment [1]	**3** Variable, based on nutrient removal needs. Would require aerobic, anaerobic, and anoxic zones, and secondary clarifiers. Tertiary filtration would be required to meet a lower P limit.	**2** Relatively high capital costs for tankage (e.g., oxidation ditches, secondary clarifiers). Less equipment intensive than other alternatives (i.e., does not require a blower system for aeration). Tertiary filtration required to meet a lower P limit.	**1** Large batch reactors must be constructed. However, no secondary clarifiers and RAS pumping required. Requires equalization basins based on the nature of batch processing – continuous feed alternatives are available typically for lower capacity plants (i.e., less than 4 MGD). Tertiary filtration required to meet a lower P limit.	**3** Does not require secondary clarifiers or tertiary filtration. Filtration system is sized based on hydraulic capacity of the membrane system, thus, peak wet weather flow equalization is typically used.
O&M Costs	Costs associated with the operation and maintenance of facilities including electrical, chemicals, and solids disposal costs	**2** Operation intensive due to high number of processes involved, but not maintenance intensive.[1]	**3** Low operational costs due to simple design. Low maintenance. Facility does not require a blower system for aeration.	**2** Sequencing operation requires more operational controls and operator oversight. Requires more blower capacity due to the lack of organic removal in primaries.	**1** Membrane cleaning and replacement costs significant. Membrane fouling can lead to higher O&M costs and high energy demand.

Selection Criteria	Description	Treatment Technology			
		Conventional Activated Sludge	Extended Aeration	SBR	MBR
Social					
Reliability	Consistency of effluent quality independent of variations in influent characteristics	**2** Process is well understood and predictable due to the longstanding use of this technology. However, more susceptible to bioreactor upsets than other alternatives.	**3** Very stable process due to high retention times in bioreactors	**3** Batch process provides very good control resulting in reliable effluent quality.	**2** Produces high quality effluent. Performance is not dependent on sludge stability[3]. Without sufficient equalization storage, process is susceptible to overflowing in event of solids overload/plugging of membrane filtration system.
Safety	Amount of dangerous or hazardous processes or chemicals involved	**3** Metal salts (ferric or alum) typically onsite for phosphorus removal.	**3** Metal salts (ferric or alum) typically onsite for phosphorus removal.	**3** Metal salts (ferric or alum) typically onsite for phosphorus removal.	**2** Metal salts (ferric or alum) typically onsite for phosphorus removal. Little hands-on operator maintenance required. Additional chemicals required for membrane cleaning.
Implementation (Future Phasing Options)	Ease of constructing additional phases to meet future flows	**2** System design is flexible for future upgrades.	**2** Size of ditches make plant expansion more land intensive.	**3** Small footprint and unit based system facilitate expansion.	**2** Small footprint facilitates expansion. Heavy dependence on equipment in the membrane system requires coordination and planning for expansion

Selection Criteria	Description	Treatment Technology			
		Conventional Activated Sludge	Extended Aeration	SBR	MBR
Public Perception	Associated odor, noise, vehicular traffic	**2** Odors can be controlled using covered primaries. Blowers require sound enclosures	**2** Use of mechanical aerators rather than blowers reduces noise. Aerators require sound enclosures.	**3** Elimination of primary clarifiers reduces potential for odors. Blowers require sound enclosures	**3** Odors can be controlled using covered primaries. Blowers require sound enclosures
Environmental					
Nutrient Removal	Ease and efficiency of implementing BNR processes with technology	**2** Effective in achieving nutrient removal with appropriate design features.	**2** Effective in achieving nutrient removal with appropriate design features.	**2** Effective in achieving nutrient removal with appropriate design features.	**3** Effective in achieving nutrient removal with appropriate design features. Can achieve very low P discharge with chemical addition.
Solids Handling Requirements	Consideration of the amount, biodegradability and/or stability of solids generated	**2** Secondary clarifier required. Well stabilized sludge produced. However, lighter, fluffy sludge flocs require larger clarifiers.	**3** Secondary clarifier required. High effluent suspended solids. Well stabilized sludge.	**3** Well-stabilized sludge produced, less biosolids production. No RAS stream needed.	**2** Low amounts of solids released in effluent. Mixed liquor is much more concentrated than activated sludge.

Selection Criteria	Description	Treatment Technology			
		Conventional Activated Sludge	Extended Aeration	SBR	MBR
Sustainability	Technology lends itself to opportunities to recover resources including reuse water, composting, phosphorus recovery, co-gen facilities	**2** Phosphorus and nitrogen recovery possible, along with co-gen facilities if anaerobic digestion is used. Additional treatment requirement to meet reuse requirements.	**2** Phosphorus and nitrogen recovery possible, along with co-gen facilities if anaerobic digestion is used. Additional treatment requirement to meet reuse requirements.	**2** Phosphorus and nitrogen recovery possible, along with co-gen facilities if anaerobic digestion is used. Additional treatment requirement to meet reuse requirements.	**3** Effluent quality sufficient for water reuse with proper disinfection. Processes can be added upstream to accommodate co-gen facilities and phosphorus recovery with primaries and anaerobic digesters.[3]
Emissions	Generation of pollutant air emissions	**3** Low aeration and cogeneration capabilities make for lower emissions. [2]	**3** Mechanical aeration. Improved flow equalization and well stabilized sludge help limit emissions.[2]	**2** High aeration energy, but well-settled solids allow for more efficient solids removal, causing less emissions.[2]	**2** High aeration energy, more energy intensive method for removing solids.[2]
Energy Consumption	Energy requirements for operation	**2** Estimate: 1250-4250 kW-Hr/million gallons[1]	**3** Average amount of energy required for aeration. Lowest mechanical equipment and associated energy consumption of alternatives.	**2** Estimate: 1250-4250 kW-Hr/million gallons[1]	**1** Estimate: 2000-7000 kW-Hr/million gallons[1]

Selection Criteria	Description	Treatment Technology			
		Conventional Activated Sludge	Extended Aeration	SBR	MBR
Chemical Usage	Chemical requirements for operation	**3**	**3**	**3**	**1**
		Chemical addition may be used for phosphorus removal or to improve BNR. Carbon addition may be required for denitrification.	Chemical addition may be used for phosphorus removal or to improve BNR. Carbon addition may be required for denitrification.	Chemical addition may be used for phosphorus removal or to improve BNR. Carbon addition may be required for denitrification.	Chemical addition may be used for phosphorus removal or to improve BNR. Carbon addition may be required for denitrification. Additional chemicals required for membrane cleaning processes including a variety of acids, sodium hypochlorite and hydrogen peroxide depending on the type of fouling contaminant.[1]
TOTAL SCORE		**28**	**31**	**29**	**25**

[1] Hazen and Sawyer. "Wastewater Treatment Capacity and Effluent Disposal Study." Technical Memorandum 3 – Evaluation of Treatment Technologies. 2011.
[2] Metcalf and Eddy. Wastewater Engineering Treatment and Resource Recovery. McGraw-Hill. 2014.
[3] California Environmental Protection Agency. "Current Anaerobic Digestion Technologies Used for Treatment of Municipal Organic Solid Waste". 2008.

Recommendations and Conclusions

Projected growth and development in Northern Tooele County and pending nutrient limits have led to an investigation into future upgrades and expansion needed at the SPID WWTP. The existing lagoon system could be expanded to meet projected capacity requirements, however, pending nitrogen and phosphorus limits will require modifications to improve nutrient removal as flows increase. The lagoons can be aerated or retrofitted with integrated fixed film processes to meet possible future nitrogen limits. Chemical addition may be utilized to meet phosphorus limits, but this will result in a significant increase in solids production, which will limit the viability of continued lagoon treatment. While variances to the phosphorus effluent limits may be possible, it is not currently clear whether the State will eliminate the phosphorus discharge cap for lagoons that discharge to the Great Salt Lake. Planning for construction of a new mechanical treatment plant would offer the SPID the ability to meet nutrient regulations. Triple-bottom line analysis based on financial, social, and environmental factors, indicate that extended aeration, conventional activated sludge, and MBRs are the most favorable alternatives considered. In terms of ease of operation and lowest O&M costs, extended aeration is most favorable. Should the SPID be interested in water reuse, or if lower phosphorus limits are likely in the future, MBR technologies may offer some benefits in cost and operation.

Tooele County - Waste Water Regionalization Plan
283.02.100
January 18, 2017

Build-out Construction Cost Estimate Calculation
Id and node labels refer to SSA model FUT_ALT_6hiDP (included in Appendix D)

ID	DESCRIPT	UP_NODE	DN_NODE	LENGTH	DIA_INCH	IN_STREET	Unit Cost/FT	Total Cost		1200 West Project	Desert Peak Sewer
Link-03		Jun-04	Jun-06	3102.3400	8.0000	N	$ 93.00	$ 288,517.62			
Link-04		Jun-07	Jun-05	2326.3800	15.0000	N	$ 120.00	$ 279,165.60			
Link-05		Jun-06	Jun-07	2642.2400	12.0000	N	$ 110.00	$ 290,646.40			
Link-06		Jun-05	Jun-08	3088.8400	18.0000	N	$ 131.00	$ 404,638.04			
Link-07		Jun-08	Jun-09	2895.6200	18.0000	N	$ 131.00	$ 379,326.22			
Link-09		Jun-10	Out-02	88.0600	36.0000	N	$ 202.00	$ 17,788.12		$ 17,788.12	
Link-100		Jun-91	Jun-92	290.1500	8.0000	Y	$ 126.00	$ 36,558.90			
Link-101		Jun-92	Jun-88	382.5600	8.0000	Y	$ 126.00	$ 48,202.56			
Link-103		Jun-94	Jun-88	711.4700	8.0000	Y	$ 126.00	$ 89,645.22			
Link-104		Jun-95	Out-05	1388.9600	8.0000	N	$ 93.00	$ 129,173.28			
Link-106		Jun-27	Jun-96	1240.4300	8.0000	Y	$ 126.00	$ 156,294.18			
Link-107		Jun-96	Jun-28	1338.3000	8.0000	Y	$ 126.00	$ 168,625.80			
Link-108		Jun-81	Jun-98	2534.8400	8.0000	Y	$ 126.00	$ 319,389.84			
Link-11		J-12	Jun-10	1629.9400	36.0000	N	$ 202.00	$ 329,247.88		$ 329,247.88	
Link-110		Jun-97	Jun-98	2582.5400	8.0000	N	$ 93.00	$ 240,176.22			
Link-111		Jun-84	Jun-99	2626.9800	10.0000	N	$ 104.00	$ 273,205.92			
Link-112		Jun-99	Jun-80	3931.8300	15.0000	N	$ 120.00	$ 471,819.60			
Link-113		Jun-103	Jun-100	2226.9900	21.0000	N	$ 145.00	$ 322,913.55		$ 322,913.55	
Link-114		Jun-100	Jun-101	2658.4600	21.0000	N	$ 145.00	$ 385,476.70		$ 385,476.70	
Link-115		Jun-101	Jun-102	2630.8900	21.0000	N	$ 145.00	$ 381,479.05		$ 381,479.05	
Link-116		Jun-102	Jun-20	2687.0800	24.0000	N	$ 159.00	$ 427,245.72		$ 427,245.72	
Link-117		Jun-104	Jun-29	2612.3500	10.0000	N	$ 104.00	$ 271,684.40			
Link-119		Jun-106	Jun-06	3292.8600	8.0000	N	$ 93.00	$ 306,235.98			
Link-120		Jun-107	Jun-108	895.2900	12.0000	N	$ 110.00	$ 98,481.90			
Link-121		Jun-108	Jun-109	5210.5200	12.0000	N	$ 110.00	$ 573,157.20			
Link-122		Jun-109	Jun-110	3385.5000	21.0000	N	$ 145.00	$ 490,897.50			
Link-123		Jun-110	Jun-10	4349.3300	27.0000	N	$ 167.00	$ 726,338.11			
Link-124		Jun-112	Jun-109	6911.7600	14.0000	N	$ 110.00	$ 760,293.60			
Link-125		Jun-113	Jun-21	1262.8600	12.0000	N	$ 110.00	$ 138,914.60			$ 138,914.60
Link-126		Jun-03	Jun-114	814.6100	18.0000	N	$ 131.00	$ 106,713.91			$ 106,713.91
Link-127		Jun-114	Jun-115	1597.3900	21.0000	N	$ 145.00	$ 231,621.55			$ 231,621.55
Link-128		Jun-115	Jun-116	501.8000	21.0000	N	$ 145.00	$ 72,761.00			$ 72,761.00
Link-129		Jun-116	Jun-117	1103.3100	21.0000	N	$ 145.00	$ 159,979.95			$ 159,979.95
Link-13		Jun-13	Jun-14	652.4400	8.0000	Y	$ 126.00	$ 82,207.44			
Link-130		Jun-117	Jun-118	2642.7600	21.0000	N	$ 145.00	$ 383,200.20			$ 383,200.20
Link-131		Jun-118	Jun-119	3807.0600	21.0000	N	$ 145.00	$ 552,023.70			$ 552,023.70
Link-132		Jun-119	Jun-120	1395.7000	21.0000	N	$ 145.00	$ 202,376.50			$ 202,376.50
Link-133		Jun-120	Jun-98	1946.9400	21.0000	N	$ 145.00	$ 282,306.30			$ 282,306.30
Link-134		Jun-98	Jun-103	420.2800	21.0000	N	$ 145.00	$ 60,940.60		$ 60,940.60	
Link-135		Jun-121	Jun-82	592.7600	8.0000	N	$ 93.00	$ 55,126.68			
Link-136		Jun-30	Jun-102	2648.5400	21.0000	N	$ 145.00	$ 384,038.30			
Link-14		Jun-14	Jun-15	2322.0800	8.0000	Y	$ 126.00	$ 292,582.08			
Link-141		Jun-18	Jun-30	2619.6200	18.0000	N	$ 131.00	$ 343,170.22			
Link-142		Jun-52b	Jun-29	2643.5400	15.0000	N	$ 120.00	$ 317,224.80			
Link-143		Jun-11	Jun-124	2823.3200	30.0000	N	$ 175.00	$ 494,081.00		$ 494,081.00	
Link-144		Jun-124	J-12	3825.5700	36.0000	N	$ 202.00	$ 772,765.14		$ 772,765.14	
Link-17		Jun-16	Jun-17	535.2400	12.0000	Y	$144.00	$ 77,074.56			
Link-18		Jun-17	Jun-18	2626.9600	12.0000	N	$ 110.00	$ 288,965.60			
Link-22		Jun-20	Jun-11	1231.7000	30.0000	N	$ 175.00	$ 215,547.50		$ 215,547.50	
Link-23		Jun-21	Jun-22	1271.0300	12.0000	N	$ 110.00	$ 139,813.30			$ 139,813.30
Link-24		Jun-22	Jun-03	2693.7300	12.0000	N	$ 110.00	$ 296,310.30			$ 296,310.30
Link-31		Jun-29	Jun-30	2630.4300	18.0000	N	$ 131.00	$ 344,586.33			
Link-32		Jun-33	Jun-32	619.4500	8.0000	Y	$ 126.00	$ 78,050.70			
Link-33		Jun-32	Jun-31	696.9800	8.0000	Y	$ 126.00	$ 87,819.48			
Link-34		Jun-31	Jun-15	516.8400	8.0000	Y	$ 126.00	$ 65,121.84			
Link-35		Jun-34	Jun-31	2308.3300	8.0000	Y	$ 126.00	$ 290,849.58			
Link-36		Jun-35	Jun-32	2431.4900	8.0000	Y	$ 126.00	$ 306,367.74			
Link-37		Jun-36	Jun-33	2573.8300	8.0000	Y	$ 126.00	$ 324,302.58			
Link-38		Jun-37	Jun-13	2197.4400	8.0000	Y	$ 126.00	$ 276,877.44			
Link-40		Jun-38	Jun-13	668.6900	8.0000	Y	$ 126.00	$ 84,254.94			
Link-41		Jun-39	Jun-38	2203.5900	8.0000	Y	$ 126.00	$ 277,652.34			
Link-42		Jun-42	Jun-37	348.3200	8.0000	Y	$ 126.00	$ 43,888.32			
Link-43		Jun-41	Jun-42	2800.0700	8.0000	Y	$ 126.00	$ 352,808.82			
Link-44		Jun-40	Jun-41	2386.4000	8.0000	Y	$ 126.00	$ 300,686.40			
Link-45		Jun-28	Jun-43	1614.5200	8.0000	Y	$ 126.00	$ 203,429.52			
Link-46		Jun-43	Jun-44	2313.4300	10.0000	Y	$ 137.00	$ 316,939.91			
Link-47		Jun-44	Jun-16	732.6800	12.0000	Y	$144.00	$ 105,505.92			
Link-48		Jun-15	Jun-44	1634.5100	8.0000	Y	$ 126.00	$ 205,948.26			
Link-49		Jun-45	Jun-46	1233.7000	8.0000	N	$ 93.00	$ 114,734.10			
Link-50		Jun-46	Jun-47	488.9700	8.0000	N	$ 93.00	$ 45,474.21			
Link-51		Jun-47	Jun-17	1029.7500	10.0000	N	$ 104.00	$ 107,094.00			
Link-52		Jun-55	Jun-56	828.7200	8.0000	Y	$ 126.00	$ 104,418.72			
Link-54		Jun-57	Jun-56	882.4900	8.0000	Y	$ 126.00	$ 111,193.74			
Link-55		Jun-56	Jun-54	1154.7000	10.0000	Y	$ 137.00	$ 158,193.90			
Link-56		Jun-54	Jun-58	434.8900	10.0000	Y	$ 137.00	$ 59,579.93			

Link-57		Jun-53	Jun-58	387.2000	10.0000	Y	$	137.00	$	53,046.40		
Link-58		Jun-58	Jun-52b	916.4300	12.0000	N	$	110.00	$	100,807.30		
Link-60		Jun-59	Jun-60	347.3300	8.0000	N	$	93.00	$	32,301.69		
Link-61		Jun-60	Jun-45	252.1800	8.0000	Y	$	126.00	$	31,774.68		
Link-63		Jun-49	Jun-50	543.3500	10.0000	N	$	104.00	$	56,508.40		
Link-64		Jun-48	Jun-49	2553.1100	10.0000	N	$	104.00	$	265,523.44		
Link-65		Jun-61	Jun-62	950.8300	8.0000	Y	$	126.00	$	119,804.58		
Link-66		Jun-62	Jun-63	411.2500	8.0000	Y	$	126.00	$	51,817.50		
Link-67		Jun-63	Jun-52b	1961.2000	12.0000	N	$	110.00	$	215,732.00		
Link-68		Jun-70	Jun-69	649.9700	8.0000	Y	$	126.00	$	81,896.22		
Link-69		Jun-64	Jun-49	440.4800	8.0000	N	$	93.00	$	40,964.64		
Link-70		Jun-69	Jun-68	1233.1200	8.0000	N	$	93.00	$	114,680.16		
Link-71		Jun-64	Jun-68	412.7200	8.0000	N	$	93.00	$	38,382.96		
Link-72		Jun-67	Jun-68	377.0700	8.0000	Y	$	126.00	$	47,510.82		
Link-73		Jun-65	Jun-64	571.2300	8.0000	Y	$	126.00	$	71,974.98		
Link-74		Jun-66	Jun-65	361.7600	8.0000	Y	$	126.00	$	45,581.76		
Link-75		Jun-50	Jun-72	1709.8700	10.0000	N	$	104.00	$	177,826.48		
Link-76		Jun-72	Jun-53	629.8000	10.0000	Y	$	137.00	$	86,282.60		
Link-77		Jun-71	Jun-72	1457.7100	8.0000	Y	$	126.00	$	183,671.46		
Link-78		Jun-74	Jun-73	2164.6000	8.0000	Y	$	126.00	$	272,739.60		
Link-79		Jun-73	Jun-48	1349.8400	8.0000	N	$	93.00	$	125,535.12		
Link-82		Jun-78	Jun-79	385.2200	8.0000	N	$	93.00	$	35,825.46		
Link-83		Jun-79	Jun-77	426.3100	8.0000	N	$	93.00	$	39,646.83		
Link-84		Jun-77	Jun-63	1962.3500	8.0000	N	$	93.00	$	182,498.55		
Link-85		Jun-09	Jun-80	2027.2300	18.0000	N	$	131.00	$	265,567.13		
Link-86		Jun-80	Jun-11	4717.1500	24.0000	N	$	159.00	$	750,026.85		
Link-89		Jun-82	Jun-83	2671.4100	8.0000	N	$	93.00	$	248,441.13		
Link-90		Jun-83	Jun-84	1297.0300	10.0000	N	$	104.00	$	134,891.12		
Link-92		Jun-89	Jun-07	3506.9900	8.0000	N	$	93.00	$	326,150.07		
Link-93		Jun-90	Jun-85	447.0500	8.0000	Y	$	126.00	$	56,328.30		
Link-94		Jun-85	Jun-86	2281.5700	8.0000	Y	$	126.00	$	287,477.82		
Link-95		Jun-86	Jun-89	359.8400	8.0000	Y	$	126.00	$	45,339.84		
Link-96		Jun-88	Jun-87	2261.4100	8.0000	Y	$	126.00	$	284,937.66		
Link-97		Jun-87	Jun-86	549.0600	8.0000	Y	$	126.00	$	69,181.56		
Link-99		Jun-93	Jun-92	1354.3900	8.0000	Y	$	126.00	$	170,653.14		
						SR-138 Temp Line						
						Construction Cost			$	24,093,477.31		$ 3,407,485.26	$ 2,566,021.31
						Sub-Total						$ 3,407,485.26	$ 2,566,021.31

Tooele County - Waste Water Regionalization Plan
283.02.100
January 5, 2017

50 yr Construction Cost Estimate Calculation
Id and node labels refer to SSA model FUT_ALT_9 included in Appendix D

ID	UP_NODE	DN_NODE	LENGTH	DIA_INCH	IN_STREET	Cost/ft	Cost		1200 West	Desert Peak	1200 West without north of SR-138
Link-03	Jun-04	Jun-06	3102.3400	8.0000	N	$93.00	$288,517.62				
Link-04	Jun-07	Jun-05	2326.3800	12.0000	N	$110.00	$255,901.80				
Link-05	Jun-06	Jun-07	2642.2400	10.0000	N	$104.00	$274,792.96				
Link-06	Jun-05	Jun-08	3088.8400	15.0000	N	$120.00	$370,660.80				
Link-07	Jun-08	Jun-09	2895.6200	15.0000	N	$120.00	$347,474.40				
Link-100	Jun-91	Jun-92	290.1500	8.0000	Y	$126.00	$36,558.90				
Link-101	Jun-92	Jun-88	382.5600	8.0000	Y	$126.00	$48,202.56				
Link-103	Jun-94	Jun-88	711.4700	8.0000	Y	$126.00	$89,645.22				
Link-104	Jun-95	Out-05	1388.9600	8.0000	N	$93.00	$129,173.28				
Link-106	Jun-27	Jun-96	1240.4300	8.0000	Y	$126.00	$156,294.18				
Link-107	Jun-96	Jun-28	1338.3000	8.0000	Y	$126.00	$168,625.80				
Link-108	Jun-81	Jun-98	2534.8400	8.0000	Y	$126.00	$319,389.84				
Link-110	Jun-97	Jun-98	2582.5400	8.0000	N	$93.00	$240,176.22				
Link-111	Jun-84	Jun-99	2626.9800	10.0000	N	$104.00	$273,205.92				
Link-112	Jun-99	Jun-80	3931.8300	15.0000	N	$120.00	$471,819.60				
Link-113	Jun-103	Jun-100	2349.0700	18.0000	N	$131.00	$307,728.17		$307,728.17		$307,728.17
Link-114	Jun-100	Jun-101	2715.0500	18.0000	N	$131.00	$355,671.55		$355,671.55		$355,671.55
Link-115	Jun-101	Jun-102	2574.5200	18.0000	N	$131.00	$337,262.12		$337,262.12		$337,262.12
Link-116	Jun-102	Jun-20	2687.0800	21.0000	N	$145.00	$389,626.60		$389,626.60		$389,626.60
Link-117	Jun-104	Jun-29	2612.3500	8.0000	N	$93.00	$242,948.55				
Link-119	Jun-106	Jun-06	3292.8600	8.0000	N	$93.00	$306,235.98				
Link-120	Jun-107	Jun-108	895.2900	8.0000	N	$93.00	$83,261.97				
Link-121	Jun-108	Jun-109	5135.0900	12.0000	N	$110.00	$564,859.90				
Link-122	Jun-109	Jun-110	3766.7900	21.0000	N	$145.00	$546,184.55				
Link-123	Jun-110	Jun-10	4117.2600	24.0000	N	$159.00	$654,644.34				
Link-124	Jun-112	Jun-109	6961.9800	14.0000	N	110.0000	$765,817.80				
Link-125	Jun-113	Jun-21	1353.2900	12.0000	N	$110.00	$148,861.90			$148,861.90	
Link-126	Jun-03	Jun-114	823.9700	15.0000	N	$120.00	$98,876.40			$98,876.40	
Link-127	Jun-114	Jun-115	1639.5300	18.0000	N	$131.00	$214,778.43			$214,778.43	
Link-128	Jun-115	Jun-116	501.8000	18.0000	N	$131.00	$65,735.80			$65,735.80	
Link-129	Jun-116	Jun-117	1103.3100	18.0000	N	$131.00	$144,533.61			$144,533.61	
Link-13	Jun-13	Jun-14	652.4400	8.0000	Y	$126.00	$82,207.44				
Link-130	Jun-117	Jun-118	2585.9300	18.0000	N	$131.00	$338,756.83			$338,756.83	
Link-131	Jun-118	Jun-119	3861.6900	18.0000	N	$131.00	$505,881.39			$505,881.39	
Link-132	Jun-119	Jun-120	1395.7000	18.0000	N	$131.00	$182,836.70			$182,836.70	
Link-133	Jun-120	Jun-98	1946.9400	18.0000	N	$131.00	$255,049.14			$255,049.14	
Link-134	Jun-98	Jun-103	297.6200	18.0000	N	$131.00	$38,988.22		$38,988.22		$38,988.22
Link-135	Jun-121	Jun-82	592.7600	8.0000	N	$93.00	$55,126.68				
Link-136	Jun-30	Jun-102	2648.5400	18.0000	N	$131.00	$346,958.74				
Link-14	Jun-14	Jun-15	2322.0800	8.0000	Y	$126.00	$292,582.08				
Link-141	Jun-18	Jun-30	2619.6200	15.0000	N	$120.00	$314,354.40				
Link-142	Jun-52b	Jun-29	2643.5400	15.0000	N	$120.00	$317,224.80				
Link-165	Jun-10	Out-02	31.2500	30.0000	N	$175.00	$5,468.75		$5,468.75		
Link-17	Jun-16	Jun-17	535.2400	10.0000	Y	$137.00	$73,327.88				
Link-172	Jun-11	Jun-148	3034.1200	24.0000	N	$159.00	$482,425.08		$482,425.08		
Link-173	Jun-148	Jun-12	3779.0300	24.0000	N	$159.00	$600,865.77		$600,865.77		
Link-174	Jun-12	Jun-10	1625.6300	24.0000	N	$159.00	$258,475.17		$258,475.17		
Link-18	Jun-17	Jun-18	2626.9600	10.0000	N	$104.00	$273,203.84				
Link-22	Jun-20	Jun-11	1253.6600	21.0000	N	$145.00	$181,780.70		$181,780.70		$181,780.70
Link-23	Jun-21	Jun-22	1271.0300	12.0000	N	$110.00	$139,813.30			$139,813.30	
Link-24	Jun-22	Jun-03	2693.7300	15.0000	N	$120.00	$323,247.60			$323,247.60	
Link-31	Jun-29	Jun-30	2630.4300	15.0000	N	$120.00	$315,651.60				
Link-32	Jun-33	Jun-32	619.4500	8.0000	Y	$126.00	$78,050.70				
Link-33	Jun-32	Jun-31	696.9800	8.0000	Y	$126.00	$87,819.48				
Link-34	Jun-31	Jun-15	516.8400	8.0000	Y	$126.00	$65,121.84				
Link-35	Jun-34	Jun-31	2308.3300	8.0000	Y	$126.00	$290,849.58				
Link-36	Jun-35	Jun-32	2431.4900	8.0000	Y	$126.00	$306,367.74				
Link-37	Jun-36	Jun-33	2573.8300	8.0000	Y	$126.00	$324,302.58				
Link-38	Jun-37	Jun-13	2197.4400	8.0000	Y	$126.00	$276,877.44				
Link-40	Jun-38	Jun-13	668.6900	8.0000	Y	$126.00	$84,254.94				
Link-41	Jun-39	Jun-38	2203.5900	8.0000	Y	$126.00	$277,652.34				
Link-42	Jun-42	Jun-37	348.3200	8.0000	Y	$126.00	$43,888.32				
Link-43	Jun-41	Jun-42	2800.0700	8.0000	Y	$126.00	$352,808.82				
Link-44	Jun-40	Jun-41	2386.4000	8.0000	Y	$126.00	$300,686.40				
Link-45	Jun-28	Jun-43	1614.5200	8.0000	Y	$126.00	$203,429.52				

Link-46	Jun-43	Jun-44	2313.4300	10.0000	Y	$137.00	$316,939.91				
Link-47	Jun-44	Jun-16	732.6800	10.0000	Y	$137.00	$100,377.16				
Link-48	Jun-15	Jun-44	1634.5100	8.0000	Y	$126.00	$205,948.26				
Link-49	Jun-45	Jun-46	1233.7000	8.0000	N	$93.00	$114,734.10				
Link-50	Jun-46	Jun-47	488.9700	8.0000	N	$93.00	$45,474.21				
Link-51	Jun-47	Jun-17	1029.7500	10.0000	N	$104.00	$107,094.00				
Link-52	Jun-55	Jun-56	828.7200	8.0000	Y	$126.00	$104,418.72				
Link-54	Jun-57	Jun-56	882.4900	8.0000	Y	$126.00	$111,193.74				
Link-55	Jun-56	Jun-54	1154.7000	10.0000	Y	$137.00	$158,193.90				
Link-56	Jun-54	Jun-58	434.8900	10.0000	Y	$137.00	$59,579.93				
Link-57	Jun-53	Jun-58	387.2000	10.0000	Y	$137.00	$53,046.40				
Link-58	Jun-58	Jun-52b	916.4300	12.0000	N	$110.00	$100,807.30				
Link-60	Jun-59	Jun-60	347.3300	8.0000	N	$93.00	$32,301.69				
Link-61	Jun-60	Jun-45	252.1800	8.0000	Y	$126.00	$31,774.68				
Link-63	Jun-49	Jun-50	543.3500	10.0000	N	$104.00	$56,508.40				
Link-64	Jun-48	Jun-49	2553.1100	10.0000	N	$104.00	$265,523.44				
Link-65	Jun-61	Jun-62	950.8300	8.0000	Y	$126.00	$119,804.58				
Link-66	Jun-62	Jun-63	411.2500	8.0000	Y	$126.00	$51,817.50				
Link-67	Jun-63	Jun-52b	1961.2000	10.0000	N	$104.00	$203,964.80				
Link-68	Jun-70	Jun-69	649.9700	8.0000	Y	$126.00	$81,896.22				
Link-69	Jun-64	Jun-49	440.4800	8.0000	N	$93.00	$40,964.64				
Link-70	Jun-69	Jun-68	1233.1200	8.0000	N	$93.00	$114,680.16				
Link-71	Jun-64	Jun-68	412.7200	8.0000	N	$93.00	$38,382.96				
Link-72	Jun-67	Jun-68	377.0700	8.0000	Y	$126.00	$47,510.82				
Link-73	Jun-65	Jun-64	571.2300	8.0000	Y	$126.00	$71,974.98				
Link-74	Jun-66	Jun-65	361.7600	8.0000	Y	$126.00	$45,581.76				
Link-75	Jun-50	Jun-72	1709.8700	10.0000	N	$104.00	$177,826.48				
Link-76	Jun-72	Jun-53	629.8000	10.0000	Y	$137.00	$86,282.60				
Link-77	Jun-71	Jun-72	1457.7100	8.0000	Y	$126.00	$183,671.46				
Link-78	Jun-74	Jun-73	2164.6000	8.0000	Y	$126.00	$272,739.60				
Link-79	Jun-73	Jun-48	1349.8400	8.0000	N	$93.00	$125,535.12				
Link-82	Jun-78	Jun-79	385.2200	8.0000	N	$93.00	$35,825.46				
Link-83	Jun-79	Jun-77	426.3100	8.0000	N	$93.00	$39,646.83				
Link-84	Jun-77	Jun-63	1962.3500	8.0000	N	$93.00	$182,498.55				
Link-85	Jun-09	Jun-80	2027.2300	15.0000	N	$120.00	$243,267.60				
Link-86	Jun-80	Jun-11	4726.1400	18.0000	N	$131.00	$619,124.34				
Link-89	Jun-82	Jun-83	2671.4100	8.0000	N	$93.00	$248,441.13				
Link-90	Jun-83	Jun-84	1297.0300	10.0000	N	$104.00	$134,891.12				
Link-92	Jun-89	Jun-07	3506.9900	8.0000	N	$93.00	$326,150.07				
Link-93	Jun-90	Jun-85	447.0500	8.0000	Y	$126.00	$56,328.30				
Link-94	Jun-85	Jun-86	2281.5700	8.0000	Y	$126.00	$287,477.82				
Link-95	Jun-86	Jun-89	359.8400	8.0000	Y	$126.00	$45,339.84				
Link-96	Jun-88	Jun-87	2261.4100	8.0000	Y	$126.00	$284,937.66				
Link-97	Jun-87	Jun-86	549.0600	8.0000	Y	$126.00	$69,181.56				
Link-99	Jun-93	Jun-92	1354.3900	8.0000	Y	$126.00	$170,653.14				
							$23,044,115.52		$ 2,958,292.13	$ 2,418,371.10	$ 1,611,057.36

APPENDIX D
Data Disk