Tule River Tribe

Request for Proposal for
Design Services

RFP Number:
TRTC-01-2019

Issue Date:
February 5, 2019

RFP Submission Address:

Ralene Clower
Gaming Commission
681 S. Reservation Road
Porterville, CA 93257

Attention: Ralene Clower, Executive Director

RFP Closing date and time:

One (1) complete hard copy and one digital copy (USB drive) to be sent via U.S. Mail or hand delivered via courier to Ms. Ralene Clower must be received by 5:00 pm Pacific Time on March 18, 2019.

Contents

Executive Summary

1. Summary of the Request

The Tule River Tribe (the "**Tribe**") proposes to develop a casino-resort within a 40-acre site it owns near the Porterville Airport, within the City of Porterville and in the southwest corner of the City's Planning Area. The Tribe is requesting proposals for the preliminary and final design of an advanced wastewater treatment facility, and wastewater collection and recycled water infrastructure required to serve the casino-resort (the "**Project**") and adjacent City Sports Park. The Tule River Tribe Casino & Resort Water & Wastewater Study (attached as **Exhibit 1**) evaluates five alternatives relating to the Project's development characteristics as well as alternatives to water and wastewater service. The Tribe seeks proposals for engineering design services for the off-site wastewater facilities for **Alternative A** as described in **Exhibit 1** and further detailed below.

Terminology and Administrative Requirements

2. Terminology

In this Request for Proposal (including the cover page), unless the context otherwise requires, the following words and terms shall have the meanings indicated herein and the grammatical variations of the words shall have the corresponding meanings. Submission of a proposal in response to this Request for Proposal indicates acceptance of the following terminology.

"Contract" means the written agreement resulting from this Request for Proposal executed by the Tribe and the Successful Respondent;

"Must" or "Mandatory" means an essential prerequisite for a proposal to receive consideration;

"Preferred Respondent" means the Respondent selected by the Tribe for proceeding to negotiation and execution of the Contract;

"Request for Proposal" or **"RFP"** means the invitation to prospective Respondents to submit a proposal for the provision of services with requirements specified herein;

"Respondent" means an organization that submits, or intends to submit, a proposal in response to this Request for Proposal;

"Should" or "Desirable" means a requirement having a significant degree of importance to the objectives of the Request for Proposal;

"Successful Respondent" means the Respondent, if any, with whom the Tribe executes the Contract.

3. Request for Proposal Process

3.1 **Inquiries/Additional Information**. All inquiries related to this RFP are to be in writing via email directed to the individuals listed below. Information obtained from any other source is not official and should not be relied upon. Inquiries will be received until 5:00 pm Pacific Time on February 25, 2019 and responses will be recorded and answers may be distributed to all potential Respondents at the Tribe's option.

Ralene Clower
Office: (559) 781-3292
Email: rclower@trtgc.com

Kerry Patterson
Office: (619) 515-3295
Email: kerry.patterson@procopio.com

3.2 **RFP Closing Date and Method of Submission**. Proposals shall be submitted only via U.S. Mail or hand delivered via courier (FedEx, UPS, etc.). All proposals must be delivered in a sealed envelope to the attention of Ms. Ralene Clower, with "**Proposal to the Tule River Tribal Council for Engineering Design Services**" clearly written in bold type.

If via U. S. Mail:
Gaming Commission
Attn: Ralene Clower, Executive Director
Tule River Indian Tribe of California
P.O. Box 589
Porterville, CA 93258

If Hand Delivered or via Courier:
Gaming Commission
Attn: Ralene Clower, Executive Director
Tule River Indian Tribe of California
681 S. Reservation Road
Porterville, CA 93257

Proposals must be received by 5:00 pm Pacific Time on March 18, 2019.

3.3 **Late Proposals**. Late proposals will not be accepted.

3.4 **Eligibility**. Proposals will not be evaluated if the Respondent's current or past corporate or other interests may, in the Tribe's opinion, give rise to a conflict of interest.

3.5 **Evaluation and Selection**. The Tribal Council will review and evaluate proposals and may consider the recommendations of a selection committee. Selection of the Preferred Respondent will be based on a combination of project understanding and approach, team experience with similar projects, proposed fee, and references. Proposals that do not meet all criteria will be disqualified without further consideration. The Tribe's intent is to enter into a Contract with the Respondent whose proposal best aligns with the criteria. As part of the final selection process the Tribe reserves the right to:

a) Contact all references provided by the Respondent.

b) Request an interview with the Respondent. Presenters must include key staff members for the proposed services. The location, time and date will be determined by the Tribe and the Respondent will be notified.

3.6 **Negotiation Delay**. If a written Contract cannot be negotiated within thirty (30) days of award notification sent to the Preferred Respondent, or such time as determined solely by the Tribe, the Tribe may, at its sole discretion, terminate negotiations and either negotiate a Contract with the next qualified

Preferred Respondent or choose to terminate the RFP process and not enter into a Contract with any of the Respondents.

3.7 **Debriefing**. At the conclusion of the RFP process, all Respondents will be notified of the outcome.

3.8 **Estimated Time-Frames**. The following timetable outlines the anticipated schedule for the RFP process. The timing and the sequence of events resulting from this RFP may vary and shall be ultimately determined by the Tribe.

Event	**Anticipated Date**
Request for Proposal is issued	February 5, 2019
Deadline for Submitting Inquiries/Questions	February 25, 2019
Closing Date to Submit Proposal	March 18, 2019
Proposal evaluation and interview process completed and Preferred Respondent Notified (estimated)	April 18, 2019

4. Proposal Preparation

4.1 **Signed Proposals**. All proposals must be signed by an authorized person/designee on behalf of the Respondent and to bind the Respondent to statements made in response to this RFP. The Respondent should ensure its proposal includes a cover letter or statement(s).

4.2 **Irrevocability of Proposals**. By submission of a clear and detailed written notice, the Respondent may amend or withdraw its proposal prior to the closing date and time. Upon closing, all proposals become irrevocable, subject to **Section 4.5**. A Respondent who has withdrawn a proposal may submit a new proposal prior to the RFP closing date, provided that such proposal is done in accordance with the terms and conditions of this RFP.

4.3 **Acceptance of Terms**. Unless specifically excluded in writing, all the terms and conditions of this RFP are accepted by the Respondent and incorporated in its proposal.

4.4 **Respondents' Expenses**. Respondents are responsible for their own expenses in preparing and submitting a proposal, and for subsequent negotiations with the Tribe, if any. The Tribe will not be liable for Respondent claims, whether for costs or damages incurred by the Respondent in the preparation and submission of the proposal, the loss of anticipated profit in connection with any final Contract, or any other matter whatsoever.

4.5 **Duration of Proposal**. All Proposals submitted will be irrevocable for ninety (90) days after the closing date as defined in **Section 3.2**.

4.6 **Completeness of Proposal**. This RFP requires a Respondent to prepare a scope of work and fee estimate for the design of a fully functional advanced (tertiary) wastewater treatment plant ("**AWTP**") and associated facilities. By submission of a proposal the Respondent warrants that all components required for the successful construction and operation of the AWTP as generally described above and in the attached Exhibits will be included in the design to be provided by the Successful Respondent at no additional design fee.

5. Additional Terms

5.1 **Acceptance of Proposals**.

a) This RFP should not be construed as an agreement to procure goods or services by the Tribe. The Tribe is not bound to enter into a Contract with the Respondent who submits the lowest priced proposal or with any Respondent. Proposals will be reviewed based on the evaluation criteria. The Tribe will be under no obligation to receive further information, whether written or oral, from any Respondent.

b) Neither acceptance of a proposal nor execution of a Contract will constitute authorization of any activity or development contemplated in any proposal that requires any approval, permit or license pursuant to any federal, state, tribal, regional district or municipal statute, regulation or by-law.

5.2 **Form of Contract**. By submission of a proposal, the Respondent agrees to be identified as the Preferred Respondent and is willing to enter into a Contract with the Tribe**.**

5.3 **Liability for Errors**. While the Tribe has used considerable efforts to ensure an accurate representation of information in this RFP, the information contained herein is supplied solely as a guideline for Respondents. The information is not guaranteed or warranted to be accurate by the Tribe, nor is it necessarily comprehensive or exhaustive. Nothing in this RFP is intended to relieve Respondents from forming their own opinions and conclusions with respect to the matters addressed in this RFP.

5.4 **Modification of Terms**. The Tribe reserves the right to modify the terms of this RFP at any time in its sole discretion. This includes the right to cancel this RFP at any time prior to entering into a Contract with the Preferred Respondent.

5.5 **Ownership of Proposals**. All documents, including proposals, submitted by Respondents in response to this RFP shall become the property of the Tribe. They will be received and held in confidence to the extent allowable by law.

5.6 **Use of Request for Proposal**. This RFP, or any portion thereof, may not be used for any purpose other than the submission of proposals.

5.7 **Confidentiality of Information**. Information pertaining to the Tribe obtained by the Respondent as a result of participation in this RFP process and Project is confidential and must not be disclosed without written authorization from the Tribe.

5.8 **Material Ownership**. All materials submitted, including but not limited to proposals in response to this RFP and any and all information, documentation, and presentations provided by the Successful Respondent to the Tribe on a go-forward basis, shall become the sole property of Tribe.

5.9 **Native Preference**. Firms seeking consideration of priority based on Native Preference must provide proof of tribal ownership.

5.10 **Sovereign Immunity**. Nothing contained in this RFP shall be construed as a waiver of rights, privileges, and sovereign immunity of the Tribe.

6. Respondent's Response

6.1 **Project Background**.

In **Alternative A** (as described in **Exhibit 1**), the Tribe would develop a casino-resort on the 40-acre Airpark Property near the Porterville Airport. Proposed development elements include a casino, a 250-room hotel, food and beverage facilities, administrative space, a multi-purpose event center, a conference center, and associated parking and infrastructure. For water supply, a connection would be made to the City's potable water system to provide all potable water demands for the casino-resort. For wastewater service, untreated sanitary wastewater would be conveyed through a series of existing gravity sewers, lift stations, and force mains, some of which will be replaced or improved as designed under this proposal ("**Wastewater Collection Facilities**"), to the City's existing Wastewater Treatment Plant located at 1333 West Grant Avenue in the center of the City for primary and secondary treatment.

An advanced (tertiary) wastewater treatment plant would be built on land owned by the City near the 40-acre Airpark Property, on a site to be determined. The new AWTP would withdraw secondary treated wastewater from the City's existing treated wastewater pipeline that extends through the site, treat the secondary effluent to a tertiary Title 22 standard, and provide recycled water to the casino-resort and to the City Sports Complex (located just north of the 40-acre casino-resort property), which is currently irrigated with City potable (well) water. The AWTP would produce sufficient recycled water to more than completely offset the casino-resort's potable water demand, (i.e. potable water demand reduction at the Sports Park equals or exceeds potable water demand of the casino-resort, which equals a net zero potable water demand from the casino-resort). While the Tribe will fund the design and construction of the AWTP and Wastewater Collection Facilities, a joint powers authority established by the Tribe and City will own the plant and provide the Wastewater Collection Facilities to the City. The City will be responsible for plant operations and providing wastewater service to the casino-resort, and thus all design work and plans will be reviewed and approved by the City on behalf of the joint powers authority and the City itself.

6.2 **Project Scope of Work**.

The Scope of Work generally consists of design services for proposed **Alternative A** identified in **Exhibit 1**. All wastewater collection, tertiary treatment and recycled water facilities will be constructed by others (contractor). Landscaping and permanent fencing of the AWTP site will be by others. The Successful Respondent shall coordinate architectural features of the Project facilities with the Tribe's casino-resort architect. An alternative design-build approach, if proposed, will be considered if it is demonstrated to have substantial benefits to the Tribe and the City.

a) Permits and Utilities. The Tribe and the Successful Respondent are responsible for procuring all necessary permits for the Project, on behalf of the joint powers authority and City of Porterville, including, but not limited to, the Waste Discharge Requirements and Water Reclamation Requirements from the Regional Water Quality Control Board, the State Department of Drinking Water, and the Health Department. Since the City will eventually operate the AWTP on behalf of the joint powers authority and operate the Wastewater Collection Facilities, it will also be involved with reviewing, providing comments, and approving all plans developed for the Project.

b) Basis of Design. **Exhibit 1** presents the estimated potable and recycled water demands, the anticipated wastewater flows and the recommended off-site infrastructure requirements (it should be noted that since potable water service requires only a connection to the City water main on West Street and on-site facilities, this proposal does not include potable water facilities to serve the casino-resort). Respondents should base their proposals on the information provided in **Exhibit 1** and detailed herein and below.

The recommended recycled water infrastructure is described in the Tule River Tribe Fee-to-Trust and Eagle Mountain Casino Relocation EIS (which can be viewed at www.tulerivereis.com) and detailed in **Exhibit 1**, shown graphically on **Exhibit 2** – AWTP/Recycled Water Facilities and **Exhibit 3** Wastewater Collection Facilities. The detailed elements to be designed include, but are not limited to:

<u>Advanced Wastewater Treatment Plant/Recycled Water Facilities</u>

- A diversion structure on the City of Porterville's existing 24-inch sewer outfall to divert a variable flow of up to approximately 310,000 gpd of secondary treated effluent to a tertiary treatment plant
- A tertiary treatment system capable of treating up to 310,000 gpd of this effluent to required Title 22 standards for the following recycled water uses
    - Irrigation of the landscaping within the proposed Casino site
    - Use for toilet flushing, etc. within the Casino & Resort via a proposed dual-plumbed purple pipe system
    - Irrigation of landscaping within the City of Porterville Sports Park
- Appropriate disinfection facilities to be evaluated and recommended (Chlorine, UV, etc.)
- Appropriate odor control for sludge and solids to be evaluated and recommended
- An approximate 500,000-gallon clearwell, operational storage tank on the treatment site
- An air-gap connection from the City's existing domestic water system to the operational storage tank to supplement during extreme peak demands and/or during emergency plant shut down
- A recycled water pump station capable of pumping a range of flow based on demand of up to approximately 700 gpm
- Appropriate yard piping and pumping facilities within the treatment site, as required
- Appropriate SCADA facilities for remote monitoring and operation of the entire system
- An approximate 4,200 linear foot recycled water transmission pipeline to deliver demands from the pump station to the Casino & Resort and the Sports Park

<u>Wastewater Collection Facilities</u>

- Replace Sewer Lift Station #12 just north of the Casino & Resort site with a new duplex lift station and appropriately sized wet well including electrical, controls, and stand-by power
- Replace approximately 800 linear feet of 10-inch gravity sewer with 12-inch immediately upstream of Sewer Lift Station #7
- Upgrade Sewer Lift Station #7 to include a larger wet well and new pumps at a minimum, exact improvements to be determined in a preliminary design report
- Replace approximately 20 linear feet of 6-inch force main from Sewer Lift Station #7 to the existing 18-inch gravity sewer

c) <u>Scope of Work</u>. (for all facilities listed above)

1. Kick-off meeting to discuss project goals, team, communication, and schedule.
2. Data research and review including Environmental Impact Statement prepared by Analytical Environmental Services (www.TuleRiverEIS.com), Tule River Tribe Casino & Resort Water & Wastewater Report, Psomas, May 24, 2017 (**Exhibit 1** to this RFP), City of Porterville Wastewater Treatment Plant water quality data,

existing wastewater collection gravity lines, force mains and lift station plans, etc.

3. Prepare draft Preliminary Design Report ("**PDR**") for review by Tribe's Team and City of Porterville staff. PDR should include a detailed description of all facility components and processes and preliminary layouts of facility components including capacities, necessary calculations, alternative analyses and recommendations, architectural renderings for above-ground facilities, etc., required to form the basis of final design. PDR should also include preliminary sheet index for final design, project schedule for design and construction, and engineer's opinion of probable construction cost ("**Estimate**").
4. As a part of the PDR, include a section identifying appropriate funding assistance opportunities available from various federal, state, and local agencies and summarize the steps required for the joint powers authority to obtain said funding.
5. Following review period, address comments and prepare final PDR.
6. Utilize PDR for AWTP as a Report of Waste Discharge and assist City in filling out the Regional Water Quality Control Board's Form 200 and filing it along with the PDR and other required information to the Fresno Regional Board for obtaining Waste Discharge Requirements. Assist City in answering Regional Board's questions through this process to obtain Waste Discharge Requirements.
7. Prepare 60% Submittal to include plans, specification outline, and updated Estimate and project schedule.
8. Address comments on 60% Submittal and prepare 90% Submittal to include plans, specifications and updated Estimate and project schedule.
9. Address comments on 90% Submittal and prepare final plans, specifications and updated Estimate and project schedule.
10. Assist the Tribe and City with obtaining recycled water permit for use on the existing City Sports Park and the proposed Casino-Resort, including preparing a draft Title 22 Report and submitting first to the Tribe and City for review, revising Report based on comments received, and then submitting to the California Water Resources Board Department of Drinking Water (DDW) for review and approval.
11. Assist City with local Health Department approval/permitting, as required, for conversion of the Sports Park irrigation from potable to recycled water.
12. Provide bid support services including attendance at a pre-bid meeting, preparation of addenda (assume 2), answering contractor questions during bidding, analysis of the bids, and providing necessary assistance regarding award.
13. Provide construction support services including attendance at the pre-construction meeting, answering contractor's requests for information (assume 50), submittals and re-submittals (assume 100), attendance at construction status meetings and field meetings (assume 10), and preparation of record drawings from contractor and inspector-provided red-lines.

d) <u>Deliverables</u>. The Successful Respondent's point of contact for the Project will be the Tribe's delegate ("Owner's Representative") and the Project Manager. The Successful Respondent will provide the following deliverables to the Owner's Representative during the course of design and construction.

1. ***Preliminary Design Report Submittal*** – Provide four (4) hard copies of the draft and final PDR along with a PDF and MS Word document. Provide four (4) copies

of the draft and final Report of Waste Discharge and accompanying forms for City submittal to the Regional Board.

2. ***60% Design Submittal*** – Provide four (4) hard copies of the plans (24” x 36”) and a PDF. Provide four (4) hard copies of the specification outline, Estimate and updated project schedule and a PDF and MS Word version.
3. ***90% Design Submittal*** – Provide four (4) hard copies of the plans (24” x 36”) and a PDF. Provide four (4) bound hard copies of the complete specifications, Estimate and updated project schedule and a PDF and MS Word version.
4. ***100% Final Design Submittal*** – Provide one PDF of 100% plans, specifications and Estimate for review/checking to confirm comments were addressed. Provide one (1) mylar and four (4) hard copies of the final plans (24” x 36”) and a PDF. Provide four (4) bound hard copies of the final complete specifications, Estimate and updated project schedule and a PDF and MS Word version. Provide one unbound set of final complete specifications to be used for reproduction purposes in bidding.

6.3 **Mandatory Proposal Criteria**. Proposals should address the following:

a) Project Team. Describe roles, responsibilities and relevant experience for the team members proposed for this assignment including project manager, key team members, and subconsultants. Provide examples (including reference contact information) of similar projects completed by the project team. Attach resumes for committed personnel, including subconsultants.

b) Project Experience.

1. State extent of experience with related infrastructure requirements for recycled water/wastewater projects
2. Demonstrate team’s track record for delivering project completion on time and within budget
3. Describe at least (3) three example projects that demonstrate familiarity with design engineering and permitting of tertiary wastewater treatment plants
4. Demonstrate team’s experience providing value engineering options on projects
5. List up to three (3) municipal clients for whom Respondent’s services have been provided
6. List up to three (3) tribal clients for whom Respondent’s services have been provided

c) References. Provide a minimum of three (3) references.

d) Project Understanding and Work Plan. Describe your understanding of the project, proposed approach and detailed work plan. The work plan should generally follow the tasks outlined in **Section 6.2** of this RFP and note any changes or exceptions.

e) Proof of Insurance. Provide proof of insurance for general liability, worker's compensation, automobile and errors and omissions coverage, stating limits for each.

f) Litigation Statement. Provide any relevant information concerning any pending or active litigation within the last five (5) years.

g) Project Schedule. Provide a detailed project schedule showing major tasks, milestones, permitting, and deliverables as outlined in the Scope of Work section, above, excluding construction tasks.

h) Fee Proposal. Provide a fee proposal matrix showing major tasks from the scope of work and manhours by classification, as well as subconsultants along with billing rates and all other direct costs. If optional tasks are proposed, show them separately in the matrix with subtotals. Tribe reserves the option to negotiate the fee with the Successful Respondent and is open to either time and materials or lump sum percent complete, or another type of contract, as mutually agreed to. Provide a billing rate sheet that could be used for additional services.

i) Certification regarding Debarment, Suspension and other Responsibility Matters. Provide an executed copy of the Tule River Tribal Council Certification regarding Debarment, Suspension and other Responsibility Matters attached to this RFP as **Exhibit 4**.

7. Proposal Format

The following format and sequence should be followed in order to provide consistency in proposals and ensure each proposal receives full consideration. All pages should be consecutively numbered.

a) Proposal cover letter.

b) Title Page including the name and number of the Request for Proposal, closing date and time and Respondent's name, address, and primary contact person.

c) Table of contents including page numbers.

d) The Respondent's proposal detailing the Respondent's responses to **Section 6.3** of this RFP.

e) A list of contact names and their telephone numbers in case further clarification is required.

f) Appendices, including documents and information that the Respondent wishes to submit as part of its proposal.

8. RFP Exhibits

Exhibit 1 – Tule River Tribe Casino & Resort Water & Wastewater Study
Exhibit 2 – Proposed AWTP/Recycled Water Facilities
Exhibit 3 – Proposed Off-Site Wastewater Collection Facility Improvements
Exhibit 4 - Tule River Tribal Council Certification regarding Debarment, Suspension and other Responsibility Matters

Exhibit 1

Tule River Tribe Casino & Resort Water & Wastewater Study

TULE RIVER TRIBE CASINO & RESORT
WATER & WASTEWATER STUDY

May 24, 2017

Prepared for:

ANALYTICAL ENVIRONMENTAL SERVICES

Prepared by:

PSOMAS
3 Hutton Centre Drive
Suite 200
Santa Ana, CA 92707
Project No. 1ANA010100

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EXECUTIVE SUMMARY

The Tule River Tribe (Tribe) proposes to develop a casino-resort (Project) within a 40-acre site it owns near the Porterville Airport (40-acre Airpark Property), within the City of Porterville (City) and in the southwest corner of the City's Planning Area. A Project Location map is shown on Figure E-1. There are five alternatives relating to Project development characteristics, as well as alternatives to water and wastewater service, which are evaluated in this study.

E.1 Alternative A: Proposed Project

In Alternative A, the Project would be developed on the 40-acre Airpark Property. Proposed development elements include a casino, a 250-room hotel, food and beverage facilities, administrative space, a multi-purpose events center, a conference center, and associated parking and infrastructure.

For water supply, a connection would be made to the City's potable water system to provide all potable water demands for the Project. For wastewater service, untreated sanitary wastewater would be conveyed to the City's Wastewater Treatment Plant (WWTP) located at 1333 West Grand Avenue in the center of the City through a series of existing gravity sewers, lift stations, and forcemains for primary and secondary treatment.

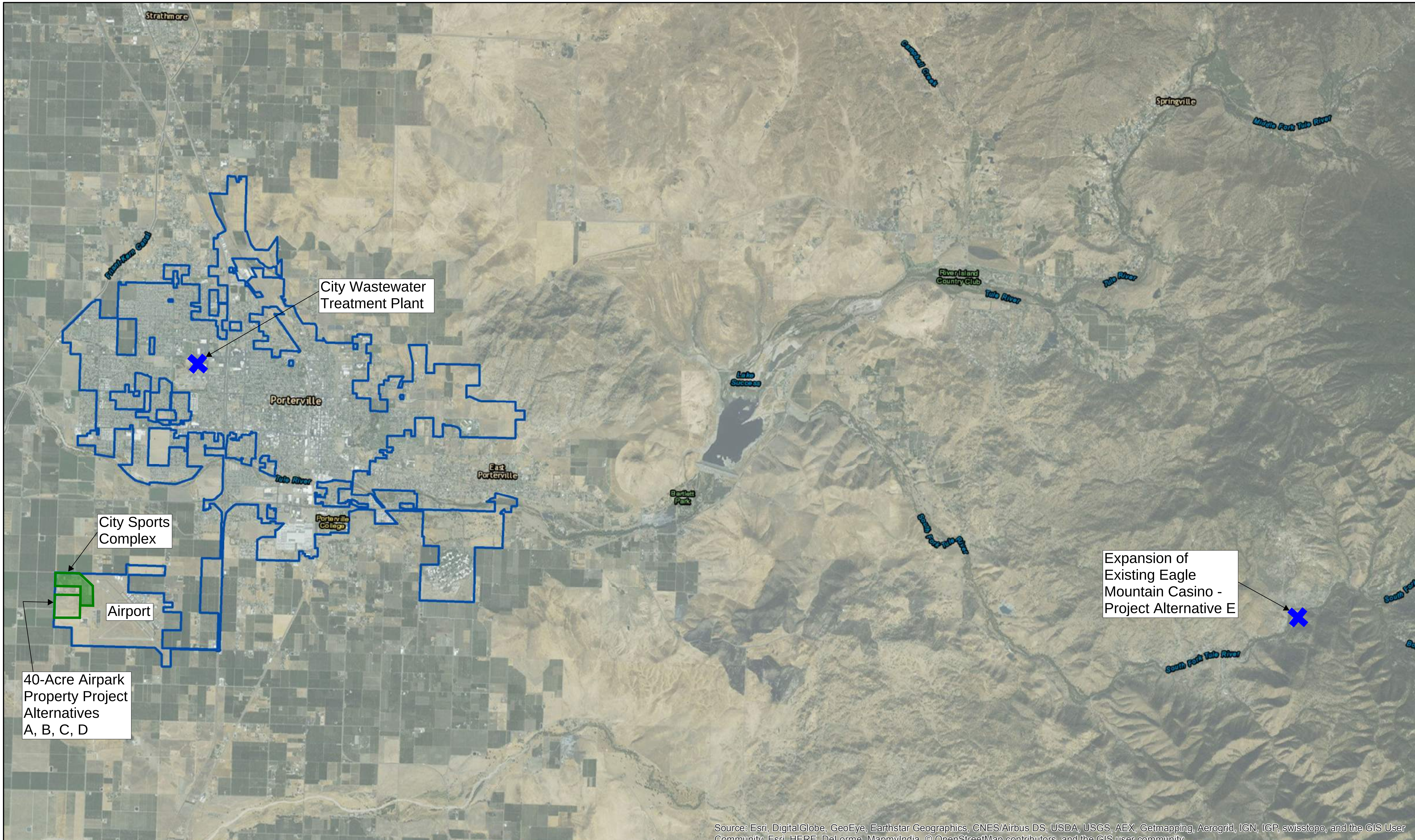
A tertiary wastewater treatment plant would be built to provide recycled water to the Project and to the City Sports Complex (located just north of the 40-acre Project property), which is currently irrigated with City potable (well) water, with sufficient recycled water production to completely offset the Project's potable water demand, i.e. potable water demand reduction at the Sports Park equals potable water demand of the Project, which equals a net zero potable water demand from the Project.

This alternative, Alternative A, is referred to as the Proposed Project herein.

Potable Water Supply

Relative to an independent Project water system, a connection to the City's potable water system provides the Project with a more reliable water supply given the redundancy offered by multiple wells, strorage reservoirs, transmission mains, and potential new water supply sources in the City's system.

The 40-acre Airpark Property is located in the Central Pressure Zone of the City's water distribution system. There is an 8-inch water main loop within the property constructed in 1995 connected to an outer 12-inch water main loop that provides the Project with redundant water distribution. The 3.0-MG Martin Hill Reservoir, which serves the Central Pressure Zone, is located just to the east of the airport area. It is estimated that the reservoir has already been sized to provide fire-flow storage for a worst-case fire within the service area that would include the Project site.



Tule River Tribe Casino & Resort
Water & Wastewater Study

FIGURE ES-1 LOCATION MAP

PSOMAS

Recycled Water Supply

In Alternative A, a tertiary wastewater treatment plant would be constructed either on a 40-acre City-owned property just southwest of the 40-acre Airpark Property that is currently used for wastewater treatment plant biosolids removal, or an 8-acre City-owned property just to the east of the 40-acre Airpark Property that was formerly used as a shooting range. The tertiary treatment plant would treat secondary effluent re-directed from the 24-inch effluent pipeline (routed from the City's WWTP) to Title 22 recycled water standards suitable for landscape irrigation use and indoor toilet and urinal flushing.

A treatment plant would provide recycled water to the Project and to the City Sports Complex (located just north of the 40-acre Airpark Property), which is currently irrigated with City potable (well) water, with sufficient recycled water production to completely offset the Project's potable water demand.

The Tribe would be responsible for the construction of the tertiary treatment plant, and the corresponding construction of (1) a covered (not open) seasonal recycled water storage reservoir or tank that may not be required depending on the sizing of the treatment plant, (2) a recycled water pump station, (3) a recycled water transmission pipeline to the Project site and to the Sports Complex, and (4) retrofitting distribution piping at the Sports Complex to distribute recycled water for irrigation use instead of potable well water.

It is understood that the City would operate the tertiary treatment plant, storage and transmission system, and will be responsible for future phases (expansions) of these facilities to accommodate recycled water use at other City locations.

The Alternative A Project potable and recycled water demands are estimated at 64,672 gallons per day (gpd) and 41,833 gpd, respectively. To completely offset the Project potable water demand, 64,672 gpd of recycled water would need to be provided to the Sports Complex, thus reducing its potable water demand by the same amount.

The City estimates the normal, non-drought impacted irrigation demand at the Sports Complex to be 138,500 gpd, averaged between between 2007 and 2013. An average recycled water supply of 64,672 gpd or 72.4 acre-feet per year (afy), as required to completely offset the Project's potable water demand, i.e. recycled water supply equal to 100 percent of Project potable water demand, would equate to approximately 47 percent of the average normal irrigation demand at the Sports Complex. This could be problematic to segregate recycled water distribution piping from potable water distribution piping as approximately half of the Sports Complex would still require potable water irrigation, and safeguards would need to be implemented into the design to prevent cross connections between the two systems.

Irrigating a single property with both recycled water and potable water is rarely if ever done, and the Health Department might not approve such an operation if there is potential to fully irrigate the Sports Complex with recycled water. The City should consider negotiating a recycled water supply to the Sports Complex of 138,500 gpd or 155.1 afy to completely irrigate the Sports Complex, i.e. recycled water supply to the Sports Complex equal to 214 percent of Project potable water demand. In this study, recycled water supply was evaluated both as a 100 percent and a 214 percent offset of the Project's potable water demand for comparison purposes.

A tertiary treatment plant can be a customized, traditional site construction, or it could be a prefabricated package plant with a carbon steel tertiary filter system and related components. In either case, the complete treatment facilities can be enclosed in a building if desired. A Package Tertiary Filter System as manufactured by Pollution Control Systems, Inc. (PCS) is discussed in this report.

When a tertiary treatment plant is sized to produce average annual recycled water demand, a seasonal recycled water storage is required to store recycled water in the low-irrigation demand months (October – March) when demands are typically less than average, for use during the high-irrigation demand months (April – September) when demands are typically greater than average.

However, there is sufficient secondary effluent supply available from the 24-inch effluent pipeline to increase the capacity of the tertiary treatment plant to maximum-month recycled water supply, and it was determined in the study analysis that this upsizing of the tertiary treatment plant is more cost effective as it eliminates the need for a large seasonal storage reservoir and the need to segregate the irrigation system at the Sports Complex. This solution also provides additional benefits to the City in that it more than offsets the potable water demand of the Proposed Project resulting in a net decrease of potable water demands within the City's service area.

For a recycled water supply that provides a 100 percent offset of the Project's potable water supply, i.e. recycled water supply to the Sports Complex equal to 100 percent of the Project's potable water demand and equal to only 47 percent of the Sports Complex's average irrigation demand, the tertiary treatment plant would need to be sized at 177,000 gpd.

For a recycled water supply that provides a 214 percent offset of the Project's potable water supply, i.e. recycled water supply to the Sports Complex equal to 214 percent of the Project's potable water demand and equal to 100 percent of the Sports Complex's normal irrigation demand, the tertiary treatment plant would need to be sized at 308,000 gpd (maximum-month demand).

Additional major infrastructure for the recycled water conveyance system includes a smaller operational storage tank, a recycled water pumping station, a transmission main from the treatment plant to the Project and the Sports Complex, recycled water distribution piping and appurtenances at the Project site, and retrofitted recycled water distribution piping at the Sports Complex (converting existing potable water piping for recycled water distribution).

The following recommendations are made regarding the tertiary treatment plant and recycled water storage and conveyance system based on analysis that focused on an initial system configuration, as potential future expansions of this system are unknown at this time:

- As it is problematic to only supply 47 percent (64,672 gpd) of the Sports Complex's normal irrigation demand of 138,500 gpd or 155.1 afy in order to obtain a 100 percent offset of the Project's potable water demand, it is recommended that the treatment and conveyance system be sized so the entire Sports Complex can be retrofitted and irrigated with recycled water, which would be equivalent to a 214 percent offset of the Project's potable water demand.

- It appears it will be more economical to increase the size of the tertiary treatment plant to treat and supply the maximum-month recycled water demand as opposed to average recycled water demand, as this eliminates the need for a more expensive seasonal storage reservoir.

- For recycled water supply to the Project and Sports Complex, it would be more economical to locate an operational storage reservoir at the treatment plant site with the treatment plant pumps and conveyance pipelines increased to supply peak hour demands for the Project and the Sports Complex, thereby eliminating smaller operational storage reservoirs and peak-hour pump stations at each of the two user sites.

- For reliability purposes, an air-gap connection between the City's existing potable water system and the recycled water operational storage reservoir at the treatment plant should be constructed. This will enable the City to supplement the Sports Complex irrigation system with potable water in the event of a treatment plant outage or provide additional supply if peak day recycled water demands are slightly higher than the treatment plant can provide.

Wastewater Treatment and Conveyance

Wastewater generated at the 40-acre Project site as well as from other facilities within the City's service area is conveyed to the City's Wastewater Treatment Plant (WWTP) located at 1333 West Grand Avenue in the center of the City through a series of collection and trunk sewer, lift stations, and forcemains. In Alternative A, wastewater flows from the Proposed Project as well as the existing flows from the Sports Complex, OHV Park and the industrial land just south of the Project site, will continue to be conveyed through the existing conveyance system to the City's WWTP. As part of this study, the wastewater conveyance system local to the Proposed Project was evaluated for capacity to carry the larger Project flows, as well as for any deficiciencies due to condition or age. The following deficiencies were determined:

- Lift Station (LS) No. 12 is deficient in both operational and emergency storage (according to City staff), and should have two pumps instead of one pump to enable efficient, and more importantly, reliable operation.

- The 800 linear-foot, 10-inch sewer that carries the combined northerly (Project, Sports Complex, and OHV Park) and southerly (Edison/industrial) buildout flows to LS No. 7 needs to be replaced because it is made of techite, a fiberglass spun pipe no longer used as it has been shown to lose its structural integrity with age. Also, the projected flows are estimated to exceed the capacity of the existing sewer.

- The LS No. 7 pumps are apparently the original pumps and are 46 years old, and if so, need to be replaced. The lift station's wetwell is also deficient in both operational and emergency storage, and it appears it will need to be replaced.

- The short (approximately 20 linear feet) 6-inch forcemain associated with LS No. 7 is 46-year-old cast iron pipe suffering from age and corrosion and is also in need of replacement.

E.2 Alternative B: Proposed Project with Onsite Water & Wastewater Systems

Alternative B is the same as Alternative A (Proposed Project) in that the Project would be developed on the 40-acre Airpark Property, and proposed development elements include a casino, a 250-room hotel, food and beverage facilities, administrative space, a multi-purpose events center, a conference center, and associated parking and infrastructure. However, in Alternative B, water and wastewater systems would be constructed on site, and there would be no connections to the City water and wastewater systems.

Potable Water Supply

In Alternative B, no connection would be made to the City's water system, and instead, an independent water system would be constructed on the Project site. The system would include two potable water supply wells; water disinfection facilities; a storage tank; and a booster pump station.

The Tule Groundwater Subbasin is unadjudicated. The Tribe could construct new wells and appurtenant facilities on the 40-acre Airpark Property to supply potable water for the Project. Fairly recently, the City constructed an 800-foot deep well at the fairgrounds that produces 300 to 400 gpm of potable water (with chlorination). If a similar well could be drilled at the Project property, sufficient water supply would be available to provide all Project water demands through maximum-day demand. Based on the well capacity required for the Project and distance from existing wells, the proposed Project groundwater extraction should not interfere with any existing wells in the area. Once the drought ends, well groundwater production could possibly increase due to increases in the groundwater table. However, the City reported in their 2010 Urban Water Management Plan, which was written prior to the drought, that new wells typically have capacities of 500 gpm or less.

As this would be an independent system, with no connection to the City's water supply system, a second well is required to back up the first well, as wells are often taken out of service for maintenance, periodic rehabilitation, and unexpected repairs.

Typically, storage is required to supply peak-hour demands (operational storage), fire-flow demands (fire storage), and some emergency storage. Total storage required for Alternative B is estimated at approximately 1.2 million gallons (MG). The wells would fill the site storage tank, and a pump station would need to be constructed with a fire pump sized to provide the fire flow; and with other smaller pumps to supply normal project water demands up to peak-hour demand.

Groundwater quality in the Porterville area is generally good, however, some wells require treatment. City wells adjacent to the Porter Slough have been closed due to percloroethylene (PCE) contamination, and a few City wells in the downtown area and eastern portion of town have nitrate problems. The two wells at the Project Property would need to be drilled (located) a minimum 100 feet apart so that the well drawdowns will not conflict and impede production. Still the wells would be fairly close together, and any contamination plume or water quality problem that affects one well will most likely affect both wells until the issue can be remediated or additional treatment is installed.

A large amount of water will be stored and not used on a normal basis, i.e. fire-protection and emergency storage, and the water quality of stored, uncirculated water deteriorates with time. Mechanical mixing or other methods might need to be employed to help maintain stored water quality.

Wastewater Treatment and Disposal and Recycled Water Supply

In Alternative B, a package wastewater treatment plant with teriary treatment; recycled water storage and conveyance facilities to provide for Project irrigation demands; and wastewater disposal facilities would be constructed on the 40-acre Project Property.

Package plants are pre-manufactured treatment facilities used to treat wastewater in small communities or on individual properties. Three of the most common types of package plants are extended aeration plants, sequencing batch reactors, and oxidation ditches, which are biological aeration processes. An extended-aeration package treatment plant with tertiary filters and ultraviolet (UV) disinfection facilities as manufactured by Pollution Control Systems, Inc. (PCS) was discussed in this report. Although it is common to install these types of treatment plants on concrete pads exposed to the environment, the treatment equipment could be housed in buildings that are architecturally designed to be visually compatible with the casino/resort.

Although average recycled water demand for the Project (41,833 gpd) is less than average wastewater flow into the plant (77,606 gpd), the tertiary plant should be sized at 77,606 gpd, which is the same size as the primary and secondary treatment components, in order to eliminate the need for seasonal storage and reduce the volume of operational storage. In addition to the tertiary treatment plant and operational storage tank, a recycled water pump station and recycled water distribution piping is required to provide irrigation water for Project landscape.

There will be days during the year, primarily in the winter and fall, when irrigation demand will be zero and the only recycled water demand will be the 16,984 gpd for indoor recycled water use. When this low recycled water demand occurs, 60,922 gpd of secondary effluent (77,606 gpd – 16,684 gpd) from the package treatment plant will need to be disposed of on site (maximum on-site disposal). It is common, to construct open earthen reservoirs to percolate the secondary effluent into the soil with some effluent evaporated. However, due to a low permeability rate for the local soil, 0.6 acres of land would be required to adequately percolate the wastewater. However, there may not be sufficient land to adequately locate and seclude the basins on the 40-acre property, and large open-water basins attract birds, which is not appropriate this close to the airport.

Due to these constraints, an underground leach field constructed below the parking lot to disperse the wastewater through plastic leaching chambers is proposed as an alternative solution. Due to the reported low percolation rate for the local soil, the leach field area is estimated at approximately 2.3 acres based on an application rate of 0.6 gpd/acre.

Sludge from the treatment plant will need to be dewatered before it can be transported off-site, either to areas that can use the sludge for crop fertilizer or to a landfill for disposal. Mechanical dewatering with centrifuges or belt filter presses located in a building is recommended instead of open drying beds considering the close proximity to the resort.

E.3 Alternative C: Reduced Intensity Hotel and Casino

The development elements included in Alternative C would be similar to the development elements proposed for Alternatives A and B, but at a smaller scale. The casino and food and beverage development elements would be smaller, and the multi-purpose events center would be eliminated. The hotel would stay the same size at 250 rooms. As a result, the project would have lower water demands and wastewater flows, thereby reducing the required capacities for new or existing water and wastewater facilities. Water and wastewater service could be the same as in either Alternative A or Alternative B.

Alternative C Development Elements with Alternative A Water and Wastewater Planning

Alternative C could have the same water and wastewater planning as Alternative A:

- Untreated sanitary wastewater would be conveyed to the City's WWTP through the existing (and potentially upgraded) conveyance system.
- A connection would be made to the City's potable water system to provide all potable water demands for the Project.
- A tertiary wastewater treatment plant would be constructed at an adjacent property to provide recycled water to the Project and to the City Sports Complex to completely offset the Project's potable water demand.

In connecting to the City's water system, Project potable water demands would be approximately 32 percent less than the potable water demands in Alternative A, as would the operational and emergency storage requirements.

The same wastewater system condition and capacity issues relating to conveying Alternative A wastewater flows still apply for conveying Alternative C flows.

Relative to recycled water supply for 100 percent Project potable water supply offset the overall recycled water demand would decrease by 22.9 percent, and the sizing of tertiary treatment and recycled water conveyance facilities presented for Alternative A would decrease by a similar amount.

To supply the Sports Complex with its normal average irrigation demand of 138,500 gpd, the overall recycled water demand would decrease by only 2.0 percent, and the sizing of tertiary treatment and recycled water conveyance facilities presented for Alternative A would not change significantly, if at all.

In general, the reduced Project water demands and wastewater flows do not have significant impacts on the water and wastewater system planning as the same facilities are required only at slightly smaller capacities.

Alternative C Development Elements with Alternative B Water and Wastewater Planning

Alternative C could have the same on-site water and wastewater system as Alternative B: water and wastewater systems would be constructed on site and there would be no connections to the City water and wastewater systems.

In Alternative C, Project potable water demands would be approximately 32 percent less than the potable water demands in Alternative B, as would the operational and emergency storage requirements. However, two wells would still be required; the wells would still need to be drilled to the same depth; and the wells would still have the same equipment with a negligible reduction is sizing. The Fire-flow demand could possibly be reduced due to a reduction in facilities and patrons, which could reduce the fire storage requirement and fire-pump sizing.

In Alternative C, Project wastewater generation would be approximately 35 percent less than the wastewater generation in Alternative B, and the package extended aeration treatment plant with tertiary filters and UV disinfection could be reduced from a capacity of approximately 77,600 gpd to 50,500 gpd. The wastewater disposal facilities could be downsized by a similar percentage. However, recycled water production would not be sufficent to supply all demands from May through August and a seasonal storage tank sized at 780,000 gallons would be required.

In general, the reduced Project water demands and wastewater flows do not have significant impacts on the water and wastewater system planning as the same facilities are required only at smaller capacities, but a large seasonal storage reservoir is required in Alternative C that is not required in Alternative B.

E.4 Alternative D: Non-Gaming Hotel and Conference Center

Alternative D would utilize the same 40-acre Airpark Property, but the casino and the multi-purpose events center would be eliminated; the conference center would be slightly smaller; and the food and beverage facilities would be greatly reduced; which would result in lower water demands and wastewater flows relative to Alternatives A, B and C. Water and wastewater service could be the same as in either Alternative A or Alternative B.

Alternative D Development Elements with Alternative A Water and Wastewater Planning

Alternative D would have the same water and wastewater plan elements as Alternative A:

- Untreated sanitary wastewater would be conveyed to the City's WWTP through the existing (and potentially upgraded) conveyance system.
- A connection would be made to the City's potable water system to provide all potable water demands for the Project.
- A tertiary wastewater treatment plant would be constructed at an adjacent property to provide recycled water to the Project and to the City Sports Complex to completely offset the Project's potable water demand.

In connecting to the City's water system, Project potable water demands would be approximately 64 percent less than the potable water demands in Alternative A, as would the operational and emergency storage requirements.

The same wastewater system condition and capacity issues relating to conveying Alternative A wastewater flows still apply for conveying Alternative D flows. The 10-inch sewer upstream of LS No. 7 has sufficient capacity to safely convey the Alternative D Project flows and southerly (Edison/industrial) buildout flows, but the station and force main should still be replaced because of its age and material, respectively.

Relative to recycled water supply for 100 percent Project potable water supply offset, the overall recycled water demand would decrease by approximately 61 percent, and the sizing of tertiary treatment and recycled water conveyance facilities presented for Alternative A would decrease by a similar amount.

To supply the Sports Complex with its normal average irrigation demand of 138,500 gpd, the overall recycled water demand would decrease by approximately 13 percent, and the sizing of tertiary treatment and recycled water conveyance facilities presented for Alternative A would decrease by a similar amount.

In summary, the reduced Project water demands and wastewater flows do not have significant impacts on the water and wastewater system planning as the same facilities are required only at smaller capacities. However, more significantly, the tertiary treatment plant and recycled water conveyance system could be reduced by approximately 61 percent with recycled water supply for 100 percent Project potable water supply offset.

Alternative D Development Elements with Alternative B Water and Wastewater Planning

Alternative D would have the same on-site water and wastewater system as Alternative B: water and wastewater systems would be constructed on site and there would be no connections to the City water and wastewater systems.

In Alternative D, Project potable water demands would be approximately 62 percent less than the potable water demands in Alternative B, as would the operational and emergency storage requirements. However, two wells would still be required with the same equipment with some reduction is sizing. The Fire-flow demand could possibly be reduced due to a reduction in facilities and patrons, which could reduce the fire storage requirement and fire-pump sizing.

In Alternative D, Project wastewater generation would be approximately 68 percent less than the wastewater generation in Alternative B, and the package extended aeration treatment plant with tertiary filters and UV disinfection could be reduced from a capacity of approximately 77,600 gpd to 24,600 gpd. The wastewater disposal facilities could be downsized by a similar percentage. However, recycled water production would not be sufficent to supply all demands from May through August and a seasonal storage tank sized at 310,000 gallons would be required.

In general, the reduced Project water demands and wastewater flows do not have significant impacts on the water and wastewater system planning as the same facilities are required only at smaller capacities, but a large seasonal storage reservoir is required in Alternative D that is not required in Alternative B.

E.5 Alternative E: Alternate Site

In Alternative E, instead of building a resort at the Airpark Property, the existing Eagle Mountain Casino located on the Tule River Indian Reservation (Reservation), on the western slope of the Sierra Nevada Mountains, east of the City, (see Figure 1) would be expanded. The existing casino and food and beverage facilities would be expanded; surface parking would be reconfigured; and a new garage parking structure would be constructed.

The Tribe utilizes water resources in the South Tule River Basin to meet water demands on the 55,396-acre Reservation that includes the Eagle Mountain Casino. Surface water drawn directly from the South Fork Tule River and treated at the Tribe's water treatment plant is the primary potable water supply, augmented by groundwater delivered from several Tribe-owned and operated wells.

The Tribe typically operates the water treatment plant at full capacity, and uses groundwater supply to help meet demands above the plant capacity. Water supplies have not been able to meet high demands in the late summer and early fall in many years. Inadequate water supplies have negatively impacted economic development and have halted the development of additional tribal housing, preventing off-reservation Tribal members from relocating to the Reservation.

The water storage system consists of a series of tanks ranging in size from 3,000 gallons to 200,000 gallons. A 200,000 gallon storage tank is located at the casino property. It has been reported that the tanks do not function as a storage system and, in some cases, were improperly designed; and that the available storage capacity is inadequate to meet all fire demands occurring during peak domestic water demands.

The existing water supply, storage, and distribution system within the reservation is not sufficient to support an expansion of the casino. However, the existing 200,000 gallon tank at the casino site could be replaced with a tank of sufficient size to serve the existing/expanded casino, and water could be trucked in to fill this tank on a daily basis. The storage requirement for the existing/expanded casino might be approximately 1.1 MG (4,000 gpm for 4 hour fire storage; 15% of maximum-day demand operational storage; an three days of average demand for emergency storage). It is not known if there is sufficient room at the site to expand the storage at the existing casino tank location or whether a new tank would need to be constructed offsite. A 5,000-gallon water tank truck would need to make approximately 7 trips per day to supply the estimated average day demand (35,607 gpd), and about 13 trips to supply the maximum-day demand (66,467 gpd).

There is wastewater treatment capacity available via two membrane bioreactor (MBR) wastewater package treatment plants to treat wastewater from the expanded casino.

E.6 Conclusions

In Alternative A, the Proposed Project with the full casino and resort development plan would connect to the City's potable water system with zero impact on the water system, which has been effected by the drought, as a tertiary treatment plant would be built and recycled water would be conveyed to the City's Sports Complex to replace potable water irrigation at the Sports Complex equivalent to the Project's potable water demand, thereby making it a net zero demand on the City's water system.

The project would also lay the groundwork for future City expansions of the tertiary treatment plant, which would provide additional recycled water to offset existing and future potable water demands on the City's water system.

Relative to an independent Project water system, a connection with the City's potable water system provides the Project with a more reliable water supply given the redundancy offered by multiple wells, strorage reservoirs, transmission mains, and potential new water supply sources in the City's system.

In Alternative B, an independent water system without a connection to the City's water system would entail significant infrastructure to help ensure water supply reliability. Two wells with disinfection facilities, a large water storage reservoir that includes fire protection water, and a pump station that includes a fire pump would be required. Still, any local groundwater contamination problem could disable both wells and leave the Project without a water supply.

Alternatives C and D provide reduced development elements relative to the development elements proposed for Alternatives A and B, therby resulting in reduced water demands and wastewater flows. However, the reduced demands and wastewater flows do not have significant impacts on the water and wastewater system planning as the same facilities are required only at slightly smaller capacities.

Relative to constructing a new resort at the 40-acre Airpark Property with a package tertiary wastewater treatment plant, an expansion of the Eagle Mountain Casino (Alternative E) is not considered as viable due to the existing water supply shortage and storage deficiencies for the water system currently serving the Reservation. However, a larger tank to support the demands of the existing/expanded casino could potentially be constructed, and water could be trucked in from a location (remote from the reservation) to fill the tank on a daily basis.

Alternative A is therefore recommended.

1.0 PROJECT OVERVIEW

The Tule River Tribe (Tribe) proposes to develop a casino-resort (Project) within a 40-acre site it owns near the Porterville Airport (40-acre Airpark Property), within the City of Porterville (City) and in the southwest corner of the City's Planning Area. A Project Location map is shown on Figure 1. There are five alternatives relating to Project development characteristics, as well as alternatives to water and wastewater service, which are evaluated in this study.

2.0 ALTERNATIVE A: PROPOSED PROJECT

In Alternative A, the Project would be developed on the 40-acre Airpark Property. Proposed development elements include a casino, a 250-room hotel, food and beverage facilities, administrative space, a multi-purpose events center, a conference center, and associated parking and infrastructure.

For water supply, a connection would be made to the City's potable water system to provide all potable water demands for the Project. For wastewater service, untreated sanitary wastewater would be conveyed to the City's Wastewater Treatment Plant (WWTP) located at 1333 West Grand Avenue in the center of the City through a series of existing gravity sewers, lift stations, and forcemains for primary and secondary treatment.

A tertiary wastewater treatment plant would be built to provide recycled water to the Project and to the City Sports Complex (located just north of the 40-acre Project property), which is currently irrigated with City potable (well) water, with sufficient recycled water production to completely offset the Project's potable water demand, i.e. potable water demand reduction at the Sports Park equals potable water demand of the Project, which equals a net zero potable water demand from the Project.

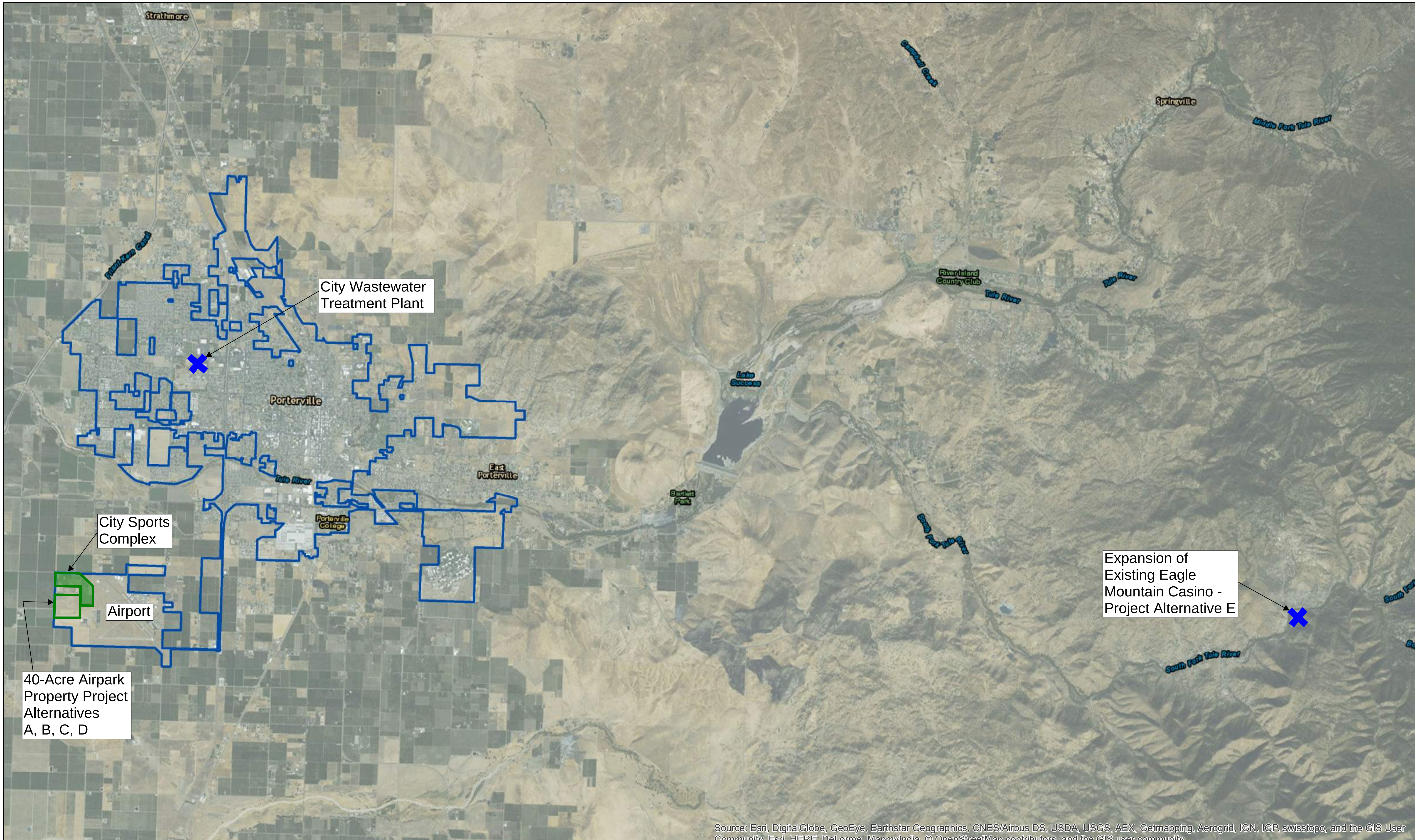
This alternative, Alternative A, is referred to as the Proposed Project herein.

The Alternative A site plan on the 40-acre Airpark Property is shown on Figure 2. The development elements included in Alternative A and estimated potable water demands are shown in Table 1.

Characteristic quantities (units) for building area, seats, and rooms are multiplied by tailored unit water use factors (based on a range of factors common for these types of facilities) and then multiplied by an average annual occupancy for these facilities of 75% (occupancy factor of 0.75) to develop average annual water demands in Table 1.

Interior maximum day demands are estimated to be 1.4 times greater than average annual demands and are estimated with 100% occupancy of facilities to be conservative, which in essence increases the maximum day demand factor to 1.87 (1.4/0.75) because average day water use assumes 75% occupancy.

Interior peak-hour demands are estimated to be 1.8 times greater than maximum day demands and are estimated with 100% occupancy of facilities to be conservative. Interior peak hour demands are expected to occur in the late morning hours consistent with slightly later hours for a casino/resort compared to a residential development.



Tule River Tribe Casino & Resort
Water & Wastewater Study

FIGURE 1 - LOCATION MAP

PSOMAS

Tule River Tribe Casino & Resort
Water & Wastewater Study

FIGURE 2 - SITE PLAN ALTERNATIVE 'A' - PROPOSED RESORT

Table 1. Estimated Potable Water Demands for Alternative A – Proposed Project

Facility	Building Area (sf)	Seats	Rooms	Unit Water Use (gpd)	Average Water Demand[(a)] (gpd)	Max Day Water Demand[(b)] (gpd)	Peak Hr Water Demand[(c)] (gpm)
Casino		1,896		15	21,330	39,816	49.8
Hotel - Standard Room			230	70	12,075	22,540	28.2
Hotel - Two-Bay Suite			20	85	1,275	2,380	3.0
Fitness Center	900			0.63	425	794	1.0
Specialty Restaurants		66		47.5	2,351	4,389	5.5
Café		100		32.5	2,438	4,550	5.7
24-Hr Bakery/Deli Counter		15		47.5	534	998	1.2
Buffet		225		47.5	8,016	14,963	18.7
Sports Bar & Grill		124		32.5	3,023	5,642	7.1
Retail	1,000			0.05	38	70	0.1
Multi-Purpose Event Center		1,700		6.0	7,650	14,280	17.9
Conference Center	29,081			0.065	1,418	2,646	3.3
Fire Station [(d)]					350	490	0.6
Pool	7,500			0.50	3,750	7,875	-
Total					**64,672**	**121,432**	**141.9**

(a) Average day demand assumes 75% occupancy, i.e. a demand factor of 0.75
(b) Max day demand for interior water use = 1.4 x average water demand; 100% occupancy assumed, i.e. max day demand = 1.87 x average day demand (1.4/0.75); max day demand for exterior (pool) water use = 2.1 x average water demand based on historical monthly ETo data for the Porterville area
(c) Peak hour demand = 1.8 x max day demand and occurs in the morning or evening; 100% occupancy
(d) Average water demand based on normal 10-person crew at 50 gpd/person. Peak demands based on 10-person crew at 50/gpd with 1.4 (max day) and 1.8 (peak hour) peaking factors

As discussed in more detail later in the report, a tertiary treatment plant will be constructed on an adjacent City-owned property to produce Title 22 recycled water that will be used at the Airpark Property, as well as the City Sports Complex, for exterior landscape irrigation. Title 22 recycled water will also be utilized at the Airpark Property for toilet and urinal flushing, which will entail dual plumbing, i.e. plumbing for toilet and urinal recycled water use and separate plumbing for the remaining indoor potable water use.

Estimated indoor, outdoor, and total recycled water demands on the 40-acre Airpark Property are shown in Table 2. The unit water use factors for indoor toilet and urinal recycled water use shown in Table 2 are based on AWWA research data for toilet and urinal use as a percentage of indoor water use using efficient water fixtures.

Table 2. Estimated Recycled Water Demands for Alternative A – Proposed Project

Facility	Building Area (sf)	Seats	Rooms	Unit Water Use (gpd)	Average Water Demand[a] (gpd)	Max Day Water Demand[b] (gpd)	Peak Hr Water Demand[c] (gpm)
Indoor Toilet & Urinal RW Use							
Casino		1,896		5	7,110	13,272	16.6
Hotel - Standard Room			230	20	3,450	6,440	8.1
Hotel - Two-Bay Suite			20	25	375	700	0.9
Fitness Center	900			-	-	-	-
Specialty Restaurants		66		2.5	124	231	0.3
Café		100		2.5	188	350	0.4
24-Hr Bakery/Deli Counter		15		2.5	28	53	0.1
Buffet		225		2.5	422	788	1.0
Sports Bar & Grill		124		2.5	233	434	0.5
Retail	1,000			-	-	-	-
Multi-Purpose Event Center		1,700		2.5	3,188	5,950	7.4
Conference Center	29,081			0.065	1,418	2,646	3.3
Fire Station[d]					150	210	0.3
Indoor Subtotal					16,684	31,073	38.8
Irrigation (9.5 Net Acres)[e]	413,820			0.061	25,149	52,812	97.9
Total					**41,833**	**83,886**	**136.8**

(a) Average day demand assumes 75% occupancy, i.e. a demand factor of 0.75

(b) Max day demand for interior water use = 1.4 x average water demand; 100% occupancy assumed, i.e. max day demand = 1.87 x average day demand (1.4/0.75); max day demand for exterior (pool) water use = 2.1 x average water demand based on historical monthly ETo data for the Porterville area

(c) Indoor peak hour demand = 1.8 x max day demand and occurs in the morning or evening; 100% occupancy

(d) Average water demand based on normal 10-person crew at 50 gpd/person. Peak demands based on 10-person crew at 50/gpd with 1.4 (max day) and 1.8 (peak hour) peaking factors

(e) Irrigation based on Model Water Efficient Landscape Ordinance (MWELO):
ETAF (Evapotranspiration Adjustment Factor) = 0.67 for efficient recycled water irrigation
MAWA (Maximum Applied Water Allowance) in gal/yr = ETo x 0.62 x ETAF x Area in square feet
ETo (evapotranspiration) for Porterville = 53.4 inches (historical annual average)
Max day demand for exterior water use = 2.1 x average water demand
Exterior (irrigation) peak hour demand = 2.67 x max day demand and occurs during a 9-hour nighttime window

The State's new Model Water Efficient Landscape Ordinance (MWELO) restricts landscape potable water irrigation for non-residential areas to an Evapotranspiration Adjustment Factor (ETAF) of 0.45 or less. The MWELO does not apply to irrigation using recycled water, and an ETAF of up to 1.0 can be used, which translates to greater and less effiecient water use. However, it is anticipated that water conservation practices will be employed to efficiently utilize recycled water for landscape irrigation at the site, and average irrigation water use is developed assuming an ETAF of 0.67, corresponding to an average plant factor of 0.5 divided by an average irrigation efficiency of 0.75.

Exterior maximum day demands are estimated to be 2.1 times greater than average annual demands based on historical evapotranspiration (ETo) data for the Porterville area showing a maximum month demand factor of 1.78 and increasing this by 20% to account for the maximum day demand within the maximum month, i.e. 1.78 x 1.2 = 2.1. The maximum month factor of 1.78 was derived using data from California Irrigation Management Information System (CIMIS) Station No. 169 located in the City of Porterville.

Irrigation is estimated to occur during a nine-hour irrigation window between approximately 11:00 p.m. and 8:00 a.m., which results in a peak hour irrigation factor of 2.67 (24 hours/9 hours) (peak hour demand factor of 5.6 relative to average demand).

Estimated average and peak wastewater flows for facilities proposed for Project Alternative A are shown in Table 3. Peak wastewater flow is estimated to be 2.0 times greater than average wastewater flow. Consistent with potable water estimates, average wastewater generation is assumed to occur with an average annual occupancy rate of 75%, while peak wastewater generation is conservatively assumed to occur with 100% occupancy, which increases the maximum day demand factor to 2.67 (2.0/0.75). The peaking factor for a resort is estimated to be less than for a residence as times for eating meals and sleeping are more spread out.

2.1 Project Potable Water Supply

In Alternative A, a connection would be made to to the City's potable water system to provide all potable water demands for the Project.

2.1.1 Summary of City's Potable Water System

Water production, storage, and distribution in the City are provided by two separate water systems, the Central City System and the Rowland Water System, which are maintained and operated by the Public Works Department. Each system is completely independent of the other. The City currently relies almost exclusively on groundwater for its water supply, which is disinfected and enters the City's water distribution system as potable water. The City has 35 active wells serving both water systems. The City's municipal wells are generally scattered west of Plano Avenue and south of Westfield Avenue, as this is where the better groundwater production lies.

Additionally, the City has purchased rights for about 900 acre-feet (af) annually from the Pioneer Ditch Company and Porter Slough Ditch Company. The City uses some of this water to recharge the groundwater basin.

Table 3. Estimated Wastewater Flows for Alternative A - Proposed Project

Facility	Building Area (sf)	Seats	Rooms	Unit Wastewater Flow (gpd)	Average Wastewater Flow[(a)] (gpd)	Peak Wastewater Flow[(b)] (gpm)
Casino		1,896		20	28,440	53
Hotel - Standard Room			230	90	15,525	29
Hotel - Two-Bay Suite			20	110	1,650	3
Fitness Center	900			0.63	425	1
Specialty Restaurants		66		50	2,475	5
Café		100		35	2,625	5
24-Hr Bakery/Deli Counter		15		50	563	1
Buffet		225		50	8,438	16
Sports Bar & Grill		124		35	3,255	6
Retail	1,000			0.05	38	0
Multi-Purpose Event Center		1,700		8.5	10,838	20
Conference Center	29,081			0.13	2,835	5
Fire Station [(c)]					500	1
Total					77,606	143

(a) Average wastewater flow assumes 75% occupancy, i.e. a demand factor of 0.75
(b) Peak wastewater flow = 2.0 x average wastewater demand; 100% occupancy assumed, i.e. peak wastewater flow = 2.67 x average wastewater flow (2.0/0.75)
(c) Average wastewater flow based on normal 10-person crew at 50 gpd/person. Peak wastewater flow based on 10-person crew at 50/gpd with 2.0 peaking factor

Water is distributed from the City's existing wells through approximately 200 miles of pipeline operated and maintained by the Public Works Department. The City currently operates and maintains five hillside reservoirs, including three 3.0 million gallon reservoirs, one 550,000 gallon reservoir, and one 300,000 gallon reservoir.

As reported in the Hydraulic Analysis Memorandum prepared for the City by Dee Jaspar & Associates dated May 19, 2015 (2015 Hydraulic Analysis Memorandum), the (then current) average-day demand and the maximum-day demand for the City was estimated to be 7,388 gpm and 12,250 gpm, respectively; and the current source capacity from City well's was estimated to be 11,965 gpm (98 percent of maximum-day demand).

The City is located within the Tule Subbasin of the San Joaquin Valley Groundwater Basin, which is not adjudicated. The basin is currently classified as critically overdrafted by the State Department of Water Resources (DWR). The area is underlain by an unconfined aquifer which receives groundwater recharge from the Sierra Nevada Mountains and seepage from the Tule River and irrigation ditches. The alluvial fans of the Tule River provide highly permeable area in which groundwater is readily replenished.

As reported in the City's 2010 UWMP, Groundwater quality in the Porterville area is generally good. Groundwater quality and quantity is generally better on the western edge of town (where the Project is located), which is why most of the production wells are located in that area. All active wells produce water that meets State and Federal drinking water quality standards. Groundwater is disinfected at the well sites prior to entering the distribution system.

As reported in a Hydraulic Analysis Memorandum prepared for the City by Dee Jaspar & Associates dated May 19, 2015 (2015 Hydraulic Analysis Memorandum), City groundwater production capabilities have declined by 28% since 2010, attributable to aging of the wells, but most significantly, due to declining groundwater levels resulting from the severe California drought that started in 2012 and continued through 2016.

DWR and the State Water Resources Control Board (SWRCB) are working with Tulare County local governments on an emergency water supply project to provide drinking water to homes in East Porterville, an unincorporated community where numerous private water wells are not usable because they are either contaminated or have gone dry during the currnt drought. It is estimated that approximately 500 private wells have gone dry in this area since 2012.

A new water supply and distribution system is being designed that will connect East Porterville residences without usable water to the City's water system. The project connected approximately 500 homes in 2016 (Phase 1), and the remaining 1,300 residences are scheduled to receive service through the new system by the end of 2017. DWR drilled a new well for the City in late 2015 to ensure the availability of water for Phase 1.

The requirements for the City to provide water service to the entire East Porterville area was analyzed and presented in the 2015 Hydraulic Analysis Memorandum. It was reported that an additional 4 to 5 wells will be required to provide water service to this area, which has an estimated maximum day demand of 2.45 mgd. Additionally, a second 3.0 MG storage tank is recommended in the East pressure zone and additional pumping capacity is needed for moving water from the central to the east pressure zone.

The Sustainable Groundwater Management Act (SGMA) went into effect January 1, 2015. SGMA requires that local water agencies within all medium and high-priority subbasins form one or more Groundwater Sustainability Agencies (GSA) to prepare a Groundwater Sustainability Plan (GSP). GSA's must be formed by June 30, 2017.

Since 2015, the City of Porterville, Porterville Irrigation District, Saucelito Irrigation District, Teapot Dome Water District, Vandalia Water District, Terra Bella Irrigation District, Kern-Tulare Water District, and the County have been meeting to form the Eastern Tule GSA to cover each Agency/District, as well as some areas not currently within these agencies sevice areas in the Tule Subbasin. As a high-priority basin that is critically overdrafted, a GSP for the Tule Subbasin of the San Joaquin Valley Groundwater Basin must be implemented by 2020.

With the exception of constructing new wells as required to supply water to the East Porterville area, the City wants to have a moratorium on constructing additional wells until the GSP is completed for the groundwater basin in 2020 considering the current state of the basin.

The City is currently working on their 2015 Urban Water Management Plan, and also on their updated water, recycled water, and wastewater master plans. As part of their development, the City is focusing on the following projects for increased water supply:

Potential Water Projects:

- New surface water treatment plant, to treat water collected from the Tulare River and/or Friant Kern Canal (new water supply)
- Increase of groundwater recharge with non-potable surface water
- Increase of groundwater recharge with storm water (increased capture and repurposing of storm water runoff)

Potential Recycled Water Projects:

- Satellite tertiary facilities, to treat undisinfected secondary effluent along the effluent pipeline route, for unrestricted landscape irrigation (Veteran's Park & Monache High School, Burton Schools, City of Porterville Sports Complex)
- Tertiary treatment upgrades at the Municipal WWTF for unrestricted irrigation
    - Comprehensive distribution throughout the City to all outdoor irrigation customers
    - Limited distribution to open spaces and public facilities (parks, golf courses etc.)
    - Distribution to the City's reclamation area, providing option to convert to other crops for unrestricted reuse
- Advanced Treatment at the WWTF for the purpose of groundwater reuse replenishment project (GRRP) for indirect potable reuse (IPR)
- Advanced Treatment at the WWTF for the purpose of direct potable reuse

2.1.2 Impacts for Connecting Project to City's Water System

As part of Alternative A, the Tribe would construct a tertiary treatment plant at one of two Project-adjacent City-owned properties to provide recycled water to the Project and to the City Sports Complex, which is currently irrigated with City potable (well) water, with sufficient recycled water production to completely offset the Project's potable water demand. As shown in Table 4, and discussed in Section 2.3.2, the annual potable water demand reduction at the

Sports Complex would equal or exceed the potable water demands of the Project, achieving a net zero or negative potable water demand for the Proposed Project.

Table 4. Recycled Water Supply to Sports Complex as Offset to Project's Potable Water Demand

	Teriary Plant Designed to Off-set Project Only	Tertiary Plant Designed to Fully Irrigate Sports Complex
Alternative A Potable Water Use (gpd/afy)	64,672 gpd/ 72.4 afy	64,672 gpd/ 72.4 afy
Recycled Water Irrigation at Sports Complex (Offsets existing irrigation with potable) (gpd/afy)	64,672 gpd/ 72.4 afy	138,500 gpd/ 155.1 afy
Net Change in Potable Water Demands (gpd/afy)	0	-73,828 gpd/ -82.7 afy

The project would also lay the groundwork for future City expansions of the tertiary treatment plant, which would provide additional recycled water to offset existing and future potable water demands on the City's water system.

Relative to an independent Project water system, a connection with the City's potable water system provides the Project with a more reliable water supply given the redundancy offered by multiple wells, strorage reservoirs, transmission mains, and potential new water supply sources in the City's system.

The 40-acre Airpark Property is located in the Central Pressure Zone of the City's water distribution system. There is an 8-inch water main loop within the property constructed in 1995 connected to an outer 12-inch water main loop (on West Scranton Drive, South Newcomb Street, West Teapot Dome Avenue, and West Street) that provides the Project with redundant water distribution. The 8-inch water mains on the property should be of sufficient capacity and condition considering they were constructed relatively recently in 1995. However, some of the piping may need to be extended to better accommodate the configuration of buildings for the Project. See Figure 2 for the approximate location of these existing on-site water lines.

The City indicated that the project area has a normal operating pressure of approximately 50 pounds per square inch (psi). A booster pump station may or may not be required to provide sufficient operating and fire flow pressures at the site. Once the buildings are designed and the fire department can confirm a required fire flow, which is estimated to be in the range of 3,000 to 4,000 gpm for a 3 to 4-hour duration, a hydraulic analysis would need to be conducted as part of preliminary design to determine whether a booster pump station is needed. A booster pump station would be required if a residual pressure of at least 20 psi could not be provided at the stipulated fire flow. A hydraulic analysis, possibly using the City's hydraulic model, would need to be completed as part of Project design to make this determination. If required, a fire booster pump station could be located on the Airpark Property in an enclosure sized at approximately 25 feet x 25 feet.

The 3.0-MG Martin Hill Reservoir, which serves the Central Pressure Zone is located just to the east of the airport area. Based on the storage analysis conducted in the 2015 Hydraulic Analysis Memorandum, operational storage of 15% of maximum day demand is required, which equates to 0.02 MG of operational storage for the Project based on an estimated Alternative A maximum day demand of 121,432 gpd. This is 0.7% of the storage capacity of the 3.0 MG Martin Hill Reservoir.

The reservoir has already been sized to provide fire flow storage for a worst-case fire within the service area that would include fire flow for the project site. With the inclusion of fire sprinklers in the project buildings, the required fire flow should not be any higher than fire flows already estimated for industrial or commercial land uses in the reservoir's service area. The worst case fire storage for the Martin Hill Reservoir is estimated at approximately 960,000 gpd (4,000 gpm for 4 hours) or greater. Therefore, no additional storage should be required to accommodate a project site fire flow. The Project storage requirement is estimated to be similar, if not the same, as the requirement for the previously-planned industrial/commercial landuse at the Airpark Property and other areas generally surrounding the Airport.

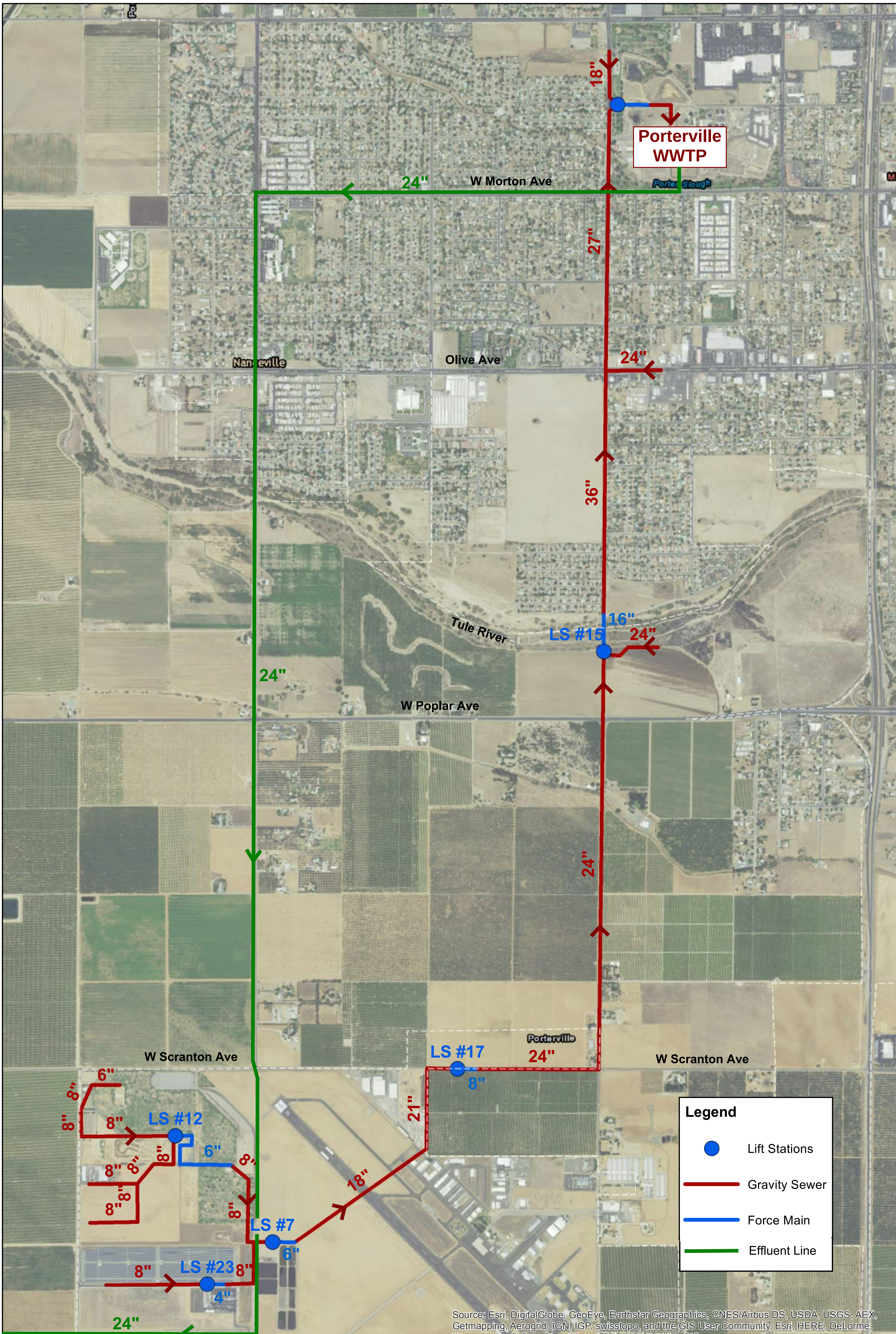
2.2 Wastewater Conveyance, Treament and Disposal

Wastewater generated at the 40-acre Airpark Property site as well as from the Sports Complex, OHV Park and the industrial land just south of the Project site, currently occupied by Edison, is conveyed to the City's Wastewater Treatment Plant located at 1333 West Grand Avenue in the center of the City through a series of collection and trunk sewers, lift stations, and forcemains as shown on Figure 3. The alignment of the 24-inch pipeline that conveys undisinfected secondary effluent from the City's Wastewater Treatment Plant to the 712-acre reclamation area (as well as the 52 acres of percolation basins located in the Deer Creek drainage area) located west and southwest of the Project site is also shown on Figure 3. This secondary effluent pipeline continues further to the southwest beyond the limits of Figure 3.

The City has indicated that the wastewater conveyance system downstream of the Lift Station (LS) No. 7 forcemain is of sufficient capacity and condition to adequately convey the increased wastewater flows from the Proposed Project. As such these sewers, lift stations, and forcemains are not evaluated herein.

A more detailed map showing the existing wastewater conveyance system in the 40-acre Airpark Property area and the immediate surrounding area, as well as the 24-inch effluent pipeline, and potential tertiary treatment and recycled water storage and conveyance facilities is shown on Figure 4.

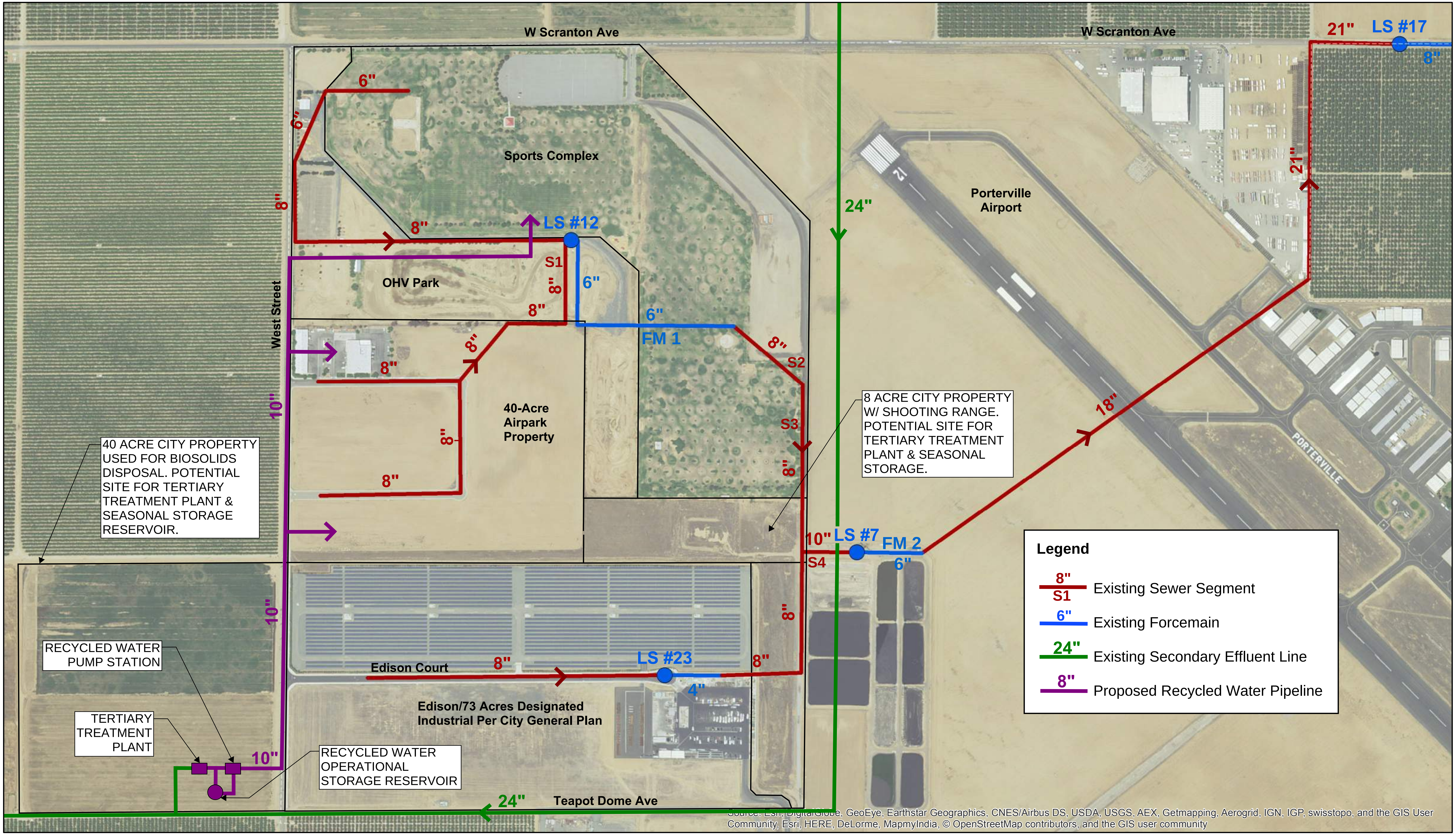
Wastewater from the 40-acre Airpark Property is conveyed to LS No. 12 through 8-inch sewers constructed in 1995. Currently wastewater is collected from a few industrial buildings that will be removed when the Project is constructed. Lift Station No. 12 and the 6 and 8-inch sewers that convey small wastewater flows from the Sports Complex and the OHV Park to that lift station were constructed in 1985 as were the 6-inch forcemain and 8-inch sewers that convey the flow from LS No. 12 to a connection with the southerly Edison wastewater conveyance system consisting of 8-inch sewers, Lift Station No. 23, and a short 4-inch forcemain, all constructed in 2008.



Tule River Tribe Casino & Resort
Water and Wastewater Study

Figure 3
Wastewater Conveyance System from Proposed Project to Porterville WWTP

PSOMAS



Tule River Tribe Casino & Resort
Water and Wastewater Study

Figure 4
Alternative A Wastewater & Recycled Water
Area Site Plan

PSOMAS

The northerly Project/park flows and the southerly Edison flows merge and are routed east through a 10-inch sewer that conveys the flow to LS No. 7, all constructed in 1971, as was the short 6-inch forcemain associated with LS No. 7.

The aforementioned "local" wastewater conveyance system is evaluated herein. Sewer segments and forcemains are designated and numbered, i.e. S1 – S4 and FM1 - FM2, correlating with a capacity analysis that is tabulated in Table 5. Only off-site sewers and forcemains impacted by the Project wastewater flows up to the LS No. 7 forcemain (FM 2) were evaluated.

Table 5. Local Sewer and Forcemain Characteristics, Hydraulics and Capacities

Sewer (S) or Force Main (FM)	Length (ft)	Age (yrs)	Peak Flow (PF: 2.67) (gpm)	Peak Flow (PF: 3.4) (gpm)	Pipe Capacity (d/D: 0.5) (gpm)	Comments
S1 - 8"	451	21	143.0	181.0	162.0	d/D = 0.54 at 181 gpm, which is deemed to be sufficient w/ conservative PF. Sewer should not be impacted by resort construction.
FM1 - 6"	1,186	32	149.9	190.3	573.0	Capacity at maximum velocity of 6.5 fps; PVC. Sufficient capacity available
S2 - 8"	343	32	149.9	190.3	157.0	d/D = 0.55 at 190 gpm, which is deemed to be sufficient w/conservative PF
S3 - 8"	920	32	149.9	190.3	157.0	d/D = 0.55 at 190 gpm, which is deemed to be sufficient w/ conservative PF
S4 - 10"	803	46	285.1	362.1	224.0	Flow is 50% from buildout industrial (Edison) area + 50% from Project/park. Under-capacity. Needs to be replaced with 12" sewer
FM2 - 6"	20	46	270.7	344.0	573.0	Forcemain is 46-year old cast iron pipe that is corroded and needs to be replaced.

As previously discussed, the peak wastewater flow for the Alternative A Project is estimated at 129 gpm using a peaking factor of 2.67. As discussed previously, this factor accounts for a resort occupancy increase of 100 percent relative to an estimated average resort occupancy of 75 percent and also a peak morning and evening wastewater generation increase of 2.0 relative to daily average wastewater generation, i.e. 2.0/0.75 = 2.67.

The City utilizes a peaking formula ($Q_{peak} = 2.41* Q_{peak}^{1.15}$, with Q in mgd) to estimate peak wastewater flows in their 2001 Sewer System Master Plan. This results in a peaking factor of approximately 3.4 for the average flow estimated for the Project of 53.9 gpm, and an estimated peak flow of 181.0 gpm. The 3.4 factor is considered to be too conservative (especially for a resort that has more dispersed times for eating and sleeping compared to a typical residence), but peak flow associated with both the 2.67 and 3.4 peaking factors are shown in Table 5 for comparison and then compared with sewer and forcemain pipe capacities.

Sewer capacity was assessed based on a minimum depth of peak flow over diameter of pipe (d/D) ratio of 0.5, which is industry standard criteria for sewer pipes 12 inches in diameter or smaller, i.e. ratios much greater than 0.5 are deemed to be hydraulic deficient. Note ratios only slightly greater than 0.5 were deemed to be adequate in Table 5 if the peak flow was based on the more conservative 3.4 peaking factor.

LS No. 12 receives flow from the 40-acre Airpark Property as well as flows from the Sports Complex and the OHV Park, which are small flows from approximately three restrooms, which were estimated and included in the total flows conveyed to LS No. 12. The LS was constructed in 1985 and the lone submersible pump is about 2 to 3 years old with a rated capacity of 236 gpm. However, according to City staff, the lift station is deficient in both operational and emergency storage, and should have two pumps instead of one pump to enable efficient, and more importantly, reliable operation. The existing submersible lift station is a buried, 23-foot deep, 5-foot diameter reinforced concrete pipe housing one pump. A new submersible pump station housing two pumps with increased storage would have the same depth, but with an increased internal area, possibly as large as 10 feet in diameter. However, the exact sizing would need to be determined as part of lift station design. The construction area might be on the order of 50 feet x 50 feet (2,500 square feet), which would be centered on the existing lift station.

The associated forcemain is 6-inch PVC pipe that has sufficient capacity to carry peak flows well below the City's standard maximum forcemain velocity of 6.5 feet per second (fps). It should be noted that according to City staff some of the forcemains and water mains in the area suffer from struvite corrosion as a result of area irrigation with secondary effluent. The City periodically acid washes the mains to remove the corrosion. According to City staff, this 6-inch PVC forcemain is still in good condition.

As shown in Table 5, sewer segments S1, S2 and S3 have sufficient estimated pipe capacity to carry 100 percent of the Project, OHV Park, and Sports Complex peak flows.

A southerly Edison wastewater conveyance system consisting of 8-inch sewers, Lift Station No. 23, and a short 4-inch forcemain, all constructed in 2008, convey wastewater to a connection with the northerly Project and Sports Complex flows at a manhole upstream of a 10-inch sewer leading directly to LS No. 7. At buildout, the industrial-designated land (per City General Plan) immediately south of the 40-acre Airpark Property is estimated to have an average wastewater generation of 50.7 gpm (73 acres x 1,000 gpd/acre).

The 10-inch sewer (approximately 803 linear feet) carries the combined northerly and southerly buildout flows to LS No. 7. The pipe is made of techite, a fiberglass spun pipe no longer used as it has been shown to lose its structural integrity with age. In addition, it does not have sufficient capacity to carry the estimated peak flows and therefore needs to be replaced with a 12-inch pipe. The pipe should be constructed using more appropriate material such as vitrified clay pipe (VCP) or cement mortar-lined ductile iron pipe. The construction area for this pipe is estimated at 50 feet x 900 feet (45,000 square feet), which would be centered on the existing sewer pipe.

LS No. 7, which was constructed in 1971, houses two submersible pumps, both with rated capacities of 200 gpm, but now operating in the 160 to 180 gpm range. The lift station is deficient in both operational and emergency storage, and it appears the pumps are also original, i.e. 46 years old. According to City staff, the pump motors are currently being repaired. It appears the pumps have sufficient capacity to carry the estimated buildout flows. However, if the pumps are in fact 46 years old, they are well past due for replacement. Also, the wetwell might need to be replaced to provide sufficient operational and emergency storage. The short (approximately 20 linear foot) 6-inch forcemain associated with LS No. 7 is a 46-year-old cast iron pipe suffering from age and corrosion and is in need of replacement, according to City staff.

The existing lift station/wetwell configuration is a buried, 21-foot deep, 6-foot diameter reinforced concrete pipe wetwell connected to a buried 7-foot diameter lift station housing two pumps. Increased storage could be provided by a new wetwell at the same depth, but with an increased internal area, possibly as large as 12 feet in diameter. However, the exact sizing would need to be determined as part of the wetwell/lift station pump design. Two new pumps could potentially be located in the existing lift station to replace the old pumps. The existing 6-inch forcemain should be replaced with a pipe of the same size, but made of a more corrosion-resistent material such as PVC or coated and lined ductile iron pipe. The construction area might be on the order of 75 feet x 75 feet (5,625 square feet), which would be centered on the existing wetwell/lift station.

2.3 Tertiary Wastewater Treatment and Recycled Water Production

In Alternative A, a tertiary wastewater treatment plant would be located either on (1) a 40-acre City-owned property just southwest of the 40-acre Airpark Property that is currently used for wastewater treatment plant biosolids removal, or (2) an 8-acre City-owned property just to the east of the 40-acre Airpark Property that was formerly used as a shooting range (see Figure 2 for these property locations). The tertiary treatment plant would treat secondary effluent re-directed from the 24-inch effluent pipeline to Title 22 recycled water standards suitable for landscape irrigation use. A treatment plant would provide recycled water to the Project and to the City Sports Complex (located just north of the 40-acre Airpark Property), which is currently irrigated with City potable (well) water, with sufficient recycled water production to completely offset the Project's potable water demand, i.e. potable water demand reduction at the Sports Complex equals potable water demand of the Project, which equals a net zero potable water demand.

The Tribe would be responsible for the construction of the tertiary treatment plant, and associated recycled water storage and conveyance facilities including (1) a seasonal storage reservoi (which might not be required as discussed in Section 2.3.1), (2) an operational storage reservoir, (3) a pump station, (4) atransmission pipeline to the Project site and to the Sports Complex, and (5) retrofitting distribution piping at the Sports Complex to distribute recycled water for irrigation use instead of potable well water.

It is understood that the City would operate the tertiary treatment plant, storage and transmission system, and will be responsible for future phases (expansions) of these facilities to accommodate recycled water use at other City locations.

The 40-acre City-owned property just to the southwest of the 40-acre Airpark Property is currently used for the disposal of wastewater treatment plant biosolids. Approximately 60 to 70 percent of City biosolids is disposed of here. As part of the disposal process this property is also irrigated with potable well water to facilitate crop growth. In addition to utilizing this property to locate tertiary treatment and recycled water storage and pumping facilities, the property could also be utilized to facilitate area storm drainage. However, in order to do so, an alternative biosolids disposal plan and site will need to be developed. This is currently being studied by the City.

The second potential site for locating tertiary treatment and recycled water storage and pumping facilities is at the 8-acre City-owned property just to the east of the 40-acre Airpark Property formerly used as a shooting range. A potential drawback for this site is that it is much smaller than the 40-acre biosolids property and it is also constrained by adjacent properties that could possibly limit future expansions of the tertiary treatment and recycled water storage and pumping facilities and associated facilities. However, it would be large enough for the facilities required to provide 100% of the recycled water demand of the Sports Park and still leave room for some future expansion.

2.3.1 Tertiary Treatment Plant & Recycled Water Storage/Pumping Types of Facilities

A tertiary treatment plant would treat secondary effluent received from the City's 24-inch effluent pipeline to California Title 22 effluent standards for unrestricted landscape irrigation use at the Project site and at the City Sports Complex. Future phases (expansions) of the treatment plant (not part of this project) could treat the secondary effluent to these same Title 22 standards or to even to higher standards.

A tertiary treatment plant that produces Title 22 effluent would include flow division, filtration, backwashing, surge control and disinfection of the wastewater. The filtration process must produce an effluent that meets the following requirements:

- Average daily turbidity less than 2 NTU (nephelometric turbidity unit)
- Effluent cannot exceed 5 NTU more than 5% of the time
- Effluent cannot exceed 10 NTU at any time
- If the influent to the filter exceeds 5 NTU for more than 15 minutes, or 10 NTU at any time, coagulant must be added

The disinfection process must meet the requirement of providing a chlorine residual that provides 450 milligram-minutes per liter (mg/L) under a minimal contact time of 90 minutes, which corresponds to a residual of 5 mg/L or less, or any process that achieves 5-log virus removal. Additionally, the median total coliform count in the disinfected water cannot exceed an average most probable number (MPN) of 2.2 per 100 milliliters (mL), and no more than one sample per month can read an MPN of over 23 per 100 mL.

Title 22 leaves the method of disinfection open to any process that can achieve 5-log virus removal, but suggests a chlorine disinfection method as one alternative. Another alternative is ultra-violet (UV) disinfection.

For chlorine disinfection, the chlorine definition is not rigid, as it can be met with either free or combined chlorine. Free chlorine is chlorine present as hypochlorous acid (HOCl) and hypochlorite ions (OCl-) while combined chlorine is present in the form of monochloramines, dichloramines, and trichloramines, which form in the presence of nitrogen and ammonia. Chloramines are significantly less effective at reducing virus levels than free chlorine.

While not directly addressed by Title 22, UV disinfection can achieve 5-log virus removal using a UV dose of 100 mJ/cm2. This is the recommended dose according to the National Water Research Institute (NWRI) in partnership with the Water Research Foundation (WRF) for disinfection of water filtered by non-membrane processes for reuse applications.

Unlike chlorine disinfection, UV disinfection does not depend on water quality parameters such as pH and nitrogen content. UV disinfection only depends on the UV transmittance of the filtered wastewater. A minimum UV transmittance of 55% is sufficient for 5-log virus removal using the recommended UV dose of 100 mJ/cm2.

Unlike drinking water systems, which require a chlorine residual for distribution, water treated for reuse only needs to be disinfected to remove enteric viruses present in the wastewater. Thus, UV disinfection can be a standalone disinfection process for recycled wastewater without any addition of chlorine.

A tertiary treatment plant can be a customized, traditional site construction, or it could be a prefabricated package plant with a carbon steel tertiary filter system and related components. In either case, the complete treatment facilities can be enclosed in a building, although it is common, especially in Southern California, not to put the prefabricated package plant in a building. A Package Tertiary Filter System as manufactured by Pollution Control Systems, Inc. (PCS) is discussed herein.

For a PCS Model TF-2-#-C filter plant model, secondary effluent will enter the filter through a flow division chamber where the flow will be divided equally to each of the two filter cells. Each filter cell will provide for the filtration of biological treatment plant effluent by the use of a dual media. This media contains both sand and anthracite to accomplish the sequential filtration and removal of suspended solids. The filter media is fully submerged to evenly distribute the water over the entire filter cell.

The water percolates through the filter cells and then into the area below the filter nozzle plates. From there, the filtrate flows through the backwash pipe, filtrate inlet valves, and backwash pumps and into the clearwell. The filtrate in the clearwell will then overflow into the disinfection chamber. The disinfection chamber will provide for the addition and mixing of a disinfectant with the filtrate. The disinfection chamber will also provide the required retention time to ensure the thorough disinfection of the filtrate. Disinfection can occur via a chlorine contact chamber or via UV disinfection units.

As the surface of the filter cells become covered with solids, the water level begins to rise. The rising wastewater level activates the air scouring and backwash cycles. The backwash cycle will use filtrate from the clearwell to backwash and dislodge the solids entrapped in the media. The media will be automatically air scoured and backwashed as air and clean filtrate water is pumped through the filter media from the bottom up, dislodging the retained solids.

The air scouring cycle will provide for the agitation of the solids that have been collected in the upper portion of the media. The rising backwash water overflows into the surge chamber. The surge chamber collects the backwash water and pumps it back to the head of the biological treatment system over several hours by using the flow control valves in the discharge line.

2.3.2 Tertiary Plant and Associated Recycled Water Facilities Sizing

The tertiary treatment plant and associated recycled water storage, pumping and conveyance facilities would be sized to provide recycled water to the Project and to the City Sports Complex, with sufficient recycled water production to completely offset the Project's potable water demand. As previously discussed, the Alternative A Project potable and recycled water demands are estimated at 64,672 gpd and 41,833 gpd, respectively. To completely offset the Project potable water demand, 64,672 gpd of recycled water would need to be provided to the Sports Complex to reduce the potable water demand by the same amount.

City potable water supply used to irrigate the Sports Complex averaged approximately 138,500 gpd between 2007 and 2013, dropping to approximately 91,500 in 2014, and then dropping to approximately 62,500 gpd in 2015. The City estimates the normal, non-drought impacted irrigation demand at the park to be the 138,500 gpd averaged between between 2007 and 2013, i.e. before the full impact of the drought. A recycled water supply of 64,672 gpd as required to completely offset the Project's potable water demand, i.e. recycled water supply equal to 100 percent of Project potable water demand, would equate to approximately 47 percent of the average normal irrigation demand at the park. This could be problematic to segregate recycled water distribution piping from potable water distribution piping as approximately half of the park would still require potable water irrigation, and safeguards would need to be implemented into the design to prevent cross connections between the two systems.

Irrigating a single property with both recycled water and potable water is rarely if ever done, and the Health Department might not approve such an operation since there is potential to fully irrigate the Sports Complex with recycled water. The City should consider negotiating a recycled water supply of 138,500 gpd to completely irrigate the Sports Complex, i.e. recycled water supply to the Sports Complex equal to 214 percent of Project potable water demand. In this study, recycled water supply was evaluated both as a 100 percent and a 214 percent offset of the Project's potable water demand for comparison purposes.

It is most common to size a tertiary plant to produce average recycled water demand and to then utilize a seasonal storage reservoir to store excess recycled water when demands are lower in the wintertime and to supply the higher summertime monthly demands. In this case, for a project with 100 percent offset tertiary supply to the Sports Complex, 89,821 gpd would be exterior irrigation (25,149 gpd for the Project and 64,672 gpd for the Sports Complex) and 16,684 gpd would be indoor urinal/toilet use for the Project (total recycled water demand of

106,505 gpd). As shown in Table 6, for a tertiary plant sized at 106,505 gpd, a seasonal storage reservoir sized at 8.2 MG is required.

Table 6. Required Seasonal Storage with 106,505 gpd Tertiary Plant Size

Month	Annual % Irrigation[(a)]	Irrigation Demand (mgd)	Indoor Demand (mgd)	Total Demand (mgd)	Plant Production (mgd)	Reservoir Storage Fill (MG)	Reservoir Storage Supply (MG)
Jan	2.4%	0.026	0.017	0.043	0.107	2.0	
Feb	3.8%	0.041	0.017	0.058	0.107	1.4	
Mar	7.0%	0.076	0.017	0.092	0.107	0.4	
Apr	9.3%	0.100	0.017	0.117	0.107		0.3
May	12.9%	0.139	0.017	0.156	0.107		1.5
Jun	14.5%	0.156	0.017	0.173	0.107		2.0
Jul	14.9%	0.160	0.017	0.177	0.107		2.2
Aug	13.4%	0.145	0.017	0.161	0.107		1.7
Sep	9.9%	0.107	0.017	0.124	0.107		0.5
Oct	6.3%	0.068	0.017	0.085	0.107	0.7	
Nov	3.4%	0.036	0.017	0.053	0.107	1.7	
Dec	2.2%	0.023	0.017	0.040	0.107	2.1	
Total	100%	0.090	0.017	0.107	0.107	8.2	-8.2

(a) Based on historical area monthly ETo data from California Irrigation Management Information System (CIMIS) Station 169

A PCS Model TF-2-35-C plant, which could produce 106,505 gpd of recycled water, would have plant dimensions of approximately 12 feet x 27.5 feet x 11 feet H.

Often times a seasonal storage reservoir is constructed as a lined, earthen opened reservoir, which also requires a relatively large surface area. However, an open-water reservoir, especially with a large surface area, would attract birds, and this might not be logistically appropriate given its proximity to the Porterville Airport. A floating cover could be used, but this would be a large surface area to cover. Alternatively, an enclosed concrete or streel reservoir structure, which could be below or above ground (or even partially buried), could be employed.

This is a rather unusual situation in that there is sufficient secondary effluent supply available from the 24-inch effluent pipeline to size the plant all the way up to the maximum-month demand, which would eliminate the need for a seasonal storage reservoir, but would increase the rated capacity of the treatment plant from 106,505 gpd to 177,000 gpd, which is the average demand in July .

A PCS Model TF-2-53-C plant, which could produce 177,000 gpd of recycled water, would have plant dimensions of approximately 12 feet x 48.5 feet x 11 feet H.

The cost to increase capacity of a package tertiary plant from 106,505 gpd to 177,000 gpd would be much less than the cost to construct an 8.2 MG seasonal storage reservoir associated with a 106,505 gpd plant. This incremental construction cost to increase from a 106,505 gpd plant to a 177,000 gpd plant is estimated at approximately $300,000, whereas the construction cost for a 8.2 MG earthen, lined reservoir (not including a floating cover) is estimated at approximately $1.4 million; and the construction cost of a steel or concrete above-ground reservoir structure is estimated at approximately $14.0 million. The increase in construction cost to employ a seasonal storage reservoir would outweigh any increased operation and maintenance costs associated with the larger treatment plant.

In addition to the treatment plant, a booster pump station will need to be constructed to pump treated recycled water to the Project and to the Sports Complex. For a large regional recycled water system, it is common to size the treatment plant (and seasonal storage reservoir if a seasonal storage reservoir is utilized) to produce, and the booster pump station to pump, the maximum day recycled water demand over a 24-hour period as a maximum pumping rate. Irrigation at user sites typically occur over a 9 to 12-hour window, i.e. between approximately 11:00 p.m. and 8:00 a.m for a 9-hour window. An opperational storage reservoir would then be located at each user site to store the 15 hours of supply from the treatment plant/seasonal storage reservoir during the portion of the day when there is no irrigation. A pump station would then be located at each user site to pump the flow from the operational storage reservoir during the irrigation window.

For a 177,000 gpd plant, a maximum day demand for the Project and Sports Complex of 219,700 gpd, and a 9-hour irrigation window, a 35,000 gallon operational storage reservoir and a 105 gpm pump would be required at the Project site, and a 105,000 gallon reservoir and a 305 gpm pump would be required at the Sports Complex. For this smaller scale recycled water project, it might be more practical to eliminate these small reservoirs and pump stations at the two user sites by increasing the pumping capacity of the treatment plant pump station from 155 gpm (maximum day) to 410 (peak hour), and locating a 140,000 gallon operational storage reservoir at the treatment plant site. This will increase the transmission main sizes to the two user sites by one pipe diameter to allow for delivery of peak hour flows.

If a seasonal storage reservoir is not constructed, then it would be appropriate to increase the operational storage from 140,000 gallons to say 200,000 gallons to provide operational and emergency storage for the plant itself. A connection can also be made to the potable water system via an air-gap connection to the operational storage reservoir to provide irrigation water in the event of an emergency, i.e. the plant is out of service for an extended period for repairs.

If the tertiary treatment plant was sized for a rated treatment capacity of 180,331 gpd, as required to increase average recycled water supply for the Sports Complex to 138,500 gpd and thereby reduce the City's potable water demand by more than just the net zero alternative, then a recycled water seasonal storage reservoir sized at approximately 15.0 MG would be required. However, due to the much lower cost to increase the package plant size from 180,331 gpd to 308,000 gpd (an estimated construction cost increase of approximately $500,000) compared to the cost to utilize a seasonal storage reservoir (an estimated construction cost of $2.3 million for a lined, earthen reservoir with no cover, and an estimated cost of $21.0 million for a steel or concrete reservoir tank), it appears that a seasonal storage reservoir is not economical.

For a 308,000 gpd plant (approximately 12 feet x 85 feet by 11 feet H), a maximum day demand for the Project and Sports Complex of 374,700 gpd, and a 9-hour irrigation window, a 54,000 gallon operational storage reservoir and a 180 gpm pump would be required at the Project site, and a 180,000 gallon reservoir and a 530 gpm pump would be required at the Sports Complex. As above, for this smaller scale project, it might be more practical to eliminate these small reservoirs and pump stations at the two user sites by increasing the pumping capacity of the treatment plant pump station from 260 gpm (maximum day) to 700 (peak hour), and locating a 235,000 gallon operational storage reservoir at the treatment plant site. This also might increase the transmission main size to the two user sites by approximately one pipe diameter. Also, it might be appropriate to increase the operational storage from 235,000 gallons to say 335,000 gallons (32 feet H x 42-foot diameter) to provide operational and emergency storage for the plant.

In addition to transmission mains from the treatment plant/operational strorage reservoir, recycled water distribution piping and appurtenances would need to be constructed at the Project site, and retrofitted (converting existing potable water piping for recycled water distribution) at the Sports Complex.

2.3.3 Recommendations

The following recommendations are made regarding the tertiary treatment plant and recycled water storage and conveyance system based on the preceding analysis that must focus on an initial system configuration, as potential future expansions of this system are unknown at this time:

- As it is problematic to only supply 47 percent (64,672 gpd) of the Sports Complex's normal irrigation demand of 138,500 gpd in order to obtain a 100 percent offset of the Project's potable water demand, i.e. approximately half of the Sports Complex would still be irrigated with potable water, it is recommended that the treatment and conveyance system be designed so the entire Sports Complex can be retrofitted and irrigated with recycled water, which would be equivalent to a 214 percent offset of the Project's potable water demand.

- It appears it will be more economical to increase the size of the tertiary treatment plant to treat and supply the maximum-month recycled water demand as opposed to average recycled water demand, as this eliminates the need for a more expensive seasonal storage reservoir.

- For recycled water supply to the Project and Sports Complex, it would be more economical to locate an operational storage reservoir at the treatment plant site with the treatment plant pumps and conveyance pipelines increased to supply peak hour demands for the Project and the Sports Complex, thereby eliminating smaller operational storage reservoirs and peak-hour pump stations at each of the two user sites.

- For reliability purposes, an air-gap connection between the City's existing potable water system and the recycled water operational storage reservoir at the treatment plant should be constructed. This will enable the City to supplement the Sports Complex irrigation system with potable water in the event of a treatment plant outage or provide additional supply if peak day recycled water demands are slightly higher than the treatment plant can provide.

3.0 ALTERNATIVE B: PROPOSED PROJECT WITH ONSITE WATER & WASTEWATER SYSTEMS

Alternative B is the same as Alternative A (Proposed Project) in that the Project would be developed on the 40-acre Airpark Property (see Figure 2), and proposed facilities include a casino, a 250-room hotel, food and beverage facilities, administrative space, a multi-purpose events center, a conference center, and associated parking and infrastructure. However, in Alternative B, water and wastewater systems would be constructed on site and there would be no connections to the City water and wastewater systems.

The potable water demands, recycled water demands, and wastewater generation are the same as in Alternative A (see Table 1, 2, and 3, respectively). As discussed in more detail later in this section, a package wastewater treatment plant with tertiary treatment would be constructed on-site to produce Title 22 recycled water that would be used at the Project for exterior landscape irrigation.

3.1 Project Potable Water Supply

In Alternative B, no connection would be made to the City's water system, and instead, an independent water system would be constructed on the Project site. The system would include two potable water supply wells; water disinfection facilities; a storage tank; and a booster pump station.

The Tule Groundwater Subbasin is unadjudicated. The Tribe could construct new wells and appurtenant facilities on the 40-acre Airpark Property to supply potable water for the Project. Fairly recently, the City constructed an 800-foot deep well at the fairgrounds that produces 300 to 400 gpm of potable water (with chlorination). It is feasible that a similar well could be drilled at the Project property to provide all Project water demands through maximum-day demand, which is estimated at 84 gpm. Also, once the drought ends and the groundwater table increases, well groundwater production could increase.

Typically, storage is required to supply peak-hour demands (operational storage) and fire-flow demands (fire storage). The well should be of sufficient capacity to provide peak-hour demand, which is estimated at 124 gpm, but the required fire flow for the property might is estimated be on the order of 4,000 gpm for a 4-hour duration (with fire sprinklers), and a storage tank would need to be constructed at the property to supply the required fire flow, which would be determined by the fire department after the buildings have been designed.

If the required fire flow was determined to be 4,000 gpm for 4 hours, then the required fire storage would be 960,000 gallons. The storage tank would also provide operational storage (approximately 18,000 gallons at 15 percent of maximum day demand), and some level of emergency storage in the event the well or another supply system element was out of service.

The amount of emergency storage required is dependent on the reliability of a backup water supply source when the primary source, i.e. the well, is out of service. As this would be an independent system, with no connection to the City's water supply system, a second well is required to back up the first well, as wells are often taken out of service for maintenance, periodic rehabilitation, and unexpected repairs. With a second well as backup water supply, three days of average day water supply for emergency storage would equate to 194,000 gallons. Total storage for the tank that would carry operational, fire protection (4,000 gpm at 4-hours estimated), and emergency storage would then be approximately 1.2 MG.

The wells would fill the site storage tank, and a pump station would need to be constructed with a fire pump sized to provide the required fire flow; and with other smaller pumps to supply normal project water demands up to peak hour demand.

Groundwater quality in the Porterville area is generally good, however, some wells require treatment. City wells adjacent to the Porter Slough have been closed due to percloroethylene (PCE) contamination, and a few City wells in the downtown area and eastern portion of town have nitrate problems. The two wells at the Project Property would need to be drilled (located) a minimum 100 feet apart so that the well drawdowns will not conflict and impede production. Still the wells would be fairly close together, and any contamination plume or water quality problem that takes out one well will most likely take out both wells until the issue can be remediated. For example, as reported in the City's 2010 UWMP, wells adjacent to Porter Slough were closed due to percloroethylene (PCE) contamination, and a few wells in the downtown area and eastern portion of the City have experienced nitrate water quality problems.

A large amount of water will be stored and not used on a normal basis, i.e. fire-protection and emergency storage, and the water quality of stored, uncirculated water deteriorates with time. Mechanical mixing or other methods might need to be employed to help maintain stored water quality.

Two well sites are estimated in the northwest corner of the Property as shown on Figure 5:

<u>Well Site No. 1: Estimated 125 feet x 110 feet site with the following facilities</u>:

- Well No. 1
- 1.2 MG Reservoir (80-foot diameter x 32 feet H)
- Pump Station Building (25 feet x 25 feet x 10 feet H)
- Disinfection Facilities (under 10 feet x 15 feet x 8 feet H shade structure)

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FIGURE 5 - SITE PLAN ALTERNATIVE 'B' - PROPOSED RESORT WITH ON-SITE WATER & WASTEWATER SYSTEMS

N

0' 70' 140' 280'
SCALE: 1" = 140'-0"

Well Site No. 2: Estimated 30 feet x 30 feet site with the following facilities:

- Well No. 2

A connection to the City's water system is recommended relative to constructing an independent water system on the Project Property for the following reasons:

- The City has a large number of wells located throughout the system, with numerous reservoirs and transmission mains, and a connection to the City's system would provide much greater supply redundancy and reliability
- With an independent system, a large storage volume would be required for fire protection and for emergency storage, which could result in water quality problems
- An independent system would require many system components, resulting in high capital and operation and maintenance (O&M) costs

3.2 Wastewater Treatment and Disposal and Recycled Water Supply

In Alternative B, a package wastewater treatment plant with teriary treatment; recycled water storage and conveyance facilities to provide for Project irrigation demands; and wastewater disposal facilities would be constructed on the 40-acre Airpark Property. The complete treatment facilities can be enclosed in a building with appropriate architecture; or just the tertiary filters and disinfection facilities can be enclosed in a building.

3.2.1 Package Wastewater Treatment Plants

Package plants are pre-manufactured treatment facilities used to treat wastewater in small communities or on individual properties. Package plants can be designed to treat flows as low as 2,000 gpd or as high as 500,000 gpd, although they more commonly treat flows of 10,000 to 250,000 gpd. Three of the most common types of package plants are extended aeration plants, sequencing batch reactors, and oxidation ditches, which are biological aeration processes.

Extended Aeration Plant

The extended aeration process is one modification of the activated sludge process which provides biological treatment for the removal of biodegradable organic wastes under aerobic conditions. Air may be supplied by mechanical or diffused aeration to provide the oxygen required to sustain the aerobic biological process. Mixing must be provided by aeration or mechanical means to maintain the microbial organisms in contact with the dissolved organics.

Extended aeration package plants consist of a series of connected steel or concrete compartments typically consisting of the following when treated tertiary Title 22 effluent is the effluent goal:

- Comminutor/inlet bar screen
- Flow equalization chamber
- Sludge holding/digestion tank
- Aeration chamber
- Hopper-bottom clarifier

- Tertiary-dual media sand filters (for Title 22 effluent)
- Disinfection chlorine contact chamber

If the system is small enough, the entire system will arrive as one unit that is ready to be installed. If the system is larger, the clarifier, aeration chamber, and chlorine tank are delivered as separate units, which are then assembled on-site. A package extended aeration system is sized based on the average volume of wastewater produced within a twenty-four hour period. Although provisions are made for some peaking, a flow equalization system is typically necessary to prevent overloading of the system from inconsistent flow rates in the morning and evening. Equalization allows the wastewater to be delivered to the treatment processes at more manageable flow rates.

Advantages

- Plants are easy to operate, as many are manned for a maximum of two or three hours per day.
- Extended aeration processes are often better at handling organic loading and flow fluctuations, as there is a greater detention time for the nutrients to be assimilated by microbes.
- Systems are easy to install, as they are shipped in one or two pieces and then mounted on onsite concrete pad(s), above or below grade.
- Systems are odor free, can be installed in most locations, have a relatively small footprint, and the site can be landscaped to blend in with the surrounding area.
- Extended aeration systems have a relatively low sludge yield due to long sludge ages, can be designed to provide nitrification, and do not require a primary clarifier.

Disadvantages

- Extended aeration plants do not achieve denitrification or phosphorus removal without additional unit processes.
- Flexibility is limited to adapt to changing effluent requirements resulting from regulatory changes.
- A longer aviation period requires more energy.
- Systems require a larger amount of space and tankage than other "higher rate" processes, which have shorter aeration detention times.

<u>Sequencing Batch Reactors</u>

A sequencing batch reactor (SBR) is a variation of the activated sludge process. As a fill and draw or batch process, all biological treatment phases occur in a single tank. This differs from the conventional flow through activated sludge process in that SBRs do not require separate tanks for aeration and sedimentation. SBR systems contain either two or more reactor tanks that are operated in parallel, or one equalization tank and one reactor tank. The type of tank used depends on the wastewater flow characteristics. While this setup allows the system to accommodate continuous influent flow, it does not provide for disinfection or holding for aerated sludge. Tertiary sand filters are utilized to produce Title 22 recycled water effluent.

The influent flow first goes through a screening process before entering the SBR. The waste is then treated in a series of batch phases within the SBR to achieve the desired effluent concentration. The sludge that is wasted from the SBR moves on to digestion and eventually to solids handling, disposal, or beneficial reuse. The treated effluent then moves to disinfection. An equalization tank is typically needed before the disinfection unit in batch SBRs in order to store large volumes of water. If the flow is not equalized, a sizable filter may be necessary to accommodate the large flow of water entering the disinfection system. SBR systems typically have no primary or secondary clarifiers as settling takes place in the SBR.

Advantages

- SBRs can consistently perform nitrification as well as denitrification and phosphorous removal.
- SBRs have large operational flexibility.
- Since all the unit processes are operated in a single tank, there is no need to optimize aeration and decanting to comply with power requirements and lower decant discharge rates.
- Significant reductions in nitrate nitrogen can occur by incorporating an anoxic cycle in the system.
- SBRs have little operation and maintenance problems.
- Systems require less space than extended aeration plants of equal capacity.
- SBRs can be manned part time from remote locations, and operational changes can be made easily.

Disadvantages

- It is hard to adjust the cycle times for small communities.
- Post equalization may be required where more treatment is needed.
- Sludge must be disposed frequently.
- Specific energy consumption is high.

Oxidation Ditches

An oxidation ditch, a modified form of the activated sludge process, is an aerated, long term, complete mix process. Many systems are designed to operate as extended aeration systems. Typical oxidation ditch treatment systems consist of a single or multi-channel configuration within a ring, oval, or horseshoe-shaped basin. Horizontally or helically mounted aerators provide aeration, circulation, and oxygen transfer in the ditch.

Raw wastewater is first screened before entering the oxidation ditch. Depending on the system size and manufacturer type, a grit chamber may be required. Once inside the ditch, the wastewater is aerated with mechanical surface or submersible aerators that propel the mixed liquor around the channel at velocities high enough to prevent solids deposition. The aerator ensures that there is sufficient oxygen in the fluid for the microbes and adequate mixing to ensure constant contact between the organisms and the food supply.

Oxidation ditches tend to operate in an extended aeration mode consisting of long hydraulic and solids retention times which allow more organic matter to break down. Treated sewage moves to the settling tank or final clarifier, where the biosolids and water separate. Wastewater then moves to other treatment processes while sludge is removed.

Advantages

- Systems are well-suited for treating typical domestic waste, have moderate energy requirements, and work effectively under most types of weather.
- Oxidation ditches provide an inexpensive wastewater treatment Alternative with both low operation and maintenance costs and operational needs.
- Systems can be used with or without clarifiers, which affects flexibility and cost.
- Systems consistently provide high quality effluent.
- Oxidation ditches have a relatively low sludge yield, require a moderate amount of operator skill, and are capable of handling shock and hydraulic loadings.

Disadvantages

- Oxidation ditches can be noisy due to mixer/aeration equipment, and tend to produce odors when not operated correctly.
- Biological treatment is unable to teat highly toxic waste streams.
- Systems have a relatively 1arge footprint.
- Systems have less flexibility should regulations for effluent requirements change.

Recommendation

An extended aeration activated sludge plant is the most common package wastewater plant employed and is well suited for the flows estimated for the casino resort project. The system can be shipped as a single unit ready to be installed or the treatment compartments can be delivered as separate units and then assembled on-site. The plants are easy to operate and are odor free. The plants have a relatively small footprint, and can be landscaped to match the surrounding area.

An extended aeration package wastewater treatment plant, Model PP-70-ES as manufactured by Pollution Control Systems, Inc. (PCS), sized for for the average flows estimated for the project (77,606 gpd), would have a plant footprint of 79 feet x 24 feet. It could be located in a building with a footprint of approximately 92 feet x 48 feet. A package tertiary filter system with disinfection facilities, PCS Model TF-2-25, also sized for 77,606 gpd, would have a footprint of 20 feet x 12 feet. It could be located in a building with a footprint of approximately 33 feet x 24 feet. Housing the treatment equipment in buildings might make sense considering the proximity of the plants to the casino/resort.

It is recommended that a more detailed study be conducted prior to preliminary design to fully analyze and determine the most effective type of package plant to employ considering wastewater characteristics, sludge production, capital cost, operation and maintenance requirements and costs, and other issues.

3.2.2 Wastewater and Sludge Disposal

Although average recycled water demand for the Project (41,833 gpd) is less than average wastewater flow into the plant (77,606 gpd), the tertiary plant should be sized at 77,606 gpd, which is the same size as the primary and secondary treatment components, in order to eliminate the need for seasonal storage and reduce the volume of operational storage. For a peak-hour recycled water demand of 136.8 gpm, and a tertiary plant sized at 77,606 gpd (53.9 gpm), an operational storage tank with a volume of 48,500 gallons, and a pump sized at 136.8 gpm would be required to augment recycled water supply during the peak irrigation window.

There will be days during the year, primarily in the winter and fall, when irrigation demand will be zero and the only recycled water demand will be the 16,984 gpd for indoor recycled water use. When this low recycled water demand occurs, 60,922 gpd of secondary effluent (77,606 gpd – 16,684 gpd) from the package treatment plant will need to be disposed of on site (maximum on-site disposal). It is common, to construct open earthen reservoirs to percolate the secondary effluent into the soil with some effluent evaporated.

The soil at the site is Exeter Loam, which has a relatively low reported permeability rate of approximately 2.0 inches per hour. a Using this permeability rate , a summer-time evaporation rate of 0.02 feet/day, and a safety factor of 2.0, a percolation basin area of 0.09 acres is estimated. This equates to two percolation basins, each with surface perimeters of 45-feet square. In estimating a suitable berm surrounding the two basins (15-foot top width with 2 to 1 side slopes), the total perimeter of the two basins including the berms is estimated at 125 feet x 195 feet or approximately 0.6 acres. However, there may not be sufficient land to adequately locate and seclude the basins on the 40-acre property, and large open-water basins attract birds, which may not be appropriate this close to the airport.

As an alternative solution, an underground leach field could be constructed below the parking lot to disperse the wastewater through plastic leaching chambers that typically provide 4 square feet per linear foot (sf/lf) for standard units and 5 sf/lf for high capacity units (conventional design). Based on the relatively low percolation rate of 2.0 inches per hour for Exeter Loam, a large leach field area of 2.3 acres is estimated based on an application rate of 0.6 gpd/acre .

Sludge from the treatment plant will need to be dewatered before it can be transported off-site, either to areas that can use the sludge for crop fertilizer or to a landfill for disposal. If sludge drying beds were to be used for sludge dewatering then a surface area (not including berms) of approximately 0.17 acres would be required. However, considering the close proximity the drying beds would have to the resort, mechanical dewatering with centrifuges or belt filter presses might be preferred to minimize potential odor issues. Two wastewater/recycled water processing sites are estimated in the southwest corner of the Property as shown on Figure 5:

<u>Wastewater/Recycled Water Site No. 1: 80 feet x 170 feet site with the following facilities</u>:

- Primary/Secondary Package Wastewater Treatment Plant (50 feet x 90 feet x 11 feet H)
- Tertiary Wastewater Treatment Plant (33 feet x 24 feet x 11 feet H)
- Recycled Water Pump Station Building (25 feet x 25 feet x 10 feet H)
- 27,000 Gallon Recycled Water Tank (17-foot diameter x 16 feet H)

Wastewater Site No. 2: Estimated 35 feet x 35 feet site with the following facilities:

- Sludge Dewatering Building (25 feet x 25 feet x 10 feet H)

4.0 ALTERNATIVE C: REDUCED INTENSITY

The site plan for Alternative C on the 40-acre Airpark Property is shown on Figure 6. The facilities included in Alternative C would be similar to the facilities proposed for Alternatives A and B, but at a smaller scale. The casino and food and beverage facilities would be smaller, and the multi-purpose events center would be eliminated. The hotel would stay the same size at 250 rooms. The facilities included in Alternative C and estimated potable water demands are shown in Table 7. The same or very similar unit demand factors used in Alternatives A and B are used in Alternative C; and the same vacancy and peaking factors are used.

Exterior landscape irrigation would occur with recycled water either produced at a tertiary plant located on one of two adjacent properties or from a package wastewater treatment plant with tertiary treatment that woulkd be located on the 40-acre Airpark Property. There would be no irrigation at the Property with potable water.

Estimated indoor, outdoor, and total recycled water demands on the 40-acre Airpark Property are shown in Table 8. Relative to Alternative A and B, the landscape area is estimated to increase from 9.5 acres to 10.5 acres due to reduced building area with recycled water use increasing proportionately (approximately 10.5%). All other recycled water usage parameters discussed and presented for Alternatives A and B (including indoor recycled water use for urinal/toilet flushing) remain the same for Alternative C. Estimated average and peak wastewater flows for facilities proposed for Project Alternative C are shown in Table 9. The same or very similar unit wastewater flow factors used in Alternatives A and B are used in Alternative C; and the same vacancy and peaking factors are used.

4.1 Alternative C with Alternative A Water and Wastewater System Planning

Relative to Alternatives A and B, Alternative C has reduced facilities, and as a result, reduced potable water demands and wastewater flows, although slightly higher recycled water demands due to reduced building area. Alternative C can have the same water and wastewater systems as Alternative A:

- Untreated sanitary wastewater would be conveyed to the City's Wastewater Treatment Plant (WWTP) through a series of existing (and potentially upgraded) gravity sewers, lift stations, and forcemains for primary and secondary treatment.
- A connection would be made to the City's potable water system to provide all potable water demands for the Project.
- A tertiary wastewater treatment plant would be constructed at an adjacent property to treat secondary effluent re-directed from the 24-inch effluent pipeline to Title 22 recycled water standards suitable for landscape irrigation use. A treatment plant would provide recycled water to the Project and to the City Sports Complex, currently irrigated with City potable water, with sufficient recycled water production to completely offset the Project's potable water demand.

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FIGURE 6 - SITE PLAN ALTERNATIVE 'C' - REDUCED INTENSITY CASINO AND HOTEL

Table 7. Estimated Potable Water Demands for Alternative C – Reduced Intensity

Facility	Building Area (sf)	Seats	Rooms	Unit Water Use (gpd)	Average Water Demand[(a)] (gpd)	Max Day Water Demand[(b)] (gpd)	Peak Hr Water Demand[(c)] (gpm)
Casino		1,259		15	14,164	26,439	33.0
Hotel - Standard Room			230	70	12,075	22,540	28.2
Hotel - Two-Bay Suite			20	85	1,275	2,380	3.0
Fitness Center	900			0.63	425	794	1.0
Specialty Restaurants		66		47.5	2,351	4,389	5.5
Café		100		32.5	2,438	4,550	5.7
24-Hr Bakery/Deli Counter		15		47.5	534	998	1.2
Food Court		125		32.5	3,047	5,688	7.1
Sports Bar & Grill		100		32.5	2,438	4,550	5.7
Retail	1,000			0.05	38	70	0.1
Conference Center	19,900			0.065	970	1,811	2.3
Fire Station [(d)]					350	490	0.6
Pool	7,500			0.50	3,750	7,875	-
Total					**43,854**	**82,573**	**93.4**

(a) Average day demand assumes 75% occupancy, i.e. a demand factor of 0.75
(b) Max day demand for interior water use = 1.4 x average water demand; 100% occupancy assumed, i.e. max day demand = 1.87 x average day demand (1.4/0.75); max day demand for exterior (pool) water use = 2.1 x average water demand based on historical monthly ETo data for the Porterville area
(c) Peak hour demand = 1.8 x max day demand and occurs in the morning or evening; 100% occupancy
(d) Average water demand based on normal 10-person crew at 50 gpd/person. Peak demands based on 10-person crew at 50/gpd with 1.4 (max day) and 1.8 (peak hour) peaking factors

4.1.1 Potable Water Supply

The Alternative C Project could connect to the City's water system. Project potable water demands would be approximately 32 percent less than the potable water demands in Alternatives A and B, as would the operational and emergency storage requirements. The fire flow demand could also possibly be reduced due to a reduction in facilities and patrons. Once the buildings are designed and the fire department confirms a required fire flow, a hydraulic analysis should be conducted as part of preliminary design to determine the need for a booster pump station. A booster pump station would be required if a residual pressure of at least 20 psi could not be provided at the stipulated fire flow.

Table 8. Estimated Recycled Water Demands for Alternative C – Reduced Intensity

Facility	Building Area (sf)	Seats	Rooms	Unit Water Use (gpd)	Average Water Demand[(a)] (gpd)	Max Day Water Demand[(b)] (gpd)	Peak Hr Water Demand[(c)] (gpm)
Indoor Toilet & Urinal RW Use							
Casino		1,259		5	4,721	8,813	11.0
Hotel - Standard Room			230	20	3,450	6,440	8.1
Hotel - Two-Bay Suite			20	25	375	700	0.9
Fitness Center	900			-	-	-	-
Specialty Restaurants		66		2.5	124	231	0.3
Café		100		2.5	188	350	0.4
24-Hr Bakery/Deli Counter		15		2.5	28	53	0.1
Food Court		125		2.5	234	438	0.5
Sports Bar & Grill		100		2.5	188	350	0.4
Retail	1,000			-	-	-	-
Conference Center	19,900			0.065	970	1,811	2.3
Fire Station[(d)]					150	210	0.3
Indoor Subtotal					10,428	19,395	24.2
Irrigation (10.5 Net Acres)[(e)]	457,380			0.061	27,796	58,371	108.2
Total					**38,224**	**77,766**	**132.5**

(a) Average day demand assumes 75% occupancy, i.e. a demand factor of 0.75
(b) Max day demand for interior water use = 1.4 x average water demand; 100% occupancy assumed, i.e. max day demand = 1.87 x average day demand (1.4/0.75); max day demand for exterior (pool) water use = 2.1 x average water demand based on historical monthly ETo data for the Porterville area
(c) Indoor peak hour demand = 1.8 x max day demand and occurs in the morning or evening; 100% occupancy
(d) Average water demand based on normal 10-person crew at 50 gpd/person. Peak demands based on 10-person crew at 50/gpd with 1.4 (max day) and 1.8 (peak hour) peaking factors
(e) Irrigation based on Model Water Efficient Landscape Ordinance (MWELO):
ETAF (Evapotranspiration Adjustment Factor) = 0.67 for efficient recycled water irrigation
MAWA (Maximum Applied Water Allowance) in gal/yr = ETo x 0.62 x ETAF x Area in square feet
ETo (evapotranspiration) for Porterville = 53.4 inches (historical annual average)
Max day demand for exterior water use = 2.1 x average water demand
Exterior (irrigation) peak hour demand = 2.67 x max day dema

Table 9. Estimated Wastewater Flows for Alternative C - Reduced Intensity

Facility	Building Area (sf)	Seats	Rooms	Unit WW Flow (gpd)	Average Wastewater Flow[(a)] (gpd)	Peak Wastewater Flow[(b)] (gpd)
Casino		1,259		20	18,885	35
Hotel - Standard Room			230	90	15,525	29
Hotel - Two-Bay Suite			20	110	1,650	3
Fitness Center	900			0.63	425	1
Specialty Restaurants		66		50	2,475	5
Café		100		35	2,625	5
24-Hr Bakery/Deli Counter		15		50	563	1
Food Court		125		35	3,281	6
Sports Bar & Grill		100		35	2,625	5
Retail	1,000			0.05	38	0
Conference Center	19,900			0.13	1,940	4
Fire Station [(c)]					**500**	**1**
Total					**50, 532**	**93**

(a) Average wastewater flow assumes 75% occupancy, i.e. a demand factor of 0.75
(b) Peak wastewater flow = 2.0 x average water demand; 100% occupancy assumed , i.e. peak wastewater flow = 2.67 x average wastewater flow (2.0/0.75)
(c) Average wastewater flow based on normal 10-person crew at 50 gpd/person. Peak wastewater flow based on 10-person crew at 50/gpd with 2.0 peaking factor

4.1.2 Wastewater Conveyance, Treament and Disposal

Project wastewater flows would be approximately 35 percent less than the wastewater flows in Alternatives A and B. Wastewater generated at the 40-acre Project site as well as from the Sports Complex, OHV Park and the industrial land just south of the Project site, currently occupied by Edison, is conveyed to the City's Wastewater Treatment Plant located at 1333 West Grand Avenue in the center of the City through a series of collection and trunk sewer, lift stations, and forcemains as shown on Figure 3. A more detailed map of the existing wastewater conveyance system at the 40-acre Project area and the immediate surrounding area, as well as the 24-inch effluent pipeline, and potential tertiary treatment and recycled water storage and conveyance facilities are shown on Figure 4.

The same wastewater system condition and capacity issues relating to conveying Alternative A wastewater flows still apply for conveying Alternative C flows:

- LS No. 12 is deficient in both operational and emergency storage, and should have two pumps instead of one pump to enable efficient, and more importantly, reliable operation.

- The 10-inch sewer that carries the combined northerly (Project and Sports Complex) and southerly (Edison/industrial) buildout flows to LS No. 7 needs to be replaced because it is made of techite. Also, the estimated flows exceed the capacity of the sewer even with the reduced Alternative C flows.

- It appears the LS No. 7 pumps are the original pumps and are 46 years old, and if so, need to be replaced. The lift station is also deficient in both operational and emergency storage, and it appears the entire station might need to be reconstructed.

- The short (approximately 20 linear feet) 8-inch forcemain associated with LS No. 7 is 46-year-old cast iron pipe suffering from age and corrosion and is in need of replacement according to City staff.

4.1.2 Tertiary Treatment Plant & Recycled Water Storage/Pumping Facilities

A tertiary treatment plant would treat secondary effluent received from the City's 24-inch effluent pipeline to California Title 22 effluent standards for unrestricted landscape irrigation at the Project site and at the City Sports Complex. Relative to Alternative A and B, the landscape area is estimated to increase from 9.5 acres to 10.5 acres due to reduced building area with average recycled water use for landscape irrigation increasing proportionately from 25,149 gpd to 27,796 gpd (approximately 10.5 percent).

Relative to Alternatives A and B, recycled water supply to the Sports Complex would decrease from 64,672 gpd to 43,854 gpd for 100 percent Project potable water supply offset. This would correlate with supplying the Sports Complex with approximately 32 percent of its normal (2007 – 2013 average) irrigation demand of 138,500 gpd. The overall recycled water demand would decrease by 22.9 percent, and the sizing of tertiary treatment and recycled water conveyance facilities presented in Section 2.3 for Alternative A would decrease by a similar amount.

To supply the Sports Complex with its normal irrigation demand of 138,500 gpd, the Project potable water demand offset would be 316 percent, i.e. recycled water supply to the Sports Complex would be 216 percent greater than the Project's potable water demand. The overall recycled water demand would decrease by only 2.0 percent, and the sizing of tertiary treatment and recycled water conveyance facilities presented in Section 2.3 for Alternative A would not change significantly, if at all.

4.2 Alternative C with Alternative B Water and Wastewater System Planning

Relative to Alternatives A and B, Alternative C has reduced facilities, and as a result, reduced potable water demands and wastewater flows, although slightly higher recycled water demands due to reduced building area. Alternative C can have the same water and wastewater system planning as Alternative B: water and wastewater systems would be constructed on site and there would be no connections to the City water and wastewater systems.

4.2.1 Potable Water Supply

In Alternative B, no connection would be made to the City's water system, and instead, an independent water system would be constructed on the Project site. The system would include two potable water supply wells; water disinfection facilities; a storage tank; and a booster pump station. As discussed previously, there is an 8-inch water main loop within the property constructed in 1995, which should be of sufficient capacity and condition. However, some of the piping may need to be extended to better accommodate Project buildings.

In Alternative C, Project potable water demands would be approximately 32 percent less than the potable water demands in Alternatives A and B as would the operational and emergency storage requirements. However, two wells would still be required, with one well providing backup potable water supply in case the first well is out of service. Although the well capacity can be slightly less to provide the lower demands asscoiated with Alternative C, the wells would still need to be drilled to the same depth. The wells would still have the same equipment and any reduction is sizing would be negligible. If the fire flow requirement was reduced by the fire department from say 4,000 gpm for 4 hours to 3,000 gpm for 3 hours due to a reduction in building square footage and potential patrons, then the total storage could be reduced from 1.2 MG in Alternative A to 680,000 gallons in Alternative C.

Two well sites are estimated in the southeast corner of the Project site as shown on Figure 6:

<u>Well Site No. 1: Estimated 125 feet x 110 feet site with the following facilities</u>:

- Well No. 1
- 1.2 MG Reservoir (80-foot diameter x 32 feet H) (assuming fire flow requirement stays the same)
- Pump Station Building (25 feet x 25 feet x 10 feet H)
- Disinfection Facilities (under 10 feet x 15 feet shade structure x 8 feet H)

<u>Well Site No. 2: Estimated 30 feet x 30 feet site with the following facilities</u>:

- Well No. 2

4.2.2 Wastewater Treatment and Disposal and Recycled Water Supply

An extended aeration package wastewater treatment plant, Model PP-55-ES as manufactured by Pollution Control Systems, Inc. (PCS), sized for for the average flows estimated for the project (50,532 gpd), would have a footprint of 65 feet x 24 feet. It could be located in a building with a footprint of approximately 78 feet x 48 feet. A package tertiary filter system with disinfection facilities, PCS Model TF-2-18-C, also sized for 50,532 gpd, would have a footprint of 14 feet x 12 feet. It could be located in a building with a footprint of approximately 27 feet x 24 feet.

Recycled water production would not be sufficent to supply all demands from May through August and a seasonal storage reservoir sized at 780,000 gallons would be required. For a peak-hour recycled water demand of 132.5 gpm, and a tertiary plant sized at 50,532 gpd (35.1 gpm), an operational storage volume of 31,600 gallons, and a pump sized at 132.5 gpm would be required to augment recycled water supply during the peak irrigation window. The operational storage could be included in the seasonal storage reservoir.

There will be days during the year, primarily in the winter and fall, when irrigation demand will be zero and the only recycled water demand will be the 10,428 gpd for indoor recycled water use. When this low recycled water demand occurs, 40,104 gpd of secondary effluent (50,532 gpd – 10,428 gpd) from the package treatment plant will need to be disposed of on site (maximum on-site disposal). Although there is enough unused land in the northeast corner of the Airpark Property to construct two open percolation basins (covering approximately 0.55 acres including berms) to disperse the secondary effluent, this is not considered a viable solution considering the close proximity the basins would have to the casino/resort.

As an alternative solution, an underground leach field could be constructed below the parking lot to disperse the wastewater through plastic leaching chambers. However, based on the relatively low percolation rate of 2.0 inches per hour for Exeter Loam, a large leach field area of 1.9 acres is estimated based on an application rate of 0.6 gpd/acre .

Sludge from the treatment plant will need to be dewatered before it can be transported off-site. Mechanical dewatering with centrifuges or belt filter presses with the equipment located in a building is recommended as opposed to sludge drying beds.

Two wastewater/recycled water processing sites are estimated in the northeast corner of the Project site as shown on Figure 6:

<u>Wastewater/Recycled Water Site No. 1: Estimated 100 feet x 195 feet site with the following facilities</u>:

- Primary/Secondary Package Wastewater Treatment Plant (50 feet x 80 feet x 11 feet H))
- Tertiary Wastewater Treatment Plant (27 feet x 24 feet x 11 feet H))
- Recycled Water Pump Station Building (25 feet x 25 feet x 10 feet H)
- 780,000 Gallon Recycled Water Tank (64-foot diameter x 32 feet H)

<u>Wastewater Site No. 2: Estimated 35 feet x 35 feet site with the following facilities</u>:

- Sludge Dewatering Building (25 feet x 25 feet x 10 feet H))

5.0 ALTERNATIVE D: NON-GAMING

As shown on Figure 7, Alternative D would utilize the same 40-acre AirportPproperty, but the casino and the multi-purpose events center would be eliminated; the conference center would be slightly smaller; and the food and beverage facilities would be greatly reduced; which would result in lower water demands and wastewater flows relative to Alternatives A, B and C.

Characteristic quantities (units) for building area, seats, and rooms are multiplied by tailored unit water use factors (based on a range of factors commonly used with these units) and then multiplied by an average annual occupancy for these facilities of 75% (occupancy factor of 0.75) to develop average water demands in Table 10. The same vacancy and peak-water use factors used in Alternatives A, B, and C are used for Alternative D.

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FIGURE 7 - SITE PLAN ALTERNATIVE 'D' - NON-GAMING HOTEL AND CONFERENCE

Table 10. Estimated Potable Water Demands for Alternative D – Non-Gaming

Facility	Building Area (sf)	Seats	Rooms	Unit Water Use (gpd)	Average Water Demand[(a)] (gpd)	Max Day Water Demand[(b)] (gpd)	Peak Hr Water Demand[(c)] (gpm)
Hotel - Standard Room	-	-	230	70	12,075	22,540	28.2
Hotel - Two-Bay Suite	-	-	20	85	1,275	2,380	3.0
Fitness Center	900			0.63	425	794	1.0
Specialty Restaurants	-	66	-	47.5	2,351	4,389	5.5
Café	-	100	-	32.5	2,438	4,550	5.7
Retail	250	-	-	0.05	9	18	0.0
Conference Center	19,900	-	-	0.065	970	1,811	2.3
Pool	7,500	-	-	0.50	3,750	7,875	-
Total	**-**	**-**	**-**	**-**	**23,294**	**44,356**	**45.6**

(a) Average day demand assumes 75% occupancy, i.e. a demand factor of 0.75
(b) Max day demand for interior water use = 1.4 x average water demand; 100% occupancy assumed, i.e. max day demand = 1.87 x average day demand (1.4/0.75); max day demand for exterior (pool) water use = 2.1 x average water demand based on historical monthly ETo data for the Porterville area
(c) Peak hour demand = 1.8 x max day demand and occurs in the morning or evening; 100% occupancy

Exterior landscape irrigation would occur with recycled water either produced at a tertiary plant located on one of two adjacent properties or from a package wastewater treatment plant with tertiary treatment that would be located on the 40-acre Airpark Property. There would be no irrigation at the property with potable water.

Estimated indoor, outdoor, and total recycled water demands on the 40-acre Airpark Property are shown in Table 11. Relative to Alternative A and B, it is estimated landscape area will decrease from an estimated 9.5 acres to 5.0 acres, with recycled water use decreasing proportionately (approximately 47.4 percent). All other recycled water usage parameters discussed and presented for Alternatives A and B (including indoor recycled water use for urinal/toilet flushing) remain the same for Alternative D.

Estimated average and peak wastewater flows for facilities proposed for Project Alternative C are shown in Table 12. The same or very similar unit wastewater flow factors used in Alternatives A and B are used in Alternative D; and the same vacancy and peaking factors are used.

Table 11. Estimated Recycled Water Demands for Alternative D – Non-Gaming

Facility	Building Area (sf)	Seats	Rooms	Unit Water Use (gpd)	Average Water Demand[a] (gpd)	Max Day Water Demand[b] (gpd)	Peak Hr Water Demand[c] (gpm)
Indoor Toilet & Urinal RW Use							
Hotel - Standard Room	-	-	230	20	3,450	6,440	8.1
Hotel - Two-Bay Suite	-	-	20	25	375	700	0.9
Fitness Center	900		-	-	-	-	-
Specialty Restaurants	-	66	-	2.5	124	231	0.3
Café	-	100	-	2.5	188	350	0.4
Retail	250	-	-	-	-	-	-
Conference Center	19,900	-	-	0.065	970	1,811	2.3
Indoor Subtotal	-	-	-		5,106	9,532	11.9
Irrigation (5.0 Net Acres)[e]	217,800	-	-	0.061	13,236	27,796	51.5
Total	**-**	**-**	**-**	**-**	**18,343**	**37,328**	**63.5**

(a) Average day demand assumes 75% occupancy, i.e. a demand factor of 0.75
(b) Max day demand for interior water use = 1.4 x average water demand; 100% occupancy assumed, i.e. max day demand = 1.87 x average day demand (1.4/0.75); max day demand for exterior (pool) water use = 2.1 x average water demand based on historical monthly ETo data for the Porterville area
(c) Indoor peak hour demand = 1.8 x max day demand and occurs in the morning or evening; 100% occupancy
(d) Average water demand based on normal 10-person crew at 50 gpd/person. Peak demands based on 10-person crew at 50/gpd with 1.4 (max day) and 1.8 (peak hour) peaking factors
(e) Irrigation based on Model Water Efficient Landscape Ordinance (MWELO)
ETAF (Evapotranspiration Adjustment Factor) = 0.67 for efficient recycled water irrigation
MAWA (Maximum Applied Water Allowance) in gal/yr = ETo x 0.62 x ETAF x Area in square feet
ETo (evapotranspiration) for Porterville = 53.4 inches (historical annual average)
Max day demand for exterior water use = 2.1 x average water demand
Exterior (irrigation) peak hour demand = 2.67 x max day demand and occurs during a 9-hour nighttime window

Table 12. Estimated Wastewater Flows for Alternative D – Non-Gaming

Facility	Building Area (sf)	Seats	Rooms	Unit Flow Factor (gpd)	Average Wastewater Flow[a] (gpd)	Peak Wastewater Flow[b] (gpm)
Hotel - Standard Room	-		230	90	15,525	29
Hotel - Two-Bay Suite	-		20	110	1,650	3
Fitness Center	900		-	0.63	425	1
Specialty Restaurants	-	66	-	50	2,475	5
Café	-	100	-	35	2,625	5
Retail	250	-	-	0.05	9	0
Conference Center	19,900	-	-	0.13	1,940	4
Total	**-**	**-**	**-**	**-**	**24,650**	**46**

(a) Average wastewater flow assumes 75% occupancy, i.e. a demand factor of 0.75

(b) Peak wastewater flow = 2.0 x average water demand; 100% occupancy assumed, i.e. peak wastewater flow = 2.67 x average wastewater flow (2.0/0.75)

5.1 Alternative D with Alternative A Water and Wastewater System Planning

Relative to Alternatives A and B, Alternative D has reduced facilities, and as a result, reduced potable water demands, recycled water demands and wastewater flows. Alternative D can have the same water and wastewater systems as Alternative A:

- Untreated sanitary wastewater would be conveyed to the City's Wastewater Treatment Plant (WWTP) through a series of existing (and potentially upgraded) gravity sewers, lift stations, and forcemains for primary and secondary treatment.
- A connection would be made to the City's potable water system to provide all potable water demands for the Project.
- A tertiary wastewater treatment plant would be constructed at an adjacent property to treat secondary effluent scalped from the 24-inch effluent pipeline to Title 22 recycled water standards suitable for landscape irrigation use. A treatment plant would provide recycled water to the Project and to the City Sports Complex, which is currently irrigated with City potable water, with sufficient recycled water production to completely offset the Project's potable water demand.

5.1.1 Potable Water Supply

The Alternative D Project could connect to the City's water system. Project potable water demands would be approximately 64 percent less than the potable water demands in

Alternatives A and B, as would the operational and emergency storage requirements. The fire flow demand could also be reduced due to a reduction in facilities and patrons; possibly from 4,000 gpm for 4 hours to 3,000 gpm for 3 hours. Once the buildings are designed and the fire department confirms a required fire flow, a hydraulic analysis should be conducted as part of preliminary design to determine the need for a booster pump station.

5.1.2 Wastewater Conveyance, Treament and Disposal

Project wastewater flows would be approximately 68 percent less than the wastewater flows in Alternatives A and B. Wastewater generated at the 40-acre Project site as well as from the Sports Complex, OHV Park and the industrial land just south of the Project site is conveyed to the City's Wastewater Treatment Plant through a series of collection and trunk sewer, lift stations, and forcemains as shown on Figure 3. A more detailed map of the existing wastewater conveyance system at the 40-acre Project area and the immediate surrounding area, as well as the 24-inch effluent pipeline, and potential tertiary treatment and recycled water storage and conveyance facilities are shown on Figure 4.

The same wastewater system condition issues relating to conveying Alternative A wastewater flows still apply for conveying Alternative C flows:

- LS No. 12 is deficient in both operational and emergency storage, and should have two pumps instead of one pump to enable efficient, and more importantly, reliable operation.
- The 10-inch sewer upstream of LS No. 7 has sufficient capacity to safely convey the Alternative D Project flows and southerly (Edison/industrial) buildout flows, but should still be replaced because it is made of techite.
- It appears the LS No. 7 pumps are the original pumps and are 46 years old, and if so, need to be replaced. The lift station is also deficient in both operational and emergency storage, and it appears the entire station might need to be reconstructed.
- The short (approximately 20 linear feet) 8-inch forcemain associated with LS No. 7 is 46-year-old cast iron pipe suffering from age and corrosion and is in need of replacement, according to City staff.

5.1.3 Tertiary Treatment Plant & Recycled Water Storage/Pumping Facilities

A tertiary treatment plant would treat secondary effluent received from the City's 24-inch effluent pipeline to California Title 22 effluent standards for unrestricted landscape irrigation at the Project site and at the City Sports Complex. Relative to Alternative A and B, the landscape areais estimated to decrease from 9.5 acres to 5.0 acres (due to reduced building area and landscape area being replaced with undeveloped land) with average recycled water use decreasing proportionately from 25,149 gpd to 13,236 gpd (approximately 47.4 percent).

Relative to Alternatives A and B, recycled water supply to the Sports Complex would decrease from 64,672 gpd to 23,294 gpd for 100 percent Project potable water supply offset. This would correlate with supplying the Sports Complex with approximately 17 percent of its normal

(2007 – 2013 average) irrigation demand of 138,500 gpd. The overall recycled water demand would decrease by approximately 61 percent, and the sizing of tertiary treatment and recycled water conveyance facilities presented in Section 2.3 for Alternative A would decrease by a similar amount.

To supply the Sports Complex with its normal irrigation demand of 138,500 gpd, the Project potable water demand offset would be 595 percent, i.e. recycled water supply to the Sports Complex would be 495 percent greater than the Project's potable water demand. The overall recycled water demand would decrease by approximately 13 percent, and the sizing of tertiary treatment and recycled water conveyance facilities presented in Section 2.3 for Alternative A would decrease by a similar amount .

5.2 Alternative D with Alternative B Water and Wastewater System Planning

Relative to Alternatives A and B, Alternative D has reduced facilities, and as a result, reduced potable water demands and wastewater flows, although slightly higher recycled water demands due to reduced building area. Alternative D can have the same water and wastewater systems as Alternative B: water and wastewater systems would be constructed on site and there would be no connections to the City water and wastewater systems.

5.2.1 Potable Water Supply

In Alternative B, no connection would be made to the City's water system, and instead, an independent water system would be constructed on the Project site. The system would include two potable water supply wells; water disinfection facilities; a storage tank; and a booster pump station. As discussed previously, there is an 8-inch water main loop within the property constructed in 1995, which should be of sufficient capacity and condition. However, some of the piping may need to be extended to better accommodate Project buildings.

In Alternative D, Project potable water demands would be approximately 62 percent less than the potable water demands in Alternatives A and B as would the operational and emergency storage requirements. However, two wells would still be required, with one well providing backup potable water supply in case the first well is out of service. Although the well capacity can be slightly less to provide the lower demands associated with Alternative D, the wells would still need to be drilled to the same depth. The wells would still have the same equipment and any reduction is sizing would not be significant. If the fire flow requirement was reduced by the fire department from say 4,000 gpm for 4 hours to 3,000 gpm for 3 hours, then the total storage could be reduced from 1.2 MG in Alternative A to 620,000 gallons in Alternative D.

Two well sites are estimated in the southeast corner of the Property as shown on Figure 6:

<u>Well Site No. 1: Estimated 95 feet x 100 feet site with the following facilities</u>:

- Well No. 1
- 620,000 Gallon Reservoir (32 feet high x 57 feet diameter)
- Pump Station Building (25 feet x 25 feet x 10 feet H)
- Disinfection Facilities (under 10 feet x 15 feet x 8 feet H shade structure)

Well Site No. 2: Estimated 30 feet x 30 feet site with the following facilities:

- Well No. 2

5.2.2 Wastewater Treatment and Disposal and Recycled Water Supply

An extended aeration package wastewater treatment plant, Model PP-26-ES as manufactured by Pollution Control Systems, Inc. (PCS), sized for for the average flows estimated for the project (24,650 gpd), would have a footprint of 59 feet x 24 feet. It could be located in a building with a footprint of approximately 72 feet x 48 feet. A package tertiary filter system with disinfection facilities, PCS Model TF-2-11-C, also sized for 24,650 gpd, would have a footprint of 14 feet x 12 feet. It could be located in a building with a footprint of approximately 27 feet x 24 feet.

Recycled water production would not be sufficent to supply all demands from May through August and a seasonal storage reservoir sized at 310,000 gallons would be required. For a peak-hour recycled water demand of 63.5 gpm, and a tertiary plant sized at 24,650 gpd (17.1 gpm), an operational storage volume of 15,400 gallons, and a pump sized at 63.5 gpm would be required to augment recycled water supply during the peak irrigation window. The operational storage could be included in the seasonal storage reservoir.

There will be days during the year, primarily in the winter and fall, when irrigation demand will be zero and the only recycled water demand will be the 5,106 gpd for indoor recycled water use. When this low recycled water demand occurs, 19,544 gpd of secondary effluent (24,650 gpd – 5,106 gpd) from the package treatment plant will need to be disposed of on site (maximum on-site disposal). There is enough unused land in the northeast corner or northwest corner of the Airpark Property to construct two open percolation basins (covering approximately 0.35 acres including berms) to disperse the secondary effluent, that may be far enough away from the casino/resort not to impact aesthetics.

An underground leach field constructed below the parking lot or on an undeveloped portion of the site near the treatment plant, to disperse the wastewater might be preferred considering casino/resort aesthetics. Based on the relatively low percolation rate of 2.0 inches per hour for Exeter Loam, a leach field area of 0.75 acres is estimated based on an application rate of 0.6 gpd/acre. Sludge from the treatment plant will need to be dewatered before it can be transported off-site. Mechanical dewatering with centrifuges or belt filter presses with the equipment located in a building is recommended as opposed to sludge drying beds.

Two wastewater/recycled water processing sites are estimated in the northeast corner of the Property as shown on Figure 6:

Wastewater/Recycled Water Site No. 1: Estimated 90 feet x 185 feet site with the following facilities:

- Primary/Secondary Package Wastewater Treatment Plant (48 feet x 72 feet x 11 feet H)
- Tertiary Wastewater Treatment Plant (27 feet x 24 feet x 11 feet H)
- Recycled Water Pump Station Building (25 feet x 25 feet x 10 feet H)
- 310,000 Gallon Recycled Water Tank (47-foot diameter x 24 feet H)

Wastewater Site No. 2: Estimated 35 feet x 35 feet site with the following facilities:

- Sludge Dewatering Building (25 feet x 25 feet x 10 feet H)

6.0 ALTERNATIVE E: ALTERNATE SITE

In Alternative E, instead of building a resort at the 40-acre Airpark Property, the existing Eagle Mountain Casino located on the Tule River Indian Reservation (Reservation), on the western slope of the Sierra Nevada Mountains, east of the City, (see Figure 1) would be expanded. The existing casino and food and beverage facilities would be expanded; surface parking would be reconfigured; and a new garage parking structure would be constructed.

The site plan for Alternative E showing existing and proposed new and expanded facilities is shown on Figure 8. Existing and proposed expanded facilities and estimated potable water demands are shown in Table 13. The same or very similar unit demand factors and vacancy factors used in the previous Alternatives are used in Alternative E; and the same peaking factors are used. Currently, recycled water is not produced at the treatment plant located at the site, and no water is used for landscape irrigation. Alternative E will also not include irrigation.

Estimated average and peak wastewater flows for existing and expanded facilities are shown in Table 14. The same or very similar unit wastewater flow factors and vacancy factors used in the previous Alternatives are used in Alternative E; and the same peaking factor is used.

6.1 Potable Water Supply

The Tribe utilizes water resources in the South Tule River Basin to meet water demands on the 55,396-acre Reservation that includes the Eagle Mountain Casino (casino). Surface water drawn directly from the South Fork Tule River and treated at the Tribe's water treatment plant is the primary potable water supply, augmented by groundwater delivered from several Tribe-owned and operated wells.

Although the amount of water the Tribe diverts annually from the South Fork Tule River is not known exactly, it is estimated to be a small portion of its entitled surface water supply of 5,000 acre feet per year (afy). Because the Reservation incorporates the majority of the headwaters of the South Tule River, the Tribe has historically had access to the undepleted flow of the river. Groundwater, on the other hand, is limited by small well capacities, and water quality problems caused by septic systems and grazing lands.

Natural springs throughout the Reservation are being used for agricultura1 irrigation and also for drinking water augmentation. Several large springs show high levels of carbon dioxide and are restricted to agricultural water use.

The Tribe's surface water treatment plant has a treatment capacity of 562 afy, which is equivalent to approximately 500,000 gpd. The Tribe typically operates the plant at full capacity, and uses groundwater supply to help meet demands above the plant capacity. Water supplies have not been able to meet high demands in the late summer and early fall in many years. Inadequate water supplies have negatively impacted economic development andhave halted the development of additional tribal housing, preventing off-reservation Tribal members from relocating to the Reservation.

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FIGURE 8 - SITE PLAN ALTERNATIVE 'E' - ALTERNATE SITE (EXISTING EAGLE MOUNTAIN CASINO SITE)

Table 13. Estimated Potable Water Demands for Alternative E - Alternate Site

Facility	Area (sf)	Seats	Unit Water Use (gpd)	Average Water Demand[(a)] (gpd)	Max Day Water Demand[(b)] (gpd)	Interior Peak Hr Water Demand[(c)] (gpm)
Casino		1,200	15	12,600	23,520	29.4
Food Court & Buffet	15,000		0.45	4,725	8,820	11.0
The River Restaurant	7,600		0.65	3,458	6,455	8.1
Administration Building	11,200		0.20	1,568	2,927	3.7
Entertainment Pavilion		1,500	7.5	7,875	14,700	18.4
Subtotal Existing				**30,226**	**56,422**	**71**
Casino		350	15	3,938	7,350	9.2
Food & Beverage Venue	3,500		0.55	1,444	2,695	3.4
Subtotal Expansion				**5,381**	**10,045**	**13**
Total				**35,607**	**66,467**	**83**

(a) Average day demand assumes 70% occupancy, i.e. a demand factor of 0.70; there is currently no site irrigation and none is estimated for the expansion project
(b) Max day demand for interior water use = 1.4 x average water demand; 100% occupancy assumed, i.e. max day demand = 2.0 x average day demand (1.4/0.70)
(c) Interior peak hour demand = 1.8 x max day demand and occurs in the morning or evening; 100% occupancy

The water storage system consists of a series of tanks ranging in size from 3,000 gallons to 200,000 gallons. A 200,000 gallon storage tank is located at the casino property. It has been reported that the tanks do not function as a storage system and, in some cases, were improperly designed. As of 2013, a new 400,000 gallon tank was proposed to serve the Justice Center. The water storage system is not regularly monitored for water in storage or for structural conditions. It was also reported that the available storage capacity was inadequate to meet all fire demands occurring during peak domestic water demands.

The existing water supply, storage, and distribution system within the reservation is not sufficient to support an expansion of the casino. However, the existing 200,000 gallon tank at the casino site could be replaced with a tank of sufficient size to serve the existing/expanded casino, and water could be trucked in to fill this tank on a daily basis. The storage requirement for the existing/expanded casino might be approximately 1.1 MG (4,000 gpm for 4 hour fire storage; 15% of maximum-day demand operational storage; an three days of average demand for emergency storage). It is not known if there is sufficient room at the site to expand the storage at the existing casino tank location or whether a new tank would need to be constructed offsite. A 5,000-gallon water tank truck would need to make approximately 7 trips per day to supply the estimated average day demand (35,607 gpd), and about 13 trips to supply the maximum-day demand (66,467 gpd).

Table 14. Estimated Wastewater Flows for Alternative E - Alternate Site

Facility	Area (sf)	Seats	Unit WW Flow (gpd)	Average Wastewater Flow[(a)] (gpd)	Peak Wastewater Flow[(b)] (gpm)
Casino		1,200	15	12,600	25
Food Court & Buffet	15,000		0.45	4,725	9
The River Restaurant	7,600		0.65	3,458	7
Administration Building	11,200		0.20	1,568	3
Entertainment Pavilion		1,500	7.5	7,875	16
Subtotal Existing				**30,226**	**60**
Casino		350	15	3,675	7
Food & Beverage Venue	3,500		0.55	1,348	3
Subtotal Expansion				**5,023**	**10**
Total				**35,249**	**70**

(a) Average wastewater flow assumes 70% occupancy, i.e. a demand factor of 0.70

(b) Peak wastewater flow = 2.0 x average water demand; 100% occupancy assumed , i.e. peak wastewater flow = 2.86 x average wastewater flow (2.0/0.70)

6.2 Wastewater Conveyance, Treatment and Disposal

A sequencing batch reactor (SBR) package wastewater treatment plant, rated at a capacity of 80,000 gpd, is located at the existing Eagle Mountain Casino site, and treats an average wastewater flow, solely from the site, of approximately 30,000 gpd. The wastewater flow is metered, which also provides an indicator of site water demand, which is not directly metered. There is no site exterior water use; so the wastewater meter reflects total site water demand. The wastewater is disposed through a leach field located underneath the parking lot. Two of the five leach fields have failed, with three fields still in operation.

There is a second package wastewater plant, which is a membrane bioreactor (MBR), located approximately a mile away from the casino site, rated at a treatment capacity of 80,000 gpd, that treats wastewater flows from the Reservation. The average wastewater flow to this plant is approximately 25,000 to 30,000 gpd. A second MBR, also rated at a capacity of 80,000 gpd, will be put into service at this site to treat additional flows from the Reservation as more homes are taken off of septic treatment systems and connected to the Reservation's "community" wastewater collection and treatment system. Effluent from this plant is sprayed on the adjacent hillsides for disposal and dust control.

The SBR servicing the casino is not connected to the community wastewater collection and treatment system. The SBR is 20 years old and the Tribe would like to take it out of service in the future and connect the casino property to the community system, as adequate treatment capacity is planned to be available.

7.0 CONCLUSIONS

In Alternative A, the Proposed Project with the full casino and resort development plan would connect to the City's potable water system with zero impact on the water system, which has been impacted by the drought. A tertiary treatment plant would be constructed and recycled water would be conveyed to the City Sports Complex to offset potable water currently used for irrigation at the Sports Park equivalent to the Project's potable water demand, thereby making it a net zero demand on the City's water system.

The project would also lay the groundwork for future City expansions of the tertiary treatment plant, which would provide additional recycled water to offset existing and future potable water demands on the City's water system.

Relative to an independent Project water system, a connection with the City's potable water system provides the Project with a more reliable water supply given the redundancy offered by multiple wells, storage reservoirs, transmission mains, and potential new water supply sources in the City's system.

In Alternative B, an independent water system without a connection to the City's water system would entail significant infrastructure to help ensure water supply reliability. Two on-site wells with disinfection facilities, a large water storage reservoir that includes fire protection water, and a pump station that includes a fire pump would be required. Still, any local groundwater contamination problem could disable both wells and leave the Project without a water supply.

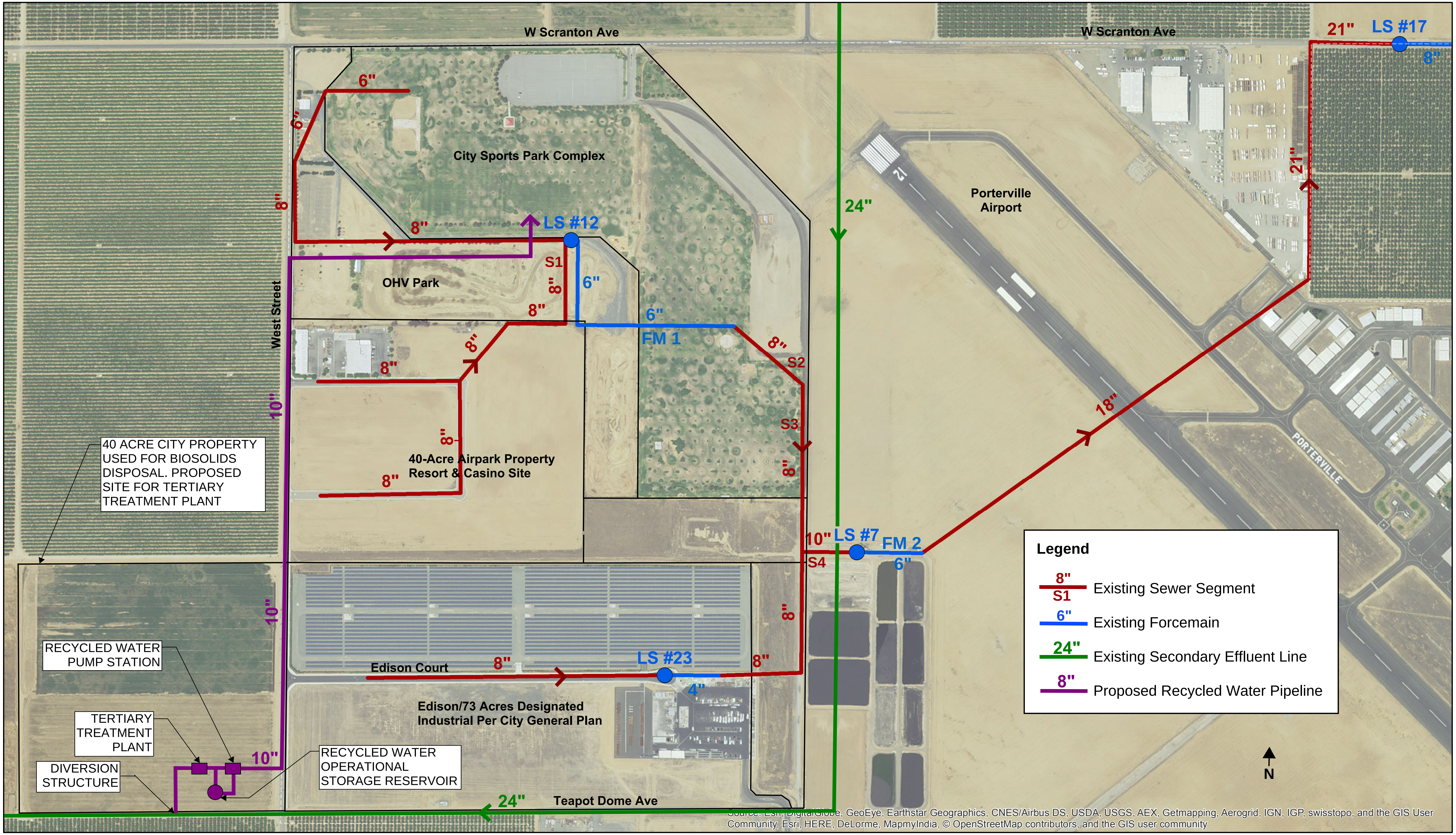
Alternatives C and D provide reduced development elements relative to the development elements proposed for Alternatives A and B that provide reduced water demands and wastewater flows. However, the reduced demands and wastewater flows do not have significant impacts on the water and wastewater systems as the same facilities are required, only at slightly smaller capacities.

Relative to constructing a new resort at the 40-acre Airpark Property with a package tertiary wastewater treatment plant, an expansion of the Eagle Mountain Casino (Alternative E) is not considered as viable due to the existing water supply shortage and storage deficiencies for the water system currently serving the Reservation. However, a larger tank to support the demands of the existing/expanded casino could potentially be constructed, and water could be trucked in from a location (remote from the reservation) to fill the tank on a daily basis.

Alternative A is therefore recommended.

Exhibit 2

Proposed AWTP/Recycled Water Facilities



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Proposed AWTP/Recycled Water Facilities

Exhibit 2
Proposed AWTP/Recycled Water Facilities

PSOMAS

Exhibit 3

Proposed Off-Site Wastewater Collection Facility Improvements

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Exhibit 3
Proposed Off-Site Wastewater Collection Facility Improvements

PSOMAS

Exhibit 4

Tule River Tribal Council
Certification regarding Debarment, Suspension and other Responsibility Matters

TULE RIVER TRIBAL COUNCIL
TULE RIVER INDIAN RESERVATION

TULE RIVER TRIBAL COUNCIL
CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

2. Have not, within a three-year period preceding this proposal, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

3. Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and

4. Have not, within a three year-period preceding this proposal, had one or more public transactions (Federal, State or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 U.S.C. Sec. 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to five years, or both.

____
Name of Firm Submitting Bid

____
Signature and Title of Authorized Official   Date

I am unable to certify to the above statements. Attached is my explanation.

Prime or Subcontractor's Name:____

Telephone Number:____