1041 PERMIT APPLICATION SUBMITTAL
FOR
TOWN OF RAMAH WASTEWATER SYSTEM
SEWER LIFT STATION
&
WASTEWATER TREATMENT PLANT

JULY 2022

EE JOB NO.: 0043.0001

ELEMENT ENGINEERING LLC
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EXHIBITS

RESPONSE TO CHAPTER 3, ARTICLE 2, OF THE COUNTY GUIDELINES

The following sections are in response to Chapter 3, Article 2, Paragraph 3.201 of the County Guidelines as the Project relates to significant change in the use and or material construction of a municipal water project within unincorporated El Paso County as outlined in Paragraph 3.201 of the guidelines.

SECTION 3.201 (1) AGENCY REVIEW

3.201 (1): *Description of efficient water use, recycling, and reuse technology the Project intends to use. Such description shall include estimated stream transit losses of water, reservoir evaporation losses, and power and energy requirements of the Project and alternatives to the Project.*

No water reuse or recycling will be utilized for the project. The evaporative ponds will operate without power except for the power required to supply the lift station which will pump the collection system wastewater through the new force main to the evaporative ponds. The proposed lift station will require power to operate the two submersible pumps, the lift station controls and the lift station control alarms.

The proposed evaporative ponds facility is to replace the existing wastewater lagoon by using the natural climate of the area to treat wastewater by evaporation with the solid waste of the treated wastewater stream settling to the bottom of the ponds.

To properly size the evaporation ponds, the annual average precipitation rate for the Town of Ramah was obtained from Western Regional Climate Center and its cooperative climatological data summaries. As no data summaries stations exist within the immediate area around Ramah, data was obtained through the closest nearby stations with the most similar climate and elevation to Ramah. The datasets selected were from the Rush, Colorado and Eastonville, Colorado stations. Both stations are approximately 20 miles away from the service area; Rush is to the south and Eastonville is to the southwest. The precipitation data used for Ramah was obtained by calculating the average of the two station's data sets. The average of the annual precipitation total for six other surrounding stations was within 5% of the Ramah data set value. The averaged data set was determined to be appropriate for Ramah as it was within the range of the other nearby surrounding data stations. The annual free water surface evaporation rate was obtained from NOAA Technical Report NWS 33. All precipitation and evaporation data are included and explained in Appendix D of the site application.

To properly hold and evaporate the 15,000 gpd of wastewater with no overflow, a total top of berm area of approximately 8.5 acres and a total land area of 10.3 acres is required. The ponds will need to be lined with a synthetic liner to avoid any discharge to groundwater.

Alternatives considered were analyzed for their effectiveness, operation and maintenance requirements, and project costs. Alternative I – "No Action" was not considered. The existing facilities are incapable of treating wastewater to the permitted limits. Continued operation in this manner would result in illegal discharges and enforcement actions, and therefore is not a feasible alternative. Alternative II - Consolidation was not considered viable. The closest WWTP in the area is in Simla, located approximately 5 miles northeast of Ramah. The costs associated with building a 5-mile pipeline make this alternative financially infeasible. Therefore, consolidation is not a feasible alternative. Alternative III – Mechanical Facility would include the decommissioning of the existing lagoon system and the complete replacement of the WWTP with a packaged wastewater facility at the existing lagoon treatment site. This alternative would include the construction/installation of the following items:

1. Influent flume and flow meter
2. Influent lift station
3. Sewer force main
4. Influent screening
5. Alkalinity feed system
6. Packaged wastewater treatment plant
7. Chlorine feed system and contact chamber
8. Effluent flume and flow meter
9. Sludge holding basin
10. Building (blowers and chemical feed)

Additionally, this alternative would include any necessary biosolids removal from the existing ponds, fill material to decommission the existing ponds, electrical site work, and yard piping. All processes in this alternative will be sized to meet the 20-year future hydraulic and organic loading. No new or alternative technologies are proposed with this alternative.

3.201 (2): *Map and description of other municipal and industrial water projects and providers in the vicinity of the Project, including their capacity and existing service levels, location of intake and discharge points, service fees and rates, debt structure and service plan boundaries and reasons for and against hooking on to those facilities.*

provide map exhibit within answer

The closest neighboring communities to Ramah are the town of Simla located approximately 5 miles to the northeast, and the town of Calhan located approximately 8 miles to the southwest of Ramah.
The town of Simla's wastewater treatment and collection systems are located within 5 miles of the proposed project area. Water wells in a one-mile radius were located utilizing the Colorado Decision Support System maps. There are 7 wells within this one-mile radius, including private wells for agriculture and town of Ramah's municipal wells.

An alternatives analysis was conducted for the project including the consideration for the alternative to consolidate wastewater treatment in Ramah with the nearest public wastewater treatment system. The town of Simla's wastewater treatment facility is the closest to Ramah, approximately 5 miles away from the nearest portion of Ramah's collection system. The alternatives analysis found that consolidation with the town of Simla to be cost prohibitive as conveying the town's wastewater flow to the location would require over 5 miles of force main that was estimated to be more expensive than the alterative to construct the evaporative ponds and lift station.

The service fees, rates, debt structure of the town of Simla wastewater system is not known at this time because this is not publicly available information.

3.201 (3): *Description of the water to be used by the Project and alternatives, including: the source, amount, the quality of such water; the applicant's right to use the water, including adjudicated decrees or determinations and substitute water supply plans, and applications for decrees or determinations; proposed points of diversion and changes in the points of diversion; the existing uses of the water; adequate proof that adequate water resources have been or can and will be committed to and retained for the Project, and that applicant can and will supply the Project with water of adequate quality, quantity, and dependability; and approval by the respective Designated Ground Water Management District if applicable.*

The proposed project will not use any freshwater. The project will more accurately treat rather than utilize the town's wastewater as part of the process of its wastewater treatment system and proposed evaporative pond treatment facility. The amount of wastewater to be treated is approximately 11,000 to 12,000 gpd. The existing town wastewater treatment system does not have an influent flow meter so it can only be estimated what the town's existing average daily wastewater flow is. The characteristics of the wastewater flow are typical for domestic wastewater. Points of diversion regarding the town's wastewater system can be considered the intersection points of the collection system. The existing collection system flows into the influent septic tank before it enters the existing wastewater lagoon. Under the proposed project, a new diversion in the collection system will be installed to send flows from the new manhole in the collection system into the influent wet well of the lift station. This will add a new diversion point in the collection system. This will also remove the downstream section of the collection system from that diversion including approximately three hundred feet of collection system and the existing influent septic tank. Adequate water resources regarding the proposed project are to be considered the wastewater flow which is to be generated consistently by town water service users.

3.201 (4): *Loss of Agricultural Productivity:*

The soils in the area around the proposed ponds are considered suitable for agriculture and the land was previously used for agricultural production prior to the Town acquiring the parcel for the proposed evaporative ponds. The area around the lift station location has been previously developed and given its designation as town right-of-way and close proximity to roads and residential structures, it would not be considered suitable for agriculture. Given that the land for the proposed ponds will no longer be used for agriculture, this project will result in approximately 39 acres of agricultural land no longer being available for agricultural productivity.

3.201 (4a): *Information on any agricultural water rights in the region converted to provide water for the Project, now or in the future.*

The service area can be seen in the Site Application in Exhibit I. The project will be funded through State of Colorado funding programs, particularly the state revolving fund. Any existing water rights from the agricultural property the town purchased for the evaporative ponds property are not intended to be used for the project.

3.201 (4b): *Information on the amount of irrigated agricultural lands taken out of production, and a description of revegetation plans.*

The evaporative ponds facility is proposed to be constructed on a 39-acre parcel of previously used agricultural land the town recently purchased for the construction of the evaporative ponds. The land is not anticipated to be used for agriculture once the construction of the evaporative ponds is completed. During construction, erosion and sedimentation control measures will be deployed for stabilization of the site and protection of the existing vegetation. Following construction, disturbed areas of vegetation will be restored to provide protective cover of the site using native grasses. All Best Management Practices for erosion and sediment control will be strictly followed.

3.201 (4c): *Economic consequences of any loss of irrigated agriculture, including loss of tax base, in the region.*

Economic consequences of the loss of land are minimal with the proposed project. The land that the project will be constructed on was acquired by the town from a private owner. The price of the land purchase was reasonably determined based on any minimal loss of income the selling of the land may have caused. The tax implications are also minimal and deemed acceptable by the town, as the town is the entity undertaking the project, including land acquisition.

3.201 (4d): *Information as to loss of wildlife habitat, loss of topsoil, or noxious weed invasion, as a result of the transfer of water rights and subsequent dry-up of lands.*

No loss of wildlife habitat, loss of topsoil or weed invasion are anticipated as a result of the proposed project as it will be confined to existing developed town right of way and formerly used agricultural land. No transfer of water rights or subsequent dry-up of lands are anticipated from the project.

3.201 (4e): *Information on impacts to agricultural head gates and water delivery systems.*

No impacts to agricultural head gates or water delivery systems are anticipated as a result of the project.

1041 Documents Related to 3.201 (Items 1 - 4)_v1.pdf Markup Summary 8-30-2022

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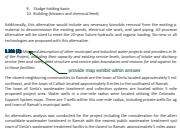

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provide map exhibit within answer