



# Town of Castle Rock

## Agenda Memorandum

**Agenda Date:** 8/18/2020

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**Item #:** 23. **File #:** RES 2020-073

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**To:** Honorable Mayor and Members of Town Council

**From:** Mark Marlowe, P.E., Director Castle Rock Water  
Tim Friday, P.E., Assistant Director Castle Rock Water

**Resolution By the Town Council Stating Its Opposition to the Site Application Submitted by JRW Family Limited Partnership, LLLP, To The Colorado Department of Public Health and Environment For A New Wastewater Treatment Plant to Serve the Pine Canyon Development**

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### Executive Summary

The purpose of this memorandum is to provide Town Council the results of a detailed review of the Pine Canyon Water & Sanitation District Water Reclamation Facility Site Application and a Resolution (**see Attachment A**) recommending denial of the application by the Colorado Department of Public Health and Environment (CDPHE). The developer of Pine Canyon has submitted a Site Application to the CDPHE requesting a permit for a new wastewater treatment plant to serve the Pine Canyon development. As part of the Site Application, the developer is required to seek comments and recommendations from the Town of Castle Rock, Chatfield Watershed Authority and Tri-County Health Department. The Town of Castle Rock received the complete site application on July 17, 2020 and has sixty days or until September 15, 2020 to provide comments and a recommendation to CDPHE. If the Resolution (**see Attachment A**) is adopted by Town Council, the recommendation to CDPHE for denial will be sent with this Resolution and a letter outlining all of the reasons for the recommendation of denial. A summary of the reasons for recommending denial are provided in the following paragraphs.

As a development in a part of unincorporated Douglas County located in the heart of Castle Rock, Pine Canyon proposes to provide their own water and wastewater services through a special district. A thorough review of the wastewater Site Application submitted to CDPHE by an independent consultant and legal counsel reveals numerous concerns including:

- Constructing a wastewater treatment plant in the middle of Castle Rock does not fit in with the nature of the surrounding development, open space and trails in the Town (**see Attachment B**) and will cause impacts on the surrounding area including noise and odor;
- The proposed water and sanitation district does not yet exist and has no financial plan to demonstrate the financial capacity to fund construction and operation of this type of facility to protect public health and environment;

- A discharge of treated wastewater into East Plum Creek at the proposed location is immediately upstream of several of Castle Rock's drinking water wells presenting risks to the safety of our water supply and falling within the Castle Rock Watershed Protection District, and as such, the applicant will need to apply for a permit from Castle Rock as required under Chapter 4.02 <[https://library.municode.com/co/castle\\_rock/codes/municipal\\_code?nodeId=TIT4WARE\\_CH4.02CAROWAPRDI](https://library.municode.com/co/castle_rock/codes/municipal_code?nodeId=TIT4WARE_CH4.02CAROWAPRDI)> of the Town's Municipal Code;
- The applicant has chosen to challenge guidance in State Code that encourages the consolidation of wastewater treatment and argues that the costs at the regional wastewater plant, Plum Creek Water Reclamation Authority (PCWRA), are too high. This argument is based on cost comparisons that are incorrect and include renewable water fees as part of the cost of consolidation when the applicant doesn't even have a plan for renewable water, whereby correct cost information shows consolidation is the best option.
- Further on consolidation, Pine Canyon lies within the Town's water and wastewater service area and the Town has planned accordingly to serve this area. Economies of scale achieved through consolidation of water and wastewater operations with the Town would be lost. Consolidation of water and wastewater services through annexation into the Town presents the best and most economical option for the applicant.
- Pine Canyon does not have a waste load allocation for phosphorus to discharge wastewater effluent within the Chatfield Watershed. This is a requirement for a new wastewater plant in the watershed and the trade for a phosphorus allocation proposed by the applicant is technically inadequate to provide for that waste load allocation.
- The applicant has prepared a site application that has a long list of technical problems and inadequacies discussed in the Discussion section below and which will be fully identified in the letter to CDPHE requesting that CDPHE deny the application.

Overall, constructing a wastewater treatment facility in the middle of Castle Rock to serve a 540-acre county development surrounded by the Town, should be opposed by Town Council for the reasons stated above. Instead, the developer should be encouraged to work with Town staff on an annexation agreement amenable to both the Town and the developer, allowing the Town and PCWRA to provide water and wastewater services. Town staff plan to provide a copy of this resolution if adopted by Town Council and the Town's comments to both the Chatfield Watershed Authority and the Tri-County Health Department to assist both entities in their review of the Site Application.

### **History of Past Town Council, Boards & Commissions, or Other Discussions**

In December 2013, the landowner, JRW Family Limited Partnership, LLLP, submitted an annexation petition, proposed Planned Development (PD) zoning application and an Annexation and Development Agreement (DA) request to the Town of Castle Rock. Several reviews of the proposal were completed, and the ninth set of staff comments and redlines were sent to the applicant in February 2018.

On April 17, 2020, the applicant submitted a written request to the Town to withdraw the Pine Canyon annexation petition, zoning and DA applications. Subsequently, in May 2020 the landowner submitted an application to Douglas County requesting a rezoning of the property to a PD.

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On May 19, 2020, Town staff presented an overview to Town Council of the project and the application to Douglas County for a PD.

On May 27, 2020, Castle Rock Water staff presented an overview to the Castle Rock Water Commission on the project and the application to Douglas County for a PD.

On July 7, 2020, Town staff presented an overview to Town Council of the project and shared Douglas County Department of Community Development, Planning Services and Department of Public Works first review comments.

On July 22, 2020, Town staff presented an overview to the Castle Rock Water Commission of the project and shared Douglas County Department of Community Development, Planning Services and Department of Public Works first review comments.

On July 31, 2020, the applicant resubmitted their PD zoning and water appeal to Douglas County. If the resubmittal addresses items raised in the initial review by Douglas County staff, then staff will have the applicant prepare referrals and seek public comment.

### **Discussion**

JRW Family Limited Partnership originally planned to develop Pine Canyon through annexation into the Town of Castle Rock, but withdrew its application in April 2020. As a Douglas County development, JRW proposes to develop as an unincorporated Douglas County Planned Development and, as such, proposes to form its own water and sanitation district under Title 32 of the Colorado Revised Statutes. As a special district, Pine Canyon would provide its own water and wastewater services separate from the Town. A detailed review of Pine Canyon's Site Application for a proposed wastewater treatment facility revealed a number of technical issues that warrant serious concern for the Town (**see Attachment C** for consultant report). These concerns are discussed below.

- **Underestimated Water Demands and Wastewater Flow** - the water demand for Pine Canyon is underestimated significantly, which in turn will cause wastewater generation rates to be lower than what the Town plans for and has observed locally over decades of operation. For planning purposes, the Town uses an average daily wastewater generation rate of 200 gallons per day (gpd) per household (single family equivalent). In comparison, the developer proposes an average daily flow of 150 gpd per household. In addition, the Town assumes an inflow/infiltration (I/I) rate of 10% of average daily flow, so in essence, a typical single family home is assumed to generate 220 gpd of wastewater. The applicant has assumed zero I/I and made the following statement in the Site Application: "I&I is not expected to have a significant impact on the expected flows to PCWRF, since PCWSD will require infrastructure contractors to waterproof all manholes and leak test the collection system to minimize I&I. PCWSD's sanitary collection system will also be entirely new." This is a plan for failure as all wastewater collection systems leak. For example, manhole covers have a one-inch diameter pick hole that leaks surface water runoff and snow melt with every event. Moreover, using Town wastewater flow design criteria results in 47% more flow than proposed in the Site Application. Therefore, the proposed wastewater treatment facility will be undersized based on current design.

- **Underestimated Capital and Operating Costs** - with underestimating the size of the wastewater treatment facility, the capital cost to construct the plant is low. A properly sized plant (0.54 million gallons per day compared to a 0.4 mgd plant) using a membrane bioreactor process would cost approximately \$16M rather than \$12M as estimated in the site application. In addition, the operating costs have been underestimated. The proposed operating plan calls for an operator to be onsite for 20 hours a week and will rely on automation for the other 148 hours per week. This is not realistic. A wastewater treatment plant using membrane technology and a sludge dewatering process will require more attention than 20 hours per week for operation and maintenance. Four hours per day, five days per week will not be enough time to complete daily process control (7 days/week is needed); conduct discharge permit monitoring including sampling and transporting samples to a certified lab; operate the screw press to dewater biosolids (sludge) and transport thickened solids to a permitted land application site; and conduct maintenance on membrane cartridges, pumps, blowers, chemical feed equipment, chemical storage tanks, and, lastly, respond to alarms and deal with failure conditions.
- **Handling of Sludge is Not Adequately Addressed** - the nature of this type of operation in the middle of Castle Rock would be unsightly and could create nuisance odors. Wastewater treatment facilities are best situated on the outskirts of a community and usually are at the downstream end of the local waterway, which is where the Plum Creek Water Reclamation Facility is located. Siting a wastewater facility in the heart of Castle Rock adjacent to a prime open space and trail, and highly visible from all of the surrounding residential areas (**see Attachment B**) would not be a desirable feature for the Town. Wastewater operations can cause odor issues as well that can be exacerbated by temperature inversions. Trapping odors in this section of Town would result in a cloud of malodorous gas accumulating in the creek bottom and saturating the atmosphere along the trail. This would detract from the experience of trail users. Handling waste outside and hauling dewatered sludge for disposal on a regular basis will be disruptive to the nature of the surrounding community. In essence, we shouldn't put a wastewater facility where we live and play.

Based on the technical information provided in the Site Application, the proposed wastewater treatment facility will be undersized, understaffed, will not have adequate financial resources to sustain operation and maintenance, and will be a nuisance facility in the heart of Castle Rock.

### **Budget Impact**

Long term budget impacts of allowing this Site Application to go forward would be significant. The Town has planned for this development in the expansion of the PCWRA wastewater treatment plant currently under construction and costing the Town roughly \$30M. System development fees (SDFs) from this development would not be forthcoming if this Site Application is approved to help cover the cost of the PCWRA wastewater treatment plant expansion. Further, the Town may incur huge expenses protecting our drinking water supplies from wastewater effluent being discharged just upstream of some of our drinking water wells, especially given the inadequate design of the proposed wastewater treatment plant, the lack of experience and financial capacity of the new Pine Canyon Water and Sanitation District, and the proposal to have the wastewater plant operated by contract

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operators.

**Staff Recommendation**

Staff recommends that Town Council adopt a resolution opposing this project for the reasons cited above. Instead, the developer should be encouraged to work with Town staff on an annexation agreement amenable to both the Town and the developer, allowing the Town to provide water and wastewater services.

**Proposed Motion**

*“I move to approve the Resolution as introduced by title.”*

**Attachments**

Attachment A: Resolution Opposing the Pine Canyon Water Reclamation Facility  
Exhibit 1: Pine Canyon Site Application  
Attachment B: Site Location Map  
Attachment C: Draft Report of Site Application Review by Vista Engineering LLC