Ohio Environmental Protection Agency

Mike DeWine, Governor
Jon Husted, Lt. Governor
Laurie A. Stevenson, Director

November 7, 2019

Limited Environmental Review and Finding of No Significant Impact

City of Hillsboro – Highland County
Rotary Filter Press Project
Loan Number: CS390450-0007

The attached Limited Environmental Review (LER) is for a wastewater treatment plant (WWTP) improvement project located in Hillsboro, Ohio, which the Ohio Environmental Protection Agency intends to finance through its Water Pollution Control Loan Fund (WPCLF) below-market interest rate revolving loan program. The LER describes the project, its costs, and expected environmental benefits. Making available this LER fulfills Ohio EPA's environmental review and public notice requirements for this loan program, as described in Ohio Administrative Code (OAC) 3745-150-05.

Ohio EPA analyzes environmental effects of proposed projects as part of its WPCLF program review and approval process. We have concluded that the proposed project should not result in significant adverse environmental impacts. This project's relatively narrow scope and lack of environmental impacts qualifies it for an LER rather than a more comprehensive Environmental Assessment, as described in OAC 3745-150-06. More information can be obtained by calling or writing the person named at the end of the attached LER.

Upon issuance of this Finding of No Significant Impact (FNSI) determination, award of funds may proceed without further environmental review or public comment unless new information shows that environmental conditions of the proposed project have changed significantly.

Sincerely,

for Jonathan Bernstein, Assistant Chief
Division of Environmental and Financial Assistance

Attachment

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LIMITED ENVIRONMENTAL REVIEW

Project Identification

Project: City of Hillsboro, Rotary Filter Press Project

Applicant: Mr. Richard Donley, Safety and Service Director
Ms. Kirby Ellison, Administrative Assistant and Grant Writer
City of Hillsboro
130 North High Street
Hillsboro, OH 45133

Loan Number: CS390450-0007

Project Summary

The City of Hillsboro proposes to finance its Rotary Filter Press project through Ohio EPA's Water Pollution Control Loan Fund (WPCLF) as a component of the twenty-year solution to the city's wastewater treatment plant (WWTP) needs. Installation of the equipment and related appurtenances constituting the project currently under construction is within or immediately adjacent to an existing addition completed in 2017 at the back of the WWTP maintenance building. This structure was previously determined to be located within the floodway of Clear Creek, as well as a prior-disturbed portion of Hillsboro's WWTP site. Clear Creek is the receiving stream for the effluent from the city's WWTP.

The main objective of this proposed solids handling improvements project is to enable the city's WWTP to continue producing a regular quality Class B sludge and to replace the high operational cost equipment currently in use (sludge dewatering geotextile bags). At the time the city advertised the project for bids in September 2018, the engineer's estimate was $475,000. In October 2018, when the city opened bids, the lowest construction cost bid from the contractors was $511,278, for a total estimated project cost of $579,651. Of this total, roughly $275,936 is expected to be paid for through an Ohio Public Works Commission (OPWC) 0%, 7-year loan. Ohio EPA's WPCLF program expects to finance the balance ($303,715) through a 0.53% small community interest rate, 20-year loan. Hillsboro is expected to save $59,407 by borrowing from the WPCLF.

Figure 1 below shows the general location of the city's WWTP, while Figures 2 and 3 show the specific location of the proposed improvements.

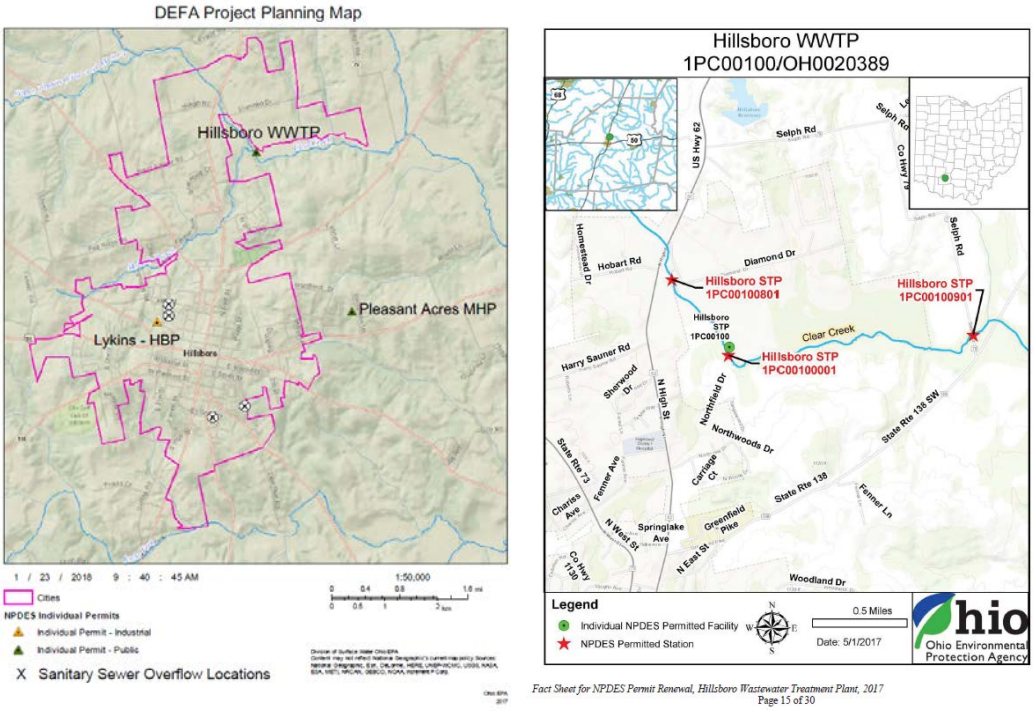

Figure 1, General Project Location Maps

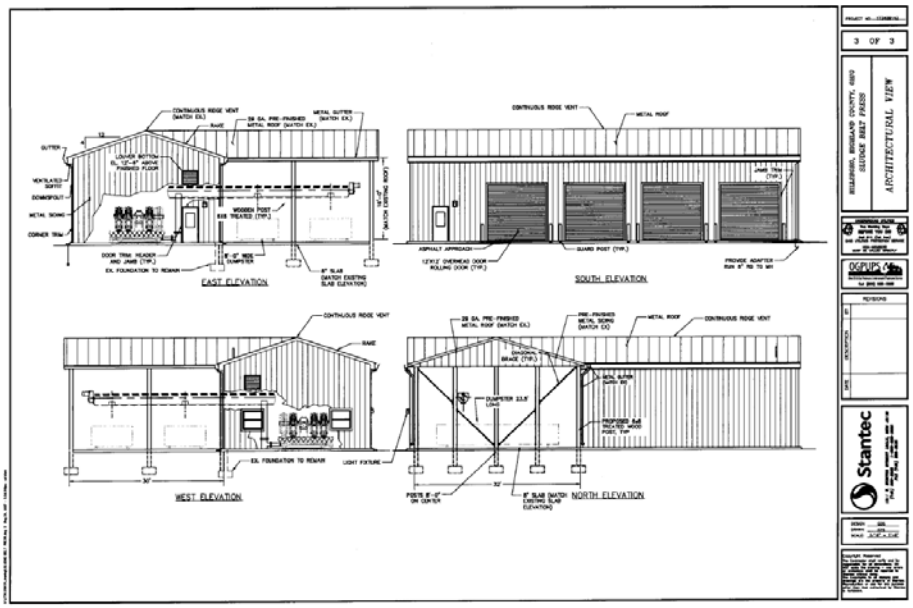

Figure 2, Proposed Project Location

Facilities Planning: History and Existing Needs

Hillsboro's collection system consists of about 32.8 miles of sanitary sewers which convey flows north to its WWTP located near Clear Creek. While the city's WWTP can handle an average of 1.5

million gallons per day (MGD) under average dry weather flow conditions, Hillsboro's water treatment plant (WTP) produces about 800,000 gallons of water daily. The difference between these figures suggests a significant continual infiltration/inflow[1] (I/I) source is present in the collection system. This I/I can contribute to operational problems at Hillsboro's WWTP, including sludge handling.

Hillsboro's WWTP utilizes the following sewage sludge treatment processes: aerobic digestion and geotextile dewatering bags. According to Ohio EPA's National Pollutant Discharge Elimination System (NPDES) permit fact sheet for Hillsboro's facility, treated sludge is land applied at agronomic rates on five farm fields in the vicinity of the city's WWTP.

Based on information in the city's April 2018 Sludge Processing Facilities Plan, the WWTP's two aerobic digesters have a storage capacity of 413,000 gallons and are followed by eight sludge dewatering beds with geotextile bags used to dewater the sludge from the digesters. In particular, the sludge dewatering process has specific problems that limit the performance of the city's WWTP during the cold winter temperature months, as well as other seasons. For example, unless the city can waste enough sludge prior to the winter months, its WWTP does not have adequate (six months) storage capacity. In response, the city either has to haul its sludge to another facility or waste to the sludge dewatering bags that will not dry the sludge in an efficient manner. The city then land applies the sludge to five fields that they own surrounding the wastewater facility. If the sludge bag system has not had sufficient time to dry the sludge, the wasting process to the fields can be messy due to the percent solids content of the sludge. In addition, the access to the wasting fields traverses city park property and can create issues on the fields if the ground is too wet or too soft.

The current inefficient and cumbersome sludge dewatering and disposal system means that the city struggles with its solids inventory and its existing sludge dewatering operations. In particular, the sludge dewatering geotextile bags following the aerobic digestion process are expensive, time-consuming to manage, more difficult to use during the cold weather months, create additional work for WWTP staff, prevent the city from being able to manage the geotextile bag's solids content efficiently, and require that the city operate its WWTP at a higher solids content then is typically recommended. In that sense, the dewatering geotextile bags put into use before the city's 2011-2012 WWTP improvements project no longer appear to be a good match for a system like Hillsboro's and need to be replaced. More details on the city's alternatives analysis, the selected solution to these problems, and the scope of this proposed project can be found in the following "Alternatives Analysis and Project Description" section of this document.

Alternatives Analysis and Project Description

Alternatives Analysis: During the early 2018 facilities planning for this proposed project, the city and its engineering consultant evaluated several sludge dewatering process alternatives. These included no-action, optimization of the current process, rotary filter press, belt filter press, screw press, and centrifuge press. The city and its consultant initially considered a belt filter press option, but it was

[1] Infiltration/Inflow (I/I) is defined as extraneous, clear water that enters a sanitary sewer system through surface or subsurface locations. Infiltration usually occurs when clear water enters the system below ground through cracked or broken pipes and manholes, poorly sealed or misaligned pipe joints, damaged or poorly connected sewer laterals, etc. Inflow may include clear water entering the system through manhole covers, roof or foundation drains, direct storm sewer connections, etc.

dropped from consideration because of its relatively large space (footprint) and more cleanup requirements.

Of these five options, the no-action approach was not considered viable as it would not address the conditions and problems described in the prior section of this document. More specifically, it would leave the costly and labor-intensive dewatering process in place. Also, Hillsboro would not have the flexibility it needs to waste sludge and control its solids inventory as it should.

The city next looked at optimization of the current geotextile process. This alternative was also determined not to be a viable option because the city would need to construct a climate-controlled building at considerable cost to house the dewatering process equipment.

Following exclusion of the no-action and optimization options from further consideration, Hillsboro looked more closely at three of the four remaining options: rotary filter press, screw press, and centrifuge press. The costs of these three options are presented below in Table 1.

Table 1. Projected Present Worth Costs (Project Costs are in 2018 $)

Option	Capital Cost	Proposed O&M Costs	O&M Cost Change	Total Present Worth Costs
Rotary Filter Press	$558,750	$9,000	$7,500	$579,100
Screw Press	$575,000	$16,500	$0	$603,330
Centrifuge Press	$600,000	$17,750	$1,250	$630,000

Partly based on this present worth costs alternatives analysis, Hillsboro selected the rotary filter press option for construction. Further support for the city's selection is that the rotary filter press process is self-contained, allows for a very clean operation, has a relatively small footprint, and can produce a good quality sludge cake upon its completion. Accordingly, the rotary filter press was determined to be the most cost-effective (both monetarily and non-monetarily) alternative.

Project Description: This project consists of installing a four-disc rotary filter press, conveyer, site piping, and related appurtenances inside a previously completed (2017) addition to an existing maintenance building at the City of Hillsboro's WWTP. More specifically, the proposed rotary press will include at least four main parts: a drive system, dewatering channels, a rotary press base, and cake outlet chutes. As part of this project, a mechanical agitation vessel to assure proper flocculation, piping, instrumentation, and controls are needed to make the sludge dewatering system fully functional.

All the proposed WWTP improvements (including the four main components listed above, the required site work, and electrical system upgrades) will be made within prior disturbed areas inside the WWTP site. By completing construction of this proposed project in about 300 days, Hillsboro expects to have a more reliable (year-round) means of handling its secondary sludge at its WWTP. In turn, this proposed project will enable the WWTP to produce a Class B (regular quality) sludge. Restoring the project area to its existing (or better) condition is an additional component of this proposed project. Initially nominated in August 2017 by Hillsboro at a total project cost of $601,500, this proposed project will help eliminate the noted operational solids handling problems discussed in the prior sections.

Readers should note that while the city's WWTP does have occasional wet stream problems due to excessive I/I in the sanitary sewers, they were not significant enough until recently to cause NPDES permit compliance issues. With as much as 0.6 MGD of spare wet stream and solids handling capacity, the city's equalization basin and WWTP components are expected to be able to handle minimal additional future flows and loadings at the current estimated rate of increase over the next twenty years without another expansion. At present, the existing demand of 0.9 MGD and rated capacity of 1.5 MGD supports this conclusion. Similarly, the city projects that its WWTP future service area population, land use, and design flows will be consistent with this current rating.

Estimated Project Costs

Based on as-bid costs, construction costs are now about $511,278; planning, design, contingency, and other costs are $68,373; and total project costs are about $579,651. To pay for construction of these improvements and related construction management and contingency costs, the city expects to borrow all but $275,936 of this amount from the WPCLF at a 0.53% hardship interest rate. Ohio EPA expects that Hillsboro will save about $59,407 over the 20-year term of its loan when compared to a market-rate loan of 2.28%.

Implementation/Proposed Project Schedule

Based on the latest project schedule update, the city expects to receive WPCLF financing in December 2019. Construction of the proposed WWTP improvements project began earlier this year and is expected to be completed within the next few months, including final restoration, after about eight months of work.

Public Participation

Hillsboro held a public meeting in March 2018. No one from the public attending the meeting that was publicly noticed in the local newspaper and on Facebook had any adverse comments on the proposal. On this basis, the City of Hillsboro appears to have adequately informed the public about its proposed project and addressed any concerns through these outreach efforts.

Information that supports this decision to issue an LER is available from the contact at the end of this document. Project information is available from either the City of Hillsboro's consulting engineer, Mr. Gary Silcott of Stantec Consultants, the city's safety and service director, Mr. Richard Donley, Safety and Service Director, or Ms. Kirby Ellison, Administrative Assistant and Grant Writer. The latter can be reached at (937) 393-5219 or through the city's municipal offices located at 130 North High Street, Hillsboro, OH 45133 to answer questions regarding this project.

Interagency Coordination

The proposed project has been reviewed by the following agencies for technical input, or for conformance with legislation under their jurisdiction, and their findings support an LER:

Ohio Department of Natural Resources
Ohio EPA
State Historic Preservation Office
United States Fish and Wildlife Service

Limited Environmental Review (LER) Criteria and Conclusion

Because the proposed project meets certain minimum conditions and will not individually, cumulatively over the useful life of these improvements, or in conjunction with other federal, state, or private actions have a significant adverse effect on the quality of the human environment, an LER is warranted. More specifically, these conditions cover actions in sewered communities (such as Hillsboro) which are for minor upgrading and/or minor expansion of existing treatment works including, but not limited to, minor rehabilitation of existing facilities, functional replacement of existing mechanical equipment or structures, and construction of new ancillary facilities adjacent or appurtenant to existing facilities.

In addition, the proposed project also meets the following specific criteria for an LER:

The proposed project will have no significant adverse environmental effects. The city's proposed project is located within a previously disturbed landscape inside the City of Hillsboro's WWTP site. During the environmental reviews of this project, Ohio EPA and the city's engineering consultant identified all the potentially sensitive environmental areas in the project area and found that only one (Clear Creek's floodway) is present in the vicinity. By specifically prohibiting the placement of any excavated material in the wetlands near Hillsboro and within Clear Creek's floodway, and by requiring the city's contractors to adhere to the routine prohibited construction activities in the detail plans and specifications, no floodway encroachment (beyond that which occurred prior to this project's construction as documented recently by the city's consultant to have resulted in a rise in flood elevation), and no near- or in-stream work will be needed to complete this proposed project. On this basis, the city's proposed project is expected to have no significant adverse environmental effects. Figure 3 below shows the WWTP's location, including the maintenance building addition, in relation to the Clear Creek floodway (cross-hatched area).

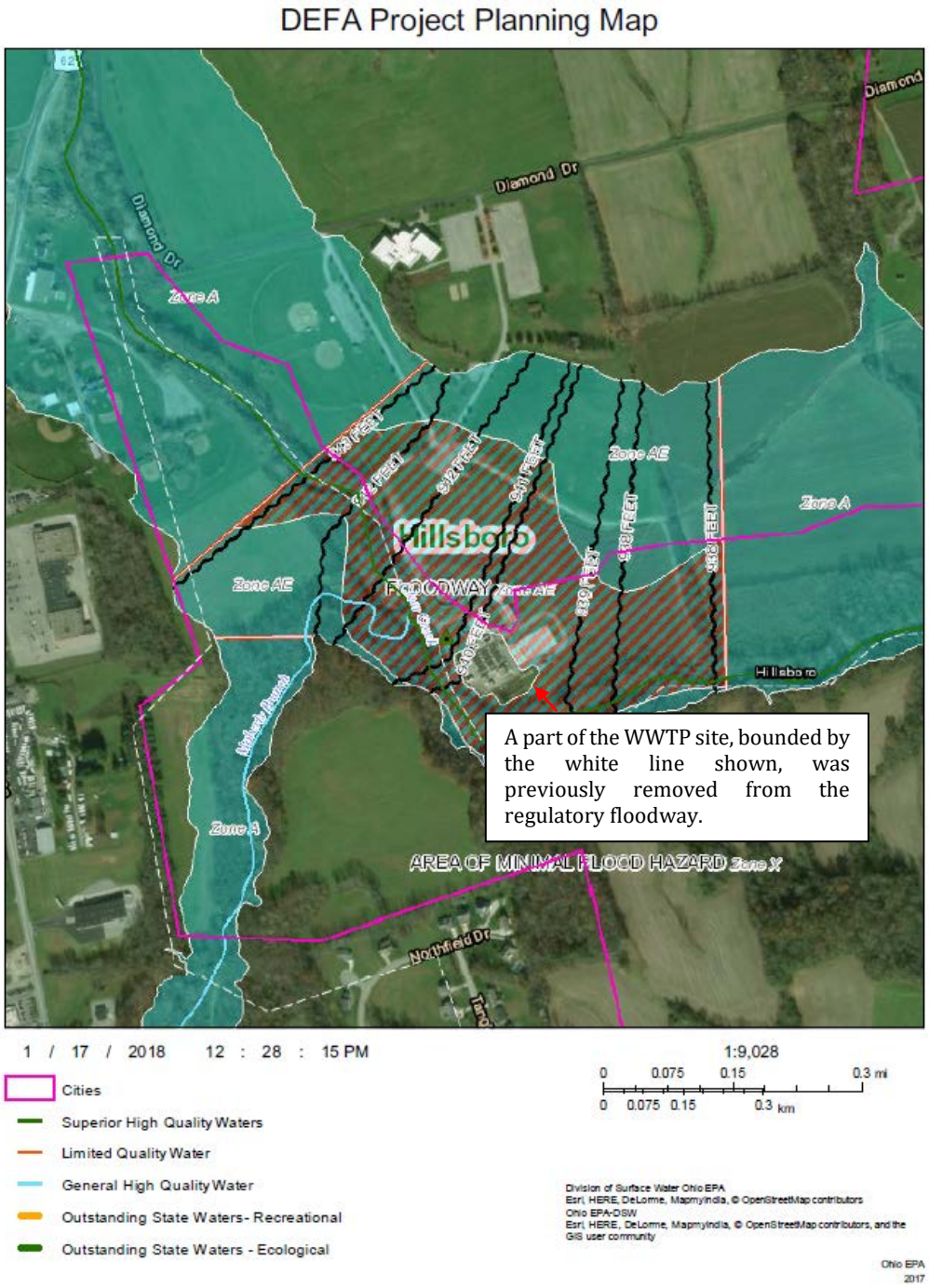

Figure 3, Clear Creek Floodway and Hillsboro WWTP Location

The proposed project does not require extensive general or specific impact mitigation. Due to the limited scope of the city's proposed project and its location within a previously disturbed landscape including a part of Clear Creek's floodway, no extensive general or specific impact mitigation is required. In particular, the proposed project will only involve work inside an existing operations/maintenance building addition at the city's WWTP site shown in the three figures above.

Environmental impacts will be held within acceptable levels through proper erosion and sedimentation controls and temporary and permanent seeding of areas disturbed during construction, as well as adherence to prohibited construction activities in the detail plans. Local residents may experience minor traffic disruption during the construction of this project in Hillsboro, but the specifications include the needed traffic control measures.

The proposed project will have no adverse effect on high-value environmental resources. As noted above, the small project area is generally devoid of any high value environmental resources and steps have been taken to assure that no adverse additional or off-site impacts to floodways and floodplains, wetlands, or the species that depend on them occur during its construction. In particular, as no spoil material from excavations will be generated during this proposed project and all construction activity will be inside or adjacent to an existing building, no adverse effects on any high value environmental resources will occur.

The selected alternative for this project is cost-effective. In comparison to the other alternatives considered during facilities planning, the city's selected alternative for this project is clearly more cost-effective. Taking no action would leave the current conditions in place and not resolve the operational problems the city is experiencing with its less than exceptional quality (Class B) sludge during disposal activities in the past few years. As part of its consideration of non-monetary aspects of cost-effectiveness, Ohio EPA has reviewed this project and found it to be consistent with the water quality management plan for Hillsboro.

The proposed project is not a controversial action. Because the city's Rotary Filter Press was discussed in open meetings, including a utilities committee meeting on March 8, 2018 (advertised in the local paper and on Hillsboro's Facebook page one day before the meeting), and no adverse comments were received from the one person in attendance, Ohio EPA considers this project to be non-controversial. Readers should note that there was minimal public comment at the March 2018 meeting, the project met with favorable approval by the utilities committee, and it was forwarded to city council for approval.

Furthermore, since the city will save in operating costs by using the rotary filter press alternative, the overall annual project cost will not result in a rate increase to city residents. With no additional costs to be realized by city residents, in part due to OPWC funding, there is no other known basis for public controversy.

Finally, Hillsboro can construct the project, use the money it would have needed to purchase sludge dewatering bags for loan repayment, and not have to raise wastewater rates.

At present, the city currently has a minimum wastewater charge of $28.02 for the first 133 cubic feet of water usage. With an average residential customer using about 600 cubic feet per month, this usage is equivalent to a monthly fee of $63.13 based on the minimum charge plus $7.52 for each additional 100 cubic feet of water used. Expressed as a percentage of Hillsboro's recent annual median household income of $33,209, a post-project fee of $757.66 is equivalent to 2.28% and is generally considered to be affordable for the average city resident.

The proposed project does not involve new or relocated discharges to surface or ground waters. As noted above, the project is very limited in scope. By correcting the sludge management problem at its WWTP, water quality conditions are expected to improve upon project completion.

Thus, no new or relocated discharges of untreated wastewater to surface or ground waters will occur as a result of the proposed project.

No substantial increase in the volume of discharge or the loading of pollutants from an existing source or from new facilities to receiving waters will occur. As noted above, the city's WWTP will continue to have an average daily flow rating of 1.5 mgd. Since this rating is not expected to change, the flows being delivered to the WWTP are expected to stay below this value (at about 1.1 mgd on an average daily flow basis) during the design life of the project. Further, as this project will not substantially increase the volume of discharge or the loading of pollutants from Hillsboro's existing WWTP to Clear Creek, this proposed project should help assure that the flows from the WWTP's service area are properly treated and discharged to Clear Creek under dry weather conditions. By itself, the proposed project will not address wet weather overflows in the city's collection system and bypasses at its WWTP.

The proposed project will not provide capacity to serve a population substantially greater than the existing population. The city's proposed Rotary Filter Press project is solely intended to remedy an existing sludge maintenance problem. As such, it is not intended to serve a population substantially larger than now exists, or an undeveloped area. Thus, this project's basis of design (population projections and flow figures established during planning) is consistent with the current attainment status of Highland County and Hillsboro under the Clean Air Act and with water quality management planning under Section 208 of the Clean Water Act for Hillsboro.

Conclusion

The proposed project is sufficiently limited in scope and meets all applicable criteria to warrant an LER. The planning activities for the proposed project have identified no potentially significant adverse impacts. The proposed project is expected to have no significant, short- or long-term adverse impacts on the quality of the human environment or on sensitive resources such as floodways and floodplains, wetlands, prime or unique agricultural lands, aquifer recharge zones, archaeologically or historically significant sites, coastal areas, or threatened or endangered species. The main benefit of this project will be the continued production of Class B sludge at Hillsboro's WWTP and lowering the annual costs of operating the solids handling equipment. While the proposed rotary filter press will use slightly more electrical power than the current process, the city noted that this increase will be offset by the reduction in fuel and maintenance on the sludge hauling equipment it currently uses.

For further information, please contact:

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