


MEETING DATE: April 12, 2004
DEPARTMENT: Community Development
& Public Works
PREPARED BY: L. Ruffing
DEPT. DIR. APPROVAL: 
CITY MGR. APPROVAL: 
PRESENTED BY: L. Ruffing

AGENDA ITEM SUMMARY REPORT

RECEIVE RECOMMENDATION FROM THE COMMUNITY DEVELOPMENT COMMITTEE AND ADOPT RESOLUTION AMENDING THE FY 2003-04 REDEVELOPMENT AGENCY BUDGET TO ALLOCATE \$5,000 FROM THE REDEVELOPMENT PROJECT FUND TO ACCOUNT #170.4810.319 AND AUTHORIZING THE INTERIM EXECUTIVE DIRECTOR TO EXECUTE A CONTRACT WITH ROBERT GEARHEART, PH.D., FOR PREPARATION OF A PRELIMINARY TECHNICAL STUDY THAT EVALUATES THE APPLICATION OF WETLAND TREATMENT SYSTEMS IN CONJUNCTION WITH THE CITY'S EXISTING WASTEWATER TREATMENT PLANT (AMOUNT: NOT TO EXCEED \$5,000; ACCOUNT: #170.4810.319)

BACKGROUND

The concept of creating a marsh to augment the City's wastewater treatment facilities has emerged in the broad community discussion of reuse ideas for the Georgia-Pacific Mill Site. As the City plans for reuse of the Mill Site property and considers options for improving and expanding its wastewater treatment facility which is located on the coast and surrounded by the Mill Site, the discussion of the potential benefits of a wetland treatment system is timely.

SUMMARY

The Community Development Committee discussed the potential benefits of a marsh at their March 17, 2004 meeting and recommended that the Council authorize a preliminary technical study to answer some basic questions about the marsh concept.

Based on questions raised at the meeting and ensuing conversations with Dr. Robert Gearheart, a civil engineer who specializes in wetland wastewater treatment systems and who has been involved with the development of Arcata's Integrated Wetland and Wastewater Treatment facility and the Arcata Marsh, the following issues and concerns were identified concerning the use of a wetland treatment system at the City's wastewater treatment facility:

- What would a marsh accomplish?
- How would it fit in to the existing system?
- Could it help the City deal with peak wastewater flows during storm events?
- How big of a marsh is needed to meet the design capacity of the plant?
- How much bigger of a marsh is needed to increase the capacity to treat wastewater from redevelopment of the Georgia-Pacific Mill Site?

- What would be the optimum configuration of a wetland marsh (size, location, etc.)?
- What are some ballpark cost estimates for construction, operation and maintenance of a wetland system?
- What, if any, odor issues are there?
- What are the maintenance issues associated with a marsh?
- Would the proposed sand filter system still be necessary?
- Why and when should the City consider switching to UV disinfection rather than chlorination?
- What other opportunities does a marsh present (i.e., water reuse; storage; wetland mitigation bank; environmental education; recreation; etc).

Staff requested that Dr. Robert Gearhart submit a proposal for a preliminary technical study in response to the Community Development Committee's recommendation. Dr. Gearheart submitted a proposal to prepare a report which addresses the issues identified above for a fixed fee of \$5,000.

FISCAL IMPACT

The Community Development Committee recommended that the study be funded by the Redevelopment Project Fund. This is appropriate as the treatment plant is located in the Redevelopment Project Area and the study will address expansion of plant capacity to serve new development on the Georgia-Pacific Mill Site which is entirely within the Redevelopment Project Area. The Redevelopment Project Fund has a sufficient unallocated fund balance to cover the \$5,000 cost of this study.

ALTERNATIVES

1. No Action. Under this alternative, the Council would take no action and the study would not be prepared.
2. Continue action on the matter and request that staff provide additional information regarding the study.

RECOMMENDATION

Receive Recommendation from the Community Development Committee and Adopt Resolution Amending the FY 2003-04 Redevelopment Agency Budget to Allocate \$5,000 from the Redevelopment Project Fund to Account #170.4810.319 and Authorizing the Interim Executive Director to Execute a Contract with Robert Gearheart, Ph.D., for Preparation of a Preliminary Technical Study that Evaluates the Application of Wetland Treatment Systems in Conjunction with the City's Existing Wastewater Treatment Plant.

ATTACHMENTS

1. Resolution

2. Community Development Committee minutes (draft), March 17, 2004

AGENDA & SUMMARY REPORT TO:

1. Dr. Robert Gearheart, Ph.D.
2. North Coast Action

RESOLUTION NO. R-____-2004

RESOLUTION OF THE FORT BRAGG REDEVELOPMENT AGENCY AMENDING THE FY 2003-04 REDEVELOPMENT AGENCY BUDGET TO ALLOCATE \$5,000 FROM THE REDEVELOPMENT PROJECT FUND TO ACCOUNT #170.4810.319 AND AUTHORIZING THE INTERIM EXECUTIVE DIRECTOR TO EXECUTE A CONTRACT WITH ROBERT GEARHEART, PH.D., FOR PREPARATION OF A PRELIMINARY TECHNICAL STUDY THAT EVALUATES THE APPLICATION OF WETLAND TREATMENT SYSTEMS IN CONJUNCTION WITH THE CITY'S EXISTING WASTEWATER TREATMENT PLANT (AMOUNT: NTE \$5,000; ACCOUNT: #170.4810.319)

WHEREAS, the City of Fort Bragg is currently planning for the reuse of the former Georgia-Pacific timber mill site; and

WHEREAS, the City's wastewater treatment plant is located on a coastal site which is encompassed on three sides by the Georgia-Pacific mill site; and

WHEREAS, the City is interested in considering options for improving and expanding its wastewater treatment facility; and

WHEREAS, the concept of creating a marsh to augment the City's wastewater treatment facilities has emerged in the broad community discussion of reuse ideas for the Georgia-Pacific mill site; and

WHEREAS, the Community Development Committee discussed the potential benefits of a marsh at their March 17, 2004 meeting and recommended that a preliminary technical study be prepared to answer basic questions about the marsh concept; and

WHEREAS, Dr. Robert Gearheart, a civil engineer who specializes in wetland wastewater treatment systems and who has been involved with the development of Arcata's Integrated Wetland and Wastewater Treatment Facility, has submitted a proposal to prepare a preliminary technical study regarding a wetland treatment system in conjunction with the City's wastewater treatment facility for an amount not to exceed \$5,000; and

WHEREAS, the study will benefit the Fort Bragg Redevelopment Project Area by helping to ensure that there is adequate wastewater treatment infrastructure to serve new development in the Project Area; and

WHEREAS, the FY 2003-04 Redevelopment Agency Budget has a sufficient unallocated fund balance in the Redevelopment Project Fund to cover the cost of this study.

NOW, THEREFORE, BE IT RESOLVED that the Agency Board of the Fort Bragg Redevelopment Agency does hereby amend the FY 2003-04 Redevelopment Agency Budget to allocate \$5,000 from the Redevelopment Project Fund to Account #170.4810.319, and

BE IT FURTHER RESOLVED that the Agency Board of the Fort Bragg Redevelopment Agency authorizes the Interim Executive Director to execute a contract with Robert Gearheart, Ph.D., for preparation of a preliminary technical study that evaluates the application of wetland treatment systems in conjunction with the City's existing wastewater treatment plant.

The above and foregoing Resolution was introduced by Agency member _____, seconded by Agency member _____, and passed and adopted at a regular meeting of the Redevelopment Agency of the City of Fort Bragg held on the 12th day of April, 2004, by the following vote:

AYES:

NOES:

ABSENT:

JERE MELO,
Chair

ATTEST:

Cynthia M. VanWormer,
Secretary

The Fort Bragg Community Development Committee convened a special meeting on Tuesday, March 17, 2004 at 3:00 p.m. at Fort Bragg City Hall, Conference Room 3, 416 North Franklin Street, Fort Bragg, California.

ROLL CALL

Members present: Council member Dan Gjerde; Council member Dave Turner.
Staff present: Community Development Director Linda Ruffing; Water Projects Manager Dick LaVen

APPROVAL OF MINUTES

Minutes of February 17, 2004 meeting were approved by consensus of Committee.

PUBLIC COMMENTS ON NON-AGENDA ITEMS

None.

CONDUCT OF BUSINESS

1. Receive Oral Report and Discuss Promotion of Historic Preservation Activities and Make Recommendation to Council

Turner provided brief report on contacts with Bill Hole and Lorraine Hee-Chorley, explaining that week of May 24 would work well and that it would cost between \$800-\$1000. National Preservation Week is May 3rd to 8th. Gjerde requested that Building Department be requested to attend.

Turner suggested that Council be requested to authorize expenditure. Discussion ensued regarding funding source. Preference is for it to be funded by Redevelopment Project fund and supplemented with General Funds, as needed. This could go on Council's April 12.

CDAB UDAG funds

May agenda follow up on Mills Act, UDAG, Proclamation

2. Receive Oral Report and Make Recommendation to Council to Allocate Up to \$5,000 to Fund a Preliminary Study of a Marsh for Wastewater Treatment

Turner provided brief summary of his efforts to contact Bob Gearhart.

Gjerde- McKinleyville \$650,000 grant for wastewater and stormwater marsh. Misconceptions, log pond would be a marsh. Need separate marsh for wastewater system. Each marsh is about 7 acres.

LaVen- Mill pond currently receives stormwater. Functions as stormwater treatment marsh. Stormwater from Alder and Maple Street systems. About 40% of runoff from City. Also receives runoff from Mill Site. He just finished grant application to SWRCB in which we're asking for \$480,000 to work on I&I problems with sanitary sewer system. If funded, that grant has water quality monitoring requirement. Would be required to do input/output monitoring. Ruffing

mentioned that Division of Dams and Safety has issued order to fix the dam on the Mill Pond. The property owner is responsible for figuring out whether to fix, replace and/or remove the pond. Certainly, the City has an interest in participating in this process. In the future, the City is likely to need to provide some treatment for it's storm drain system. If we can retain the marsh, this would provide a solution to 40% of our problem.

Questions ensued about location for wastewater treatment marsh and whether there are any opportunities for blending effluent. LaVen mentioned that primary biofilter is working, but secondary biofilter (one with plastic rather than rocks) is not working as well.

LaVen suggests that we look at replacing secondary biofilter with a marsh system. The outfall from that marsh system. Continue with same chlorination system. Question: How much space is needed. Plumbing problem, land problem. Does it flow by gravity, do we need pumps. What are costs associated with that. How big a marsh do we need to remove a known level of solids and BOD. Sand filter and secondary digester are capital projects. Just had audit of sytem by EPA. Don't know whether we've seen results of that audit or not. Is there connection between marsh and size of sand filter? Can we use smaller sand filter? Or not do sand filter at all? Can marsh serve as expansion capability during big I&I, have pond expand and triple in size, reprocess outflow.

Once in system, pond would not have excess capacity—unless you had different ponds. Can this, in some way absorb the overflow for the I&I—instead of gearing a whole plant to handle 10 mgd for 2 days out of the year.

Gjerde raised idea of a solarium or greenhouse over marsh and/or treatment facilities, where warmer environment can hasten process. Raise temperature of solution by 10 C you double the reaction rate. Fonthav's Law. Could increase flow rate. What are requirements of solarium? Maintenance wise, it might be easier to have a little more pond.

LaVen- need to look at what are the requirements that brought us to the conclusion that we need to do the sand filter. Where are we with the timeframes.

Gjerde- letter to WQCB was to raise idea that we are looking at marsh, and we may need to go back to them and

Turner- Sand filter project needs to be done 420 days from when we get our NPDES permits. Got new prices, half again as much. Prop 50 funds are not in hand. If for same cost of sand filter we can do marsh, handle expansion, but it will take an extra 6 months.

Bob Gearhart, father of Arcata Marsh. Conceptual study. Retired HSU professor. Conceptual study. Size, configuration, site layout.

Need to provide map showing elevations, as lower elevation would be less expensive.

LaVen- marsh would work as substitute for filter which is not working now.

Turner- need to know what is cost of replacing secondary biofilter.

Gjerde- if we need to acquire land for this, maybe Coastal Conservancy or Wildlife Conservation Board might help provide funding.

Turner- Recommend Council authorize staff to work with Gearhart on conceptual study of how marsh might work with our treatment study.

Ruffing- source of funds? Wastewater fund. Location/amenity for Mill Site. Redevelopment. All with redevelopment, unless we need to use other funds.

LaVen- If we get grant, everything needs to be complete by March 2007. \$500,000 won't do it. May also get \$250,000 from Congressman Thompson's office. Hopefully will get large chunk of sites that need to be treated. Identified 58 sites that will get 98% of measured inflow. Of those 58 sites, 32 are relatively minor. Grant match- PW crew will deal with minor sites. Other 26 sites have 90% of water.

Discussion continued regarding Oak Street reconstruction and need to do I&I improvements during construction.

826-3135 Bob Gearhart

April 12th Council meeting.

MATTERS FROM COMMITTEE/STAFF

No matters were reported.

The meeting was adjourned at 4:10 p.m.

The Fort Bragg Community Development Committee convened a special meeting on Tuesday, March 17, 2004 at 3:00 p.m. at Fort Bragg City Hall, Conference Room 3, 416 North Franklin Street, Fort Bragg, California.

ROLL CALL

Members present: Council member Dan Gjerde; Council member Dave Turner.
Staff present: Community Development Director Linda Ruffing; Water Projects Manager Dick LaVen

APPROVAL OF MINUTES

Minutes of February 17, 2004 meeting were approved by consensus of Committee.

PUBLIC COMMENTS ON NON-AGENDA ITEMS

None.

CONDUCT OF BUSINESS

1. Receive Oral Report and Discuss Promotion of Historic Preservation Activities and Make Recommendation to Council

Turner provided brief report on contacts with Bill Hole and Lorraine Hee-Chorley, explaining that week of May 24 would work well for a workshop and that it would cost between \$800-\$1000. He noted that National Preservation Week is May 3rd to 8th. Gjerde requested that the Building Department be requested to attend.

Turner suggested that the Council be requested to authorize expenditure. Discussion ensued regarding funding sources. Committee members agreed that the preference is for the workshop to be funded by the Redevelopment Project Fund and supplemented with General Funds, if needed.

The Committee will follow up with additional recommendations to the Council regarding the Mills Act, use of UDAG funds for façade improvement grants and a proclamation for Historic Preservation Week.

2. Receive Oral Report and Make Recommendation to Council to Allocate Up to \$5,000 to Fund a Preliminary Study of a Marsh for Wastewater Treatment

Turner indicated that he had attempted to contact Robert Gearheart regarding the possibility of performing a preliminary study of a marsh/wetland treatment system at the City's wastewater treatment plant.

Gjerde noted that McKinleyville had received a \$650,000 grant for a wastewater and a stormwater marsh. He felt that there are misconceptions that the log pond could be converted into a wastewater treatment marsh, when, in fact, separate marshes are needed for stormwater and for wastewater. He said that each of the McKinleyville marshes is about seven acres.

Dick LaVen noted that the Mill Pond currently receives stormwater and functions as a stormwater treatment marsh for stormwater discharged from the Alder and Maple Street collection systems. This is about 40% of the stormwater runoff from the City. The Mill Pond also receives runoff from Mill Site. He noted that he had just finished a grant application to the State Regional Water Quality Control Board which requests \$480,000 to work on inflow and infiltration problems with the sanitary sewer system. If funded, that grant has water quality monitoring requirements. The City would be required to do input/output monitoring.

Ruffing mentioned that the Division of Dams and Safety has issued an order to G-P to repair the dam on the Mill Pond. While the property owner is responsible for figuring out whether to fix, replace and/or remove the pond, the City has an interest in participating in this process. In the future, the City is likely to need to provide some treatment for its storm drain system. If we can retain the Mill Pond as a marsh, this would provide a solution to 40% of our problem.

Questions ensued about the location for a wastewater treatment marsh and whether there are any opportunities for blending effluent. LaVen mentioned that the primary biofilter at the wastewater treatment plant is working well, but the secondary biofilter (one with plastic rather than rocks) is not working as well. He suggests that the City look at replacing the secondary biofilter with a marsh system. He explained that the marsh system would use the existing outfall and that the effluent would be treated with chlorine. He noted some questions: How much space is needed? Would the effluent flow by gravity or would pumps be needed? What are costs associated with that? How big of a marsh do we need to remove a known level of solids and BOD? Is there connection between a marsh and the size of sand filter? Can we use smaller sand filter? Or no sand filter at all? Can marsh provide expansion capability during big storm events when we experience high flows, have pond expand and then reprocess the outflow?

Gjerde mentioned that in some northern European countries, they build solariums or greenhouses over wetland treatment facilities, with the warmer environment speeding up the digestion process. LaVen noted that there is a scientific law that, if you raise the temperature of a solution by 10°C, the reaction rate is doubled. This would allow for an increased flow rate. However, you would have to consider the requirements of a solarium? Maintenance wise, it might be easier to have a little more pond.

Gjerde noted that a letter was sent to the Water Quality Control Board explaining that the City is looking at the possibility of a marsh. Turner noted that the sand filter project needs to be done 420 days from when the City receives its NPDES permits. However, we may need some extra time, if we switch from a sand filter to a marsh.

Discussion ensued regarding Robert Gearheart, one of the founding designers of the Arcata Marsh treatment system.

Gjerde noted that, if the City needs to acquire land for a marsh, maybe the Coastal Conservancy or the Wildlife Conservation Board could help provide funding.

Turner recommended that Council authorize staff to work with Gearheart to develop a scope of work for a conceptual study which looks at how a marsh might work with our treatment system.

Ruffing asked the Committee to identify a source of funding for the study. While the Wastewater Fund would be a natural, it is short of revenues. Since the marsh would be located on the Mill Site and would in part help with processing wastewater from future development on the Site—and the site is located in the Redevelopment Project Area, she suggested that redevelopment funds could be used for the study.

Consensus of Committee was to direct staff to work with Dr. Gearheart to develop a scope of services for a conceptual study of a wastewater treatment marsh in conjunction with the City's existing wastewater treatment system and to recommend to the Council that the City enter into a contract with Dr. Gearheart for an amount not to exceed \$5,000 for such a study, with funding from the Redevelopment Project Fund.

LaVen provided an update on recent grants received by the City to deal with inflow & infiltration and the work that would be completed with the funds. Discussion continued regarding Oak Street reconstruction and the need to perform the inflow and infiltration improvements during construction.

MATTERS FROM COMMITTEE/STAFF

No matters were reported.

The meeting was adjourned at 4:10 p.m.