Environmental Assessment
July 2004

Project Name: City of Fort Bragg Municipal Improvement District Number 1 Inflow and Infiltration Repair

Lead Federal Agency: **U.S. Environmental Protection Agency Region IX (Grant to the City of Fort Bragg)**

Prepared By: **Jason Dose, Planner II, City of Fort Bragg**
(707)961-2823, ext 107
jdose@ci.fort-bragg.ca.us

Introduction

The City of Fort Bragg is seeking grant funds from the U.S. Environmental Protection Agency (EPA) through a special Congressional appropriation to assist in a project to locate and correct points where storm water is entering the City's wastewater collection and treatment system. The total cost of the project is expected to be $772,473, with $241,000 coming from the U.S. EPA. Matching funds are being provided through a grant to the City of Fort Bragg from the California State Water Resources Control Board and through City Municipal Utility District No. 1.

Based on the information in this Environmental Assessment, prepared pursuant to the National Environmental Policy Act, EPA is proposing to issue a Finding of No Significant Impact (FONSI). The City of Fort Bragg is responsible for compliance with the California Environmental Quality Act and has submitted a notice of exemption because the project is reconstruction of an existing utility system.

I. Purpose and Need for Action

Sewage treatment and disposal within the City of Fort Bragg is provided by the Fort Bragg Municipal Improvement District Number 1. The District is larger than the City as it includes much of the City's designated Sphere of Influence identified in the 2002 General Plan update. The treatment and disposal facility, located on the westernmost portion of the City limits and adjacent to the Pacific Ocean, currently handles approximately 640,000 gallons of treated wastewater per day (Average Dry Weather Flow or ADWF). The facility has a rated capacity of 1,000,000 gallons per day.

The original City of Fort Bragg sewer system was constructed to carry combined storm water and sanitary sewage. In the early 1970's the City conducted a smoke testing program of its sewers to identify and correct the remaining remnants of the combined sewer system. By the late 1970's the combined system was converted to a "separate" sanitary sewer and storm drain system. However, cross connections between the systems persist, causing excessive inflow and infiltration into the wastewater system during storms.

The City of Fort Bragg Municipal Improvement District (District) is currently operating under orders from the State Regional Water Quality Control Board (Board) to improve the quality of effluent discharged from it's ocean fronting wastewater treatment plant in order to renew it's discharge permits (the District operates under a temporary permit). One of the factors which impairs the District's ability to comply with waste discharge requirements of the Board are the high wet weather flows which are experienced during the rainy season. Although the District's sanitary sewer system is referred to as "separated" from the storm drain system, rainwater and groundwater enters the sewer system during rainy weather through leaks and direct drainage connections (remnants of the original system). The older portions of the sewer system in the City are vitrified clay pipe with cement or tar joints every two to three feet. Over time, these joints can become damaged particularly by tree roots and excavations which, in turn, can create a situation where the damaged portions of sewer to create a vacuum like pull on the surrounding soil/water during periods of rainfall, sucking rainwater, groundwater, and mud into the sewer system and add to the amount of fluid entering the wastewater treatment plant. Under these conditions, the plant's efficiency drops precipitously and, at times, partially treated effluent enters public waterways. Further, the interconnections are such that there is some possibility, if sewer flows were blocked through flooding, a construction accident, or an earthquake, that raw sewage could be discharged into the City's storm drain system into Pudding Creek, the Noyo River, or ocean beaches, which are frequented by the public. This risk is compounded by the fact that the Noyo River and Pudding Creek estuaries serve as holding areas for spawning salmonids until upstream conditions are such that they may begin their spawning runs.

In 1997, the City hired 7H Consulting Engineers to conduct a smoke test of the sewer main system all accessible main lines were identified and smoke tested. From this testing various deficiencies within the main line system were identified and photographed. In 1999 the City of Fort Bragg contracted with Nute Engineering to complete an engineering evaluation of the smoke test of the municipal sewer system (summary report attached, see

attachment 1). The test identified the existence of 227 cross-connections between the sanitary sewer and storm drain systems. The analysis assigned treatment priorities to each of these cross-connections based on the ratio of the estimated cost to eliminate the cross connection to the volume of water moving through the cross-connection during a design storm. Priority 1, 2, and 3 sites cost less than $2 per unit volume per day of cross connection flow prevented. Priority 4, 5, and 6 sites cost from 10 to 100 times as much per unit volume to treat. The City proposes to investigate the 57 sites classified as priority 1, 2, and 3 more closely and to take appropriate action to eliminate the cross connections. These 57 sites account for better than 95% of the total volume of potential cross-connection flows known to exist.

The project is intended to eliminate the identified high priority (priority 1, 2, and 3) inflow, infiltration, and cross connections between the sanitary sewer system and stormwater drainage systems. It is estimated that the repair of the 57 noted cross-connections would reduce the design peak daily wet weather flow at the wastewater treatment plant from 5.0 million gallons per day (mgd) to 4.4 mgd. This represents a 12% reduction in peak flow and an 18% reduction in the combined inflow and intensity related component.

II. Project Description and Analysis of Alternatives

Alternative 1 – Elimination of "priority" cross connections.
The City proposes to excavate the 57 sites and take such steps as are necessary to eliminate inflow, infiltration, and cross connections (see attached maps, attachments 2 and 3). It has been determined that the proposed project can be most effectively broken into two components based on complexity. Thirty Two of the 57 sites (56%) can be corrected by the City's Department of Public Works Road Maintenance personnel through the use of hand tools, a backhoe, and a dump truck. The other 25 locations (44%) are more complicated and would require an investigation by a sewer camera and additional smoke testing to locate and isolate. These other locations would be treated under an "investigate, design, and construct" subcontract for the project. Once a repair approach is identified for a particular area and the design completed, the repair would take place in a similar fashion to the above methods. Smoke testing and photo-documentation will be conducted at the of the locations prior to and after construction to quantify the level of success of the project.

Each of the 57 locations are located on paved City streets and would require temporary traffic control and/or detours for through vehicles, depending on the extent of construction required at specific locations. The City will undertake a considerable public awareness campaign so as to keep public disruptions to a minimum. The campaign will consist of: presentation of the project work plan at a City Council meeting (with appropriate noticing pursuant to the Brown Act), notification of affected residents by mail 30 days before proposed construction, additional notification in the form of door hangers 7 days before construction, and all construction activities will be published in the local newspaper.

Construction activities would take place over two construction seasons with specific work on a location taking place over a 30 day period (on average). As construction progresses, the City will regularly update the community on progress as well as expected delays.

The project would not result in an increase in capacity of either the sewer or stormwater system.

Alternative 2 – No Action Alternative.
If the City takes no action regarding reduction of the known inflow and infiltration issues confronting the public sewer/storm drainage system, the wastewater treatment plan will continue to experience difficulty meeting the Board's requirements for containment/cleaning of effluent during high rainfall events. Further, the continued risk of contamination of public beaches as well as the Pudding Creek and Noyo River estuaries would remain.

III. Present Environment.

A. Community Location and General Description

The majority of the City of Fort Bragg is located in western Mendocino County on the Pacific Ocean between the Noyo River and Pudding Creek. It is a relatively urban community of 7,026 (2000 Census) located amongst several smaller rural communities along the coast (Caspar, Mendocino, Cleone, Westport). Historic economic activities have been natural resource based in the timber and fishing industries but recently have transitioned more to a visitor serving type economy and also with a large portion of jobs being provided in the government sector. Water is provided by the City of Fort Bragg and sewer service is provided by the Fort Bragg Municipal Improvement District Number 1 which serves all of Fort Bragg City limits as well as limited portions of the surrounding adjacent lands that are incorporated into the City's sphere of influence as identified in the Fort Bragg General Plan. The community is predominantly residential in nature though there are large areas of commercial land uses as well as limited industrial uses within the City.

B. Geology

There are no active earthquake faults within the City. However, the San Andreas fault is located approximately 9 miles to the west (off the coast), and the Maacama fault is located 22 miles to the east. Major earthquakes can occur on these faults. Seismic activities can cause major disruptions of the City's transportation and emergency services network. Should the Pudding Creek, Noyo River, and/or Hare Creek bridges become unusable following a seismic event, people may not be able to evacuate and emergency access would be blocked. Potential hazards associated with earthquakes include: rupture of the ground surface by displacement, shaking of the ground caused by passage of seismic waves through the earth, ground failure induced by shaking, liquefactions of susceptible soils, and tsunamis. Non-seismic geologic hazards include the presence of unstable soils on steep slopes which are located adjacent to the Pacific Ocean and in limited areas adjacent to Pudding Creek and the Noyo River.

C. Climate and Air Quality

The Fort Bragg area generally experiences dry summers and wet winters. The average annual temperature recorded at the US Weather Station in Fort Bragg (# 043161) is 52.7 degrees Fahrenheit. The average annual maximum temperature is 60.7 degrees Fahrenheit, while the average annual minimum temperature is 44.8 degrees. Freezing temperatures rarely occur. The average annual rainfall in Fort Bragg is 44.8 inches, with about 90 percent falling between the months of November and March. The predominant wind direction is from the north to northwest in the summer with a southerly wind in the winter. The average yearly wind speed is 7.3 mph.

The Mendocino County Air Quality Management District currently defines the local air basin as an attainment area for state and federal air quality standards except for the state suspended particulate standard (PM10).

D. Environmental Inventory.

There are various isolated wetlands located within the service area, all of which are located on private property (not City owned/maintained). The project area is bordered by the Noyo River on the south, Pudding Creek on the north, the Pacific Ocean to the west, and mountains to the east. Each of the water features is considered habitat for salmonid species of fish. Much of the ocean front vegetation in Fort Bragg can be classified as coastal prairie while the majority of the remainder of the service area can be characterized as "urbanized", in that, a relatively dense mix of housing on relatively small lots predominates the area.

There are no sole source aquifers located in the service area and the FEMA-identified floodplains occur strictly adjacent to the Noyo River and Pudding Creek. Both areas are located anywhere from (approximately) 30 feet to 50 feet lower than the service area.

The portions of the service area which are west of Main Street and south of Walnut street are located in the Coastal Zone. The City of Fort Bragg maintains a Certified Local Coastal Program and processes it's own Coastal Development Permits.

The receiving waters for much of the City's storm water runoff are the Noyo River and Pudding Creek estuaries as well as limited direct outfall into the Pacific Ocean. These estuaries serve as holding areas for spawning salmonids until upstream flow conditions are such that the salmonids can begin their spawning runs. Coho salmon hold in the Noyo estuary until incoming water temperature drops to a suitable level and flows increase following the first storms of the season. These flow conditions are most often achieved in late November, but may not occur until early January. Coho Salmon waiting to spawn spend that time in near-shore waters. Steelhead do not begin their spawning runs until January and spend much of December close to shore. The City contacted NOAA Fisheries regarding this project and have received their full support.

There are no National Natural Landmarks as identified by the National Parks Service located in, or adjacent to, the service area. There are known archaeological sites located on the west side of the service area on private property. The sites are related to the

Mendocino Coast band of Pomo Indians and relate to former lodging and camp sites. There are innumerable historic structures located in the service area as the City of Fort Bragg was incorporated in 1889.

E. Present Facilities

Sewer System

The City's sewer treatment and disposal facility currently disposes of approximately 640,000 gallons of wastewater per day (Average Dry Weather Flow – ADWF). The Average Wet Weather Flow (AWWF) of the plant is 1.413 million gallons per day with a Peak Wet Weather Flow (PWWF) of 5 million gallons per day.

The plant has a rated capacity of 1,000,000 gallons per day ADWF which is sufficient to meet the demand of the projected increase. The plant has a rated capacity of 2,200,000 Average Wet Weather Flow (AWWF). However, due to spikes in the inflow to the facility during wet weather (caused by inflow and infiltration), the plant's wet weather capacity is frequently exceeded, resulting in violations of the facility's National Pollutant Discharge Elimination System (NPDES) permit. The facility exceeded the terms of their NPDES permit on ten occasions in 2003 when the facility experienced flows which were above the approved average wet weather flows.

The District is in the process of installing a new secondary digester at the treatment plant. The new digester would allow for closing down of the primary digester to allow for cleaning and maintenance. Until the necessary improvements to the plant are constructed, the wet weather capacity at the plant will continue to be limited and future permit violations are expected.

The facility discharges directly into the Pacific Ocean via a permitted outfall pipe which extends out past the wave action zone. The treatment plant discharges at a dilution rate of 50:1.

Storm Drain System

The City completed a storm drain master plan in 1985 and added a chapter to the Fort Bragg Municipal Code which allows the City to review new development proposals and condition them appropriately to ensure that adequate on and off-site drainage improvements are included as part of the development. Most of the storm drain improvements identified in the plan have been completed.

The City is in the process of updating it's Storm Drain Master Plan. The plan will identify areas which should be analyzed for improvement in the future.

Quality and Location of Present Receiving Waters

Much of the City's storm drainage enters a large marsh located on the west side of the City (located on private property). The marsh acts as a defacto "polishing" basin. Limited runoff from areas of the City enter the Noyo River, Pudding Creek, and the Pacific Ocean

directly. All of the receiving waters for the City of Fort Bragg may be described as "good" quality.

IV. Evaluation of direct and indirect impacts associated with the proposed project.

This section describes potential impacts of the project and recommended mitigation measures to reduce the impact to a level of insignificance.

Wetlands
The proposed project involves the investigation and correction of known cross connections between the City's sewer system and storm drain system. All work would take place on paved City Streets in existing City right-of-way. No expansion of the City Storm Drain or Sewer system is proposed. As such, the project will not impact any wetlands.

Floodplain
The proposed project involves the investigation and correction of known cross connections between the City's sewer system and storm drain system. All work would take place on paved City Streets in existing right-of-way. The only designated floodplains within the service area are near the Noyo River and Pudding Creek and are not located within any proposed work areas.

Significant and/or Important Farmlands.
There are no significant and/or important farmlands located within either the service or project area.

Coastal Zone/Wild and Scenic Rivers.
Portions of the project are located within the City's designated Coastal Zone. However, as there is not expansion of City services proposed the project is exempt from Coastal Permitting as a repair and maintenance project.

There are no wild and scenic rivers located within either the service or project area.

Air Quality.
The project would involve minor excavation in order to expose the suspect storm drain/ water lines. As such, the project would be subject to the Mendocino County Air Quality management District regulations revolving around fugitive dust emissions. Specifically, the project would be subject to Regulation 1, Rule 400(a) of the district guidelines. To mitigate potential impacts and to reduce the amount of fugitive dust generated by the activities, the City would incorporate the control measures recommended by the District. Specifically, the control measures (as applicable) are as follows:

1. Enclose, cover, water, or apply soil binders to exposed stock piles (i.e. sand, gravel, dirt).
2. Water active construction areas as needed to keep dust from traveling off site.
3. Limit dust generating activities during periods of high winds (over 15 mph).

4. Remove earth tracked off of the construction site at least once daily.

If implemented correctly, the mitigation measures would reduce the amount of fugitive dust emitted from the project to a level of insignificance.

Important Vegetation Types
The proposed project would be conducted on paved City Streets in existing City right of Way. To the extent that tree roots are encountered during construction activities, they will be removed to the minimum extent feasible so that they would not pose a hazard to City facilities. The minimum amount of roots will be removed to ensure to the maximum extent feasible that no detrimental damage occur to any trees adjacent to the work area. As such, the project would have no impact on any vegetation types.

Endangered or Threatened Species and Critical Habitats
The proposed project would be conducted on paved City Streets in existing City right of way. The project entails the correction of known cross connections between the City's storm water and sewer conveyance systems. The storm water and sewer conveyance systems eventually discharge into public waterways (the Noyo River, Pudding Creek, and the Pacific Ocean). If the project is completed there would be a net positive impact to these public trust resources through the reduction of the potential for raw sewage to be discharged into public waterways or public beaches as well as the improvement of the City's treatment plant capabilities during periods of wet weather.

Topography
As stated previously, the project would be conducted on paved City streets and involves the correction of known cross connections between the City's storm water and sewer conveyance systems. No increase in services is proposed nor is any excavation outside the limits of the City Streets (public right-of-way). As such, there would be no change to the existing topography including rivers, lakes, or mountains.

Surface Waters
If completed, the project would result in the elimination of cross connections between the City's storm drain system and sewer system. This would result in a greatly reduced chance of raw sewage being released directly into the Pacific Ocean, the Noyo River, or Pudding Creek (the receiving waters for the City of Fort Bragg). Further, the project would reduce the wet weather peak flow which impacts the City's wastewater treatment plant thus reducing the chance for the City to exceed the maximum wet weather daily flow allowances stipulated in the plant's NPDES permit.

Groundwater
The project involves the correction of known cross connections between the City's storm water and sewer conveyance systems. The connections are located within the existing City right-of-way in paved City streets. The streets are constructed of asphalt with an underlaid compacted road base. The streets to do not contribute significantly to the replenishment of local groundwater supplies due to the relatively impervious properties associated with the stated materials. The project does not entail the expansion of

groundcover, simply the replacement of the cross-connections within the existing paved portion of the right-of-way.

Hazardous Materials
There are no known hazardous materials located within the City right-of-way. However, in the past the City has encountered undocumented fuel tanks during routine street repairs. If these tanks or similar items are encountered during the construction phase of the proposed project, the City will coordinate with the County of Mendocino Department of Environmental Health for appropriate removal protocol.

Environmentally Sensitive Areas
The entirety of the proposed project would take place within paved City right-of-way. As such, the project would not have the possibility of encountering an environmentally sensitive habitat. The project would incrementally reduce the possibility of raw sewage being discharged into the Noyo River or Pudding Creek, as well as the Pacific Ocean through the elimination of the storm water and sewer conveyance systems cross connections.

Geology/Seismic Considerations/Soils
The project would entail the correction of existing cross connections between the City's storm drain and sewer conveyance systems. The correction of these existing facilities would not impact the geology of the local area nor would soils be an issue.

The entire coastline of California is subject to seismic shaking during an earthquake event. The proposed project would take place within City roadways and would not be particularly affected during an earthquake event. However, work crews would be required to apply typical protocols for working in trenches to prevent cave in, etc.

National Natural Landmarks
There are no national natural landmarks within the service area and, consequently, none in the project area.

Historical, Architectural, Archaeological, and Cultural Sites
The proposed project would take place within existing City right-of-way on existing paved City Streets. As such, the project would not directly impact any architectural features within the City. Further, the project would not impact any known historical, archaeological, or cultural resources or sites. If evidence of a significant site/resource is uncovered during excavation activities, all work would be halted until such time as a qualified archaeologist could be contacted to investigate the significance of the find.

Aesthetic Resources
There are no aesthetic resources located on the roadways within the City right-of-way.

Land Use and Zoning
The entirety of the project is located within the existing City right-of-way and is not subject to any special land use considerations. Parts of the proposed project are located within

the Coastal Zone though the project itself is exempt from Coastal Permit requirements as it is simply a repair and maintenance endeavor.

Socioeconomic Impacts
The project would result in temporary detours and/or road closures as well as interruptions in sewer service to localized areas of the service area during construction. As part of the project the City would take on a considerable public awareness campaign so as to keep the inconvenience to the public to the absolute minimum necessary. The campaign will consist of; presentation of the project work plan at a City Council meeting, notification of affected residents by mail 30 days before the commencement of any work activities as well as notification of affected residents in the form of door hangers on front doors 7 days before construction, as well as regular press releases to local newspapers and radio stations notifying the public of work schedules, progress, and known delays.

Utilities
The project entails the repair of public utilities. The project would not result in the expansion of capacity or expansion of the service area over the existing condition.

Transportation and Access
The project would result in temporary impacts to traffic and access on localized areas in the City through temporary detours and road closures during the hours of construction. The public would be updated on progress, scheduling, and timing on a regular basis through the duration of the project.

Climate
The project would have no impact on climate.

Noise Considerations
The project would be subject to the City of Fort Bragg Noise ordinance, in that, no work could commence before 8 a.m. on any given day. The use of machinery for excavation and repair activities is considered less than significant if the hours stipulated in the noise ordinance are adhered to.

Environmental Justice Considerations
The project would have no impact on environmental justice.

Tribal Issues
The project would not impact any Native American homesteads or sites.

V. Cumulative Impacts

The proposed project is considered a repair and replacement of existing City services. No expansion of services or increase in capacity is proposed. Therefore, there are no foreseen cumulative impacts associated with this project.

Summary of Significant Impacts and Mitigation Measures

No significant adverse impacts have been identified.

The project would benefit water quality in the Noyo River and Pudding Creek by reducing the chance of raw sewage overflows during storms.

The project has the potential for localized, short term construction related impacts related to dust, noise, transportation and access, as well as the general inconvenience to the public related to these issues.

The project would be subject to the Mendocino County Air Quality Management District's rules and regulations regarding dust emissions as well as the City's noise ordinance regarding noise. Access and inconvenience issues would be addressed proactively through a comprehensive public education and notification program conducted by the City as well as regular press releases notifying the public of project progress.

California Environmental Quality Act (CEQA) Compliance

The City has prepared and submitted a Notice Of Exemption (NOE) to the Mendocino County Clerk regarding the project (attachment 4). The project has been determined to be exempt per CEQA Guidelines Section 15302 as a reconstruction project of an existing utility system which "involves negligible or no expansion of capacity."

Attachments

1. Infiltration/Inflow Analysis of 1999 Smoke Testing Program, Nute Engineering, February 2000.
2. Map Illustrating Approximate Locations of 57 Work Sites
3. Municipal Improvement District #1 Service Area
4. Conformed Copy of Notice of Exemption