

INFORMATION SHEET, ORDER NO. R5-2002-0042  
CITY OF FOLSOM  
SANITARY SEWER COLLECTION SYSTEM  
SACRAMENTO COUNTY

**Background**

The City of Folsom (hereafter Discharger) is located in Sacramento County approximately 20 miles east of Sacramento (Attachment A), near the American River, Folsom Dam, Willow Creek, Hinkle Creek, Humbug Creek and other unnamed surface waters within the Folsom area. As of 1 January 2001, the Discharger's sanitary sewer collection system served a population of 49,844 plus an unspecified number of Folsom Prison residents. The collection system consists of approximately 160 miles of sanitary sewer pipe, ranging in size from 6 to 33 inches in diameter, and 13 pump stations.

A municipal satellite sanitary sewer collection system is a sanitary sewer collection system that is (1) owned by a municipality; (2) is used to convey municipal sewage or industrial waste to a treatment facility that has or has applied for a NPDES permit; and (3) the operator is not the owner or operator of the treatment facility that has or has applied for a NPDES permit.

The Discharger's sanitary sewer collection system is a satellite collection system. The Discharger owns, operates and maintains the sanitary sewers within its territorial jurisdiction, but does not own or operate the facilities that treat its wastewater. Pursuant to an Interagency Agreement with the Sacramento Regional County Sanitation District (hereafter District), the Discharger's wastewater is conveyed through the District's regional interceptors for treatment at the District's Sacramento Regional Wastewater Treatment Plant.

A schematic of the sanitary sewer collection system is shown in Attachment B. The system is divided into 17 basins. Sewage is conveyed from the individual basins to one of two major sewer mains. Flows from Basins 1, 2, 3, 4, 5, 6, 7 and 14 are conveyed to the 27-inch sewer on Folsom Blvd (27-inch sewer shed). Flows from Basins 8, 9, 10, 11, 12, 13, 15, 16 and 17 are conveyed to the 33-inch sewer on Blue Ravine Road (33-inch sewer shed). The 27-inch and 33-inch sewers connect with the District's newly completed 54-inch Folsom East Interceptor No. 2 (FE2) that conveys the Discharger's wastewater to the Sacramento Regional Wastewater Treatment Plant for treatment.

FE2 flows are currently conveyed through the District's existing pipeline that runs adjacent to Folsom South Canal, a drinking water source for the Arden Cordova Water Service. This pipeline is scheduled to be abandoned when the Folsom/Bradshaw interceptor is completed and connected to the FE2 interceptor in September 2005.

An SSO occurred in February 2000 in the District's pipeline near Folsom South Canal, at a manhole that had not been properly secured. Reference 7, Attachment C stated that there is a flow restriction beginning at this manhole. The full pipe capacity of the pipeline is 17 mgd when the manhole is not sealed. Reference 8, Attachment C stated the pipeline can carry up to 29 mgd

if the manhole is sealed, but would not recommend doing so without the storage capacity of the emergency storage basin at Pump Station No. 1.

Flows in this section of the District's pipeline are almost entirely from the Discharger. Monitoring records show that the Discharger's peak wet weather sanitary sewer flows delivered to the District were in excess of 18 mgd in February 2000. For comparison, the Discharger's dry weather flow in 2000 was approximately 6.5 mgd.

Pump Station No. 1 has experienced four overflows to the American River since 1995:

| <u>Date</u> | <u>SSO Volume, gallons</u> |
|-------------|----------------------------|
| 1/10/95     | 84,000                     |
| 1/2/97      | 650,000                    |
| 2/3/98      | Unknown                    |
| 1/24-25/00  | 700,000                    |

On 14 February 2000, a 9750 gallon SSO was discharged from Pump Station No. 3 to the American River. The Discharger attributed the overflow to rainwater entering the pump station dry well and flooding the pump motors.

In September 2000, the Board ordered the Discharger to pay a \$700,000 ACL for the raw sewage spill that occurred in January 2000 from Pump Station No.1. The ACL took into consideration that prior multiple spills had occurred at this location, the pump station and the basin were undersized for the Discharger's wet weather flow, and the Discharger had not taken corrective measures to prevent sewage overflows.

Due to the apparent capacity problems in the Discharger's collection system and the District's downstream interceptor, Cleanup and Abatement Order (CAO) No. 5-00-706 was issued by the Board's Executive Officer in July 2000. It ordered the Discharger and the District to assess their system capacities and implement any necessary corrective actions to prevent future spills, taking into account the Discharger's infiltration/inflow problems and its continued growth.

In response to CAO 5-00-706, the District and the Discharger are negotiating to have Pump Station No. 1 and its emergency storage basin available during wet weather seasons as a safety factor for preventing overflows in the Folsom South Canal area. Other than its potential use during wet weather, the Discharger discontinued the operation of Pump Station No. 1 when the District's FE2 interceptor replaced it in February 2000.

### **Infiltration/Inflow**

As part of the Discharger's program for complying with CAO 5-00-706, flows within the Discharger's 17 sewer basins were monitored from 29 January 2001 through 28 March 2001.

The flow data was used to evaluate the individual basins for infiltration/inflow problems. Reference 1, Attachment C stated that:

“(T)he City of Folsom is experiencing significant wet weather RDII (rain-dependent infiltration/inflow) in portions of its sanitary sewer service area. This RDII is causing a reduction in sanitary sewer capacity that could lead to future sanitary sewer overflows or other system or plant capacity related issues.”

The report recommended that Sanitary Sewer Evaluation Surveys (SSES) be conducted and sewer collection system defects be located and repaired. The SSES work recommended is shown below:

| <u>Basin No.*</u> | <u>Smoke Testing</u> | <u>CCTV Inspection</u> | <u>Manhole Inspections</u> | <u>Source Defect/Cost Benefit Analysis</u> |
|-------------------|----------------------|------------------------|----------------------------|--|
| 3                 | X                    |                        |                            | X  |
| 4                 | X                    | X                      | X                          | X  |
| 7                 | X                    |                        |                            | X  |
| 10                | X                    |                        |                            | X  |
| 13                | X                    | X                      | X                          | X  |
| 14                | X                    | X                      | X                          | X  |
| 16                | X                    |                        |                            | X  |

\* Table includes only the Basins that were recommended for SSES evaluation in Ref. 1.

Following is a summary of SSES work conducted since Fall 2000:

Basin 1: Smoke testing was conducted in Fall 2000.

Basin 4: CCTV inspections were conducted in Fall 2000, and smoke testing and manhole inspections were conducted in June and July 2001.

Basin 7: CCTV inspections were conducted in June and July 2001.

The Discharger (Reference 2, Attachment C) identified and prioritized locations within Basins 4 and 7 that required rehabilitation based on the SSES work already conducted. In a 15 October 2001 Quarterly Progress Report pursuant to the CAO, the Discharger indicated the rehabilitation work had begun.

### **Wet Weather Sewer Capacity**

Predictions of the Discharger’s sanitary sewer collection system’s response to a 10-year, 6-hour storm event were provided in Reference 4, Attachment C. For a 10-year, 6-hour rainfall event,

the current total flow delivered to the FE2 interceptor from the Discharger's sanitary sewer collection system is predicted to be 29 mgd. The District reported (Reference 7, Attachment C) that the Discharger's current sanitary sewer flow during a 10-year, 6-hour storm is 23 mgd, and will be 29 mgd in 2005. The District's existing downstream pipeline has a capacity of 29 mgd (Reference 8, Attachment C). Subsequent to these predictions, improvements were made to the Discharger's sanitary sewer collection system that should have reduced wet weather flows, however, the amount of the reduction is unknown.

27-inch Sewer Shed

The capacity of the 27-inch sewer shed to accommodate wet weather flows was evaluated (Reference 4, Attachment C). Five areas within the 27-inch sewer shed were predicted to overflow in the event of a 10-year, 6-hour storm. The overflow locations and the Discharger's proposed interim mitigation actions are shown below. These actions are to prevent overflows during the 2001-2002 wet weather season. The Discharger stated in its 15 October 2001 Quarterly Progress Report pursuant to the CAO, that these improvement had begun.

| <u>Location<sup>a</sup></u>                  | <u>Description<sup>a</sup></u>   | <u>Discharger's proposed mitigation actions<sup>b</sup></u>   |
|--|--|---|
| Folsom Boulevard                             | 1 manhole on Folsom Boulevard near Bidwell Street (Basin 14)   | Bolt down manhole cover and build a cross-connection to transfer not more than 3.4 mgd from the 27-inch sewer shed to the 33-inch sewer shed. |
| School Street                                | 3 manholes (Basin 6)   | Build an 8-inch intertie pipeline to divert 0.7 mgd to the Blue Ravine pipeline in the 27-inch sewer shed.                                    |
| Duchow Way                                   | 2 manholes (Basin 6)   | Construct an 8-inch intertie pipeline to divert 0.7 mgd to the Blue Ravine pipeline in the 27-inch sewer shed.                                |
| Near Oak Avenue Parkway and Blue Ravine Road | 1 manhole on Big Valley Road; 1 manhole on Winterstein Drive; 1 manhole on Bitter Creek Drive (2 manholes in ref. B); and 4 manholes on Blue Ravine Road near Oak Avenue Parkway (Basin 7) | Divert 1.6 mgd from the 27-inch sewer shed to the 33-inch sewer shed  |

| <u>Location<sup>a</sup></u>            | <u>Description<sup>a</sup></u>  | <u>Discharger's proposed mitigation actions<sup>b</sup></u>          |
|--|---|--|
| Near Flower Drive and Blue Ravine Road | 2 manholes on Flower Drive near Blue Ravine Road; and<br>3 manholes on Blue Ravine Road near Flower Drive (Basin 7) | Divert 1.6 mgd from the 27-inch sewer shed to the 33-inch sewer shed |

<sup>a</sup> Reference 4, Attachment C

<sup>b</sup> Reference 5, Attachment C

The diversion of 1.6 mgd from the 27-inch sewer shed to the 33-inch sewer shed at Blue Ravine Road near the Oak Avenue Pump Station will adversely impact the 33-inch sewer shed. A portion of the 33-inch sewer shed already has wet weather capacity concerns in the Willow Creek Corridor, which is downstream of the Oak Avenue Pump Station. The Discharger is developing alternatives to accommodate the proposed diversion.

### 33-inch Sewer Shed

The Discharger (Reference 3, Attachment C) evaluated the capability of the 33-inch sewer shed to accommodate the Discharger's East Area growth. Wet weather capacity concerns were identified in two areas, Broadstone and the Willow Creek Corridor. Specific projects with specific completion dates were recommended to prevent wet weather SSOs. In September 2001, the Discharger constructed an emergency corrective action project in the Broadstone area. The Discharger also plans to build a pipeline connecting the Oak Avenue pump station with the Broadstone area by the end of 2002 to prevent overflows in the Willow Creek Corridor.

### Street Flooding

Fifteen locations within the City (shown below) have been documented to historically have had street flooding problems (Reference 6, Attachment C). These locations were identified as critical high priority sites for visual monitoring during heavy rainstorms. Street flooding can lead to sanitary sewer inflow at open or leaking sanitary sewer manhole covers.

### Historic Locations of Street Flooding

- Greenback Lane northeast of American Canyon Drive
- Crow Canyon Drive at Buck Circle
- Simmons Way and Foxridge Drive
- Oak Avenue Parkway southeast of Foxridge Drive
- Berry Creek Drive between Auburn Folsom Road and Valley Pines Drive
- Along Baldwin Dam Road between Mosswood Circle and South Creek Circle
- East Bidwell at Market
- Rumsey between Needles and Price Way
- School Street at Corale Way
- Rebecca Way at Boxler Court
- Mainsail Court at end of cul de sac
- Goodell Road at Livermore Way
- Big Valley Road between Stoney Hill Drive and Blakeslee
- Blakeslee between Oak Hill Road and Bender Court
- Folsom Blvd at Willow Creek and Woodmere Road

### **Sanitary Sewer Maintenance**

Numerous sanitary sewer overflows have occurred within the Discharger's sanitary sewer collection system that were reported as being caused by vandalism or lack of maintenance.

- On 24 November 2001, a 3600 gallon SSO was caused by rocks blocking a sewage pipeline in the Lexington Hills Wetland Refuge.
- On 22 October 2001, a 2000 gallon SSO was caused by heavy debris, possibly asphalt base rock, that had partially blocked a sewer main on Prairie City Road near Intel.
- On 9 March 2001, a 570 gallon SSO occurred as a result of a contractor depositing rock and debris into a sewer main near Freswick Drive.
- On 25 October 2000, a level control failure at Pump Station No. 2 caused a 450 gallon SSO on the Folsom Boulevard Bridge.
- On 9 September 2000, a 700 gallon SSO occurred near 115 Gisler Street as a result of rags and debris blocking a sewer main.
- On 13 July 2000, a contractor damaged a sewer main causing a 3000 gallon SSO near Iron Point Road and McAdoo.

- From 28 July 1999 to 2 August 1999, for approximately 5 consecutive days, an SSO to Hinkle Creek occurred, near the intersection of Baldwin Dam Road and Digger Pine, which impacted fish habitat. About fifty dead fish were observed, with sizes varying from 3 to 5 inches long. Reportedly, the Discharger was not notified of the spill until 5 days after the SSO began. Proper reporting was delayed because the residents of the area were unaware of the spill reporting protocol, and had notified the County instead of the Discharger. The Discharger stated the spill was caused by a large root mass that had blocked the sanitary sewer pipeline. The Regional Board Inspection Report dated 2 August 1999 recommended the Discharger communicate with the County to improve spill response, and to improve its public outreach program, such as providing a phone number for reporting SSOs in sewer bills. The Report also recommended that the Discharger review and improve its sewer maintenance program to prevent a similar occurrence in the future.
- On 6 July 2001, the Discharger submitted a list of the main sewer blockages within the Discharger's collection system since 1998 that were logged in the Discharger's computerized database. Twenty-eight blockages were recorded from January 2001 to June 2001; 18 in 2000; 10 in 1999; and 34 in 1998. The logs noted that fifty-one of these blockages resulted in a SSO.

### **Sanitary Sewer Management Plan**

Federal Regulations at 40 CFR 122.41(e) state:

“The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.”

In addition, US EPA has proposed revisions to the NPDES permit regulations that will ensure improved operation of municipal sanitary sewer collection systems, reduce the frequency and occurrence of sewer overflows, and provide more effective public notification when overflows do occur.

Pursuant to 40 CFR 122.41(e), this Order contains Provisions requiring the Discharger to develop and implement a Sanitary Sewer Management Plan (SSMP), which includes many aspects of the proposed NPDES permit regulations. The SSMP consists of a framework to ensure proper operation and maintenance of all facilities comprising the sanitary sewer collection system through the use of appropriately trained personnel; to provide a plan and schedule for measures to be implemented to prevent SSOs, such as sewer rehabilitation and maintenance and sewer capacity evaluation; to provide proper notification when an SSO occurs; and to institute a public outreach program to inform the public, including building contractors, of the materials that cannot be disposed of in the sanitary sewer.

To ensure adequate funds, the SSMP requires the adoption of a Revenue Plan that describes the costs associated with implementing the provisions of this Order and the attached Monitoring and Reporting Program and how each item will be financed.

### **Monitoring and Reporting Program**

This Order requires the Discharger to submit a monitoring plan that specifies (a) the flow data the Discharger will collect from locations specified in the monitoring plan that will be used to determine the effectiveness of sewer repairs and the locations of flow constraints within the sanitary sewer collection system; (b) the locations the Discharger will visually monitor for SSOs or street flooding when precipitation exceeds 0.5 inches, and to document this monitoring in a written log. The collected information shall be reported in accordance with the reporting schedule in Monitoring and Reporting Program No. R5-2002-0042. This monitoring plan shall be updated when appropriate, or at least annually, to be consistent with improvements made to the sanitary sewer collection system. Currently, flow monitoring is recommended at the following locations (Map in Attachment B):

| <u>Monitor No.</u> | <u>Location</u>  |
|--------------------|--|
| M1                 | Oak Ave. near Lew Howard Park  |
| M2                 | Folsom-Auburn Rd. near Greenback Lane  |
| M3                 | Greenback Lane near Folsom-Auburn Rd.  |
| M4                 | Folsom Blvd near Natoma St   |
| M5                 | Near Liedesdorff Street, the City Fire Station and the PG&E<br>Transmission Line |
| M-A                | Liedesdorff Street near Wool Street  |
| M6                 | Comstock Dr.   |
| M7                 | Blue Ravine Rd. near Oak Ave. Pkwy   |
| M8                 | Humbug Creek Dr. near Buckbrush  |
| M9                 | Prairie City Rd. near Iron Point Rd.   |
| M10                | East Bidwell near Willow Creek Corridor  |
| M11                | Prairie City Rd. near Reddington   |
| M12                | Blue Ravine Rd. near Prairie City Rd.  |
| M13                | Folsom Blvd near Pump Station 1 (33-inch sewer shed)                             |
| M14                | Folsom Blvd near Pump Station 1 (27-inch sewer shed)                             |
| M15                | Sibley St. near Blue Ravine Rd.  |
| M16                | Iron Point Rd. near Broadstone Pump Station                                      |
| M17                | Willow Creek Corridor near PG&E Transmission Line                                |

Visual, aboveground monitoring for sewage overflows or street flooding are currently recommended at the following locations:

- Folsom Boulevard near Bidwell Street
- School Street
- Duchow Way
- Big Valley Road
- Winterstein Drive
- Bitter Creek Drive
- Blue Ravine Road between Oak Avenue Parkway and Flower Drive
- Flower Drive near Blue Ravine Road
- Greenback Lane northeast of American Canyon Drive
- Willow Creek Corridor
- Iron Point Road near Broadstone Pump Station
- Crow Canyon Drive at Buck Circle
- Simmons Way and Foxridge Drive
- Oak Avenue Parkway southeast of Foxridge Drive
- Berry Creek Drive between Auburn Folsom Road and Valley Pines Drive
- Along Baldwin Dam Road between Mosswood Circle and South Creek Circle
- East Bidwell at Market
- Rumsey between Needles and Price Way
- School Street at Corale Way
- Rebecca Way at Boxler Court
- Mainsail Court at end of cul de sac
- Goodell Road at Livermore Way
- Big Valley Road between Stoney Hill Drive and Blakeslee
- Blakeslee between Oak Hill Road and Bender Court
- Folsom Blvd at Willow Creek and Woodmere Road

On 4 October 2001, Section 13193 was added to the California Water Code, requiring sanitary sewer agencies in California to report all SSOs, regardless of size and final destination, to the Regional Boards. This Order requires a Sanitary Sewer Overflow Report Form (Attachment E) shall be submitted for all SSOs from the Discharger's sanitary sewer collection system within 15 days of the start of the SSO.

KYN/PHL  
03/01/02