City of Lake Oswego
Wastewater Collection and Conveyance System Overflow Response Plan

February 22, 2007

Prepared by:

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WASTEWATER COLLECTION AND CONVEYANCE SYSTEM
OVERFLOW RESPONSE PLAN

FOR THE

CITY OF LAKE OSWEGO, OREGON

Problem Statement

The City of Lake Oswego’s Oswego Lake Interceptor Sewer (OLIS) system was originally designed to serve an area of 3,500 acres. The OLIS system was constructed in the early 1960’s and today serves an area of 4,500 acres. (See OLIS map in Appendix A). The ultimate service area is expected to increase to about 6,400 acres. Typical of many older communities, its systems of private and public wastewater conveyance infrastructure is old and decaying. The City needs an improved comprehensive strategy for operating, maintaining and replacing its aging infrastructure.

A decaying collection system and an increasing service population overburden the interceptor and trunk sewers with wet-weather flows in excess of their hydraulic capacity. A history of surcharged conditions and resulting discharge of untreated wastewater to waters of the state has caused the Oregon Department of Environmental Quality (ODEQ) to initiate enforcement actions against the City for violations of the Clean Water Act (CWA). A project to replace the interceptor sewer and trunk sewers is underway. Until the new system is designed, constructed and operational, the City must develop and implement programs to mitigate further overflows from its wastewater systems. After the new system is in place, on-going efforts to reduce rainfall dependant infiltration and inflow (RDII), and more proactive management of the City’s sewer collection system assets will further reduce the risk of overflows stemming from hydraulic overload or structural failures.

Purpose

Development of this Overflow Response Plan (ORP) responds to a requirement of the Mutual Agreement and Order (MAO) executed between the City of Lake Oswego and the ODEQ on February 8, 2007. The objective of this ORP is to mitigate the frequency of occurrence, duration and volume of wastewater discharges to surface waters of the state from Lake Oswego’s wastewater collection system to the extent feasible and practicable considering the costs and
expected efficacy of measures identified herein. The programs/actions described are those that the City believes can achieve the objectives of this ORP.
Wastewater Overflow Response Plan (ORP)
(Effective February 22, 2007)

Maintenance Services Division

A. OLIS System Under Surcharge Conditions

When conditions indicate surcharge conditions will occur in the OLIS system and an overflow event is likely, regardless of anticipated size or duration, the Maintenance Services Department will initiate and sustain the following overflow response protocol until conditions causing the overflow event cease. The objective of this response protocol is to strategically and safely deploy maintenance staff and equipment in an effort to minimize the volume of wastewater discharged to waters of the state.

Spill response actions would be triggered by the occurrence of specific events. Triggering events are:

- Precipitation records from nearby weather stations measuring rainfall volumes of an inch or more in 24 hours.
- Forecasts of continued rainfall.
- Influent flows to the Tryon Creek Wastewater Treatment Plant exceeding 13 million gallons per day (mgd) and rising.

Upon the occurrence of these events, maintenance services would initiate this portion of the ORP comprising the following actions:

1. The Wastewater Supervisor or designee and maintenance services staff will be deployed to Cardinal Drive; the first and most frequent point of overflow in the system during surcharge events. The Wastewater Supervisor or designee will have the authority to direct the actions of staff, and deploy materials and equipment based upon his/her assessment of actions necessary to mitigate wastewater spills at the site.
2. Nearby points of inflow to the stormwater system will be blocked and a containment area will be established at the potential spill site to intercept wastewater before it reaches storm water inlets or natural drainage ways.
3. Public access to any potential overflow spill area will be restricted through installation of barricades and/or other visible warning devices.
4. The Wastewater crew supervisor will notify potentially impacted properties and the Lake Oswego Corporation (LOC) about the potential for an overflow occurrence. Methods of communication will be direct telephone contact through either personal cellular service or using the City’s “Code Red” autodialing emergency notification system. Pre-prepared
press releases (see example in Appendix B) may also be used to augment other means of public communications regarding spill events.

5. Spill responders will initiate visual monitoring of flow levels in the interceptor system at specific manholes.

6. Based on the rate of rise in flow level, the City’s vectortruck will be dispatched to the site and readied for any actual overflow.

7. Upon the occurrence of an overflow, the vectort will suction up discharged wastewater and discharge it at a legally permissible disposal site.

8. The City owns a second vectortruck and may deploy this second truck to the site if necessary and available to supplement cleanup capacity.

9. During an overflow response, if overflows occur at additional known points, the Wastewater Supervisor will evaluate conditions and choose how to deploy equipment and personnel to various locations to achieve the greatest reduction of overflows reaching the surface water system. Where possible, we will work to provide containment, minimize overflow and protect the public by limiting access. Note however, that most known overflow sites are in locations within water bodies or with access or other physical barriers that impede our ability to timely respond and collect overflows.

10. After the event concludes, the overflow area(s) will be cleaned to minimize further impact to surface waters and make the area safe for public access.

11. The Wastewater Supervisor or designee will file a response report with OER and ODEQ.

12. Each overflow response effort will be evaluated within one-week of the occurrence to identify potential changes or improvements needed to achieve a more effective overflow response. Records will be kept of the review work. Should any modifications to this response protocol be deemed appropriate to enact, the plan will be amended accordingly and a copy furnished to ODEQ.

B. Non-OLIS system overflows

The City of Lake Oswego endeavors to operate and maintain its wastewater collection system in accordance with generally accepted practices in the Portland Metropolitan area. Sustained maintenance efforts to inspect, clean, repair and replace its collection system assets are goals of the City. However, it must be acknowledged that despite these efforts, overflows may occur due to latent conditions, inadvertent damage by private parties, poor construction practices and myriad other reasons including “Act of God” events. In the event of an overflow or spill of wastewater from its non-OLIS collection system the following response will be initiated:

1. Deploy response equipment and staff to visually confirm overflow.

2. The Wastewater Supervisor will notify property owners in the immediate area of the spill and other parties as appropriate to the location and volume of the spill.

3. Restrict access to the area when possible through use of barricades and warning tape.
4. When possible create containment areas/structures or otherwise block overland flows from reaching the surface water system.

5. Identify what, if any, actions can be taken to stop the overflow or minimize the amount that could reach surface waters, and implement such actions as needed.

6. After the event concludes, clean the overflow area sufficiently to minimize any further impact to surface waters and make the area safe for public access.

7. File an event report with ODEQ.

8. Follow up with evaluation and identification of possible improvements either to avoid the same type of spill or to improve overflow response.

Responsible Party:

City of Lake Oswego Maintenance Services Division  
Wayne Benson, Wastewater Systems Supervisor  
503.635.0280  
Mobil: 503.819.3964

Engineering Services Division

An effective overflow response plan must include actions and programs that improve our understanding of the physical characteristics of the City’s wastewater collection system and how it functions under normal dry weather conditions and during extreme wet weather events. The actions described below will generally be initiated by the Engineering Services Division with the support of several City departments including Maintenance Services, Finance and the City Managers office. Some of these action items are a continuation of activities or programs already underway in the City and others are proposed as new activities or programs. New activities will be noted as such. Implementation of new activities is subject to City Council authorization and funding pursuant to its biennial budget process.

Wastewater Flow Metering, Monitoring and Modeling: (New Activity)

Developing and implementing a sustained, system-wide sewer flow metering, monitoring and modeling program. This new activity will prove valuable in the development of a strategic plan to fund on-going collection system I/I reduction projects. The City will install up to 20 flow meters throughout its collection system during the next two years. Flow data from these meters will be collected during dry and wet weather seasons and then used as input along with local rainfall data to a computer model to establish relationships between land use patterns, collection system age, rainfall depths and basin-specific I/I. The City will procure equipment and services through contracts with private firms. Flow metering and monitoring will also be implemented in each basin where previous rehabilitation projects have been completed to determine the efficacy of the City’s approach to collection system I/I reduction. This new activity will be initiated with
approval of the City’s FY 07/09 biennial budget cycle, which begins July 1, 2007. Annual costs are estimated at $300,000. Funding levels in prior years for flow metering/monitoring averaged about $50,000 but annual expenditures were discontinued after 1998. Annual funding for computer model maintenance continues at $5,000.

**Lateral Replacement Policy: (New Activity)**

The intergovernmental agreement between the City of Portland for treatment of wastewater at Portland’s Tryon Creek Wastewater Treatment Plant, hereinafter TCWTP, obligates each city to enact standards, ordinances and policies that strive to achieve reductions in I/I to allow maximum utilization of the design capacity of the TCWTP. To that end the City’s utility code prohibits attachment to the City’s sewage collection system of any pipe or structure that would discharge storm water, rainwater or groundwater to the sewage disposal system. However, the City does not presently regulate the replacement or repair of private sewer laterals that are known to contribute to I/I. Recently, the Lake Oswego City Council publicly expressed interest in developing policies and enacting ordinances that would mandate repair or replacement of private laterals when such laterals are identified as in need of repair or replacement. The City will periodically report to ODEQ the status of progress toward enactment of such policies and codes.

**Emergency Power Generation Capacity Evaluation and Augmentation: (New Activity)**

The City currently owns, operates and maintains 10 municipal wastewater pumping stations. Current practices of providing back-up power by deploying portable, trailer-mounted engine generators does not always prevent lift station overflows. This activity will require retaining outside consultant services to conduct an evaluation of current emergency power generation capabilities and deployment practices, identify means and methods to augment emergency power generation capacity via portable, trailer-mounted engine generators, permanent installations or through rental contracts and develop recommendations for improving the reliability of our emergency backup power response capacity.

The City Maintenance Services Division has already initiated preliminary engineering for one of its most problematic lift stations – the Palisades Pump Station and expects to have this station retrofit with a dedicated emergency backup generator on or before November 1, 2007. Preliminary engineering to conduct the standby power analyses as noted above for all other lift station sites will be initiated upon approval of the proposed Wastewater Utility budget for FY 07/09. The funding cycle begins July 1, 2007. A funding level of $200,000 in each year is being proposed to cover engineering and equipment procurement costs. The City proposes to furnish ODEQ with status reports on a quarterly basis regarding this new activity.

**Collection System I/I Reduction Program: (On-going)**

In the current fiscal year the City will spend approximately $2.5M on projects intended to repair, reconstruct and replace defective wastewater collection system pipes, public laterals and
manholes known to contribute to excessive system I/I. In concert with the proposed new activity to annually fund enhanced flow metering, monitoring and modeling, the City will fund and construct new I/I reduction projects with the goal of reducing I/I to levels generally viewed by the industry and regulatory agencies as achievable using modern materials and construction methods. The City’s current, adopted Capital Improvement Plan (CIP) identifies projects to be completed over FY 07/09. These recent expenditures represent significant increases over prior year expenditures which averaged about $450,000 annually.

**Wastewater Manhole Sealing: (New Activity)**

Using the City’s Hansen’s Infrastructure Management System, Maintenance and Engineering Services will identify wastewater collection system manholes in need of rehabilitation to prevent unwanted I/I. This work would be undertaken annually using outside contractors experienced in manhole sealing technology. This program will consist of identifying existing manholes needing repair and prioritizing repair efforts based upon condition and visually observed leakage. The FY 07/09 biennial budget will contain a proposed expenditure of $100,000 to repair up to 20 manholes annually. This proposed program and expenditure represents a significant increase over prior year expenditures for manhole repair, which were made on an ad-hoc basis as defective manholes were identified during periodic maintenance inspections.

**Responsible Party:**

City of Lake Oswego Engineering Division  
Joel B. Komarek, City Engineer  
Telephone 503.697.6588
For Immediate Release
(Insert Date Here)

Contact: (insert contact name here)
503-XXX-XXXX

WASTE WATER SYSTEM
OVERFLOW NEAR (INSERT LOCATION HERE)

LAKE OSWEGO – Waste water infrastructure near (insert location here) experienced overflow conditions on (note date/time/volume of spill), affecting (describe impacted area). City Maintenance Services are on site (describe site location) in response to the problem.

Use this 2nd paragraph to describe cause of overflow and what adjacent facilities e.g., streets, dwellings, etc. were in contact with untreated wastewater. Also describe what actions are being taken by the City in response to the overflow event, when overflows can be expected to cease or be contained and any other public service information that will be of interest to the public.

Use this 3rd paragraph to provide public health advisories e.g., “As a result of these overflows, City officials advise residents in the vicinity of the spill to protect themselves, children and pets from direct dermal contact with storm water or lake water that has been subjected to contact with untreated sanitary wastewater for the next 72 hours.” “If contact with untreated wastewater cannot be avoided, residents are advised to use rubber boots, gloves and other protective wear in good condition to prevent direct dermal contact.”

Use this 4th paragraph to provide information on whom to contact at the City or County with questions or concerns about how this event may affect them e.g., “If you have questions about this advisory please contact the City public information office at 503.635.0257. For specific questions related to public health concerns please contact the Clackamas County Public Health Office at 503.655.8478.”

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