

CITY OF NEWPORT BEACH
Sewer System Management Plan Audit
August 2013

Introduction

On May 2, 2006, the State Water Quality Control Board adopted Ordinance No. 2006-0003 which outlined the General Waste Discharge Requirements (WDRs) for sanitary sewer systems. The ordinance created a statewide rule aimed at reducing the number of sanitary sewer overflows (SSOs) and setting up online reporting standards for when SSOs did occur.

Within the ordinance it required public agencies to adopt and maintain a Sewer System Management Plan (SSMP), outlined in Chapter 13 that would create a standard of practice and procedure within the agency when handling sewer system overflows and preventative maintenance.

Part of the Ordinance No. 2006-0003 requires at minimum that the SSMP be audited every two years to maintain current information and to revise any changes in procedures or practices.

The focus of the audit is to look at the effectiveness and the compliance of the City of Newport Beach with the goals it has created for itself as well as those created by the State Water Resource Control Board. After reviewing the audit report, staff will focus on areas to improve its overall efficiency at minimizing SSOs and preventing future overflows.

The audit will be kept on file at the Municipal Operations Department with the Sewer System Management Plan. No action is required by the City Council.

System Overview	
Miles of gravity Sewer mains	202
Miles of CNB Forcemains	4.2
Total LF/Miles of all District sewer lines	200
Number of Pump stations	21
LF/Miles of private sewer mains, excluding Laterals	N/A
Miles of private sewer laterals maintained by CNB Staff	90
Population served	80,554

Significant Changes Since Last Updated: Internal Audit October 2011

- The City is undergoing a wastewater rate study which will help in the preparation of a financial plan.

Element I: Goal

Audit Question(s)

Yes

No

1. Is the goal stated in the SSMP still appropriate and accurate?

Findings:

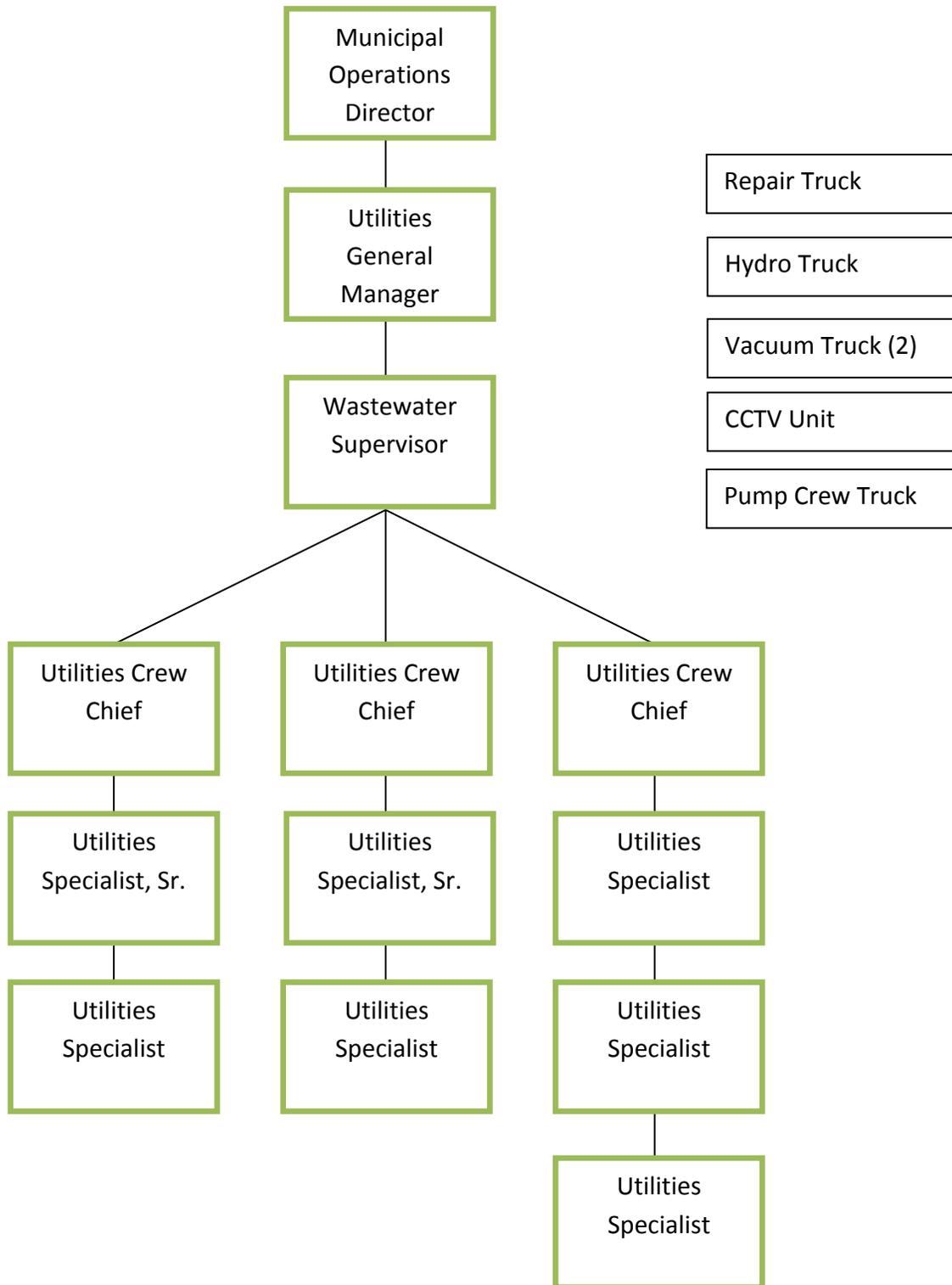
The goal for the City of Newport Beach is still accurate and appropriate.

Recommendations:

Element II: Organization

Audit Question(s)	Yes	No
1. Is the name of the authorized representative current?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Findings: The authorized representative is the Utilities General Manager.</p> <p>Recommendations:</p>		
2. Is the SSMP contact information for staff agencies current?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Findings: The original organizational chart has changed:</p> <ul style="list-style-type: none">• The Wastewater Division no longer has four part-time positions, but a total of ten full-time positions, plus the Wastewater Supervisor. See the attached organizational chart for all updates.• In the fall of 2010, the Utilities Department joined with the General Services Department to become Municipal Operations, this altered the organizational chart that was attached to the SSMP. The title of Utilities Director was changed to Utilities General Manager. <p>Recommendations: Update and distribute necessary organizational charts.</p>		
3. Is the Chain of Communication for SSO reporting up-to-date?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Findings: The Wastewater Supervisor reports directly to the Utilities General Manager</p> <p>Recommendations: Update and distribute the chain of command to entire department.</p>		

Wastewater Organizational Chart



Element III: Legal Authority

Audit Question(s)

Yes

No

1. Does the City have legal authority to prevent illicit discharges into the sewer?

Findings:

- Municipal Code 14.36.030 prohibits illicit connections and discharges.
- The initial SSMP states the City has a long range financial plan; currently the City does not have a financial plan for wastewater.
- The most common source of inflow is through cracks and infiltration of pipelines. By using the CCTV, the City is able to proactively look for infiltration of roots and cracks in sewer pipelines.
- Illegal connections are not seen as often, however the City has the legal authority to prohibit such connections and cite responsible parties.

Recommendations:

2. Does the City require proper design and construction of sewer laterals and sewer connections?

Findings:

The City follows its Standard Plans and Specifications for the Construction of Sanitary Sewers to insure the sewer lines and connections are properly designed and constructed.

Recommendations:

Yes No

3. Does the City have the legal authority to ensure access for maintenance, inspection or repairs for laterals owned by the City?

Findings:

- Municipal Code 14.04.120 gives the City the right to inspection.
- Currently the Public Works Department has three city inspectors, one contracted inspector and one surveyor that performs inspections.
- The City has reduced two full-time staff members assigned to the CCTV unit, to monitor the maintenance and repair of the sewer mains and laterals. In their place, the City contracted with Huston and Harris PCS, Inc. to CCTV the City's sewer lines on a yearly basis to monitor the high maintenance areas, repairs and also to fulfill the goal of CCTVing the entire City every 10 years.
- As part of the preventative maintenance it is the City's goal to root cut every linear foot of sewer pipe within city boundaries every 18 months with the exception of areas that contain PVC or lining.

Recommendations:

4. Does the City have legal authority to limit the discharge of FOGs?

Findings:

- Chapter 14, Section 30 of the City of Newport Beach Municipal Code provides the City the legal authority to control discharges to the sewer system for all sewer facilities located on private property that are outside any structure located on the property.
- For fixtures inside a building, the legal authority rests with the City's Community Development Department, formerly the Building Department.

Recommendations:

5. Is the City able to enforce violations of sewer ordinances?

Findings:

- The City of Newport Beach Municipal Code meets the requirements of the Water Discharge Requirements (14.04.130 – Enforcement of Violations).

Recommendations:

Element IV: Operation and Maintenance Program

Audit Question(s)	Yes	No
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1. Does the City maintain an up-to-date map of the sanitary sewer system?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Findings:

- The Sewer Atlas is continuously updated in GIS mapping systems.
- City is moving to iWater inframap system for sewer and electrical operations.

Recommendations:

Work with the Public Works Department to insure most up-to-date infrastructure is located on the GIS mapping system.

Update maps in Sewer Master Plan.

2. Does the City have a program of scheduled maintenance and documentation of all preventative activities conducted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Findings:

- Originally it was the City's goal to clean the entire sewer system every twelve months; however the goal was modified to 18 months. High maintenance areas still receive more frequent cleaning to prevent potential build up.
- The City maintains 21 pump stations. The vehicle fleet has also changed to one hydro truck and two vacuum trucks specifically for spill cleanup.
- Area cleaning Excel reports and schedules include:
 - High maintenance areas Run 1 (Monthly)
 - Airport Run (Monthly)
 - High Maintenance areas Run 2 (Quarterly)
 - Wet Wells (4 months)
 - Traffic Control Run (6 months)
- Area map for the 18 month City-wide cleaning schedule, which is color coded, and dated with last cleaning.

Recommendations:

Move to electronic logs of all reports and mapping (such as iWater) to retain past and current schedules.

Element IV: Operation and Maintenance Program

- | | Yes | No |
|--|-------------------------------------|--------------------------|
| 3. Does the City maintain an up-to-date program to identify and prioritize short-term and long-term rehabilitation projects to maintain its sewer infrastructure? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Findings:

- The City's Sewer Master Plan identifies all short and long term sewer projects; however it does not include a financial plan.
- The City is currently working with a Consultant to complete a wastewater rate study.

Recommendations:

Develop a long term financial plan for sewer operations, maintenance and capital improvements.

Revise Sewer Master Plan CIP projects with a list of completed projects and any added projects (on-going).

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|---|-------------------------------------|--------------------------|
| 4. Has adequate training been provided to staff members to maintain a safe and knowledgeable work force? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
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Findings:

- All wastewater employees receive cross-training with water maintenance and repair crew members. The cross training provides the City with additionally trained staff in the event of a SSO.
- Wastewater employees completed confined space and trench trainings, as well as certified CPR classes.

Recommendations:

Maintain current certifications.

- | | Yes | No |
|---|-------------------------------------|--------------------------|
| 5. Are there enough replacement parts to respond to emergencies and properly conduct maintenance activities? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Findings:

- Constantly managing inventory levels.
- Wastewater has an excel list but, mainly predicts storage levels because of use.

Recommendations:

Element V: Design and Performance Provisions

Audit Question(s)

Yes

No

1. Has the City upheld its design and construction standards to fit the specifications of the City's needs?

Findings:

- The City maintains standardized equipment for ease of maintenance and replacement.
- Installation and construction standards follows the City of Newport Beach Standards and the Green Building Standards Codes.

Recommendations:

Public Works needs to review and present updated standards.

2. Are the procedures and standards for inspection and testing up to date for new, rehabilitated and repaired facilities?

Findings:

- City inspectors follow the guidelines of City of Newport Beach Construction Standards and the Green Book Inspection Manual.

Recommendations:

Element VI: Overflow Emergency Response Plan

Audit Question(s)	Yes	No
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1. Does the City maintain the proper notification procedures for primary responders and regulating agencies?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Findings:

- It is City policy to report all spills no matter how small, whether it spills into U.S. waters or is on private property.

Recommendations:

2. Is there a program to ensure an appropriate response to all overflows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Findings:

- If notified, the Wastewater Division responds to all spill within its jurisdiction, regardless of private or public.
- Element II, Organization, includes an updated organizational chart with line of command.

Recommendations:

3. Does the City follow procedure to ensure prompt notification to appropriate agencies and affected entities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Findings:

- City reports all spills regardless of size to all required agencies.
- Wastewater Supervisor and/or designee is in charge of reporting spills from the field to required agencies, and administrative staff.
- Utilities Supervisor responds to the field and informs the general manager, director and any other City departmental staff as necessary.

Recommendations:

Update wastewater employees and on call Duty personnel on procedure of reporting and chain of command.

Element VI: Overflow Emergency Response Plan

Audit Question(s) **Yes** **No**

4. Is staff trained on proper procedures and aware of the Emergency Response Plan?

Findings:

- Staff is aware of the proper procedures. A copy of the SSMP is available in all buildings.

Recommendations:

Review and update the Emergency Response Plan in regards to the sewer system. Train employees on current Emergency Response Plan (on-going).

5. Does the City maintain procedures to address emergency operations such as traffic control?

Findings:

- Since General Services and Utilities merged, services such as street signs, and storm drains are now in same department as wastewater. This provides extra equipment and help if necessary.
- The City follows the WATCH handbook.

Recommendations:

6. Does the City have a program to ensure all necessary steps are taken to prevent a discharge into U.S. waters?

Findings:

- The City policy is to prevent discharge into waters by any means necessary.
- Employees receive at least one hour of training a month to go over any safety programs, policy changes, questions or concerns.
- The City continues to clean high maintenance areas monthly and wet wells are cleaned every four months.

Recommendations:

Review all of the updates to the SSMP with wastewater staff.

Element VII: FOG Control Program

Audit Question(s)	Yes	No
1. Does the FOG Control Program provide an implementation plan and public outreach that promotes proper disposal of FOG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Findings:</p> <ul style="list-style-type: none">The City contractor who inspects and tests grease removal devices provides a booklet of Best Management Practices (BMPs) to Food Service Establishments. <p>Recommendations:</p> <ul style="list-style-type: none">Consider public education program on proper disposal of fats oils and grease (ex. the municipal services statement, city website). See if County has any pamphlets or articles to post.Obtain list from the Building Division of any newly installed grease interceptors and provide to City's FOG contractor.		
2. Does the City properly dispose of all discharges?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Findings:</p> <ul style="list-style-type: none">All discharges go to the Orange County Sanitation District. <p>Recommendations:</p>		
3. Does the City have the legal authority to prohibit discharges, and inspect and enforce FOG ordinances?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Findings:</p> <ul style="list-style-type: none">Municipal Code, Chapter 14, Section 30 is dedicated to the monitoring, and control of FOGs into the sewer system. <p>Recommendations:</p>		

Audit Question(s)	Yes	No
4. Does the City maintain records of all installed grease removal devices along with design standards for installation and removal of devices, maintenance requirements, BMP requirements and reporting?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Findings:

- The City contractor maintains a list of all devices that have been inspected along with the locations.

Recommendations:

Work with the Community Development Department inspectors to create a comprehensive list of any new installations of grease interceptors and update wastewater crews and contractors regularly. Wastewater Supervisor and Jon Kinley, ECIS FOG Contractor.

5. Does the City maintain a list of areas subject to FOG blockages and manage a cleaning schedule for all sources of discharge?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Findings:

- All high maintenance areas which include areas subject to FOG blockages are included in the following cleaning schedule:
 - High maintenance areas Run 1 (Monthly)
 - Airport Run (Monthly)
 - High Maintenance areas Run 2 (Quarterly)
 - Wet Wells (4 months)
 - Traffic Control Run (6 months)

Recommendations:

Element VIII: System Evaluation and Capacity Assurance Plan

Audit Question(s)	Yes	No
<p>1. Does the City have on-going evaluations of the sewer that are contributing to SSOs discharged by hydraulic deficiency?</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Findings:</p> <ul style="list-style-type: none"> In the Sewer Master Plan there is a comprehensive hydraulic analysis of the entire City. The analysis includes a list of projects necessary to increase the capacity of the system. Wastewater regularly CCTV and flow monitors uses to see if it's a hydraulic or other issue and based on those results prepares list of projects <p>Recommendations: Compare hydraulic analysis project list with CIP list and update project statuses(on-going).</p>		
<p>2. Does the City have an established CIP to address City priorities, hydraulic deficiencies and show sources of funding?</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Findings:</p> <ul style="list-style-type: none"> The Sewer Master Plan includes an established capital improvements program and Newport Beach Municipal Code Chapter 14, Section 33 includes sources of funding for CIP. <p>Recommendations: Develop a long-term financial plan to support the operations, maintenance and improvements to the sewer system.</p>		
<p>3. Is there an up-to-date schedule of completion dates for capital improvement programs?</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Findings:</p> <ul style="list-style-type: none"> The Wastewater Supervisor is currently working with Public Works to compile a master list of all completed CIP projects from the SMP and more recently added projects. <p>Recommendations: Update Sewer Master Plan CIP schedule with completed projects.</p>		

Element IX: Monitoring, Measurement and Program Modifications

Audit Question(s) Yes No

1. Does the City monitor the implementation and success of the SSMP Elements?

Findings:

- The City has monitored its success and, when necessary, modified goals to best fit the City's wastewater system.

Recommendations:

2. Does the City maintain five years of records for all documentation relevant to identifying SSO trends?

Findings:

- The City maintains over the required five years for all documentation including CCTV footage.

Recommendations:

Move to an electronic database for records that are currently kept in paper only.

3. Are the program elements updated as appropriate based on the monitoring and performance of the system?

Findings:

Program elements are modified as needed to maximize the efficiency of the department.

Recommendations:

Element X: Program Audit

Audit Question(s)	Yes	No
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1. Are updates to the SSMP needed, based on the results of the audit?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Findings:

The necessary updates are included in the element sections.

Recommendations:

- Discuss the audit of the SSMP and areas of improvement with wastewater staff during monthly training.
- After the audit is conducted, the wastewater supervisor and management should meet to discuss schedule to incorporate audit recommendations.

Element XI: Communication Program

Audit Question(s)	Yes	No
1. Does the City maintain open communication with regards to the development, implementation and performance of its SSMP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Findings:

- The SSMP and other wastewater information are available on the City's website (<http://www.newportbeachca.gov>).
- The SSMP was adopted by City Council in a public forum.

Recommendations:

Update the wastewater webpage as frequently as possible.

Recommendation Summary

In the elements above, recommendations were made to maximize the efficiency of the SSMP in reducing the number of sanitary sewer overflows. A summary of those recommendations is listed below.

1. Update Organizational Charts and Review Procedures
 - Update and distribute necessary organizational charts and review the chain of command with the department.
 - Discuss the audit of the SSMP and any updates with all staff at one of the monthly meetings.
 - Review and update the Emergency Response Plan in regards to the sewer system. Train employees on current Emergency Response Plan including the reporting procedure and chain of command.
2. Update and Maintain Records
 - Work with the Public Works Department to insure most up to date infrastructure is located on the GIS mapping system.
 - Move to electronic logs for all reports and mapping (such as iWater) including: cleaning schedules, and other records that are currently kept in paper only, Sewer Master Plan maps. Update lists as required.
 - Revise CIP project list and schedule to include list of projects completed and those recently added. Compare hydraulic analysis project list with the CIP list and update project statuses. (on-going)
 - Assist Public Works with finalizing updates to the City's installation and construction standards.
 - Have the Community Development Department inspectors create a comprehensive list of any new installations of grease interceptors.
 - Update and maintain all employee certifications and training records.
3. Outreach and Communication
 - Consider public education program on proper disposal of fats, oils, and grease. Update Wastewater webpage as frequently as possible.
4. Long Term Goals
 - Develop a long-term financial plan to support the operations, maintenance and improvements to the sewer system.
 - After the audit is conducted, the wastewater supervisor and management should meet to discuss schedule to incorporate audit recommendations.

Schedule of Audit Meetings

October 2011 Audit

07/11/11: SSMP Audit Requirements.

Attendance: Mark Harmon, George Murdoch, Maurice Turner, Rachell Wilfert

07/21/11: Discussion on SSMP and Audit Format

Attendance: Mark Harmon, George Murdoch, Maurice Turner, Rachell Wilfert

08/11/2011: Review SSMP

Attendance: George Murdoch, Ed Burt, Mike Lynch, Rachell Wilfert

9/28/11: Audit Review

Attendance: George Murdoch, Mike Lynch, Rachell Wilfert

August 2013 Audit

08/07/2013 – Meeting to Review Audit

Attendance: George Murdoch, Mike Lynch, Rachell Wilfert