

Director of Engineering Report

Nov 19, 2014

District staff manages projects, consultants, contractors and equipment suppliers. Consultant reports and Project Managers reports are included in this section and detail the status of the associated study, design, or construction projects.

Active Projects

2013 Digester Complex Improvements Project: This project consists of upgrades to the primary digesters' mixing systems with 4 Linear Motion Mixers to replace the current Pearth mixing systems; the addition of an electrical building to gain NFPA 820 code compliance in the primary digester complex; installation of automated drip traps and condensate collectors in the digester complex; and replacement of the waste gas burner to a separate location away from the digester complex.

Grant Funding

- Illinois Clean Energy Community Foundation (ICE) - Clean Energy grant - \$188,164.
- DCEO - Energy Reduction in the mixing systems –Grant amount - \$188,000.

Contractor: Leander Construction (LCI)

Contract Changes being worked through:

- *Future changes:*
 - (a) *O&M platforms on digester lids – Request for Change Order has been returned to SDD, it is under review currently. – Owner Request*
 - (b) *Coating changes to skirt and underside of lid on Digesters 4, 3, and 1 – Owner Request*
 - (c) *Contract time extension- The length of the adjustment remains in question. Staff is working with LCI on construction sequence modifications in an effort to expedite the construction. Construction sequence is changing dramatically in the schedule on the next 3 digesters, and pending changes to the CPM schedule, no contract modifications are being made.*
- *Key activities: Digester #2 was returned to service in manual operating mode this last period. Digester #4 has been turned over to contractor. Cleaning of digester #4 is underway.*
- *There is a Change Order before the board for consideration.*

2014 Odor Control Upgrades – Phase 2: The concrete underneath the “odor control covers” has experienced significant degradation since the installation. Inspection under the covers indicates a loss of 1” – 1-3/4” of surface concrete. The P2 channel, which carries all the flow through the plant into the aeration basins, is experiencing this same deterioration.

- *Design Engineers: Clark Dietz (CDI)*
- *Facility Plan Amendment – Received a Notice of Intent to Issue a Categorical Exclusion from IEPA. This means that IEPA sees little to no negative impact on the proposed work. SDD will advertise the Intent for 10 days and receive comments from the public. After the 10 days, comments will be provided to IEPA after which, we anticipate the approval of the FPA.*
- *Schedule: Adv – 10/14/14; PreBid – 11/4/14; Bid Open – 11/24/14*
- *Addendum #1 was issued this last period.*

2014 STL Bridge and Faries Park Force main Replacement Project: The district has budgeted to replace the cast iron sections of these force mains. These force mains have both experience failures within the previous 12 months. The project consists of replacement of approximately 1800 linear feet of 10” cast iron FM to the south Faries Park pump station and 2100 LF that is a 10” cast iron FM that runs North from Saint Louis Bridge pump station.

- *Budgeted Amount: \$675,000*
- *Design Engineers: Clark Dietz: CDI;*
- *Schedule: Adv: 10/1/14; Prebid: 10/14/14, Bid Open: 11/11/14*

- *Addendum #1 issued to modify bid opening date this period and address comments resulting from the Wetland Delineation Study (tree clearing required a specific window of time).*
- *There is a Contract Award before the board for consideration.*
- *There is a Construction Related Services agreement before the board for consideration.*
- *There is a Norfolk Southern Railway Permit Agreement before the board for consideration on the consent agenda.*

2014 Bleach Building Modifications Project: *Currently, bleach is delivered to storage tanks at the front of the plant and pumped to other storage tanks at the south end of the plant prior to use. The district has experienced operational issues with the transfer operation and is looking to eliminate the process step of transfer pumping. This project increases the size of the bleach building for local storage of the bleach, which will eliminate the need to transfer from one tank to another.*

- *Contractor: Christy-Foltz; Bid Award: 6/26/14; Notice to Proceed: 7/11/14*
- *Project is progressing... Building structure has been erected, and siding is being prepared to install. Electrical duct banks are being installed.*
- *Future Change Items:*
 - (a) *Paint the structural steel prior to installing the siding – Owner Requested*
 - (b) *Relocation of manhole – Unknown condition*
 - (c) *Concrete tank removal – Unknown condition*
 - (d) *Change asphalt drive to concrete – Owner Requested*

2014 East Side Separation Sewer Rehab: *The Eastside Separation Sewer was constructed in 1983. The intent was for it to be a dedicated sewer to transport various flows around the combined sewers within the central core of the City of Decatur. Pump station flows were routed into the East Side Separation Sewer from Eastside Booster pump station, Country Club pump station, Lost Bridge pump station, and the Damon Ave pump station. The Separator Sewer discharges into a junction structure feeding the Sanitary Districts two main interceptors on the East side of South Main Street; just west of Christy-Foltz. The projected rehabilitation method is cured-in-place lining this sewer.*

- *The approved Facility Planning Amendment (FPA) has been received.*
- *Schedule : Adv – 9/09/14; Prebid – 10/08/14, Bid Open – 12/02/14*
- *Addendum #1 was issued this last period.*

2014 Roofing Rehabilitation Project: *The district asset management program calls for the replacement/repairs of roofing on an annual basis. This year's project includes replacements of roofs on Bldgs 259 and 314, restoring EPDM roofs on plant bldg 217 and asphalt shingle replacement at 835 – Larkdale and 810-Damon Ave Pump stations.*

- *Contractor: Craftmasters; Notice of Award: August 25, 2014*
- *Work outside the plant is complete. Work inside the plant on Bldgs 259 and 314 remain. The weather has suspended work – for both buildings the contractor needs temps at 45 degrees F to complete.*

2014 Roads Rehab Project: *The district asset management program calls for the replacement/repairs of roads around the treatment plant on an annual basis. Most of this year's work is around the Nitrification Clarifiers on the West end of the plant.*

- *Contractor: Dunn Company; Notice of Award: August 21, 2014*
- *Work is progressing as planned. Work around clarifiers is complete; contract work around ammonia building will be finished when bleach building work is completed and weather permits.*

2014 Manhole Inspection Project: This project includes the digital data capture and 360° photography of all of the district manholes. This is major step forward for the SDD asset management program in underground assets at the district.

- Contractor: Terra Contracting, LLC; Agreement Date: August 25, 2014
- Contractor mobilized this last period and is recording MH inspection data.
- At this point in time – Data on 196 manholes has been gathered.

2014 Hatch Replacement Project: This project will replace the hatches at Finley Creek, Damon PS and Larkdale PS. It will be a total of 10 double leaf hatches and 3 single leaf hatches will be replaced in the project. The project is replacing hatches that have reached the end of their asset life and is installing safety grating at that time.

- Contractor: Burdick Plumbing and Heating Award: Oct 15, 2014
- Contractor is preparing shop drawing submittals for staff review.

2014 Sludge Thickening Project

- Bid Open 8/28/14; Conditional Award – 9/24/14; Final Award – 10/3/14
- Bonds and Insurances have been received and approved.
- Contractor is preparing shop drawings and CPM schedule.

2014 Nitrification Aeration Tank – Diffuser Replacements

- DCEO Grant application was submitted to DCEO energy efficiency incentives program. The program director has contacted the district and verbally approved \$750,000 of incentive money (.36 /KWH saved, up to the amount of the enabling equipment – estimate of diffusers only cost is \$750,000).
- The district received Notice to Proceed from DCEO this period. Final grant amount will be adjusted upon completion of the project.
- Design is on-going and is addressed in the Technical Director report.

2014 Sewer Cleaning and Televising Project

- As an ongoing part of the Districts asset management plan (AMP), the district puts out a sewer cleaning and televising contract for approximately 40,000 linear feet annually.
- Adv: Bid Open: 11/12/14
- There is a contract award before the board for consideration.

INTERGOVERNMENTAL ACTIVITIES

- None

Other Activities:

2012 BioMass to Energy Project: To continue with upgrading the digester complex and reducing the energy needs of the district, the district has received a 500k DECO Public Sector Biomass to Energy grant.

- Additional grant funding for a Combined Heat and Power (CHP) project available through DCEO. This last period, the district submitted a letter of intent to apply with a full application on or before November 21, 2014. This is a 50% grant up to a cap of \$2M.
- Grant application is currently being prepared.

PROPOSED BOARD ACTION

For the Board's consideration from the Engineering Department this meeting:

- 1. Change Order #5 – 2013 Digester Complex Improvements**
- 2. Contract Award – 2014 Force Main Replacements Project**
- 3. Professional Services Agreement - 2014 Force Main Replacement Project**
- 4. Contract Award – 2014 Sewer Cleaning and Televising**

Further details can be found in the Summary of Motions.

If there are any questions, please contact me by telephone at 422-6931 ext 216, or by email at DonM@sdd.dst.il.us



MEMO

To: Don Miller
Sanitary District of Decatur
From: Terrence K. Boyer, P.E.
Clark Dietz, Inc.
Date: November 14, 2014
Subject: **Projects Update for the Month of October 2014**
Copies:

D0540015 SDD-2014 Odor Control Upgrades Phase 2

Work This Month: Complete work on IEPA required front- end specifications, IEPA SRF loan coordination, final review meeting and advertised project.

Planned Work for Next Month: Bidding of project, IEPA SRF loan coordination, pre-bid meeting and open bids for project.

D0540016 Faries Park Force Main & St. Louis Bridge Force Main

Work This Month: Final review meeting with District, RR coordination, respond to IEPA questions, wetland delineation, habitat evaluation, IDOT coordination for work along the right of way, advertise project for construction and pre-bid meeting.

Planned Work for Next Month: Open bids, prepare bid tabulation and bid recommendation, finalize wetland delineation and coordination with US Army Corps.


In addition to these efforts we have prepared grant applications for the District for an energy grant for new diffusers for the full \$300,000 grant amount available, and a grant application for the cogeneration system for an additional \$236,000 grant. We are currently investigating a grant for the replacement of the DAF units with rotary drum thickeners. We are also investigating a pilot study to treat the biogas to remove H₂S using digester supernatant as a low cost alternative for biogas treatment prior to the new cogen system.

Memorandum



Date: November 12, 2014

To: Don Miller, Director of Engineering
Tim Kluge, Director of Technical Services

From: Joe Pisula 

Re: Donohue's Monthly Activities Report

The following summarizes the assistance that Donohue is currently providing to the District:

Primary Digester Complex Improvements: Currently Donohue is providing Construction Related Services for this project that is now under construction. Construction is estimated to be about 65% complete. Donohue is reviewing shop drawings, contractor pay estimates, change orders, and addressing RFIs and handling other construction issues as they come up. The District has been providing construction observation services since May 2014. Construction is currently forecasted to be complete by June 2015; however a time extension request of 90 days or more is forthcoming from the contractor. Funding of this project is covered by IEPA loan number L174876. *This work is covered by Donohue project number 12421.*

Sludge Thickening System Replacement Project – Design & Loan Administration: Donohue has completed the design, has bid the project out and construction will likely start in November 2014. The only remaining task under this project is administration of the IEPA loan and submission of Loan Reimbursement requests during construction. *This work is covered by Donohue project number 12618.*

Sludge Thickening System Replacement Project - Construction: The construction contractor, Christy-Foltz, Inc. received their Notice To Proceed in late October 2014 and they are currently working on their Construction Schedule. their bonds and insurance. We expect shop drawings to be arriving in mid-to-late November 2014. Donohue has been retained to review shop drawings, contractor pay estimates, and change orders, and address RFIs and other construction issues as they come up. The project budget includes part-time construction observation by Donohue, only as needed. *This work is covered by Donohue project number 12756.*

Continuing Services Agreement: Donohue has in-place an active Continuing Services Agreement that covers minor tasks and work efforts that the District authorizes from time-to-time. Thus far, SDD has only authorized Task Order #001, which covered the design of minor structural repairs to a hatch in Building #217 and a cracked beam in Building #009. *The work under Task Order #001 was completed in September 2013 and no further work has been authorized by the District since then. This work is covered by Donohue project number 12525.*

OUTSIDE FACILITIES MONTHLY REPORT
November 2014

TO: Don Miller, Director of Engineering

FROM: Paul Caswell, Asset Manager

- **2013 CCTV Project**
 - Opened Bids on 2/22/13
 - Bid unit price was higher than expected – rejecting all bids and will re-bid the work.
 - Project bid on June 6, 2013.
 - Visu Sewer/Walden is the apparent low with prices still higher than expected.
 - All bid recommended to be rejected.
 - Requested proposals to pre-televising the project.
 - Pre-televising should reduce the scope of project (due to lines that already clean) and will reduce risk of unknowns for the contractor.
 - Proposals have been received from Tele-scan, National Power Rodding, and Visu-sewer. Tele-Scan had the lowest proposal at \$1.00 per foot for all televising except Country Club which is \$1.10 per foot.
 - CCTV has been completed and is being analyzed by staff to prepare cleaning project book, project is expected to advertise in December.
 - Preliminary information indicates a cleaning scope reduction of over 50%
 - Project will advertise in October and will be awarded at the November Meeting
 - Tele Scan was the lowest bid for \$90,445, project is recommended for approval.

- **DAMON Ave**
 - Check and gate valves for the 3 pumps are near the end of their asset life.
 - Purchased one set of valves for backup due to long lead time.
 - Cost ~~ \$28,500.
 - Preparing specifications to bid installation of purchased valves plus acquisition of two more sets.
 - Total project cost ~~ \$130,000

- **Stevens Creek Interceptor (42" section) – Exposed section of pipe**
 - There is a section of the 42" interceptor just West of Oakland Ave where the cover dirt over the interceptor has washed away due to storm water over the years (originally installed in 1953).
 - Acquiring access easement from property owner.
 - Plans and specifications will need to be prepared for bid due to repair cost.

- **Lake Shore Force Main (FM)**
 - District is working with ADM preparing to replace the air release valves and their isolation valves along the FM.
 - Do to condition of existing nipple taps to the FM new saddles taps will be needed and replacement of vault structure
 - Staff is getting proposals to replace structures.

- **7th Ward Foul Sewer Pump No 1**

- Pump No 1 has reached its asset and has a high potential of failure.
 - Replacement includes pump, base elbow and guide rails and brackets
Purchase price \$37,500.
 - Pump has been received and preparation has started for installation.
 - Pump, base elbow, and guide rails are installed and operational.
- **Faries Pump #1**
 - A Dry Pit Submersible was purchased to replace the existing centrifugal drive shaft pump due to asset management plan
 - Pump replacement cost approx \$16,000.
 - Suction, discharge and check valves will be replaced during pump replacement.
 - Valve replacement cost approx \$3,300.
 - Pump base and reducing discharge elbow approx cost \$3,000
 - Staff is in the process of removing and reinstalling new equipment.
 - Pump is installed and waiting for a discharge elbow to be fabricated.
- **Lincoln Park Interceptor Pump #1**
 - Pump failed and was taken to Vandevander for failure analysis.
 - Pump failed due to Mechanical Seal Failure. Pump also has major wear to the Impeller and the Volute.
 - Repair cost is \$24,241.05
 - New pump Approx \$29,000
 - The cost is within the range to purchase new rather than rebuild the existing.
 - Pump is delivered and staff is researching volute/impeller coatings for extended life.
- **Lincoln Park Interceptor Pump #2**
 - Pump has been taken to Vandevander for analysis due to vibration and bearing noises. Pump did not fail.
 - Analysis showed excessive shaft wear and impeller.
 - Repair cost is \$16,300.
 - The existing pump will be repaired
 - Pump is repaired and operational.
- **Lincoln Park Interceptor Pump #3**
 - Pump Failed and was found that bolts vibrated out of volute and twisted the electrical cord until the pump failed.
 - Pump cannot be repaired, new pump ordered for \$29,000.
- **Wyckles East Lagoon Loadout Pump**
 - Pump has been taken to BRI for analysis due failure.
 - Spare loadout pump has been installed and is operational.
 - Analysis showed water in Stator housing but all seals passed pressure test.
 - Repair cost is \$18,400
- **Florian Ave Pump No 2**
 - Pump failed.
 - Pump purchased in 1985 and was scheduled for replacement next year.
 - Replacement Cost \$3,315
 - Pump is installed and operational.

Sanitary District Of Decatur

501 Dipper Lane * Decatur, Illinois 62522 * 217/ 422-6931

MONTHLY ACTIVITY SUMMARY

Main Plant Facility Maintenance Division

To: Don Miller

From: Fred McKinney / Craig Jones

Date Nov. 14, 2014

For the month of October, these are the projects in progress.

Nitrification Clarifiers:

Installation of the number two nitrification clarifier scum trough has been put on hold until spring due to valve problems in the center structure.

DAF-113 bldg:

The D.A.F. units are all being brought up to proper working order, excluding numbers one and two.

Primary Digesters: 105-00-00

Two new burner assemblies for heat exchangers one and four are installed and two more are on site will be scheduled for installation soon.

Secondary Aeration Tanks:

Rehab of all tanks are complete except for minor touch up work, ie. tighten bolts and pvc fittings throughout.

Grit tank 204:

Sandblasting and painting of the Catwalk, Drags & Piping are being performed in house by inside maintenance personal.

SANITARY DISTRICT OF DECATUR

501 DIPPER LANE, DECATUR, IL 62522

MEMORANDUM

TO: DON MILLER
DATE: November 12, 2014
FROM: PAUL CASWELL
SUBJECT: 2014 ROOF REPLACEMENT AND REHABILITATION PROGRESS REPORT #2

The work is currently on hold due to cold weather. Below is the project status:

- Larkdale PS shingle roof replacement – COMPLETE
- Damon PS shingle roof replacement – COMPLETE
- Bld 217, Grit Pump Bld roof coating – COMPLETE
- Bld 314, Secondary Return Sludge PS – Roof is watertight, needs flood coat and gravel, fascia and gutters. Contractor needs temperature 45 degrees and rising to complete this work.
- Bld 259, Nitrification Return Sludge PS - Roof watertight, needs flood coat and gravel, fascia and gutters. Contractor needs temperature 45 degrees and rising to complete this work.

Thank you

Sanitary District of Decatur
501 Dipper Lane * Decatur, Illinois 62522 * 217/422-6931

MEMORANDUM

TO: Don Miller
13, 2014

DATE: November

FR: Roger Dudley

RE: 2014 Bleach Building Modifications

Notice of Award was issued on June 26, 2014.

Notice to Proceed issued on July 14, 2014.

The contractor arrived on site on July 10, 2014 to unload District purchased building; delivery of materials began on August 1, 2014.

As of this date, the contractor has constructed the proposed building addition, installed approximately 50% of electrical duct bank, applying finish coat to the structural steel and preparing to construct the concrete pavement around the bleach building. As of this date, 5 field orders have been issued.

The project is estimated to be 80% complete.

Project consists of removal of exiting building and containment wall, constructing an 1800 square foot addition, rerouting exiting electrical duct bank, erecting a new building purchased by the District along with site improvements.

Sanitary District of Decatur

501 Dipper Lane * Decatur, Illinois 62522 * 217/422-6931

MEMORANDUM

TO: Don Miller
2014

DATE: October 12,

FR: Roger Dudley

RE: 2014 Roads Rehabilitation

Notice of Award was issued on August 21, 2014, with Notice to Proceed issued on September 16, 2014.

Contractor has completed the 5" depth pavement replacement as of this date. The 7" depth replacement will begin whenever the bleach building pavement is constructed.

Project is estimated to be 70% complete.

Project consists of 7" & 5" existing bituminous pavement removal within the main treatment plant.

With ambient air temperatures not favorable for bituminous concrete pavement construction, the project may need to be closed out and the remaining portion of the project completed next fiscal year.

SANITARY DISTRICT OF DECATUR

501 DIPPER LANE, DECATUR, IL 62522

MEMORANDUM

TO: DON MILLER

DATE: November 12, 2014

FROM: PAUL CASWELL

SUBJECT: 2014 HATCH REPLACEMENT PROJECT PROGRESS REPORT #1

The project was awarded to Burdick Plumbing and Heating during the October Board Meeting.

Notice of Proceed was delivered on November 3, 2014. Project completion time is 90 days or February 1, 2014

The District still needs to receive hatch submittals for approval and fabrication before any work begins.

Thank you

SANITARY DISTRICT OF DECATUR

501 DIPPER LANE, DECATUR, IL 62522

MEMORANDUM

TO: DON MILLER

DATE: November 12, 2014

FROM: PAUL CASWELL

SUBJECT: 2014 MANHOLE INSPECTION PROJECT PROGRESS REPORT #1

The project was awarded to Terra Contracting during the August Board Meeting.

Project kickoff meeting was on October 6th, 2014

Work started on October 16th, 2014

On November 7, 2014 Terra Contracting has completed 196 inspections

Inspections are ongoing to complete the approximate 1250 MH inspections

Thank you