ENGINEERING SERVICES

ASSET SYSTEMS MANAGEMENT

Asset Management - System Planning ♦ Systems Analysis - Engineering/Modeling and Technical Support

CMOM SCIP Models

Phase 1: Kickoff Meeting

To	Mike Szwaya, Issac Gardner, Neil Revello, Kevin Ramey, Gail Luthy, Arnel Mandilag
From	Mark Liebe, Alicia Lanier
Date	April 5, 2012
Project	Internal Order 9ESPP0000055
Subject	CMOM SCIP Models - Phase 1

Background

Gary needs a tool to help him manage his Maintenance Program's inspection and cleaning activities and their annual planning. The model results will help Gary understand how much should be spent and how it should be prioritized. The results will also help meet DEQ permit reporting requirements required at the end of this year. Gail will also be using results from this tool.

This is part of Phase 1 of a multi-phase project. The primary objectives of our work are as follows:

Develop a regularly updated **Inspection** Schedule/Map/List that minimizes overall risk, along with explanation for why inspection for any particular asset was ranked as it is. Keep it simple. Expect a yearly refresh, although initial updates will likely be frequent as the product is approved.

Develop a regularly updated **Cleaning** Schedule/Map/List that minimizes overall risk, along with explanation for why inspection for any particular asset was ranked as it is. Keep it simple. Expect a yearly refresh, although initial updates will likely be frequent as the product is approved.

Purpose of Kickoff Meeting April 5, 2012

Purpose of this meeting was to bring team up to speed on the SCIP Models Requirements, and the management approach that Mark plans to use. In addition, the team was asked to brainstorm the potential major work involved in meeting the known requirements. The known model requirements are included as Appendix A, and Major Milestones in Appendix B. For more information on the project management approach, refer to the Project Charter (*insert hyperlink*).

Major Work Elements

The team brainstormed the following major activities, and unknowns (that can be translated into an activity- “find the answer”). These elements have not been put into a workflow order or associated with a schedule.

Project Documentation

- Internal Document Control & Archiving
- Project Documentation
- Code Documentation
- Metadata
- Data Specifications
  - Metadata
  - Data Extract Mapping of Source to Output Fields
- GeoSpatial Data Information
  - Data Specs
  - MetaData

QA / QC

- QA/QC data to support level of Analysis
- Vetting Results for Inspection Model
- Test Cleaning Model
- Vetting Results for Cleaning Model
- QA Driver Metrics with Hansen & BOM Data
  - Predicted e.g. BSBR vs known BSBR's
- Test Inspection Model
- Code Review / Testing

Analysis Design

- When to batch – levels of automation
- User Interface
- Design Archiving Mechanism
- Identify Non-Controlled Data Sources
  - spreadsheets, documents, mdbs (Excel, Word , Access)
- Determine Code Platform
- Identify conflicting interests in data consumption
- Design Alternative Comparison
- Calculate Driver Metrics

Data Design

- Seed Data Acquisition
- Data Inventory
- Location on Network
  - where will Project Reside
  - Space allocated
- Importing Non-Controlled Sources to Controlled (Source) media
- External Dependencies
- System Data Architecture

- Design Database Schema
- Data Conversion

Source Data
- Last TV Date
- Structural Score
- Grease Asset Group
- Last Clean Date
- Root Priority
- Location
  - In Street
  - In Canyon

Project Management
- Project Lexicon
- Managing Expectations
- Communication Plan
- Response to External Review
- Time Management
  - Constraints
  - Workload
- Progress Tracking

Deliverable Specifications
- Who will manage standards control in GIS
- Determine Detailed Report Items
- Identify what the end user will actually do with the information
- Map Production
- Design Alternative Presentation
- Map Template Developed
- Present proof of concept “Results” to responsible end user - Identify Flows
- Reporting Templates (Maps, Tables, Charts)
- Identify data
  - true end users
  - How far does the data reach
  - Not just Managers
- Identify data distribution methods
- Formulate Reporting Aggregation
- Size and Shape of Graphics

Driver Specs
- Tag Behavior
  - Static
  - Dynamic
- Identify Ranking Metric for drivers
  - e.g. pipe grades
- Identify consequence of failure for each driver
- Develop list of drivers and measures
- I.D. Data requirements to develop driver metrics

- e.g. How to calculate pipe grade

Next Steps

Determine drivers - Set up meeting early next week with Gail Luthy, Matt Marine (BOM), John McGregor (Pollution Prevention), Arnel Mandilag, and Mark Liebe. [ALICIA]

Set up Sprint meetings – for next week [Mark Liebe]

Discuss resource needs with Virgil – Asap [Mark Liebe]

Set up network location – Asap [Arnel]

Appendix A

Known Qualities of the Collection System Sewer Inspection and Cleaning Prioritization Models

- Two models : Inspection Model, Cleaning Model
- Intended users (people running the model): Asset Systems Management for near future (2-3 years)
- ASM maintenance of the model: Assume ASM for near future (2-3 years)
- User of end results: Gary (and Gail, and Joe to some extent)
- Expected output: Map, Schedule from each model, with pertinent data for each pipe; specifically for Gail, a table keyed with compkey to generate groups of projects. Table for Gail preferably in ACCESS.
- ASM is not intending to backfeed into Hansen.
- Scale: Pipes from node to node only, manholes, NOT laterals
- Drivers: Tags for each asset that can be picked as the driver
- Each Pipe is dealt with atomically; there is no segmentation
- Each Pipe can be assigned one or more Drivers. A Driver has
  - A name
  - A frequency of occurrence (stated as a period of time)
  - A cost per occurrence
- While each Pipe can be assigned one or more Drivers, a pipe picks out only one of them to be the Critical Driver. At this time, this is the Driver with the shortest period
- All Pipes will have a Preventive Maintenance Driver assigned (for Inspections)
- When the model is applied, the model will be run to twice the longest period available in all possible Drivers. The first period acts as a hot start; the actual usable data is the second period.
- The Inspection and Cleaning models are run independently of each other. [There is a sequence that is typically used, for example, cleaning before inspection. But this sequence may not be required.]
- The model will need to support alternatives analysis

    - Comparison routines
    - Archiving routines
- Seed data is expected to come from Hansen workorders and Gail's knowledge
- Results for the 1st phase will be used for a total needs assessment
- Results for subsequent phases will be leveled using a budget cap (one for inspection, one for cleaning)
- Pilot Models – should cover two basins with different schedules.

Appendix B

Schedule for Phase 1

Key Activity	Lead	Description	Completion Date
Model Development and Analysis- Inspection	ASM	Needs based assessment based on risk	June 1, 2012
Model Development and Analysis - Cleaning	ASM	Needs based assessment based on risk	June 1, 2012
Alternative Development - Inspection	ASM	Simple adjustment of levers (example, change values for the asset tags)	August 31, 2012
Alternative Development - Cleaning	ASM	Simple adjustment of levers (example, change values for the asset tags)	August 31, 2012
Report Preparation – Inspection	Gary		December 1, 2012
Report Preparation - Cleaning	Gary		December 1, 2012