Summary of Existing CCSD Geographic Information System (GIS), Asset Management, and CIP Planning

Prepared for September 11, 2018 Infrastructure Committee Meeting

By Robert Gresens, CCSD District Engineer

Outline

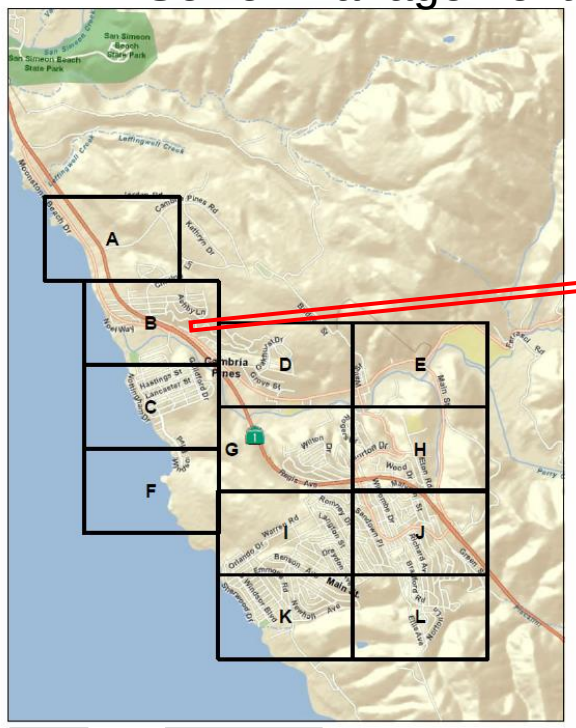
- Summary of CCSD's Geographic Information System (GIS)
- Summary of CCSD's Use of "KeepTraK" Maintenance Management Program, which includes Asset Management Capabilities
- Summary of CCSD's Use of "Plan-It" Capital Improvement Planning software

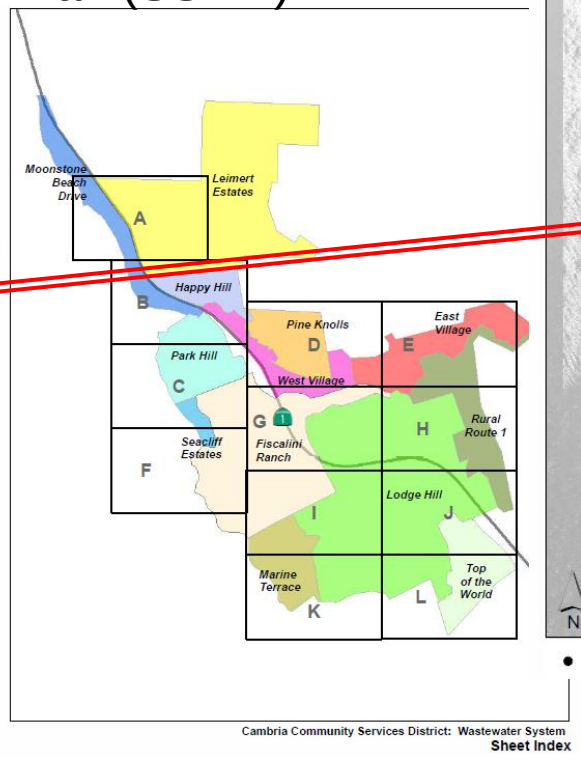
Geographic Information System (GIS)

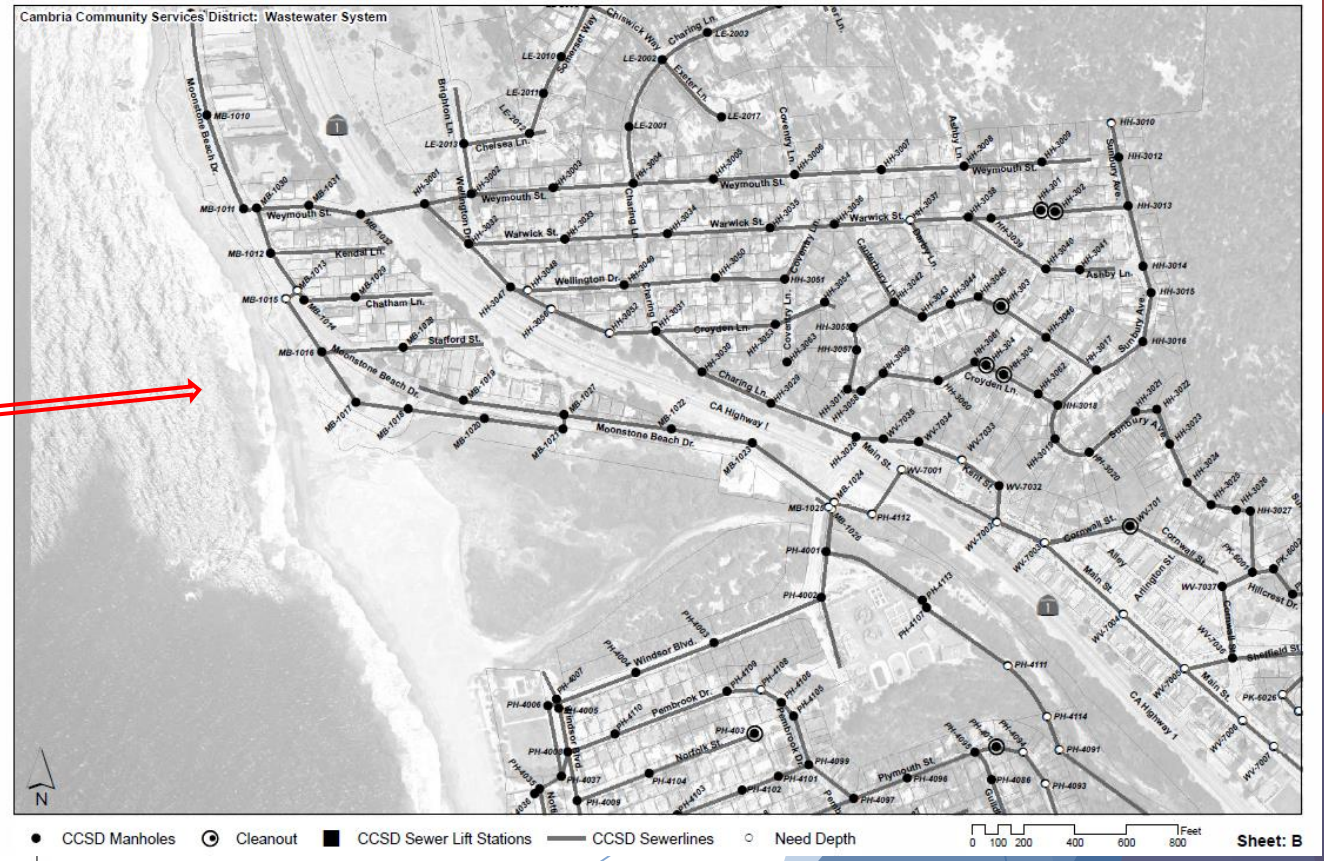
- Worked with Seth Sutherland, our local GIS Expert in Utilizing a Vast Amount of Previously Mapped Data
- Developed a Low-Cost Viewer System Using Google Earth
- Much of the original aerial data was “rubber-sheeted” to edge match, which resulted in inaccuracies. Also relied upon past record drawings.
- Accuracy and volume of supporting data is continuously being improved upon by operators gathering field data.
- Field data is gathered using a tablet PC in combination with a hand held Trimble GPS device that has submeter accuracy (not survey-level accuracy).
- Files are periodically sent to Seth Sutherland for remote updating of the Google Earth data files.

Example of Past Sanitary Sewer Mapping Used in GIS

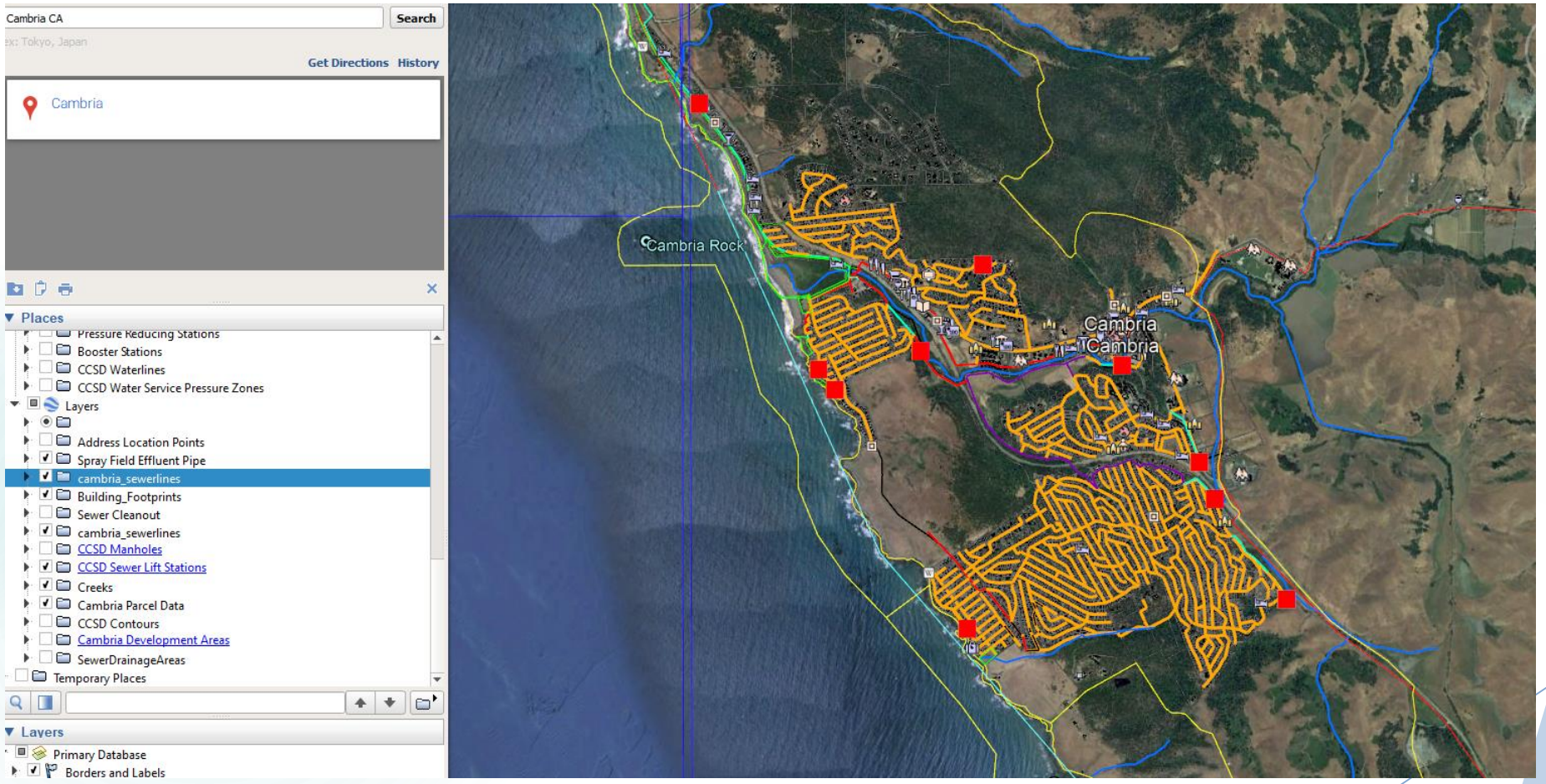
2013 Mapping Completed for Sanitary Sewer Management Plan (SSMP)



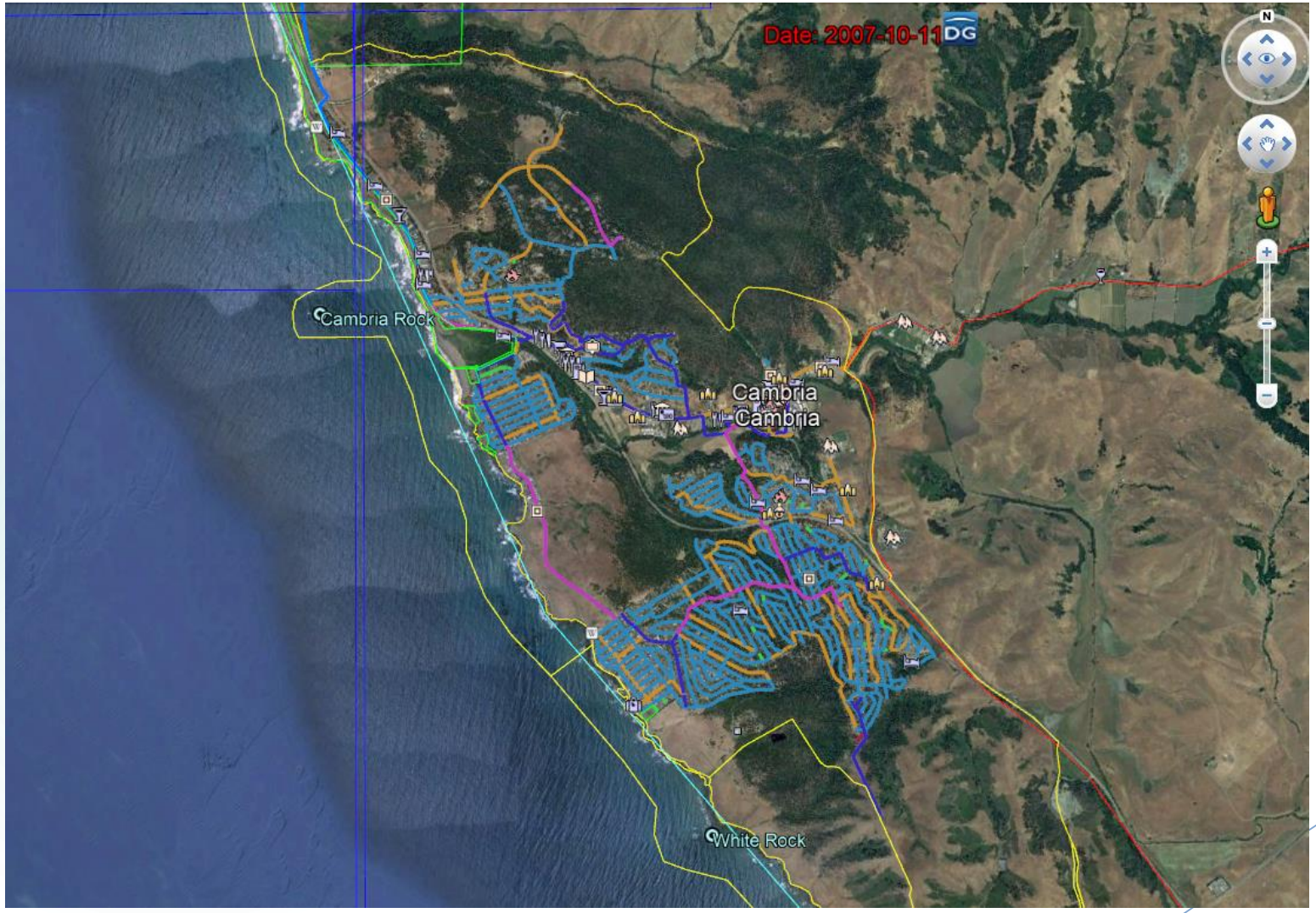




GIS Overview of Sanitary Sewer System

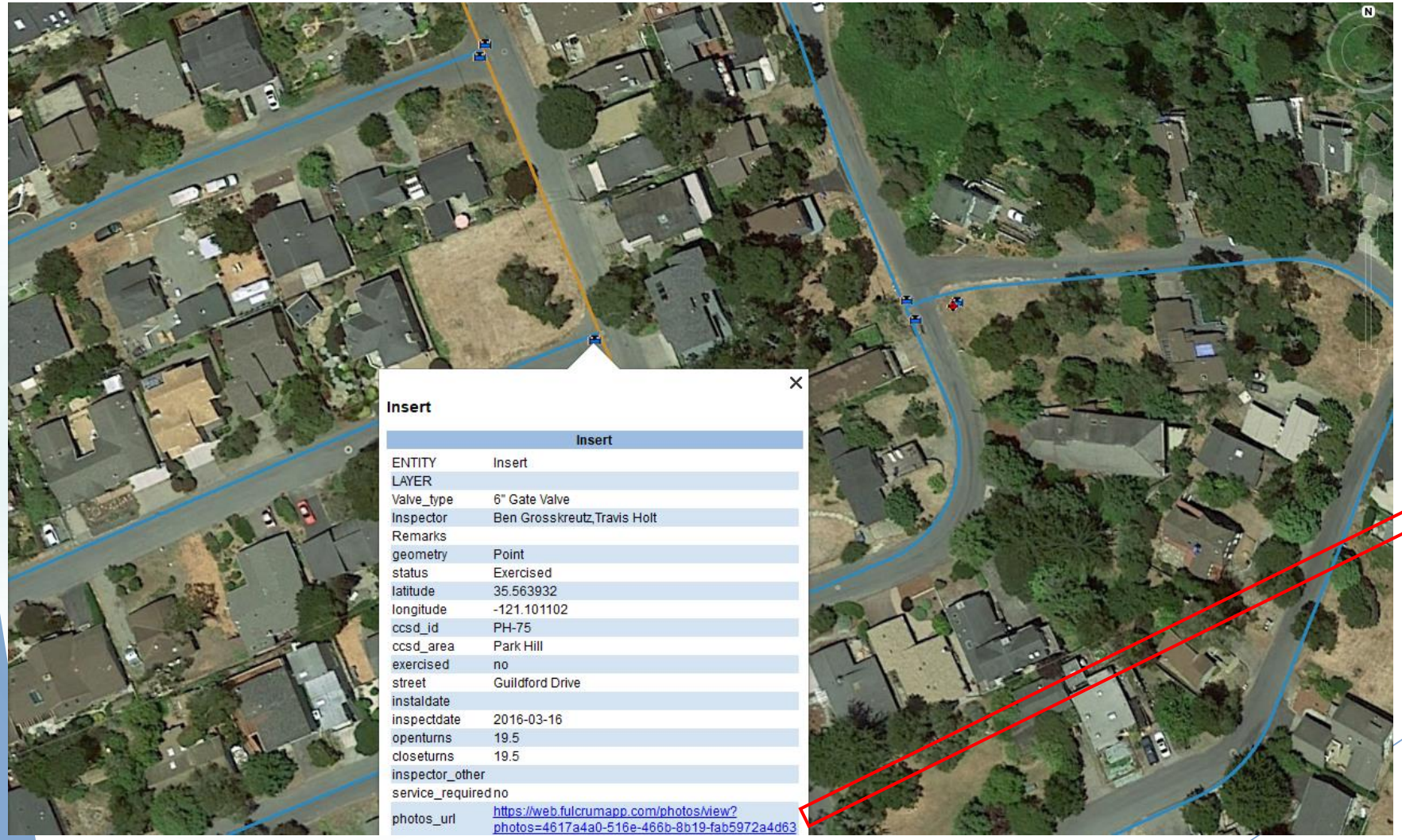


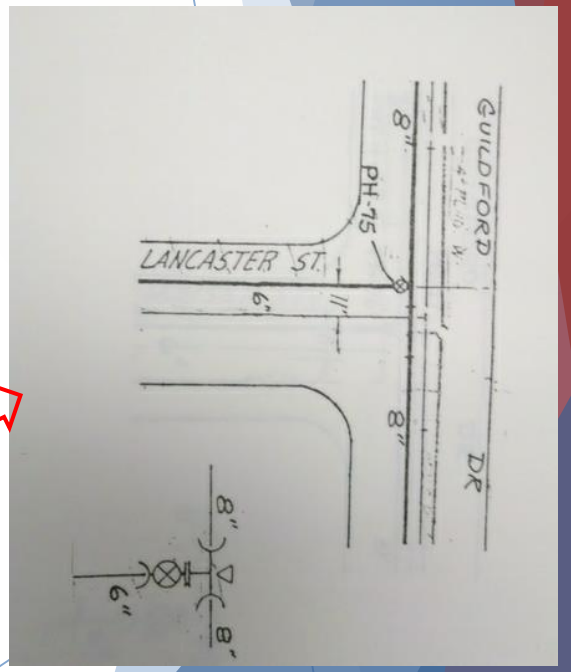
GIS Overview of Water System



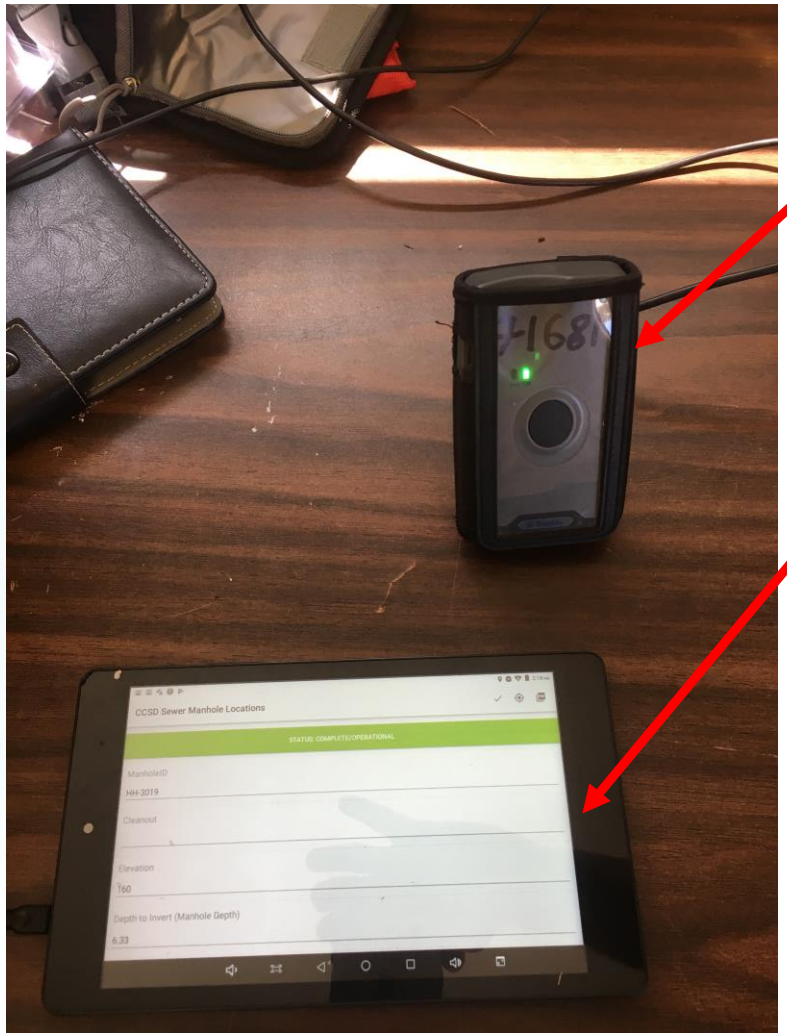
Example of Sewer System Data Viewer

Example of Water System Data Viewer





Data Collection Equipment



Trimble Handheld Receiver

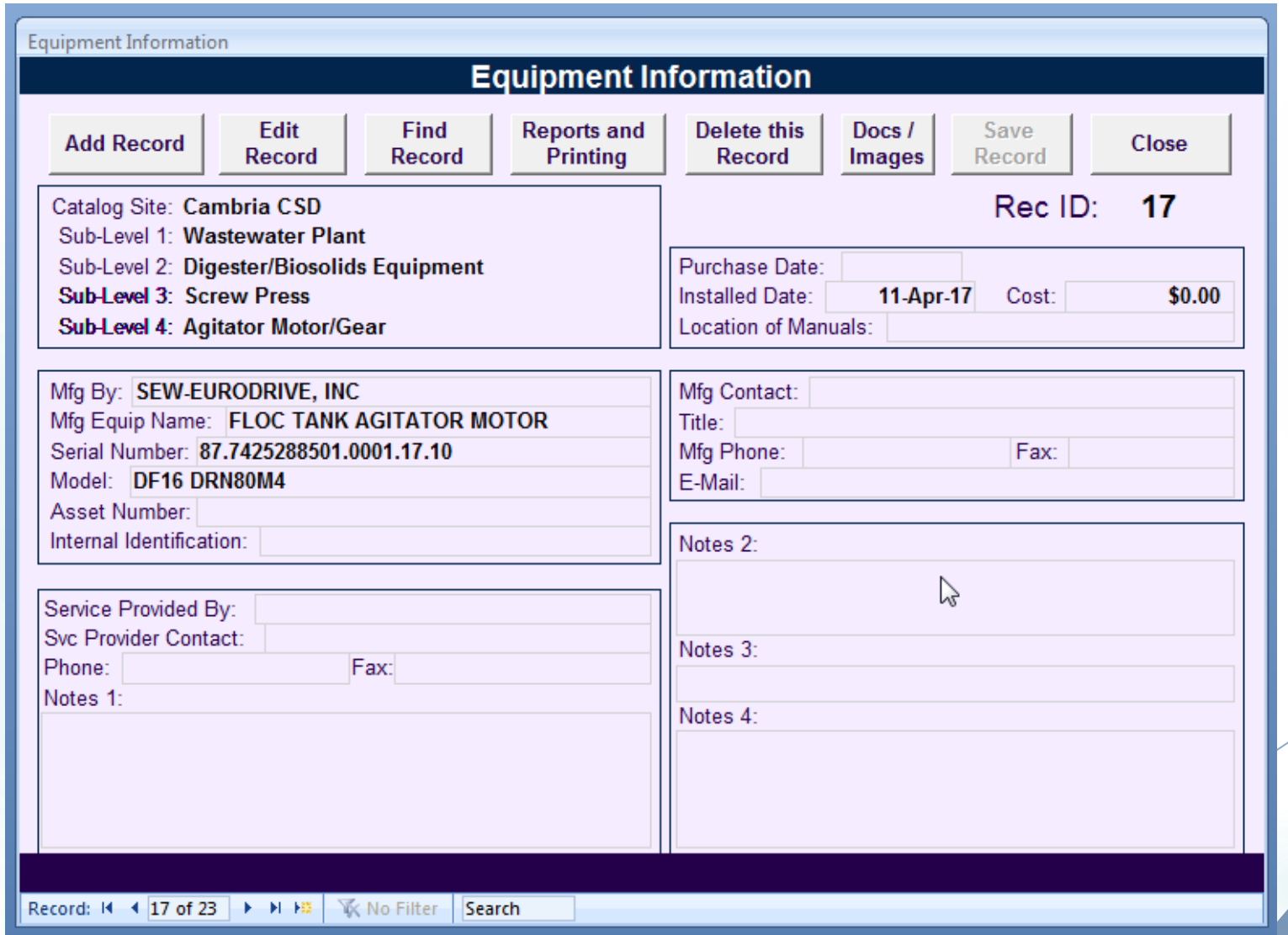
Tablet PC Links Wirelessly to GPS Receiver. Tablet contains all data fields for operator entry.

KeepTraK Maintenance Management Program with Asset Management Capabilities

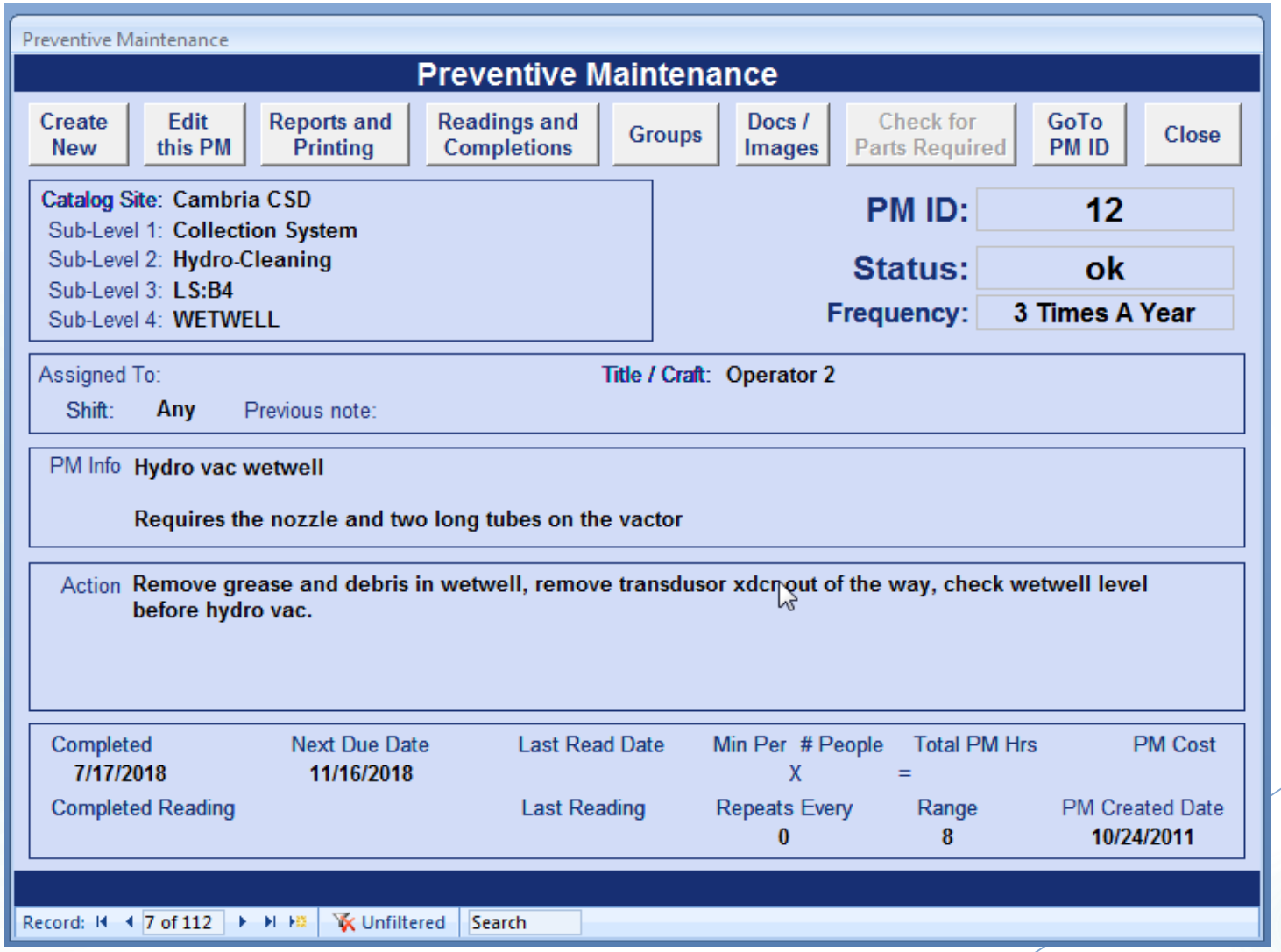
- Cloud based software
- Originally purchased by a previous WWTP CPO who had used it in the private sector.
- To date, used mostly by Wastewater Department
- Water needs to enter data.
- Quite a bit more data entry is still needed

Beginning Screen for KeepTrak

KeepTraK Equipment Information Screen



KeepTraK Preventative Maintenance Screen

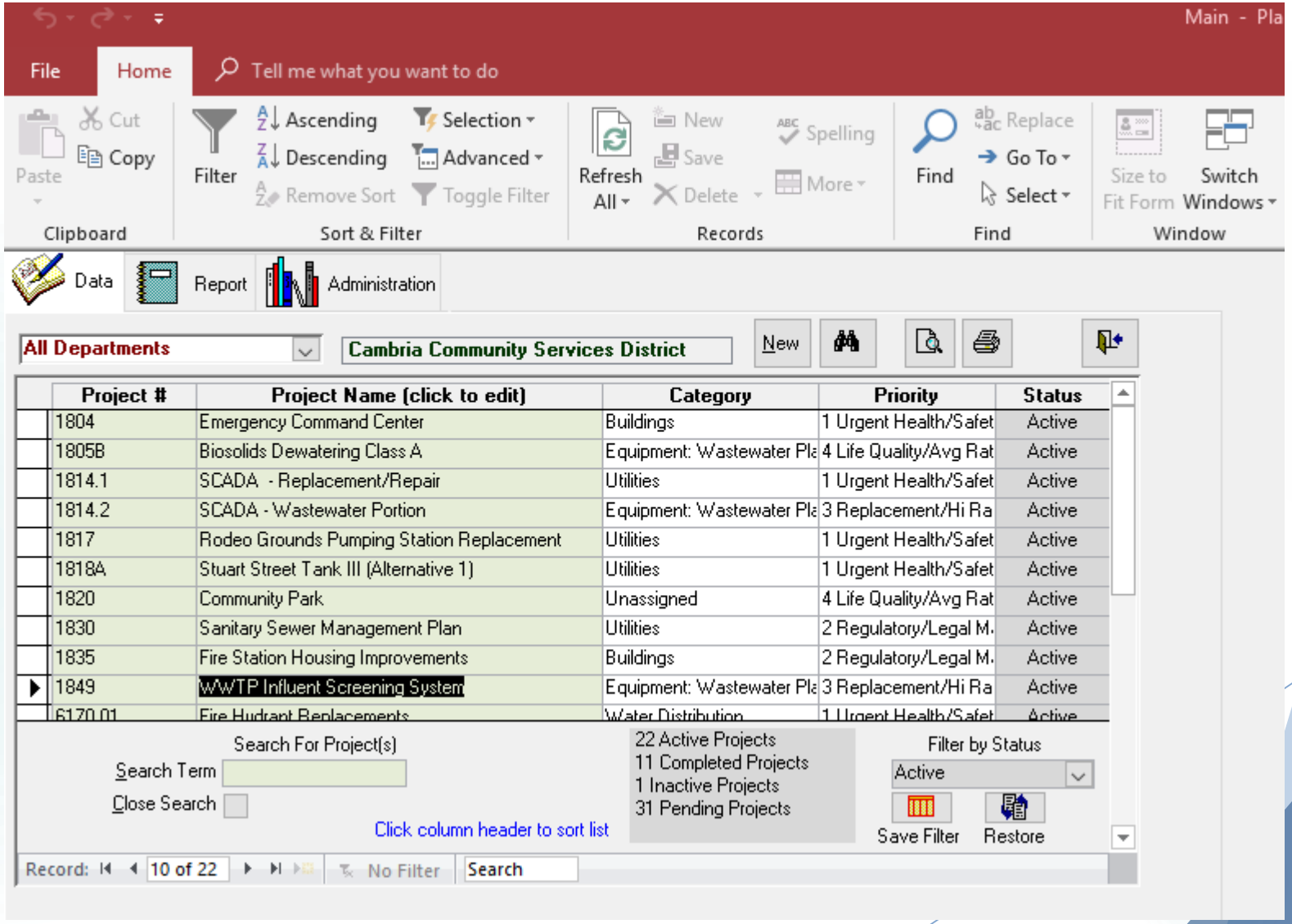


Plan-It CIP Project Planning Software

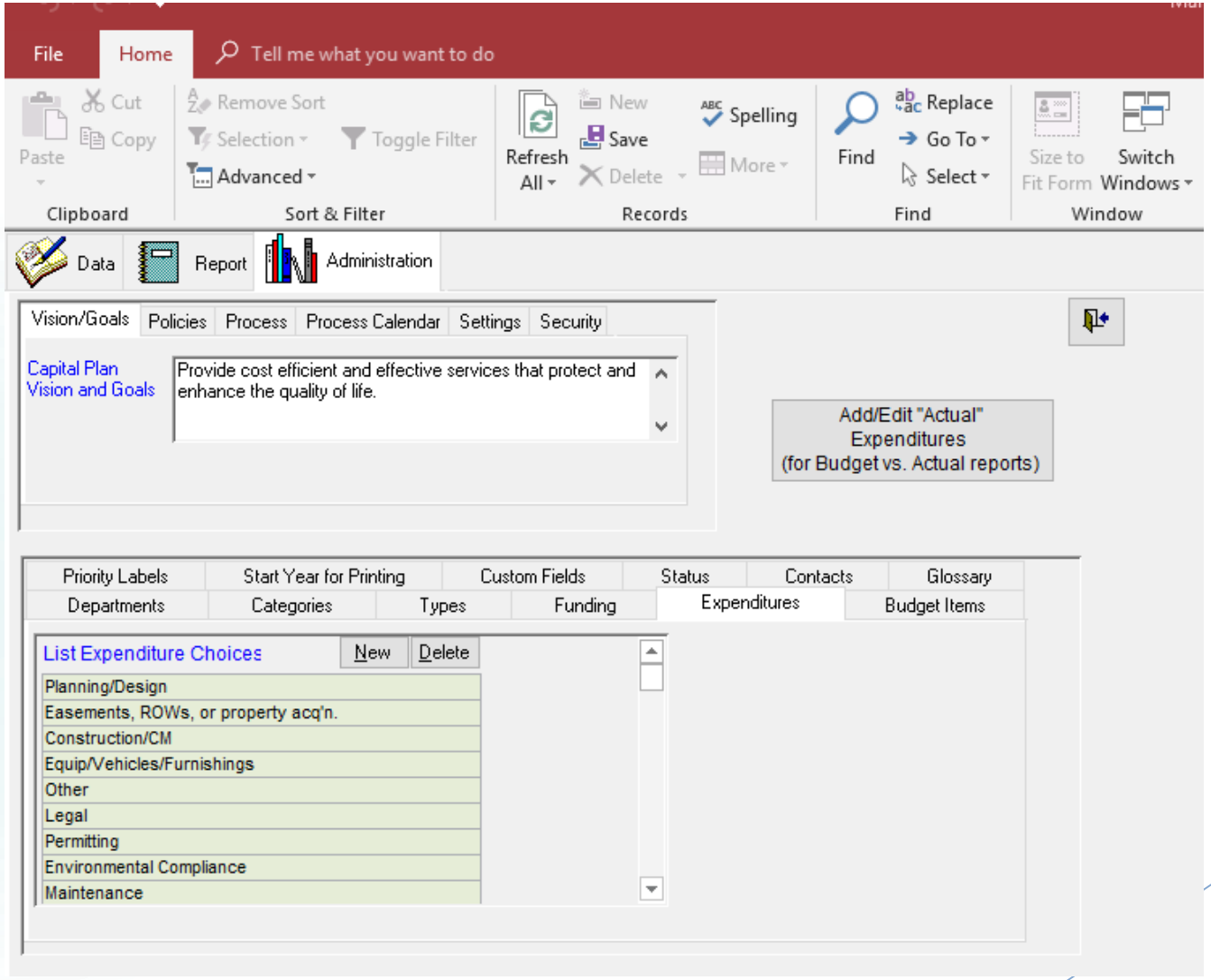
- Based on Access database. Provided with Customized Data Entry and Reporting
- Annual license with cost based number of concurrent users. License cost is in the $400 to $1,000 per year range.
- Plan-It mentions it is used by several hundred public agencies.
- First set up by District Engineer over 10 years ago.
- Went into hibernation (did not renew licensing) after several years of no CIP funding.
- Renewed license this year
- Additional updating of data fields is needed.
- Recently updated influent screen project summary for committee.

Beginning Screen for Plan-It

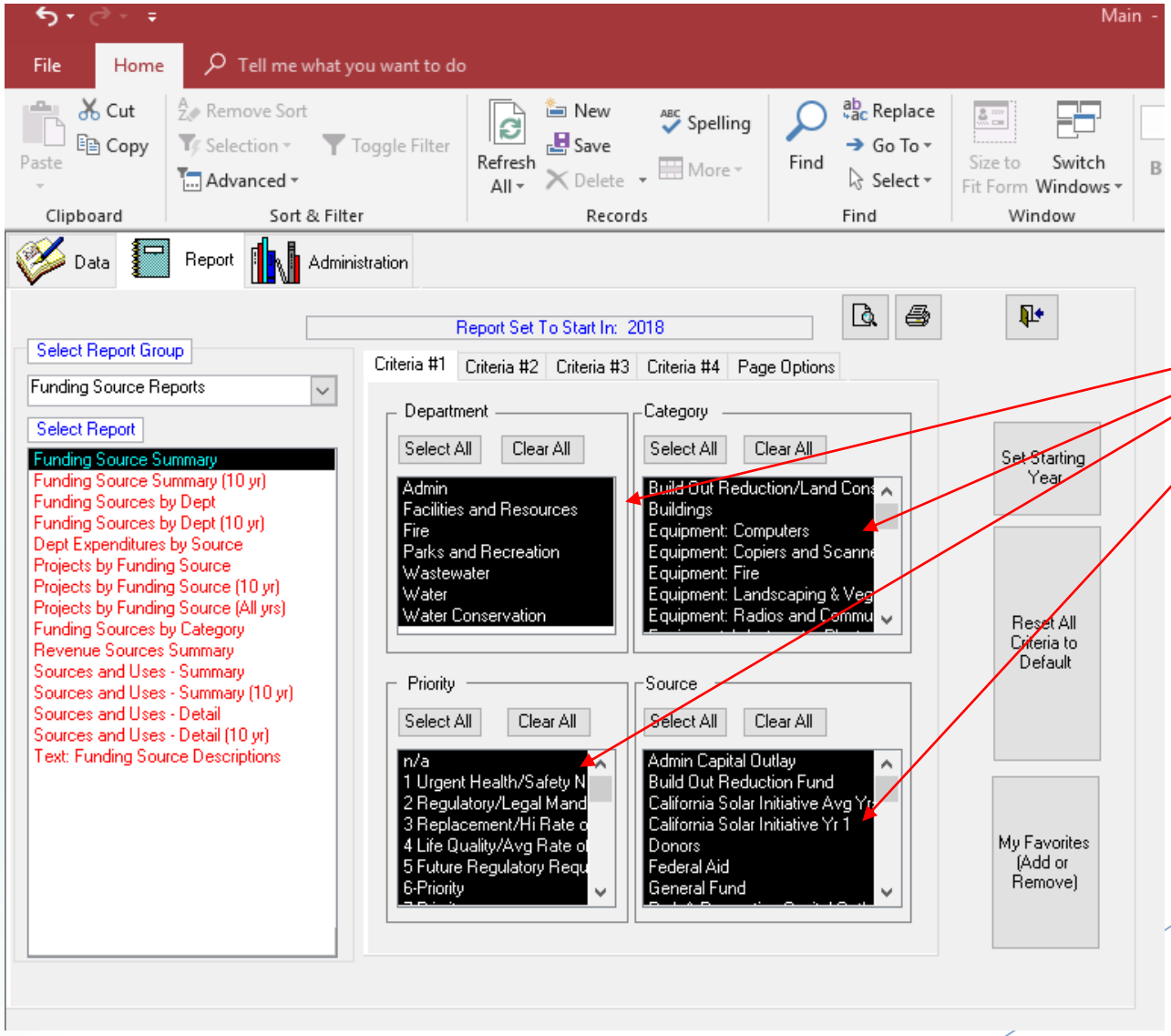
Main Project Data Entry Screen



Main Administrative Entry Screen



Report Generation Screen



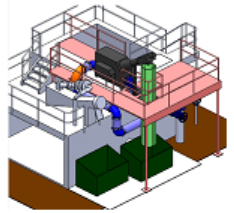
Dark background shows fields developed during original setup, which are user defined.

Plan-It Generated Project Summary Report

Capital Improvement Plan 2018 *thru* 2022

Cambria Community Services District

Project # 1849
Project Name WWTP Influent Screening System



Type	Improvement	**Department**	Wastewater
Useful Life	25 years	**Contact**	Wastewater Department Supervi
Category	Equipment: Wastewater Plant	**Priority**	3 Replacement/Hi Rate of Retur
Environmental:	Categorically Exempt	**Consultant:**	none
Coordination:		**Project Manager**	District Engineer

Description

This project will augment an existing screenings grinder at the main inlet to the wastewater treatment plant (WWTP) with a new mechanically cleaned influent screen. The new screening equipment will remove screenings from the flow stream, which is much more effective at avoiding downstream impacts than the existing grinder system. The screen assembly includes an upper dewatering screw compactor and washer. Screenings are then discharged into a dumpster for disposal at a landfill.

The influent screen was originally planned approximately 10 plus years earlier, but did not advance due to funding limitations. It was pre-purcahsed during 2016, but did not advance any further due to a lack of funding. Design for its installation was completed during 2017 and it was bid at a proposed installation cost of $338,000. This bid was rejected and District staff redesigned the installation to save costs by mounting it on top of an existing grit tank structure. A rebid of the revised installation occurred during 2018, whuch resuted in a bid of $156,675 that was awarded to Brough Construction. The contractor has 120 days to complete the project, which is projected to have an end date of Decmeber 18, 2018.

Justification

The existing grinder-based system does not remove inert materials, which recombine in downstream processes causing clogged pipes and equipment. This leads to process and equipment failures along with costly emergency repairs and tank cleanings. The ragging that occurs with the current grinder system also blocks aerators, which increase power use by making the activated sludge process oxygen transfer far less efficient. Plugging of pipes and pumps resulting from the current grinding system can also contribute towards permit violations, increased staff time for repairs, burned out motors, and cause premature equipment replacements.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/CM	164,509					164,509
Total	164,509					164,509

Funding Sources	2018	2019	2020	2021	2022	Total
Wastewater Replacement Fund	164,509					164,509
Total	164,509					164,509

Budget Impact/Other

The budgetted costof $164,509 includes a 5% contingency for potential change orders during construction. Plant operations will be impacted during installation of the new equipment due to the need for temporary bypasses and connections. Once installed, the new equipment will improve overall plant performance and reliability.

Questions?