

# 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

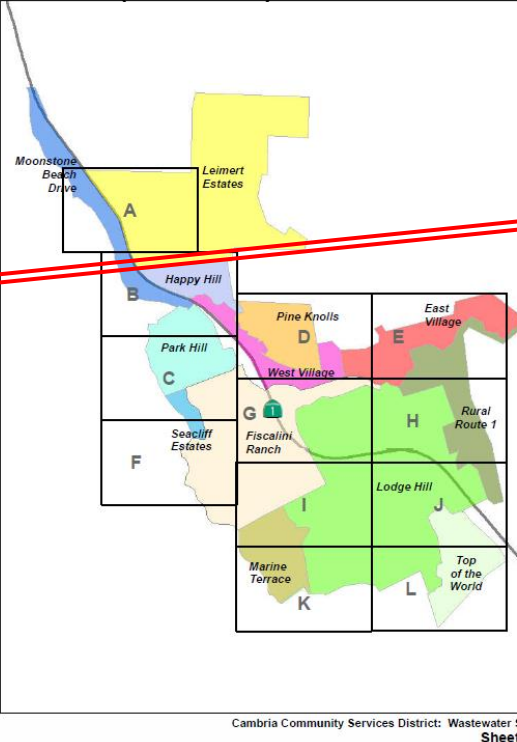
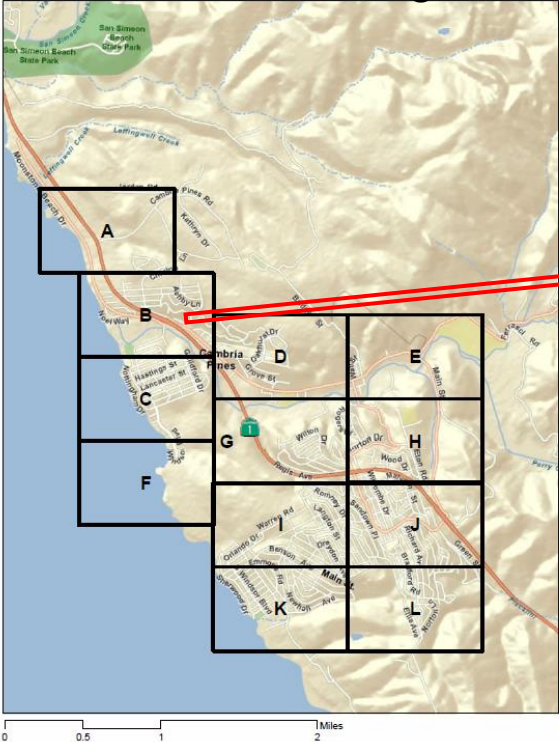
- ▶ Summary of CCSD's Geographic Information System (GIS)
- ▶ Summary of CCSD's Use of "KeepTraK" Maintenance Management Program, which includes Asset Management Capabilities
- ▶ Summary of CCSD's Use of "Plan-It" Capital Improvement Planning software

# 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.

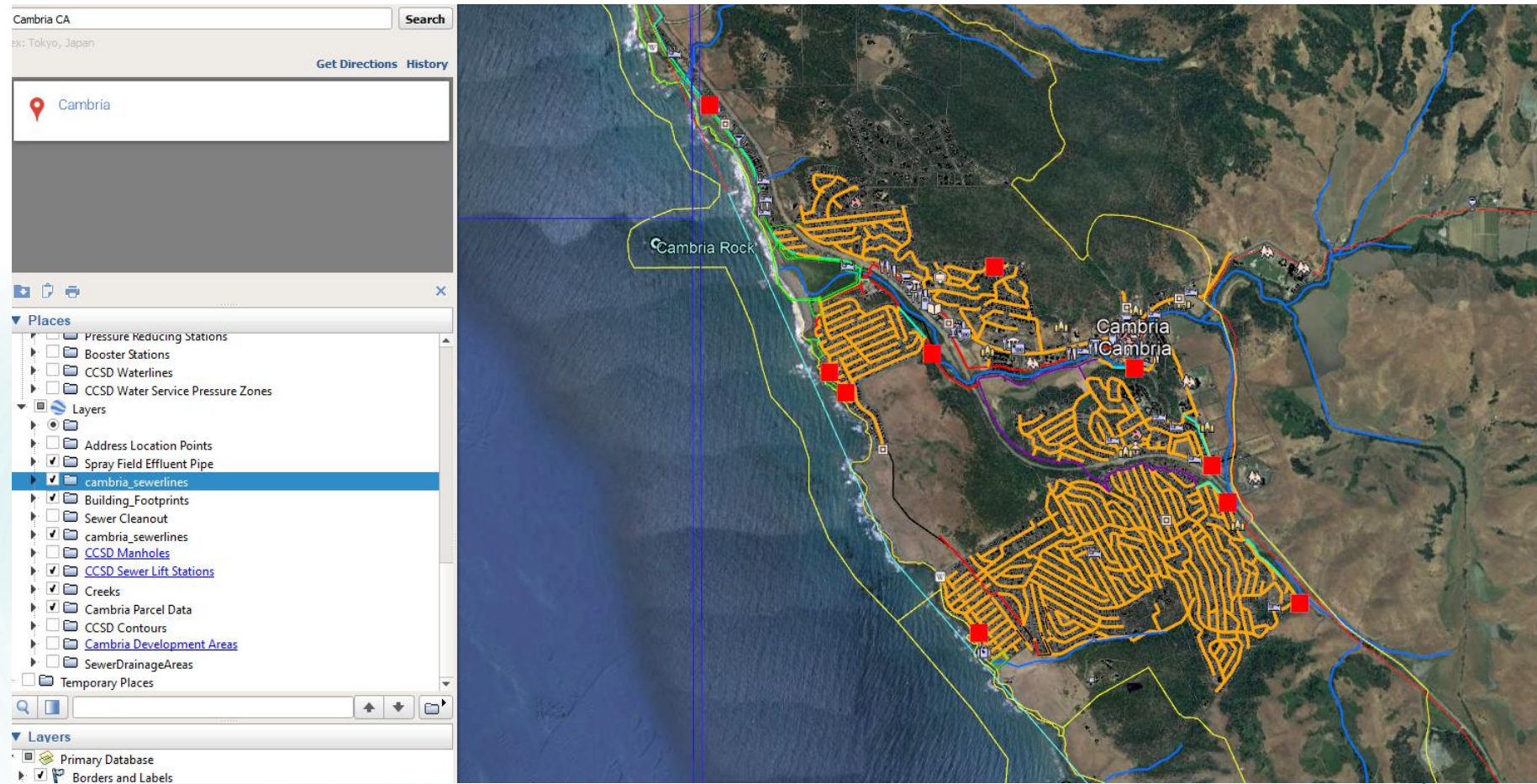
# Example of Past Sanitary Sewer Mapping Used in GIS

2013 Mapping Completed for Sanitary Sewer Management Plan (SSMP)





# GIS Overview of Sanitary Sewer System



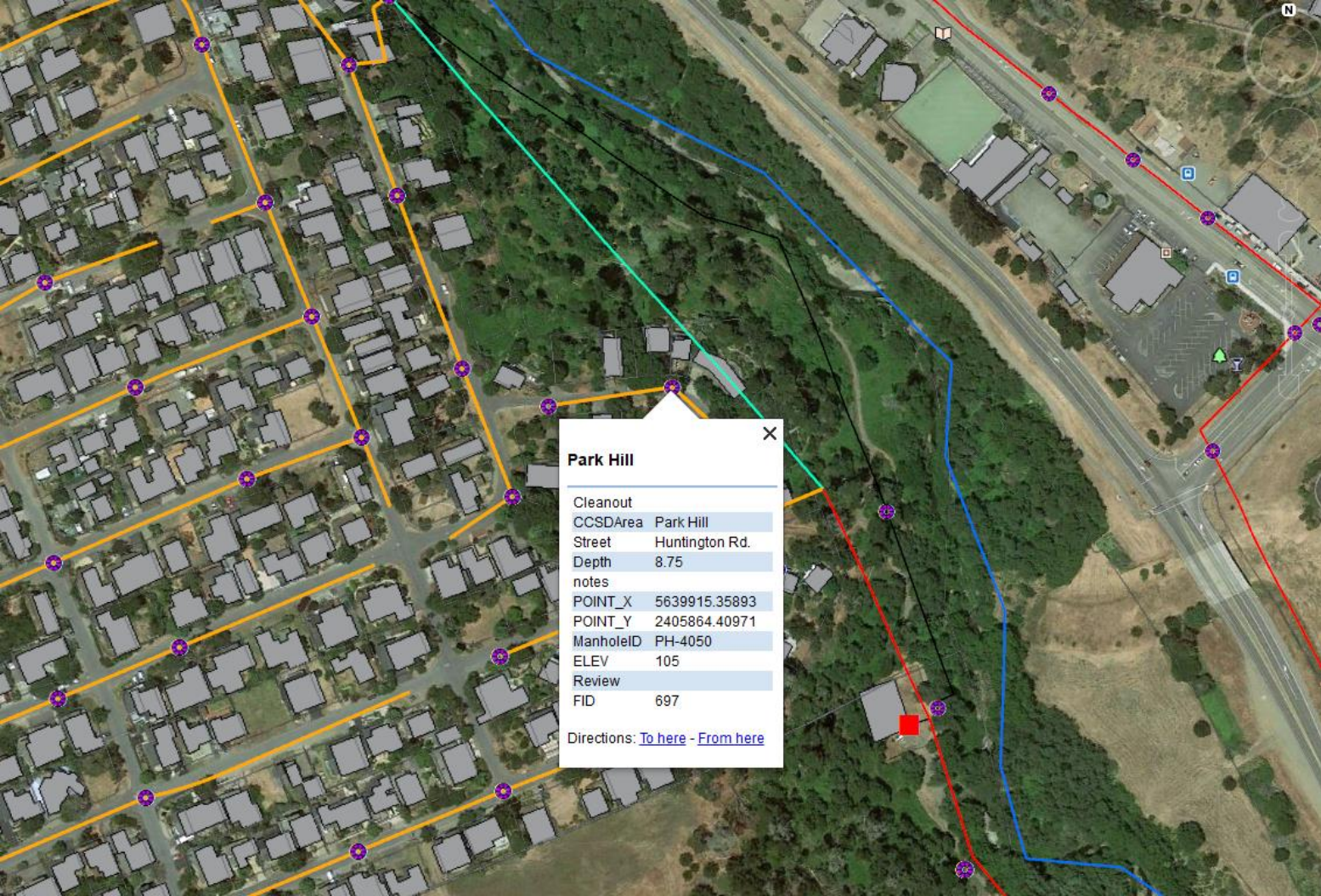


# GIS Overview of Water System



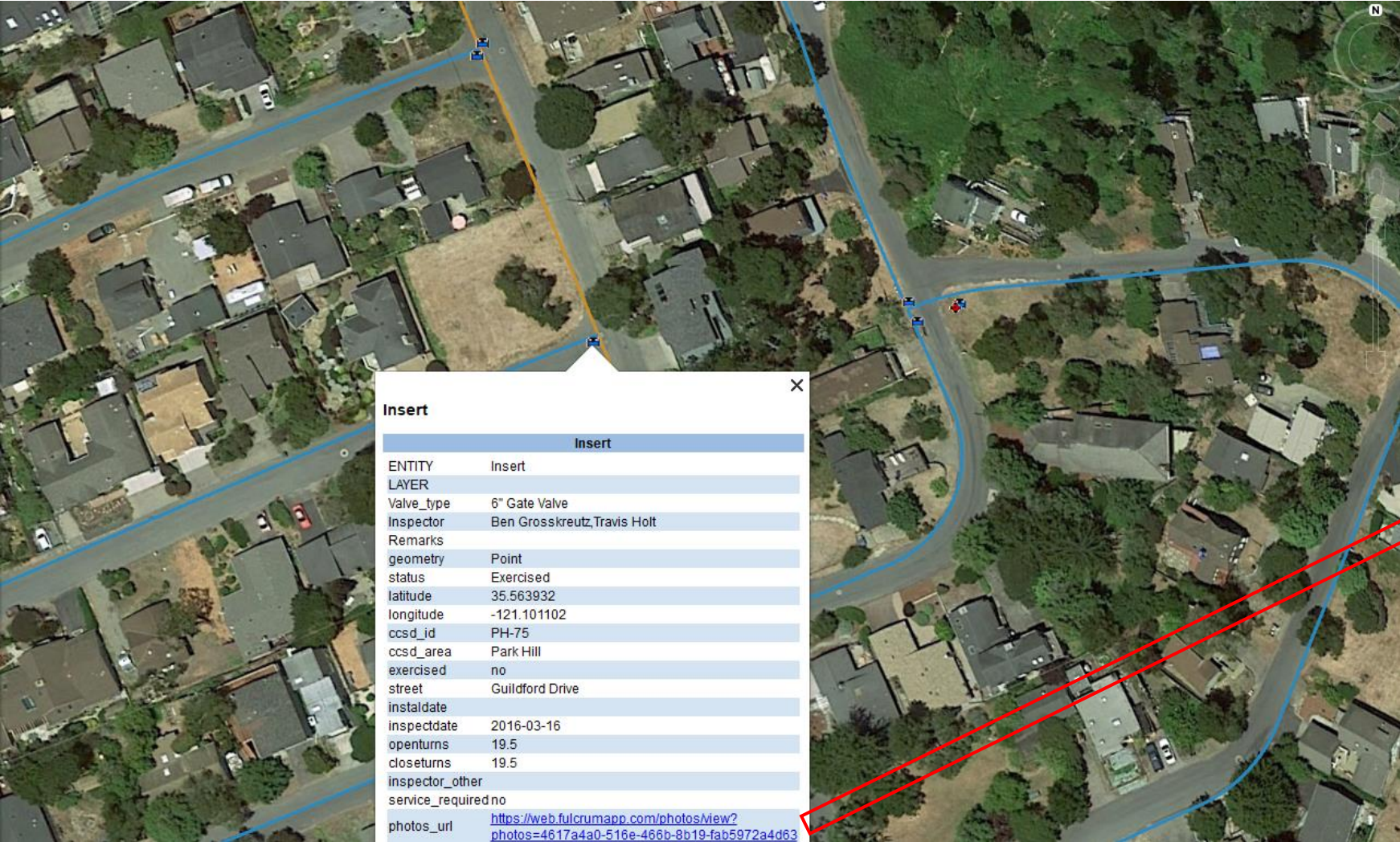


# Example of Sewer System Data Viewer



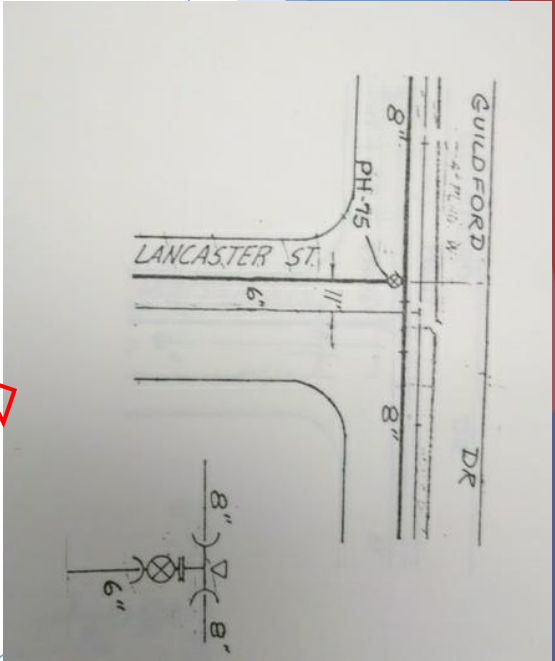


# Example of Water System Data Viewer



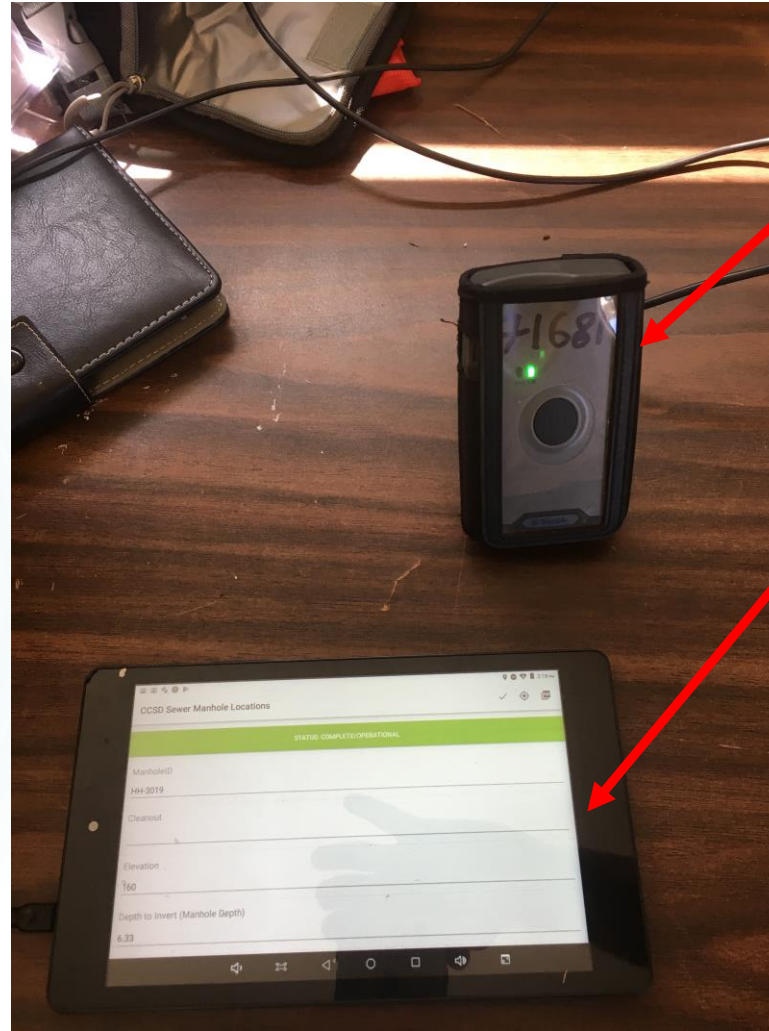
**Insert**

Insert	
ENTITY	Insert
LAYER	
Valve_type	6" Gate Valve
Inspector	Ben Grosskreutz, Travis Holt
Remarks	
geometry	Point
status	Exercised
latitude	35.563932
longitude	-121.101102
ccsd_id	PH-75
ccsd_area	Park Hill
exercised	no
street	Guildford Drive
instaldate	
inspectdate	2016-03-16
openturns	19.5
closeturns	19.5
inspector_other	
service_required	no
photos_url	<a href="https://web.fulcrumapp.com/photos/view?photos=4617a4a0-516e-466b-8b19-fab5972a4d63">https://web.fulcrumapp.com/photos/view?photos=4617a4a0-516e-466b-8b19-fab5972a4d63</a>





# 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

C O R P O R A T I O N

**Catalog Dept / Equip**

**Equipment Information**

**People and Resources**

**Preventive Maintenance**

**Maintenance Requests and Logs**

Contact KeepTraK to enable Parts Inventory

**Help**

**Administration**

**Exit**

Cambria CSD

## Facilities and Equipment Maintenance Software



# KeepTraK Equipment Information Screen

Equipment Information

### Equipment Information

**Add Record**   **Edit Record**   **Find Record**   **Reports and Printing**   **Delete this Record**   **Docs / Images**   **Save Record**   **Close**

Catalog Site: **Cambria CSD**  
Sub-Level 1: **Wastewater Plant**  
Sub-Level 2: **Digester/Biosolids Equipment**  
**Sub-Level 3: Screw Press**  
**Sub-Level 4: Agitator Motor/Gear**

Rec ID: **17**

Purchase Date:   
Installed Date: **11-Apr-17**   Cost: **\$0.00**  
Location of Manuals:

Mfg By: **SEW-EURODRIVE, INC**  
Mfg Equip Name: **FLOC TANK AGITATOR MOTOR**  
Serial Number: **87.7425288501.0001.17.10**  
Model: **DF16 DRN80M4**  
Asset Number:   
Internal Identification:

Mfg Contact:   
Title:   
Mfg Phone:    Fax:   
E-Mail:

Notes 2:

Notes 3:

Notes 4:

Service Provided By:   
Svc Provider Contact:   
Phone:    Fax:   
Notes 1:

Record:   **17 of 23**



# KeepTraK Preventative Maintenance Screen

Preventive Maintenance

**Preventive Maintenance**

<p><b>Catalog Site:</b> Cambria CSD</p> <p>Sub-Level 1: <b>Collection System</b></p> <p>Sub-Level 2: <b>Hydro-Cleaning</b></p> <p>Sub-Level 3: <b>LS:B4</b></p> <p>Sub-Level 4: <b>WETWELL</b></p>	<p><b>PM ID:</b> <input type="text" value="12"/></p> <p><b>Status:</b> <input type="text" value="ok"/></p> <p><b>Frequency:</b> <input type="text" value="3 Times A Year"/></p>
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Assigned To: Title / Craft: Operator 2

Shift: **Any** Previous note:

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**PM Info** Hydro vac wetwell

Requires the nozzle and two long tubes on the vector

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**Action** Remove grease and debris in wetwell, remove transducer xdc out of the way, check wetwell level before hydro vac.

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Completed	Next Due Date	Last Read Date	Min Per # People	Total PM Hrs	PM Cost
7/17/2018	11/16/2018		X	=	
Completed Reading		Last Reading	Repeats Every	Range	PM Created Date
			0	8	10/24/2011

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Record:

# 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



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**Welcome to the Plan-It CIP Software**  
**Cambria Community Services District**

*Application File Version 5.6*  
*Data File Version 5.6*

*Serial Number:*

Thank you for using Plan-It! For licensing information, contact Strategic Insights at (952) 994-1744 or [bleskee@CIPsoftware.com](mailto:bleskee@CIPsoftware.com).  
There are 386 days remaining in your license period.

Location of data file: P:\PlanIt\Si\_dat.mdb

# Main Project Data Entry Screen

The screenshot displays the 'Main - Pla' application window. At the top is a Microsoft Office ribbon with tabs for 'File' and 'Home'. The 'Home' tab is active, showing groups for 'Clipboard' (Paste, Cut, Copy), 'Sort & Filter' (Filter, Ascending, Descending, Remove Sort, Toggle Filter), 'Records' (Refresh All, New, Save, Delete, More), 'Find' (Find, Replace, Go To, Select), and 'Window' (Size to Fit Form, Switch Windows). Below the ribbon are navigation tabs for 'Data', 'Report', and 'Administration'. The main content area features a dropdown menu set to 'All Departments' and a text box containing 'Cambria Community Services District'. Below this is a table of project data.

Project #	Project Name (click to edit)	Category	Priority	Status
1804	Emergency Command Center	Buildings	1 Urgent Health/Safet	Active
1805B	Biosolids Dewatering Class A	Equipment: Wastewater Pla	4 Life Quality/Avg Rat	Active
1814.1	SCADA - Replacement/Repair	Utilities	1 Urgent Health/Safet	Active
1814.2	SCADA - Wastewater Portion	Equipment: Wastewater Pla	3 Replacement/Hi Ra	Active
1817	Rodeo Grounds Pumping Station Replacement	Utilities	1 Urgent Health/Safet	Active
1818A	Stuart Street Tank III (Alternative 1)	Utilities	1 Urgent Health/Safet	Active
1820	Community Park	Unassigned	4 Life Quality/Avg Rat	Active
1830	Sanitary Sewer Management Plan	Utilities	2 Regulatory/Legal M.	Active
1835	Fire Station Housing Improvements	Buildings	2 Regulatory/Legal M.	Active
▶ 1849	WWTP Influent Screening System	Equipment: Wastewater Pla	3 Replacement/Hi Ra	Active
6170.01	Fire Hydrant Replacements	Water Distribution	1 Urgent Health/Safet	Active

Below the table, there is a search section with a 'Search For Project(s)' label, a 'Search Term' input field, and a 'Close Search' button. To the right, a summary box shows: '22 Active Projects', '11 Completed Projects', '1 Inactive Projects', and '31 Pending Projects'. Further right, a 'Filter by Status' dropdown is set to 'Active', with 'Save Filter' and 'Restore' buttons below it. At the bottom, a status bar shows 'Record: 10 of 22', 'No Filter', and a 'Search' button.



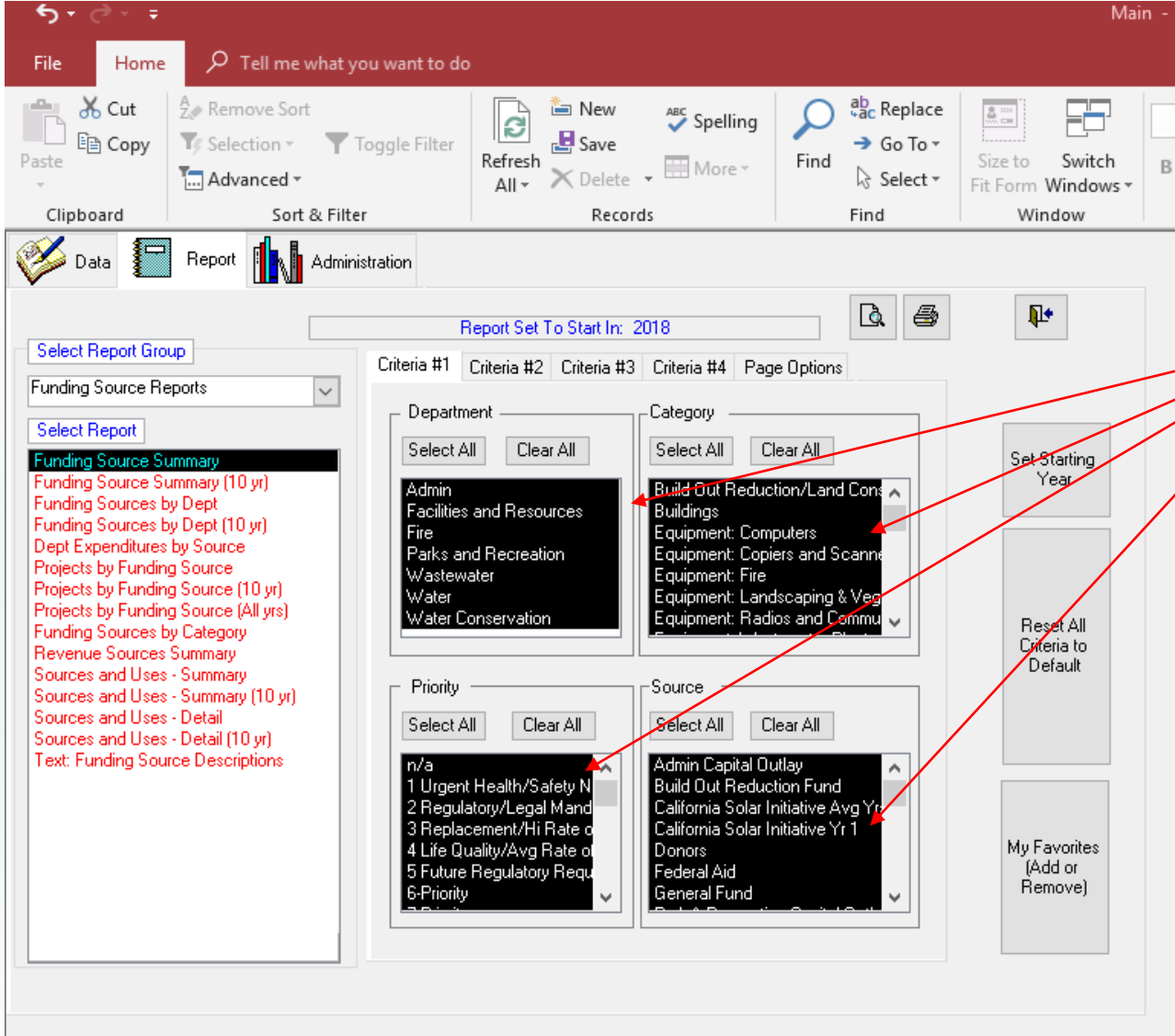
# Main Administrative Entry Screen

The screenshot displays the 'Main Administrative Entry Screen' with a ribbon interface. The ribbon includes tabs for 'File', 'Home', 'Data', 'Report', and 'Administration'. The 'Administration' tab is selected, showing sub-tabs for 'Vision/Goals', 'Policies', 'Process', 'Process Calendar', 'Settings', and 'Security'. The 'Capital Plan Vision and Goals' section contains a text box with the text: 'Provide cost efficient and effective services that protect and enhance the quality of life.' Below this is a button labeled 'Add/Edit "Actual" Expenditures (for Budget vs. Actual reports)'. The 'List Expenditure Choices' table is visible, listing various categories such as 'Planning/Design', 'Easements, ROWs, or property acq'n.', 'Construction/CM', 'Equip/Vehicles/Furnishings', 'Other', 'Legal', 'Permitting', 'Environmental Compliance', and 'Maintenance'.

Priority Labels	Start Year for Printing	Custom Fields	Status	Contacts	Glossary
Departments	Categories	Types	Funding	Expenditures	Budget Items

List Expenditure Choices	New	Delete
Planning/Design		
Easements, ROWs, or property acq'n.		
Construction/CM		
Equip/Vehicles/Furnishings		
Other		
Legal		
Permitting		
Environmental Compliance		
Maintenance		

# Report Generation Screen



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

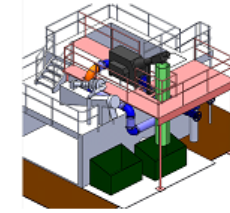
# Plan-It Generated Project Summary Report

## Capital Improvement Plan Cambria Community Services District

2018 thru 2022

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 Return  
Environmental: Categorical 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-purchased 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 re-designed 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, which resulted 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 December 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
<b>Total</b>	<b>164,509</b>					<b>164,509</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Wastewater Replacement Fund	164,509					164,509
<b>Total</b>	<b>164,509</b>					<b>164,509</b>

### Budget Impact/Other

The budgeted cost of \$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?