

Volusia County Road & Bridge and Drainage

Asset Management

Volusia County (FL) Public Works



About Volusia County, FL

- Population 494,000 (2010 census)
- 400+ employees in the Public Works Department
- Started using Lucity in October 2007
 - Road & Bridge/Stormwater
 - Traffic Engineering
 - Coastal
 - Utilities
 - Solid Waste
 - Mosquito Control
- ArcServerWeb map (EMS)
- Road & Bridge/Stormwater Assets Maintained in Lucity and GIS
 - 1,047 centerline miles of roadway
 - 274 miles of sidewalks
 - 49 bridges
 - 160 miles of open channels
 - 323 miles of roadside ditches
 - 8,224 drainage structures
 - 200+ miles of storm pipes
 - 269 retention ponds



Road & Bridge Background

PRIOR TO OCTOBER 2007:

- Data stored on a mainframe (called TIS)
- No mapping
- Very little drainage inventory information
- Work orders tied to entire lengths of roads
 - Difficult to search for specific segments
 - Details & notes in work orders were very vague



The Transition to GBA/Lucity

- Hired LA Consulting to evaluate the Public Works program
- Huge effort put into data collection
- Video Van was very helpful in gathering data
 - County “videoed” all county maintained roads in 2006
 - Images from Video Van were used to identify assets
- Hired Southeastern Surveying to survey canals
- Each division has superusers to manage data
- Superusers continually managing records in Lucity and updating assets in GIS



Improved Work Orders

- Updated and Improved Unit of Measure
 - Retention area maintenance (mowing) = acres, roadside ditch clean = linear feet, street sweeping = curb miles, etc.
- More tasks
 - Previously only had a few vague tasks
 - Now tasks are associated to assets:
 - Retention areas: Maintenance, repairs, spraying
 - Drainage pipes: Installation, cleaning, repairs
 - Drainage structures: Installation, cleaning, repairs
 - Canals: Mowing, spraying, cleaning
 - Roads: Swale construction, roadside ditch cleaning and spraying



Yearly Plan

- Plan work for the upcoming year
- Two week schedule meetings
- Productivity reports
 - Review monthly with supervisor and division director
 - Look at Average Daily Production (ADP) and cost
 - High or low ADP can either be an abnormal work order or maybe the plan needs to be adjusted
- Look at Routine vs Response Maintenance



Productivity Report

5/16/2018 7:25 AM

Drainage

Work Status Detail Report October - September FY 2018

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Summary Totals			
2303 ROADSIDE DITCH CLEAN/MECHANICAL																
Plan Labor Days:	83.7	83.7	83.7	83.7	83.7	83.7	83.7	83.7	83.7	83.7	83.7	83.7				
UOM																
Linear Feet																
Actual Labor Days:	74.7	74.3	65.9	59.6	90.6	105.8	88.2	28.5	0.0	0.0	0.0	0.0				
Actual ADP:	326.5	289.9	399.0	288.5	360.0	297.8	316.5	317.9	0.0	0.0	0.0	0.0				
Actual Unit Cost:	\$1.89	\$1.85	\$1.43	\$1.79	\$1.52	\$1.68	\$1.70	\$1.74	\$0.00	\$0.00	\$0.00	\$0.00				
2304 RETENTION AREA CONSTRUCTION																
Plan Labor Days:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
UOM																
Acres																
Actual Labor Days:	0.0	0.0	0.0	0.0	0.0	0.0	10.5	0.0	0.0	0.0	0.0	0.0				
Actual ADP:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Actual Unit Cost:	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	*****	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00				
2306 MECHANICAL CLEAN DRAINAGE BOX																
Plan Labor Days:	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4				
UOM																
Each																
Actual Labor Days:	1.9	0.2	1.0	3.0	1.0	1.4	2.0	0.0	0.0	0.0	0.0	0.0				
Actual ADP:	2.1	10.0	0.0	1.3	2.0	2.1	19.0	0.0	0.0	0.0	0.0	0.0				
Actual Unit Cost:	\$224.91	\$57.90	\$0.00	\$327.46	\$271.40	\$272.71	\$30.84	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00				
2307 HAND CLEAN DRAINAGE BOX																
Plan Labor Days:	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1				
UOM																
Each																
Actual Labor Days:	0.6	0.0	3.1	13.0	2.6	7.5	12.5	6.0	0.0	0.0	0.0	0.0				
Actual ADP:	6.3	0.0	2.0	14.1	33.8	7.1	18.4	30.0	0.0	0.0	0.0	0.0				
Actual Unit Cost:	\$76.15	\$0.00	\$228.29	\$27.28	\$10.77	\$60.60	\$17.33	\$11.70	\$0.00	\$0.00	\$0.00	\$0.00				
2309 PIT OPERATION																
Plan Labor Days:	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1				
UOM																
Hours																
Actual Labor Days:	58.4	17.5	12.1	5.8	12.6	4.3	16.4	0.0	0.0	0.0	0.0	0.0				
Actual ADP:																
Actual Unit Cost:	\$40.29	\$55.62	\$121.15	\$81.07	\$85.03	\$120.30	\$100.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00				
2311 DITCH CLEAN/MECHANICAL NO HAND																
Plan Labor Days:	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9				
UOM																
Linear Feet																
Actual Labor Days:	0.0	0.0	5.0	14.0	24.8	5.2	13.6	0.0	0.0	0.0	0.0	0.0				
Actual ADP:	0.0	0.0	303.4	333.3	251.2	168.3	211.2	0.0	0.0	0.0	0.0	0.0				
Actual Unit Cost:	\$0.00	\$0.00	\$3.26	\$3.07	\$3.85	\$7.13	\$6.03	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00				
2312 DITCH CLEANING/MECHANICAL - HAND																
Plan Labor Days:	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7				
UOM																
Linear Feet																
Actual Labor Days:	68.8	69.2	44.5	42.7	21.1	24.1	34.1	0.0	0.0	0.0	0.0	0.0				
Actual ADP:	401.4	251.3	283.8	414.3	144.8	42.6	181.9	0.0	0.0	0.0	0.0	0.0				
Actual Unit Cost:	\$1.65	\$2.94	\$2.39	\$1.76	\$4.98	\$19.01	\$3.95	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00				

Unit Cost = Cost / Quantity

ADP = Quantity / Labor Days

ADP is not calculated if a task has a UOM of Hours as this does not provide any beneficial information. A worker does 1 day of work in 1 labor day.



Productivity Report

5/16/2018 7:25 AM

Work Status Detail Report

October - September

FY 2018

Drainage

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Summary Totals			
4205	HAULING MATERIALS TON																
	Plan Labor Days:	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4				
	UOM																
	Load																
	Actual Labor Days:	5.0	3.6	3.0	10.6	19.6	5.4	7.5	0.0	0.0	0.0	0.0	0.0				
	Actual ADP:	4.4	3.3	4.7	2.8	3.0	4.6	5.1	0.0	0.0	0.0	0.0	0.0				
	Actual Unit Cost:	\$145.55	\$188.97	\$344.10	\$286.58	\$351.18	\$114.20	\$124.92	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00				
4207	CLEAN CURB & GUTTER MECHANIC																
	Plan Labor Days:	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7				
	UOM																
	Curb Miles																
	Actual Labor Days:	15.3	14.4	21.0	25.8	23.4	6.4	26.1	8.3	0.0	0.0	0.0	0.0				
	Actual ADP:	8.2	5.7	13.5	12.6	7.5	15.0	15.9	4.0	0.0	0.0	0.0	0.0				
	Actual Unit Cost:	\$89.54	\$129.51	\$55.36	\$91.09	\$106.96	\$51.23	\$47.09	\$175.04	\$0.00	\$0.00	\$0.00	\$0.00				
4209	INSTALL DRAINAGE PIPE																
	Plan Labor Days:	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8				
	UOM																
	Linear Feet																
	Actual Labor Days:	52.5	102.2	86.5	103.4	97.4	36.0	68.2	0.0	0.0	0.0	0.0	0.0				
	Actual ADP:	10.1	2.2	7.3	6.0	6.2	4.1	7.8	0.0	0.0	0.0	0.0	0.0				
	Actual Unit Cost:	\$69.52	\$240.83	\$84.55	\$102.19	\$92.83	\$198.72	\$94.41	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00				
4210	REPAIR DRAINAGE SYSTEMS																
	Plan Labor Days:	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7				
	UOM																
	Repairs																
	Actual Labor Days:	21.2	24.7	24.1	31.0	22.2	42.1	63.0	4.3	0.0	0.0	0.0	0.0				
	Actual ADP:	0.7	0.2	0.5	0.5	0.9	0.3	0.3	0.9	0.0	0.0	0.0	0.0				
	Actual Unit Cost:	\$8,621.91	\$1,766.07	\$7,187.92	\$1,004.85	\$531.52	\$1,855.18	\$2,858.22	\$499.49	\$0.00	\$0.00	\$0.00	\$0.00				
4215	SWALE MAINTENANCE																
	Plan Labor Days:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
	UOM																
	Square Foot																
	Actual Labor Days:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
	Actual ADP:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
	Actual Unit Cost:	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00				
4217	SWALES CONSTRUCTION																
	Plan Labor Days:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
	UOM																
	Linear Feet																
	Actual Labor Days:	1.5	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
	Actual ADP:	66.7	14.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
	Actual Unit Cost:	\$13.59	\$26.17	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00				
4218	SHOULDER REPAIR-MECH																
	Plan Labor Days:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
	UOM																
	Linear Feet																
	Actual Labor Days:	0.7	0.0	7.8	3.9	2.3	44.8	0.0	0.0	0.0	0.0	0.0	0.0				
	Actual ADP:	456.9	0.0	191.7	192.8	440.9	24.5	0.0	0.0	0.0	0.0	0.0	0.0				
	Actual Unit Cost:	\$1.25	\$0.00	\$3.24	\$2.82	\$1.55	\$42.14	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00				

Unit Cost = Cost / Quantity

ADP = Quantity / Labor Days

ADP is not calculated if a task has a UOM of Hours as this does not provide any beneficial information. A worker does 1 day of work in 1 labor day.

Routine Maintenance

- Certain tasks are scheduled every year
 - Retention area maintenance: 6 times a year
 - Street sweeping: 6 times a year
 - Chemical weed control: 3-4 times a year
- Supervisors used to select assets from map
- Now templates are used
 - Work Orders are created with select assets
 - Auto-generated



Response Maintenance

- Some tasks are planned but locations aren't specified
 - Drainage repairs
 - Inlet/pipe cleaning
- Call comes in - asset maintenance is verified
- If County maintained, a request is created
 - Supervisor inspects the problem
 - If work is necessary, supervisor creates WO
 - If no work necessary, supervisor adds comment to request and changes status to No Work Necessary

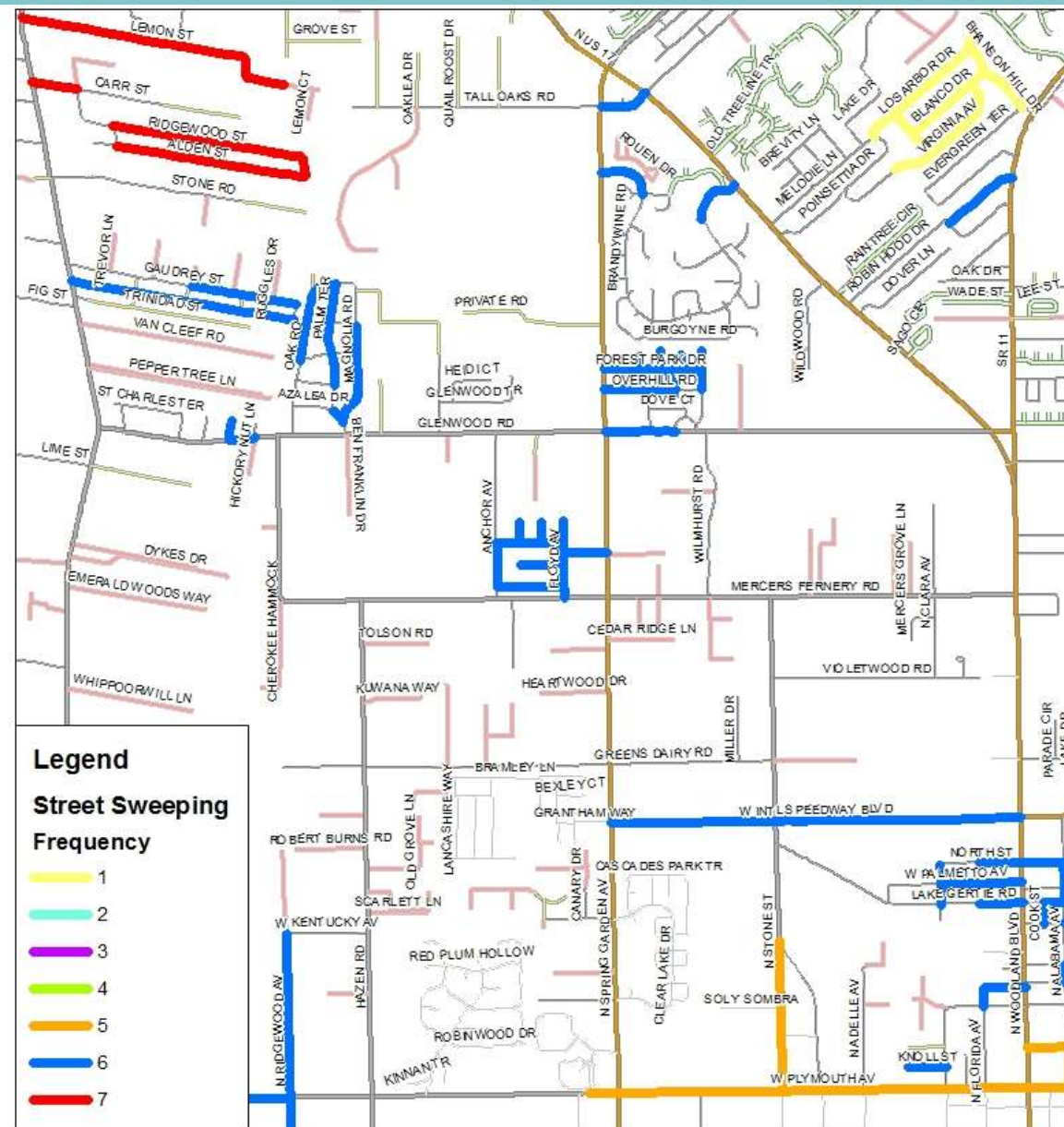


Frequency Map

- Run frequency in Lucity using task and dates
- Viewing the frequency info on map allows you to see where you might be missing or overdoing scheduled maintenance
- Helps to find problem areas
- Also another version of QA/QC



Frequency Map



Report Generating

Several reports available to pull data

Task Summary Report

7/18/2019

Drainage Task FY 17/18

2:24 PM

Task	**WOs	Units	*Total Cost	*Avg. Cost/Unit
2303 ROADSIDE DITCH CLEAN/MECHANICAL	44	368,736.00	\$628,114.24	\$1.70
2311 DITCH CLEAN/MECHANICAL NO HAUL	24	65,242.80	\$144,161.90	\$2.21
2312 DITCH CLEANING/MECHANICAL - HAUL	48	128,830.30	\$381,209.95	\$2.96
4207 CLEAN CURB & GUTTER MECHANICAL	45	3,175.94	\$178,170.46	\$56.10
4209 INSTALL DRAINAGE PIPE	54	6,050.25	\$588,968.08	\$97.35
Totals:	206		\$1,920,624.64	



Report Generating

Employee Usage Summary Report

8/11/2018 thru 8/24/2018

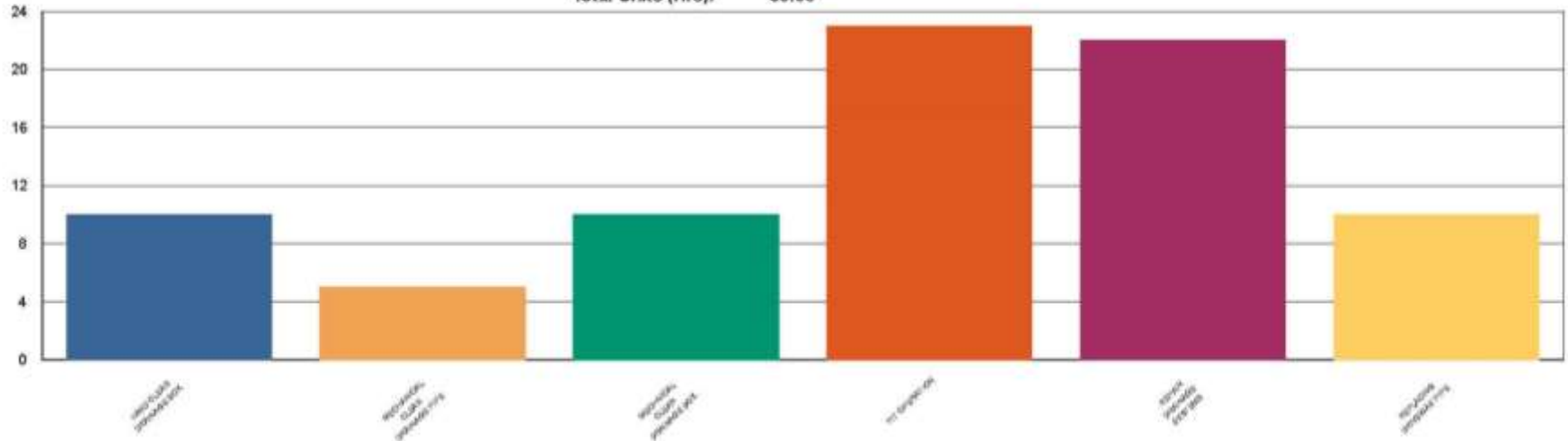
DR. EQUIPMENT OPERATOR II

7/26/2019

2:23 PM

Employee	Task	Units (Hrs)	Percentage %
FONTAINE, ANTHONY 0000024266	HAND CLEAN DRAINAGE BOX	10.00	12.50%
	MECHANICAL CLEAN DRAINAGE PIPE	5.00	6.25%
	MECHANICAL CLEAN DRAINAGE BOX	10.00	12.50%
	PIT OPERATION	23.00	28.75%
	REPAIR DRAINAGE SYSTEMS	22.00	27.50%
	REPLACING DRIVEWAY PIPE	10.00	12.50%

Total Units (Hrs): 80.00



Report Generating

Employee Usage Summary Report

8/11/2018 thru 8/24/2018

DR EQUIPMENT OPERATOR III

7/26/2019

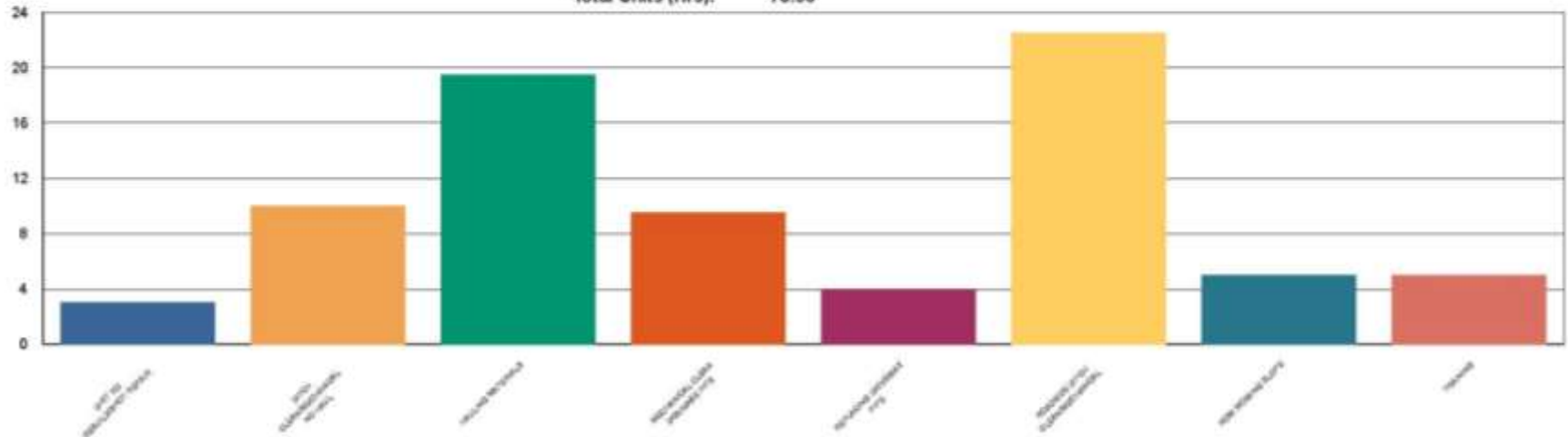
2:25 PM

Employee	Task	Units (Hrs)	Percentage %
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DUBBERLY, WILLIAM 0000023012

DIRT RD. REBUILD/SPOT REPAIR	3.80	3.82%
DITCH CLEAN/MECHANICAL NO HAUL	10.00	12.74%
HAULING MATERIALS	19.50	24.84%
MECHANICAL CLEAN DRAINAGE PIPE	9.50	12.10%
REPLACING DRIVEWAY PIPE	4.00	5.10%
ROADSIDE DITCH CLEAN/MECHANICAL	22.50	28.66%
ROW MOWING SLOPE	5.80	6.37%
TRAINING	5.00	6.37%

Total Units (Hrs): 78.50



Report Generating

Road Centerline Costing Report

Excludes Traffic Engineering Study Related Work

From 10/1/2017 thru 9/30/2018

Control IDs in order entered as parameter(s):
008611,008638,008637,008625,011554,008607,008613,0
08614,008609,008626,008624,036903

Drainage

CLEAN CURB & GUTTER MECHANICAL TOTAL	10,570.40
ROADSIDE DITCH SPRAYING TOTAL	1,970.95

ROAD AND BRIDGE	12,541.35
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Drainage Total: \$12,541.35

Road and Bridge

BRUSH CUTTING-HAND TOTAL	2,049.82
CLEAN CURB AND GUTTER - HAND TOTAL	2,992.67
FLAT MOWING TOTAL	169,095.14
LITTER REMOVAL TOTAL	7,304.68
QUICK KURB/DELINEATOR INSTALLATION TOTAL	1,458.28
REQUESTS FOR SERVICE TOTAL	2,368.01
ROAD & BRIDGE ASSET INSPECTION TOTAL	204.52
SIGN INSTALLATION/REPLACE TOTAL	289.22
SIGN MAINTENANCE TOTAL	742.95

COUNTY OF VOLUSIA - TRANSPORTATION TRUST	186,505.29
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Road and Bridge Total: \$186,505.29

Grand Total: \$199,046.64



Report Generating

IRMA 2017 - CAT A (DEBRIS REMOVAL)

09/04/17 to 09/11/17

Field supervision and meeting tasks included

FEMA Fringe Benefit Rates

Transportation Trust

Mosquito Control

General County

2/15/2017

2/15/2017

2/15/2017

67.34% (33.67%)

60.34% (30.17%)

58.87% (29.44%)

65.14% (32.57%)

56.42% (28.21%)

58.29% (29.15%)

65.03% (32.52%)

56.42% (28.21%)

58.29% (29.15%)

Road and Bridge

Volusia County Florida

Employees: 481001 to 481999 (1000000000)

Other: 481000 (1000000000)

Group	Resource Code	Resource Name	Reg Hrs	OT Hrs	Equip Hrs	Material Qty	Emp Hr Rate	Unit Cost	Labor Cost	Equip Cost	Materials Cost	Contractor Cost	Total Cost
Asset ID1	Asset ID2	Asset Detail											
001890	300770 - 0.375	W CHURCH ST - From N BOUNDARY AV To STEWART AV							29° 3' 50.450" N - 81° 3' 19" 14.885" W			DELAND	06/12/2017
001787	300771 - 0	STEWART AV - From W NEW YORK AV To W RICH AV							29° 3' 43.854" N - 81° 3' 17" 254" W			DELAND	06/12/2017
001889	300771 - 0.126	STEWART AV - From W RICH AV To W CHURCH ST							29° 3' 48.790" N - 81° 3' 17" 319" W			DELAND	06/12/2017
001904	300771 - 0.188	STEWART AV - From W CHURCH ST To W WISCONSIN AV							29° 3' 52.087" N - 81° 3' 17" 417" W			DELAND	06/12/2017
005643	300771 - 0.291	STEWART AV - From W WISCONSIN AV To REHBEHN CT							29° 3' 56.354" N - 81° 3' 17" 326" W			DELAND	06/12/2017
005643	300790 - 0	CRANLEIGH AV - From PRINTER AV To N SPRING GARDEN AV							29° 2' 2.560" N - 81° 1' 22" 167" W			DELAND	06/12/2017
005646	300790 - 0.188	CRANLEIGH AV - From N BOUNDARY AV To PAINTER AV							29° 2' 3.467" N - 81° 1' 24" 641" W			DELAND	06/12/2017
005696	300793 - 0.347	S RIDGEWOOD AV - From RIDGEWOOD HAMMOCK To W BERESFORD RD							29° 0' 27.933" N - 81° 2' 24" 868" W			DELAND	06/12/2017
005695	300793 - 0.862	S RIDGEWOOD AV - From W BERESFORD AV To RIDGEWOOD HAMMOCK							29° 0' 44.358" N - 81° 2' 25" 417" W			DELAND	06/12/2017
001476	300796 - 0.124	W EUCLID AV - From OLD NEW YORK AV To S GRAND AV							29° 3' 12.968" N - 81° 2' 46" 037" W			DELAND	06/12/2017
001262	300808 - 0	JEANETTE DR - From LOUISE LN To S SPRING GARDEN AV							29° 0' 45.319" N - 81° 3' 29" 588" W			DELAND	06/12/2017

pushing the debris and cutting trees out of the roads due to Hurricane Irma. Clearing Roads / Initial push after Hurricane Irma Major Thoroughfares and Secondary Roads

9/11/2017 BRUSH REMOVAL													
1	Employee	0000016540	RB	BRANCH, JAMES M	9:00				\$18.37	\$27.39	\$246.52		\$386.52
1	Equipment	178455	(R801)	FORD F150		9:00				\$32.30	\$110.70		\$110.70
2	Employee	0000016176	RB	BOGAN, JAMES R	8:50				\$18.97	\$28.39	\$241.31		\$341.31
2	Equipment	159233	(R297)	GRADALL K13100		8:50				\$105.40	\$886.41		\$886.41
3	Employee	0000023039	RB	LOPEZ-REYES, MICHAEL	8:50				\$14.83	\$24.48	\$208.09		\$308.09
3	Equipment	161446	(R294)	CAT 550G		8:50				\$59.30	\$504.05		\$504.05
4	Employee	0000024172	RB	FITZGERALD, JESSE J	8:50				\$11.83	\$19.46	\$165.39		\$185.39
4	Employee	0000022429	RB	LEARY, AARON	8:50				\$12.04	\$20.14	\$171.18		\$171.18
4	Equipment	195500	(R802)	GMC SIERRA 2500		8:50				\$17.65	\$150.03		\$150.03

Trees - Hanger/Leaner Total: \$0.00

All Other Debris Tasks Total: \$2,693.67

Work Order Total: \$2,693.67



Maintenance Data Uses

- Work Planning/Budget
- Community Rating System
 - Document flood prevention activities
 - Volusia County's rating is a 5, equates to a 25% reduction in flood insurance costs
- NPDES Permit
 - Document nutrient removal activities (ie- street sweeping, ditch cleaning, etc.)



Planning Example

Drainage Work Plan FY 18/19

[illegible]

CRS Data Example

Requested Work Form

10/2/2018

1:23 PM

Request
18-00425

Received: PublicWebUser

1/10/2018 9:17 AM

Status: WO Completed

1/24/2018 12:01 PM

Priority:

Supervisor: PARKER, LESLIE

Follow-up:

Requestor

Name: KATHLEEN DAVIS

Phone #: 386-214-9459

Business:

Account #:

Address: 359 WATER OAK LN
ORMOND BEACH 32174

Parcel #:

Home Phone: 386-214-9459

Work Phone:

Phone 1:

Phone 2: 386-214-9459

Location

Address: 359 WATER OAK LN

Affected Utilities

PIPE_012575

ORMOND BEACH

Category: Pipes and Culverts

Problem: Flooding

Cause:

Parcel:

General Location: CHEROKEE

Information for Work Order

Here is my issue. I live on the corner of Water Oak and Cherokee. Every time we have a heavy rain the street flood in the corner of these streets and comes up my driveway. We've had cars stuck there for days, water splashing almost into my garage etc.

The issue is the drain is getting filled up with leaves, etc. I've had to go out on numerous occasions and clean it out to get the water to go down. This is very dangerous, I've almost been hit by cars, I've had to do this in thunderstorms, etc. I'm not sure why I am having to maintain this drain. It seems to get clogged once a week. Maybe there is another solution.

It was so bad this morning I could not get out of my driveway and had to drive over the lawns to get out to take my children to school and for me to go to work.

I am hoping some one could get back to me with some kind of solution to this on going problem.

CRS Data Example

Work Order Number: 18-01019		10/2/2018 1:23 PM	
Category:	Structures	Priority:	
Problem:	Flooding	Crew:	Structure Maint Crew & Eq
Cause:	STORMWATER	Supervisor:	PARKER, LESLIE
Main Task:	REPAIR DRAINAGE SYSTEMS	Status:	Complete
Work Order Start Date/Time:	1/11/2018	Work Order End Date/Time:	1/11/2018
Daily Units:	Unit of Measure: Repairs		

Requester Information				
<u>Name:</u>	<u>Phone #:</u>	<u>Address:</u>	<u>Home Phone #:</u>	<u>Work Phone #:</u>
KATHLEEN DAVIS	386-214-9459	359 WATER OAK LN	386-214-9459	

Comments from Request

Here is my issue. I live on the corner of Water Oak and Cherokee. Every time we have a heavy rain the street flood in the corner of these streets and comes up my driveway. We've had cars stuck there for days, water splashing almost into my garage etc. The issue is the drain is getting filled up with leaves, etc. I've had to go out on numerous occasions and clean it out to get the water to go down. This is very dangerous, I've almost been hit by cars. I've had to do this in thunderstorms, etc. I'm not sure why I am having to maintain this drain. It seems to get clogged once a week. Maybe there is another solution. It was so bad this morning I could not get out of my driveway and had to drive over the lawns to get out to take my children to school and for me to go to work. I am hoping some one could get back to me with some kind of solution to this on going problem.

Task Start Date/Time:	1/11/2018	Task End Date/Time:	1/11/2018
Task Code:	4210	Task Description:	REPAIR DRAINAGE SYSTEMS

<u>Employee Number</u>	<u>Employee Name</u>	<u>Hours</u>	<u>Type</u>
0000018378	VERWYS, MARTIN E	10.00	DTT LABOR RATE
0000024356	WOODY, ZACHARY T	10.00	DTT LABOR RATE

<u>Equipment Code</u>	<u>Equipment Description</u>	<u>Hours</u>
176529	CAT MINI EXCAVATOR	10.00
176530	FLATBED TRAILER	10.00
176538	FORD F550	10.00

<u>Material Code</u>	<u>Material Description</u>	<u>Units</u>	<u>UQM</u>
R-21030014	20- LB PAIL, HYDRAULIC CEMENT	4.00	Each
R-89021001	GRATES STEEL 27 3/4"X 35 1/2"	2.00	Each
R-13508001	BRICKS CLAY 3 HOLE	50.00	Each
R-21036003	SLABS, TOPS (4'X4')	2.00	Each



NPDES Data Example

Task/Resource Summary Report

1/23/2019

1:15 PM

Task	Resource	Units	*Total Cost
4207 CLEAN CURB & GUTTER MECHANICAL			
Employee			
	0000015773 HUFFMAN, DANIEL J	2.00	\$83.06
	0000018378 VERWYS, MARTIN E	8.00	\$315.10
	0000020908 COZIER, ADAM	1.00	\$27.55
	0000021930 ALLEN, VIVIAN	988.75	\$32,624.57
	0000022776 ELLINGWOOD, PETER	50.00	\$1,801.67
	0000023100 HARRIS, DAVID L	1.00	\$23.78
	0000023622 LUTHER, DIL	8.00	\$247.78
	0000023743 JOHNSON, MARK	1.00	\$23.43
	0000024266 FONTAINE, ANTHONY	1,408.25	\$43,532.62
	DL-PACE-RB DayLabor-MW PACE For RB	1.00	\$11.58
		2,469.00	\$78,691.14
Equipment			
	165629 LOAD TRAIL TRAILER	1.00	\$1.25
	168231 CAT SKID STEER	1.00	\$27.53
	174851 FORD F550	20.00	\$195.60
	176529 CAT MINI EXCAVATOR	8.00	\$73.36
	176530 FLATBED TRAILER	8.00	\$10.00
	176538 FORD F550	8.00	\$72.24
	177446 ELGIN SWEEPER	1,382.25	\$61,936.06
	178428 FORD F350	2.00	\$12.56
	179904 FORD F550	1.00	\$9.03
	194215 ELGIN CROSSWIND SWEEPER	988.75	\$45,072.69
	195567 KENWORTH FLATBED	8.00	\$72.24
		2,428.00	\$107,482.57
Material			
	D-0100 DEBRIS	2,800.00	\$0.00
	R-WaterDB WATER - CITY OF DAYTONA BEACH	43,425.00	\$0.00
	R-WaterDELAND WATER - CITY OF DELAND	9,190.00	\$0.00
	R-WaterOB WATER - CITY OF ORMOND BEACH	1,350.00	\$0.00
	R-WaterPO WATER - CITY OF PORT ORANGE	1,275.00	\$0.00
	R-WaterVOL WATER - VOLUSIA COUNTY UTILITIES	5,195.00	\$0.00
		63,235.00	\$0.00
Task Total:		68,132.00	\$186,173.71
Grand Total:		68,132.00	\$186,173.71



Capital Improvements vs Increased Maintenance

Capital Improvement Projects

	Cost/lb TN Removed	Cost/lb TP Removed
Retention/Detention Ponds	\$1,100-4,600	\$10,000-21,000
Stormwater Treatment Boxes	\$300-1,000	\$1,000-2,500
Bioswales	\$300	\$2,600

Maintenance Activities

	Cost/lb TN Removed	Cost/lb TP Removed
Street Sweeping	\$220	\$350
Open Channel Cleaning	\$4	\$11
Roadside Ditch Cleaning	\$13	\$32
Pipe Cleaning	\$80	\$200
Structure Cleaning	\$11	\$28

Questions?

