

# Taylors Fire & Sewer District Annual Report December 1, 2010 – June 30, 2011 and July 1, 2011 – June 30, 2012

# Introduction & Overview

On December 4, 2010, Taylors Fire & Sewer District mourned the loss of Kelly Tucker, Director of Sewer Services. Due to the untimely death of Kelly, Taylors Fire & Sewer District Commissioners went through 109 resumes before finding Samantha Bartow. On February 28, 2011 Samantha Bartow started work as the Director of Sewer Services. Ms. Bartow was formerly employed at Renewable Water Resources for 15 years in the Collection System Department.

# **Taylors mourns loss of sewer director**

Kelly Tucker died Dec. 4 at age 51

#### By Anna Lee

GREATER GREER NEWS

Flags were flown at half staff last week in front of the Taylors Fire and Sewer District office as friends and family mourned the sudden loss of Kelly Tucker, director of sewer services, single mother, traffic director, avid reader, firecracker.

Tucker was 51 years old when she died Dec. 4 at Greenville Memorial Hospital

She left behind two teenage daughters, Alice and Jennifer, and a family of sewer district employees who knew her as "mama

"Kelly called all of her sewer employees her guys, and she treated them like family. She treated us all like family," said Violet Shehan, district receptionist and Tucker's former assistant.

"She had a very outgoing personality but she was very straightforward, very fair. She didn't put up with a lot of junk."

And the men in the sewer department admired and respected her for that. They would call her at

night, and she would go out and flag traffic at 12 o'clock at night if her boys needed her," Shehan said. William Ables, known as

Red, was Tucker's foreman and operations coordinator. Ables saw a different side of her, saw her as someone who went the extra mile to help those in need.

"We had one employee with a 10-year-old son who had leukemia. Kelly went way out of her way with everything to try and help with that youngin'. She let him do extra things in the evenings so he would get paid with all the time he had to be out to see his son," Ables said.

Prior to working in Taylors, Tucker was the city codes inspector for Fountain Inn and the public works coordinator for the Greenville County Rede-



Kelly Tucker

velopment Authority.

She was president of the Greenville Area Utilities Coordination Committee, a member of the Water Environment Association of South Carolina Blue Ridge District and the Greenville County Geographic Information Alliance, where

she was known to stand up for Taylors and other special purpose districts. "She was a firecracker,"

Shehan said. "I don't know what we're going to do here. She was the sewer department. She was the life of it, and she's really going to be missed."

A memorial service was held Dec. 8 in the downtown chapel at Thomas McAfee Funeral Home.

Memorials may be made to the Kelly Tucker Memorial Fund FBO Alice and Jennifer Tucker c/o Greer State Bank, 3317 Wade Hampton Blvd., Taylors, SC 29687, or St. Jude Children's Research Hospital, 501 St. Jude Place, Memphis, TN 38105.

# New sewer director to start in Taylors

#### By Anna Lee

GREATER GREER NEWS

Taylors Fire and Sewer District commissioners went through 109 resumes before finding Samantha Bartow

On Feb. 28, Bartow will officially start work as the district's new director of sewer services, a position left open since the death of Kelly Tucker in December.

Bartow was formerly employed at Renewable Water Resources for 15 years, where she worked in the collection system department.

She is a member of the Water Environment Association of South Carolina and the Five S Society, or Select Society of Sanitary Sludge Shovelers.

Inductees who have made a significant contribution to the sewer indus-



GEORGE GARDNER / Staf Samantha Bartow is Taylors' new sewer director.

try receive a gold pin in the shape of a round-nose shovel, and Bartow wears hers proudly.

"She has the same background and a lot of similari-ties as Kelly," said Com-missioner Gilbert Rivers.

"The timing couldn't have been better," he said. We feel very, very good that we were able to convince her to come and stay with us.

# New sewer director joins Taylors district

Ry Anna Lee STAFF WRITER zlee@greenvillenew

nvillenews.com, -TAYLORS - Samantha Bartow comes from a long line of public servants. Formerly employed at Renewable Water Resources for 15 years, Bartow has joined the Taylors Fire and Sewer District as its new director of sewer services. She is a member of the Water Environment Association of South Carolina and the national Five S Society, or Select Society of Sanitary Sludge Shovelers. Inductees who have made a significant contribution to

vel, and flow Bartow 1 proudly. Public Bartow

service runs in Bartow's family. Her father is retired from law enforcement; her uncleworks in the sanitation department for Anderson County

"And here I am in the sewer. It's a family thing," she said. District commissioners come and stay with us," the sewer industry receive welcomed Bartow to her! Rivers said

gold pin in new office this week the shape of where she quickly got a round down to business when re-nose sho- ports came of a sewer overports came of a sewer over-

"The timing couldn't wears hers have been better," said Commissioner Gilbert Rivers

Bartow fills the position left open since the death of Kelly Tucker in December.

"She has the same background and a lot of similarities as Kelly, who we were so fond of We feel very very good that we were able to convince her to Taylors Fire & Sewer District and ReWa's intergovernmental agreement was signed on March 7, 2007 by Kelly Tucker and Ray Orvin. After doing some research on the intergovernmental agreement it was noted that the report was due on December 1, 2007. The reports would run from December 1<sup>st</sup> to November 30<sup>th</sup> of the following year. After going through the 2007, 2008, 2009 and 2010 reports, Ms. Bartow set up a meeting with Mr. Orvin, Executive Director and Mrs. Flax, Customer Service / Contract Manager to discuss the timeline. During this meeting Ms. Bartow asked if Taylors Fire & Sewer District's report could change the dates of the agreement so it could run on fiscal year. Taylors' fiscal year is July 1<sup>st</sup> to June 30<sup>th</sup>. This change was requested due to how Taylors' reports their financials. Mr. Orvin granted Ms. Bartow to change Taylors Fire & Sewer District would turn in a report for December 1, 2010 to June 30, 2012 to incorporate the new reporting period. From this point forward Taylors Fire & Sewer District reports will run on fiscal year reporting.

#### Samantha Bartow

From: Sent: To: Subject: Stacey Flax <staceyg@re-wa.org> Thursday, October 27, 2011 12:17 PM 'taylorssewer@bellsouth.net': Lance Roddy Re: Annual Report

Thanks, Samanthall Works for us!

From: Samantha Bartow <taylorssewer@belisouth.net> To: Lance Roddy Cc: Stacey Flax Sent: Thu Oct 27 12:08:57 2011 Subject: RE: Annual Report

#### Lance,

I had a meeting with Ray Orvin and Stacey and stated that I wanted to change our dates so we could run on fiscal year. Currently ours (Taylors) is to be turned in December. Since I requested this change earlier in the year because of our financial reports. I was granted by Ray that I could change ours to fiscal year. I would like to be able to turn our reports in after our fiscal year ends (June 30<sup>th</sup>). It would be nice that while we are preparing for the presentation that we could submit our report then at the annual meeting. It would make sense that would be the time frame. Since our was changed you will get a report for Taylors for December 2010 to June 2012 in one report.

So my preference is to turn it in at the Mid-September annual meeting.

Thanks, Samantha



Samantha E. Bartow Directol of Sovier Services

3335 Wade Hampton lievo Toylors, SC 29687

Invionationer Schellaputh.cm/ 854-244-5596 phone 864-292-4975 fas

# Work Plan Updates

### **Vehicles Purchases**

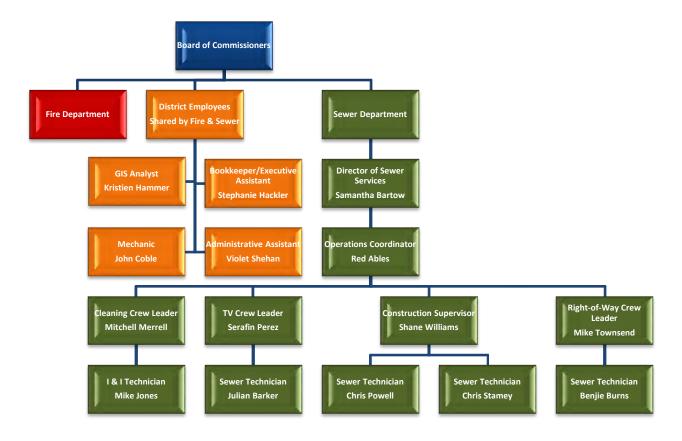
Purchase Date	Equipment	Cost
1-27-2012	2012 Freightliner Vac-Con Truck	\$303,274.50
11-3-2010	2011 Chevrolet Silverado L. S. Pickup	\$21,512.00
6-1-2009	2009 Ford Super Duty F250 Service Truck	\$25,274.92
8-27-2008	2009 International Durastar Dump Truck	\$59,673.94
10-30-2006	2007 Ford Ranger Pick Up 4x4	\$15,030.75
10-30-2006	2007 Ford Ranger Pick Up 4x2	\$10,126.75
7-12-2002	2002 Freightliner TV Van with Cues K2 Camera System	\$161,670.00
4-26-2002	2002 Ford Super Duty F350 XL	\$27,102.00
12-14-2005	1997Chevrolet C6500 Dump Truck	\$11,500.00
5-18-2010	2010 Ford Crown Vic	\$22,042.68

### **Equipment Purchases**

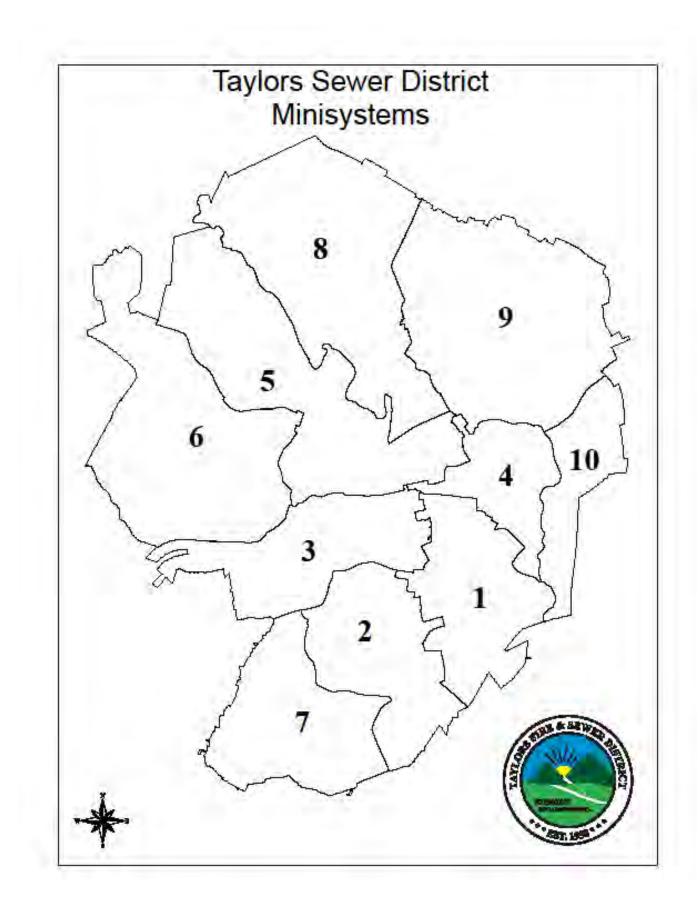
Purchase Date	Equipment	Cost
5-1-2011	2002 Haulmark Trailer for Patch Repair includes:	\$1,800.00
	10 Marker Cones	
	Porter-Cable Compressor	
	Power House Generator	
	36" Fan	
	10'x10' Canopy	
	1 – 8' Repair Bladder	
	36 – Connector Rods for Bladder	
8-2-2002	2002 John Deere 310 S.G. Backhoe w Cab	\$43,300.00
9-17-2008	D&E Dual Axle Trailer	\$1,669.50
6-23-2008	Bobcat 2200 ATV	\$8,655.20
5-19-2008	with Cues K2 Camera System & Honda Generator	\$65,500.00
8-19-2005	2005 6415 John Deere Tractor w Cab	\$65,653.43
	V.M.C. Sidearm Mower	
9-29-2008	Woods 8' Bushhog	\$5 <i>,</i> 000.00
6-30-2007	2007 Hudson 10 Ton Trailer	\$7,070.20
5-28-1998	1998 Bobcat 873 Turbo Skid-Steer Loader	\$26,446.00
6-30-2007	Kobelco C.S. 80 Mini Excavator	\$78,595.00
8-17-2005	Godwin By-Pass Pump C.D. 100	\$19,142.55
9-9-2008	Sidekick Easement Machine	\$23,677.47
5-18-2011	Bulldog Jetter Machine 3000 psi	\$39,008.00
	Mi-T-M 1000 psi Steam & Pressure Washer	

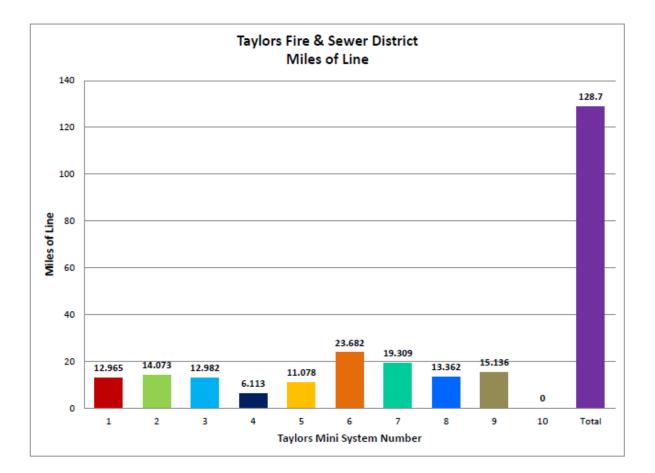
Purchase Date	Equipment	Cost
	Stone Cement Mixer 655 P.M.	\$3,000.00
1-1-1986	1986 Ingersol-Rand Air Compressor (pull behind)	\$6,000.00
11-6-2009	Gossen Straw Blower for ROWs	\$1,200.00
11-13-2009	Carlton 2518 14" Chipper	\$44,201.62
	F.C.P. Tripod	
	F.C.P. Fall Protection Cable	
	F.C.P. Winch with Fall Protection	
	Hurco Smoke Machine	\$2,500.00
	Hurco Ventilator Machine	
	Hobart Ironman Welder 250 Wire-Welder	\$2,000.00
3-16-2001	Rhino Ditch Box Hyd. 6'x8'	\$6,632.45
11-29-2005	2 – G.M.E. Manual Trench Boxes with End Plates	\$5,479.14
2-20-2007	Stanley Hyd. Power Unit with Misc. Tools	\$7 <i>,</i> 575.75
	3 – Flo-Dar Flow Monitors	
	7 – Hach Sigma 910 Flow Monitors	
3-8-2010	Insight / Vision Push Camera	\$7,791.00
8-14-1996	950 Sigma Rain Gauge	\$595.00

# Taylors Fire & Sewer District Organizational Chart

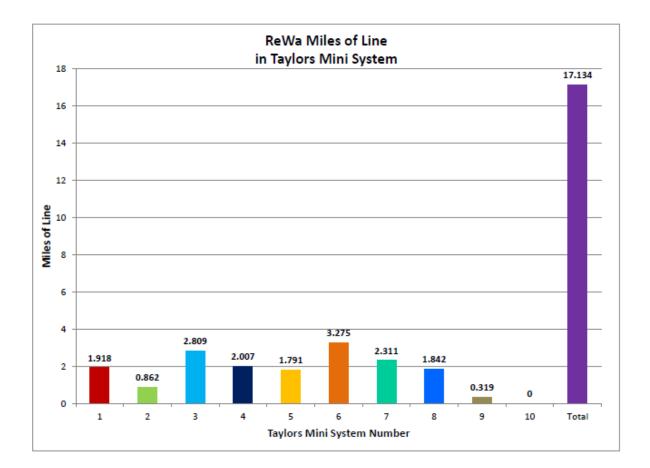


Over the last few years the District has added employees. Taylors Fire & Sewer District has three classifications for employees: Fire Department Personnel, Sewer Department Personnel and District Administration Personnel. District Administration Personnel work for both the Sewer and Fire Departments, which reports to the Director of Sewer Services and Fire Chief. The Sewer Department has changed responsibilities for Crews; each Crew now has a Crew Leader and/or Supervisor to report to. Due to limited size of each crew, each employee is cross trained in other fields so as to add more manpower to either crew as required by the nature of the project.

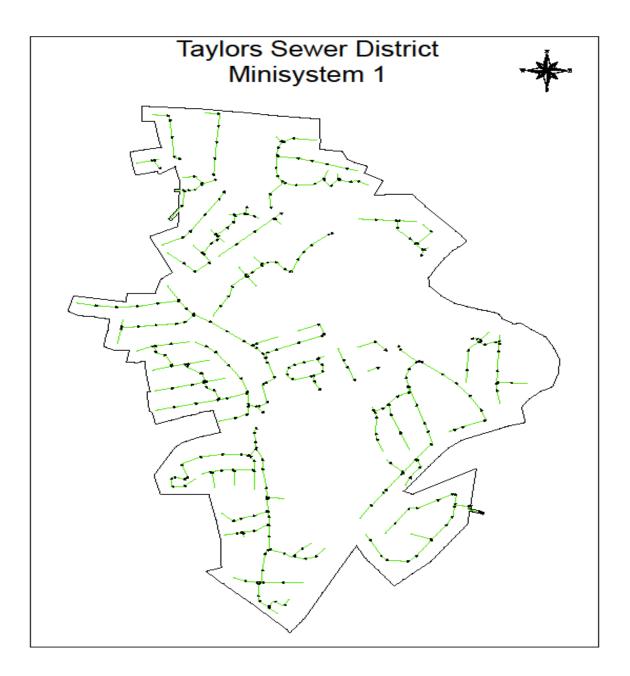




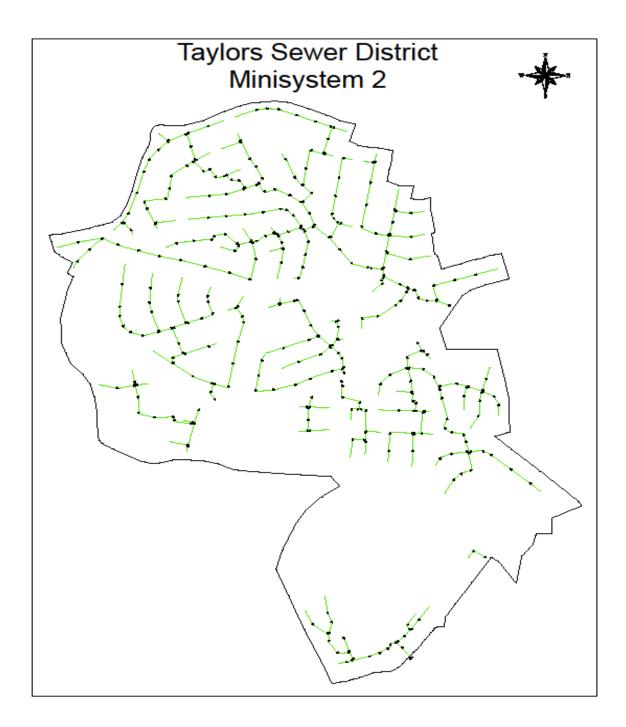
Taylors	Taylors
Mini System #	Miles of Line
1	12.965
2	14.073
3	12.982
4	6.113
5	11.078
6	23.682
7	19.309
8	13.362
9	15.136
10	0
Total:	128.7



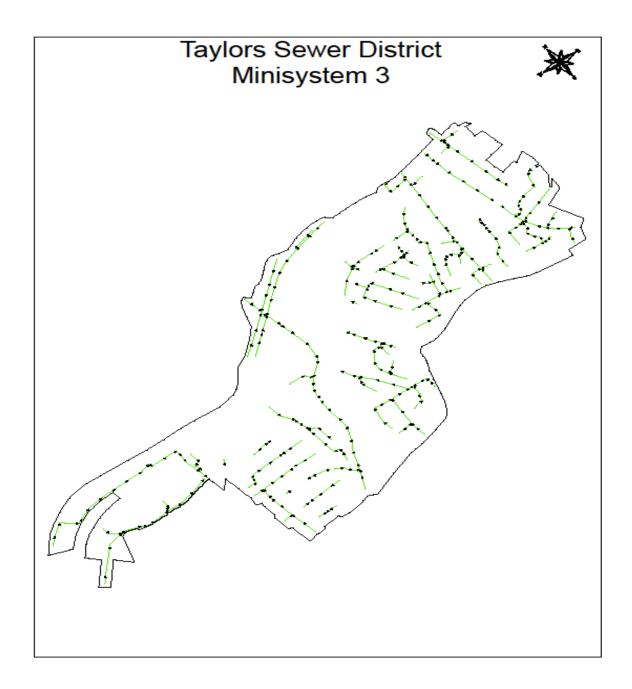
Taylors Mini System #	ReWa Miles of Line
1	1.918
2	0.862
3	2.809
4	2.007
5	1.791
6	3.275
7	2.311
8	1.842
9	0.319
10	0
Total:	17.134



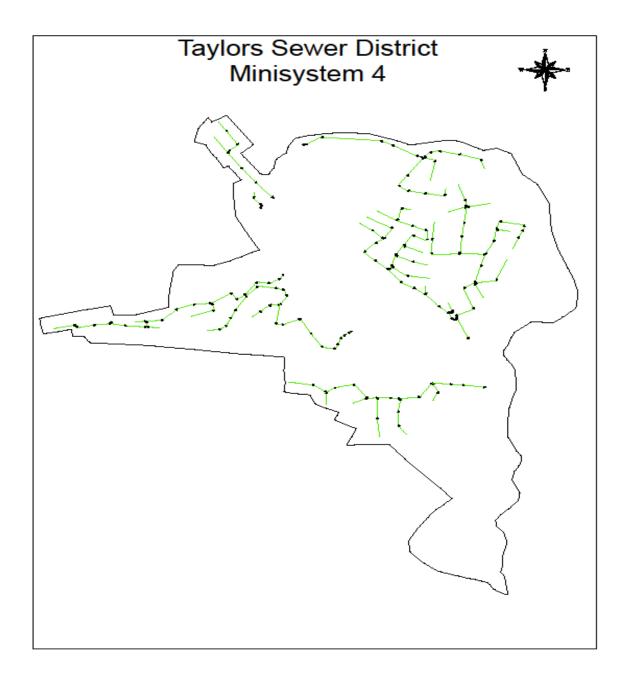
Number of Miles of Collection Lines:	12.965
Number of Miles of ReWa Trunk Lines:	1.918
Number of Connection to ReWa Trunk Lines:	17



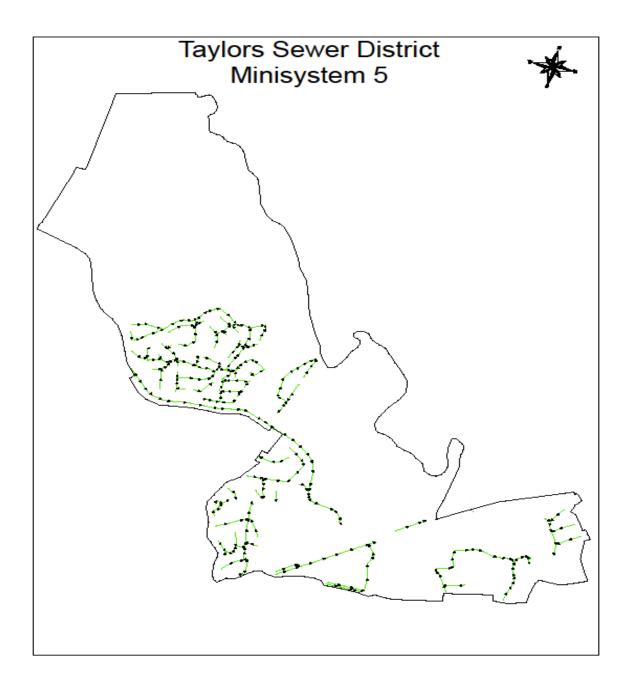
Number of Miles of Collection Lines:	14.073
Number of Miles of ReWa Trunk Lines:	0.862
Number of Connection to ReWa Trunk Lines:	7
Number of Connection to Metro Lines:	2



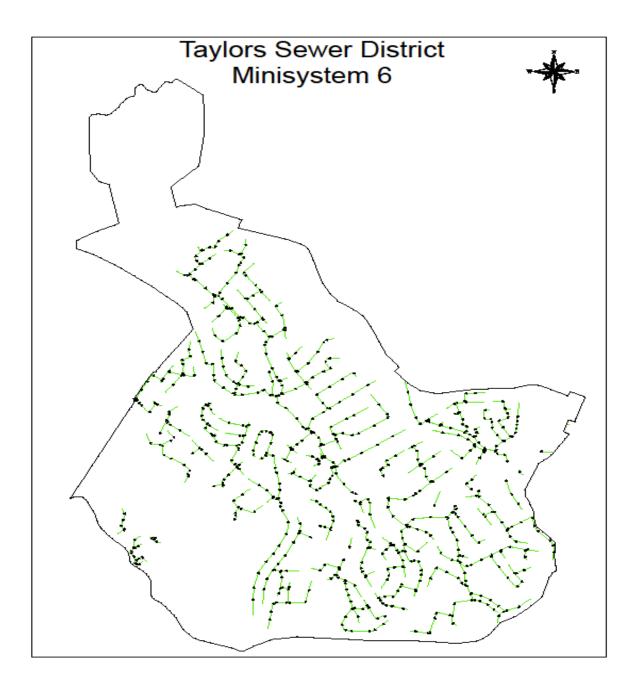
Number of Miles of Collection Lines:	12.982
Number of Miles of ReWa Trunk Lines:	2.809
Number of Connection to ReWa Trunk Lines:	33



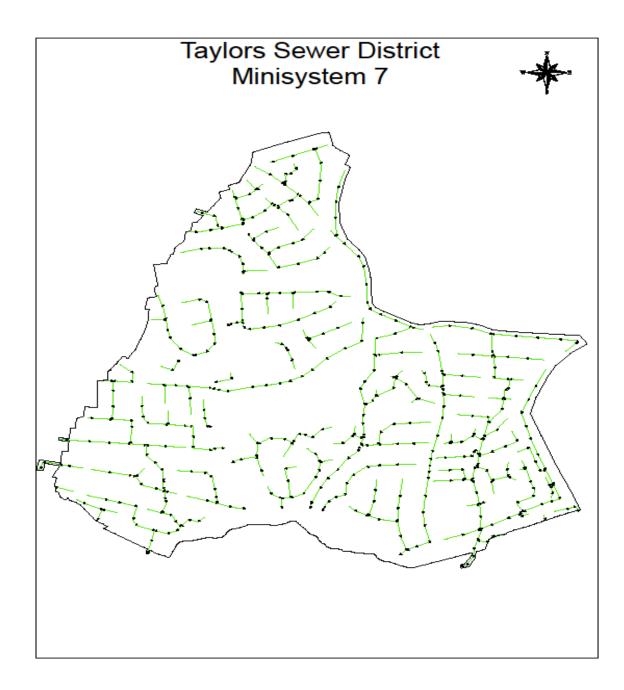
Number of Miles of Collection Lines:	6.113
Number of Miles of ReWa Trunk Lines:	2.007
Number of Connection to ReWa Trunk Lines:	8



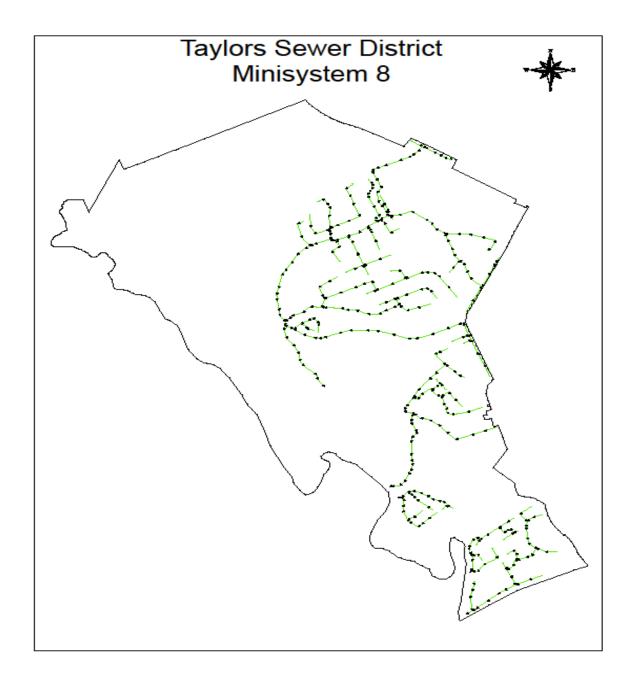
Number of Miles of Collection Lines:	11.078
Number of Miles of ReWa Trunk Lines:	1.791
Number of Connection to ReWa Trunk Lines:	11



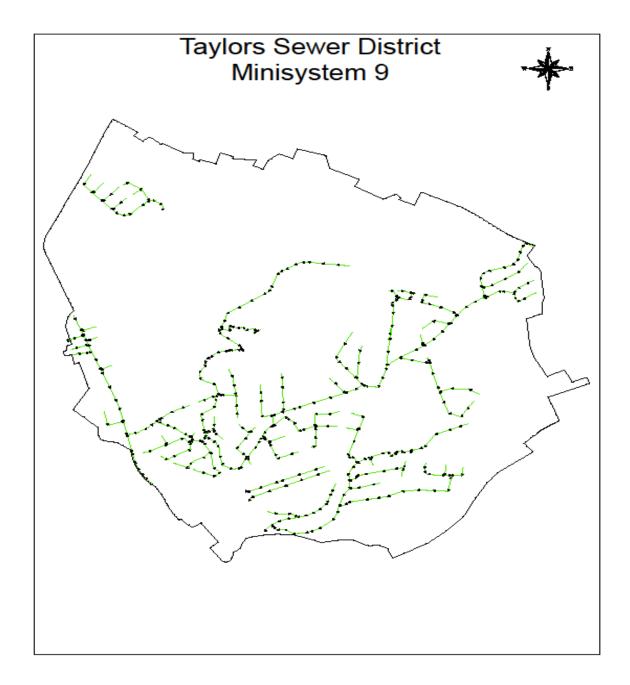
Number of Miles of Collection Lines:	23.682
Number of Miles of ReWa Trunk Lines:	3.275
Number of Connection to ReWa Trunk Lines:	30



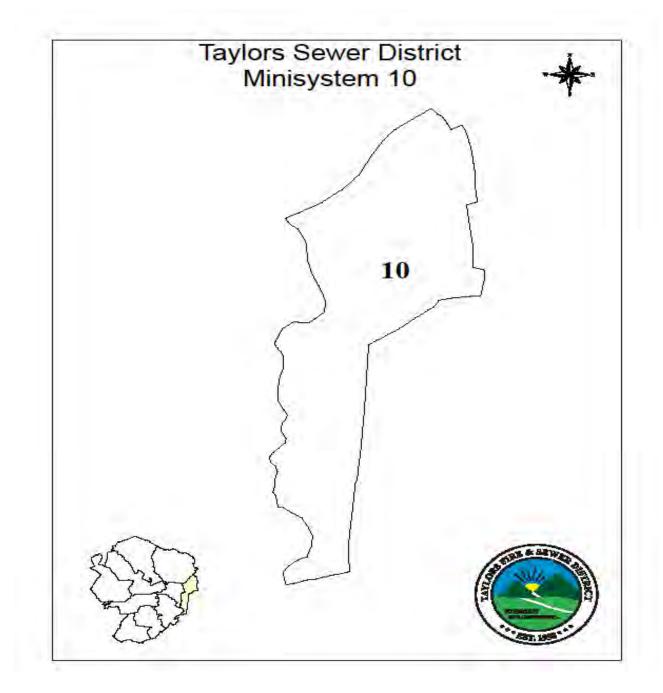
Number of Miles of Collection Lines:	19.309
Number of Miles of ReWa Trunk Lines:	2.311
Number of Connection to ReWa Trunk Lines:	27



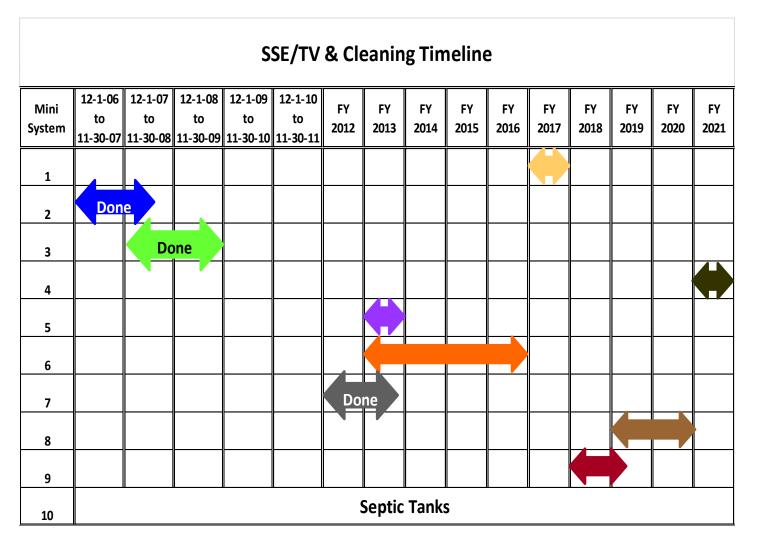
Number of Miles of Collection Lines:	13.362
Number of Miles of ReWa Trunk Lines:	1.842
Number of Connection to ReWa Trunk Lines:	5



Number of Miles of Collection Lines:	15.136
Number of Miles of ReWa Trunk Lines:	0.319
Number of Connection to ReWa Trunk Lines:	5



Number of Miles of Collection Lines:	0
Number of Miles of ReWa Trunk Lines:	0
Number of Connection to ReWa Trunk Lines:	0

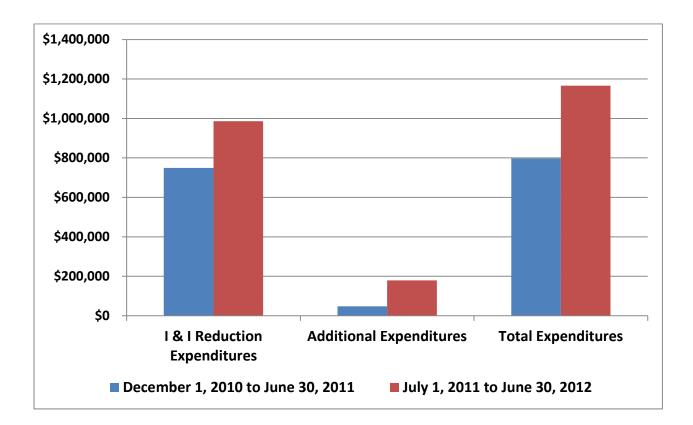


# Current Year (December 1, 2010 to June 30, 2012) Financial Report

According to the budget profile for December 1, 2010 through June 30, 2011, Taylors Fire & Sewer District spent \$797,106 on the reduction of inflow and infiltration (I&I).

According to the budget profile for July 1, 2011 through June 30, 2012, Taylors Fire & Sewer District spent \$1,166,084 on the reduction of inflow and infiltration (I&I).

<i>I &amp; I Reduction Expenditures:</i> December 1, 2010 to June 30, 2011 July 1, 2011 to June 30, 2012	\$749,058 \$986,502
Additional Expenditures: December 1, 2010 to June 30, 2011 July 1, 2011 to June 30, 2012	\$48,048 \$179,582
<i>Total Expenditures:</i> December 1, 2010 to June 30, 2011 July 1, 2011 to June 30, 2012	\$797,106 \$1,166,084



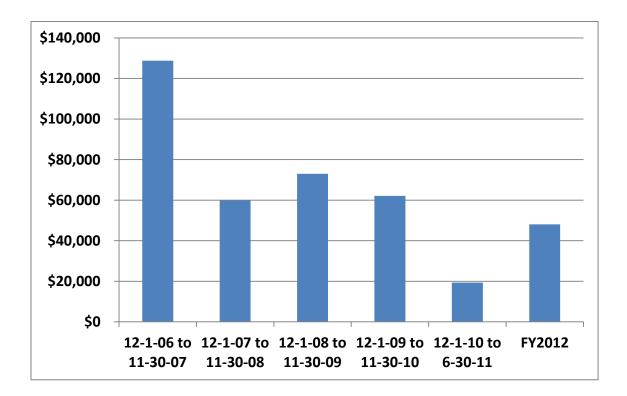
The Additional Expenditures listed above include such items as Taylors Fire & Sewer District Shared Overhead, Facilities/Utilities, Pump Station, Septic Tank Repair/Maintenance, Professional Services, and Capital Expenditures. All items the District must cover in order to serve our residents.

Taylors Fire & Sewer District uses a combination of methods to ensure and maintain the integrity of our system. Duke Root Control, Insituform CIPP, and SpectraShield Liner Systems are frequent contractors for specific projects.

Taylors Fire & Sewer District has also implemented the use of higher regulations and standards for new construction. Each site is required to seal manholes with either a Uniband or Flex Seal prior to backfilling. The entire project is monitored by Engineers representing Taylors Fire & Sewer District as well as District staff during construction in an effort to minimize and/or eliminate the amount of I&I that enters the system.

Over the past years the slowing economy has had a direct effect on our permit income. Over the last few years we have seen a steady decline.

\$128,800	\$59,900	\$72,975	\$62,100	\$19,375	\$48,100
11-30-07	11-30-08	11-30-09	11-30-10	6-30-11	
to	to	to	to	to	FY2012
12-1-06	12-1-07	12-1-08	12-1-09	12-1-10	



Even though the District has steadily increased the tax millage rates each year, the funds have been offset by the decrease in fair market values. During 2007, the Board of Commissioners approved the institution of a user fee, however postponed the implementation. In 2009, the Board of Commissioners felt that the time had come to enact this fee in order to keep on schedule with the major repairs above and beyond regular maintenance of the sewer system.

The challenge was to set the fees low enough as to not create further financial burden on our residents and still be able to fund the improvements to our capital assets. The 2009 Board of Commissioners set the following fee schedule with the stipulation that it apply to all properties connected to our sewer system.

### **User Fees:**

<b>\$20</b>
\$10
\$50
\$50
\$100
\$200
\$250

Taylors Fire and Sewer District Summary of Expenditures on Sewer Services December 1, 2010 - June 30, 2011

#### I & I REDUCTION EXPENDITURES

GIS/Technology Maintenance - Equipment	\$9,892 \$162,614	
Personnel/Training/Safety	\$322,284	
Maintenance - Contract Services	\$254,268	
Total I & I Expenditures	<b>\$749,058</b> 94%	
ADDITIONAL EXPENDITURES		
TFSD Shared Overhead	\$0	
Facilities/Utilities	\$14,836	
Pump Station	\$16,703	
Septic Tank Repair/Maintenance	\$1,875	
Professional Services	\$14,634	
Capital Expenditures	\$0	
Total Additional Expenditures	<b>\$48,048</b> 6%	

**Total Expenditures** 

\$797,106

Taylors Fire and Sewer District Summary of Expenditures on Sewer Services July 1, 2011 - June 30, 2012

#### **I & I REDUCTION EXPENDITURES**

GIS/Technology	\$2,531
Maintenance - Equipment	\$101,423
Personnel/Training/Safety	\$539,349
Maintenance - Contract Services	\$323,895
R&M Building and Grounds (ROW's, etc)	\$19,304

#### Total I & I Expenditures

#### \$986,502 85%

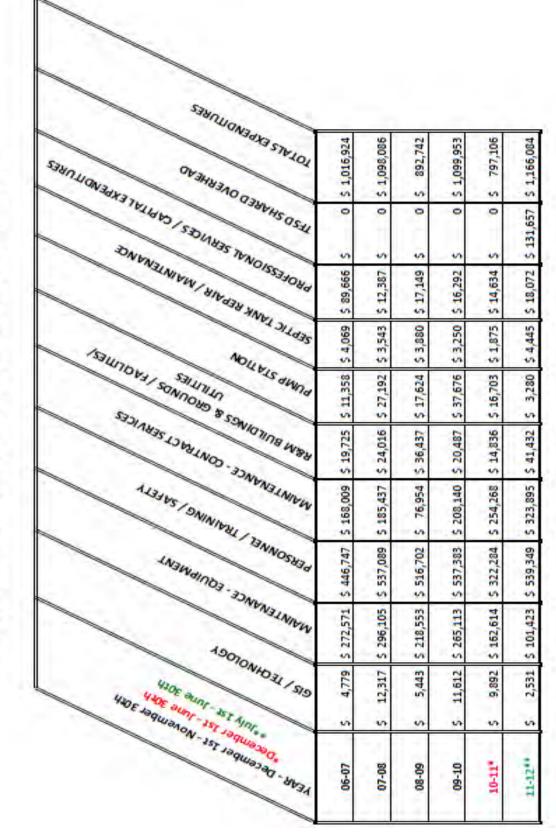
#### ADDITIONAL EXPENDITURES

TFSD Shared Overhead	\$131,657
Facilities/Utilities	\$22,128
Pump Station	\$3,280
Septic Tank Repair/Maintenance	\$4,445
Professional Services	\$13,560
Capital Expenditures	\$4,512
Total Additional Expenditures	\$179,582 15%

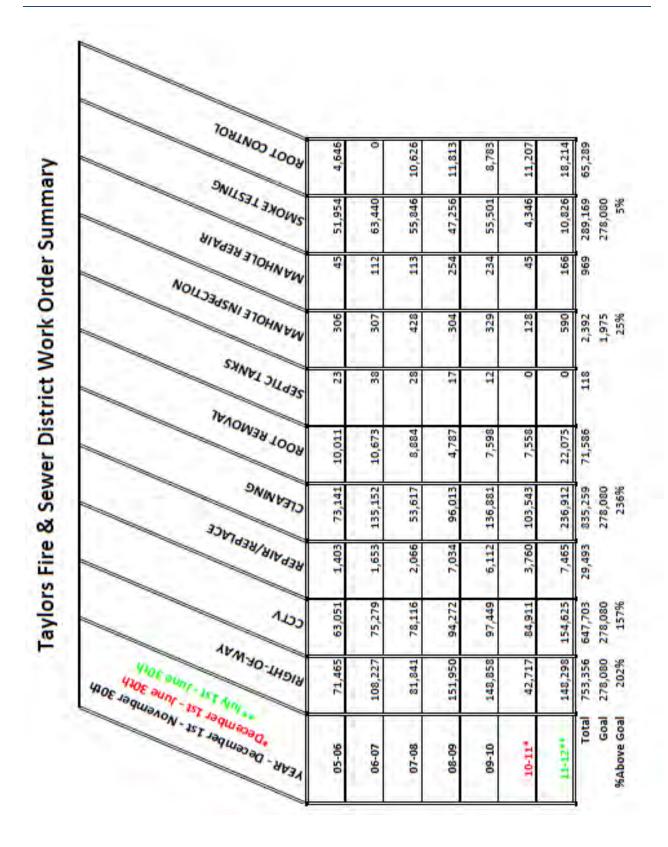
**Total Expenditures** 

\$1,166,084

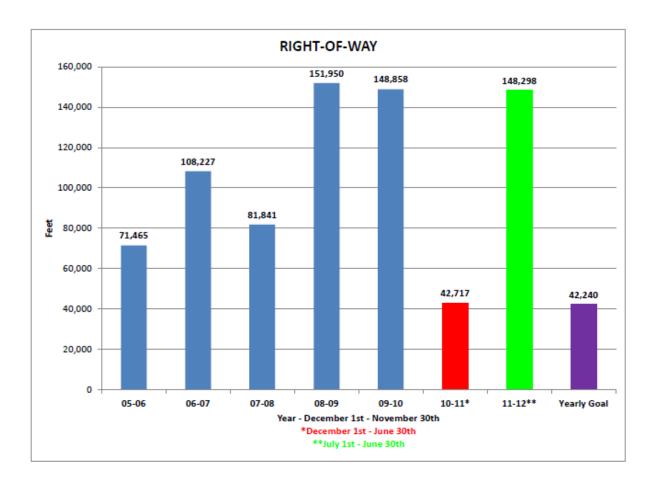




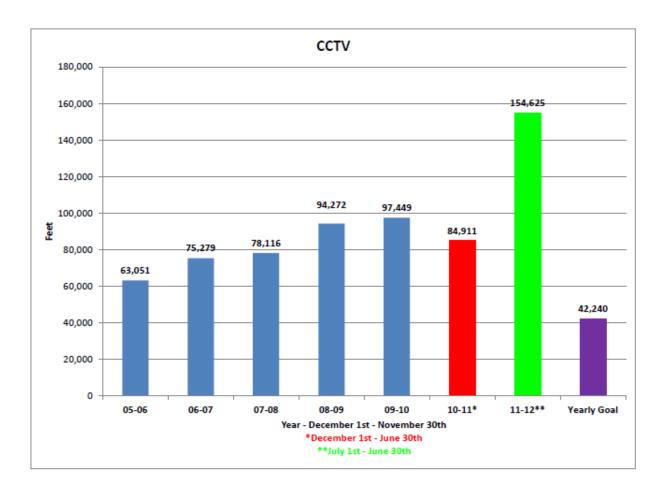
# **Operations & Maintenance**



### **Right-of-Way Maintenance:**

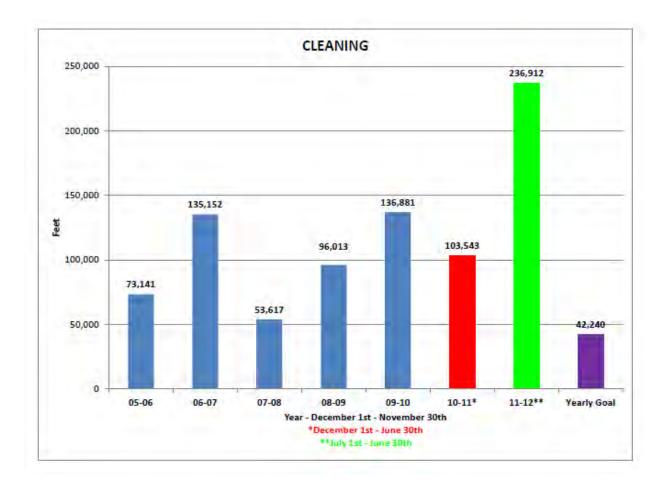


Per our agreement with ReWa, Taylors Fire & Sewer District will be working and/or inspecting at least 8 miles or 42,240 L.F. per year of right-of-way maintenance. As the chart above demonstrates we have exceeded our yearly goal. 2005 to 2010 (indicated by the blue column) were reported from December 1<sup>st</sup> to November 30<sup>th</sup>. 2010 to 2011 (indicated by the red column) was reported from December 1<sup>st</sup> to June 30<sup>th</sup>. 2011 to 2012 (indicated by the green column) was reported based off of Taylors' fiscal year, July 1<sup>st</sup> to June 30<sup>th</sup>, and will be reported as such going forward. Our yearly goal is indicated in purple.



Per our agreement with ReWa, Taylors Fire & Sewer District will be working and/or inspecting at least 8 miles or 42,240 L.F. per year of CCTV. As the chart above demonstrates we have exceeded our yearly goal. 2005 to 2010 (indicated by the blue column) were reported from December 1<sup>st</sup> to November 30<sup>th</sup>. 2010 to 2011 (indicated by the red column) was reported from December 1<sup>st</sup> to June 30<sup>th</sup>. 2011 to 2012 (indicated by the green column) was reported based off of Taylors' fiscal year, July 1<sup>st</sup> to June 30<sup>th</sup>, and will be reported as such going forward. Our yearly goal is indicated in purple.

### **Cleaning Maintenance:**



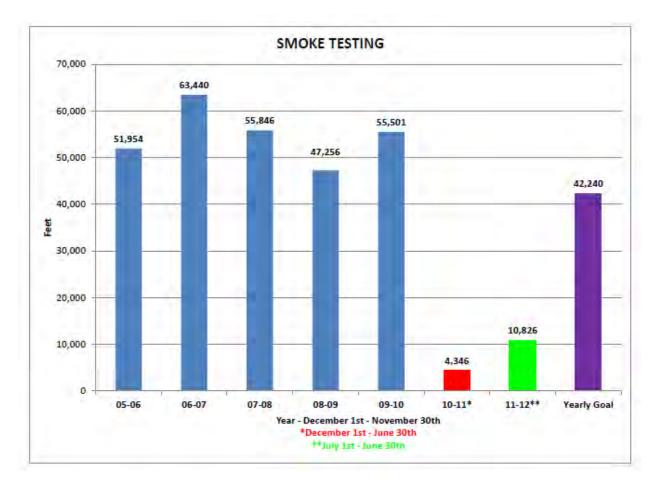
Per our agreement with ReWa, Taylors Fire & Sewer District will be working and/or inspecting at least 8 miles or 42,240 L.F. per year of cleaning maintenance. As the chart above demonstrates we have exceeded our yearly goal. 2005 to 2010 (indicated by the blue column) were reported from December 1<sup>st</sup> to November 30<sup>th</sup>. 2010 to 2011 (indicated by the red column) was reported from December 1<sup>st</sup> to June 30<sup>th</sup>. 2011 to 2012 (indicated by the green column) was reported based off of Taylors' fiscal year, July 1<sup>st</sup> to June 30<sup>th</sup>, and will be reported as such going forward. Our yearly goal is indicated in purple.

### Manhole Inspections:



Per our agreement with ReWa, Taylors Fire & Sewer District will be working and/or inspecting at least 300 manholes per year. As the chart above demonstrates we have exceeded our yearly goal in 2011 to 2012. 2005 to 2010 (indicated by the blue column) were reported from December 1<sup>st</sup> to November 30<sup>th</sup>. 2010 to 2011 (indicated by the red column) was reported from December 1<sup>st</sup> to June 30<sup>th</sup>. 2011 to 2012 (indicated by the green column) was reported based off of Taylors' fiscal year, July 1<sup>st</sup> to June 30<sup>th</sup>, and will be reported as such going forward. Our yearly goal is indicated in purple. Due to this time frame of only 7 months in 2010 to 2011 were not able to reach the goal of 300. We were able to exceed in 2011 to 2012 to make up for not meeting the goal from the previous time frame.

### Smoke Testing:



Per our agreement with ReWa, Taylors Fire & Sewer District will be working and/or inspecting at least 8 miles or 42,240 L.F per year of smoke testing. As the chart above demonstrates we have not met our yearly goal in 2011 to 2012. In March 2011, Taylors Fire & Sewer District received a complaint from a citizen in the District about our smoke testing. Due to a potential law suit, Taylors Fire & Sewer District lawyers advised us to not do any smoke testing until the issue is resolved. As you can see from the chart above we were only able to do minimal smoke testing for the last year. This issue seems to be resolved for now so we can get back to our smoke testing schedule. 2005 to 2010 (indicated by the blue column) were reported from December 1<sup>st</sup> to November 30<sup>th</sup>. 2010 to 2011 (indicated by the green column) was reported based off of Taylors' fiscal year, July 1<sup>st</sup> to June 30<sup>th</sup>, and will be reported as such going forward. Our yearly goal is indicated in purple.

### Flow Monitoring:

The Board of Commissioners decided to contract with The Clearwater Group to provide flow monitoring services. After the preliminary review and evaluation of the data, it became apparent that Taylors had a problem with the flow monitor data gathered. It seems that a large segment of our mains do not have enough flow to obtain an accurate measurement.

Attached is the report from The Clearwater Group.

# Summary

Taylors Fire & Sewer District is steadily moving forward and quickly becoming one of the leaders in the local sewer industry. From innovative methodologies to plain old common sense and ingenuity, Taylors has risen to and exceeded the challenge of not only reducing inflow and infiltration but setting a higher standard for others to follow.

The staff has excelled in training opportunities. All of the employees of Taylors Fire & Sewer District's Sewer Department, with the exception of one new employee, are currently certified Wastewater Collection System Operators. One District Administration employee is also a certified Wastewater Collection System Operator.

Certification's: Number of Employees & Certification's
Wastewater Collection System Operators: A's <u>2</u> B's <u>2</u> C's <u>3</u> D's <u>4</u>
Biological Wastewater Operator Trainee: <u>1</u>
Nassco's PACP (Pipeline Assessment Certification Program) and MACP (Manhole Assessment
Certification Program) Certified – <u>4</u>

Taylors Fire & Sewer District employees are not only dedicated to their positions with the organization, but are also very involved in the Water Environment Association of South Carolina and the Water Environment Federation. Our Director of Sewer Services is Past Chair of the Blue Ridge Foothills District. She is currently the Vice Chair of the Voluntary Certification Committee and serves on many other committees with the Water Environment Association of South Carolina.

The implementation of a User Fee has been designated for the major capital improvements to ensure the funds needed are available as we continue to not only maintain the integrity of our sewer system, but also expand our services to meet the growth of the Taylors area. We continue to become more creative and seek out alternative avenues to make each investment the most economically feasible.

It continues to be the mission of Taylors Fire & Sewer District, to not only improve the quality of life for our residents, but to also be the best stewards of their tax dollars as humanly possible. We believe our records speak for themselves as we consistently exceed our established goals while remaining within, and often below, the confines of our budget.

### **Taylors Fire and Sewer District**

**Flow Monitoring Report** 

**Prepared by** 

### The Clearwater Group, Inc.

August 23, 2012

#### Introduction

Taylors Fire and Sewer District ("Taylors") has been performing significant investigation and rehabilitation of its sewer system over the last decade. Included in this report are a series of documents that summarize the flow monitoring and Inflow and Infiltration ("I/I") status of various portions of the Taylors sewer system for the period December 2010 through June 2012.

#### **Flow Monitoring**

Flow monitoring of 22.2 miles of gravity sewer lines in the Taylors system is documented in this report. This represents approximately 15% of the Taylors collection system. Sigma 910 and FloDar Flowmeters owned and maintained by Taylors were used to monitor flow.

Table 1 contains a brief description of the portions of the system flow monitored during the time period December 2010 through June 2012.

Table 1 Areas	s of the	Taylors	System	Flow	Monitored
	, or the	Iaylors	System	110 11	mionicu cu

Mini-System	Metered Manhole Number	Street Location	Feet of Pipe	Miles of Pipe
6	MH 6-274D	Wintergreen Ln	5,014	0.9
6	MH 6-192	Wood Heights Rd ROW	38,665	7.3
6	MH 6-552	Tanner Rd	2,639	0.5
6	MH 6-028	Old Mill Rd	11,578	2.2
6	MH 6-330	Stalling Rd	4,342	0.8
6	MH 6-107	Bellview Dr ROW	21,770	4.1
2	MH 2-008	Creighton Dr	34,037	6.4
Total Miles				22.2

#### Results

Table 2 contains the results of flow monitoring as compared to the Babbitt equation calculated peaking factor. Supporting calculations and documentation for flow monitoring are provided for each manhole as Appendix A.

The 12.8 mile portion of the monitored system, associated with MH 6-274D, MH 6-192, MH 6-552 and MH 6-107, were found to meet the Babbitt peaking factor with regards to Inflow.

For the remaining portions monitored, the allowable Babbitt peaking factor was met for smaller or less intense rainfall events, but the Babbitt was slightly exceeded for certain rainfall conditions. Further investigation of inflow sources in these areas needs to be performed and these sources eliminated to complete work in these sections.

<u>MH 6-274D Wintergreen Lane</u> – This 0.9 mile residential and commercial portion of tTaylors system appears to be in good condition. The wet weather flow Peaking Factor (PF) was well below the allowable Babbitt PF. No further action is needed in this portion of the system at this time.

<u>MH 6-192 Wood Heights Rd</u> – This 7.3 mile residential portion of the Taylors system appears to be in good condition. The wet weather flow Peaking Factor (PF) was well below the allowable Babbitt PF. No further action is needed in this portion of the system at this time.

<u>MH 6-552 Tanner Rd</u> – This 0.5 mile portion of the Taylors system contains both residential and commercial/industrial sources. It appears to be in good condition. The wet weather flow Peaking Factor was below the allowable Babbitt PF or the allowable EPA excessive infiltration rate. This was a short section of pipe to monitor and the average daily flow is very low due to the commercial/industrial input along with a small residential population. This very low average daily flow caused the Babbitt PF to be slightly exceeded during one of the three storm events, but because it was still significantly lower in comparison to the EPA excessive I&I values, this portion of the system is considered to not have excessive I&I. No further action is needed in this portion of the system at this time.

<u>MH 6-107 Bellview Dr</u> – This 4.1 mile residential portion of the Taylors system appears to be in good condition. The wet weather Peaking Factor was well below the allowable Babbitt PF. No further action is needed in this portion of the system at this time.

<u>MH 6-028 Old Mill Rd</u> – This 2.2 mile portion of the Taylors system contains primarily residential input. It met the Babbitt PF for both a small storm event and a substantially larger rainfall event. However the PF increased slightly above the allowable PF for an intense 1.53" rainfall event. Thus, there appears to still be one or more significant openings in the system, most likely broken cleanouts or manhole covers, which leak significantly when standing water occurs. This area should be re-smoked to identify and correct these likely Inflow sources.

<u>MH 6-330 Stalling Rd</u> – This 0.8 mile residential portion of the Taylors system met the Babbitt PF for a small storm event, however for larger events, e.g. 1.53" and above, the PF increased

substantially and exceeded the allowable Babbitt. Some rehab work has been completed in this area, but there appears to still be several significant openings in the system, most likely broken cleanouts or manhole covers, which leak significantly when standing water occurs. This area should be re-smoked to identify and correct these likely Inflow sources.

<u>MH 2-008 Creighton Dr ROW</u> – This 6.4 mile primarily residential portion of the Taylors system meets the Babbitt PF for smaller storm events, however for one larger event, e.g. a 2.36" rainfall, the PF increased to a level just slightly above the allowable Babbitt PF. Thus, there appears to be one or more significant openings in the system, most likely broken cleanouts or manhole covers, which leak significantly when standing water occurs. This area should be resmoked to identify and correct these likely Inflow sources.

#### Table 2. Flow Monitoring Summary

Project	Meter Location MH #	Rain Event Dates	Rainfall Totals	Peaking Factor (PF)	Babbitt Allowable	PF Below Babbitt Y/N	Comments
Mini-System 6	MH 6-274D Wintergreen Lane	Apr 16, 2011	1.46	8.3	8.6	Y <sup>1</sup>	<sup>1</sup> This short section of pipe has very low avg daily flow due to commercial businesses connected in this area and a small residential population.
5,014'		May 25, 2011	1.14	1.5	8.6	Y	
0.9 mi		July 25, 2011	1.12	1.6	8.6	Y	
Mini-System 6	MH 6-192 Wood Heights Rd ROW	Nov 30, 2010	2.36	2.9	5.5	Y	
38,665'		Feb 1, 2011	1.21	5.3	5.5	Y	
7.3 mi		Feb 28, 2011	1.02	2.8	5.5	Υ	
Mini-System 6	MH 6-552 Tanner Rd	Apr 15, 2011	1.46	10.0	8.8	Y <sup>1</sup>	<sup>1</sup> This short section of pipe has very low avg daily flow due commercial/industrial connections and a small residential population. This low avg daily flow distorts the peak factor.
2,639'		May 26, 2011	1.14	5.7	8.8	Y	
0.5 mi		July 25, 2011	1.12	2.0	8.8	Υ	
Mini-System 6	MH 6-028 Old Mill Rd	Nov 30, 2010	2.36	3.9	6.8	Y	
11,578'		Feb 1, 2011	1.23	3.1	6.8	Y	
2.2 mi		Feb 4, 2011	1.53	7.2	6.8	N	

Project	Meter Location MH #	Rain Event Dates	Rainfall Totals	Peaking Factor (PF)	Babbitt Allowable	PF Below Babbitt Y/N	Comments
Mini-System 6	MH 6-330 Stalling Rd	Nov 30, 2010	2.36	7.1	6.6	N	
4,342'		Feb 1, 2011	1.12	4.2	6.6	Y	
0.8 mi		Feb 4, 2011	1.53	8.9	6.6	N	
Mini-System 6	MH 6-107 Bellview Dr ROW	Nov 30, 2010	2.36	5.0	5.0	Y	
21,770'		Feb 1, 2011	1.23	3.8	5.0	Y	
4.1 mi		Feb 28, 2011	1.02	3.2	5.0	Υ	
Mini-System 2	MH 2-008 Creighton Dr ROW	Nov 30, 2010	2.36	5.3	4.8	N	
34,037'		Feb 1, 2011	1.23	2.8	4.8	Y	
6.4 mi		Feb 4, 2011	1.53	4.2	4.8	Y	

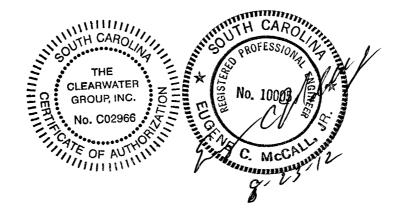
#### Conclusions

Flow monitoring of 22.2 miles, approximately 15%, of gravity sewer lines in the Taylors system was completed during the period of December 2010 through July 2011. Approximately 12.8 miles of this portion measured was found to meet peak flow standards and requires no further study or rehabilitation work at this time. Some of the system measured, approximately 9.4 miles, is close to the Babbitt allowable Peak Flow and will likely require identification and repair of only a few Inflow sources.

Respectfully submitted,

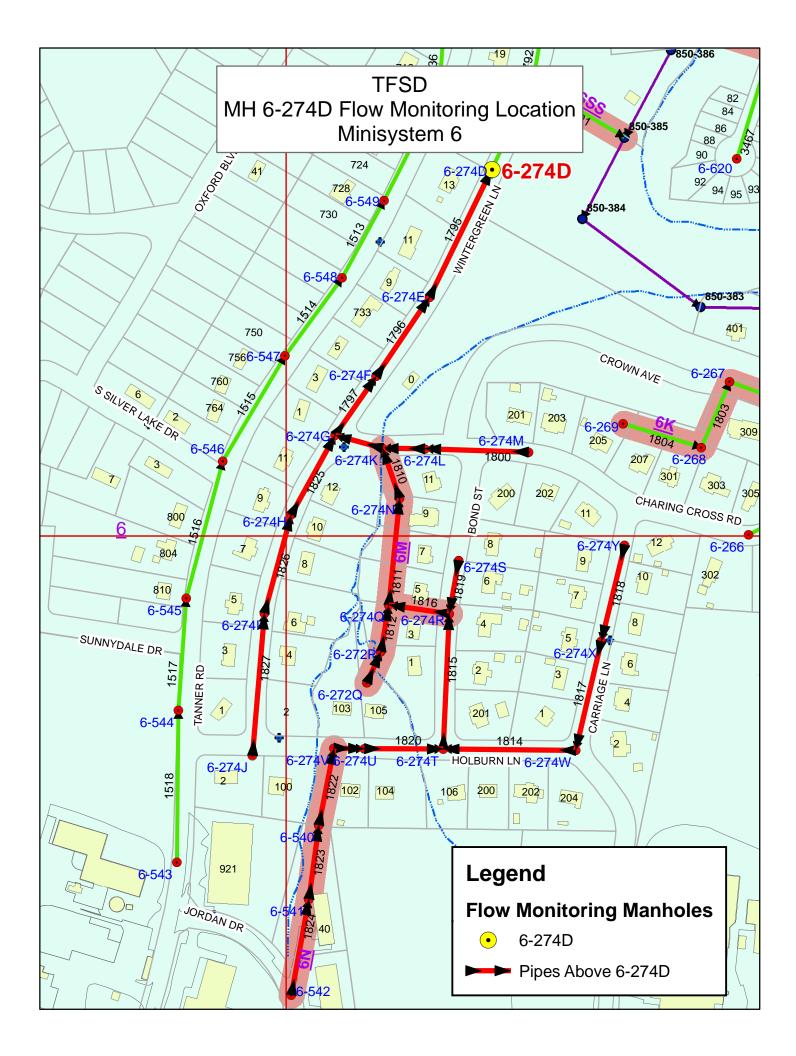
1-9

**The Clearwater Group, Inc.** Eugene C. McCall, Jr., Ph.D., P.E., J.D. President



APPENDIX A – Location Map, Dry Weather, and Wet Weather flow data and calculations

# MH 6-274D



MH 6-274-D PanAll Eat 1 April 15,2011

System Data

Meter Location:	6-274D	Pipe Size (in.): 8
No. of States and States		

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	5,014	7.60	24		0.0
10		0.00	27		0.0
12		0.00	30		0.0
14		0.00	36		0.0
15		0.00	42		0.0
16		0.00	48		0.0
18		0.00	54		0.0
20		0.00	60		0.0
21		0.00	72		0.0
				Total =	7.6

Dry Weather Flow

Average Daily Flo following dates:	w calculated from the	Avg. Daily Flowrate =	4,000 gpd
C		Avg. Flow Depth =	0.400 inches
From:	05/20/11	Deels Heurise Elemente –	15 000 and
To:	05/25/11	Peak Hourly Flowrate =	<u>15,000</u> gpd
10	00/20/11	Peak Factor =	3.75

Completed By:

EC Hdd

Date: 2-5-2012

- computer calculated (formula)

Flow Meter Data Sheet - Dry Weather Flow \\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flo-Dar 2011\6-552\6-274d 4-16-11

#### Rainfall and I/I Event Duration

Rainfall:	Start:	4/15/11 21:15	End: <u>4/1</u>	6/11 12:30	
Max. 24-h	our Total:	1.46 in.	Storm Total:	<u>1.46</u> in.	
I/I Event:	Start:	4/15/11 20:15	End:	4/21/11 0:0	0
		Dates and times that rain	fall and I/I begin and end.		
		Wet Weather Ev	ent - I/I Analysis		
Peak Flow	w Depth =	1.4 inches	I/I Event	Duration =	123 hours
□Manhole Surch	arged (Level	exceeded pipe dia.)	I/I	Volume =	41,000 gallons
Peak Hourly F	lowrate =	33,000 gpd	Inflow and Inf	iltration Breakd	<u>own (optional)</u>
Avg. Dry Weath	er Flow =	4,000 gpd	Dry Weather In	filtration =	1,000 gpd
Peal	k Factor =	8.25 R	ainfall Induced In	filtration =	5,000 gpd
Avg. Wet Weath	er Flow =	11,000 gpd	Total In	filtration =	6,000 gpd
Avg.	I/I Flow =	8,000 gpd	Infiltrat	ion Rate =	789 gpd/idn
Inch-Diamete	er Miles =	7.60 idm		Inflow =	2,000 gpd
	I/I Rate =	1,053 gpd/idm	Infl	ow Rate =	263 gpd/idn
Notes:					
Completed By	EC,	Meler		Date:	2-5-2012
- 00	omputer calc	ulated (formula)			

\\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flo-Dar 2011\6-552\6-274d 4-16-11

Rain 4/16/11 Site Id: 00000000 File name: 00000000.000 Graph span: 1 week

Rain (in.)

Tues. Apr. 19					
Mon. 2011					
Sun. 2011					
Sat. 2011					
Fri. 2011					
Thurs. Apr. 14 2011					
Med. 2011					
0.200 0.400 0.300 0.200 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.200 0.200 0.100 0.200 0.200 0.100 0.200 0.200 0.200 0.200 0.200 0.100 0.200 0.200 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.200 0.100 0.100 0.200 0.1000 0.1000 0.100000000	0 500	0.600	0 200	0800	006.0

															<	2011
													A A	MM		5/26/2011
											 	<	V		5	5/25/2011
													V		NN	
									-		V			V		5/24/20
												4			Y / V	5/22/2011 5/23/2011 5/24/2011
													VV	141	N	1 5/
														5	Å	5/22/201
												4		N	A	5/21/2011
													VV		NN.	5/2
0.046	0.044		920 0	050.0	0.034	800	070.0	020.0		0.018	V	0.01	0.005	0.004	0.002	5/20/2011

6-274D

Dry Weather Flow May. 2011

--- Flow (mgd)

4	
ņ	
Ó	

Wet Weather Event 4/16/11

	V	AM AN

MH 6-2740 Rai : 11 Event 2 May 26, 2011

System Data

Meter Location:	6-27	74D	Pipe Size (in.): 8	-
		Inch-Miles of Sewer	Upstream of Meter	
Pipe Size	Length	Inch-Miles	Pipe Size Length	Inch-Miles
(in.)	(ft.)		(in.) (ft.)	
8	5,014	7.60	24	0.00
10		0.00	27	0.00
12		0.00	30	0.00
14		0.00	36	0.00
15		0.00	42	0.00
16		0.00	48	0.00
18		0.00	54	0.00
20	1	0.00	60	0.00
21		0.00	72	0.00
			Total =	7.60

Dry Weather Flow

Average Daily Flow calculated from the following dates:	Avg. Daily Flowrate =	4,000 gpd
onowing dates.	Avg. Flow Depth =	0.400 inches
From: 05/20/11		
	Peak Hourly Flowrate =	15,000 gpd
To: 05/25/11		
	Peak Factor =	3.75

Notes:

Completed By:

Ec Mold

Date: 2-5-2012

- computer calculated (formula)

Flow Meter Data Sheet - Dry Weather Flow
\\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flo-Dar 2011\6-552\6-274d 5-26-11

#### Rainfall and I/I Event Duration

Rainfall:	Start:	5/26/11 18:45	End: 5/2	7/11 12:15	
Max. 24-h	our Total:	1.14 in.	Storm Total:	<u>1.14</u> in.	
I/I Event:	Start:	5/26/11 17:45	End:	5/28/11 0:00	
	_	Dates and times that rain	fall and I/I begin and end.		
		Wet Weather Ev	vent - I/I Analysis		
Peak Flow	w Depth =	0.6 inches	I/I Event I	Duration =	30 hours
□Manhole Surch	arged (Level	exceeded pipe dia.)	I/I	Volume =	0 gallons
Peak Hourly F	Flowrate =	6,000 gpd	Inflow and Infi	Itration Breakdow	m (optional)
Avg. Dry Weath	er Flow =	4,000 gpd	Dry Weather Inf	iltration =	0 gpd
Pea	k Factor =	1.50	Rainfall Induced Int	iltration =	0 gpd
Avg. Wet Weath	er Flow =	4,000 gpd	Total Int	iltration =	0 gpd
Avg.	I/I Flow =	0 gpd	Infiltrat	ion Rate =	0 gpd/idn
Inch-Diamete	er Miles =	7.60 idm		Inflow =	0 gpd
	I/I Rate =	0 gpd/idm	Infl	ow Rate =	0 gpd/idn
T					
Notes:					
Completed By	SCM	all		Date: 2	-5-2012
- 00	omputer calc	ulated (formula)			
	inputer cate	unarea (torintata)			

Flow Meter Data Sheet - Wet Weather Event \\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flo-Dar 2011\6-552\6-274d 5-26-11 Rain 5/26/11 Site Id: 00000000 File name: 0000000.000

Graph span: 1 week

Rain (in.)

Tues. May 31										
Mon. May 30										
Sun. May 29										
Sat. May 28										
Fri. May 27	M. LLL									
Thurs. May 26										
Wed. May 25										
Tues. May 24	0.000	0.100	0.200	0.300	0 400	0 500	0.600	0.700	0 800	0.900

												2	2011
										1.	M/W/		5/26/2011
									V				5/25/2011
			 							V	V	N	5/24/2011
										1 V		M	5/22/2011 5/23/2011 5/24/2011
										VV	4 4		11 5/23
											M	1	5/22/20
						_				V	N	Phil	5/21/2011
								V		V	1VV		5/20/2011

6-274D

Dry Weather Flow May. 2011

1
4
N

Wet Weather Event 5/26/11

MH & -274 D Roin fill Front 3 July 25, 2012

0.00

0.00

7.60

#### **Taylors Fire & Sewer Flow Meter Data Sheet**

System Data

Meter Location:	6-27	74D	Pipe Size (in.):	8	-
1.5.1		Inch-Miles of Sewer	Upstream of Meter		
Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	5,014	7.60	24		0.00
10		0.00	27		0.00
12		0.00	30		0.00
14		0.00	36		0.00
15		0.00	42		0.00
16		0.00	48		0.00
18		0.00	54		0.00

Dry Weather Flow

60

72

0.00

0.00

Average Daily Flow calculated from the following dates:	Avg. Daily Flowrate =	5,000 gpd
	Avg. Flow Depth =	0.500 inches
From: 06/27/11		
	Peak Hourly Flowrate =	12,000 gpd
To: 07/02/11		
	Peak Factor =	2.40

Notes:

Completed By:

20

21

ECMeld

Date: 8-12-12

Total =

- computer calculated (formula)

Flow Meter Data Sheet - Dry Weather Flow \\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flo-Dar 2011\6-552\6-274d 7-25-11

#### Rainfall and I/I Event Duration

Rainfall:	Start:	7/25/11 14:15	End: <u>7/2</u>	5/11 20:45	
Max. 24-h	our Total:	1.12 in.	Storm Total:	1.12 in.	
I/I Event:	Start:	7/25/11 13:15	End:	7/26/11 0:00	
			nfall and I/I begin and end.		
		Wet Weather Ev	vent - I/I Analysis		
Peak Flow	v Depth =	0.7 inches	I/I Event	Duration =	11 hours
Manhole Surch	arged (Level	l exceeded pipe dia.)	I/I	Volume =	0 gallons
Peak Hourly F	lowrate =	8,000 gpd	Inflow and Inf	iltration Breakdow	n (optional)
Avg. Dry Weath	er Flow =	5,000 gpd	Dry Weather In	filtration =	0 gpd
Peal	k Factor =	1.60 H	Rainfall Induced In	filtration =	0 gpd
Avg. Wet Weath	er Flow =	5,000 gpd	Total In	filtration =	0 gpd
Avg.	I/I Flow =	0 gpd	Infiltrat	ion Rate =	0 gpd/idn
Inch-Diamete	er Miles =	7.60 idm		Inflow =	0 gpd
	I/I Rate =	0 gpd/idm	Inf	low Rate =	0 gpd/idn
lotes:					
Completed By	ECT	dell		Date: St	12-12
		10. A. a. 1. 19.			

\\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flo-Dar 2011\6-552\6-274d 7-25-11

Rain 7/25/11 Site Id: 00000000 File name: 00000000.000

Tues.
Thurs.

0	
4	
2	
9	

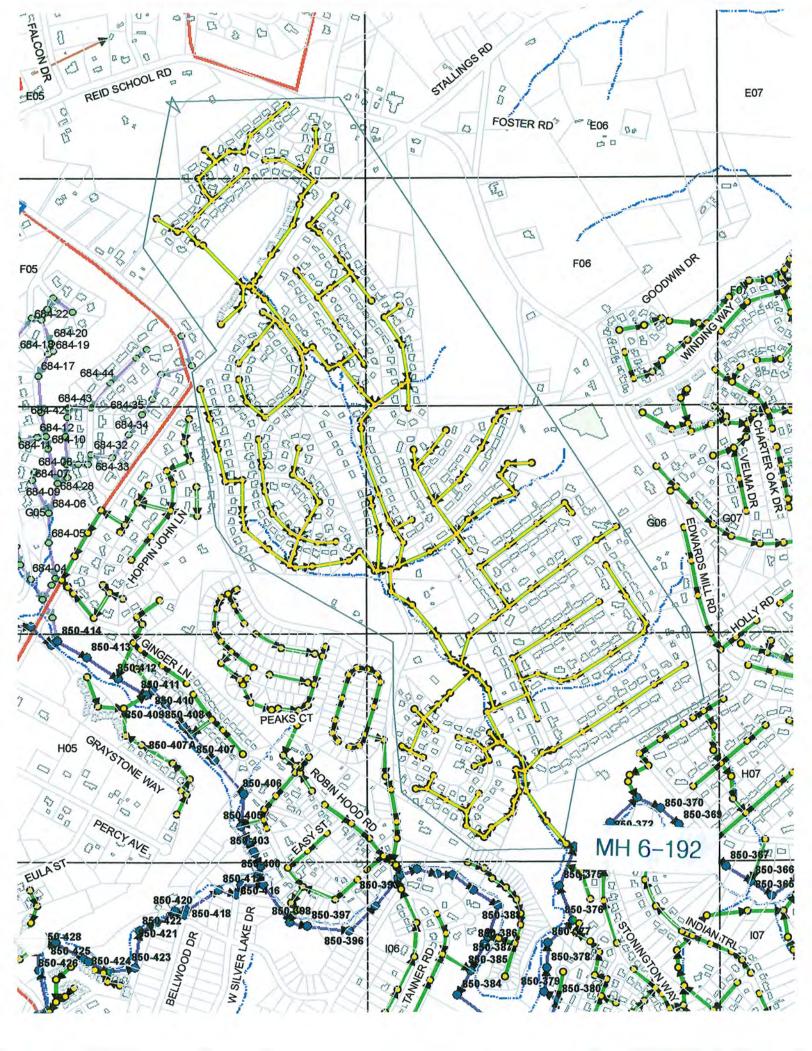
Dry Weather Flow 6/27/11 to 7/2/11

7/3/2013	7/2/2011	7/1/2011	6/29/2011 6/30/2011 7/1/2011	6/29/2011	6/28/2011	6/27/2011
MM				N		
V. V	Q 4			V	A A A	V

6-274D

Wet Weather Event 7/25/11

# MH 6-192



MIA 6-192 Rom & 11 Event 1 Nov 30, 2010

System Data

Meter Location:	6-192	Pipe Size (in.): 8	
Wieter Location.	0-172	Tipe Size (iii.). o	

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	38,665	58.58	24	24	
10		0.00	27		0.0
12		0.00	30		0.0
14		0.00	36	36	
15		0.00	42		
16		0.00	48		
18		0.00	54	54	
20		0.00	60		0.0
21		0.00	72		0.0
				Total =	58.5

#### Dry Weather Flow

Average Daily Flow calculated from the following dates:	Avg. Daily Flowrate =	60,000 gpd
5	Avg. Flow Depth =	1.500 inches
From: 12/06/10		
	Peak Hourly Flowrate =	133,000 gpd
To: 12/11/10		
	Peak Factor =	2.22

Notes:

Completed By:

Date: 2-5-2012

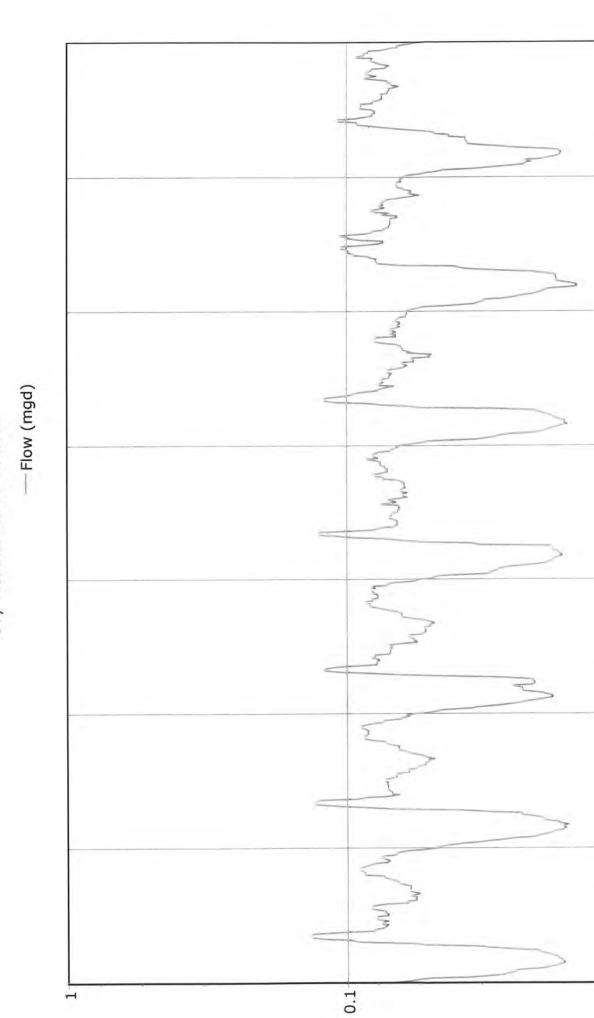
- computer calculated (formula)

E. C. Mila

Flow Meter Data Sheet - Dry Weather Flow H:\6-192 11-30-10

#### Rainfall and I/I Event Duration

Max. 24-hour Total:       2.36 in.       Storm Total:       2.36 in.         I/I Event:       Start:       11/30/10 0:00       End:       12/4/10 0:00         Dates and times that rainfall and I/I begin and end.       Wet Weather Event - I/I Analysis         Peak Flow Depth =       2.6 inches       I/I Event Duration =       9         Manhole Surcharged (Level exceeded pipe dia.)       I/I Volume =       124,00         Peak Hourly Flowrate =       172,000 gpd       Inflow and Infiltration Breakdown (or Avg. Dry Weather Flow =       60,000 gpd         Peak Factor =       2.87       Rainfall Induced Infiltration =       3,00         Avg. Wet Weather Flow =       73,000 gpd       Total Infiltration =       21,00         Avg. I/I Flow =       31,000 gpd       Infiltration Rate =       33         Inch-Diameter Miles =       58.58 idm       Inflow =       10,00	_
Dates and times that rainfall and 1/1 begin and end.         Wet Weather Event - I/I Analysis         Peak Flow Depth =       2.6 inches       I/I Event Duration =       9         Manhole Surcharged (Level exceeded pipe dia.)       I/I Volume =       124,00         Peak Hourly Flowrate =       172,000 gpd       Inflow and Infiltration Breakdown (or Avg. Dry Weather Flow =       60,000 gpd       Dry Weather Infiltration =       18,00         Peak Factor =       2.87       Rainfall Induced Infiltration =       3,00         Avg. Wet Weather Flow =       73,000 gpd       Total Infiltration =       21,00         Avg. I/I Flow =       31,000 gpd       Infiltration Rate =       35	
Wet Weather Event - I/I AnalysisPeak Flow Depth =2.6 inchesI/I Event Duration =9 $\Box$ Manhole Surcharged (Level exceeded pipe dia.)I/I Volume =124,00Peak Hourly Flowrate =172,000 gpdInflow and Infiltration Breakdown (orAvg. Dry Weather Flow =60,000 gpdDry Weather Infiltration =Peak Factor =2.87Rainfall Induced Infiltration =3,00Avg. Wet Weather Flow =73,000 gpdTotal Infiltration =21,000Avg. I/I Flow =31,000 gpdInfiltration Rate =35	
Peak Flow Depth =2.6 inchesI/I Event Duration =9 $\Box$ Manhole Surcharged (Level exceeded pipe dia.)I/I Volume =124,00Peak Hourly Flowrate =172,000 gpdInflow and Infiltration Breakdown (orAvg. Dry Weather Flow =60,000 gpdDry Weather Infiltration =Peak Factor =2.87Rainfall Induced Infiltration =Avg. Wet Weather Flow =73,000 gpdTotal Infiltration =Avg. I/I Flow =31,000 gpdInfiltration Rate =	
Peak Hourly Flowrate =172,000 gpdInflow and Infiltration Breakdown (d)Avg. Dry Weather Flow = $60,000$ gpdDry Weather Infiltration = $18,00$ Peak Factor = $2.87$ Rainfall Induced Infiltration = $3,00$ Avg. Wet Weather Flow = $73,000$ gpdTotal Infiltration = $21,00$ Avg. I/I Flow = $31,000$ gpdInfiltration Rate = $35$	06 hours
Avg. Dry Weather Flow = $60,000 \text{ gpd}$ Dry Weather Infiltration = $18,000 \text{ gpd}$ Peak Factor = $2.87$ Rainfall Induced Infiltration = $3,000 \text{ gpd}$ Avg. Wet Weather Flow = $73,000 \text{ gpd}$ Total Infiltration = $21,000 \text{ gpd}$ Avg. I/I Flow = $31,000 \text{ gpd}$ Infiltration Rate = $35000 \text{ gpd}$	0 gallons
Peak Factor = $2,87$ Rainfall Induced Infiltration = $3,00$ Avg. Wet Weather Flow = $73,000$ gpdTotal Infiltration = $21,00$ Avg. I/I Flow = $31,000$ gpdInfiltration Rate = $35$	optional)
Avg. Wet Weather Flow =73,000 gpdTotal Infiltration =21,00Avg. I/I Flow =31,000 gpdInfiltration Rate =35	0 gpd
Avg. I/I Flow = 31,000 gpd Infiltration Rate = 35	00 gpd
	0 gpd
Inch-Diameter Miles = $58.58$ idm Inflow = $10.00$	8 gpd/idr
	0 gpd
I/I Rate = 529 gpd/idm Inflow Rate = 17	1 gpd/idr
	-
lotes:	
000/11/1	2.
Completed By ECMddd Date: 2-5-	2012



12/13/201

12/12/2010

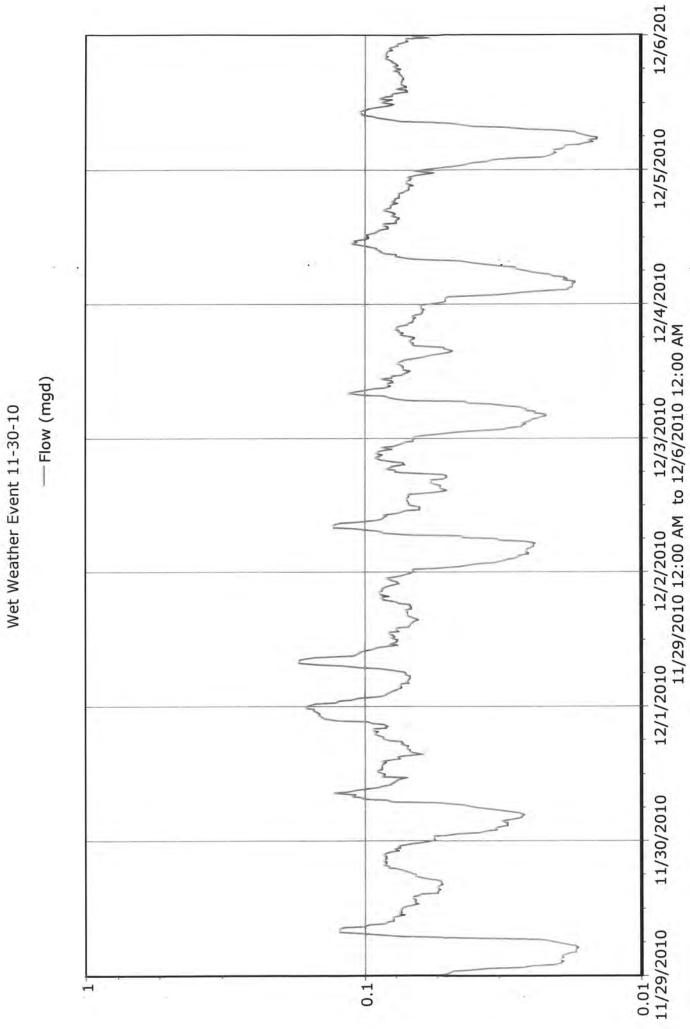
12/8/2010 12/9/2010 12/10/2010 12/11/2010 12/6/2010 12:00 AM to 12/13/2010 12:00 AM

12/7/2010

0.01 12/6/2010

6-192

Dry Weather Flow Dec. 2010



6-192

6-192 Rain 11/30/10 Site Id: 00000000 File name: 00000000.000

Graph span: 1 week

	Fri. Dec. 03 2010
	Thurs. Dec. 02 2010
	Wed. Dec. 01 2010
	Tues. Nov. 30 2010
	Mon. Nov. 29 2010
	Sun. Nov. 28 2010
	Sat. Nov. 27 2010
0.500 0.400 0.300 0.200 0.100	0.000 Fri. Fri. Nov. 26 2010

Rain (in.)

MH6-192 Rin All Kint 2 Februs 1, 2011

٦

## **Taylors Fire & Sewer Flow Meter Data Sheet**

System Data

Meter Location:	6-192	Pipe Size (in.): 8

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	38,665	58.58	24	24	
10		0.00	27		0.0
12		0.00	30		0.0
14		0.00	36		0.0
15		0.00	42		
16		0.00	48		0.0
18		0.00	54	54	
20		0.00	60		0.0
21		0.00	72		0.0
				Total =	58.5

Dry Weather Flow

ollowing dates:	w calculated from the	Avg. Daily Flowrate =	57,000 gpd	
showing dutes.		Avg. Flow Depth =	1.600 inches	
From:	01/20/11	Peak Hourly Flowrate =	118,000 gpd	
То:	01/25/11	Peak Factor =	2.07	

riotes.

Г

Completed By:

- computer calculated (formula)

Date: 2-5-2012

EC Mele

Flow Meter Data Sheet - Dry Weather Flow H:\6-192 2-1-11

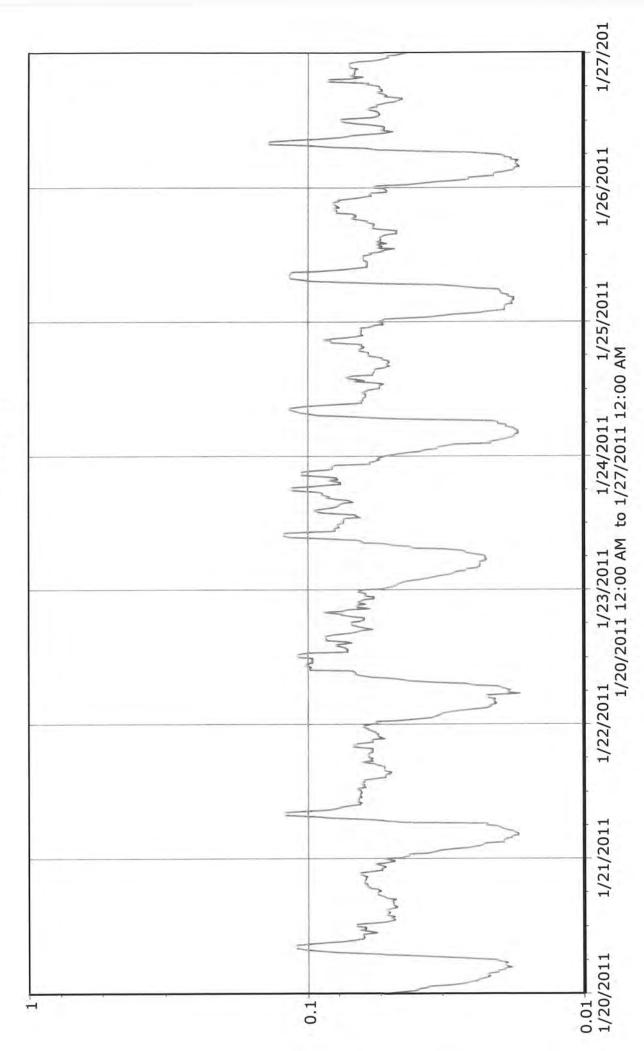
#### Rainfall and I/I Event Duration

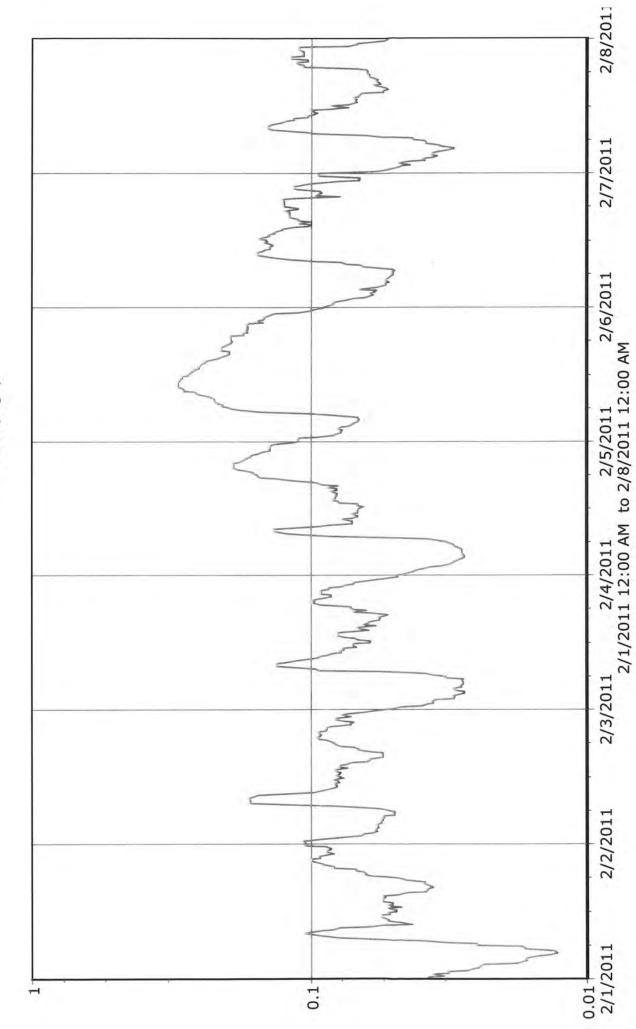
Rainfall:	Start:	2/1/11 7:15	End: 2/2	2/11 0:30	
Max. 24-h	our Total:	1.21 in.	Storm Total:	2.97 in.	
I/I Event:	Start:	2/1/11 6:15		2/13/11 0:0	0
		Dates and times that rain	nfall and I/I begin and end.		
		Wet Weather E	vent - I/I Analysis		
Peak Flow	w Depth =	3.4 inches	I/I Event	Duration =	281 hours
□Manhole Surch	arged (Level	exceeded pipe dia.)	I/I	Volume =	491,750 gallons
Peak Hourly F	lowrate =	300,000 gpd	Inflow and Inf	iltration Breakd	<u>own (optional)</u>
Avg. Dry Weath	er Flow =	57,000 gpd	Dry Weather Int	filtration =	19,000 gpd
Peal	k Factor =	5.26 H	Rainfall Induced Inf	filtration =	9,000 gpd
Avg. Wet Weath	er Flow =	80,000 gpd	Total Inf	filtration =	28,000 gpd
Avg. I	/I Flow =	42,000 gpd	Infiltrat	ion Rate =	478 gpd/idr
Inch-Diamete	er Miles =	58.58 idm		Inflow =	14,000 gpd
	I/I Rate =	717 gpd/idm	Infl	ow Rate =	239 gpd/idn
Notes:					
Completed By	EC	Mille		Date: 2	- 5-2012
- 00	mputer calcu	lated (formula)			
		(contraint)			

Flow Meter Data Sheet - Wet Weather Event H:\6-192 2-1-11





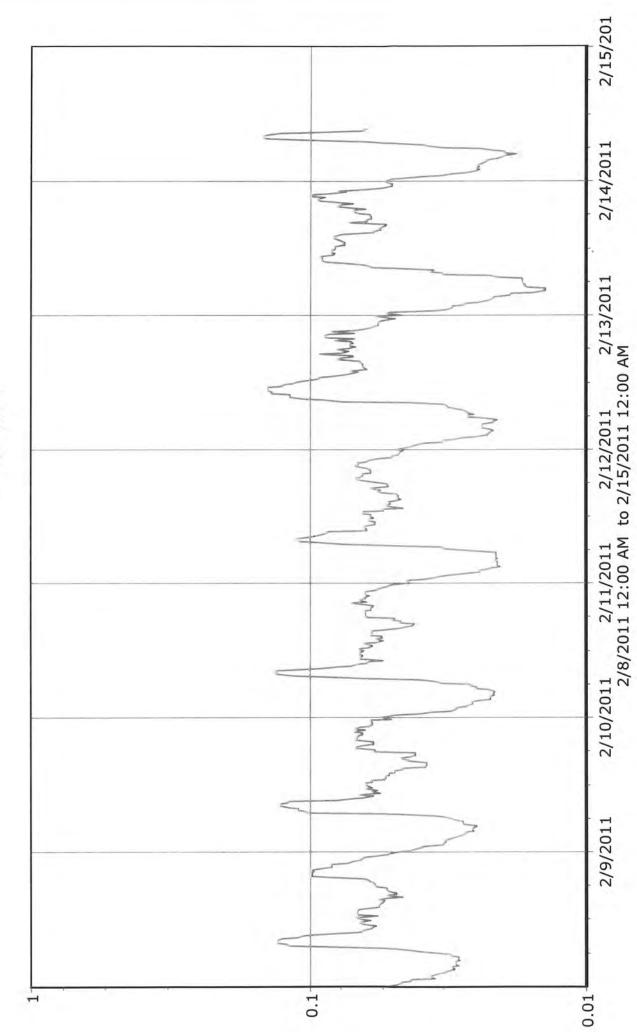




6-192

Wet Weather Event 2-1-11

— Flow (mgd)



6-192

Wet Weather Event 2-1-11

6-192 Rain 2/1/11 Site Id: 00000000 File name: 0000000.000 Graph span: 1 week

Rain (in.)

Mon. Feb. 07											
Sun. Feb. 06				-							
Sat. Feb. 05	-	-									
Fri. Feb. 04	ahaa										
Thurs. Feb. 03											
Wed. Feb. 02											
Tues. Feb. 01											
Mon. Jan. 31	0.000	0.100	0.200	0.300	_	0400	0 500	0.600	002.0	0,800	0060

MH 6-192 Paintell Event Februry 28, 2011

System Data

Meter Location:	6-192	Pipe Size (in.): 8	

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	38,665	58.58	24		0.0
10		0.00	27		0.0
12		0.00	30		0.0
14		0.00	36		0.0
15		0.00	42		0.0
16		0.00	48		0.0
18		0.00	54		0.0
20		0.00	60		0.0
21		0.00	72		0.0
				Total =	58.5

### Dry Weather Flow

Average Daily Flow calculated from the following dates:	Avg. Daily Flowrate =	57,000 gpd
	Avg. Flow Depth =	1.600 inches
From: 01/20/11		
	Peak Hourly Flowrate =	118,000 gpd
To: <u>01/25/11</u>	Peak Factor =	2.07

Notes:

Completed By:

ECMdell

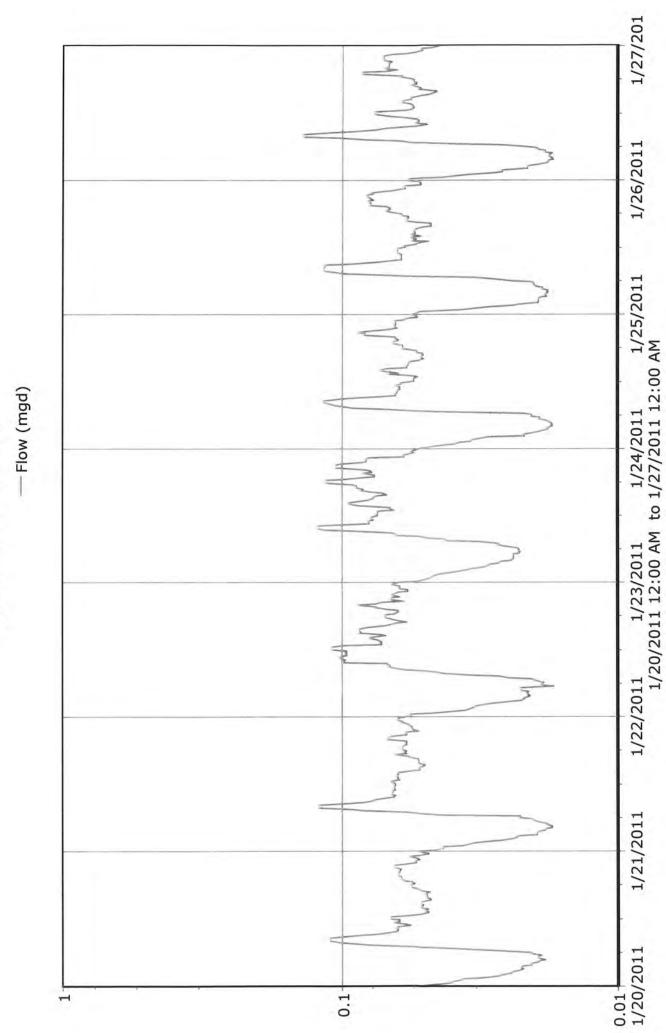
Date: 2-5-2012

- computer calculated (formula)

Rainfall and I/I Event Duration

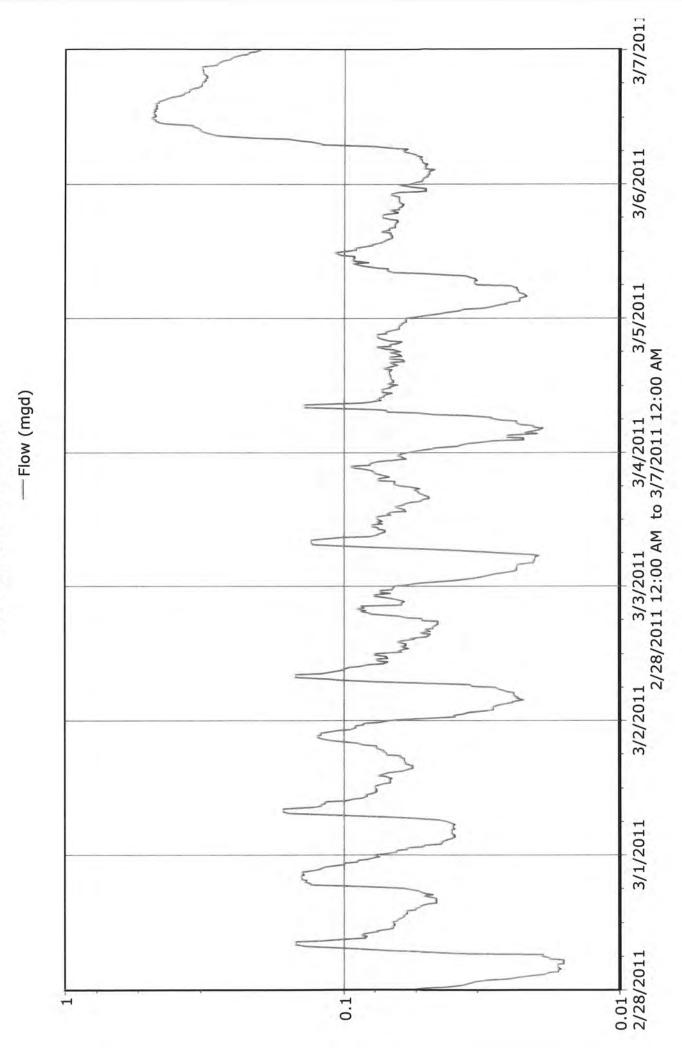
Rainfall:	Start:	2/28/11 17:30	End: 2/2	8/11 19:45	
Max. 24-h	our Total:	1.02 in.	Storm Total:	1.02 in.	
I/I Event:	Start:	2/28/11 16:30	End:	3/4/11 0:00	
		Dates and times that rain	nfall and I/I begin and end.		
		Wet Weather E	vent - I/I Analysis		
Peak Flow	w Depth =	2.5 inches	I/I Event	Duration =	68 hours
□Manhole Surch	arged (Leve	l exceeded pipe dia.	) I/I	Volume =	90,667 gallons
Peak Hourly H	Flowrate =	162,000 gpd	Inflow and Inf	iltration Breakdo	own (optional)
Avg. Dry Weath	ther Flow = $\_$	57,000 gpd	Dry Weather In	filtration =	19,000 gpd
Pea	k Factor =	2.84	Rainfall Induced In	filtration =	9,000 gpd
Avg. Wet Weath	er Flow =	70,000 gpd	Total In	filtration =	28,000 gpd
Avg.	I/I Flow =	32,000 gpd	Infiltrat	ion Rate =	478 gpd/idn
Inch-Diamet	er Miles =	58.58 idm		Inflow =	4,000 gpd
	I/I Rate =	546 gpd/idm	ı Infl	ow Rate =	68 gpd/idn
T. 4					
lotes:					
Completed By	Ec ?	Adde		Date: 2	2-5-201
		Le la la Xa			
- 0	omputer calc	culated (formula)			

Flow Meter Data Sheet - Wet Weather Event H:\6-192 2-28-11



6-192

Dry Weather Flow Jan. 2011



6-192

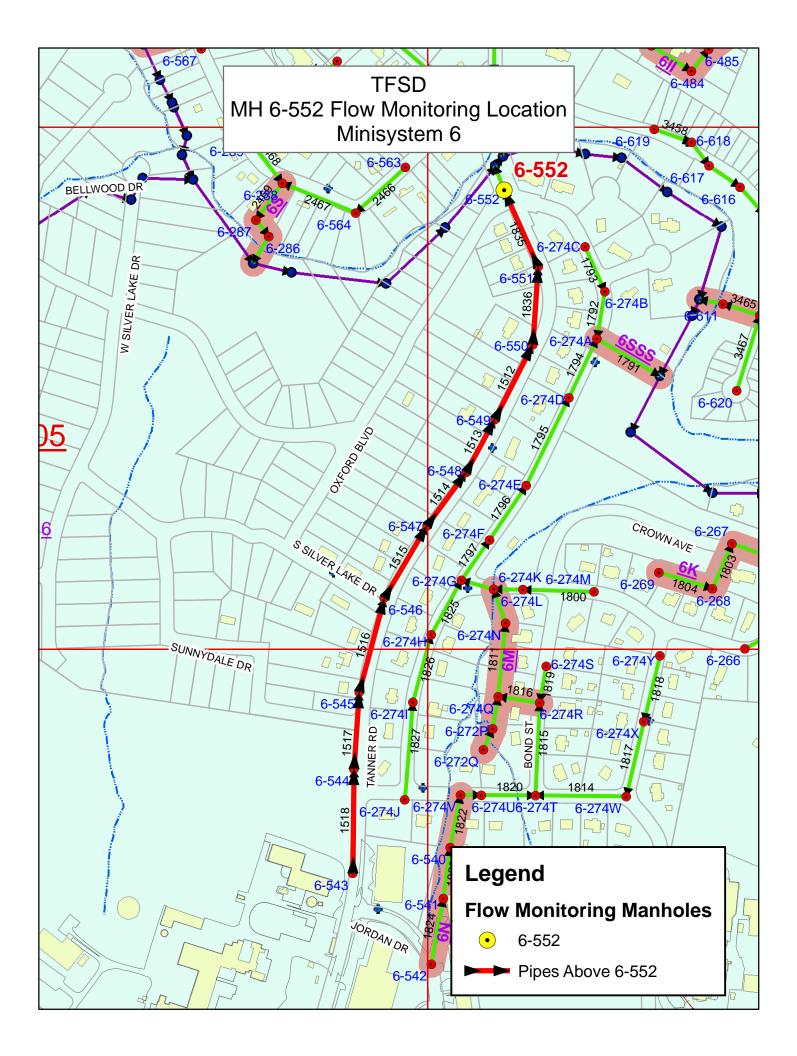
Wet Weather Event 2-28-11

6-192 Rain 2/28/11 Site Id: 00000000 File name: 00000000.000 Graph span: 1 week

	2	
4	Ξ	2
	~	
2	z	
4	σ	
- 1	r	

									Tues.         Wed.         Thurs.         Fri.         Sat.           Mar. 01         Mar. 02         Mar. 03         Mar. 04         Mar. 05
									Mon. Ti Feb. 28 Má
									Sun. Feb. 27
0.900	0.800	0.700	0.600	0.500	0.400	0.300	0 100	0000	Sat. Feb. 26

# MH 6-552



MH 6-552 Romfell Front 1 April 15, 2011

System Data

Meter Location:	6 552	Pipe Size (in.): 8	
Wieter Location.	0-352	1 ipe Size (iii.). <u>8</u>	

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	2,639	4.00	24		0.00
10		0.00	27		0.00
12		0.00	30		0.00
14		0.00	36		0.00
15		0.00	42		0.00
16		0.00	48		0.00
18		0.00	54		0.00
20		0.00	60		0.00
21		0.00	72		0.00
				Total =	4.00

### Dry Weather Flow

Average Daily Flow calculated from the following dates:	Avg. Daily Flowrate =	3,000 gpd
	Avg. Flow Depth =	0.280 inches
From: 05/20/11		
	Peak Hourly Flowrate =	9,000 gpd
To: <u>05/25/11</u>	Peak Factor =	3.00

Notes:

Completed By:

EC Mddd

Date: 2-5-2012

- computer calculated (formula)

Flow Meter Data Sheet - Dry Weather Flow \\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flo-Dar 2011\6-192\6-552 4-16-11

Rainfall and I/I Event Duration

Rainfall:	Start:	4/15/11 21:15	End: 4/16	/11 12:30	
Max. 24-h	our Total:	1.46 in.	Storm Total:		
I/I Event:	Start:	the second second second second	End:	4/18/11 0:0	0
	_	Dates and times that rain	fall and I/I begin and end.		
		Wet Weather Ex	vent - I/I Analysis		
Peak Flow	v Depth =	0.8 inches	I/I Event D	ouration =	51 hours
□Manhole Surch	arged (Level	exceeded pipe dia.)	I/I V	Volume =	19,125 gallons
Peak Hourly F	lowrate =	30,000 gpd	Inflow and Infil	tration Breakd	own (optional)
Avg. Dry Weath	er Flow =	3,000 gpd	Dry Weather Infi	ltration =	2,000 gpd
Peal	k Factor =	10.00 F	ainfall Induced Infi	ltration =	2,000 gpd
Avg. Wet Weath	er Flow =	10,000 gpd	Total Infi	ltration =	4,000 gpd
Avg. l	I/I Flow =	9,000 gpd	Infiltratio	on Rate =	1,000 gpd/idn
Inch-Diamete	er Miles =	4.00 idm		Inflow =	5,000 gpd
	I/I Rate =	2,250 gpd/idm	Inflo	w Rate =	1,250 gpd/idn
Jotes:					
Completed By	EyC?	delle		Date: _2	-5-2012
- co	mputer calc	ulated (formula)			
		Flow Meter Data She	et - Wet Weather Event		

N	
10	5
5	)
1	
6	)

Dry Weather Flow May. 2011

	5/26/2011 5/27/201	5/25/2011	5/23/2011 5/24/2011 5/25/2011	5/23/2011	5/22/2011	$\triangleleft$

C	-	1	ľ	
L		1	)	
L	(	1	)	
			į	
0	1		)	

Wet Weather Event 4/16/11

--- Flow (mgd)

4/16/2011 12:00 AM to 4/21/2011 12:00 AM

Rain 4/16/11 Site Id: 00000000 File name: 0000000.000

Graph span: 1 week

	-
	$\geq$
2	-
	-
	1
	m.
	3
- 1	r,

Tues. Apr. 19 2011										
Mon. Apr. 18 2011										
Sun. Apr. 17 2011										
Sat. Apr. 16 2011										
Fri. Apr. 15 2011										
Thurs. Apr. 14 2011										
Wed. Apr. 13 2011										
Tues. Apr. 12 2011	0.000	0 100	0.200	0 300	007.0	0 500	0 600	0 200	100 U	7, 000 0 000 0 000

MH 6-552 fortill Frent 2 May 21, 2011

System Data

1		
Meter Location:	6-552	Pipe Size (in.): 8

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	2,639	4.00	24		0.0
10		0.00	27		0.0
12		0.00	30		0.0
14		0.00	36		0.0
15		0.00	42		0.0
16		0.00	48		0.0
18		0.00	54	54	
20		0.00	60		0.0
21		0.00	72		0.0
				Total =	4.0

Dry Weather Flow

Average Daily Flow collowing dates:	alculated from the	Avg. Daily Flowrate =	3,000 gpd
	2200/11	Avg. Flow Depth =	0.280 inches
From:(	05/20/11	Peak Hourly Flowrate =	9,000 gpd
To:(	05/25/11	Peak Factor =	3.00

Completed By: ECMdld

Date: 2-5-2012

- computer calculated (formula)

Flow Meter Data Sheet - Dry Weather Flow \\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flo-Dar 2011\6-192\6-552 5-26-11

### Rainfall and I/I Event Duration

Rainfall:	Start:	5/26/11 18:45	End: <u>5/2</u>	27/11 12:15	
Max. 24-h	our Total:	<u>1.14</u> in.	Storm Total:	<u>1.14</u> in.	
I/I Event:	Start:	The state of the state of the state	End:	5/28/11 0:0	0
		Dates and times that rain	fall and I/I begin and end.		
		Wet Weather Ev	ent - I/I Analysis		
Peak Flow	w Depth =	0.8 inches	I/I Event	Duration =	30 hours
□Manhole Surch	arged (Leve	exceeded pipe dia.)	I/I	Volume =	7,500 gallons
Peak Hourly H	Flowrate =	17,000 gpd	Inflow and Inf	iltration Breakd	own (optional)
Avg. Dry Weath	er Flow =	3,000 gpd	Dry Weather In	filtration =	2,000 gpd
Pea	k Factor =	5.67 R	ainfall Induced In	filtration =	2,000 gpd
Avg. Wet Weath	er Flow =	7,000 gpd	Total In	filtration =	4,000 gpd
Avg.	I/I Flow =	6,000 gpd	Infiltra	tion Rate =	1,000 gpd/idn
Inch-Diamete	er Miles =	4.00 idm		Inflow =	2,000 gpd
	I/I Rate =	1,500 gpd/idm	Inf	low Rate =	500 gpd/idn
Notes:					
Completed By	Ec.	Mala		Date:	2-5-201-
- co	omputer calc	ulated (formula)			

C		J		
L	ſ	)		
L	ſ	)	ĺ.	
L	Ć	2	1	

# Dry Weather Flow May. 2011

	J.	A A A A A A A A A A A A A A A A A A A

6-552

Wet Weather Event 5/26/11

IN V/ VV V				A A	VV VV	AA
AA	N	MA	4	M	V V	
	-					
					Ą	
_						
				-		

Rain 5/26/11 Site Id: 00000000 File name: 00000000.000

Graph span: 1 week

Rain (in.)

Tues. May 31							
Mon. May 30							
Sun. May 29							
Sat. May 28							
Fri. May 27							
Thurs. May 26							
Wed. May 25							
Tues. May 24	0.100	0.200	0.300		000		

MH 6-552 Rowfll Fourt 3 July 25, 2011

System Data

Meter Location:	6-552	Pipe Size (in.): <u>8</u>

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	2,639	4.00	24		0.0
10		0.00	27		0.0
12		0.00	30		0.0
14		0.00	36		0.0
15		0.00	42		0.0
16		0.00	48		0.0
18		0.00	54		0.0
20		0.00	60		0.0
21		0.00	72		0.0
				Total =	4.0

Dry Weather Flow

verage Daily Flo ollowing dates:	w calculated from the	Avg. Daily Flowrate =	4,000 gpd
		Avg. Flow Depth =	0.320 inches
From:	06/27/11		
		Peak Hourly Flowrate =	23,000 gpd
To:	07/02/11	Peak Factor =	5.75

Г

Completed By:

ECHOLA

2-5-2012 Date:

- computer calculated (formula)

Flow Meter Data Sheet - Dry Weather Flow \\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flo-Dar 2011\6-552\6-552 7-25-11

Rainfall and I/I Event Duration

Rainfall:	Start:	7/25/11 14:15	End: <u>7/2</u>	5/11 20:45	
Max. 24-h	our Total:	1.12 in.	Storm Total:	<u>1.12</u> in.	
I/I Event:	Start:		End:	7/26/11 5:00	)
		Dates and times that rain	fall and I/I begin and end.		
		Wet Weather Ev	ent - I/I Analysis		
Peak Flow	v Depth =	0.4 inches	I/I Event	Duration =	15 hours
□Manhole Surch	arged (Level	exceeded pipe dia.)	I/I	Volume =	1,250 gallons
Peak Hourly F	lowrate =	8,000 gpd	Inflow and Inf	iltration Breakdo	own (optional)
Avg. Dry Weath	er Flow =	4,000 gpd	Dry Weather In	filtration =	2,000 gpd
Peal	k Factor =	2.00 R	ainfall Induced In	filtration =	0 gpd
Avg. Wet Weath	er Flow =	4,000 gpd	Total In	filtration =	2,000 gpd
Avg.	I/I Flow =	2,000 gpd	Infiltrat	ion Rate =	500 gpd/idm
Inch-Diamete	er Miles =	4.00 idm		Inflow =	0 gpd
	I/I Rate =	500 gpd/idm	Infl	ow Rate =	0 gpd/idm
lotes:					
Completed By	Eci	Mell		Date: _2	-5-2012
- co	omputer calc	ulated (formula)			

\\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flo-Dar 2011\6-192\6-552 7-25-11

7/4/2011	7/3/2011

Dry Weather Flow 6/27/11 to 7/1/11

--- Flow (mgd)

6-552

7/30/2011 7/31/201	7/29/2011	7/27/2011 7/28/2011 7/29/2011	-	7/26/2011	7/25/2011	7/24/2011
MA M	M	MMM	N WW	N.	A MAN	
WW.			R.	V		
					_	
	-					
				-		

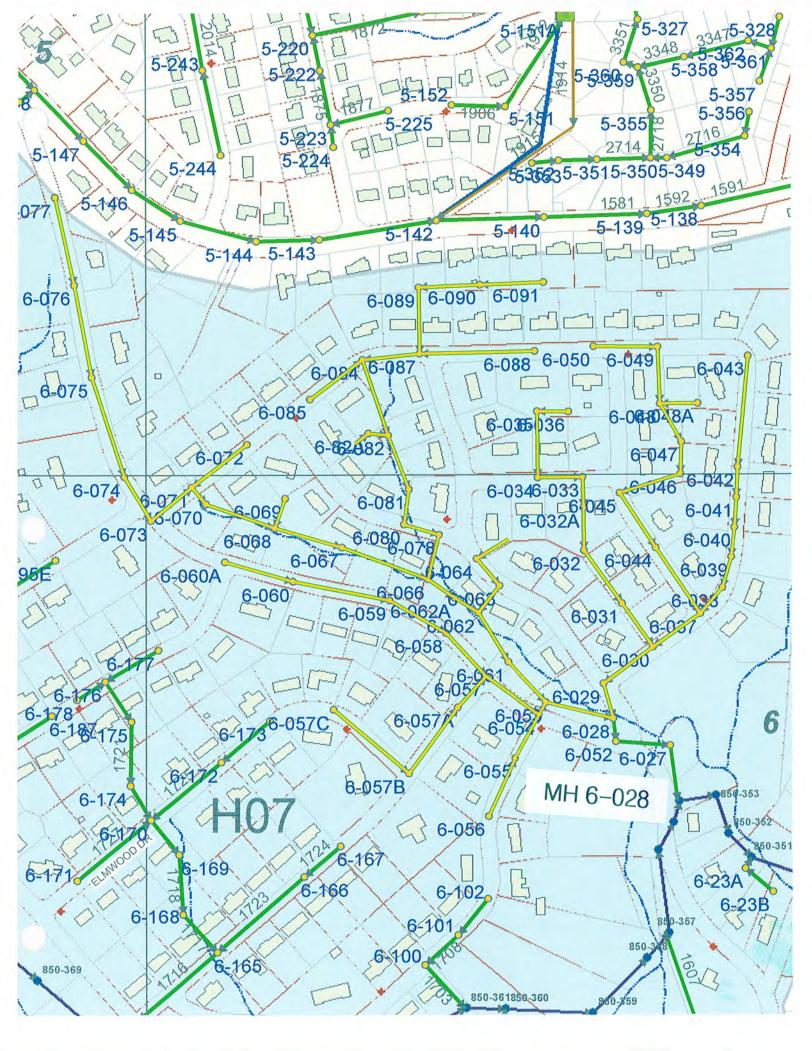
6-552

Wet Weather Event 7/25/11

Rain 7/25/11 Site Id: 00000000 File name: 00000000.000

July 29 2011 Fri. Thurs. July 28 2011 Wed. July 27 2011 Tues. July 26 2011 Graph span: 1 week Mon. July 25 2011 Sun. July 24 2011 Sat. July 23 2011 July 22 2011 Fri. Rain (in.) 0.000 0.900 0.800 0.600 0.400 0.300 0.200 0.100 1.000 0.700 0.500

# MH 6-028



MH 6-028 Painfill Event 1 Nov 30, 2010

System Data

Meter Location 6-028 Pipe Size (in.): 8

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	11,587	17.56	24		0.0
10		0.00	27		0.0
12		0.00	30		0.0
14		0.00	36		0.0
15		0.00	42		0.00
16		0.00	48		0.00
18		0.00	54		0.00
20		0.00	60		0.00
21		0.00	72		0.00
				Total =	17.50

#### Dry Weather Flow

Average Daily Flow calculated from the ollowing dates:	Avg. Daily Flowrate = $13000.000$ gpd
	Avg. Flow Depth = $1.500$ inches
From: <u>11/08/10</u> To: 11/13/10	Peak Hourly Flowrate = <u>28000.000</u> gpd
	Peak Factor = 2.15

Completed By:

Ec Mall

Date: 2-5-2012

- computer calculated (formula)

Flow Meter Data Sheet - Dry Weather Flow

\/MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flow Mointoring 2011\6-107 2011\Flow Meter Forms Taylor 6-028 Nov. 2010

### Rainfall and I/I Event Duration

I/I Event: Sta	art: $11/30/20$ Dat W	10 0:00 es and times that rainfall a 'et Weather Event 2.4 inches	
Peak Flow Dept	 <u>W</u> h =	es and times that rainfall a let Weather Event 2.4 inches	and I/I begin and end. nt - I/I Analysis
☐ Manhole Surcharge	<u>W</u>	Vet Weather Event	nt - I/I Analysis
☐ Manhole Surcharge	h =	2.4 inches	
☐ Manhole Surcharge		20. C. S. M.	I/I Event Duration = $51$ hours
	ed (Level exce		
Peak Hourly Flowrat		eded pipe dia.)	I/I Volume = 19,125 gallo
	e =	51,000 gpd	Inflow and Iniltration Breakdown (option
Avg. Dry Weather Flow	w =	13,000 gpd	Dry Weather Infiltration =5,000 gpd
Peak Facto	or =	3.92	Rainfall Induced Infiltration = $4,000$ gpd
Avg. Wet Weather Flow	N =	22,000 gpd	Total Infiltration = 9,000 gpd
Avg. I/I Flow	w =	9,000 gpd	Infiltration Rate = $513$ gpd/i
Inch-Diameter Mile	s =	17.56 idm	Inflow = 0 gpd
I/I Rat	e =	513 gpd/idm	Inflow Rate = 0 gpd/i

6-028 Rain 11/30/10 Site Id: 00000000 File name: 00000000.000

Rain (in.)

week
-
span:
Braph

										Fri. Dec. 03
										Thurs. Dec. 02
										Wed. Dec. 01
									مينا م المراكم المراكم المراكم المراكم المراكم المراكم المراكم ا	Tues. Nov. 30
										Mon. Nov. 29
										Sun. Nov. 28
										Sat. Nov. 27
006.0	0080	0 200	0 800	0 500	0 400	0.300	0.200	0.100	0.000	Fri. Nov. 26

6-028 Dry Weather Flow Nov. 2010	File name: 00006028.000	Graph span: 1 week
6-028 Dry Wea	Site Id: 00006028	Graph.

Nov. 14 2010 Sun. Mummun how Nov. 13 2010 Sat. Munnumuland Nov. 12 2010 Fri. MMMAMM. Thurs. Nov. 11 2010 Jun Mul MWW.M Nov. 10 2010 Wed. more way Am Tues. Nov. 09 2010 My WWWWWWW Mon. Nov. 08 2010 MM WWW WWWWW Flow 1 (mgd) Nov. 07 2010 Sun. 0:000 M 0.450 0.400 0.300 0.200 0.500 0.350 0.250 0.150 0.100 0.050

6-028 Wet Weather Event 11/30/10 Site Id: 00006028 File name: 00006028.000

Dec. 03 2010 Fri. 1 mm m Dec. 02 2010 Thurs. WWW Dec. 01 2010 Wed. Nov. 30 2010 Tues. Murray Nov. 29 2010 Mon. NMM Nov. 28 2010 Sun. San Nov. 27 2010 Sat. My When When My Nov. 26 2010 Fri. 0.000

0.100

0.050

6-028 Pointil Front 2 Feb 1, 2011

System Data

Meter Location 6-028 Pipe Size (in.): 8

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	11,587	17.56	24		0.00
10		0.00	27		0.00
12		0.00	30		0.00
14		0.00	36		0.00
15		0.00	42		0.00
16		0.00	48		0.00
18		0.00	54		0.00
20		0.00	60		0.00
21		0.00	72		0.00
				Total =	17.56

### Dry Weather Flow

Avg. Daily Flowrate = $17000.000$ gpd
Avg. Flow Depth = $1.600$ inches
Peak Hourly Flowrate = $40000.000$ gpd
Peak Factor = 2.35
Date: 2-5-2012
ula)

Flow Meter Data Sheet - Dry Weather Flow

\\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flow Mointoring 2011\6-028 2011\Flow Meter Forms Taylor 6-028 Feb. 2011

Rainfall and I/I Event Duration

Rainfall:	Start: 2/1/	/2011 7:15	End: 2/2/2011 12:30
Max. 24-ho	our Total: 1.23	in. 5	Storm Total: <u>1.23</u> in.
I/I Event:	Start:		
		Dates and times that rainfall	and the second
		Wet Weather Even	it - I/I Analysis
Peak Flov	v Depth =	2.3 inches	I/I Event Duration = $45$ hours
☐ Manhole Su	rcharged (Level	exceeded pipe dia.)	I/I Volume = 13,125 gallons
Peak Hourly F	lowrate =	52,000 gpd	Inflow and Iniltration Breakdown (optional)
Avg. Dry Weath	er Flow =	17,000 gpd	Dry Weather Infiltration = 5,000 gpd
Peal	k Factor =	3.06	Rainfall Induced Infiltration = 2,000 gpd
Avg. Wet Weath	er Flow =	24,000 gpd	Total Infiltration = 7,000 gpd
Avg.	I/I Flow =	7,000 gpd	Infiltration Rate = 399 gpd/ide
Inch-Diamete	er Miles =	17.56 idm	Inflow = 0 gpd
	I/I Rate =	399 gpd/idm	n Inflow Rate = 0 gpd/ide

6-028 Rain 2/1/11 Site Id: 00000000 File name: 0000000.000

2011

2011

2011

R

6-028 Wet Weather Event 2/1/11 Site Id: 00006028 File name: 00006028.000 Graph span: 1 week

Feb. 07 2011 Mon. Feb. 06 2011 Sun. Sat. Feb. 05 2011 5 Feb. 04 2011 Fri. Feb. 03 2011 Thurs. Feb. 02 2011 Wed. Tues. Feb. 01 2011 - Flow 1 (mgd) Jan. 31 Mon. 2011 0.000 0.300 0.250 0.200 0.150 0.100 0.050 0.500 0.450 0.350 0.400

6-028 Dry Weather Feb. 2011 Site Id: 00006028 File name: 00006028.000 Graph span: 1 week

- Flow 1 (mgd)

Wed. Feb. 16	Manum						
Tues. Feb. 15	3						
Tr Fee	MMW www. MMM						
Mon. Feb. 14	M. W. M. M. M. M. M.						
Sun. Feb. 13	2						
	Manna						
Sat. Feb. 12	M. Man Man Man						
Fri. Feb. 11	2						
	Month Mary						
Thurs. Feb. 10	Munumul						
Wed. Feb. 09	0.050 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.150	0.200	0.300	0.350	0.400	0 450

MH 6-028 Point 11 Essent 3 Feb 4, 2011

### **Taylors Fire & Sewer Flow Meter Data Sheet**

System Data

Meter Location 6-028

Pipe Size (in.): 8

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	11,587	17.56	24		0.00
10		0.00	27		0.0
12		0.00	30		0.0
14		0.00	36		0.0
15		0.00	42		0.0
16		0.00	48		0.0
18		0.00	54		0.0
20		0.00	60		0.0
21		0.00	72		0.0
				Total =	17.5

#### Dry Weather Flow

erage Daily Flow calculated from the lowing dates:	Avg. Daily Flowrate = $17000.000$ gpd
	Avg. Flow Depth = $1.600$ inches
From: 02/10/11	
	Peak Hourly Flowrate = 40000.000 gpd
To: 02/15/11	
	Peak Factor = 2.35

Notes:

Completed By: ECM.Cl

Date: 2-5-2012

- computer calculated (formula)

Flow Meter Data Sheet - Dry Weather Flow

\\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flow Mointoring 2011\6-028 2011\Flow Meter Forms Taylor 6-028 Feb. 2011 # 2

### Rainfall and I/I Event Duration

Rainfall:	Start:	2/4/2011 7:15		End: 2/5	/2011 7:15	
Max. 24-hour	Total:	i.53 i	n. Sto	rm Total:	1.53	in.
I/I Event:	Start:			End: <u>2/8</u>	/2011 0:00	
		Dates and times the	hat rainfall and	I I/I begin and end.		
		Wet Weath	er Event	· I/I Analysis		
Peak Flow D	epth =_	3.7 i	nches	I/I Ev	ent Duration =	95 hours
Manhole Surcha	arged (I	level exceeded pipe	e dia.)		I/I Volume =	118,750 gallons
Peak Hourly Flow	rate =	122,000 g	gpd	Inflow and I	niltration Break	down (optional)
Avg. Dry Weather F	Flow =	17,000 g	gpd	Dry Weathe	r Infiltration =	<u>6,000</u> gpd
Peak Fa	actor =	7.18	R	ainfall Induce	d Infiltration =	16,000 gpd
Avg. Wet Weather F	Flow =	47,000 g	gpd	Tota	Infiltration =	22,000 gpd
Avg. I/I F	Flow =	<b>30,000</b> g	gpd	Infi	ltration Rate =	1,253 gpd/idm
Inch-Diameter M	files =	17.56 i	dm		Inflow =	8,000 gpd
I/I	Rate =	l,708 g	gpd/idm		Inflow Rate =	456 gpd/idm
otes:						
	0	O d d i				10.00
ompleted By:	EC.	Mela			Date:	2-5-201
- comp	uter cal	culated (formula)				

6-028 Rain 2/4/11 Site Id: 00000000 File name: 00000000.000

Graph span: 1 week

Wed. Feb. 09		-						
Tues. Feb. 08	-							
Mon. Feb. 07								
- ŭ								
Sun. Feb. 06				 				
t. 05								
Sat. Feb. 05	-			10				
	· · ····							
Fri. Feb. 04								
Ľ.								
~					-			
Thurs. Feb. 03								
Wed. Feb. 02								
V Fet	0.100	0.200 -	0.300 -	o Enn	0 600	0 700	0 800	006.0

Rain (in.)

6-028 Dry Weather Feb. 2011 Site Id: 00006028 File name: 00006028.000 Graph span: 1 week

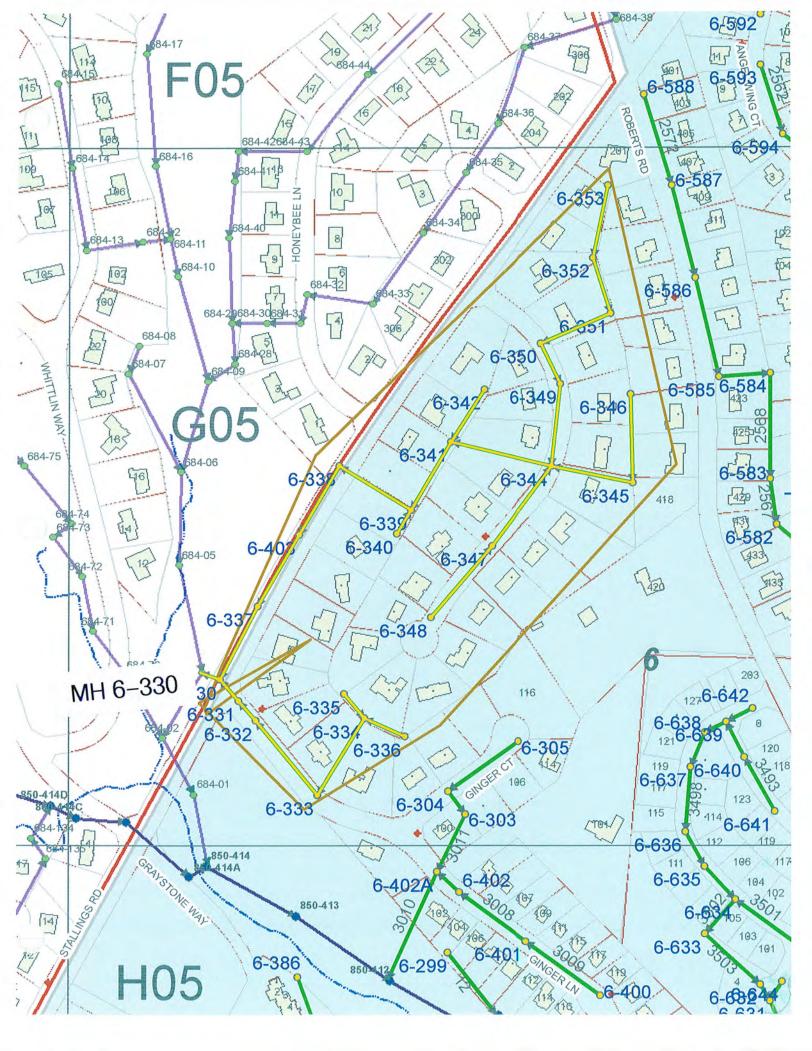
-A Flow 1 (mgd)

Wed. Feb. 16	MANNA						
Tues. Feb. 15	Www.W.						
Mon. Feb. 14	MM many Man MM						
Sun. Feb. 13	Mr. M. W.						
Sat. Feb. 12	Mummun						
Fri. Feb. 11	My man Mary						
Thurs. Feb. 10	M Munum						
Wed. Feb. 09	0.050 0.000 0.000 0.000 0.000	0.100	0.150	0055.0	0.250	0.400	0.450

6-028 Wet Weather Event 2/4/11 Site Id: 00006028 File name: 00006028.000

Thurs. Feb. 10 2011 Mr. M. M. M. willing Multimore May Feb. 09 2011 Wed. Feb. 08 2011 Tues. Feb. 07 2011 Mon. Graph span: 1 week 1 May Feb. 06 2011 Sun. A Feb. 05 2011 Sat. Feb. 04 2011 Fri. - Flow 1 (mgd) Feb. 03 Thurs. 2011 0.000 0.200 0.050 0.500 0.400 0.350 0.300 0.250 0.150 0.100 0.450

## MH 6-330



MH 6-330 Fain Allevent 1 Na 30, 2010

System Data

Meter Location 6-330

Pipe Size (in.): 8

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	4,342	6.58	24		0.00
10		0.00	27		0.00
12		0.00	30		0.00
14		0.00	36	36	
15		0.00	42		0.00
16		0.00	48		0.00
18	1	0.00	54		0.00
20		0.00	60		0.00
21		0.00	72		0.00
				Total =	6.58

### Dry Weather Flow

Average Daily Flow calculated from the following dates:	Avg. Daily Flowrate = $21000.000$ gpd
	Avg. Flow Depth = $0.900$ inches
From: <u>11/08/10</u> To: <u>11/13/10</u>	Peak Hourly Flowrate = <u>110000.000</u> gpd
10	Peak Factor = 5.24
Notes:	
Completed By: 2 C Mell	Date: 2-5-2012

- computer calculated (formula)

Flow Meter Data Sheet - Dry Weather Flow

\\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flow Mointoring 2011\6-028 2011\Flow Meter Forms Taylor 6-330 Nov. 2010

#### Rainfall and I/I Event Duration

Rainfall:	Start: 11/3	0/2010 1:00	End: <u>12/1/201</u>	0 1:00	
Max. 24-h	our Total: 2.36	in.	Storm Total:	2.36 in.	
I/I Event:	Start: 11/3	0/2010 0:00	End: <u>12/3/201</u>	0 1:00	
		Dates and times that rainf	all and I/I begin and end.	1000	
		Wet Weather Ev	ent - I/I Analysis		
Peak Flow	v Depth =	1.8 inches	I/I Event D	uration = $73$ hou	ırs
Manhole Su	rcharged (Leve	exceeded pipe dia.	) I/I V	/olume = 79,083 gal	lons
Peak Hourly F	lowrate =	148,000 gpd	Inflow and Iniltra	tion Breakdown (optio	nal)
Avg. Dry Weath	er Flow =	21,000 gpd	Dry Weather Infi	tration = 3,000 gpc	I
Pea	k Factor =	7.05	Rainfall Induced Infil	tration = 13,000 gpc	I
Avg. Wet Weath	er Flow =	47,000 gpd	Total Infi	tration = 16,000 gpc	ł
Avg.	I/I Flow =	26,000 gpd	Infiltratio	on Rate = 911 gpc	l/idm
Inch-Diamete	er Miles =	17.56 idm		Inflow = 10,000 gpc	ł
	I/I Rate =	1,481 gpd/id	m Inflo	w Rate = $569$ gpc	l/idm
-0.55					
otes:					
	0.0	11 111		1.1.1.2.1.	
ompleted By:	ECP	1.ll.4		Date: 2-5.	- 20
- 00	omputer calcula	ted (formula)			

6-330 Dry Weather Flow Nov. 2010 Site Id: 00006330 File name: 00006330.000 Graph span: 1 week

Nov. 14 2010 Sun. Nov. 13 2010 Sat. Nov. 12 2010 Fri. Nov. 11 2010 Thurs. Nov. 10 Wed. 2010 Nov. 09 2010 Tues. Nov. 08 2010 Mon. - Flow 1 (mgd) 2 0.000 VUM Nov. 07 2010 Sun. 0.040 0.200 0.120 0.080 0.400 0.360 0.320 0.280 0.240 0.160

6-330 Wet Weather Event 11/30/10 Site Id: 00006330 File name: 00006330.000 Graph span: 1 week

-A Flow 1 (mgd)

Sun. Dec. 05 2010	- ANNIA				-				
Sat. Dec. 04 2010	W W W								
	May MAN MAN								
Fri. Dec. 03 2010	WWW / / MWW								
Thurs. Dec. 02 2010	M Month								
10				_					
Wed. Dec. 01 2010	MMM								
Tues. Nov. 30 2010	WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW								
Mon. Nov. 29 2010									
<	MWWW W		_						
Sun. Nov. 28 2010	0.040	0.080	0.120	0.160	0.200	0.240	0.280	0.320	0.360

6-330 Rain 11/30/10 Site Id: 00000000 File name: 00000000.000

Graph span: 1 week

	-	
	2	
9	Ξ	
	-	
÷	E	
0	ř	

									Fri. Dec. 03 2010
								_	Thurs. Dec. 02 2010
								-	Wed. Dec. 01 2010
								talia jitti liddil atot a kon o	Tues. Nov. 30 2010
								_	Mon. Nov. 29 2010
									Sun. Nov. 28 2010
								_	Sat. Nov. 27 2010
0.900	0.800	0.700	0.600	0.500	0 300	0.200	0.100	0.000	Fri. Nov. 26 2010

MH 6-330 Find 11 Event 2 Feb 1, 2011

Date: 2-5-2012

## Taylors Fire & Sewer Flow Meter Data Sheet

System Data

Meter Location 6-330

Pipe Size (in.): 8

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	4,342	6.58	24		0.0
10		0.00	27		0.0
12		0.00	30		0.0
14		0.00	36		0.0
15		0.00	42		0.0
16		0.00	48		0.0
18		0.00	54		0.0
20		0.00	60		0.00
21		0.00	72		0.00
				Total =	6.5

#### Dry Weather Flow

Average Daily Flow calculated from the following dates:	Avg. Daily Flowrate = $17000.000$ gpd
	Avg. Flow Depth = $0.800$ inches
From: 02/10/11	[
	Peak Hourly Flowrate = $52000.000$ gpd
To: <u>02/15/10</u>	
	Peak Factor = 3.06

Notes:

Completed By:

- computer calculated (formula)

EC Mell

Flow Meter Data Sheet - Dry Weather Flow

\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flow Mointoring 2011\6-028 2011\Flow Meter Forms Taylor 6-330 Feb. 2011

#### Rainfall and I/I Event Duration

Manhole Surcharged (Level exceeded pipe dia.)I/I Volume = $29,79$ Peak Hourly Flowrate =					
Dates and times that rainfall and I/I begin and end.         Wet Weather Event - I/I Analysis         Peak Flow Depth =       1.5 inches       I/I Event Duration =       6         Manhole Surcharged (Level exceeded pipe dia.)       I/I Volume =       29,79         Peak Hourly Flowrate =       71,000 gpd       Inflow and Iniltration Breakdown of the second pipe dia.)         Avg. Dry Weather Flow =       17,000 gpd       Dry Weather Infiltration =       2,000         Peak Factor =       4.18       Rainfall Induced Infiltration =       7,000         Avg. Wet Weather Flow =       28,000 gpd       Total Infiltration =       9,000         Avg. I/I Flow =       11,000 gpd       Infiltration Rate =       51         Inch-Diameter Miles =       17.56 idm       Inflow =       2,000		torm Total: <u>1.23</u> in.	in. Si	hour Total: 1.2	Max. 24-ł
Wet Weather Event - I/I AnalysisPeak Flow Depth =	_	End: 2/4/2011 0:00	1/2011 6:15	Start: 2	I/I Event:
Peak Flow Depth =1.5 inchesI/I Event Duration =6I Manhole Surcharged (Level exceeded pipe dia.)I/I Volume =29,79Peak Hourly Flowrate =71,000 gpdInflow and Iniltration Breakdown ofAvg. Dry Weather Flow =17,000 gpdDry Weather Infiltration =Peak Factor =4.18Rainfall Induced Infiltration =Avg. Wet Weather Flow =28,000 gpdTotal Infiltration =Avg. I/I Flow =11,000 gpdInfiltration Rate =Inch-Diameter Miles =17.56 idmInflow =2,0001010		and I/I begin and end.	Dates and times that rainfall a		
Manhole Surcharged (Level exceeded pipe dia.)I/I Volume = 29,79Peak Hourly Flowrate =71,000 gpdInflow and Iniltration BreakdownAvg. Dry Weather Flow =17,000 gpdDry Weather Infiltration = 2,00Peak Factor =4.18Rainfall Induced Infiltration = 7,00Avg. Wet Weather Flow =28,000 gpdTotal Infiltration = 9,00Avg. I/I Flow =11,000 gpdInfiltration Rate = 51Inch-Diameter Miles =17.56 idmInflow = 2,00		t - I/I Analysis	Wet Weather Even		
Peak Hourly Flowrate = $71,000 \text{ gpd}$ Inflow and Iniltration Breakdown ofAvg. Dry Weather Flow = $17,000 \text{ gpd}$ Dry Weather Infiltration = $2,000 \text{ gpd}$ Peak Factor = $4.18$ Rainfall Induced Infiltration = $7,000 \text{ gpd}$ Avg. Wet Weather Flow = $28,000 \text{ gpd}$ Total Infiltration = $9,000 \text{ gpd}$ Avg. I/I Flow = $11,000 \text{ gpd}$ Infiltration Rate = $51000 \text{ gpd}$ Inch-Diameter Miles = $17.56 \text{ idm}$ Inflow = $20000 \text{ gpd}$	65 hours	I/I Event Duration =6	1.5 inches	ow Depth =	Peak Flo
Avg. Dry Weather Flow = $17,000 \text{ gpd}$ Dry Weather Infiltration = $2,000 \text{ gpd}$ Peak Factor = $4.18$ Rainfall Induced Infiltration = $7,000 \text{ gpd}$ Avg. Wet Weather Flow = $28,000 \text{ gpd}$ Total Infiltration = $9,000 \text{ gpd}$ Avg. I/I Flow = $11,000 \text{ gpd}$ Infiltration Rate = $51000 \text{ gpd}$ Inch-Diameter Miles = $17.56 \text{ idm}$ Inflow = $2,000 \text{ gpd}$	0,792 gallons	I/I Volume = 29,79	el exceeded pipe dia.)	Surcharged (Lev	Manhole Su
Peak Factor =4.18Rainfall Induced Infiltration =7,00Avg. Wet Weather Flow = $28,000 \text{ gpd}$ Total Infiltration =9,00Avg. I/I Flow =11,000 gpdInfiltration Rate =51Inch-Diameter Miles =17.56 idmInflow =2,00	wn (optional)	Inflow and Iniltration Breakdown (	71,000 gpd	Flowrate =	Peak Hourly I
Avg. Wet Weather Flow = $28,000 \text{ gpd}$ Total Infiltration = $9,00$ Avg. I/I Flow = $11,000 \text{ gpd}$ Infiltration Rate = $51$ Inch-Diameter Miles = $17.56 \text{ idm}$ Inflow = $2,00$	2,000 gpd	Dry Weather Infiltration = $2,00$	17,000 gpd	ther Flow =	Avg. Dry Weath
Avg. I/I Flow =11,000 gpdInfiltration Rate =51Inch-Diameter Miles =17.56 idmInflow =2,00	7,000 gpd	Rainfall Induced Infiltration = 7,00	4.18	ak Factor =	Pea
Inch-Diameter Miles = $17.56$ idm Inflow = $2,00$	),000 gpd	Total Infiltration = 9,00	28,000 gpd	ther Flow =	Avg. Wet Weath
	513 gpd/idm	Infiltration Rate = 51	11,000 gpd	I/I Flow =	Avg.
I/I Rate = 626 gpd/idm Inflow Rate = 11	2,000 gpd	Inflow =2,00	17.56 idm	eter Miles =	Inch-Diamet
	114 gpd/idm	Inflow Rate = 11	626 gpd/idm	I/I Rate =	
otes:					otes:
Completed By: ECNdl Date: 2	2-5-2	Date: 2	CA	ECT	ompleted By:
- computer calculated (formula)			1000000		

6-330 Dry Weather Flow Feb. 2011 Site Id: 00006330 File name: 00006330.000 Graph span: 1 week

-A Flow 1 (mgd)

			-	r r		_	2	Wed. Feb. 16 2011
							1 THOMAN AND	7 E
							MM	Tues. Feb. 15 2011
							M WWWWW	
							W A WW	Mon. Feb. 14
							Mr WWW WWW	Sun. Feb. 13 2011
-						-	AN WILLING MW	Sat. Feb. 12 2011
						4	Why With Why Why	Fri. Feb. 11 2011
							MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM	Thurs. Feb. 10 2011
0.360	0.320	0.280	0.240	0.160	0.120	0.080	0.040 0.040 0.0000	Wed. Feb. 09 2011

Site Id: 00006330 File name: 00006330.000 6-330 Wet Weather Event 2/1/11

Graph span: 1 week

Feb. 05 2011 Sat. Feb. 04 2011 Fri. Thurs. Feb. 03 2011 Feb. 02 2011 Wed. Tues. Feb. 01 2011 Jan. 31 2011 Mon. Jan. 30 2011 Sun. - Flow 1 (mgd) Jan. 29 2011 Sat. 0.000 1 0.400 0.160 0.120 0.040 0.360 0.320 0.280 0.240 0.200 0.080

6-330 Rain 2/1/11 Site Id: 00000000 File name: 00000000.000

20 B S 111 Graph span: 1 week 0.000 0.600 0.500 0.400 0.300 0.200 0.100 0.900 0.800 0.700 Rain (in.) 1.000

Fri. Feb. 04 2011

Thurs. Feb. 03 2011

Wed. Feb. 02 2011

Tues. Feb. 01 2011

Mon. Jan. 31 2011

Sun. Jan. 30 2011

Sat. Jan. 29 2011

Fri. Jan. 28 2011

MH 6-330 Rainfill Events Feb 4, 2011

Date: 2-5.2012

## **Taylors Fire & Sewer Flow Meter Data Sheet**

System Data

Meter Location 6-330

Pipe Size (in.): 8

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	4,342	6.58	24		0.0
10		0.00	27		0.0
12		0.00	30		0.0
14		0.00	36		0.0
15		0.00	42		0.0
16		0.00	48		0.0
18		0.00	54		0.0
20		0.00	60		0.0
21		0.00	72		0.0
				Total =	6.5

#### Dry Weather Flow

ollowing dates:	
	Avg. Flow Depth = $0.800$ inches
From: 02/10/11 To: 02/15/10	Peak Hourly Flowrate = $52000.000$ gpd Peak Factor = $3.06$

Completed By:

- computer calculated (formula)

Ec Mall

Flow Meter Data Sheet - Dry Weather Flow

\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flow Mointoring 2011\6-028 2011\Flow Meter Forms Taylor 6-330 Feb. 2011 # 2

#### Rainfall and I/I Event Duration

Start:	20000	
	Dates and times that rainfall	I and I/I begin and end.
pth =		
pth =	Wet Weather Ever	nt - I/I Analysis
pth =		
1.12	1.9 inches	I/I Event Duration = <u>89</u> hours
rged (Le	evel exceeded pipe dia.)	I/I Volume = <u>163,167</u> gallon
ate =	151,000 gpd	Inflow and Iniltration Breakdown (optiona
ow =	17,000 gpd	Dry Weather Infiltration = 2,000 gpd
tor =	8.88	Rainfall Induced Infiltration = 21,000 gpd
ow =	61,000 gpd	Total Infiltration = 23,000 gpd
ow =	44,000 gpd	Infiltration Rate = 1,310 gpd/ic
iles =	17.56 idm	Inflow = 21,000 gpd
ate =	2,506 gpd/idn	n Inflow Rate = $1,196$ gpd/ic
	114-118-	
ECI	Mall	Date: 2 - 5 -
	low = low = low = low = liles = late =	rate = 151,000  gpd $low = 17,000  gpd$ $rate = 8.88$ $low = 61,000  gpd$ $rate = 17.56  idm$ $rate = 2,506  gpd/idm$ $rate = 2,506  gpd/idm$

6-330 Dry Weather Flow Feb. 2011 Site Id: 00006330 File name: 00006330.000

Feb. 16 2011 Wed. ž MA Feb. 15 Tues. 2011 Feb. 14 2011 Mon. Feb. 13 2011 Sun. Graph span: 1 week Feb. 12 2011 Sat. Feb. 11 2011 Fri. Thurs. Feb. 10 2011 - Flow 1 (mgd) Feb. 09 Wed. 2011 0.000 0.120 0.040 0.400 0.360 0.320 0.280 0.240 0.200 0.160 0.080

6-330 Wet Weather Event 2/4/11 Site Id: 00006330 File name: 00006330.000 Graph span: 1 week

-A-Flow 1 (mgd)

Thurs. Feb. 10	=	~						-	-	
Т F	W/NWW/W									
Wed. Feb. 09			-							
W Fet	WWW NWW	-								
Tues. Feb. 08	MULAN	-		-						
Tu	MMAANN									
Mon. Feb. 07	MANNA		-							
H										
Sun. Feb. 06	24			-						
о, Б										
Sat. Feb. 05		2		NN						
Ϋ́,	M									
Fri. Feb. 04	MIN		-							
Fet	WWWWWW									
rs. 03	MN MM									
Thurs. Feb. 03	0.000	0.040	0.080	0.120	031.0	0.200	0 240	0 280	005.0	036.0

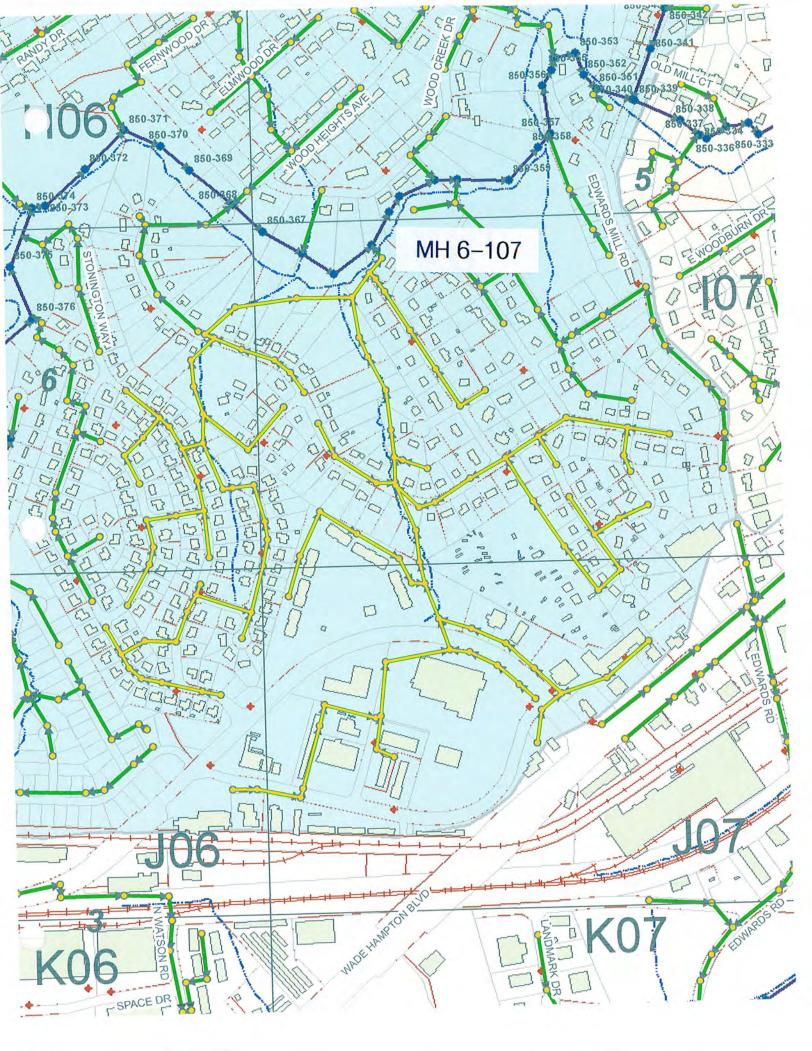
6-330 Rain 2/4/11 Site Id: 00000000 File name: 00000000.000

Graph span: 1 week

Rain (in.)

	T	Wed. Feb. 09
		Tues. Feb. 08
		ΓĽ
	_	Mon. Feb. 07
		Sun. Feb. 06
		Ľ
		Sat. Feb. 05
		Fri. Feb. 04
		Feb F
	_	Thurs. Feb. 03
0.900 0.800 0.700 0.600 0.400 0.300 0.200 0.100	0.000	Wed. Feb. 02

# MH 6-107



MH 6-107 fain fill treat 1 Nor 30, 2010

System Data

Meter Location 6-107

Pipe Size (in.): 8

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	21,770	32.98	24	-	0.0
10		0.00	27		0.0
12		0.00	30		0.0
14		0.00	36		0.0
15		0.00	42		0.0
16		0.00	48		0.0
18		0.00	54		0.0
20		0.00	60		0.00
21		0.00	72		0.00
				Total =	32.9

#### Dry Weather Flow

Average Daily Flov following dates:	w calculated from the	Avg. Daily Flowrate = $\underline{111000.000}$ gpd
From:	11/08/10	Avg. Flow Depth = $2.400$ inches
F10III.	11/00/10	Peak Hourly Flowrate = <u>194000.000</u> gpd
To:	11/13/10	Peak Factor = 1.75
Notes:		

Flow Meter Data Sheet - Dry Weather Flow

\MCCALLSBS\RedirectedFolders\Brent\My Documents\Flow Monitoring\Flow Monitoring Forms\Flow Meter Forms Taylor 6-107 Nov. 2010

Rainfall and I/I Event Duration

Max 24-b	our Total: 2 36	in	Storm Total: 2.36 i	n
1710A. 27-11	our roun <u>2.50</u>		2.50	
I/I Event:	Start: 11/30		End: <u>12/3/2010 5:00</u>	
		Dates and times that rainfall	and 1/1 begin and end.	
		Wet Weather Ever	nt - I/I Analysis	
Peak Flov	v Depth =	4.9 inches	I/I Event Duration =	77 hours
□ Manhole Su	rcharged (Level e	exceeded pipe dia.)	I/I Volume =	37,958 gallons
Peak Hourly F	lowrate =	550,000 gpd	Inflow and Iniltration Break	down (optional)
Avg. Dry Weath	er Flow =	111,000 gpd	Dry Weather Infiltration =	43,000 gpd
Peal	k Factor =	4.95	Rainfall Induced Infiltration =	0 gpd
Avg. Wet Weath	er Flow =	154,000 gpd	Total Infiltration =	43,000 gpd
Avg. I	/I Flow =	43,000 gpd	Infiltration Rate =	1,304 gpd/idm
Inch-Diamete	er Miles =	32.98 idm	Inflow =	0 gpd
	I/I Rate =	1,304 gpd/idm	Inflow Rate =	0 gpd/idm

6-107 Wet Weather Event 11/30/10 Site Id: 00006107 File name: 00006107.000 Graph span: 1 week

Dec. 05 2010 Sun. Dec. 04 2010 Sat. Dec. 03 2010 Fri. Dec. 02 2010 Thurs. Dec. 01 2010 Wed. Nov. 30 2010 Tues. MM Nov. 29 2010 Mon. - Flow 1 (mgd) 2 Nov. 28 Sun. 2010 0.000 0.480 0.300 0.240 0.180 0.120 0.060 0.600 0.540 0.420 0.360

6-107 Dry Weather Flow Nov. 2010 Site Id: 00006107 File name: 00006107.000

Sun. Nov. 14 2010 Nov. 13 2010 Sat. 2 Nov. 12 2010 Fri. Nov. 11 2010 Thurs. Graph span: 1 week Nov. 10 2010 Wed. MM Nov. 09 2010 Tues. Nov. 08 Mon. 2010 A Flow 1 (mgd) Nov. 07 Sun. 2010 0.600 0.240 0.120 0.060 0.000 0.540 0.480 0.420 0.360 0.300 0.180

6-107 Rain 11/30/10 Site Id: 00000000 File name: 00000000.000 Graph span: 1 week

Rain (in.)

Sat. Dec. 04 2010				-						
Fri. Dec. 03 2010										
Thurs. Dec. 02 2010										
Wed. Dec. 01 2010										
Tues. Nov. 30 2010	المالية الله									
Mon. Nov. 29 2010										
Sun. Nov. 28 2010										
Sat. Nov. 27 2010	0.000	0.100	0.200	0300	0400	0 500	0,600	0.700	0800	006 0

MH 6- 107 Printall Event 2 Feb 1, 2012

Date: 2-5-2012

## Taylors Fire & Sewer Flow Meter Data Sheet

System Data

Meter Location <u>6-107</u> Pipe Size (in.): <u>8</u>

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	21,770	32.98	24		0.0
10		0.00	27		0.0
12	Second Second	0.00	30		0.00
14		0.00	36		0.00
15		0.00	42		0.00
16		0.00	48		0.00
18		0.00	54		0.00
20		0.00	60		0.00
21		0.00	72		0.00
				Total =	32.98

Dry Weather Flow

From: 02/14/11	Avg. Flow Depth = $2.100$ inches
From: <u>02/14/11</u>	
	Peak Hourly Flowrate = <u>164000.000</u> gpd
To: <u>02/19/11</u>	Peak Factor = 1.82
	Peak Factor = 1.82

Completed By: El Malle

- computer calculated (formula)

Flow Meter Data Sheet - Dry Weather Flow

\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flow Mointoring 2011\6-107 2011\Flow Meter Forms Taylor 6-107 Feb.2011

#### Rainfall and I/I Event Duration

Rainfall: Start: 2/	1/2011 7:15	End: <u>2/2/201</u>	1 12:50	-
Max. 24-hour Total: 1.23	in	Storm Total:	1.23 in.	
I/I Event: Start: 2/	1/2011 6:15	End: 2/4/201	1 3:00	<u> </u>
	Dates and times that rainfall	and I/I begin and end.		
	Wet Weather Even	nt - I/I Analysis		
Peak Flow Depth =	4.0 inches	I/I Event I	Duration =	68 hours
Manhole Surcharged (Leve	el exceeded pipe dia.)	I/I	Volume = 82,	167 gallons
Peak Hourly Flowrate =	342,000 gpd	Inflow and Iniltra	ation Breakdow	n (optional)
Avg. Dry Weather Flow =	90,000 gpd	Dry Weather Inf	$\overline{1}$	000 gpd
Peak Factor =	3.80	Rainfall Induced Inf	iltration =	0 gpd
Avg. Wet Weather Flow =	119,000 gpd	Total Inf	iltration = 29	000 gpd
Avg. I/I Flow =	29,000 gpd	Infiltrati	on Rate =	879 gpd/idm
Inch-Diameter Miles =	32.98 idm		Inflow =	0 gpd
I/I Rate =	879 gpd/idn	n Infle	ow Rate =	0 gpd/idm
otes:				
ompleted By: &	Mell		Date: 2	-5-2
inprotod by:	(00-)			

6-107 Dry Weather Flow Feb. 2011 Site Id: 00006107 File name: 00006107.000 Graph span: 1 week

A Flow 1 (mgd)

Sun. Feb. 20 2011 Feb. 19 2011 Sat. Feb. 18 2011 Fri. Thurs. Feb. 17 2011 Wed. Feb. 16 2011 Tues. Feb. 15 2011 Mon. Feb. 14 2011 M MM Feb. 13 2011 Sun. 0.060 0.000 0.240 0.600 0.540 0.480 0.420 0.360 0.300 0.180 0.120

6-107 Wet Weather Event 2/1/11 Site Id: 00006107 File name: 00006107.000 Graph span: 1 week

- Flow 1 (mgd)

Feb. 05 2011 Sat. 1m Feb. 04 2011 Fri. Thurs. Feb. 03 2011 Feb. 02 2011 Wed. Tues. Feb. 01 2011 MMM Jan. 31 2011 Mon. 2 Sun. Jan. 30 2011 Jan. 29 2011 Sat. 0.000 0.060 0.600 0.540 0.420 0.360 0.300 0.240 0.180 0.120 0.480

6-107 Rain 2/1/11 Site Id: 00000000 File name: 00000000.000

Graph span: 1 week

ł	-	

Fri. Feb. 04	un tra			-						
Thurs. Feb. 03										
Wed. Feb. 02										
Tues. Feb. 01	=									
Mon. Jan. 31										
Sun. Jan. 30										
Sat. Jan. 29										
Fri. Jan. 28	0.000	0.100	0.200	0.300	0400	0 500	0.600	0.700	0.800	006.0

Rain (in.)

MH 6-107 Paint 11 Event 3 F25 28, 2011

Date: 2-5-2012

## **Taylors Fire & Sewer Flow Meter Data Sheet**

System Data

Meter Location 6-107	Pipe Size (in.): 8

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	21,770	32.98	24		0.0
10		0.00	27		0.0
12		0.00	30		0.0
14		0.00	36		0.00
15		0.00	42		0.00
16	·	0.00	48		0.00
18		0,00	54		0.0
20	10	0.00	60		0.0
21		0.00	72		0.0
				Total =	32.9

#### Dry Weather Flow

verage Daily Flow calculated from the	Avg. Daily Flowrate = $90000.000$ gpd
blowing dates:	Avg. Flow Depth = $2.100$ inches
From: 02/14/11	Peak Hourly Flowrate = $164000.000$ gpd
To: 02/19/11	Peak Factor = $1.82$
lotes:	

Completed By: EC McCu

- computer calculated (formula)

Flow Meter Data Sheet - Dry Weather Flow

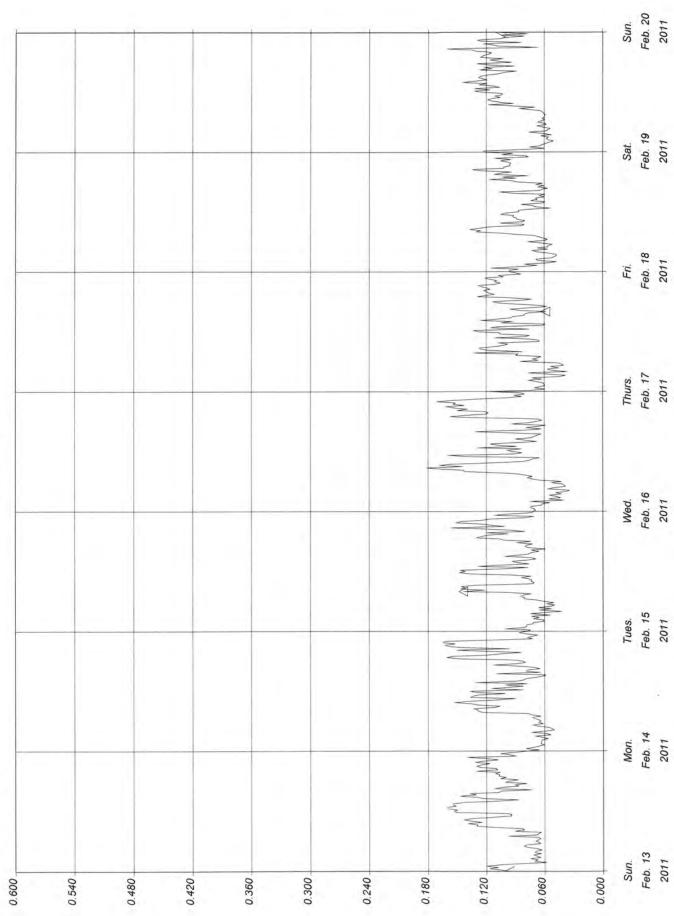
\\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flow Mointoring 2011\6-107 2011\Flow Meter Forms Taylor 6-107 Mar. 2011

Rainfall and I/I Event Duration

Max. 24-hour Total: 1.02	in. S	torm Total:	1.02 in.
	8/2011 16:30	End: <u>3/2/2011 3:0</u>	
	Dates and times that rainfall a	and I/I begin and end.	
	Wet Weather Even	t - I/I Analysis	
Peak Flow Depth =	3.6 inches	I/I Event Durat	ion = 34 hours
Manhole Surcharged (Leve	l exceeded pipe dia.)	I/I Volu	me = <u>56,667</u> gallons
Peak Hourly Flowrate =	287,000 gpd	Inflow and Iniltration	Breakdown (optional)
Avg. Dry Weather Flow =	90,000 gpd	Dry Weather Infiltrat	ion = 40,000 gpd
Peak Factor =	3.19	Rainfall Induced Infiltrat	ion = 0 gpd
Avg. Wet Weather Flow =	130,000 gpd	Total Infiltrat	on = 40,000 gpd
Avg. I/I Flow =	40,000 gpd	Infiltration R	ate = 1,213 gpd/idm
Inch-Diameter Miles =	32.98 idm	Infl	ow = 0 gpd
I/I Rate =	1,213 gpd/idm	Inflow R	ate = 0 gpd/idm
otes:			
ompleted By: ECP	111		Date: 2-5-20
	av l		2 2 2 20

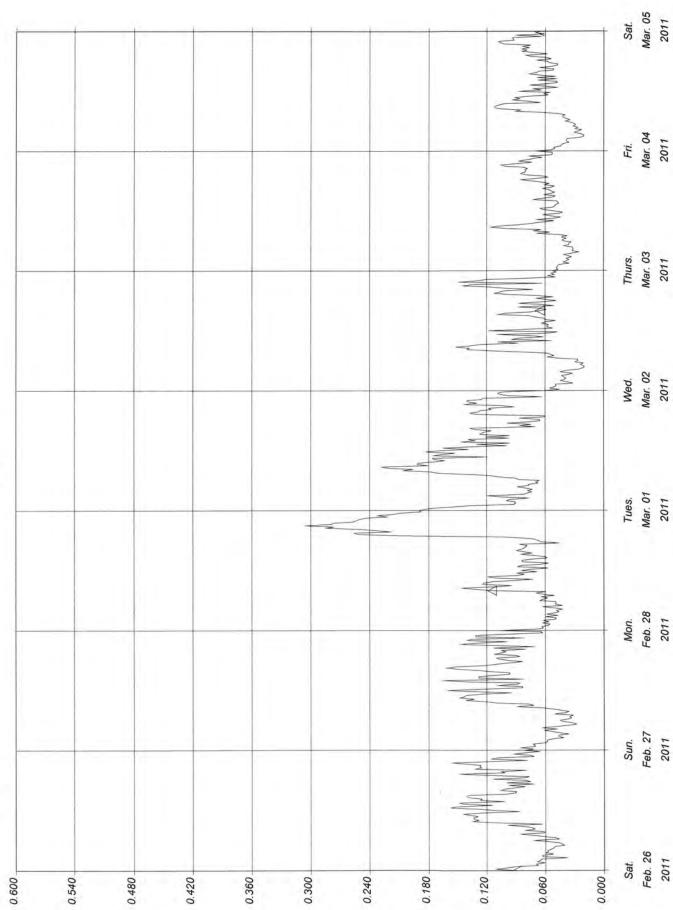
6-107 Dry Weather Flow Feb. 2011 Site Id: 00006107 File name: 00006107.000 Graph span: 1 week

-A-Flow 1 (mgd)



6-107 Wet Weather Event 2/28/11 Site Id: 00006107 File name: 00006107.000 Graph span: 1 week

- Flow 1 (mgd)



6-107 Rain 2/28/11 Site Id: 00000000 File name: 00000000.000

Graph span: 1 week

Rain (in.)

							Thurs. Mar. 03 2011
							Wed. Mar. 02 2011
							Tues. Mar. 01 2011
							Mon. Feb. 28 2011
							Sun. Feb. 27 2011
							Sat. Feb. 26 2011
						ha	Fri. Feb. 25 2011
0.900	0.800	0.700	0.500	0.400	0.200	0.000	Thurs. Feb. 24 2011

## MH 2-008



MH 2-008 PrintellExect ( Nor 30, 2010

System Data

Meter Location:	2-008	Pipe Size (in.): 8

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles
8	34,037	51.57	24		0.00
10		0.00	27		0.00
12		0.00	30		0.00
14		0.00	36		0.00
15		0.00	42		0.00
16	· · · · · · · · · · · · · · · · · · ·	0.00	48		0.00
18		0.00	54		0.00
20		0.00	60		0.00
21		0.00	72		0.00
				Total =	51.57

#### Dry Weather Flow

Average Daily Flow calculated from the following dates:	Avg. Daily Flowrate =	118,000 gpd
	Avg. Flow Depth =	2.000 inches
From: 12/06/10		
	Peak Hourly Flowrate =	179,000 gpd
To: <u>12/11/10</u>		
	Peak Factor =	1.52

Notes:

Completed By:

26 Mall

Date: 2-5-2012

- computer calculated (formula)

Flow Meter Data Sheet - Dry Weather Flow \\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flo-Dar 2011\6-274D\2-008 11-30-10

#### Rainfall and I/I Event Duration

Start:	11/30/10 1:00	End: 1	2/1/10 1:00	
our Total:	2.36 in.	Storm Total:	2.36 in.	
Start:	11/30/10 0:00	End:	12/5/10 0:0	00
	Dates and times that rai	infall and I/I begin and end	·	
	Wet Weather E	vent - I/I Analysis	I	
Depth =	4.9 inches	I/I Even	t Duration =	120 hours
rged (Level	exceeded pipe dia.	) I	/I Volume =	615,000 gallons
owrate =	626,000 gpd	Inflow and In	nfiltration Breakd	<u>lown (optional)</u>
r Flow =	118,000 gpd	Dry Weather I	nfiltration =	65,000 gpd
Factor =	5.31	Rainfall Induced I	nfiltration =	17,000 gpd
er Flow =	176,000 gpd	Total I	nfiltration =	82,000 gpd
I Flow =	123,000 gpd	Infiltr	ation Rate =	1,590 gpd/idn
r Miles =	51.57 idm		Inflow =	41,000 gpd
/I Rate =	2,385 gpd/idn	n In	flow Rate =	795 gpd/idm
				-
20	Mall		Date:	2-5-201
mputer calc	ulated (formula)			
	our Total:	Start: $11/30/10 0:00$ Dates and times that rai Wet Weather E Depth = 4.9 inches rged (Level exceeded pipe dia. owrate = 626,000 gpd r Flow = 118,000 gpd Factor = 5.31 r Flow = 176,000 gpd r Flow = 123,000 gpd r Miles = 51.57 idm	ur Total:       2.36 in.       Storm Total:         Start:       11/30/10 0:00       End:         Dates and times that rainfall and 1/1 begin and end         Wet Weather Event - I/I Analysis         Depth =       4.9 inches         II Even         rged (Level exceeded pipe dia.)       I         owrate =       626,000 gpd       Inflow and Ir         r Flow =       118,000 gpd       Dry Weather I         Factor =       5.31       Rainfall Induced I         rr Flow =       176,000 gpd       Total I         I'I Flow =       123,000 gpd       Infiltr         r Miles =       51.57 idm       Ir         /I Rate =       2,385 gpd/idm       Ir	ur Total:       2.36 in.       Storm Total:       2.36 in.         Start:       11/30/10 0:00       End:       12/5/10 0:0         Dates and times that rainfall and 1/1 begin and end.       Wet Weather Event - I/I Analysis         Depth =       4.9 inches       I/I Event Duration =

Flow Meter Data Sheet - Wet Weather Event
\\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flo-Dar 2011\6-274D\2-008 11-30-10

# Dry Weather Flow Dec. 2010

12/12/2010									
12/11/2010									
:/10/2010 0 1:11 PM									
12/8/2010 12/9/2010 12/10/2010 12/12/2010 1:11 PM		A A							
10 1:11 PM									
12/8/20 12/5/2									
12/7/2010	$\sum$								
12/6/2010									

C	0	
C	D	
C	D	
1	ī	
ſ	N	

wet Weather Event 11/30/10

--- Flow (mgd)

÷

12/6/2010	$\geq$							
-		2						
12/5/2010		1						
2/4/2010	$\geq$				 			
12/2/2010 12/3/2010 12/4/2010		Z						
12/3/20	>	5						
/2/2010	>							
-		P	5					
12/1/2010		->						
11/30/2010		K						

000.000 Central 11/30/10 Site Id: (

Rain (in.)

0000	2000	
········	name.	
CIL	LIG	
0000000	0000000	

Graph span: 1 week

Dec. 03 2010 Fri. Thurs. Dec. 02 2010 Dec. 01 2010 Wed. the field and a loss Tues. Nov. 30 2010 Mon. Nov. 29 2010 Sun. Nov. 28 2010 Nov. 27 2010 Sat. Nov. 26 2010 Fri. 0.000 0.900 0.800 0.700 -0.600 -0.500 0.400 0.300 0.200 0.100 1.000

MH 2-008 Ro. All Ecent 2 Feb 1, 2011

System Data

Meter Location:	2-008	Pipe Size (in.): 8

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size Length (in.) (ft.)	Inch-Miles
8	34,037	51.57	24	0.0
10		0.00	27	0.0
12		0.00	30	0.0
14		0.00	36	0.0
15		0.00	42	0.0
16		0.00	48	0.0
18		0.00	54	0.0
20	1	0.00	60	0.0
21		0.00	72	0.0
			Total =	51.5

Dry Weather Flow

ollowing dates:	w calculated from the	Avg. Daily Flowrate =	138,000 gpd
		Avg. Flow Depth =	2.200 inches
From:	02/10/11	Peak Hourly Flowrate =	222,000 gpd
To:	02/15/11	Peak Factor =	1.61

Completed By: <u>ECMddd</u>

Date: 2 - 5-2012

- computer calculated (formula)

Flow Meter Data Sheet - Dry Weather Flow \\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flo-Dar 2011\6-274D\2-008 2-4-11

#### Rainfall and I/I Event Duration

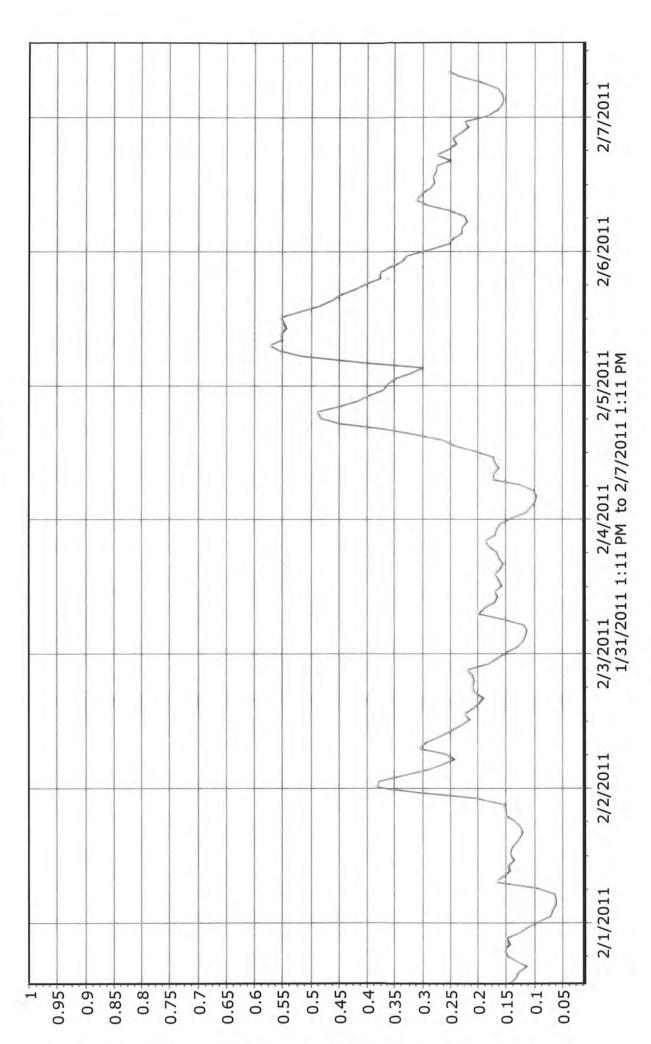
Rainfall:	Start:	2/1/11 7:15	End: 2/2	/11 0:30	<u> </u>
Max. 24-h	our Total:	1.23 in.	Storm Total:	1.23 in.	
I/I Event:	Start:	2/1/11 6:15	End:	2/4/11 0:00	
		Dates and times that rain	nfall and I/I begin and end.		
		Wet Weather Ev	vent - I/I Analysis		
Peak Flow	w Depth =	3.9 inches	I/I Event	Duration =	66 hours
□Manhole Surch	arged (Level	exceeded pipe dia.)	) I/I	Volume = 2	88,750 gallons
Peak Hourly F	Flowrate =	385,000 gpd	Inflow and Inf	iltration Breakdov	wn (optional)
Avg. Dry Weath	er Flow =	138,000 gpd	Dry Weather In	filtration =	76,000 gpd
Pea	k Factor =	2.79 H	Rainfall Induced In	filtration =	29,000 gpd
Avg. Wet Weath	her Flow =	167,000 gpd	Total In	filtration = 1	05,000 gpd
Avg.	I/I Flow =	105,000 gpd	Infiltrat	ion Rate =	2,036 gpd/idm
Inch-Diamete	er Miles =	51.57 idm		Inflow =	0 gpd
	I/I Rate =	2,036 gpd/idm	Infl	low Rate =	0 gpd/idm
Notes:					
Completed By	E.C	Mildle		Date:	-5- 2012
- co	omputer calco	ulated (formula)			
		Flow Meter Data Sho RedirectedFolders\Brent\Des	eet - Wet Weather Event		

Dry Weather Flow Feb. 2011

1 2/16/2011								
2/15/2011	5							
2/14/2011 /2011 1:11 PM								
2/12/2011 2/13/2011 2/14/2011 2/9/2011 1:11 PM to 2/16/2011 1:11 PM								
2/12/2011 2/9/2011 1		<						
2/11/2011	5							
2/10/2011	5							

Wet Weather Event 2/1/11

--- Flow (mgd)



Site Id: 00000000 File name: 0000000.000

Graph span: 1 week

Rain (in.)

Feb. 04 2011 Fni. IN IN SU Thurs. Feb. 03 2011 Feb. 02 2011 Wed. Feb. 01 2011 Tues. Jan. 31 2011 Mon. Jan. 30 2011 Sun. Jan. 29 2011 Sat. Jan. 28 2011 Fni. 0.000 0.100 0.900 -0.800 0.700 0.600 0.500 0.400 0.300 -0.200 1.000

MH 2-008 Pai-211 East3 Feb4, 2011

System Data

Meter Location:	2-008	Pipe Size (in.): 8	
and the second second second			

Pipe Size (in.)	Length (ft.)	Inch-Miles	Pipe Size (in.)	Length (ft.)	Inch-Miles		
8	34,037	51.57	24	24			
10		0.00	27	27			
12		0.00	30	30			
14		0.00	36	36			
15		0,00	42	42			
16		0.00	48	48			
18		0.00	54		0.0		
20		0.00	60	60		60	
21		0.00	72		0.0		
				Total =	51.5		

#### Dry Weather Flow

verage Daily Flo ollowing dates:	w calculated from the	Avg. Daily Flowrate =	138,000 gpd
5		Avg. Flow Depth =	2.200 inches
From:	02/10/11		
Ter	02/15/11	Peak Hourly Flowrate =	222,000 gpd
To:	02/15/11	Peak Factor =	1.61

Completed By: 20Mable

Date: 2-5-2012

- computer calculated (formula)

Flow Meter Data Sheet - Dry Weather Flow
\\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flo-Dar 2011\6-274D\2-008 2-1-11

Rainfall and I/I Event Duration

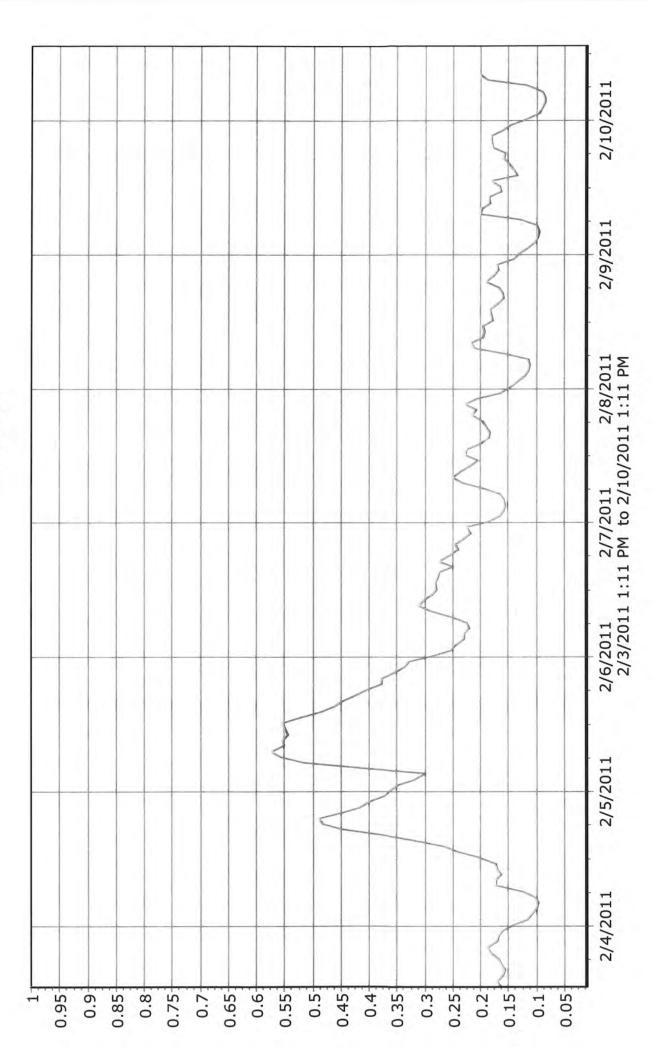
Rainfall:	Start:	2/4/11 7:15	End: 2/5	/11 7:15	
Max. 24-h	our Total:	<u>1.53</u> in.	Storm Total:	1.53 in.	
I/I Event:	Start:	2/4/11 6:15	and the second	2/9/11 0:00	<u>,                                     </u>
		Dates and times that rainf	all and I/I begin and end.		
		Wet Weather Ev	ent - I/I Analysis		
Peak Flow	w Depth =	4.8 inches	I/I Event I	Duration =	108 hours
□Manhole Surch	narged (Level	exceeded pipe dia.)	I/I	Volume =	945,000 gallons
Peak Hourly F	Flowrate =	579,000 gpd	Inflow and Infi	Itration Breakdo	<u>own (optional)</u>
Avg. Dry Weath	ner Flow =	138,000 gpd	Dry Weather Inf	iltration =	76,000 gpd
Pea	k Factor =	4.20 R	ainfall Induced Inf	iltration =	65,000 gpd
Avg. Wet Weath	ner Flow =	272,000 gpd	Total Inf	iltration =	141,000 gpd
Avg.	I/I Flow =	210,000 gpd	Infiltrat	ion Rate =	2,734 gpd/idm
Inch-Diameter	er Miles =	51.57 idm		Inflow =	69,000 gpd
	I/I Rate =	4,072 gpd/idm	Infl	ow Rate =	1,338 gpd/idm
lotes:					
Completed By	Ec	Malk		Date:	2-5-201
- co	omputer calc	ulated (formula)			
		Flow Meter Data She	et - Wet Weather Event		
	WM COOLLEODO	In Provident Annual	tool Taulana Ela Das 201114	374013 000 3 4 11	

\\MCCALLSBS\RedirectedFolders\Brent\Desktop\Taylors Flo-Dar 2011\6-274D\2-008 2-4-11

Dry Weather Flow Feb. 2011

2115/2011
15112
5

## Wet Weather Event 2/4/11



Site Id: 00000000 File name: 0000000.000 Graph span: 1 week

Rain (in.)

Wed. Feb. 09										
Tues. Feb. 08										
Mon. Feb. 07										
Sun. Feb. 06										
Sat. Feb. 05	ille - A. A.									
Fri. Feb. 04	huddan 1.1 and									
Thurs. Feb. 03										
Wed. Feb. 02	0.000	0.100	0.200	0.300	0.400	0 500	0.600	0.700	0.800	0.900