APPENDIX 240-A

ATTENUATION FACTORS

From: Ji, Zhong [Zhong.Ji@METROKC.GOV]
Sent: Tuesday, November 16, 1999 9:09 AM
To: 'Linda Allen'
Subject: RE: CSI PLAN - Attenuation calculations

Sorry, it is a mistake when I read the number from my map here.
It should be:
> RE*AUBURN3 .R18H-66 0.936
> RE*AUBURN1 .R18H-21A 0.912
>
> ----------
> From: Linda Allen[SMTP:lallen@herrerainc.com]
> Sent: Tuesday, November 16, 1999 8:11 AM
> To: 'Ji, Zhong'
> Subject: RE: CSI PLAN - Attenuation calculations
>
> RE*AUBURN3 .R18H-66 0.936
> RE*AUBURN3 .R18H-66 0.912
>
> Is one of these from the east and one from the west?
>
> _____
> Linda Allen
>
> Herrera Environmental Consultants, Inc.
> 2200 Sixth Avenue, Suite 601
> Seattle, WA 98121
> Voicemail (206) 441-4908 x147
> Fax (206) 441-9108
> Phone: (206) 441-9080
>
>
> -----Original Message-----
> From: Ji, Zhong [mailto:Zhong.Ji@METROKC.GOV]
> Sent: Monday, November 15, 1999 3:36 PM
> To: 'Linda Allen'
> Cc: Peterson, Bob
> Subject: RE: CSI PLAN - Attenuation calculations
>
>
> Hi, Linda,
>
> I have finished a model simulation using a 20 year storm under 2050

base
> flow and I/I conditions. I'd like to send you the result of the peak
> attenuation before I can do a brief summary report of the model run
some
> time later. The peak attenuation in the following table is defined as
> the
> ratio between the model simulated peak flow and the sum of the peak
> flows
> upstream of the location.
>
> Peak attenuation at selected locations based on the 20 year storm:
>

> Location	Peak
> Attenuation	
> RE*WINTSEWR.GR27-01	0.983
> RE*MSTTRUNK.GR22-2A	0.954
> RE*AUBURN3 .R18H-66	0.936
> RE*WVAL.R79-1	0.945
> SWTRUNK. 8	0.999
> Downstream end of STUCK TRUNK	0.982
> RE**AUBURN2.R18H-26 in SWTRUNK	0.940
> RE*AUBURN3 .R18H-66	0.912
> RE*ULID 1/5.53	0.972
> RE*KENTX.R18G-3	0.865
> RE*ULID 1/2.49	0.847

>
> In addition to the attenuations, I have also some findings about James
> Trunk. The current Mill Creek Trunk seems to have almost enough
capacity
> to
> deal with this storm. But on the other hand, Garrision need more room
> for
> the storm. We can discuss this later.
>
> Please let me know if anything is unclear. Thanks,
>
> Zhong
>
> DNR, Wastewater Treatment Division
> King County
> (206)684-1726
> zhong.ji@metrokc.gov
>

APPENDIX 240-B

KENT PLANNING ZONE FLOW PROJECTIONS

Kent basin flow projections

Prepared by Zhong Ji, 5/10/2001 Draft

Given information

- GIS sewer basin boundaries
  The following map shows the study area, including the sewer basin boundaries based on the local sewer lines. The information is available for us at the time of this work.

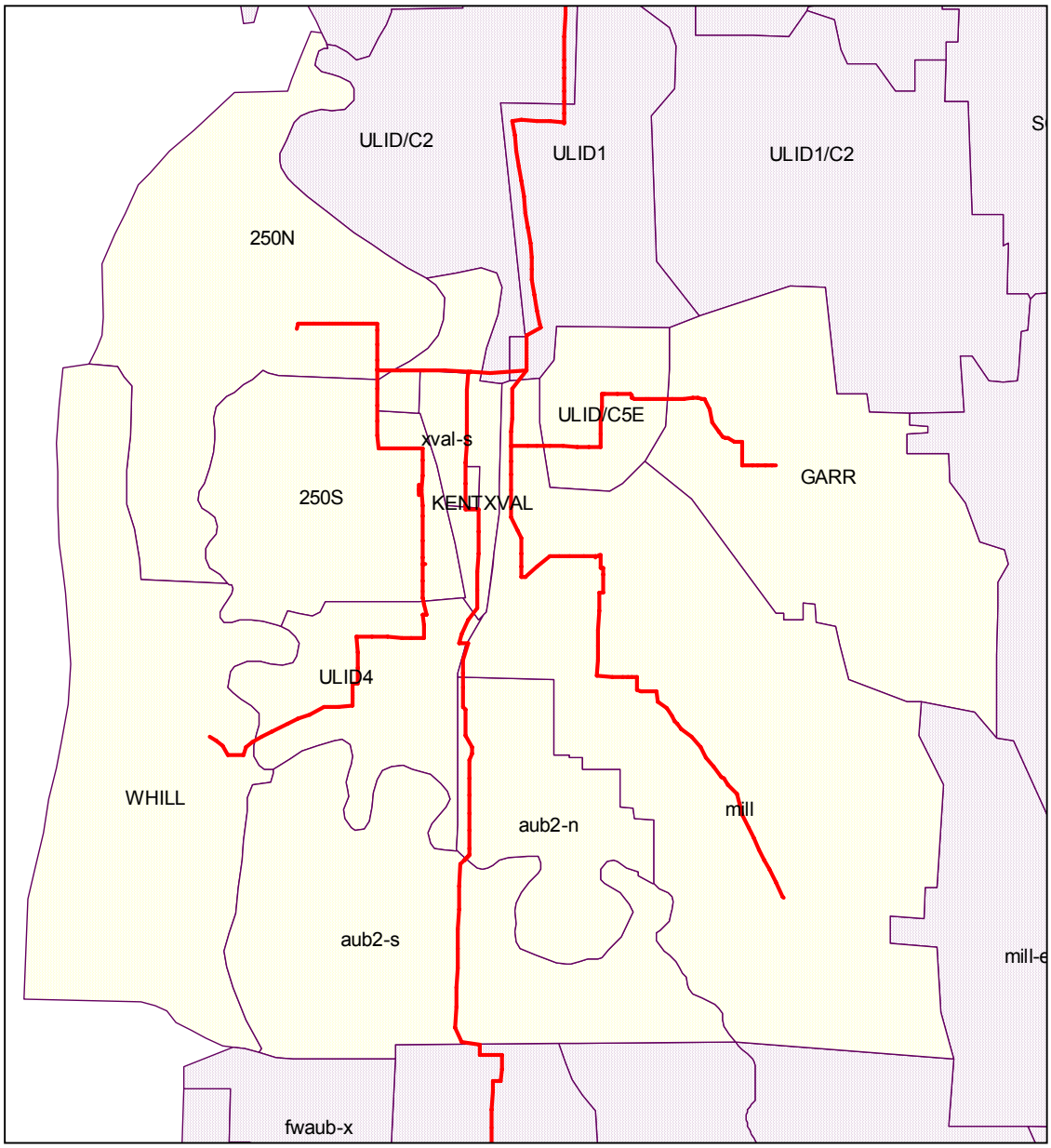

Figure 1 Sewer Basins, King County Interceptor Locations

- Flow data

  Since we have no flow data from this area, there is no model calibration and simulation involved in the flow projection. Assumption has been made for now and the flow projections are subject to any future model calibrations.

- Orthogonal Air photo

  Orthogonal air photo taken from this area in 1996 is available through King County Arc/View GIS. When overlapped with local sewer lines, it gives good information about the portion of basin area sewered, developed and undeveloped. The estimation of sewered, unsewered, and undeveloped area was done based on the orthogonal photo and used for the Runoff model simulation.

- Rainfall information

  The Sea-Tac rainfall record (49 years from 1948 to 1997) is available for any future model calibration and long term simulation.

Base flow and Inflow/Infiltration Projection

The basin flow projection is based on the following procedure:

A value of 2900 gpad I/I is assumed for all the basins in this area for 1990 under 20 year storm conditions. Peak I/I is projected assuming the peak I/I flow from the area will increase 7% per decade from the 1990 level till 2030 as a result of sewer line degradation. The recurrence curves used to determine flows with 10-year and 5-year recurrence for each basin are based on the information from the Auburn and Lower Green basins.

Based on TAZ population data, the basin base flow are estimated according to the following flow factors:

Population component	Residential	Commercial	Industrial
Flow per capita (gpd)	60	35	75

1996 base flow (gallon per acre per day) is determined according to the population using above table and the sewered area in each basin. The basin development and local sewer information is determined according to the orthogonal air photo and the sewer map from local agency whenever available, assuming population is evenly distributed in the basin.

Subtract 1996 base flow from the peak flow (20, 10, and 5 year peak) to get I/I peak flow for 1996 conditions

Base flows for 2000 through 2050 are determined based on TAZ population projection with an assumption that all the unsewered population will be sewered and all the basin area will be developed in 2020.

The total basin peak flow projections are summarized in the following tables.

Summary of basin peak flow projections for Kent area (flow in mgd)
Basins include: aub2-s, aub2-n, c5e, garr, mill ulid4, whill, xval-s, kxv, 250n, and 250s

	20 Year	10 Year	5 Year
1996	29.5	27.8	25.8
2000	33.3	31.3	28.1
2010	43.1	40.4	34.3
2020	54.0	50.6	41.2
2030	57.4	53.8	43.8
2040	57.9	54.3	44.3
2050	58.5	54.9	44.8

APPENDIX 240-C

AUBURN PLANNING ZONE FLOW PROJECTIONS

Lower Green River and Mill Creek basin flow projections

Prepared by Zhong Ji, July 22, 1999 **Draft**

Given information

- GIS sewer basin boundaries
  The following map shows the study area, including the sewer basin boundaries based on the local sewer lines. The information is available for us at the time of this work.

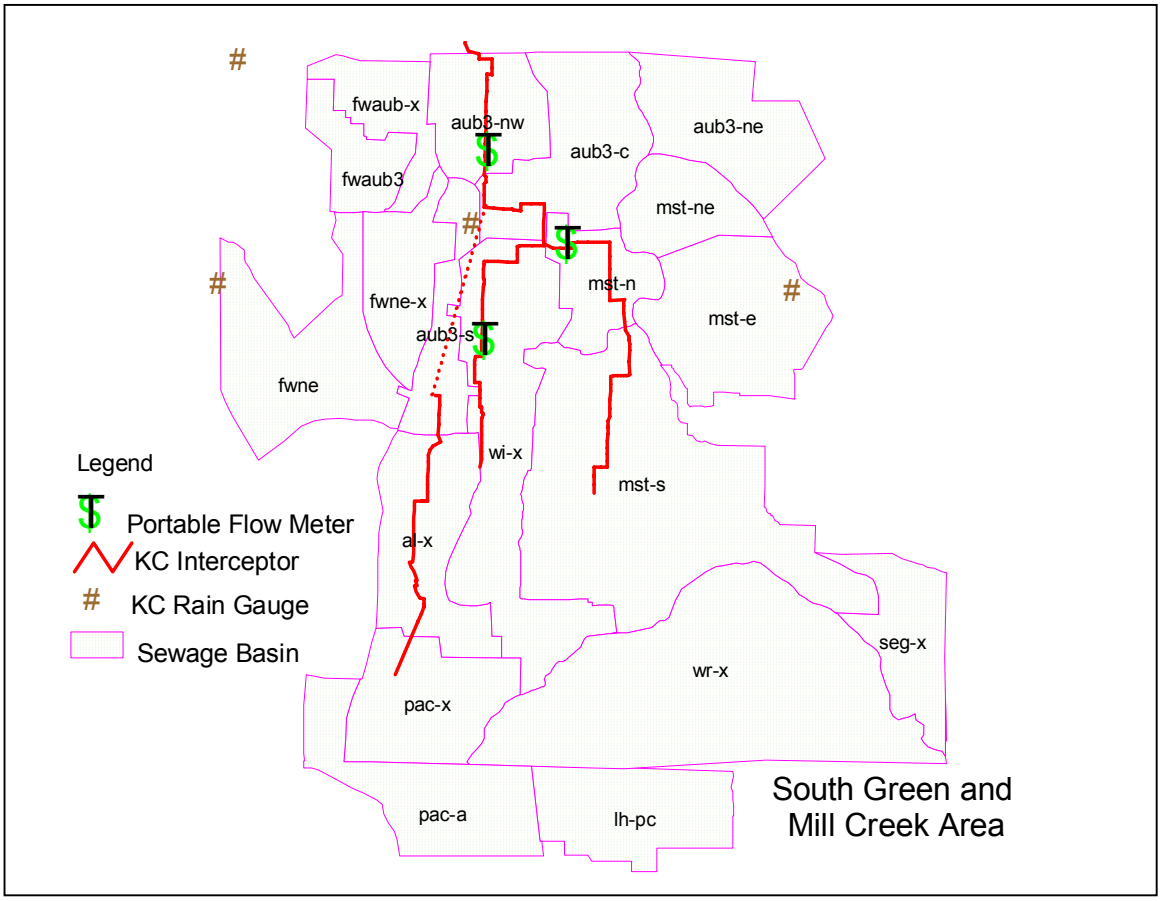

Figure 1 Sewer Basins, King County Interceptors, Flow Meter and Rain Gauge Locations

- Flow data

  Limited flow data were collected from this area with King County WTD portable flow monitoring system. There is a flow monitoring station located at MH GR22-2A of the M Street Trunk. It covers flow from six sewer basins (Basins seg-x, mst-s, mst-e, mst-n, sss-sw, and mst-ne). Another portable flow meter is located downstream of the West Interceptor Sewer at MH GR27-9. The meter measures flow from Lakeland Hill and White River basins in Auburn (Basins lh-pc, wr-x, and wi-x) area. The third portable flow meter is located downstream of the two meters in Auburn Interceptor at

manhole R18H-53. The meter measures flow from Pacific, Algona, some Auburn sewer basins, and north east of Federal Way basins (Basins pac-a, pac-x, al-x, aub-3s, fwne, fwne-x, fwaub3, fwaub-x, aub3-nw, and aub3-c) in addition to the two upstream portable metered flows. The portable meters were installed to collect flow and level data several years ago. The portable metered flows are used in this study to calibrate the Runoff model for the basins. The meter locations are shown in Figure 1.

- Orthogonal Air photo

  Orthogonal air photo taken from this area in 1996 is available through King County Arc/View GIS. When overlapped with local sewer lines, it gives good information about the portion of basin area sewered, developed and undeveloped. The estimation of sewered, unsewered, and undeveloped area was done based on the orthogonal photo and used for the Runoff model simulation. Due to lack of local sewer information for the Pacific and North East Federal Way area, the sewered area from the WW2020 King County sewer basins is assumed.

- Rainfall information

  A number of King County WLRD rainfall gauges are available for this area as shown in Figure 1. The rainfall data were used for model calibration. Due to limited recording period from these gauge stations, Sea-Tac rainfall record (49 years from 1948 to 1997) was used for long term simulation to get statistics of the basin I/I flow estimates.

Model setup

The RUNOFF model was set up according to the basin boundaries defined in Figure 1. There are 19 sewer basins in our Runoff Model simulation for flow projections in this area. The basin parameters are based on the basin conditions such as basin geometric data, basin conditions, and basin dry weather and wet weather flow conditions subject to model calibration and comparison with measured flow.

Model calibration and Verification

Preliminary model calibration was done based on the data collected from King County WTD portable flow monitoring stations. The data collected from these meters seem to be problematic. Major data quality problems were found in the data from portable meter in M Street Trunk at MH GR22-2A and in Auburn Interceptor at MH R18-H53 as will be briefly discussed. Calibration is mainly based on major storm event during November of 1998. The storm event has a recurrence period of about 1 to 2 years.

Storm #1 Nov. 15, 1998 to Dec. 3, 1998

Flow and level data from the flow meter upstream of M Street Trunk during the period during Nov. 15 – Dec. 3, 1998 were used to calibrate the Runoff Model for M Street Trunk service area, West Interceptor Sewer service area, and Auburn Interceptor service

area. Rainfall event during the same period was compared with the Runoff Model output. Figure 2 - 4 shows the comparison.

Comparison between rainfall event and flow measurement shows good response for all three meters during this storm. This set of flow data is used for analyzing flow data for other events. The storm during this period is used as the base of the Runoff Model calibration.

According to the flow measurement before the rainfall event, flows in West Interceptor and M Street Trunk composed approximately two thirds of the flow in Auburn Interceptor with almost equal amount of flow from West Interceptor and M Street Trunk.

Peak flows in West Interceptor and M Street Trunk composed about half of the peak flow in Auburn Interceptor. The flow data from Auburn Interceptor shows a failure of the portable meter for a period after Dec. 3, 1998.

Runoff Model parameters for the sewerage basins were adjusted based on the flow measurement during this storm event. Several other storms were selected for comparison between the calibrated model to validate the flow data and model results.

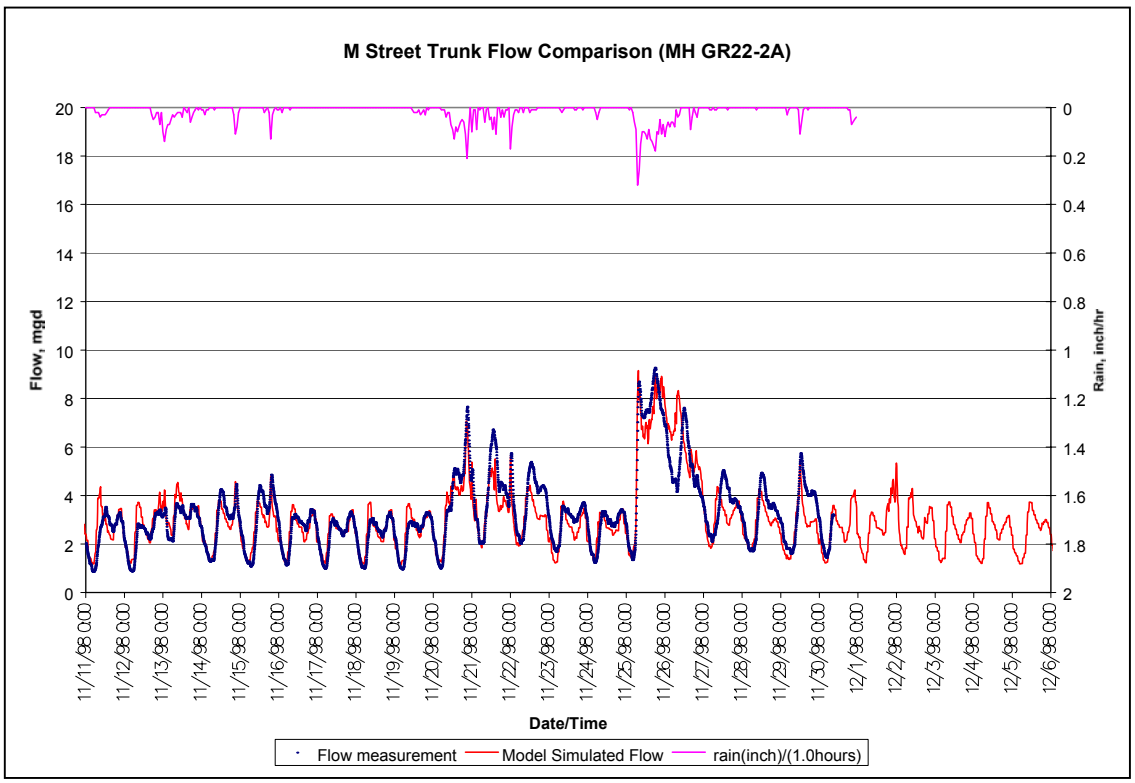

Figure 2

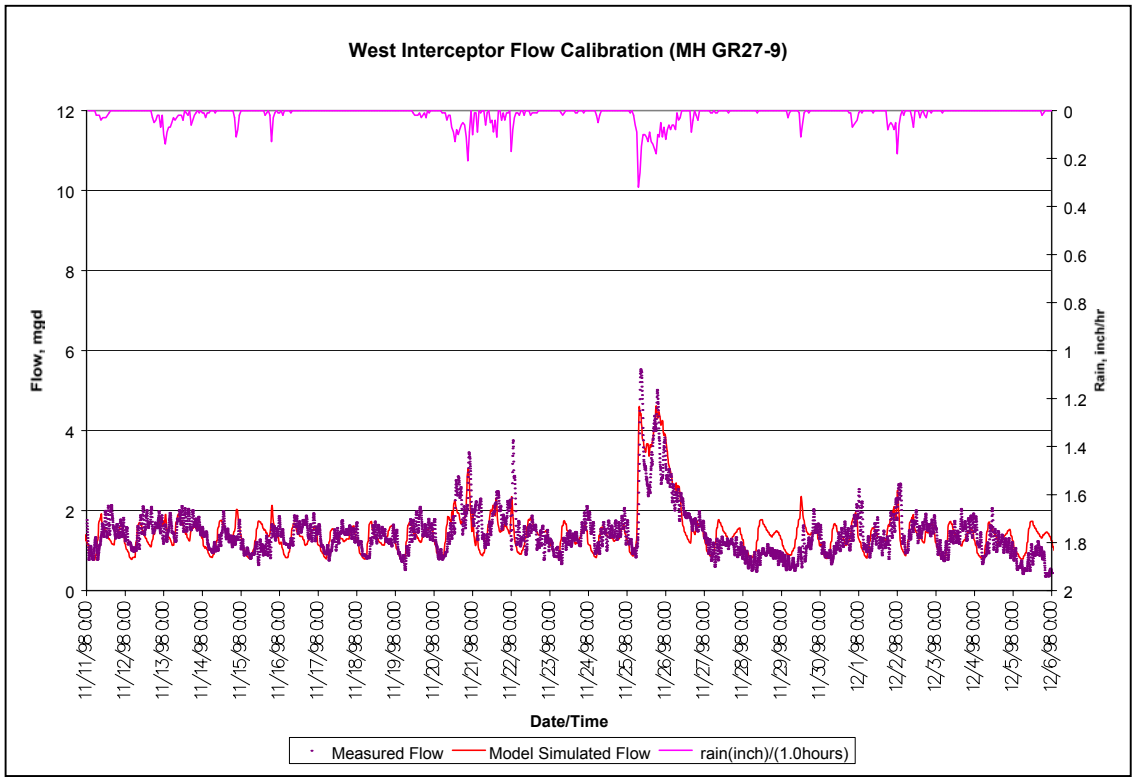

Figure 3

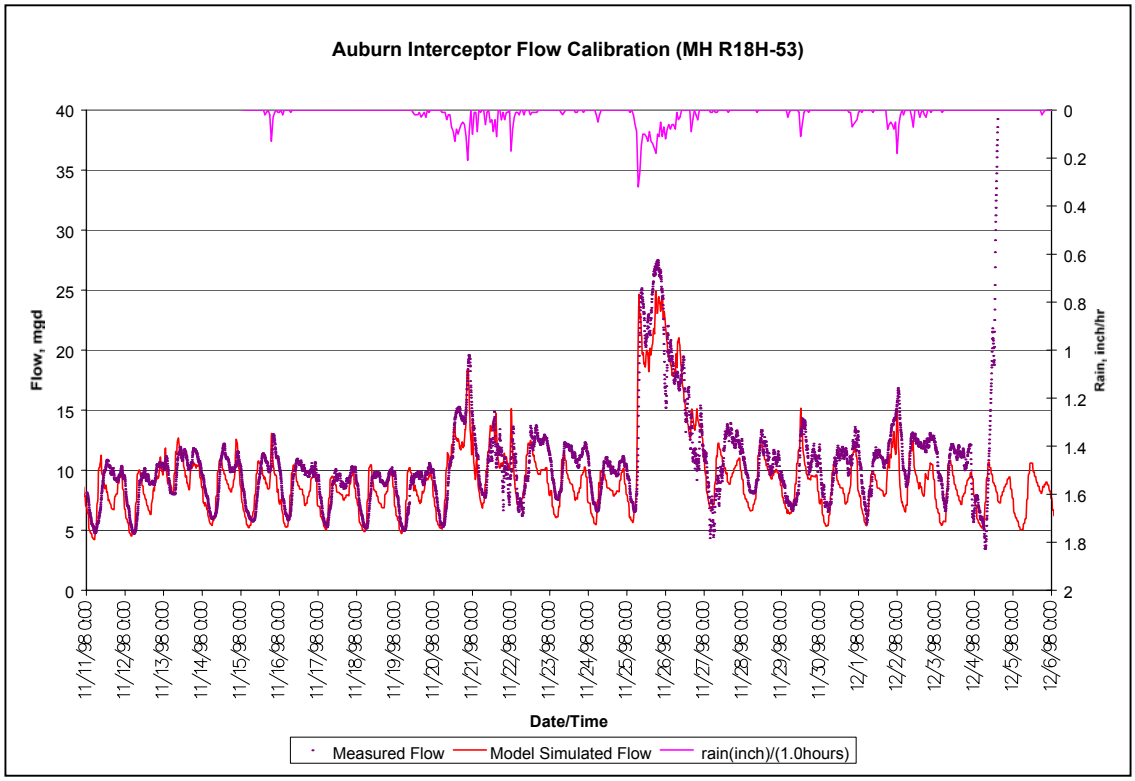

Figure 4

Storm #2 Dec. 20, 1996 – Jan. 10, 1997

Flow data from the flow meters at M Street Trunk, West Interceptor, and Auburn Interceptor during period of Dec. 20, 1996 to Jan. 10, 1997 were used to validate the flow data and model simulated results. Rain and snow events during the same period were compared with the flow results. Figure 5 - 7 shows the comparison.

The flow meter in West Interceptor shows a consistent response with the rainfall data as well as the model result (Figure 6). Due to the snow fall before the rainfall event, there seems to be more flow collected during the intense rainfall event. The diurnal peak flows before and after the intensive rainfall event is about 2 mgd that is in line with the flow data during November 1998 (Figure 3).

The flow data from M Street Trunk appears to have problems intermittently during this period. As is shown in Figure 5, the flow measurement is drifting up and down before the intensive rainfall. The meter flow approaching zero on Dec. 21 and Dec. 22 that is below the base flow when there is no rainfall event. The metered flow drifted near zero again on Dec. 26 and Dec. 29 before the big storm event.

The flow data from Auburn Interceptor was having problems during this period as is seen in Figure 6. The meter flow was drifting lower with certain response to the rainfall event. The sum of the flows from M Street Trunk and West Interceptor is even higher than the flow measurement from this location indicating that the flow collected from this meter is not reliable.

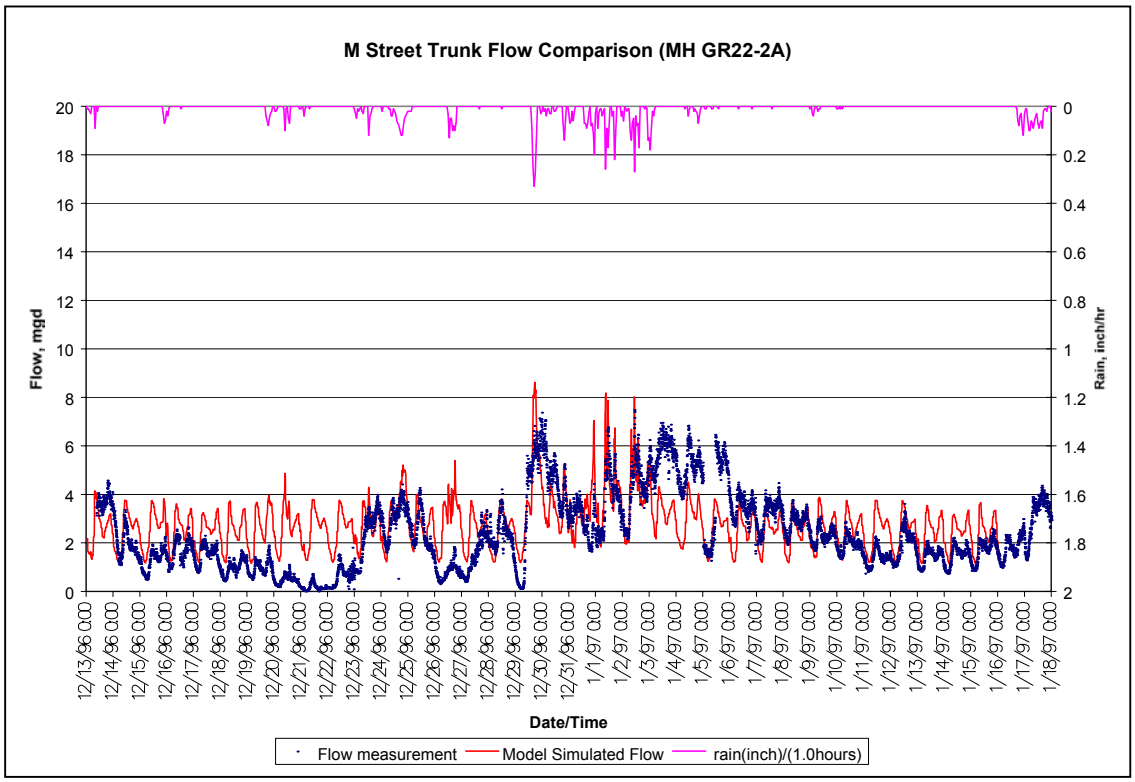

Figure 5

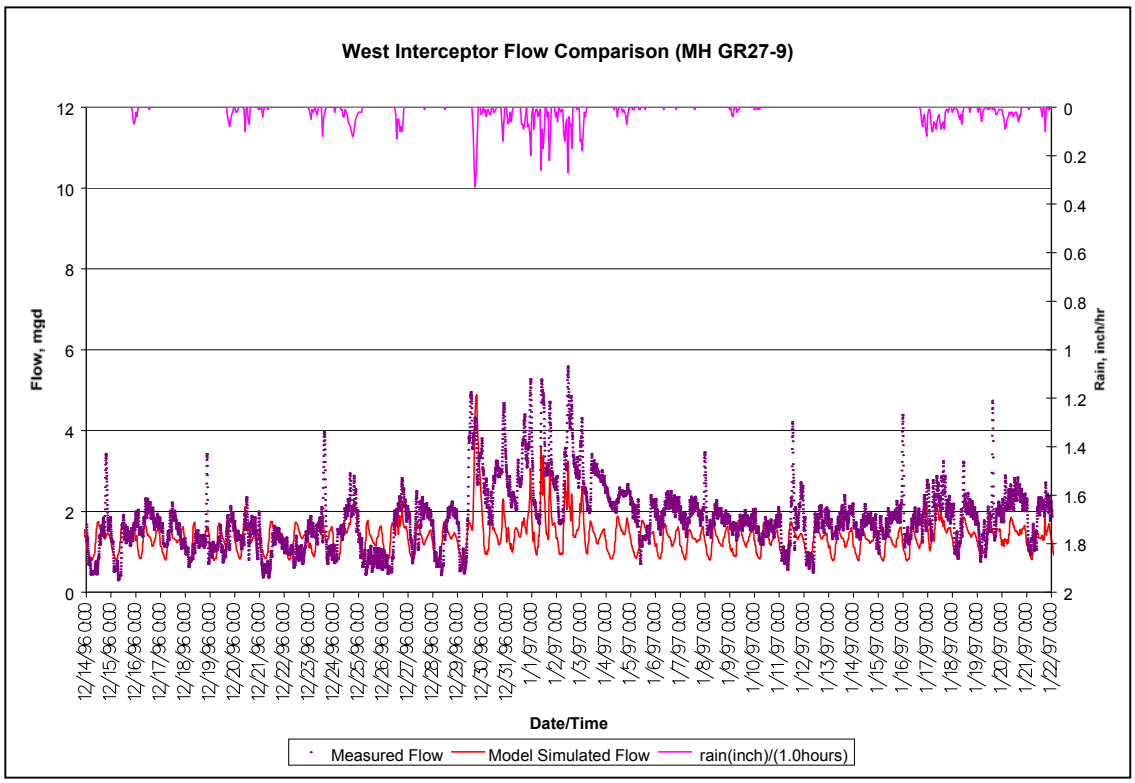

Figure 6

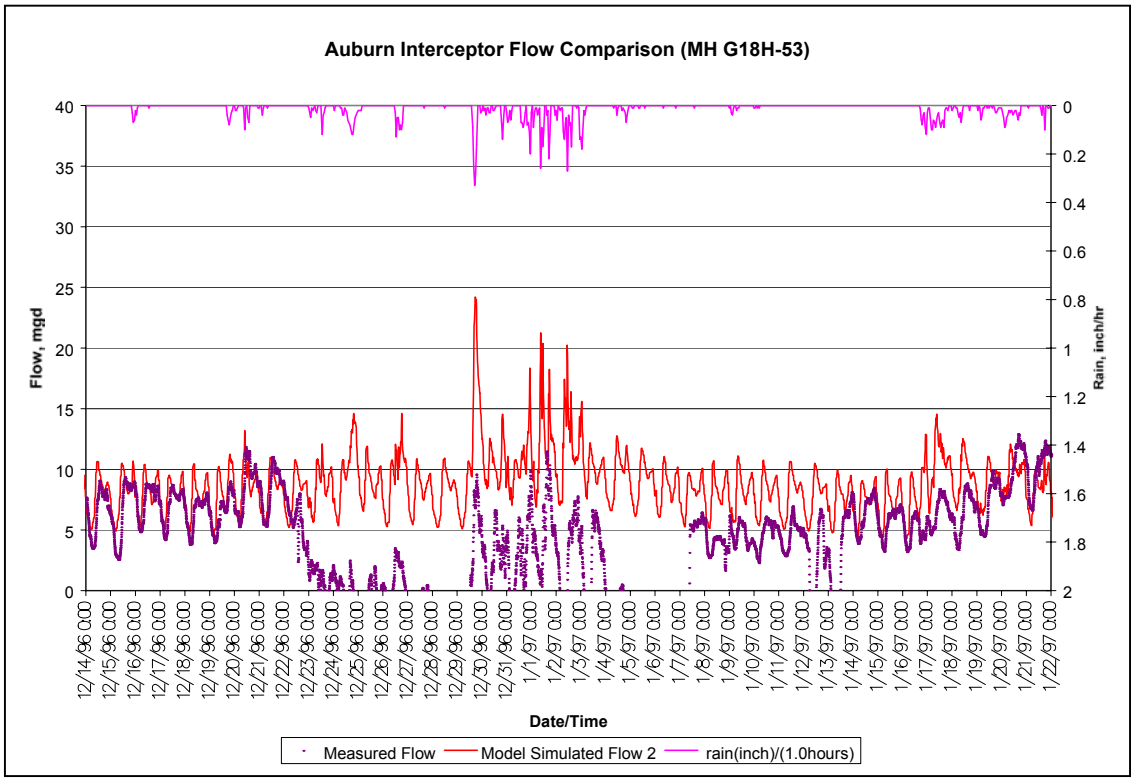

Figure 7

Storm #3 Mar. 13, 1997 – Apr. 1, 1997

Flow data from the flow meters in the M Street Trunk, West Interceptor, and Auburn Interceptor during period of Mar. 13 to Apr. 1, 1997 were used to validate the flow data and model simulated results. Rainfall event during the same period was compared with the flow results. Figure 8 - 10 shows the comparison.

The flow meter in West Interceptor generally shows consistent responses with the rainfall data as well as the model result (Figure 9) with a little drifting at the beginning of the event. The diurnal peak flows before and after the intensive rainfall event is about 2 mgd that is in line with the flow data during November 1998 (Figure 3).

The flow data from M Street Trunk appears to have problems intermittently during this period similar to the data collected during Dec 96. As is shown in Figure 8, the flow measurement is drifting up and down before the intensive rainfall with a certain response to the rainfall. In general, the measurement most likely under estimates the actual flow at this location.

The flow data from Auburn Interceptor also have problems as is seen in Figure 10 with flow measurement drifting up and down during the period. The meter flow was drifting lower with certain response to the rainfall event. It sometimes gets negative readings for a certain period of time. The sum of the measured peak flows from M Street Trunk and West Interceptor is almost the same as the flow measurement from this location indicating that the flow collected from this meter is not reliable.

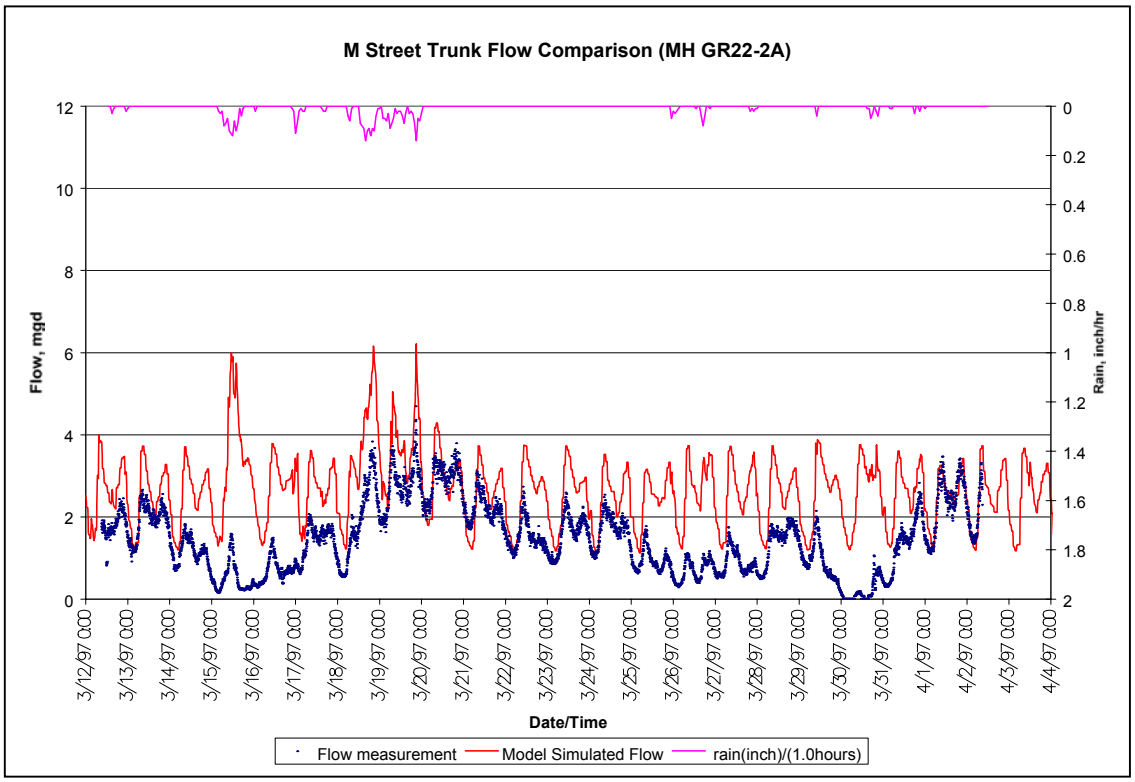

Figure 8

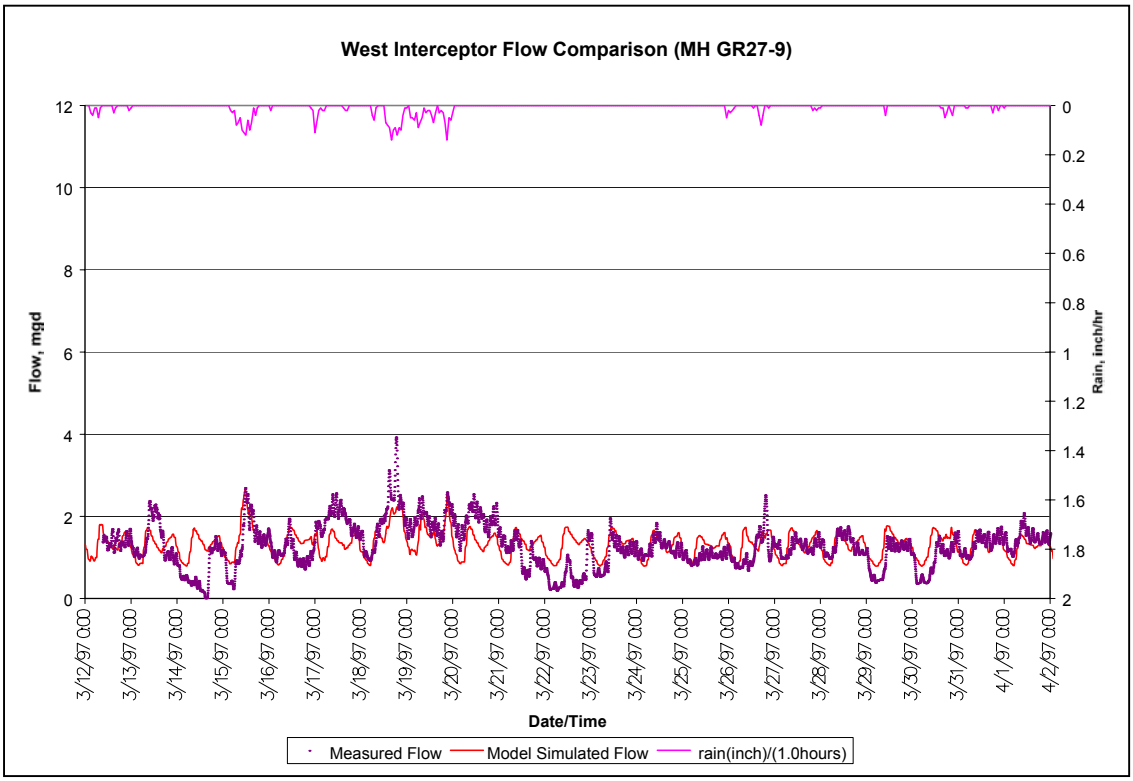

Figure 9

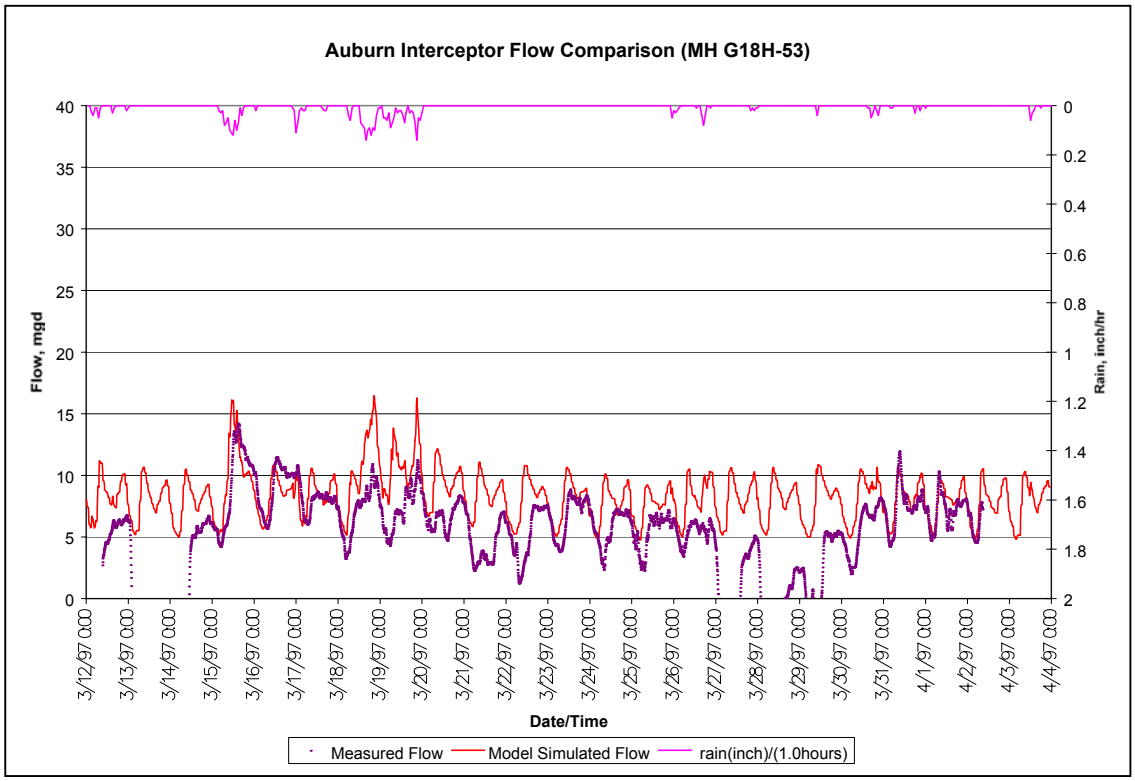

Figure 10

Storm #4 Jan. 26, 1996 – Feb. 25 1996

Flow data from the flow meters in M Street Trunk, West Interceptor, and Auburn Interceptor during period of Jan. 26, 1996 to Feb. 25, 1996 were used to validate the flow data and model simulated results. Rainfall event during the same period was compared with the flow results. Figure 11 - 13 shows the comparison.

The flow meter in West Interceptor generally shows consistent responses with the rainfall data as well as the model result (Figure 9) with a little obvious drifting at the beginning of the event. The diurnal peak flows before and after the intensive rainfall event is about 2 mgd. That is in line with the flow data during November 1998 (Figure 3).

The flow data from M Street Trunk appears having problems intermittently during this period similar to the data collected during Dec 96. As is shown in Figure 8, the flow measurement is drifting up and down before the intensive rainfall. It responds to the rainfall intensity during the rain. In general, the measurement tends to underestimate the flow.

The flow meter in Auburn Interceptor was having problems as is seen in Figure 10. The meter flow was drifting lower with certain response to the rainfall event. The sum of the measured peak flows from M Street Trunk and West Interceptor is almost the same as the flow measurement from this location indicating that the flow collected from this meter is not reliable.

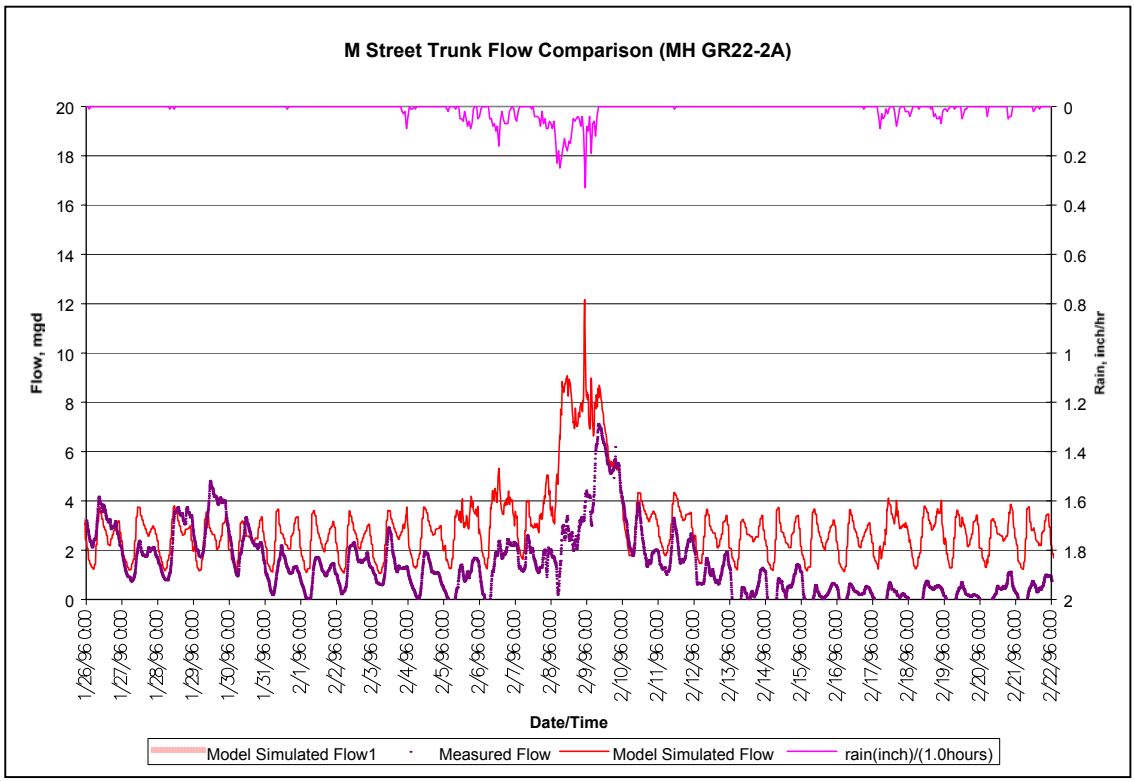

Figure 11

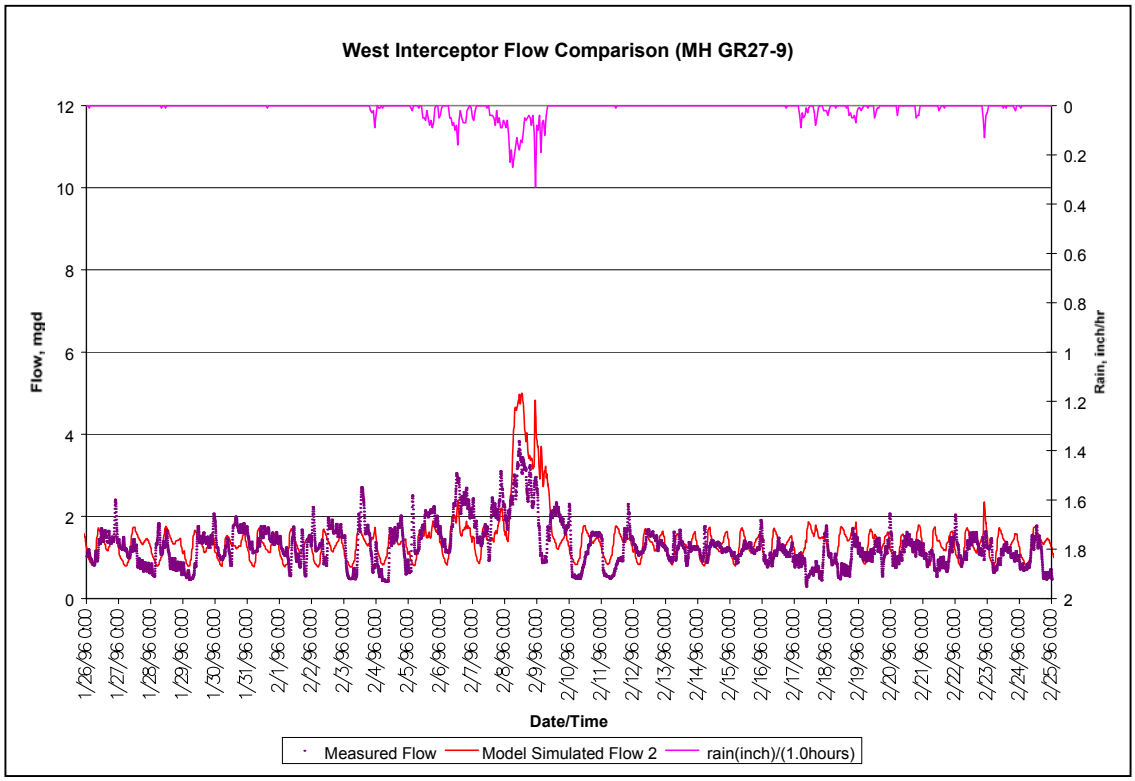

Figure 12

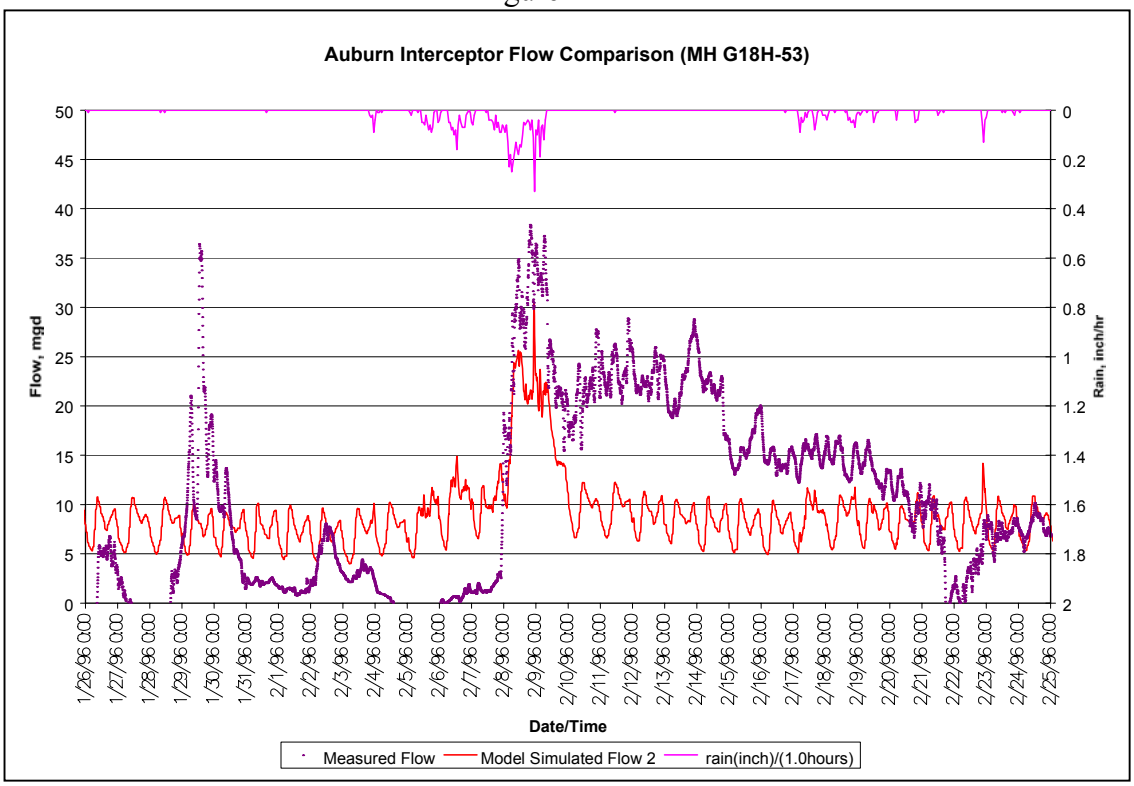

Figure 13

Base flow and Inflow/Infiltration Projection

The calibrated Runoff model was used to make a 49-year simulation based on the rainfall record from Sea-Tac airport during 1948 to 1997. The simulated flow from each basin is then used to establish a frequency curve for peak flow from each basin.

The basin flow projection is based on the following procedure:

Generate flow hydrograph for each basin in the area using the Runoff model and rank peak flow to generate frequency curves for basin peak flow

Find the 20, 10, and 5 year peak flow based on the frequency curves for each basin

Based on TAZ population data, the basin base flow are estimated according to the following flow factors:

Population component	Residential	Commercial	Industrial
Flow per capita (gpd)	60	35	75

1996 base flow (gallon per acre per day) is determined according to the population using above table and the sewered area in each basin. The basin development and local sewer information is determined according to the orthogonal air photo and the sewer map from local agency whenever available, assuming population is evenly distributed in the basin.

Subtract 1996 base flow from the peak flow (20, 10, and 5 year peak) to get I/I peak flow for 1996 conditions

Base flows for 2000 through 2050 are determined based on TAZ population projection with an assumption that all the unsewered population will be sewered and all the basin area will be developed in 2020 with an exception for two basins. This flow projection will generally overestimate the flow in the basins where a very small portion of the area has been developed. The development outside the UGB that may be connected to the sewer system can be considered to compensate the overestimation. The only exceptions are for basin wr-x and basin lh-pc where sewered area in 2020 is projected according to the population growth and Auburn Sewer Comprehensive Plan in comparison with the current orthogonal photo.

Peak I/I is projected assuming the peak I/I flow from the area will increase 7% per decade from current level till 2030 as a result of sewer line degradation.

The total basin peak flow projections are summarized in the following tables.

APPENDIX 240-D

SOOS PLANNING ZONE FLOW PROJECTIONS

Soos Creek service area flow projection:

Prepared by Zhong Ji
June 18, 1999

Given information

- GIS sewer basin boundaries
  The following GIS map shows the study area, including the sewer basin boundaries based on the local sewer lines. The information is available to us at the time of this work

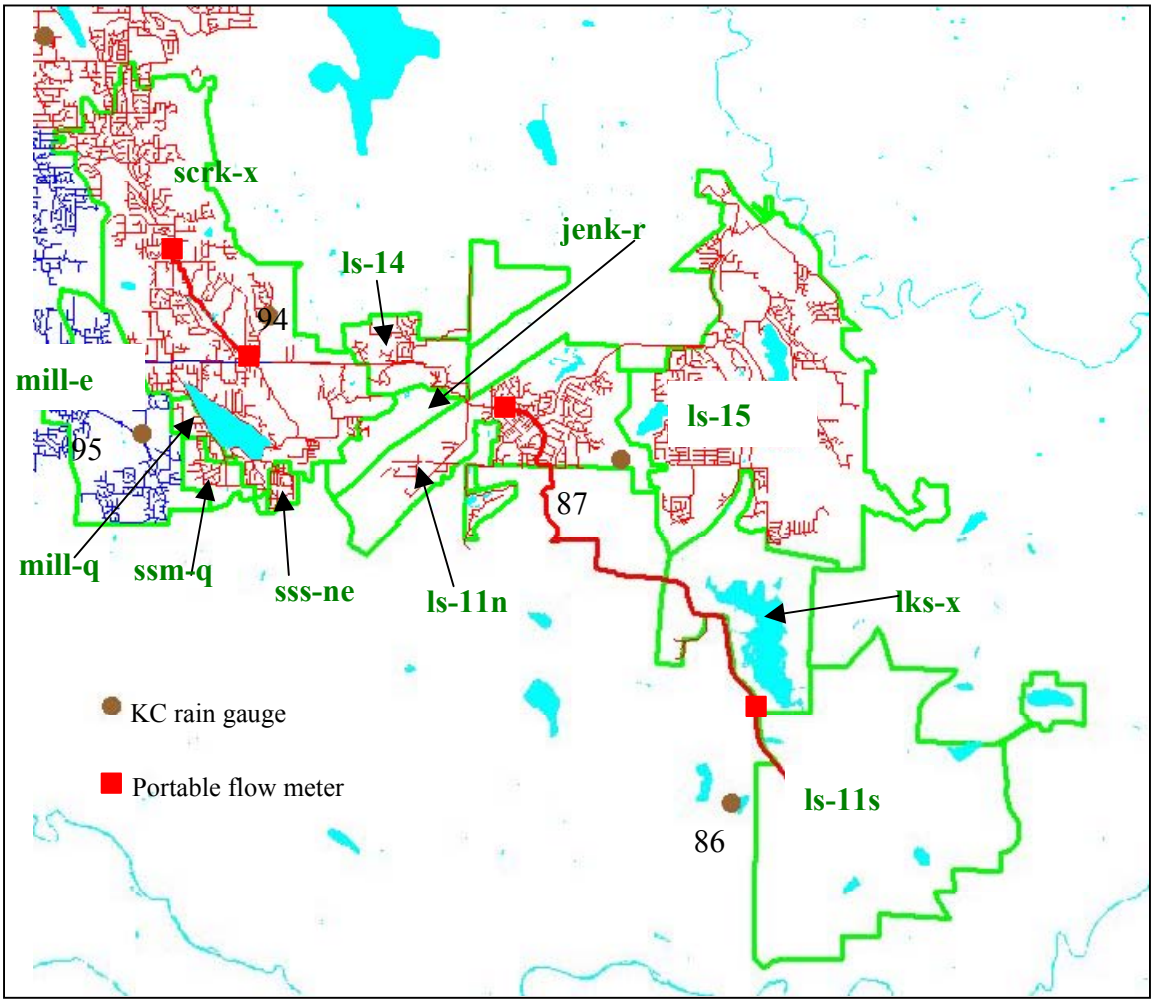

Figure 1 Sewer Basins and Local Sewer Lines

- Flow data

  Limited flow data were collected from this area with King County WTD portable flow monitoring system. There is a flow monitoring station located at MH R18F-38 of the Mill Creek Trunk on the Crow Road. It has been used to collect flow and level data since 1994. The monitoring station measures flow from Soos Creek and Black

Diamond service area and the data can be used for calibration of the Runoff model for the whole service area.

In addition to the flow monitoring station in the Mill Creek Trunk, there are 4 new stations set up recently since mid February 1999. Two meters are located in Black Diamond Trunk downstream of the Black Diamond Force Main. One upstream and one downstream of the trunk as shown in Figure 1. These two stations measure flow from Black Diamond service area or more specifically, flow pumped through Black Diamond pump station. The other two monitoring stations are located upstream and downstream of Clark Fork Trunk that measure flow from part of the Soos Creek basin. The metering period of the 4 new stations did not contain any long-term data.

- Orthogonal Air photo

  Orthogonal air photo taken from this area in 1996 is available through King County Arc/View GIS. When overlapped with local sewer lines, it gives a good information about the portion of basin sewered, developed and undeveloped. The estimation of sewered, unsewered and undeveloped area was done and used for the Runoff model simulation.

- Rainfall information

  A number of King County WLRD rainfall gauges are available for this area as shown in Figure 1. The rainfall data were used for model calibration. Due to limited recording period from these gauge stations, Sea-Tac rainfall record (49 years from 1948 to 1997) was used for long term simulation to get statistics of the basin I/I flow estimates.

Model setup

- The RUNOFF model was set up according to the basin boundaries defined in Fig. 1. There are 11 RUNOFF basins in our model simulation for Soos Creek area. The basin parameters are based on the basin conditions such as basin geometric data, basin conditions, and basin dry weather and wet weather flow conditions subject to model calibration.
- The TRANSPORT model was based on the lift stations, force mains and gravity flow lines in the system. as shown in Figure 2. Capacity of each pump station was built in the model to reflect current restrictions of flow for model calibration. Flows from the Runoff basins are routed to the proper location of the Transport lines.

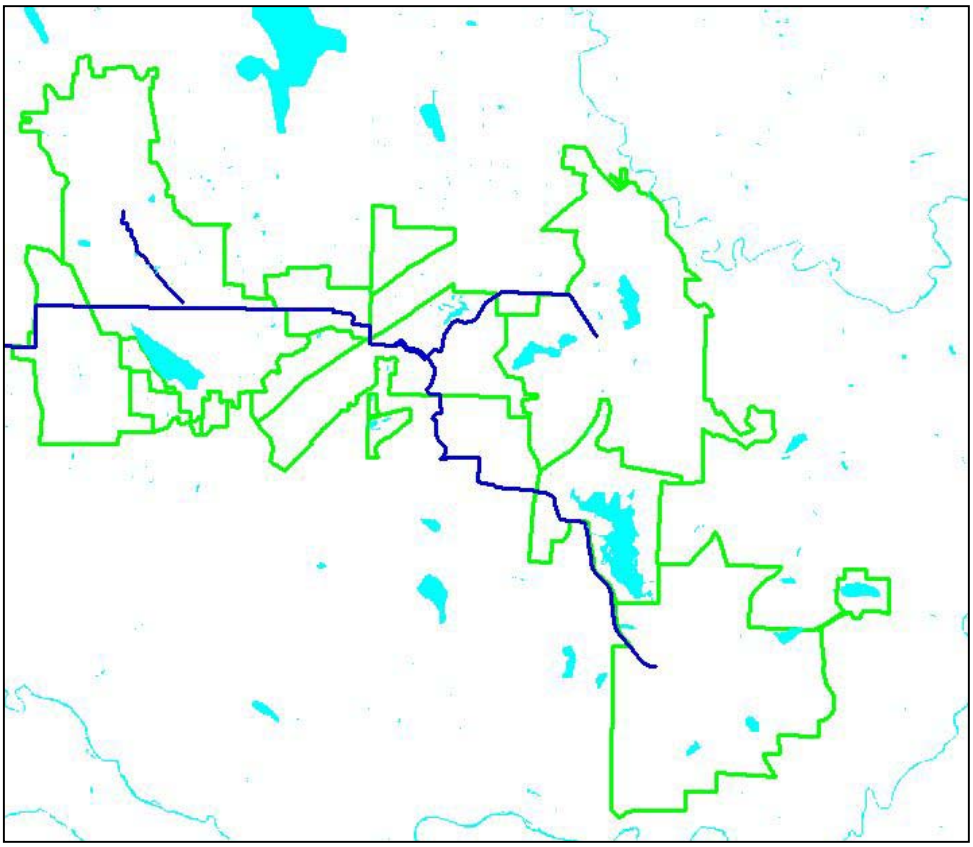

Figure 2. The Runoff basins and Transport Pipes for Soos Creek area

Model calibration

Preliminary model calibration was done based on the data collected from King County WTD portable flow monitoring stations. The calibration was done in progressive steps to make effective use of the limited data. Since the metering period for the 4 new monitoring site did not contain any long-term data, re-iteration of the calibration process should be done when more flow data is available.

- Black Diamond Basin

The calibration started with Black Diamond basin with the data collected since February of 1999. By adjusting dry weather and wet weather inflow /infiltration parameters, the Runoff basin behaves more or less with the measurement data as shown in Figure 3 and Figure 4. Due to unknown reasons, the upstream meter seems to have problems during the storm that starts on February 26th, 1999. The meter seemed to have been out of service until March 18, 1999.

The rainfall events since February are not heavy enough to establish the peak I/I response with certainty. More extensive calibration is required for Black Diamond Basin when flow data corresponding to heavier storm are collected.

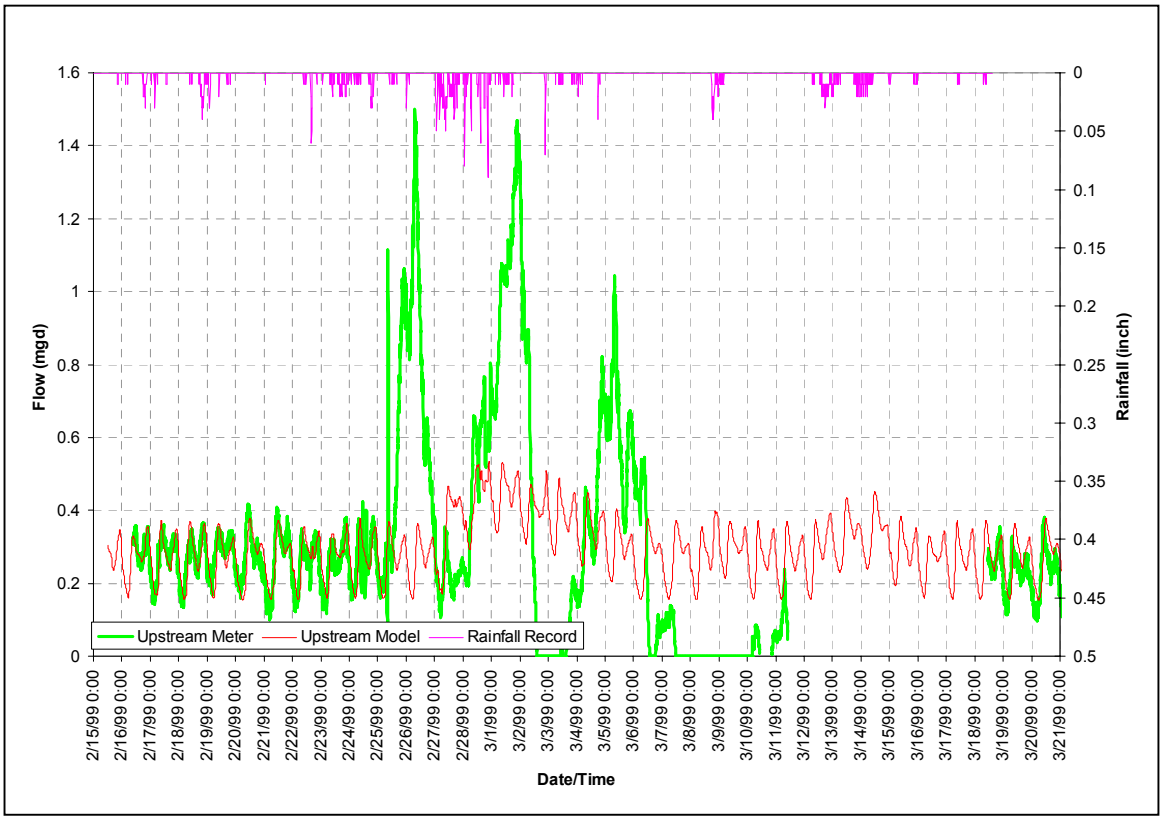

Figure 3. Upstream of Black Diamond Trunk

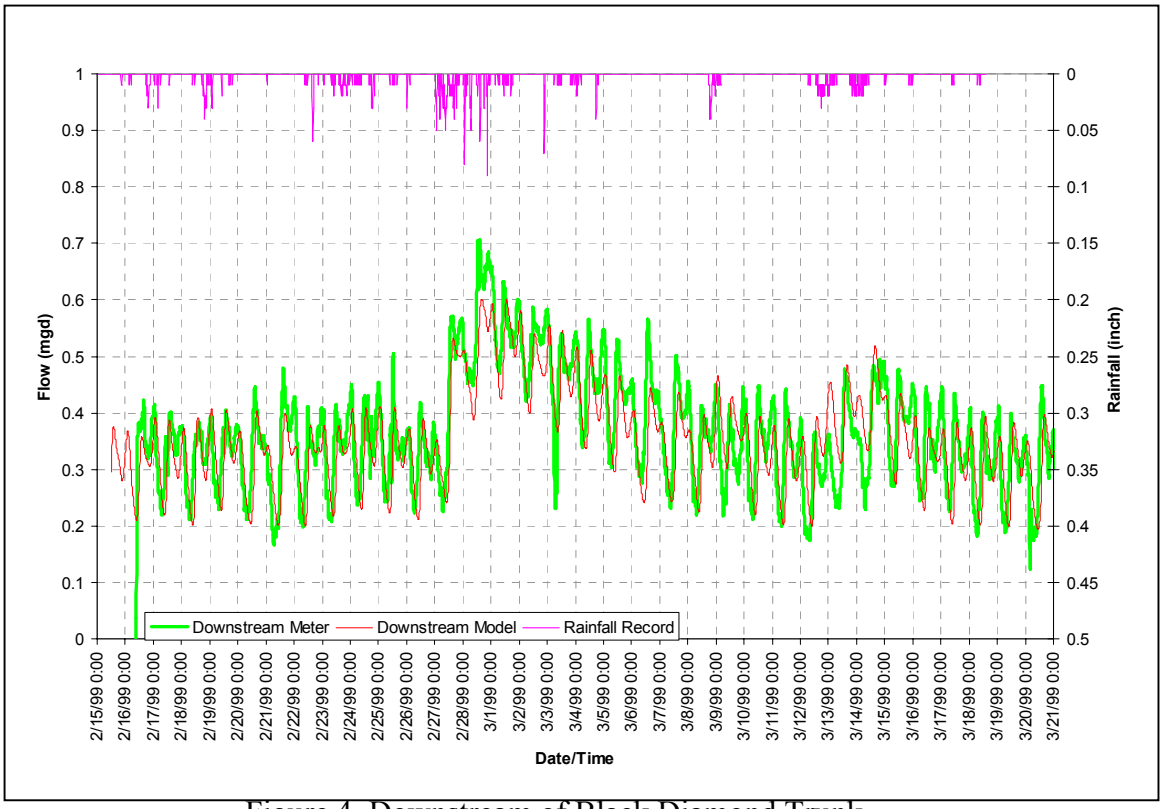

Figure 4. Downstream of Black Diamond Trunk

- Soos-Mill Basin

We don't have a flow meter that measures flow from the whole basin of Soos-Mill. The meters located in Clark Fork Trunk measures part of the flow from the basin. Our calibration is based on the two meters and the percentage of sewage basin area upstream of the meters in comparison with the air photo and local sewer information.

Figure 5 and 6 is a comparison between the measured and calibrated Runoff model simulated flow. There seems to be no measurement during March 11 to March 17 for the upstream of Clark Fork meter.

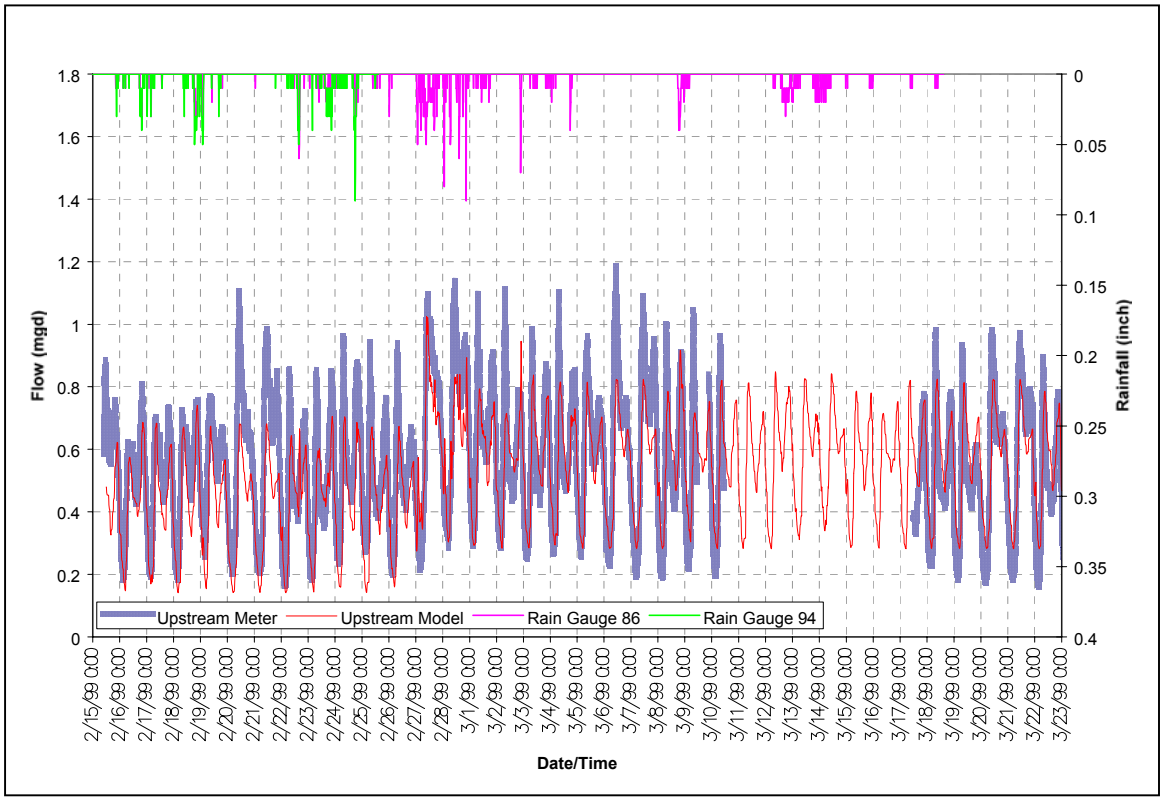

Figure 5. Upstream of Clark Fork

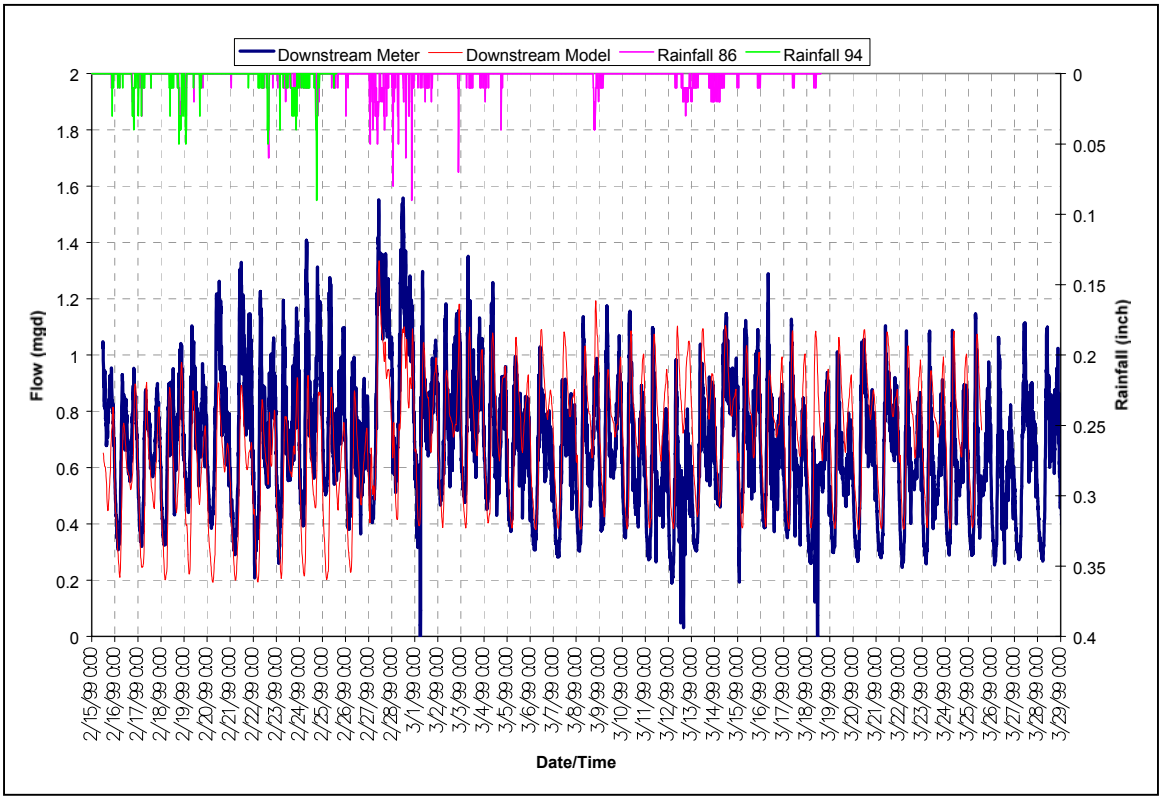

Figure 6. Downstream of Clark Fork

Similar to the Black Diamond basin, the rainfall since February is not heavy enough to establish the peak I/I response with certainty for the Soos-Mill basin. More extensive calibration is required for the basin when flow data corresponding to heavier storms are collected.

- All Basins for Soos Creek area

The parameters for Black Diamond basin and Soos-Mill basin are used for the calibration described in this step.

Flow and level data from the flow meter upstream of Mill Creek Trunk during period of 19th November to December 31, 1998 (during which time a storm with one-year occurrence period) were used to make a calibration of the whole service area. Figure 7 shows the comparison. Except for Black Diamond and Soos-Mill basins, parameters for all other basins were adjusted to make the model simulation comparable to the measurement.

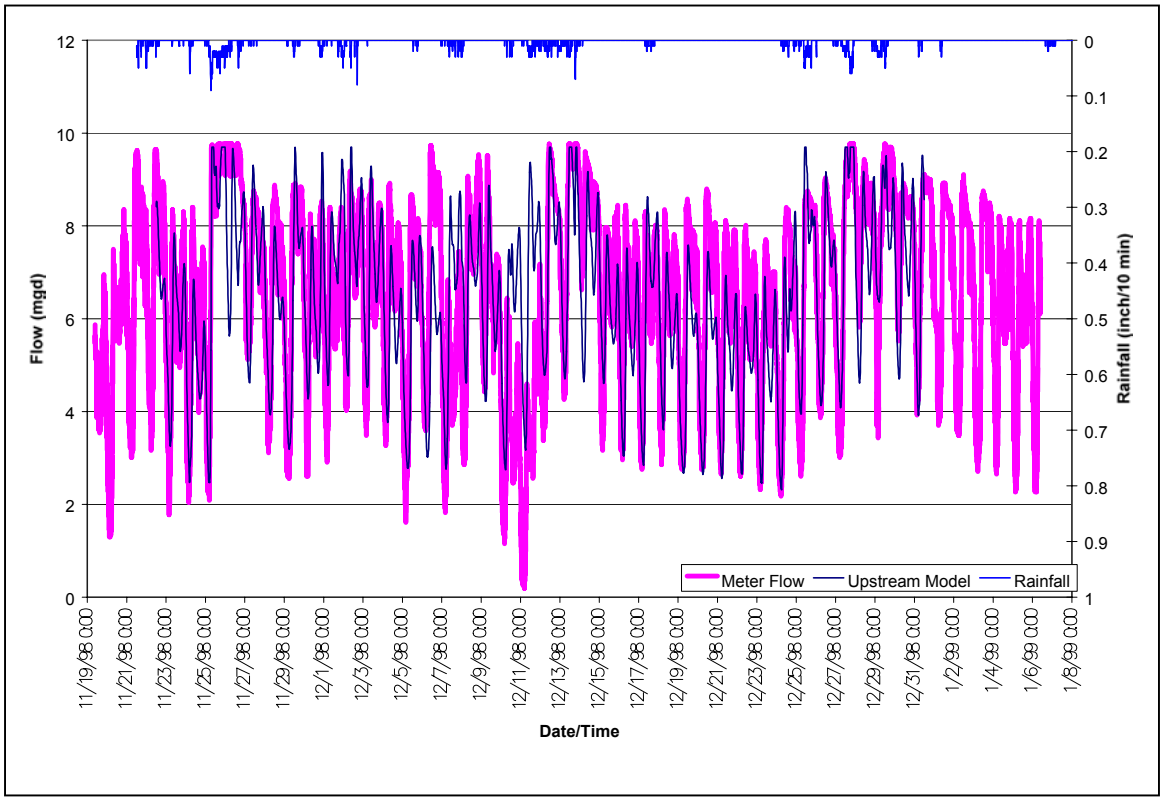

Figure 7. Upstream Mill Creek Interceptor

Base flow and Inflow/Infiltration Projection

The calibrated Runoff model was used to make a 49-year simulation based on the rainfall record from Sea-Tac airport during 1948 to 1997. The simulated flow from each basin is then used to establish a frequency curve of peak flow from the basin.

The basin flow projection is based on the following procedure:

- Generate flow hydrograph for each basin in Soos Creek area using the Runoff model and rank peak flow to generate frequency curves for basin peak flow
- Find the 20, 10, and 5 year peak flow based on the frequency curves for each basin
- Based on TAZ population data, calculate basin base flow according to an empirical base flow setting:

Population component	Residential	Commercial	Industrial
Flow per capita (gpd)	60	35	75

- 1996 base flow (gallon per acre per day) is determined according to the population using above table and sewered area in each basin. The basin development and local

sewer information is determined according to the orthogonal air photo and the sewer map from local agency, assuming population is evenly distributed in the basin.

- Subtract 1996 base flow from the peak flow (20, 10, and 5 year peak) to get I/I peak flow for 1996 conditions
- Base flows for 2000 through 2050 are determined based on TAZ population projection assuming all the unsewered population will be sewered and all the basin area will be developed in 2020. The flow projection is based on the assumption that the size of undevelopable area is comparable to development outside the UGB so that a simplified estimate of future flow can be made.
- Peak I/I is projected assuming the peak I/I flow from Soos Creek area will increase 7% per decade from current level till 2030 as a result of sewer line degradation

The basin peak flows are summarized to get the following table.

Summarize all basin peak flows

	20 Year	10 Year	5 Year
1996	12.6	11.9	11.2
2000	15.2	14.3	13.5
2010	21.9	20.7	19.5
2020	29.6	27.9	26.2
2030	31.5	29.7	28.0
2040	31.8	30.1	28.3
2050	32.2	30.5	28.7

Flow projection for Soos Creek basins

Flow projection for basin ls-15

Total GIS area	4041	
Year	1996	2020
Sewered Area	2344	4041
Septic Area	341	0
Sewered land %	58	100
Septic land %	8	0

*7% / decade I/I increases for "degradation"

Area is in acres, 1996 sewered area is a rough estimate subject to local sewer information

20-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**20 year peak I/I flow (gpad)***	**20 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	2344	87	0.54	229	1734	4.06	4.60
2000	2627	90	0.56	213	1783	4.68	5.24
2010	3334	96	0.61	182	1904	6.35	6.96
2020	4041	100	0.72	179	2026	8.19	8.91
2030	4041	100	0.76	188	2147	8.68	9.44
2040	4041	100	0.81	201	2147	8.68	9.49
2050	4041	100	0.86	213	2147	8.68	9.54

10-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**10 year peak I/I flow (gpad)***	**10 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	2344	87	0.54	229	1651	3.87	4.41
2000	2627	90	0.56	213	1697	4.46	5.02
2010	3334	96	0.61	182	1813	6.04	6.65
2020	4041	100	0.72	179	1929	7.79	8.51
2030	4041	100	0.76	188	2044	8.26	9.02
2040	4041	100	0.81	201	2044	8.26	9.07
2050	4041	100	0.86	213	2044	8.26	9.12

5-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**5 year peak I/I flow (gpad)***	**5 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	2344	87	0.54	229	1568	3.68	4.21
2000	2627	90	0.56	213	1612	4.23	4.79
2010	3334	96	0.61	182	1722	5.74	6.35
2020	4041	100	0.72	179	1832	7.40	8.12
2030	4041	100	0.76	188	1941	7.85	8.60
2040	4041	100	0.81	201	1941	7.85	8.66
2050	4041	100	0.86	213	1941	7.85	8.71

Flow projection for basin **mill-e**

Total GIS area	1327	
Year	1996	2020
Sewered Area	743	1327
Septic Area	269	0
Sewered land %	56	100
Septic land %	20	0

*7% per decade I/I increases for "degradation"

Basin area is in acres, 1996 sewered area is a rough estimate subject to local sewer information

20-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**20 year peak I/I flow (gpad)***	**20 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	743	73	0.26	344	1812	1.35	1.60
2000	840	79	0.30	358	1863	1.57	1.87
2010	1084	91	0.42	387	1990	2.16	2.58
2020	1327	100	0.55	416	2117	2.81	3.36
2030	1327	100	0.64	479	2244	2.98	3.61
2040	1327	100	0.72	544	2244	2.98	3.70
2050	1327	100	0.81	608	2244	2.98	3.78

10-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**10 year peak I/I flow (gpad)***	**10 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	743	73	0.26	344	1650	1.23	1.48
2000	840	79	0.30	358	1696	1.43	1.73
2010	1084	91	0.42	387	1811	1.96	2.38
2020	1327	100	0.55	416	1927	2.56	3.11
2030	1327	100	0.64	479	2042	2.71	3.35
2040	1327	100	0.72	544	2042	2.71	3.43
2050	1327	100	0.81	608	2042	2.71	3.52

5-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**5 year peak I/I flow (gpad)***	**5 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	743	73	0.26	344	1487	1.11	1.36
2000	840	79	0.30	358	1529	1.28	1.59
2010	1084	91	0.42	387	1633	1.77	2.19
2020	1327	100	0.55	416	1737	2.31	2.86
2030	1327	100	0.64	479	1841	2.44	3.08
2040	1327	100	0.72	544	1841	2.44	3.16
2050	1327	100	0.81	608	1841	2.44	3.25

Flow projection for basin **mill-q**

Total GIS area	104	
Year	1996	2020
Sewered Area	76	104
Septic Area	15	0
Sewered land %	73	100
Septic land %	14	0

*7% per decade I/I increases for "degradation"

Basin area is in acres, 1996 sewered area is a rough estimate subject to local sewer information

20-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**20 year peak I/I flow (gpad)***	**20 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	76	84	0.02	255	2163	0.16	0.18
2000	81	87	0.02	264	2224	0.18	0.20
2010	92	94	0.03	286	2375	0.22	0.25
2020	104	100	0.03	309	2527	0.26	0.29
2030	104	100	0.04	346	2678	0.28	0.31
2040	104	100	0.04	382	2678	0.28	0.32
2050	104	100	0.04	418	2678	0.28	0.32

10-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**10 year peak I/I flow (gpad)***	**10 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	76	84	0.02	255	2012	0.15	0.17
2000	81	87	0.02	264	2068	0.17	0.19
2010	92	94	0.03	286	2209	0.20	0.23
2020	104	100	0.03	309	2350	0.24	0.28
2030	104	100	0.04	346	2490	0.26	0.29
2040	104	100	0.04	382	2490	0.26	0.30
2050	104	100	0.04	418	2490	0.26	0.30

5-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**5 year peak I/I flow (gpad)***	**5 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	76	84	0.02	255	1860	0.14	0.16
2000	81	87	0.02	264	1912	0.15	0.18
2010	92	94	0.03	286	2042	0.19	0.22
2020	104	100	0.03	309	2173	0.23	0.26
2030	104	100	0.04	346	2303	0.24	0.28
2040	104	100	0.04	382	2303	0.24	0.28
2050	104	100	0.04	418	2303	0.24	0.28

Flow projection for basin **sss-ne**

Total GIS area	76	
Year	1996	2020
Sewered Area	76	76
Septic Area	0	0
Sewered land %	100	100
Septic land %	0	0

*7% per decade I/I increases for "degradation"

Basin area is in acres, 1996 sewered area is a rough estimate subject to local sewer information

20-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**20 year peak I/I flow (gpad)***	**20 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	76	100	0.01	169	1445	0.11	0.12
2000	76	100	0.01	179	1485	0.11	0.13
2010	76	100	0.02	206	1586	0.12	0.14
2020	76	100	0.02	237	1687	0.13	0.15
2030	76	100	0.02	265	1788	0.14	0.16
2040	76	100	0.02	294	1788	0.14	0.16
2050	76	100	0.02	322	1788	0.14	0.16

10-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**10 year peak I/I flow (gpad)***	**10 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	76	100	0.01	169	1321	0.10	0.11
2000	76	100	0.01	179	1358	0.10	0.12
2010	76	100	0.02	206	1450	0.11	0.13
2020	76	100	0.02	237	1542	0.12	0.14
2030	76	100	0.02	265	1635	0.12	0.14
2040	76	100	0.02	294	1635	0.12	0.15
2050	76	100	0.02	322	1635	0.12	0.15

5-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**5 year peak I/I flow (gpad)***	**5 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	76	100	0.01	169	1197	0.09	0.10
2000	76	100	0.01	179	1230	0.09	0.11
2010	76	100	0.02	206	1314	0.10	0.12
2020	76	100	0.02	237	1398	0.11	0.12
2030	76	100	0.02	265	1481	0.11	0.13
2040	76	100	0.02	294	1481	0.11	0.13
2050	76	100	0.02	322	1481	0.11	0.14

Flow projection for basin **scrk-x**

Total GIS area	3990	
Year	1996	2020
Sewered Area	2032	3990
Septic Area	280	0
Sewered land %	51	100
Septic land %	7	0

*7% per decade I/I increases for "degradation"

Basin area is in acres, 1996 sewered area is a rough estimate subject to local sewer information

20-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**20 year peak I/I flow (gpad)***	**20 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	2032	88	0.94	462	1199	2.44	3.38
2000	2358	91	1.02	433	1233	2.91	3.93
2010	3174	96	1.21	382	1317	4.18	5.39
2020	3990	100	1.42	356	1401	5.59	7.01
2030	3990	100	1.56	392	1485	5.92	7.49
2040	3990	100	1.71	429	1485	5.92	7.63
2050	3990	100	1.86	466	1485	5.92	7.78

10-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**10 year peak I/I flow (gpad)***	**10 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	2032	88	0.94	462	1102	2.24	3.18
2000	2358	91	1.02	433	1133	2.67	3.69
2010	3174	96	1.21	382	1210	3.84	5.05
2020	3990	100	1.42	356	1287	5.13	6.55
2030	3990	100	1.56	392	1364	5.44	7.00
2040	3990	100	1.71	429	1364	5.44	7.15
2050	3990	100	1.86	466	1364	5.44	7.30

5-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**5 year peak I/I flow (gpad)***	**5 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	2032	88	0.94	462	1004	2.04	2.98
2000	2358	91	1.02	433	1032	2.43	3.46
2010	3174	96	1.21	382	1103	3.50	4.71
2020	3990	100	1.42	356	1173	4.68	6.10
2030	3990	100	1.56	392	1243	4.96	6.52
2040	3990	100	1.71	429	1243	4.96	6.67
2050	3990	100	1.86	466	1243	4.96	6.82

Flow projection for basin **ssm-q**

Total GIS area	196	
Year	1996	2020
Sewered Area	98	196
Septic Area	18	0
Sewered land %	50	100
Septic land %	9	0

*7% per decade I/I increases for "degradation"

Basin area is in acres, 1996 sewered area is a rough estimate subject to local sewer information

20-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**20 year peak I/I flow (gpad)***	**20 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	98	84	0.03	303	1642	0.16	0.19
2000	114	88	0.03	289	1688	0.19	0.23
2010	155	95	0.04	263	1803	0.28	0.32
2020	196	100	0.05	250	1918	0.38	0.42
2030	196	100	0.05	280	2033	0.40	0.45
2040	196	100	0.06	310	2033	0.40	0.46
2050	196	100	0.07	341	2033	0.40	0.47

10-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**10 year peak I/I flow (gpad)***	**10 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	98	84	0.03	303	1504	0.15	0.18
2000	114	88	0.03	289	1546	0.18	0.21
2010	155	95	0.04	263	1652	0.26	0.30
2020	196	100	0.05	250	1757	0.34	0.39
2030	196	100	0.05	280	1862	0.36	0.42
2040	196	100	0.06	310	1862	0.36	0.43
2050	196	100	0.07	341	1862	0.36	0.43

5-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**5 year peak I/I flow (gpad)***	**5 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	98	84	0.03	303	1367	0.13	0.16
2000	114	88	0.03	289	1405	0.16	0.19
2010	155	95	0.04	263	1500	0.23	0.27
2020	196	100	0.05	250	1596	0.31	0.36
2030	196	100	0.05	280	1692	0.33	0.39
2040	196	100	0.06	310	1692	0.33	0.39
2050	196	100	0.07	341	1692	0.33	0.40

Flow projection for basin **ls-14**

Total GIS area	483	
Year	1996	2020
Sewered Area	246	483
Septic Area	20	0
Sewered land %	51	100
Septic land %	4	0

*7% per decade I/I increases for "degradation"

Basin area is in acres, 1996 sewered area is a rough estimate subject to local sewer information

20-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**20 year peak I/I flow (gpad)***	**20 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	246	92	0.07	302	1324	0.33	0.40
2000	286	94	0.08	281	1361	0.39	0.47
2010	384	98	0.09	247	1453	0.56	0.65
2020	483	100	0.11	228	1546	0.75	0.86
2030	483	100	0.12	253	1639	0.79	0.91
2040	483	100	0.13	279	1639	0.79	0.93
2050	483	100	0.15	305	1639	0.79	0.94

10-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**10 year peak I/I flow (gpad)***	**10 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	246	92	0.07	302	1213	0.30	0.37
2000	286	94	0.08	281	1247	0.36	0.44
2010	384	98	0.09	247	1332	0.51	0.61
2020	483	100	0.11	228	1417	0.68	0.79
2030	483	100	0.12	253	1501	0.73	0.85
2040	483	100	0.13	279	1501	0.73	0.86
2050	483	100	0.15	305	1501	0.73	0.87

5-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**5 year peak I/I flow (gpad)***	**5 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	246	92	0.07	302	1102	0.27	0.35
2000	286	94	0.08	281	1133	0.32	0.40
2010	384	98	0.09	247	1210	0.46	0.56
2020	483	100	0.11	228	1287	0.62	0.73
2030	483	100	0.12	253	1364	0.66	0.78
2040	483	100	0.13	279	1364	0.66	0.79
2050	483	100	0.15	305	1364	0.66	0.81

Flow projection for basin **ls-11n**

Total GIS area	2146	
Year	1996	2020
Sewered Area	1019	2146
Septic Area	478	0
Sewered land %	47	100
Septic land%	22	0

*7% per decade I/I increases for "degradation"

Basin area is in acres, 1996 sewered area is a rough estimate subject to local sewer information

20-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**20 year peak I/I flow (gpad)***	**20 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	1019	68	0.32	316	957	0.98	1.30
2000	1207	75	0.37	307	984	1.19	1.56
2010	1676	89	0.48	289	1051	1.76	2.25
2020	2146	100	0.60	278	1118	2.40	3.00
2030	2146	100	0.65	301	1185	2.54	3.19
2040	2146	100	0.70	325	1185	2.54	3.24
2050	2146	100	0.75	349	1185	2.54	3.29

10-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**10 year peak I/I flow (gpad)***	**10 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	1019	68	0.32	316	868	0.88	1.21
2000	1207	75	0.37	307	892	1.08	1.45
2010	1676	89	0.48	289	953	1.60	2.08
2020	2146	100	0.60	278	1013	2.17	2.77
2030	2146	100	0.65	301	1074	2.30	2.95
2040	2146	100	0.70	325	1074	2.30	3.00
2050	2146	100	0.75	349	1074	2.30	3.05

5-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**5 year peak I/I flow (gpad)***	**5 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	1019	68	0.32	316	778	0.79	1.11
2000	1207	75	0.37	307	800	0.96	1.34
2010	1676	89	0.48	289	854	1.43	1.92
2020	2146	100	0.60	278	908	1.95	2.55
2030	2146	100	0.65	301	963	2.07	2.71
2040	2146	100	0.70	325	963	2.07	2.76
2050	2146	100	0.75	349	963	2.07	2.82

Flow projection for basin **jenk-r**

Total GIS area	325	
Year	1996	2020
Sewered Area	36	325
Septic Area	149	0
Sewered land %	11	100
Septic land %	46	0

*7% per decade I/I increases for "degradation"

Basin area is in acres, 1996 sewered area is a rough estimate subject to local sewer information

20-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**20 year peak I/I flow (gpad)***	**20 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	36	19	0.01	294	1401	0.05	0.06
2000	84	40	0.02	276	1440	0.12	0.14
2010	205	77	0.05	247	1538	0.31	0.37
2020	325	100	0.07	231	1636	0.53	0.61
2030	325	100	0.08	257	1734	0.56	0.65
2040	325	100	0.09	283	1734	0.56	0.66
2050	325	100	0.10	310	1734	0.56	0.66

10-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**10 year peak I/I flow (gpad)***	**10 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	36	19	0.01	294	1275	0.05	0.06
2000	84	40	0.02	276	1311	0.11	0.13
2010	205	77	0.05	247	1400	0.29	0.34
2020	325	100	0.07	231	1489	0.48	0.56
2030	325	100	0.08	257	1579	0.51	0.60
2040	325	100	0.09	283	1579	0.51	0.61
2050	325	100	0.10	310	1579	0.51	0.61

5-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**5 year peak I/I flow (gpad)***	**5 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	36	19	0.01	294	1149	0.04	0.05
2000	84	40	0.02	276	1181	0.10	0.12
2010	205	77	0.05	247	1262	0.26	0.31
2020	325	100	0.07	231	1342	0.44	0.51
2030	325	100	0.08	257	1423	0.46	0.55
2040	325	100	0.09	283	1423	0.46	0.55
2050	325	100	0.10	310	1423	0.46	0.56

Flow projection for basin **ls-11s**

Total GIS A	3867	
Year	1996	2020
Sewd Area	500	3000
Septic Area	50	0
Sewed land %	17	100
Septic land %	1	0

*7% per decade I/I increases for "degradation"

Basin area is in acres, 1996 sewered area is a rough estimate subject to local sewer information

20-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**20 year peak I/I flow (gpad)***	**20 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	500	91	0.11	213	1378	0.69	0.80
2000	917	96	0.11	116	1417	1.30	1.40
2010	1958	99	0.09	48	1513	2.96	3.06
2020	3000	100	0.13	44	1610	4.83	4.96
2030	3000	100	0.13	44	1706	5.12	5.25
2040	3000	100	0.14	48	1706	5.12	5.26
2050	3000	100	0.15	51	1706	5.12	5.27

10-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**10 year peak I/I flow (gpad)***	**10 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	500	91	0.11	213	1332	0.67	0.77
2000	917	96	0.11	116	1369	1.26	1.36
2010	1958	99	0.09	48	1463	2.86	2.96
2020	3000	100	0.13	44	1556	4.67	4.80
2030	3000	100	0.13	44	1649	4.95	5.08
2040	3000	100	0.14	48	1649	4.95	5.09
2050	3000	100	0.15	51	1649	4.95	5.10

5-Year Peak Flow Projection

Year	Sewered basin area	Basin % pop sewered	Basin base flow (mgd)	Basin base flow (gpad)	**5 year peak I/I flow (gpad)***	**5 year peak I/I flow (mgd)**	**Projected basin peak flow (mgd)**
1996	500	91	0.11	213	1286	0.64	0.75
2000	917	96	0.11	116	1322	1.21	1.32
2010	1958	99	0.09	48	1412	2.77	2.86
2020	3000	100	0.13	44	1502	4.51	4.64
2030	3000	100	0.13	44	1592	4.78	4.91
2040	3000	100	0.14	48	1592	4.78	4.92
2050	3000	100	0.15	51	1592	4.78	4.93

APPENDIX 240-E

AUBURN PLANNING ZONE PARALLEL ALTERNATIVE FLOW ROUTING

Task 240 Report:
AUBURN PLANNING ZONE - PARALLEL ALTERNATIVE

Facility	Up-stream MH #	Down-stream MH #	Dia. (in.)	Manning n	Up-stream Inv Elev	Down-stream Inv Elev	Length (ft)	Slope (ft/ft)	Vfull (fps)	Cap. (mgd)	Herrera Proposed Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (mgd)	2010 Design Flow Total (mgd)	2020 Design Flow Inflow (mgd)	2020 Design Flow Total (mgd)	2030 Design Flow Inflow (mgd)	2030 Design Flow Total (mgd)	2050 Design Flow Inflow (mgd)	2050 Design Flow Total (mgd)	Excess (mgd)	Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW elev (ft)	Proposed Diameter (inches)
do not delete this line																												
												10% al-x	0.34	0.34	0.37	0.37	0.39	0.39	0.40	0.40			X					
RE*ALPAC FORCEMAIN	PS 2	238	12	0.013	144.50	165.60	2940					100% pac-a	2.58	2.92	3.23	3.60	3.43	3.82	3.45	3.85			2010					
RE*ALPAC	238	237	21	0.013	165.60	165.30	400	0.0007	1.81	2.8	0.0012	100% pac-x	2.71	5.63	3.26	6.86	3.47	7.29	3.57	7.42	4.61	24	2010					
RE*ALPAC	237	230	21	0.013	165.30	164.90	401	0.0010	2.09	3.2	0.0012	0%		5.63		6.86		7.29		7.42	4.18	24	2010					
RE*ALPAC	230	229	21	0.013	164.90	164.70	135	0.0015	2.54	3.9	0.0012	10% al-x	0.34	5.98	0.37	7.23	0.39	7.69	0.40	7.81	3.86	24	2010					
RE*ALPAC	229	228	21	0.013	164.70	164.40	275	0.0011	2.18	3.4	0.0012	0%		5.98		7.23		7.69		7.81	4.42	24	2010					
RE*ALPAC	228	251	21	0.013	164.40	163.90	241	0.0021	3.01	4.7	0.0012	0%		5.98		7.23		7.69		7.81	3.14	21	2010					
RE*ALPAC	251	252	21	0.013	163.90	163.60	366	0.0008		2.9	0.0012	0%		5.98		7.23		7.69		7.81	4.88	24	2010					
RE*ALPAC	252	253	21	0.013	163.60	163.20	328	0.0012	2.31	3.6	0.0012	0%		5.98		7.23		7.69		7.81	4.23	24	2010					
RE*ALPAC	253	254	21	0.013	163.20	162.90	165	0.0018	2.81	4.4	0.0012	0%		5.98		7.23		7.69		7.81	3.44	21	2010					
RE*ALPAC	254	256	21	0.013	162.90	162.60	300	0.0010	2.09	3.2	0.0012	0%		5.98		7.23		7.69		7.81	4.57	24	2010					
	Section		21	0.013		3.00	2611	0.0011	**2.24**	**3.5**	**0.0011**	0%		5.98		7.23		7.69		7.81	4.33	24	2010					24
RE*ALPAC	256	257	24	0.013	162.60	162.50	89	0.0011	2.42	4.9	0.0012	40% al-x	1.37	7.35	1.49	8.72	1.57	9.26	1.58	9.39	4.49	24	2010					
RE*ALPAC	257	258	24	0.013	162.50	162.20	251	0.0012	2.50	5.1	0.0012	0%		7.35		8.72		9.26		9.39	4.34	24	2010					
RE*ALPAC	258	259	24	0.013	162.20	161.90	248	0.0012	2.51	5.1	0.0012	0%		7.35		8.72		9.26		9.39	4.30	24	2010					
RE*ALPAC	259	260	24	0.013	161.90	161.70	241	0.0008	2.08	4.2	0.0012	0%		7.35		8.72		9.26		9.39	5.18	27	2010					
RE*ALPAC	260	261	24	0.013	161.70	161.40	241	0.0012	2.55	5.2	0.0012	0%		7.35		8.72		9.26		9.39	4.23	24	2010					
RE*ALPAC	261	290	24	0.013	161.40	161.20	185	0.0011	2.37	4.8	0.0012	0%		7.35		8.72		9.26		9.39	4.58	24	2010					
RE*ALPAC	290	293	24	0.013	161.20	160.80	421	0.0010	2.22	4.5	0.0012	0%		7.35		8.72		9.26		9.39	4.88	24	2010					
RE*ALPAC	293	304	24	0.013	160.80	160.30	438	0.0011	2.44	4.9	0.0012	0%		7.35		8.72		9.26		9.39	4.45	24	2010					
RE*ALPAC	304	305	24	0.013	160.30	159.90	460	0.0009	2.13	4.3	0.0012	0%		7.35		8.72		9.26		9.39	5.08	24	2010					
RE*ALPAC	305	306	24	0.013	159.90	159.40	440	0.0011	2.44	4.9	0.0012	0%		7.35		8.72		9.26		9.39	4.46	24	2010					
RE*ALPAC	306	307	24	0.013	159.40	159.00	446	0.0009	2.16	4.4	0.0012	0%		7.35		8.72		9.26		9.39	5.01	24	2010					
RE*ALPAC	307	308	24	0.013	159.00	158.60	434	0.0009	2.19	4.4	0.0012	0%		7.35		8.72		9.26		9.39	4.95	24	2010					
RE*ALPAC	308	309	24	0.013	158.60	158.10	441	0.0011	2.43	4.9	0.0012	0%		7.35		8.72		9.26		9.39	4.46	24	2010					
RE*ALPAC	309	309B	24	0.013	158.10	157.80	340	0.0009	2.15	4.3	0.0012	0%		7.35		8.72		9.26		9.39	5.05	24	2010					
RE*ALPAC	309B	R83-17	24	0.013	157.80	157.20	345	0.0017	3.01	6.1	0.0012	40% al-x	1.37	8.72	1.49	10.21	1.57	10.83	1.58	10.98	4.87	24	2010					
	Section		24	0.013		5.40	5020	0.0011	**2.37**	**4.8**	**0.0011**	0%		8.72		10.21		10.83		10.98	6.18	27	2010					27
RE*AUBWVAL	R83-17	R83-16	24	0.013	157.20	156.40	437	0.0018	3.09	6.3	0.0012	0%		8.72		10.21		10.83		10.98	4.71	24	2010					
RE*AUBWVAL	R83-16	R83-15	24	0.013	156.40	156.00	39	0.0103	7.31	14.8	0.0012	0%		8.72		10.21		10.83		10.98	-3.84	OK	NE					
RE*AUBWVAL	R83-15	R83-14	24	0.013	156.00	154.80	367	0.0033	4.13	8.4	0.0012	0%		8.72		10.21		10.83		10.98	2.61	21	2010					
RE*AUBWVAL	R83-14	R83-13	24	0.013	154.80	154.00	369	0.0022	3.36	6.8	0.0012	0%		8.72		10.21		10.83		10.98	4.16	24	2010					
RE*AUBWVAL	R83-13	R83-12	24	0.013	154.00	153.60	408	0.0010	2.26	4.6	0.0012	0%		8.72		10.21		10.83		10.98	6.40	27	2010					
RE*AUBWVAL	R83-12	R83-11	24	0.013	153.60	153.30	371	0.0008	2.05	4.2	0.0012	0%		8.72		10.21		10.83		10.98	6.81	27	2010					
RE*AUBWVAL	R83-11	R83-10	24	0.013	153.30	153.10	339	0.0006	1.75	3.6	0.0012	0%		8.72		10.21		10.83		10.98	7.42	30	2010					
RE*AUBWVAL	R83-10	R83-09	24	0.013	153.10	153.00	270	0.0004	1.39	2.8	0.0012	0%		8.72		10.21		10.83		10.98	8.16	30	2010					
RE*AUBWVAL	R83-09	R83-08	24	0.013	153.00	152.50	221	0.0023	3.43	7.0	0.0012	0%		8.72		10.21		10.83		10.98	4.01	24	2010					
RE*AUBWVAL	R83-08	R83-07	24	0.013	152.50	152.10	467	0.0009	2.11	4.3	0.0012	0%		8.72		10.21		10.83		10.98	6.69	27	2010					
RE*AUBWVAL	R83-07	R83-06	24	0.013	152.10	151.80	380	0.0008	2.03	4.1	0.0012	0%		8.72		10.21		10.83		10.98	6.87	27	2010					
RE*AUBWVAL	R83-06	R83-05	24	0.013	151.80	151.20	538	0.0011	2.41	4.9	0.0012	0%		8.72		10.21		10.83		10.98	6.09	27	2010					
RE*AUBWVAL	R83-05	R83-04	24	0.013	151.20	150.80	475	0.0008	2.09	4.2	0.0012	0%		8.72		10.21		10.83		10.98	6.73	27	2010					
RE*AUBWVAL	R83-04	R83-03	24	0.013	150.80	150.20	480	0.0013	2.55	5.2	0.0012	0%		8.72		10.21		10.83		10.98	5.80	27	2010					
RE*AUBWVAL	R83-03	R83-02	24	0.013	150.20	149.80	482	0.0008	2.08	4.2	0.0012	0%		8.72		10.21		10.83		10.98	6.76	27	2010					
RE*AUBWVAL	R83-02	R83-01	24	0.013	149.80	149.20	235	0.0026	3.65	7.4	0.0012	0%		8.72		10.21		10.83		10.98	3.58	24	2010					
	Section		24	0.013		8.00	5878	0.0014	**2.66**	**5.4**	**0.0014**	0%		8.72		10.21		10.83		10.98	5.58	27	2010					27

Task 240 Report:
AUBURN PLANNING ZONE - PARALLEL ALTERNATIVE

Facility	Up-stream MH #	Down-stream MH #	Dia. (in.)	Manning n	Up-stream Inv Elev	Down-stream Inv Elev	Length (ft)	Slope (ft/ft)	Vfull (fps)	Cap. (mgd)	Herrera Proposed Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (mgd)	2010 Design Flow Total (mgd)	2020 Design Flow Inflow (mgd)	2020 Design Flow Total (mgd)	2030 Design Flow Inflow (mgd)	2030 Design Flow Total (mgd)	2050 Design Flow Inflow (mgd)	2050 Design Flow Total (mgd)	Excess (mgd)	Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW elev (ft)	Proposed Diameter (inches)
												100% fwne-w	2.39	11.11	4.21	14.42	4.45	15.28	4.48	15.46			X					
WVAL	R83-01	81-2	36	0.013	149.15	148.95	375	0.0005	2.18	10.0	0.0038	25% aub3-s	0.36	11.47	0.44	14.86	0.47	15.75	0.48	15.93	5.97	21	2010					
WVAL	81-2	81-1	30	0.013	149.00	148.50	210	0.0024	4.09	12.9	0.0038	0%		11.47		14.86		15.75		15.93	2.98	18	2020					
WVAL	81-1	80-8	42	0.013	148.50	148.42	70	0.0011	3.54	22.0	0.0038	0%		11.47		14.86		15.75		15.93	-6.07	OK	NE					
WVAL x Main St*	80-8	80-7	42	0.013	148.42	147.60	335	0.0024	5.19	32.2	0.0038	0%		11.47		14.86		15.75		15.93	-16.27	OK	NE					
WVAL	80-7	80-6	30	0.013	147.60	147.00	167	0.0036	5.02	15.9	0.0038	0%		11.47		14.86		15.75		15.93	0.03	3	2050					
WVAL	80-6	80-5	30	0.013	147.00	146.10	482	0.0019	3.62	11.5	0.0038	25% aub3-s	0.36	11.83	0.44	15.30	0.47	16.22	0.48	16.41	4.94	21	2010					
WVAL	80-5	80-3	30	0.013	146.10	145.16	510	0.0018	3.60	11.4	0.0038	0%		11.83		15.30		16.22		16.41	5.01	21	2010					
WVAL	80-3	80-2	30	0.013	145.16	144.50	441	0.0015	3.24	10.3	0.0038	0%		11.83		15.30		16.22		16.41	6.14	21	2010					
WVAL	80-2	80-1	30	0.013	144.50	143.70	450	0.0018	3.53	11.2	0.0038	0%		11.83		15.30		16.22		16.41	5.22	21	2010					
WVAL	80-1	79-23	30	0.013	143.70	142.80	447	0.0020	3.76	11.9	0.0038	0%		11.83		15.30		16.22		16.41	4.50	21	2020					
WVAL	79-23	79-22	30	0.013	142.80	142.25	465	0.0012	2.88	9.1	0.0038	0%		11.83		15.30		16.22		16.41	7.29	24	2010					
WVAL	79-22	79-21	30	0.013	142.25	141.95	450	0.0007	2.16	6.8	0.0038	0%		11.83		15.30		16.22		16.41	9.56	27	2010					
WVAL	79-21	79-20	30	0.013	141.95	141.70	410	0.0006	2.07	6.6	0.0038	0%		11.83		15.30		16.22		16.41	9.85	27	2010					
WVAL	79-20	79-19	30	0.013	141.70	141.48	363	0.0006	2.06	6.5	0.0038	0%		11.83		15.30		16.22		16.41	9.88	27	2010					
WVAL	79-19	79-18	30	0.013	141.48	141.26	362	0.0006	2.07	6.5	0.0038	0%		11.83		15.30		16.22		16.41	9.86	27	2010					
WVAL	79-18	79-17	30	0.013	141.26	141.00	425	0.0006	2.07	6.6	0.0038	0%		11.83		15.30		16.22		16.41	9.85	27	2010					
WVAL	79-17	79-16	42	0.013	140.89	139.87	260	0.0039	6.57	40.8	0.0038	0%		11.83		15.30		16.22		16.41	-24.36	OK	NE					
WVAL	79-16	79-15X	30	0.013	139.87	139.67	360	0.0006	1.97	6.3	0.0038	0%		11.83		15.30		16.22		16.41	10.16	27	2010					
WVAL	79-15X	79-15	30	0.013	139.67	139.04	90	0.0070	7.01	22.2	0.0038	0%		11.83		15.30		16.22		16.41	-5.79	OK	NE					
WVAL	79-15	79-14	30	0.013	139.04	138.15	410	0.0022	3.90	12.4	0.0038	0%		11.83		15.30		16.22		16.41	4.05	18	2020					
WVAL	79-14	1	30	0.013	138.15	137.92	389	0.0006	2.04	6.5	0.0038	0%		11.83		15.30		16.22		16.41	9.95	27	2010					
	Section		24	0.013		11.23	7470	0.0015	**2.80**	**5.7**	**0.0015**	0%		11.83		15.30		16.22		16.41	10.73	33	2010					33
WVAL	1	79-13	42	0.013	137.92	136.50	380	0.0037	6.41	39.8	0.0038	0%		11.83		15.30		16.22		16.41	-23.38	OK	NE					
WVAL	79-13	79-12	30	0.013	136.50	136.40	100	0.0010	2.65	8.4	0.0038	0%		11.83		15.30		16.22		16.41	8.00	24	2010					
											0.0038	100% fwne-x	1.71	13.54	2.12	17.41	2.24	18.46	2.26	18.67			X					
WVAL	79-12	79-11	30	0.013	136.40	135.95	484	0.0009	2.55	8.1	0.0038	25% aub3-s	0.36	13.90	0.44	17.85	0.47	18.93	0.48	19.14	11.05	27	2010					
WVAL	79-11	79-10	30	0.013	135.95	135.70	289	0.0009	2.46	7.8	0.0038	0%		13.90		17.85		18.93		19.14	11.34	27	2010					
WVAL	79-10	79-9	30	0.013	135.70	135.41	364	0.0008	2.37	7.5	0.0038	0%		13.90		17.85		18.93		19.14	11.65	27	2010					
WVAL	79-9	79-8	30	0.013	135.41	135.12	361	0.0008	2.38	7.5	0.0038	0%		13.90		17.85		18.93		19.14	11.62	27	2010					
WVAL	79-8	79-6	30	0.013	135.12	134.83	362	0.0008	2.37	7.5	0.0038	0%		13.90		17.85		18.93		19.14	11.63	27	2010					
WVAL	79-6	79-5	30	0.013	134.83	134.50	411	0.0008	2.37	7.5	0.0038	0%		13.90		17.85		18.93		19.14	11.63	27	2010					
WVAL	79-5	79-4	30	0.013	134.50	134.09	496	0.0008	2.41	7.6	0.0038	0%		13.90		17.85		18.93		19.14	11.52	27	2010					
WVAL	79-4	79-3	30	0.013	134.09	133.70	490	0.0008	2.36	7.5	0.0038	0%		13.90		17.85		18.93		19.14	11.66	27	2010					
WVAL	79-3	79-2	30	0.013	133.70	133.42	373	0.0008	2.30	7.3	0.0038	25% aub3-s	0.36	14.27	0.44	18.30	0.47	19.40	0.48	19.62	12.35	27	2010					
WVAL	79-2	79-1	30	0.013	133.42	133.40	39	0.0005	1.91	6.0	0.0038	0%		14.27		18.30		19.40		19.62	13.57	30	2010					
WVAL	79-1	R18H-65	42	0.013	133.40	133.19	12	0.0175	13.87	86.1	0.0038	0%		14.27		18.30		19.40		19.62	-66.48	OK	NE					
	Section		30	0.013		4.73	4160	0.0011	**2.83**	**8.9**	**0.0011**	0%		14.27		18.30		19.40		19.62	10.67	33	2010					33
TO AUBURN3.R18H-65																												

Task 240 Report:
AUBURN PLANNING ZONE - PARALLEL ALTERNATIVE

Facility	Up-stream MH #	Down-stream MH #	Dia. (in.)	Manning n	Up-stream Inv Elev	Down-stream Inv Elev	Length (ft)	Slope (ft/ft)	Vfull (fps)	Cap. (mgd)	Herrera Proposed Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (mgd)	2010 Design Flow Total (mgd)	2020 Design Flow Inflow (mgd)	2020 Design Flow Total (mgd)	2030 Design Flow Inflow (mgd)	2030 Design Flow Total (mgd)	2050 Design Flow Inflow (mgd)	2050 Design Flow Total (mgd)	Excess (mgd)	Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW elev (ft)	Proposed Diameter (inches)
												100% lh-pc	1.73	1.73	3.08	3.08	3.29	3.29	3.35	3.35			X					
L. HILLS*			24	0.013	194.74	174.98	7269	0.0017	3.01	6.1	0.0027	100% wr-x	3.84	5.57	6.39	9.47	6.78	10.07	6.84	10.18	4.08	21	2020					
REPLACEMENT REQUIRED			27	0.013		19.76	7269	0.0027	**4.07**	**10.4**	**0.0027**	0%		5.57		9.47		10.07		10.18	-0.26	OK	NE					**27**
RE*WINTSEWR	GR27-44	GR27-43	24	0.013	174.98	172.67	329	0.0070	6.05	12.3	0.0030	40% wi-x	4.30	9.87	4.79	14.26	5.06	15.13	5.05	15.23	2.97	18	2020					
RE*WINTSEWR	GR27-43	GR27-42	24	0.013	172.67	170.67	295	0.0068	5.94	12.0	0.0030	0%		9.87		14.26		15.13		15.23	3.19	18	2020					
RE*WINTSEWR	GR27-42	GR27-41	24	0.013	170.67	168.78	268	0.0071	6.06	12.3	0.0030	0%		9.87		14.26		15.13		15.23	2.94	18	2020					
RE*WINTSEWR	GR27-41	GR27-40	24	0.013	168.78	168.52	123	0.0021	3.32	6.7	0.0030	0%		9.87		14.26		15.13		15.23	8.50	27	2010					
RE*WINTSEWR	GR27-40	GR27-39	24	0.013	168.52	167.20	412	0.0032	4.09	8.3	0.0030	0%		9.87		14.26		15.13		15.23	6.95	24	2010					
RE*WINTSEWR	GR27-39	GR27-38	24	0.013	167.20	166.40	399	0.0020	3.23	6.6	0.0030	0%		9.87		14.26		15.13		15.23	8.68	27	2010					
RE*WINTSEWR	GR27-38	GR27-37	24	0.013	166.40	165.60	410	0.0020	3.19	6.5	0.0030	0%		9.87		14.26		15.13		15.23	8.77	27	2010					
RE*WINTSEWR	GR27-37	GR27-36	24	0.013	165.60	164.80	411	0.0019	3.19	6.5	0.0030	0%		9.87		14.26		15.13		15.23	8.78	27	2010					
RE*WINTSEWR	GR27-36	GR27-35	24	0.013	164.80	163.90	410	0.0022	3.38	6.9	0.0030	0%		9.87		14.26		15.13		15.23	8.38	27	2010					
RE*WINTSEWR	GR27-35	GR27-34	24	0.013	163.90	163.10	419	0.0019	3.15	6.4	0.0030	0%		9.87		14.26		15.13		15.23	8.84	27	2010					
RE*WINTSEWR	GR27-34	GR27-33	24	0.013	163.10	162.50	414	0.0014	2.75	5.6	0.0030	0%		9.87		14.26		15.13		15.23	9.66	27	2010					
RE*WINTSEWR	GR27-33	GR27-32A	24	0.013	162.50	162.40	117	0.0009	2.11	4.3	0.0030	0%		9.87		14.26		15.13		15.23	10.96	27	2010					
RE*WINTSEWR	GR27-32A	GR27-32	24	0.013	162.40	162.10	160	0.0019	3.13	6.3	0.0030	0%		9.87		14.26		15.13		15.23	8.90	27	2010					
RE*WINTSEWR	GR27-32	GR27-31	24	0.013	162.10	162.00	111	0.0009	2.17	4.4	0.0030	0%		9.87		14.26		15.13		15.23	10.84	27	2010					
CORRODED	UPSTREAM		24	0.013		12.98	4278	0.0030	**3.98**	**8.1**	**0.0030**	0%		9.87		14.26		15.13		15.23	7.18	24	2010					24
RE*WINTSEWR	GR27-31	GR27-30	24	0.013	162.00	161.50	239	0.0021	3.30	6.7	0.0021	0%		9.87		14.26		15.13		15.23	8.54	27	2010					
RE*WINTSEWR	GR27-30	GR27-29	24	0.013	161.50	161.40	64	0.0016	2.86	5.8	0.0021	0%		9.87		14.26		15.13		15.23	9.45	30	2010					
RE*WINTSEWR	GR27-29	GR27-28	24	0.013	161.40	160.80	409	0.0015	2.77	5.6	0.0021	0%		9.87		14.26		15.13		15.23	9.63	30	2010					
RE*WINTSEWR	GR27-28	GR27-27	24	0.013	160.80	160.20	410	0.0015	2.76	5.6	0.0021	0%		9.87		14.26		15.13		15.23	9.63	30	2010					
RE*WINTSEWR	GR27-27	GR27-26	24	0.013	160.20	159.60	398	0.0015	2.80	5.7	0.0021	0%		9.87		14.26		15.13		15.23	9.55	30	2010					
RE*WINTSEWR	GR27-26	GR27-25	24	0.013	159.60	158.20	248	0.0056	5.42	11.0	0.0021	0%		9.87		14.26		15.13		15.23	4.24	21	2020					
	Section		24	0.013		3.80	1768	0.0021	**3.35**	**6.8**	**0.0021**	0%		9.87		14.26		15.13		15.23	8.45	27	2010					27
RE*WINTSEWR	GR27-25	GR27-24	36	0.013	158.20	157.60	433	0.0014	3.52	16.1	0.0013	0%		9.87		14.26		15.13		15.23	-0.83	OK	NE					
RE*WINTSEWR	GR27-24	GR27-23	36	0.013	157.60	157.00	445	0.0013	3.47	15.8	0.0013	0%		9.87		14.26		15.13		15.23	-0.61	OK	NE					
RE*WINTSEWR	GR27-23	GR27-22	36	0.013	157.00	156.50	445	0.0011	3.17	14.5	0.0013	0%		9.87		14.26		15.13		15.23	0.77	12	2030					
RE*WINTSEWR	GR27-22	GR27-21	36	0.013	156.50	155.90	443	0.0014	3.48	15.9	0.0013	0%		9.87		14.26		15.13		15.23	-0.64	OK	NE					
RE*WINTSEWR	GR27-21	GR27-20	36	0.013	155.90	155.50	310	0.0013	3.40	15.5	0.0013	0%		9.87		14.26		15.13		15.23	-0.26	OK	NE					
RE*WINTSEWR	GR27-20	GR27-19	36	0.013	155.50	154.90	421	0.0014	3.57	16.3	0.0013	55% wi-x	5.91	15.77	6.59	20.85	6.95	22.08	6.95	22.18	5.89	27	2020					
RE*WINTSEWR	GR27-19	GR27-18	36	0.013	154.90	154.20	444	0.0016	3.76	17.1	0.0013	0%		15.77		20.85		22.08		22.18	5.05	24	2020					
RE*WINTSEWR	GR27-18	GR27-17	36	0.013	154.20	153.10	498	0.0022	4.45	20.3	0.0013	0%		15.77		20.85		22.08		22.18	1.90	18	2020					
RE*WINTSEWR*	GR27-17	GR27-16	36	0.013	153.10	153.00	490	0.0002	1.35	6.2	0.0013	0%		15.77		20.85		22.08		22.18	16.02	39	2010					
RE*WINTSEWR	GR27-16	GR27-15	36	0.013	153.00	152.40	499	0.0012	3.28	15.0	0.0013	0%		15.77		20.85		22.08		22.18	7.22	27	2010					
RE*WINTSEWR	GR27-15	GR27-14	36	0.013	152.40	151.80	488	0.0012	3.32	15.1	0.0013	0%		15.77		20.85		22.08		22.18	7.05	27	2010					
	Section		36	0.013		6.40	4916	0.0013	**3.41**	**15.6**	**0.0013**	0%		15.77		20.85		22.08		22.18	6.61	27	2010					27
RE*WINTSEWR	GR27-14	GR27-13	42	0.013	151.80	151.20	543	0.0011	3.49	21.6	0.0011	0%		15.77		20.85		22.08		22.18	0.55	12	2030					
RE*WINTSEWR	GR27-13	GR27-12B	42	0.013	151.20	150.90	110	0.0027	5.48	34.0	0.0011	0%		15.77		20.85		22.08		22.18	-11.81	OK	NE					
RE*WINTSEWR	GR27-12B	GR27-12	42	0.013	150.90	150.80	250	0.0004	2.10	13.0	0.0011	0%		15.77		20.85		22.08		22.18	9.16	33	2010					
RE*WINTSEWR	GR27-12	GR27-11	42	0.013	150.80	150.40	309	0.0013	3.77	23.4	0.0011	0%		15.77		20.85		22.08		22.18	-1.24	OK	NE					
RE*WINTSEWR	GR27-11	GR27-10	42	0.013	150.40	150.00	428	0.0009	3.21	19.9	0.0011	0%		15.77		20.85		22.08		22.18	2.28	21	2020					
RE*WINTSEWR	GR27-10	GR27-09	42	0.013	150.00	149.80	206	0.0010	3.27	20.3	0.0011	0%		15.77		20.85		22.08		22.18	1.90	18	2020					
	Section		42	0.013		2.00	1846	0.0011	**3.45**	**21.4**	**0.0011**	0%		15.77		20.85		22.08		22.18	0.75	12	2030					12
RE*WINTSEWR	GR27-09	GR27-08	42	0.013	149.80	149.10	503	0.0014	3.91	24.3	0.0014	0%		15.77		20.85		22.08		22.18	-2.10	OK	NE					
RE*WINTSEWR	GR27-08	GR27-07	42	0.013	149.10	148.50	499	0.0012	3.64	22.6	0.0014	0%		15.77		20.85		22.08		22.18	-0.39	OK	NE					
RE*WINTSEWR	GR27-07	GR27-06	42	0.013	148.50	147.80	479	0.0015	4.01	24.9	0.0014	0%		15.77		20.85		22.08		22.18	-2.70	OK	NE					
RE*WINTSEWR	GR27-06	GR27-05	42	0.013	147.80	147.30	426	0.0012	3.59	22.3	0.0014	0%		15.77		20.85		22.08		22.18	-0.12	OK	NE					
RE*WINTSEWR	GR27-05	GR27-04	42	0.013	147.30	146.80	398	0.0013	3.72	23.1	0.0014	0%		15.77		20.85		22.08		22.18	-0.89	OK	NE					
RE*WINTSEWR	GR27-04	GR27-03	42	0.013	146.80	146.60	121	0.0017	4.26	26.5	0.0014	0%		15.77		20.85		22.08		22.18	-4.28	OK	NE					
RE*WINTSEWR	GR27-03	GR27-02	42	0.013	146.60	145.70	636	0.0014	3.94	24.5	0.0014	0%		15.77		20.85		22.08		22.18	-2.31	OK	NE					
RE*WINTSEWR	GR27-02	GR27-01	42	0.013	145.70	144.80	628	0.0014	3.97	24.6	0.0014	5% wi-x	0.54	16.31	0.60	21.45	0.63	22.71	0.63	22.81	-1.83	OK	NE					
RE*WINTSEWR	GR27-01	R18H-78A	42	0.013	144.80	144.50	65	0.0046	7.12	44.2	0.0014	0%		16.31		21.45		22.71		22.81	-21.40	OK	NE					
	Section		42	0.013		5.30	3755	0.0014	**3.94**	**24.5**	**0.0014**	0%		16.31		21.45		22.71		22.81	-1.64	OK	NE					OK
TO AUBURN3.R18H-78A																												

Task 240 Report:
AUBURN PLANNING ZONE - PARALLEL ALTERNATIVE

Facility	Up-stream MH #	Down-stream MH #	Dia. (in.)	Manning n	Up-stream Inv Elev	Down-stream Inv Elev	Length (ft)	Slope (ft/ft)	Vfull (fps)	Cap. (mgd)	Herrera Proposed Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (mgd)	2010 Design Flow Total (mgd)	2020 Design Flow Inflow (mgd)	2020 Design Flow Total (mgd)	2030 Design Flow Inflow (mgd)	2030 Design Flow Total (mgd)	2050 Design Flow Inflow (mgd)	2050 Design Flow Total (mgd)	Excess (mgd)	Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW elev (ft)	Proposed Diameter (inches)
M STREET TRUNK												100% seg-x	1.26	1.26	1.94	1.94	2.05	2.05	2.06	2.06			X					
RE*MSTTRUNK	GR19-49	GR19-48	18	0.013	200.10	199.10	422	0.0024	2.90	3.3	0.0023	70% mst-s	6.47	7.73	7.44	9.38	7.93	9.99	8.20	10.26	6.95	24	2010					
RE*MSTTRUNK	GR19-48	GR19-47	18	0.013	199.10	198.30	385	0.0021	2.72	3.1	0.0023	0%		7.73		9.38		9.99		10.26	7.16	27	2010					
RE*MSTTRUNK	GR19-47	GR19-46	18	0.013	198.30	198.05	102	0.0025	2.95	3.4	0.0023	0%		7.73		9.38		9.99		10.26	6.90	24	2010					
RE*MSTTRUNK	GR19-46	GR19-45	18	0.013	198.05	197.10	414	0.0023	2.86	3.3	0.0023	0%		7.73		9.38		9.99		10.26	7.00	27	2010					
RE*MSTTRUNK	GR19-45	GR19-44	18	0.013	197.10	196.40	322	0.0022	2.78	3.2	0.0023	0%		7.73		9.38		9.99		10.26	7.09	27	2010					
RE*MSTTRUNK	GR19-44	GR20-43	18	0.013	196.40	195.60	330	0.0024	2.94	3.3	0.0023	7% mst-s	0.65	8.38	0.74	10.12	0.79	10.78	0.82	11.08	7.73	27	2010					
	Section		18	0.013		4.50	1975	0.0023	**2.85**	**3.2**	**0.0023**	0%		8.38		10.12		10.78		11.08	7.83	27	2010					27
RE*MSTTRUNK	GR20-43	GR20-42	18	0.013	195.60	194.00	308	0.0052	4.30	4.9	0.0056	0%		8.38		10.12		10.78		11.08	6.18	21	2010					
RE*MSTTRUNK	GR20-42	GR20-41	18	0.013	194.00	192.40	320	0.0050	4.22	4.8	0.0056	0%		8.38		10.12		10.78		11.08	6.27	21	2010					
RE*MSTTRUNK	GR20-41	GR20-40	18	0.013	192.40	190.80	321	0.0050	4.21	4.8	0.0056	0%		8.38		10.12		10.78		11.08	6.28	21	2010					
RE*MSTTRUNK	GR20-40	GR21-39	18	0.013	190.80	188.90	362	0.0052	4.32	4.9	0.0056	0%		8.38		10.12		10.78		11.08	6.15	21	2010					
RE*MSTTRUNK	GR21-39	GR21-38	18	0.013	188.90	187.30	329	0.0049	4.16	4.7	0.0056	0%		8.38		10.12		10.78		11.08	6.33	21	2010					
RE*MSTTRUNK	GR21-38	GR21-37	18	0.013	187.30	185.60	340	0.0050	4.22	4.8	0.0056	8% mst-s	0.74	9.12	0.85	10.97	0.91	11.69	0.94	12.01	7.21	21	2010					
RE*MSTTRUNK	GR21-37	GR21-36A	18	0.013	185.60	185.20	77	0.0052	4.30	4.9	0.0056	0%		9.12		10.97		11.69		12.01	7.12	21	2010					
RE*MSTTRUNK	GR21-36A	GR21-36	18	0.013	185.20	183.90	252	0.0052	4.28	4.9	0.0056	0%		9.12		10.97		11.69		12.01	7.14	21	2010					
RE*MSTTRUNK	GR21-36	GR21-35	18	0.013	183.90	180.20	285	0.0130	6.79	7.7	0.0056	0%		9.12		10.97		11.69		12.01	4.27	18	2010					
RE*MSTTRUNK	GR21-35	GR21-34	18	0.013	180.20	178.40	342	0.0053	4.32	4.9	0.0056	0%		9.12		10.97		11.69		12.01	7.08	21	2010					
RE*MSTTRUNK	GR21-34	GR21-33	18	0.013	178.40	176.20	428	0.0051	4.27	4.9	0.0056	0%		9.12		10.97		11.69		12.01	7.14	21	2010					
RE*MSTTRUNK	GR21-33	GR21-32	18	0.013	176.20	174.10	430	0.0049	4.16	4.7	0.0056	0%		9.12		10.97		11.69		12.01	7.26	21	2010					
RE*MSTTRUNK	GR21-32	GR21-31	18	0.013	174.10	172.10	383	0.0052	4.31	4.9	0.0056	15% mst-s	1.39	10.51	1.59	12.57	1.70	13.39	1.76	13.77	8.86	24	2010					
RE*MSTTRUNK	GR21-31	GR22-30	18	0.013	172.10	170.20	382	0.0050	4.20	4.8	0.0056	0%		10.51		12.57		13.39		13.77	8.98	24	2010					
	Section		18	0.013		25.40	4559	0.0056	**4.45**	**5.1**	**0.0056**	0%		10.51		12.57		13.39		13.77	8.70	24	2010					24
RE*MSTTRUNK	GR22-30	GR22-29	24	0.013	163.70	163.40	177	0.0017	2.97	6.0	0.0018	0% mst-s		10.51		12.57		13.39		13.77	7.74	27	2010					
RE*MSTTRUNK	GR22-29	GR22-28	24	0.013	163.40	163.10	165	0.0018	3.08	6.2	0.0018	0%		10.51		12.57		13.39		13.77	7.53	27	2010					
RE*MSTTRUNK	GR22-28	GR22-27	24	0.013	163.10	162.80	167	0.0018	3.06	6.2	0.0018	0%		10.51		12.57		13.39		13.77	7.57	27	2010					
RE*MSTTRUNK	GR22-27	GR22-26	24	0.013	162.80	162.50	160	0.0019	3.13	6.3	0.0018	0%		10.51		12.57		13.39		13.77	7.43	27	2010					
RE*MSTTRUNK	GR22-26	GR22-25	24	0.013	162.50	162.30	153	0.0013	2.61	5.3	0.0018	0%		10.51		12.57		13.39		13.77	8.48	27	2010					
RE*MSTTRUNK	GR22-25	GR22-24	24	0.013	162.30	162.00	128	0.0023	3.50	7.1	0.0018	0%		10.51		12.57		13.39		13.77	6.69	27	2010					
	Section		24	0.013		1.70	950	0.0018	**3.06**	**6.2**	**0.0018**	0%		10.51		12.57		13.39		13.77	7.58	27	2010					27
RE*MSTTRUNK	GR22-24	GR22-23	30	0.013	162.00	161.70	659	0.0005	1.79	5.7	0.0020	0%		10.51		12.57		13.39		13.77	8.10	27	2010					
RE*MSTTRUNK	GR22-23	GR22-22B	30	0.013	161.70	161.30	605	0.0007	2.16	6.8	0.0020	0%		10.51		12.57		13.39		13.77	6.94	27	2010					
RE*MSTTRUNK	GR22-22B	GR22-22A	30	0.013	161.30	161.10	302	0.0007	2.16	6.8	0.0020	0%		10.51		12.57		13.39		13.77	6.94	27	2010					
RE*MSTTRUNK	GR22-22A	GR22-22	30	0.013	161.11	160.42	203	0.0034	4.87	15.4	0.0020	0%		10.51		12.57		13.39		13.77	-1.67	OK	NE					
RE*MSTTRUNK	GR22-22	GR22-21A	30	0.013	160.42	159.79	188	0.0034	4.87	15.4	0.0020	0%		10.51		12.57		13.39		13.77	-1.67	OK	NE					
RE*MSTTRUNK	GR22-21A	GR22-21	30	0.013	159.79	159.64	20	0.0073	7.18	22.7	0.0020	100% mst-e	3.24	13.75	3.98	16.54	4.23	17.61	4.30	18.07	-4.67	OK	NE					
RE*MSTTRUNK	GR22-21	GR22-20	30	0.013	159.60	158.90	357	0.0020	3.71	11.7	0.0020	0%		13.75		16.54		17.61		18.07	6.32	24	2010					
RE*MSTTRUNK	GR22-20	GR22-19	30	0.013	158.80	158.00	400	0.0020	3.75	11.9	0.0020	0%		13.75		16.54		17.61		18.07	6.21	24	2010					
RE*MSTTRUNK	GR22-19	GR22-18	30	0.013	157.90	156.90	487	0.0021	3.80	12.0	0.0020	0%		13.75		16.54		17.61		18.07	6.04	24	2010					
RE*MSTTRUNK	GR22-18	GR22-17A	30	0.013	156.90	156.10	336	0.0024	4.09	12.9	0.0020	80% mst-n	1.42	15.17	1.61	18.16	1.73	19.35	1.83	19.90	6.95	27	2010					
RE*MSTTRUNK	GR22-17A	GR22-17	30	0.013	156.10	155.60	240	0.0021	3.82	12.1	0.0020	0%		15.17		18.16		19.35		19.90	7.79	27	2010					
RE*MSTTRUNK	GR22-17	GR22-16	30	0.013	155.60	155.40	59	0.0034	4.88	15.5	0.0020	0%		15.17		18.16		19.35		19.90	4.45	21	2020					
RE*MSTTRUNK	GR22-16	GR22-15	30	0.013	155.40	153.90	729	0.0021	3.80	12.0	0.0020	0%		15.17		18.16		19.35		19.90	7.86	27	2010					
RE*MSTTRUNK	GR22-15	GR22-14	30	0.013	153.90	153.80	13	0.0077	7.35	23.3	0.0020	0%		15.17		18.16		19.35		19.90	-3.37	OK	NE					
RE*MSTTRUNK	GR22-14	GR22-13A	30	0.013	153.80	152.50	687	0.0019	3.64	11.5	0.0020	0%		15.17		18.16		19.35		19.90	8.36	27	2010					
RE*MSTTRUNK	GR22-13A	GR22-13	30	0.013	152.50	151.80	236	0.0030	4.56	14.5	0.0020	0%		15.17		18.16		19.35		19.90	5.45	24	2010					
RE*MSTTRUNK	GR22-13	GR22-12A	30	0.013	151.80	151.50	134	0.0022	3.96	12.6	0.0020	0%		15.17		18.16		19.35		19.90	7.34	27	2010					
RE*MSTTRUNK	GR22-12A	GR22-12	30	0.013	151.50	150.30	518	0.0023	4.03	12.8	0.0020	0%		15.17		18.16		19.35		19.90	7.12	27	2010					
RE*MSTTRUNK	GR22-12	GR22-11	30	0.013	150.30	148.30	652	0.0031	4.64	14.7	0.0020	0%		15.17		18.16		19.35		19.90	5.20	24	2010					
	Section		30	0.013		13.70	6825	0.0020	**3.75**	**11.9**	**0.0020**	0%		15.17		18.16		19.35		19.90	8.01	27	2010					27
RE*MSTTRUNK	GR22-11	GR22-10	36	0.013	148.30	147.90	704	0.0006	2.26	10.3	0.0008	0%		15.17		18.16		19.35		19.90	9.61	33	2010					
												20% mst-n	0.36	15.53	0.40	18.56	0.43	19.78	0.46	20.36			X					
												100% mst-ne	1.13	16.65	1.72	20.28	1.84	21.62	1.89	22.25			X					
RE*MSTTRUNK	GR22-10	GR22-08A	36	0.013	147.90	147.00	1079	0.0008	2.73	12.5	0.0008	100% sss-sw	0.97	17.62	1.36	21.64	1.45	23.07	1.48	23.73	11.28	36	2010					
RE*MSTTRUNK	GR22-08A	GR22-07	36	0.013	147.00	146.60	528	0.0008	2.60	11.9	0.0008	0%		17.62		21.64		23.07		23.73	11.86	36	2010					
RE*MSTTRUNK	GR22-07	GR22-06	36	0.013	146.60	146.40	237	0.0008	2.75	12.5	0.0008	0%		17.62		21.64		23.07		23.73	11.20	36	2010					
RE*MSTTRUNK	GR22-06	GR22-05	36	0.013	146.40	146.30	13	0.0077	8.30	37.8	0.0008	0%		17.62		21.64		23.07		23.73	-14.11	OK	NE					
RE*MSTTRUNK	GR22-05	GR22-04	36	0.013	146.30	146.10	269	0.0007	2.58	11.8	0.0008	0%		17.62		21.64		23.07		23.73	11.97	36	2010					
RE*MSTTRUNK	GR22-04	GR22-02A	36	0.013	146.10	145.60	655	0.0008	2.61	11.9	0.0008	0%		17.62		21.64		23.07		23.73	11.81	36	2010					
RE*MSTTRUNK	GR22-02A	GR22-02	36	0.013	145.60	145.30	348	0.0009	2.78	12.7	0.0008	0%		17.62		21.64		23.07		23.73	11.06	36	2010					
RE*MSTTRUNK	GR22-02	R18H-78A	36	0.013	145.20	144.80	464	0.0009	2.78	12.7	0.0008	0%		17.62		21.64		23.07		23.73	11.06	36	2010					
	Section		36	0.013		3.50	4297	0.0008	**2.70**	**12.3**	**0.0008**	0%		17.62		21.64		23.07		23.73	11.42	36	2010					36
TO AUBURN3.R18H-78A																												

Task 240 Report: AUBURN PLANNING ZONE - PARALLEL ALTERNATIVE											Herrera	Modification	2010 Design Flow		2020 Design Flow		2030 Design Flow		2050 Design Flow					Surcharge: any negative value in "BW elev"				
Facility	Up-stream MH #	Down-stream MH #	Dia. (in.)	Manning n	Up-stream Inv Elev	Down-stream Inv Elev	Length (ft)	Slope (ft/ft)	Vfull (fps)	Cap. (mgd)	Proposed Slope	Origin of Flow Percent	Inflow (mgd)	Total (mgd)	Inflow (mgd)	Total (mgd)	Inflow (mgd)	Total (mgd)	Inflow (mgd)	Total (mgd)	Excess (mgd)	Parallel Pipe (in.)	Decade Exceeded	Δ elev FULL pipe	Δ elev	Δ−Δfull	BW elev (ft)	Proposed Diameter (inches)
do not delete row																												
												100% MSTTRK GR22-02	17.62	17.62	21.64	21.64	23.07	23.07	23.73	23.73			X					
AUBURN 3 TRUNK												100% WINTSEWR.GR27-01	16.31	33.93	21.45	43.09	22.71	45.78	22.81	46.54			X					
RE*AUBURN3	R18H-78A	R18H-78	42	0.013	144.50	143.70	123	0.0065	8.46	52.5	0.0021	0%		33.93		43.09		45.78		46.54	-5.95	OK	NE					
RE*AUBURN3	R18H-78	R18H-77	42	0.013	143.70	140.90	480	0.0058	8.01	49.7	0.0021	0%		33.93		43.09		45.78		46.54	-3.17	OK	NE					
RE*AUBURN3	R18H-77	R18H-76	42	0.013	140.90	138.10	480	0.0058	8.01	49.7	0.0021	0%		33.93		43.09		45.78		46.54	-3.17	OK	NE					
RE*AUBURN3	R18H-76	R18H-75	42	0.013	138.10	135.30	480	0.0058	8.01	49.7	0.0021	0%		33.93		43.09		45.78		46.54	-3.17	OK	NE					
RE*AUBURN3	R18H-75	R18H-74	42	0.013	135.30	132.60	480	0.0056	7.86	48.8	0.0021	0%		33.93		43.09		45.78		46.54	-2.27	OK	NE					
	Section		42	0.013		11.90	2043	0.0058	**8.00**	**49.7**	**0.0058**	0%		33.93		43.09		45.78		46.54	-3.13	OK	NE					OK
RE*AUBURN3	R18H-74	R18H-73	72	0.013	131.40	131.00	162	0.0025	7.46	136.1	0.0021	100% aub3-c	2.99	36.93	3.96	47.05	4.23	50.01	4.35	50.89	-85.24	OK	NE	0.06	0.40	0.34	0.07	
RE*AUBURN3	R18H-73	R18H-72	72	0.013	131.00	131.10	499	-0.0002			0.0021	0%		36.93		47.05		50.01		50.89	50.89	54	2010	0.17	-0.10	-0.27	-0.27	IGNORE
RE*AUBURN3	R18H-72	R18H-71	72	0.013	131.10	130.80	500	0.0006	3.68	67.1	0.0021	0%		36.93		47.05		50.01		50.89	-16.22	OK	NE					
RE*AUBURN3	R18H-71	R18H-70	72	0.013	130.80	130.60	365	0.0005	3.52	64.1	0.0021	0%		36.93		47.05		50.01		50.89	-13.24	OK	NE	0.13	0.20	0.07	0.05	
RE*AUBURN3	R18H-70	R18H-69	72	0.013	130.60	130.50	363	0.0003	2.49	45.5	0.0021	0%		36.93		47.05		50.01		50.89	5.42	24	2020	0.12	0.10	-0.02	-0.02	IGNORE
RE*AUBURN3	R18H-69	R18H-68	72	0.013	130.50	130.30	84	0.0024	7.33	133.7	0.0021	0%		36.93		47.05		50.01		50.89	-82.79	OK	NE					
RE*AUBURN3	R18H-68	R18H-67	72	0.013	130.30	130.10	421	0.0005	3.27	59.7	0.0021	0%		36.93		47.05		50.01		50.89	-8.82	OK	NE					
RE*AUBURN3	R18H-67	R18H-66	72	0.013	130.10	129.80	489	0.0006	3.72	67.9	0.0021	0%		36.93		47.05		50.01		50.89	-16.97	OK	NE					
RE*AUBURN3	R18H-66	R18H-65	72	0.013	129.80	129.20	489	0.0012	5.26	96.0	0.0021	0%		36.93		47.05		50.01		50.89	-45.08	OK	NE	0.17	0.60	0.43	0.23	
												100% WVAL 79-1	14.27	51.19	18.30	65.35	19.40	69.41	19.62	70.51			X					
RE*AUBURN3	R18H-65	R18H-64	72	0.013	129.20	128.90	610	0.0005	3.33	60.8	0.0021	0%		51.19		65.35		69.41		70.51	9.76	30	2020	0.40	0.30	-0.10	-0.21	IGNORE
RE*AUBURN3	R18H-64	R18H-63	72	0.013	128.90	128.60	612	0.0005	3.33	60.7	0.0021	0%		51.19		65.35		69.41		70.51	9.85	30	2020	0.40	0.30	-0.10	-0.10	IGNORE
RE*AUBURN3	R18H-63	R18H-62	72	0.013	128.60	128.50	87	0.0011	5.09	92.9	0.0021	0%		51.19		65.35		69.41		70.51	-22.37	OK	NE					
RE*AUBURN3	R18H-62	R18H-61	72	0.013	128.50	128.30	275	0.0007	4.05	73.9	0.0021	0%		51.19		65.35		69.41		70.51	-3.37	OK	NE					
RE*AUBURN3	R18H-61	R18H-59	72	0.013	128.30	127.90	556	0.0007	4.03	73.5	0.0021	0%		51.19		65.35		69.41		70.51	-2.97	OK	NE					
RE*AUBURN3	R18H-59	R18H-58	72	0.013	127.90	127.50	460	0.0009	4.43	80.8	0.0021	0%		51.19		65.35		69.41		70.51	-10.28	OK	NE					
	Section		72	0.013		3.90	5972	0.0007	**3.84**	**70.0**	**0.0007**	0%		51.19		65.35		69.41		70.51	0.50	12	2050					ok
												100% fwaub-x	0.91	52.11	1.63	66.98	1.73	71.14	1.74	72.25			X					
												100% fwaub-w	0.79	52.90	1.41	68.39	1.49	72.63	1.50	73.76			X					
RE*AUBURN3	R18H-58	R18H-57	72	0.013	127.46	127.63	82	-0.0021			0.0006	100% aub3-nw	1.75	54.65	2.31	70.70	2.45	75.08	2.47	76.22	76.22	78	2010					
RE*AUBURN3	R18H-57	R18H-56	72	0.013	127.60	127.10	582	0.0009	4.40	80.3	0.0006	0%		54.65		70.70		75.08		76.22	-4.08	OK	NE					
RE*AUBURN3	R18H-56	R18H-55	72	0.013	127.10	126.80	525	0.0006	3.59	65.5	0.0006	0%		54.65		70.70		75.08		76.22	10.73	39	2020					
RE*AUBURN3	R18H-55	R18H-54	72	0.013	126.80	126.50	513	0.0006	3.63	66.3	0.0006	0%		54.65		70.70		75.08		76.22	9.97	36	2020					
RE*AUBURN3	R18H-54	R18H-53	72	0.013	126.50	126.10	515	0.0008	4.19	76.4	0.0006	0%		54.65		70.70		75.08		76.22	-0.13	OK	NE					
RE*AUBURN3	R18H-53	R18H-52	72	0.013	126.10	125.80	578	0.0005	3.42	62.4	0.0006	0%		54.65		70.70		75.08		76.22	13.81	42	2020					
RE*AUBURN3	R18H-52	R18H-51	72	0.013	125.80	125.50	530	0.0006	3.57	65.2	0.0006	0%		54.65		70.70		75.08		76.22	11.04	39	2020					
RE*AUBURN3	R18H-51	R18H-50	72	0.013	125.50	125.00	530	0.0009	4.61	84.1	0.0006	0%		54.65		70.70		75.08		76.22	-7.93	OK	NE					
RE*AUBURN3	R18H-50	R18H-49	72	0.013	125.00	124.70	311	0.0010	4.66	85.1	0.0006	0%		54.65		70.70		75.08		76.22	-8.87	OK	NE					
RE*AUBURN3	R18H-49	R18H-48	72	0.013	124.70	124.50	1000	0.0002	2.12	38.7	0.0006	0%		54.65		70.70		75.08		76.22	37.48	60	2010					
	Section		72	0.013		2.96	5166	0.0006	**3.60**	**65.6**	**0.0006**	0%		54.65		70.70		75.08		76.22	10.64	39	2020					39
TO AUBURN3.R18H-48												0%																
*RWSP pipe or section data revised.																												

APPENDIX 240-F

AUBURN PLANNING ZONE REROUTING ALTERNATIVE FLOW ROUTING

Task 240 Report:
AUBURN PLANNING ZONE - REROUTING ALTERNATIV

FACILITY	UP-STREAM MH #	DOWN-STREAM MH #	DIA. (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (MGD)	Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ– Δfull	BW elev	Proposed Diameter (inches)
do not delete this line																												
LAKELAND HILLS TRUNK																												
(replace gravity pipe downstream from forcemain)												100% lh-pc	1.73	1.73	3.08	3.08	3.29	3.29	3.35	3.35			X					
												100% wr-x	3.84	5.57	6.39	9.47	6.78	10.07	6.84	10.18			X					
LH TRUNK	LH#1	LH#2	27	0.013	194.49	174.91	6896	0.0028	4.16	10.7	0.0028	0%		5.57		9.47		10.07		10.18	-0.50	OK	NE					27
																							X					
TO STK-1																												
STUCK TRUNK																												
(divert from end of M St Trunk)												100% seg-x	1.26	1.26	1.94	1.94	2.05	2.05	2.06	2.06			X					
STUCK/ M ST #49	MST	LH#2	30	0.013	199.10	174.10	5000	0.0050	5.92	18.8	0.0050	70% mst-s	6.47	7.73	7.44	9.38	7.93	9.99	8.20	10.26	-8.50	OK	NE					30
												50% wi-x	5.37	13.10	5.99	15.37	6.32	16.31	6.31	16.57			X					
												100% LH TRUNK	5.57	18.67	9.47	24.84	10.07	26.38	10.18	26.75	26.75		X					
STUCK	LH#2	LH#3	42	0.013	173.10	166.95	1800	0.0034	6.13	38.1	0.0034	0%		18.67		24.84		26.38		26.75	-11.31	OK	NE					42
STUCK match ex.IE	LH#3	WINT#32	42	0.013	166.95	162.10	2851	0.0017	4.32	26.8	0.0017	0%		18.67		24.84		26.38		26.75	-0.08	OK	NE					42
STUCK match ex.inv	WINT#32	SW7	42	0.013	162.10	148.40	4500	0.0030	5.79	35.9	0.0030	0%		18.67		24.84		26.38		26.75	-9.16	OK	NE					42
Section							**14151**	**0.0132**														OK	NE					
TO SW-7																												
26TH ST. TRUNK																												
(paralell to N Sewer. Trunk)																							X					
26th TRUNK	GR22-10	R18H-77	18	0.013	147.90	140.90	4297	0.0016	2.41	2.7	0.0008	100% mst-ne	1.13	1.13	1.72	1.72	1.84	1.84	1.89	1.89	-0.85	OK	NE					18
Section			**18**			**140.90**	**4297**	**0.0016**		**2.7**												OK	NE					
TO RE*AUBURN3.R18H-77																												
SOUTHWEST TRUNK 1																												
(uses ALPAC & AUBWVAL pipe data)												8% al-x	0.27	0.27	0.30	0.30	0.31	0.31	0.32	0.32			X					
												100% pac-x	2.71	2.99	3.26	3.55	3.47	3.79	3.57	3.88			X					
PACIFIC FM						165.6						100% pac-a	2.58	5.56	3.23	6.78	3.43	7.22	3.45	7.34								
SW TRUNK	8	7	30	0.013	164.85	149.40	12000	0.0013	3.01	9.5	0.0013	0%		5.56		6.78		7.22		7.34	-2.19	OK	NE					
Section			30	**0.013**		**15**	**12000**	**0.0013**	**3.01**	**9.5**	0.0013	0%		5.56		6.78		7.22		7.34	-2.19	OK	NE					30
											0.0011	100% STUCK TRUNK	18.67	24.24	24.84	31.62	26.38	33.59	26.75	34.09			X					
SW TRUNK	7	6	54	0.013	147.40	146.99	380	0.0011	4.10	42.0	0.0011	100% fwne-w	2.39	26.63	4.21	35.83	4.45	38.05	4.48	38.57	-3.46	OK	NE					
SW TRUNK	6	5	54	0.013	146.99	146.40	538	0.0011	4.10	42.0	0.0011	10% aub3-s	0.14	26.77	0.18	36.01	0.19	38.23	0.19	38.76	-3.27	OK	NE					
SW TRUNK	5	4	54	0.013	146.40	145.88	475	0.0011	4.10	42.0	0.0011	0%		26.77		36.01		38.23		38.76	-3.27	OK	NE					
SW TRUNK	4	3	54	0.013	145.88	145.36	480	0.0011	4.10	42.0	0.0011	0%		26.77		36.01		38.23		38.76	-3.27	OK	NE					
SW TRUNK	3	2	54	0.013	145.36	144.83	482	0.0011	4.10	42.0	0.0011	0%		26.77		36.01		38.23		38.76	-3.27	OK	NE					
SW TRUNK	2	1	54	0.013	144.83	144.57	235	0.0011	4.10	42.0	0.0011	0%		26.77		36.01		38.23		38.76	-3.27	OK	NE					
Section			54	**0.013**		**2.83**	**2590**	**0.0011**	**4.10**	**42.0**	**0.0011**	0%		26.77		36.01		38.23		38.76	-3.27	OK	NE					54
												0%		26.77		36.01		38.23		38.76			X					
SW TRUNK	3	2	54	0.013	144.57	138.67	5410	0.0011	4.10	42.0	0.0035	100% fwne-x	1.71	28.48	2.12	38.12	2.24	40.48	2.26	41.02	-1.00	OK	NE					
SW TRUNK	2	1	54	0.013	138.67	132.40	5500	0.0011	4.19	43.0	0.0035	100% fwaub-w	0.79	29.27	1.41	39.53	1.49	41.97	1.50	42.52	-0.43	OK	NE					
												100% fwaub-x	0.91	30.19	1.63	41.17	1.73	43.70	1.74	44.27			X					
SW TRUNK @Aub3#48 @124.5	1	R18H-44	54	0.013	132.40	126.00	5000	0.0013	4.44	45.5	0.0035	50% aub3-nw	0.88	31.06	1.15	42.32	1.22	44.92	1.23	45.50	-0.01	OK	NE					
Section			54	**0.013**		**18.57**	**15,910**	**0.0035**	**7.35**	**75.4**	**0.0035**			31.06		42.32		44.92		45.50	-29.88	OK	NE					54
TO RE*AUBURN3.R18H-63																												

Task 240 Report:
AUBURN PLANNING ZONE - REROUTING ALTERNATIV

FACILITY	UP-STREAM MH #	DOWN-STREAM MH #	DIA. (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (MGD)	Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ– Δfull	BW elev	Proposed Diameter (inches)
do not delete this line																												
ALGONA-PACIFIC & WEST												0%											X					
RE*ALPAC FORCEMAIN	PS 2	238	12	0.013	144.50	165.60	2940					0%											X					
RE*ALPAC	238	237	21	0.013	165.60	165.30	400	0.0007	1.81	2.8	0.0012	0%									-2.81	OK	NE					
RE*ALPAC	237	230	21	0.013	165.30	164.90	401	0.0010	2.09	3.2	0.0012	0%									-3.24	OK	NE					
RE*ALPAC	230	229	21	0.013	164.90	164.70	135	0.0015	2.54	3.9	0.0012	12% al-x	**0.41**	0.41	**0.45**	0.45	**0.47**	0.47	**0.47**	0.47	-3.47	OK	NE					
RE*ALPAC	229	228	21	0.013	164.70	164.40	275	0.0011	2.18	3.4	0.0012	0%		0.41		0.45		0.47		0.47	-2.91	OK	NE					
RE*ALPAC	228	251	21	0.013	164.40	163.90	241	0.0021	3.01	4.7	0.0012	0%		0.41		0.45		0.47		0.47	-4.20	OK	NE					
RE*ALPAC	251	252	21	0.013	163.90	163.60	366	0.0008	1.89	2.9	0.0012	0%		0.41		0.45		0.47		0.47	-2.46	OK	NE					
RE*ALPAC	252	253	21	0.013	163.60	163.20	328	0.0012	2.31	3.6	0.0012	0%		0.41		0.45		0.47		0.47	-3.11	OK	NE					
RE*ALPAC	253	254	21	0.013	163.20	162.90	165	0.0018	2.81	4.4	0.0012	0%		0.41		0.45		0.47		0.47	-3.89	OK	NE					
RE*ALPAC	254	256	21	0.013	162.90	162.60	300	0.0010	2.09	3.2	0.0012	0%		0.41		0.45		0.47		0.47	-2.76	OK	NE					
	Section		21	0.013		3.00	2611	0.0011		**3.5**	**0.0011**	0%		0.41		0.45		0.47		0.47	-3.00	OK	NE					OK
RE*ALPAC	256	257	24	0.013	162.60	162.50	89	0.0011	2.42	4.9	0.0012	40% al-x	**1.37**	1.78	**1.49**	1.94	**1.57**	2.04	**1.58**	2.06	-2.85	OK	NE					
RE*ALPAC	257	258	24	0.013	162.50	162.20	251	0.0012	2.50	5.1	0.0012	0%		1.78		1.94		2.04		2.06	-3.00	OK	NE					
RE*ALPAC	258	259	24	0.013	162.20	161.90	248	0.0012	2.51	5.1	0.0012	0%		1.78		1.94		2.04		2.06	-3.03	OK	NE					
RE*ALPAC	259	260	24	0.013	161.90	161.70	241	0.0008	2.08	4.2	0.0012	0%		1.78		1.94		2.04		2.06	-2.16	OK	NE					
RE*ALPAC	260	261	24	0.013	161.70	161.40	241	0.0012	2.55	5.2	0.0012	0%		1.78		1.94		2.04		2.06	-3.10	OK	NE					
RE*ALPAC	261	290	24	0.013	161.40	161.20	185	0.0011	2.37	4.8	0.0012	0%		1.78		1.94		2.04		2.06	-2.76	OK	NE					
RE*ALPAC	290	293	24	0.013	161.20	160.80	421	0.0010	2.22	4.5	0.0012	0%		1.78		1.94		2.04		2.06	-2.45	OK	NE					
RE*ALPAC	293	304	24	0.013	160.80	160.30	438	0.0011	2.44	4.9	0.0012	0%		1.78		1.94		2.04		2.06	-2.88	OK	NE					
RE*ALPAC	304	305	24	0.013	160.30	159.90	460	0.0009	2.13	4.3	0.0012	0%		1.78		1.94		2.04		2.06	-2.26	OK	NE					
RE*ALPAC	305	306	24	0.013	159.90	159.40	440	0.0011	2.44	4.9	0.0012	0%		1.78		1.94		2.04		2.06	-2.88	OK	NE					
RE*ALPAC	306	307	24	0.013	159.40	159.00	446	0.0009	2.16	4.4	0.0012	0%		1.78		1.94		2.04		2.06	-2.32	OK	NE					
RE*ALPAC	307	308	24	0.013	159.00	158.60	434	0.0009	2.19	4.4	0.0012	0%		1.78		1.94		2.04		2.06	-2.39	OK	NE					
RE*ALPAC	308	309	24	0.013	158.60	158.10	441	0.0011	2.43	4.9	0.0012	0%		1.78		1.94		2.04		2.06	-2.87	OK	NE					
RE*ALPAC	309	309B	24	0.013	158.10	157.80	340	0.0009	2.15	4.3	0.0012	0%		1.78		1.94		2.04		2.06	-2.29	OK	NE					
RE*ALPAC	309B	R83-17	24	0.013	157.80	157.20	345	0.0017	3.01	6.1	0.0012	40% al-x	**1.37**	3.15	**1.49**	3.42	**1.57**	3.61	**1.58**	3.64	-2.46	OK	NE					
	Section		24	0.013		5.40	5020	0.0011		**4.8**	**0.0011**	0%		3.15		3.42		3.61		3.64	-1.16	OK	NE					OK
RE*AUBWVAL	R83-17	R83-16	24	0.013	157.20	156.40	437	0.0018	3.09	6.3	0.0012	0%		3.15		3.42		3.61		3.64	-2.63	OK	NE					
RE*AUBWVAL	R83-16	R83-15	24	0.013	156.40	156.00	39	0.0103	7.31	14.8	0.0012	0%		3.15		3.42		3.61		3.64	-11.18	OK	NE					
RE*AUBWVAL	R83-15	R83-14	24	0.013	156.00	154.80	367	0.0033	4.13	8.4	0.0012	0%		3.15		3.42		3.61		3.64	-4.73	OK	NE					
RE*AUBWVAL	R83-14	R83-13	24	0.013	154.80	154.00	369	0.0022	3.36	6.8	0.0012	0%		3.15		3.42		3.61		3.64	-3.17	OK	NE					
RE*AUBWVAL	R83-13	R83-12	24	0.013	154.00	153.60	408	0.0010	2.26	4.6	0.0012	0%		3.15		3.42		3.61		3.64	-0.94	OK	NE					
RE*AUBWVAL	R83-12	R83-11	24	0.013	153.60	153.30	371	0.0008	2.05	4.2	0.0012	0%		3.15		3.42		3.61		3.64	-0.52	OK	NE	0.23	0.30	0.07	0.00	
RE*AUBWVAL	R83-11	R83-10	24	0.013	153.30	153.10	339	0.0006	1.75	3.6	0.0012	0%		3.15		3.42		3.61		3.64	0.08	6	2030	0.21	0.20	**-0.01**	-0.08	ignore
RE*AUBWVAL	R83-10	R83-09	24	0.013	153.10	153.00	270	0.0004	1.39	2.8	0.0012	0%		3.15		3.42		3.61		3.64	0.82	15	2010	0.17	0.10	**-0.07**	-0.07	ignore
RE*AUBWVAL	R83-09	R83-08	24	0.013	153.00	152.50	221	0.0023	3.43	7.0	0.0012	0%		3.15		3.42		3.61		3.64	-3.32	OK	NE					
RE*AUBWVAL	R83-08	R83-07	24	0.013	152.50	152.10	467	0.0009	2.11	4.3	0.0012	0%		3.15		3.42		3.61		3.64	-0.64	OK	NE					
RE*AUBWVAL	R83-07	R83-06	24	0.013	152.10	151.80	380	0.0008	2.03	4.1	0.0012	0%		3.15		3.42		3.61		3.64	-0.47	OK	NE					
RE*AUBWVAL	R83-06	R83-05	24	0.013	151.80	151.20	538	0.0011	2.41	4.9	0.0012	0%		3.15		3.42		3.61		3.64	-1.25	OK	NE					
RE*AUBWVAL	R83-05	R83-04	24	0.013	151.20	150.80	475	0.0008	2.09	4.2	0.0012	0%		3.15		3.42		3.61		3.64	-0.61	OK	NE					
RE*AUBWVAL	R83-04	R83-03	24	0.013	150.80	150.20	480	0.0013	2.55	5.2	0.0012	0%		3.15		3.42		3.61		3.64	-1.53	OK	NE					
RE*AUBWVAL	R83-03	R83-02	24	0.013	150.20	149.80	482	0.0008	2.08	4.2	0.0012	0%		3.15		3.42		3.61		3.64	-0.57	OK	NE					
RE*AUBWVAL	R83-02	R83-01	24	0.013	149.80	149.20	235	0.0026	3.65	7.4	0.0012	0%		3.15		3.42		3.61		3.64	-3.75	OK	NE					
	Section		24	0.013		8.00	5878	0.0014	**2.66**	**5.4**	**0.0014**	0%		3.15		3.42		3.61		3.64	-1.76	OK	NE					OK

Task 240 Report:
AUBURN PLANNING ZONE - REROUTING ALTERNATIV

FACILITY	UP-STREAM MH #	DOWN-STREAM MH #	DIA. (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (MGD)	Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ– Δfull	BW elev	Proposed Diameter (inches)
												0%		3.15		3.42		3.61		3.64			X					
WVAL	R83-01	81-2	36	0.013	149.15	148.95	375	0.0005	2.18	10.0	0.0038	10% aub3-s	**0.14**	3.30	**0.18**	3.60	**0.19**	3.80	**0.19**	3.83	-6.13	OK	NE					
WVAL	81-2	81-1	30	0.013	149.00	148.50	210	0.0024	4.09	12.9	0.0038	0%		3.30		3.60		3.80		3.83	-9.12	OK	NE					
WVAL	81-1	80-8	42	0.013	148.50	148.42	70	0.0011	3.54	22.0	0.0038	0%		3.30		3.60		3.80		3.83	-18.17	OK	NE					
WVAL Main St*	80-8	80-7	42	0.013	148.42	147.60	335	0.0024	5.19	32.2	0.0038	0%		3.30		3.60		3.80		3.83	-28.37	OK	NE					
WVAL	80-7	80-6	30	0.013	147.60	147.00	167	0.0036	5.02	15.9	0.0038	0%		3.30		3.60		3.80		3.83	-12.07	OK	NE					
WVAL	80-6	80-5	30	0.013	147.00	146.10	482	0.0019	3.62	11.5	0.0038	30% aub3-s	**0.43**	3.73	**0.53**	4.13	**0.56**	4.36	**0.57**	4.40	-7.06	OK	NE					
WVAL	80-5	80-3	30	0.013	146.10	145.16	510	0.0018	3.60	11.4	0.0038	0%		3.73		4.13		4.36		4.40	-6.99	OK	NE					
WVAL	80-3	80-2	30	0.013	145.16	144.50	441	0.0015	3.24	10.3	0.0038	0%		3.73		4.13		4.36		4.40	-5.86	OK	NE					
WVAL	80-2	80-1	30	0.013	144.50	143.70	450	0.0018	3.53	11.2	0.0038	0%		3.73		4.13		4.36		4.40	-6.79	OK	NE					
WVAL	80-1	79-23	30	0.013	143.70	142.80	447	0.0020	3.76	11.9	0.0038	0%		3.73		4.13		4.36		4.40	-7.50	OK	NE					
WVAL	79-23	79-22	30	0.013	142.80	142.25	465	0.0012	2.88	9.1	0.0038	0%		3.73		4.13		4.36		4.40	-4.72	OK	NE					
WVAL	79-22	79-21	30	0.013	142.25	141.95	450.4	0.0007	2.16	6.8	0.0038	0%		3.73		4.13		4.36		4.40	-2.45	OK	NE					
WVAL	79-21	79-20	30	0.013	141.95	141.70	409.5	0.0006	2.07	6.6	0.0038	0%		3.73		4.13		4.36		4.40	-2.15	OK	NE					
WVAL	79-20	79-19	30	0.013	141.70	141.48	363	0.0006	2.06	6.5	0.0038	0%		3.73		4.13		4.36		4.40	-2.13	OK	NE					
WVAL	79-19	79-18	30	0.013	141.48	141.26	361.5	0.0006	2.07	6.5	0.0038	0%		3.73		4.13		4.36		4.40	-2.15	OK	NE					
WVAL	79-18	79-17	30	0.013	141.26	141.00	425	0.0006	2.07	6.6	0.0038	0%		3.73		4.13		4.36		4.40	-2.16	OK	NE					
WVAL	79-17	79-16	42	0.013	140.89	139.87	260	0.0039	6.57	40.8	0.0038	0%		3.73		4.13		4.36		4.40	-36.37	OK	NE					
WVAL	79-16	79-15X	30	0.013	139.87	139.67	360	0.0006	1.97	6.3	0.0038	0%		3.73		4.13		4.36		4.40	-1.85	OK	NE					
WVAL	79-15X	79-15	30	0.013	139.67	139.04	90	0.0070	7.01	22.2	0.0038	0%		3.73		4.13		4.36		4.40	-17.80	OK	NE					
WVAL	79-15	79-14	30	0.013	139.04	138.15	410	0.0022	3.90	12.4	0.0038	0%		3.73		4.13		4.36		4.40	-7.96	OK	NE					
WVAL	79-14	1	30	0.013	138.15	137.92	388.5	0.0006	2.04	6.5	0.0038	0%		3.73		4.13		4.36		4.40	-2.06	OK	NE					
	Section		24	0.013		11.23	7469.9	0.0015	**2.80**	**5.7**	0.0015	0%		3.73		4.13		4.36		4.40	-1.28	OK	NE					OK
WVAL	1	79-13	42	0.013	137.92	136.50	380	0.0037	6.41	39.8	0.0038	0%		3.73		4.13		4.36		4.40	-35.39	OK	NE					
WVAL	79-13	79-12	30	0.013	136.50	136.40	99.7	0.0010	2.65	8.4	0.0038	0%		3.73		4.13		4.36		4.40	-4.01	OK	NE					
											0.0038	0%		3.73		4.13		4.36		4.40			X					
WVAL	79-12	79-11	30	0.013	136.40	135.95	483.7	0.0009	2.55	8.1	0.0038	25% aub3-s	**0.36**	4.09	**0.44**	4.57	**0.47**	4.83	**0.48**	4.88	-3.21	OK	NE					
WVAL	79-11	79-10	30	0.013	135.95	135.70	289.2	0.0009	2.46	7.8	0.0038	0%		4.09		4.57		4.83		4.88	-2.92	OK	NE					
WVAL	79-10	79-9	30	0.013	135.70	135.41	364	0.0008	2.37	7.5	0.0038	0%		4.09		4.57		4.83		4.88	-2.61	OK	NE					
WVAL	79-9	79-8	30	0.013	135.41	135.12	361	0.0008	2.38	7.5	0.0038	0%		4.09		4.57		4.83		4.88	-2.65	OK	NE					
WVAL	79-8	79-6	30	0.013	135.12	134.83	362	0.0008	2.37	7.5	0.0038	0%		4.09		4.57		4.83		4.88	-2.63	OK	NE					
WVAL	79-6	79-5	30	0.013	134.83	134.50	411	0.0008	2.37	7.5	0.0038	0%		4.09		4.57		4.83		4.88	-2.64	OK	NE					
WVAL	79-5	79-4	30	0.013	134.50	134.09	496.3	0.0008	2.41	7.6	0.0038	0%		4.09		4.57		4.83		4.88	-2.75	OK	NE					
WVAL	79-4	79-3	30	0.013	134.09	133.70	490	0.0008	2.36	7.5	0.0038	0%		4.09		4.57		4.83		4.88	-2.61	OK	NE					
WVAL	79-3	79-2	30	0.013	133.70	133.42	372.7	0.0008	2.30	7.3	0.0038	25% aub3-s	**0.36**	4.46	**0.44**	5.01	**0.47**	5.30	**0.48**	5.35	-1.92	OK	NE					
WVAL	79-2	79-1	30	0.013	133.42	133.40	38.5	0.0005	1.91	6.0	0.0038	0%		4.46		5.01		5.30		5.35	-0.69	OK	NE					
WVAL	79-1	R18H-65	42	0.013	133.40	133.19	12	0.0175	13.87	86.1	0.0038	0%		4.46		5.01		5.30		5.35	-80.75	OK	NE					
	Section		30	0.013		4.73	4160.1	0.0011	**2.83**	**8.9**	0.0011	0%		4.46		5.01		5.30		5.35	-3.60	OK	NE					OK
TO AUBURN3.R18H-65																												

Task 240 Report:
AUBURN PLANNING ZONE - REROUTING ALTERNATIV

FACILITY	UP-STREAM MH #	DOWN-STREAM MH #	DIA. (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (MGD)	Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ– Δfull	BW elev	Proposed Diameter (inches)
WEST INTERCEPTOR												0%											X					
L. HILLS*			24	0.013	194.74	174.98	7269	0.0017	3.01	6.1	0.0027	0%									-6.10	OK	NE					
REPLACEMENT REQUIRED			27	0.013		19.76	7269	0.0027	**4.07**	**10.4**	**0.0027**	0%									-10.45	OK	NE					
RE*WINTSEWR	GR27-44	GR27-43	24	0.013	174.98	172.67	329	0.0070	6.05	12.3	0.0236	0%									-12.26	OK	NE					
RE*WINTSEWR	GR27-43	GR27-42	24	0.013	172.67	170.67	295.3	0.0068	5.94	12.0	0.0236	0%									-12.05	OK	NE					
RE*WINTSEWR	GR27-42	GR27-41	24	0.013	170.67	168.78	268	0.0071	6.06	12.3	0.0236	0%									-12.29	OK	NE					
RE*WINTSEWR	GR27-41	GR27-40	24	0.013	168.78	168.52	123	0.0021	3.32	6.7	0.0236	0%									-6.73	OK	NE					
RE*WINTSEWR	GR27-40	GR27-39	24	0.013	168.52	167.20	411.7	0.0032	4.09	8.3	0.0236	0%									-8.28	OK	NE					
RE*WINTSEWR	GR27-39	GR27-38	24	0.013	167.20	166.40	399	0.0020	3.23	6.6	0.0236	0%									-6.55	OK	NE					
RE*WINTSEWR	GR27-38	GR27-37	24	0.013	166.40	165.60	410	0.0020	3.19	6.5	0.0236	0%									-6.46	OK	NE					
RE*WINTSEWR	GR27-37	GR27-36	24	0.013	165.60	164.80	411	0.0019	3.19	6.5	0.0236	0%									-6.46	OK	NE					
RE*WINTSEWR	GR27-36	GR27-35	24	0.013	164.80	163.90	410	0.0022	3.38	6.9	0.0236	0%									-6.86	OK	NE					
RE*WINTSEWR	GR27-35	GR27-34	24	0.013	163.90	163.10	419	0.0019	3.15	6.4	0.0236	0%									-6.39	OK	NE					
RE*WINTSEWR	GR27-34	GR27-33	24	0.013	163.10	162.50	414	0.0014	2.75	5.6	0.0236	0%									-5.57	OK	NE					
RE*WINTSEWR	GR27-33	GR27-32A	24	0.013	162.50	162.40	117	0.0009	2.11	4.3	0.0236	0%									-4.28	OK	NE					
RE*WINTSEWR	GR27-32A	GR27-32	24	0.013	162.40	162.10	160	0.0019	3.13	6.3	0.0236	0%									-6.34	OK	NE					
RE*WINTSEWR	GR27-32	GR27-31	24	0.013	162.10	162.00	111	0.0009	2.17	4.4	0.0236	45% wi-x	**4.83**	4.83	**5.39**	5.39	**5.69**	5.69	**5.68**	5.68	1.29	9	2010					
CORRODED UPSTREAM			24	0.013		12.98	4278	0.0030	**3.98**	**8.1**	**0.0030**	0%		4.83		5.39		5.69		5.68	-2.38	OK	NE					LH GRAVITY
RE*WINTSEWR	GR27-31	GR27-30	24	0.013	162.00	161.50	239	0.0021	3.30	6.7	0.0236	0%		4.83		5.39		5.69		5.68	-1.01	OK	NE	0.36	0.50	0.14	0.12	
RE*WINTSEWR	GR27-30	GR27-29	24	0.013	161.50	161.40	64	0.0016	2.86	5.8	0.0236	0%		4.83		5.39		5.69		5.68	-0.10	OK	NE	0.10	0.10	0.00	-0.02	
RE*WINTSEWR	GR27-29	GR27-28	24	0.013	161.40	160.80	409	0.0015	2.77	5.6	0.0236	0%		4.83		5.39		5.69		5.68	0.08	3	2030	0.61	0.60	**-0.01**	-0.03	ignore
RE*WINTSEWR	GR27-28	GR27-27	24	0.013	160.80	160.20	410	0.0015	2.76	5.6	0.0236	0%		4.83		5.39		5.69		5.68	0.08	3	2030	0.62	0.60	**-0.02**	-0.01	ignore
RE*WINTSEWR	GR27-27	GR27-26	24	0.013	160.20	159.60	398	0.0015	2.80	5.7	0.0236	0%		4.83		5.39		5.69		5.68	0.00	OK	2030	0.60	0.60	0.00	0.00	ignore
RE*WINTSEWR	GR27-26	GR27-25	24	0.013	159.60	158.20	248	0.0056	5.42	11.0	0.0236	0%		4.83		5.39		5.69		5.68	-5.31	OK	NE					
Section			24	0.013		3.80	1768	0.0021	**3.35**	**6.8**	**0.0021**	0%		4.83		5.39		5.69		5.68	-1.10	OK	NE					OK
RE*WINTSEWR	GR27-25	GR27-24	36	0.013	158.20	157.60	433	0.0014	3.52	16.1	0.0236	0%		4.83		5.39		5.69		5.68	-10.38	OK	NE					
RE*WINTSEWR	GR27-24	GR27-23	36	0.013	157.60	157.00	445	0.0013	3.47	15.8	0.0236	0%		4.83		5.39		5.69		5.68	-10.16	OK	NE					
RE*WINTSEWR	GR27-23	GR27-22	36	0.013	157.00	156.50	445	0.0011	3.17	14.5	0.0236	0%		4.83		5.39		5.69		5.68	-8.78	OK	NE					
RE*WINTSEWR	GR27-22	GR27-21	36	0.013	156.50	155.90	443	0.0014	3.48	15.9	0.0236	0%		4.83		5.39		5.69		5.68	-10.19	OK	NE					
RE*WINTSEWR	GR27-21	GR27-20	36	0.013	155.90	155.50	310	0.0013	3.40	15.5	0.0236	0%		4.83		5.39		5.69		5.68	-9.81	OK	NE					
RE*WINTSEWR	GR27-20	GR27-19	36	0.013	155.50	154.90	421	0.0014	3.57	16.3	0.0236	0%		4.83		5.39		5.69		5.68	-10.61	OK	NE					
RE*WINTSEWR	GR27-19	GR27-18	36	0.013	154.90	154.20	444	0.0016	3.76	17.1	0.0236	0%		4.83		5.39		5.69		5.68	-11.45	OK	NE					
RE*WINTSEWR	GR27-18	GR27-17	36	0.013	154.20	153.10	498	0.0022	4.45	20.3	0.0236	0%		4.83		5.39		5.69		5.68	-14.59	OK	NE					
RE*WINTSEWR*	GR27-17	GR27-16	36	0.013	153.10	153.00	490	0.0002	1.35	6.2	0.0236	0%		4.83		5.39		5.69		5.68	-0.48	OK	NE					
RE*WINTSEWR	GR27-16	GR27-15	36	0.013	153.00	152.40	499	0.0012	3.28	15.0	0.0236	0%		4.83		5.39		5.69		5.68	-9.28	OK	NE					
RE*WINTSEWR	GR27-15	GR27-14	36	0.013	152.40	151.80	488	0.0012	3.32	15.1	0.0236	0%		4.83		5.39		5.69		5.68	-9.45	OK	NE					
Section			36	0.013		6.40	4916	0.0013	**3.41**	**15.6**	**0.0013**	0%		4.83		5.39		5.69		5.68	-9.89	OK	NE					OK
RE*WINTSEWR	GR27-14	GR27-13	42	0.013	151.80	151.20	543	0.0011	3.49	21.6	0.0236	0%		4.83		5.39		5.69		5.68	-15.95	OK	NE					
RE*WINTSEWR	GR27-13	GR27-12B	42	0.013	151.20	150.90	110	0.0027	5.48	34.0	0.0236	0%		4.83		5.39		5.69		5.68	-28.30	OK	NE					
RE*WINTSEWR	GR27-12B	GR27-12	42	0.013	150.90	150.80	250	0.0004	2.10	13.0	0.0236	0%		4.83		5.39		5.69		5.68	-7.34	OK	NE					
RE*WINTSEWR	GR27-12	GR27-11	42	0.013	150.80	150.40	309	0.0013	3.77	23.4	0.0236	0%		4.83		5.39		5.69		5.68	-17.74	OK	NE					
RE*WINTSEWR	GR27-11	GR27-10	42	0.013	150.40	150.00	428	0.0009	3.21	19.9	0.0236	0%		4.83		5.39		5.69		5.68	-14.21	OK	NE					
RE*WINTSEWR	GR27-10	GR27-09	42	0.013	150.00	149.80	206	0.0010	3.27	20.3	0.0236	0%		4.83		5.39		5.69		5.68	-14.59	OK	NE					
Section			42	0.013		2.00	1846	0.0011	3.45	21.4		0%		4.83		5.39		5.69		5.68	-15.74	OK	NE					
RE*WINTSEWR	GR27-09	GR27-08	42	0.013	149.80	149.10	503	0.0014	3.91	24.3	0.0236	0%		4.83		5.39		5.69		5.68	-18.59	OK	NE					
RE*WINTSEWR	GR27-08	GR27-07	42	0.013	149.10	148.50	499	0.0012	3.64	22.6	0.0236	0%		4.83		5.39		5.69		5.68	-16.89	OK	NE					
RE*WINTSEWR	GR27-07	GR27-06	42	0.013	148.50	147.80	479	0.0015	4.01	24.9	0.0236	0%		4.83		5.39		5.69		5.68	-19.19	OK	NE					
RE*WINTSEWR	GR27-06	GR27-05	42	0.013	147.80	147.30	426	0.0012	3.59	22.3	0.0236	0%		4.83		5.39		5.69		5.68	-16.61	OK	NE					
RE*WINTSEWR	GR27-05	GR27-04	42	0.013	147.30	146.80	398	0.0013	3.72	23.1	0.0236	0%		4.83		5.39		5.69		5.68	-17.39	OK	NE					
RE*WINTSEWR	GR27-04	GR27-03	42	0.013	146.80	146.60	121	0.0017	4.26	26.5	0.0236	0%		4.83		5.39		5.69		5.68	-20.78	OK	NE					
RE*WINTSEWR	GR27-03	GR27-02	42	0.013	146.60	145.70	636	0.0014	3.94	24.5	0.0236	0%		4.83		5.39		5.69		5.68	-18.80	OK	NE					
RE*WINTSEWR	GR27-02	GR27-01	42	0.013	145.70	144.80	628	0.0014	3.97	24.6	0.0236	5% wi-x	**0.54**	5.37	**0.60**	5.99	**0.63**	6.32	**0.63**	6.31	-18.32	OK	NE					
RE*WINTSEWR	GR27-01	R18H-78A	42	0.013	144.80	144.50	65	0.0046	7.12	44.2	0.0236	0%		5.37		5.99		6.32		6.31	-37.90	OK	NE					
Section			42	0.013		5.30	3755	0.0014	**3.94**	**24.5**	**0.0014**	0%		5.37		5.99		6.32		6.31	-18.14	OK	NE					OK
TO AUBURN3.R18H-78A																												

Task 240 Report:
AUBURN PLANNING ZONE - REROUTING ALTERNATIV

FACILITY	UP-STREAM MH #	DOWN-STREAM MH #	DIA. (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (MGD)	Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ– Δfull	BW elev	Proposed Diameter (inches)
M STREET TRUN																						OK	NE					
RE*MSTTRUNK	GR19-49	GR19-48	18	0.013	200.10	199.10	422	0.0024	2.90	3.3	0.0036	0%									-3.31	OK	NE					
RE*MSTTRUNK	GR19-48	GR19-47	18	0.013	199.10	198.30	385	0.0021	2.72	3.1	0.0036	0%									-3.10	OK	NE					
RE*MSTTRUNK	GR19-47	GR19-46	18	0.013	198.30	198.05	102	0.0025	2.95	3.4	0.0036	0%									-3.36	OK	NE					
RE*MSTTRUNK	GR19-46	GR19-45	18	0.013	198.05	197.10	414	0.0023	2.86	3.3	0.0036	0%									-3.26	OK	NE					
RE*MSTTRUNK	GR19-45	GR19-44	18	0.013	197.10	196.40	322	0.0022	2.78	3.2	0.0036	0%									-3.17	OK	NE					
RE*MSTTRUNK	GR19-44	GR20-43	18	0.013	196.40	195.60	330	0.0024	2.94	3.3	0.0036	7% mst-s	**0.65**	0.65	**0.74**	0.74	**0.79**	0.79	**0.82**	0.82	-2.53	OK	NE					
	Section		18	0.013		4.50	1975	0.0023	**2.85**	**3.2**	**0.0023**	0%		0.65		0.74		0.79		0.82	-2.43	OK	NE					OK
RE*MSTTRUNK	GR20-43	GR20-42	18	0.013	195.60	194.00	308	0.0052	4.30	4.9	0.0036	0%		0.65		0.74		0.79		0.82	-4.08	OK	NE					
RE*MSTTRUNK	GR20-42	GR20-41	18	0.013	194.00	192.40	320	0.0050	4.22	4.8	0.0036	0%		0.65		0.74		0.79		0.82	-3.99	OK	NE					
RE*MSTTRUNK	GR20-41	GR20-40	18	0.013	192.40	190.80	321	0.0050	4.21	4.8	0.0036	0%		0.65		0.74		0.79		0.82	-3.98	OK	NE					
RE*MSTTRUNK	GR20-40	GR21-39	18	0.013	190.80	188.90	362	0.0052	4.32	4.9	0.0036	0%		0.65		0.74		0.79		0.82	-4.10	OK	NE					
RE*MSTTRUNK	GR21-39	GR21-38	18	0.013	188.90	187.30	329	0.0049	4.16	4.7	0.0036	0%		0.65		0.74		0.79		0.82	-3.92	OK	NE					
RE*MSTTRUNK	GR21-38	GR21-37	18	0.013	187.30	185.60	340	0.0050	4.22	4.8	0.0036	8% mst-s	**0.74**	1.39	**0.85**	1.59	**0.91**	1.70	**0.94**	1.76	-3.05	OK	NE					
RE*MSTTRUNK	GR21-37	GR21-36A	18	0.013	185.60	185.20	77	0.0052	4.30	4.9	0.0036	0%		1.39		1.59		1.70		1.76	-3.14	OK	NE					
RE*MSTTRUNK	GR21-36A	GR21-36	18	0.013	185.20	183.90	252	0.0052	4.28	4.9	0.0036	0%		1.39		1.59		1.70		1.76	-3.12	OK	NE					
RE*MSTTRUNK	GR21-36	GR21-35	18	0.013	183.90	180.20	285	0.0130	6.79	7.7	0.0036	0%		1.39		1.59		1.70		1.76	-5.99	OK	NE					
RE*MSTTRUNK	GR21-35	GR21-34	18	0.013	180.20	178.40	342	0.0053	4.32	4.9	0.0036	0%		1.39		1.59		1.70		1.76	-3.17	OK	NE					
RE*MSTTRUNK	GR21-34	GR21-33	18	0.013	178.40	176.20	428	0.0051	4.27	4.9	0.0036	0%		1.39		1.59		1.70		1.76	-3.11	OK	NE					
RE*MSTTRUNK	GR21-33	GR21-32	18	0.013	176.20	174.10	430	0.0049	4.16	4.7	0.0036	0%		1.39		1.59		1.70		1.76	-2.99	OK	NE					
RE*MSTTRUNK	GR21-32	GR21-31	18	0.013	174.10	172.10	383	0.0052	4.31	4.9	0.0036	15% mst-s	**1.39**	2.77	**1.59**	3.19	**1.70**	3.40	**1.76**	3.51	-1.40	OK	NE					
RE*MSTTRUNK	GR21-31	GR22-30	18	0.013	172.10	170.20	382	0.0050	4.20	4.8	0.0036	0%		2.77		3.19		3.40		3.51	-1.28	OK	NE					
	Section		18	0.013		25.40	4559	0.0056	**4.45**	**5.1**	**0.0056**	0%		2.77		3.19		3.40		3.51	-1.56	OK	NE					OK
RE*MSTTRUNK	GR22-30	GR22-29	24	0.013	163.70	163.40	177	0.0017	2.97	6.0	0.0036	0%		2.77		3.19		3.40		3.51	-2.51	OK	NE					
RE*MSTTRUNK	GR22-29	GR22-28	24	0.013	163.40	163.10	165	0.0018	3.08	6.2	0.0036	0%		2.77		3.19		3.40		3.51	-2.73	OK	NE					
RE*MSTTRUNK	GR22-28	GR22-27	24	0.013	163.10	162.80	167	0.0018	3.06	6.2	0.0036	0%		2.77		3.19		3.40		3.51	-2.69	OK	NE					
RE*MSTTRUNK	GR22-27	GR22-26	24	0.013	162.80	162.50	160	0.0019	3.13	6.3	0.0036	0%		2.77		3.19		3.40		3.51	-2.82	OK	NE					
RE*MSTTRUNK	GR22-26	GR22-25	24	0.013	162.50	162.30	153	0.0013	2.61	5.3	0.0036	0%		2.77		3.19		3.40		3.51	-1.78	OK	NE					
RE*MSTTRUNK	GR22-25	GR22-24	24	0.013	162.30	162.00	128	0.0023	3.50	7.1	0.0036	0%		2.77		3.19		3.40		3.51	-3.57	OK	NE					
	Section		24	0.013		1.70	950	0.0018	**3.06**	**6.2**	**0.0018**	0%		2.77		3.19		3.40		3.51	-2.68	OK	NE					OK
RE*MSTTRUNK	GR22-24	GR22-23	30	0.013	162.00	161.70	659	0.0005	1.79	5.7	0.0036	0%		2.77		3.19		3.40		3.51	-2.15	OK	NE					
RE*MSTTRUNK	GR22-23	GR22-22B	30	0.013	161.70	161.30	605	0.0007	2.16	6.8	0.0036	0%		2.77		3.19		3.40		3.51	-3.31	OK	NE					
RE*MSTTRUNK	GR22-22B	GR22-22A	30	0.013	161.30	161.10	302	0.0007	2.16	6.8	0.0036	0%		2.77		3.19		3.40		3.51	-3.31	OK	NE					
RE*MSTTRUNK	GR22-22A	GR22-22	30	0.013	161.11	160.42	203	0.0034	4.87	15.4	0.0036	0%		2.77		3.19		3.40		3.51	-11.93	OK	NE					
RE*MSTTRUNK	GR22-22	GR22-21A	30	0.013	160.42	159.79	188	0.0034	4.87	15.4	0.0036	0%		2.77		3.19		3.40		3.51	-11.93	OK	NE					
RE*MSTTRUNK	GR22-21A	GR22-21	30	0.013	159.79	159.64	20	0.0073	7.18	22.7	0.0036	100% mst-e	**3.24**	6.02	**3.98**	7.17	**4.23**	7.63	**4.30**	7.81	-14.92	OK	NE					
RE*MSTTRUNK	GR22-21	GR22-20	30	0.013	159.60	158.90	357	0.0020	3.71	11.7	0.0036	0%		6.02		7.17		7.63		7.81	-3.94	OK	NE					
RE*MSTTRUNK	GR22-20	GR22-19	30	0.013	158.80	158.00	400	0.0020	3.75	11.9	0.0036	0%		6.02		7.17		7.63		7.81	-4.05	OK	NE					
RE*MSTTRUNK	GR22-19	GR22-18	30	0.013	157.90	156.90	487	0.0021	3.80	12.0	0.0036	0%		6.02		7.17		7.63		7.81	-4.21	OK	NE					
RE*MSTTRUNK	GR22-18	GR22-17A	30	0.013	156.90	156.10	336	0.0024	4.09	12.9	0.0036	80% mst-n	**1.42**	7.44	**1.61**	8.78	**1.73**	9.36	**1.83**	9.64	-3.31	OK	NE					
RE*MSTTRUNK	GR22-17A	GR22-17	30	0.013	156.10	155.60	240	0.0021	3.82	12.1	0.0036	0%		7.44		8.78		9.36		9.64	-2.47	OK	NE					
RE*MSTTRUNK	GR22-17	GR22-16	30	0.013	155.60	155.40	59	0.0034	4.88	15.5	0.0036	0%		7.44		8.78		9.36		9.64	-5.81	OK	NE					
RE*MSTTRUNK	GR22-16	GR22-15	30	0.013	155.40	153.90	729	0.0021	3.80	12.0	0.0036	0%		7.44		8.78		9.36		9.64	-2.40	OK	NE					
RE*MSTTRUNK	GR22-15	GR22-14	30	0.013	153.90	153.80	13	0.0077	7.35	23.3	0.0036	0%		7.44		8.78		9.36		9.64	-13.63	OK	NE					
RE*MSTTRUNK	GR22-14	GR22-13A	30	0.013	153.80	152.50	687	0.0019	3.64	11.5	0.0036	0%		7.44		8.78		9.36		9.64	-1.90	OK	NE					
RE*MSTTRUNK	GR22-13A	GR22-13	30	0.013	152.50	151.80	236	0.0030	4.56	14.5	0.0036	0%		7.44		8.78		9.36		9.64	-4.81	OK	NE					
RE*MSTTRUNK	GR22-13	GR22-12A	30	0.013	151.80	151.50	134	0.0022	3.96	12.6	0.0036	0%		7.44		8.78		9.36		9.64	-2.91	OK	NE					
RE*MSTTRUNK	GR22-12A	GR22-12	30	0.013	151.50	150.30	518	0.0023	4.03	12.8	0.0036	0%		7.44		8.78		9.36		9.64	-3.13	OK	NE					
RE*MSTTRUNK	GR22-12	GR22-11	30	0.013	150.30	148.30	652	0.0031	4.64	14.7	0.0036	0%		7.44		8.78		9.36		9.64	-5.05	OK	NE					
	Section		30	0.013		13.70	6825	0.0020	**3.75**	**11.9**	**0.0020**	0%		7.44		8.78		9.36		9.64	-2.25	OK	NE					OK
RE*MSTTRUNK	GR22-11	GR22-10	36	0.013	148.30	147.90	704	0.0006	2.26	10.3	0.0008	0%		7.44		8.78		9.36		9.64	-0.64	OK	NE					
												20% mst-n	**0.36**	7.79	**0.40**	9.18	**0.43**	9.79	**0.46**	10.10			X					
RE*MSTTRUNK	GR22-10	GR22-08A	36	0.013	147.90	147.00	1079	0.0008	2.73	12.5	0.0008	100% sss-sw	**0.97**	8.76	**1.36**	10.54	**1.45**	11.24	**1.48**	11.58	-0.88	OK	NE					
RE*MSTTRUNK	GR22-08A	GR22-07	36	0.013	147.00	146.60	528	0.0008	2.60	11.9	0.0008	0%		8.76		10.54		11.24		11.58	-0.29	OK	NE					
RE*MSTTRUNK	GR22-07	GR22-06	36	0.013	146.60	146.40	237	0.0008	2.75	12.5	0.0008	0%		8.76		10.54		11.24		11.58	-0.95	OK	NE					
RE*MSTTRUNK	GR22-06	GR22-05	36	0.013	146.40	146.30	13	0.0077	8.30	37.8	0.0008	0%		8.76		10.54		11.24		11.58	-26.26	OK	NE					
RE*MSTTRUNK	GR22-05	GR22-04	36	0.013	146.30	146.10	269	0.0007	2.58	11.8	0.0008	0%		8.76		10.54		11.24		11.58	-0.18	OK	NE					
RE*MSTTRUNK	GR22-04	GR22-02A	36	0.013	146.10	145.60	655	0.0008	2.61	11.9	0.0008	0%		8.76		10.54		11.24		11.58	-0.34	OK	NE					
RE*MSTTRUNK	GR22-02A	GR22-02	36	0.013	145.60	145.30	348	0.0009	2.78	12.7	0.0008	0%		8.76		10.54		11.24		11.58	-1.09	OK	NE					
RE*MSTTRUNK	GR22-02	R18H-78A	36	0.013	145.20	144.80	464	0.0009	2.78	12.7	0.0008	0%		8.76		10.54		11.24		11.58	-1.09	OK	NE					
	Section		36	0.013		3.50	4297	0.0008	**2.70**	**12.3**	**0.0008**	0%		8.76		10.54		11.24		11.58	-0.73	OK	NE					OK
TO AUBURN3.R18H-78A																												

Task 240 Report:
AUBURN PLANNING ZONE - REROUTING ALTERNATIV

FACILITY	UP-STREAM MH #	DOWN-STREAM MH #	DIA. (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (MGD)	Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ– Δfull	BW elev	Proposed Diameter (inches)
AUBURN 3 TRUNK												100% MSTTRK	8.76	8.76	10.54	10.54	11.24	11.24	11.58	11.58			X					
												100% WINTSEWR	5.37	14.13	5.99	16.53	6.32	17.56	6.31	17.90			X					
RE*AUBURN3	R18H-78A	R18H-78	42	0.013	144.50	143.70	123	0.0065	8.46	52.5	0.0021	0%		14.13		16.53		17.56		17.90	-34.59	OK	NE					
RE*AUBURN3	R18H-78	R18H-77	42	0.013	143.70	140.90	480	0.0058	8.01	49.7	0.0021	0%		14.13		16.53		17.56		17.90	-31.81	OK	NE					
											0.0021	100% 26TH ST. TRUNK	1.13	15.26	1.72	18.25	1.84	19.40	1.89	19.79			X					
RE*AUBURN3	R18H-77	R18H-76	42	0.013	140.90	138.10	480	0.0058	8.01	49.7	0.0021	0%		15.26		18.25		19.40		19.79	-29.92	OK	NE					
RE*AUBURN3	R18H-76	R18H-75	42	0.013	138.10	135.30	480	0.0058	8.01	49.7	0.0021	0%		15.26		18.25		19.40		19.79	-29.92	OK	NE					
RE*AUBURN3	R18H-75	R18H-74	42	0.013	135.30	132.60	480	0.0056	7.86	48.8	0.0021	0%		15.26		18.25		19.40		19.79	-29.02	OK	NE					
Section			42	0.013		11.90	2043	0.0058	**8.00**	**49.7**	**0.0058**	0%		15.26		18.25		19.40		19.79	-29.88	OK	NE					OK
RE*AUBURN3	R18H-74	R18H-73	72	0.013	131.40	131.00	162	0.0025	7.46	136.1	0.0021	100% aub3-c	2.99	18.25	3.96	22.21	4.23	23.63	4.35	24.14	-112.00	OK	NE	0.01	0.40	0.39	0.25	
RE*AUBURN3	R18H-73	R18H-72	72	0.013	131.00	131.10	499	-0.0002			0.0021	0%		18.25		22.21		23.63		24.14	24.14	39	2010	0.04	-0.10	-0.14	-0.14	ignore
RE*AUBURN3	R18H-72	R18H-71	72	0.013	131.10	130.80	500	0.0006	3.68	67.1	0.0021	0%		18.25		22.21		23.63		24.14	-42.97	OK	NE					
RE*AUBURN3	R18H-71	R18H-70	72	0.013	130.80	130.60	365	0.0005	3.52	64.1	0.0021	0%		18.25		22.21		23.63		24.14	-39.99	OK	NE					
RE*AUBURN3	R18H-70	R18H-69	72	0.013	130.60	130.50	363	0.0003	2.49	45.5	0.0021	0%		18.25		22.21		23.63		24.14	-21.33	OK	NE					
RE*AUBURN3	R18H-69	R18H-68	72	0.013	130.50	130.30	84	0.0024	7.33	133.7	0.0021	0%		18.25		22.21		23.63		24.14	-109.54	OK	NE					
RE*AUBURN3	R18H-68	R18H-67	72	0.013	130.30	130.10	421	0.0005	3.27	59.7	0.0021	0%		18.25		22.21		23.63		24.14	-35.58	OK	NE					
RE*AUBURN3	R18H-67	R18H-66	72	0.013	130.10	129.80	489	0.0006	3.72	67.9	0.0021	0%		18.25		22.21		23.63		24.14	-43.72	OK	NE					
RE*AUBURN3	R18H-66	R18H-65	72	0.013	129.80	129.20	489	0.0012	5.26	96.0	0.0021	0%		18.25		22.21		23.63		24.14	-71.83	OK	NE					
											0.0021	100% WEST VALLEY	4.46	22.71	5.01	27.22	5.30	28.93	5.35	29.49			X					
											0.0021	0%		22.71		27.22		28.93		29.49			X					
RE*AUBURN3	R18H-65	R18H-64	72	0.013	129.20	128.90	610	0.0005	3.33	60.8	0.0021	0%		22.71		27.22		28.93		29.49	-31.26	OK	NE					
RE*AUBURN3	R18H-64	R18H-63	72	0.013	128.90	128.60	612	0.0005	3.33	60.7	0.0021	0%		22.71		27.22		28.93		29.49	-31.17	OK	NE					
RE*AUBURN3	R18H-63	R18H-62	72	0.013	128.60	128.50	87	0.0011	5.09	92.9	0.0021	0%		22.71		27.22		28.93		29.49	-63.39	OK	NE					
RE*AUBURN3	R18H-62	R18H-61	72	0.013	128.50	128.30	275	0.0007	4.05	73.9	0.0021	0%		22.71		27.22		28.93		29.49	-44.39	OK	NE					
RE*AUBURN3	R18H-61	R18H-59	72	0.013	128.30	127.90	556	0.0007	4.03	73.5	0.0021	0%		22.71		27.22		28.93		29.49	-43.99	OK	NE					
RE*AUBURN3	R18H-59	R18H-58	72	0.013	127.90	127.50	460	0.0009	4.43	80.8	0.0021	0%		22.71		27.22		28.93		29.49	-51.30	OK	NE					
Section			72	0.013		3.90	5972	0.0007	**3.84**	**70.0**	**0.0007**	0%		22.71		27.22		28.93		29.49	-40.52	OK	NE					OK
												0%		22.71		27.22		28.93		29.49			X					
												0%		22.71		27.22		28.93		29.49			X					
												50% aub3-nw	0.88	23.59	1.15	28.38	1.22	30.16	1.23	30.72			X					
RE*AUBURN3	R18H-58	R18H-57	72	0.013	127.46	127.63	82	-0.0021			0.0006	0%		23.59		28.38		30.16		30.72	30.72	57	2010	0.01	-0.17	-0.18	-0.18	ignore
RE*AUBURN3	R18H-57	R18H-56	72	0.013	127.60	127.10	582	0.0009	4.40	80.3	0.0006	0%		23.59		28.38		30.16		30.72	-49.58	OK	NE					
RE*AUBURN3	R18H-56	R18H-55	72	0.013	127.10	126.80	525	0.0006	3.59	65.5	0.0006	0%		23.59		28.38		30.16		30.72	-34.77	OK	NE					
RE*AUBURN3	R18H-55	R18H-54	72	0.013	126.80	126.50	513	0.0006	3.63	66.3	0.0006	0%		23.59		28.38		30.16		30.72	-35.53	OK	NE					
RE*AUBURN3	R18H-54	R18H-53	72	0.013	126.50	126.10	515	0.0008	4.19	76.4	0.0006	0%		23.59		28.38		30.16		30.72	-45.63	OK	NE					
RE*AUBURN3	R18H-53	R18H-52	72	0.013	126.10	125.80	578	0.0005	3.42	62.4	0.0006	0%		23.59		28.38		30.16		30.72	-31.69	OK	NE					
RE*AUBURN3	R18H-52	R18H-51	72	0.013	125.80	125.50	530	0.0006	3.57	65.2	0.0006	0%		23.59		28.38		30.16		30.72	-34.46	OK	NE					
RE*AUBURN3	R18H-51	R18H-50	72	0.013	125.50	125.00	530	0.0009	4.61	84.1	0.0006	0%		23.59		28.38		30.16		30.72	-53.42	OK	NE					
RE*AUBURN3	R18H-50	R18H-49	72	0.013	125.00	124.70	311	0.0010	4.66	85.1	0.0006	0%		23.59		28.38		30.16		30.72	-54.37	OK	NE					
RE*AUBURN3	R18H-49	R18H-48	72	0.013	124.70	124.50	1000	0.0002	2.12	38.7	0.0006	0%		23.59		28.38		30.16		30.72	-8.02	OK	NE					
Section			72	0.013		2.96	5166	0.0006	**3.60**	**65.6**	**0.0006**	0%		23.59		28.38		30.16		30.72	-34.86	OK	NE					OK
														54.65		**70.70**		**75.08**	**76.2**	**76.22**	**CHECK**							

Task 240 Report: AUBURN PLANNING ZONE - REROUTING ALTERNATIV											Herrera	Modification	2010 Design Flow		2020 Design Flow		2030 Design Flow		2050 Design Flow					Surcharge: any negative value in "BW elev"				
FACILITY	UP-STREAM MH #	DOWN-STREAM MH #	DIA. (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	New Slope	Origin of Flow Percent	Inflow (MGD)	Total (MGD)	Inflow (MGD)	Total (MGD)	Inflow (MGD)	Total (MGD)	Inflow (MGD)	Total (MGD)	Excess (MGD)	Parallel Pipe (in.)	Decade Exceeded	Δ elev FULL pipe	Δ elev	Δ– Δfull	BW elev	Proposed Diameter (inches)
*RWSP pipe or section data revised.																												

APPENDIX 240-G

KENT PLANNING ZONE PARALLEL ALTERNATIVE FLOW ROUTING

Task 240 Report:
KENT PLANNING ZONE - PARALLEL PIPE ALTERNATIVE

FACILITY	UP- STREAM MH #	DOWN-STREAM MH #	DIA (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow (%)	2010 Design Flow 2010 Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow 2020Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow 2030 Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow 2050 Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (MGD)	2050 Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW elev	Proposed Diameter (inches)
do not delete this line																												
												100% AUBURN3-BASE	54.65	54.7	70.70	70.7	75.08	75.1	76.22	76.2			X					
RE*AUBURN3	R18H-48	R18H-47	72	0.013	124.50	123.70	659	0.0012	5.23	95.5	0.0007	0%		54.7		70.7		75.1		76.2	-19.2	OK	NE					
												100% S256TH CORR	20.10	74.7	27.93	98.6	29.66	104.7	30.22	106.4			X					
												100% S SOOS	3.27	78.0	5.56	104.2	5.96	110.7	6.18	112.6			X					
RE*AUBURN3	R18H-47	R18H-45	72	0.013	123.70	123.30	827	0.0005	3.30	60.3	0.0007	0%		78.0		104.2		110.7		112.6	52.4	66	2010					
RE*AUBURN3	R18H-45	R18H-44	72	0.013	123.30	123.20	454	0.0002	2.23	40.7	0.0007	10% aub2-s	0.40	78.4	0.69	104.9	0.74	111.4	0.75	113.4	72.7	72	2010					
RE*AUBURN3	R18H-44	R18H-43	72	0.013	123.20	122.90	592	0.0005	3.38	61.7	0.0007	0%		78.4		104.9		111.4		113.4	51.7	63	2010					
RE*AUBURN3	R18H-43	R18H-42	72	0.013	122.90	122.40	575	0.0009	4.43	80.8	0.0007	0%		78.4		104.9		111.4		113.4	32.6	54	2020					
	Section		72	0.013		2.10	3107	0.0007		74.5	0.0007	0%		78.4		104.9		111.4		113.4	38.8	57	2010					57
RE*AUBURN2	R18H-42	R18H-41	72	0.013	122.40	122.00	575	0.0007	3.96	72.3	0.0007	68% aub2-s	2.71	81.1	4.71	109.6	5.01	116.4	5.10	118.5	46.2	63	2010					
RE*AUBURN2	R18H-41	R18H-40	72	0.013	122.00	121.60	575	0.0007	3.96	72.3	0.0007	0%		81.1		109.6		116.4		118.5	46.2	63	2010					
RE*AUBURN2	R18H-40	R18H-39	72	0.013	121.60	121.10	518	0.0010	4.67	85.1	0.0007	0%		81.1		109.6		116.4		118.5	33.3	54	2020					
RE*AUBURN2	R18H-39	R18H-38	72	0.013	121.10	120.80	570	0.0005	3.45	62.9	0.0007	0%		81.1		109.6		116.4		118.5	55.6	66	2010					
RE*AUBURN2	R18H-38	R18H-37	72	0.013	120.80	120.20	610	0.0010	4.71	85.9	0.0007	22% aub2-s	0.88	82.0	1.52	111.1	1.62	118.1	1.65	120.1	34.2	54	2020					
RE*AUBURN2*	R18H-37	R18H-36	72	0.013	120.20	119.51	610	0.0011	5.05	92.1	0.0007	0%		82.0		111.1		118.1		120.1	28.0	51	2020					
RE*AUBURN2*	R18H-36	R18H-35	72	0.013	119.51	119.56	155	-0.0003			0.0007	0%		82.0		111.1		118.1		120.1	120.1	87	2010					
	Section		72	0.013		2.84	3613	0.0008		76.8	0.0008	0%		82.0		111.1		118.1		120.1	43.3	60	2010					60
RE*AUBURN2 SIPHON	R18H-35	R18H-34	54	0.013	119.56	118.40	200	0.0058	64%	96.9		0%		27.3		56.4		63.3		65.4	-31.5		NE					
RE*AUBURN2 SIPHON	R18H-35	R18H-34	42	0.013	119.56	118.40	200	0.0058	33%	49.6		0%		49.6		49.6		49.6		49.6			NE					
RE*AUBURN2 SIPHON	R18H-35	R18H-34	18	0.013	119.56	118.40	200	0.0058	3%	5.2		0%		5.2		5.2		5.2		5.2			NE					
	Section		64	0.013	119.56	118.40	200					0%		82.0		111.1		118.1		120.1	120.1	OK	NE	ok				OK
RE*AUBURN2	R18H-34	R18H-33	72	0.013	118.40	118.30	186	0.0005	3.48	63.5	0.0008	70% aub2-n	1.76	83.8	1.88	113.0	2.00	120.1	2.03	122.1	58.6	66	2010					
RE*AUBURN2	R18H-33	R18H-32	72	0.013	118.30	117.90	535	0.0007	4.11	74.9	0.0008	0%		83.8		113.0		120.1		122.1	47.2	63	2010					
RE*AUBURN2	R18H-32	R18H-31	72	0.013	117.90	117.50	517	0.0008	4.18	76.2	0.0008	0%		83.8		113.0		120.1		122.1	45.9	60	2010					
RE*AUBURN2	R18H-31	R18H-30	72	0.013	117.50	117.10	518	0.0008	4.17	76.1	0.0008	0%		83.8		113.0		120.1		122.1	46.0	60	2010					
RE*AUBURN2	R18H-30	R18H-29	72	0.013	117.10	116.40	517	0.0014	5.53	100.8	0.0008	0%		83.8		113.0		120.1		122.1	21.3	45	2020					
RE*AUBURN2	R18H-29	R18H-28	72	0.013	116.40	115.90	517	0.0010	4.67	85.2	0.0008	0%		83.8		113.0		120.1		122.1	36.9	57	2020					
RE*AUBURN2@ SR516	R18H-28	R18H-27	72	0.013	115.90	116.10	220	-0.0009			0.0008	0%		83.8		113.0		120.1		122.1	122.1	87	2010					
RE*AUBURN2@ SR516	R18H-27	R18H-26	72	0.013	116.10	115.90	179	0.0011	5.02	91.6	0.0008	30% aub2-n	0.75	84.5	0.81	113.8	0.86	120.9	0.87	123.0	31.4	54	2020					
RE*AUBURN2	R18H-26	R18H-25	72	0.013	115.90	115.70	416	0.0005	3.29	60.1	0.0008	0%		84.5		113.8		120.9		123.0	62.9	69	2010					
RE*AUBURN2	R18H-25	R18H-24	72	0.013	115.70	114.40	736	0.0018	6.31	115.1	0.0008	0%		84.5		113.8		120.9		123.0	7.9	33	2030					
RE*AUBURN2	R18H-24	R18H-23	72	0.013	114.40	114.70	116	-0.0026			0.0008	0%		84.5		113.8		120.9		123.0	123.0	87	2010					
RE*AUBURN2	R18H-23	R18H-22	72	0.013	114.70	114.50	577	0.0003	2.80	51.0	0.0008	0%		84.5		113.8		120.9		123.0	72.0	72	2010					
	Section		72	0.013		3.90	5034	0.0008		76.3	0.0008	0%		84.5		113.8		120.9		123.0	46.8	60	2010					60
RE*AUBURN1	R18H-22	R18H-21A	72	0.013	114.50	114.20	410	0.0007	4.06	74.1	0.0008	0%		84.5		113.8		120.9		123.0	48.9	63	2010					
RE*AUBURN1	R18H-21A	R18H-21	72	0.013	114.20	113.90	410	0.0007	4.06	74.1	0.0008	0%		84.5		113.8		120.9		123.0	48.9	63	2010					
RE*AUBURN1	R18H-21	R18H-19	72	0.013	113.90	113.60	492	0.0006	3.71	67.7	0.0008	0%		84.5		113.8		120.9		123.0	55.4	66	2010					
RE*AUBURN1@ SR 167	R18H-19	R18H-18	72	0.013	113.60	113.20	260	0.0015	5.89	107.5	0.0008	0%		84.5		113.8		120.9		123.0	15.6	42	2020					
RE*AUBURN1	R18H-18	R18H-17	72	0.013	113.20	112.90	260	0.0012	5.10	93.1	0.0008	0%		84.5		113.8		120.9		123.0	30.0	51	2020					
RE*AUBURN1	R18H-17	R18H-16	72	0.013	112.90	112.50	468	0.0009	4.39	80.1	0.0008	0%		84.5		113.8		120.9		123.0	42.9	60	2010					
RE*AUBURN1	R18H-16	R18H-15	72	0.013	112.50	112.20	413	0.0007	4.05	73.8	0.0008	0%		84.5		113.8		120.9		123.0	49.2	63	2010					
RE*AUBURN1	R18H-15	R18H-14	72	0.013	112.20	111.90	546	0.0005	3.52	64.2	0.0008	25% xval-x	0.29	84.8	0.30	114.1	0.32	121.2	0.32	123.3	59.1	66	2010					
RE*AUBURN1	R18H-14	R18H-13	72	0.013	111.90	111.50	540	0.0007	4.09	74.6	0.0008	0%		84.8		114.1		121.2		123.3	48.8	63	2010					
RE*AUBURN1	R18H-13	R18H-12	72	0.013	111.50	111.00	530	0.0009	4.61	84.1	0.0008	0%		84.8		114.1		121.2		123.3	39.2	57	2010					
RE*AUBURN1	R18H-12	R18H-11	72	0.013	111.00	110.50	655	0.0008	4.15	75.7	0.0008	0%		84.8		114.1		121.2		123.3	47.6	60	2010					
RE*AUBURN1	R18H-11	R18H-10	72	0.013	110.50	110.00	640	0.0008	4.20	76.6	0.0008	0%		84.8		114.1		121.2		123.3	46.8	60	2010					
RE*AUBURN1	R18H-10	R18H-09	72	0.013	110.00	109.60	398	0.0010	4.76	86.9	0.0008	0%		84.8		114.1		121.2		123.3	36.5	57	2020					
RE*AUBURN1	R18H-09	R18H-08	72	0.013	109.60	109.40	112	0.0018	6.35	115.8	0.0008	100% xval-s	0.41	85.2	0.43	114.5	0.46	121.7	0.46	123.8	8.0	33	2030					
RE*AUBURN1	R18H-08	R18H-07	72	0.013	109.40	109.10	629	0.0005	3.28	59.8	0.0008	0%		85.2		114.5		121.7		123.8	64.0	69	2010					
RE*AUBURN1	R18H-07	R18H-06	72	0.013	109.10	108.60	629	0.0008	4.23	77.2	0.0008	0%		85.2		114.5		121.7		123.8	46.6	60	2010					

Task 240 Report:
KENT PLANNING ZONE - PARALLEL PIPE ALTERNATIVE

FACILITY	UP- STREAM MH #	DOWN-STREAM MH #	DIA (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow (%)	2010 Design Flow 2010 Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow 2020Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow 2030 Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow 2050 Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (MGD)	2050 Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW elev	Proposed Diameter (inches)
RE*AUBURN1	R18H-06	R18H-05	72	0.013	108.60	108.00	534	0.0011	5.03	91.8	0.0008	0%		85.2		114.5		121.7		123.8	32.0	54	2020					
RE*AUBURN1	R18H-05	R18H-04	72	0.013	108.00	107.50	565	0.0009	4.47	81.5	0.0008	0%		85.2		114.5		121.7		123.8	42.3	60	2010					
RE*AUBURN1	R18H-04	R18H-03	72	0.013	107.50	107.20	494	0.0006	3.70	67.5	0.0008	0%		85.2		114.5		121.7		123.8	56.3	66	2010					
RE*AUBURN1	R18H-03	R18H-02	72	0.013	107.20	106.80	520	0.0008	4.17	76.0	0.0008	0%		85.2		114.5		121.7		123.8	47.8	60	2010					
RE*AUBURN1	R18H-02	R18H-01	72	0.013	106.80	106.40	520	0.0008	4.17	76.0	0.0008	0%		85.2		114.5		121.7		123.8	47.8	60	2010					
	Section		72	0.013		8.10	10025	0.0008		77.9	0.0008	0%		85.2		114.5		121.7		123.8	45.9	60	2010					60
RE*AUBURN1	R18H-01	R18G-01A	60	0.013	106.40	105.90	36	0.0139	15.67	198.6	0.0026	25% xval-x	**0.29**	85.5	**0.30**	114.8	**0.32**	122.0	**0.32**	124.1	-74.4	OK	NE					
RE*KENTX	R18G-01A	R18G-01	72	0.013	104.00	103.80	635	0.0003	2.67	48.6	0.0026	-35% AUBURN1-SPLIT	**-29.92**	55.6	**-40.20**	74.7	**-42.71**	79.3	**-43.44**	80.7	32.1	42	2010					
RE*KENTX	R18G-01	52	72	0.013	103.80	103.70	353	0.0003	2.53	46.1	0.0026	0%		55.6		74.7		79.3		80.7	34.6	45	2010					
	Section		72	0.013		2.70	1024	0.0026		140.7	0.0026	0%		55.6		74.7		79.3		80.7	-60.0	OK	NE					OK
TO ULID1/5#52																												

Task 240 Report:
KENT PLANNING ZONE - PARALLEL PIPE ALTERNATIVE

FACILITY	UP- STREAM MH #	DOWN-STREAM MH #	DIA (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow (%)	2010 Design Flow 2010 Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow 2020Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow 2030 Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow 2050 Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (MGD)	2050 Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW elev	Proposed Diameter (inches)
not delete this line												0%																
RE*WHILL	15	14	24	0.013	155.30	153.30	221	0.0090	6.87	13.9	0.0061	100% whill-x	6.23	6.2	7.62	7.6	8.09	8.1	8.20	8.2	-5.7	OK	NE					
RE*WHILL	14	13	24	0.013	153.30	146.20	249	0.0285	12.19	24.7	0.0061	0%		6.2		7.6		8.1		8.2	-16.5	OK	NE	0.8	7.1	6.3	5.3	
RE*WHILL	13	12	24	0.013	146.20	145.40	286	0.0028	3.82	7.7	0.0061	0%		6.2		7.6		8.1		8.2	0.5	9	2030	0.9	0.8	-0.1	-1.0	ignore
RE*WHILL	12	11	24	0.013	145.40	144.60	514	0.0016	2.85	5.8	0.0061	0%		6.2		7.6		8.1		8.2	2.4	15	2010	1.6	0.8	-0.8	-0.9	ignore
RE*WHILL	11	10	24	0.013	144.60	144.40	95	0.0021	3.31	6.7	0.0061	0%		6.2		7.6		8.1		8.2	1.5	12	2020	0.3	0.2	-0.1	-0.1	ignore
RE*WHILL	10	09	24	0.013	144.40	143.50	222	0.0041	4.60	9.3	0.0061	0%		6.2		7.6		8.1		8.2	-1.1	OK	NE					
RE*WHILL	09	08	24	0.013	143.50	142.30	305	0.0039	4.53	9.2	0.0061	0%		6.2		7.6		8.1		8.2	-1.0	OK	NE					
RE*WHILL	08	07	24	0.013	142.30	140.00	344	0.0067	5.90	12.0	0.0061	0%		6.2		7.6		8.1		8.2	-3.8	OK	NE					
RE*WHILL	07	06A	24	0.013	140.00	131.20	500	0.0176	9.58	19.4	0.0061	0%		6.2		7.6		8.1		8.2	-11.2	OK	NE					
RE*WHILL	06A	06B	24	0.013	131.20	131.10	15	0.0067	5.90	11.9	0.0061	0%		6.2		7.6		8.1		8.2	-3.7	OK	NE					
RE*WHILL	06B	06	24	0.013	131.10	130.40	335	0.0021	3.30	6.7	0.0061	0%		6.2		7.6		8.1		8.2	1.5	12	2020	1.0	0.7	-0.3	-1.8	12
RE*WHILL	06	05	24	0.013	130.40	129.70	350	0.0020	3.23	6.5	0.0061	0%		6.2		7.6		8.1		8.2	1.7	12	2020	1.1	0.7	-0.4	-1.4	12
RE*WHILL	05	04	24	0.013	129.70	128.70	500	0.0020	3.23	6.5	0.0061	0%		6.2		7.6		8.1		8.2	1.7	12	2020	1.6	1.0	-0.6	-1.0	12
RE*WHILL	04	03	24	0.013	128.70	127.90	410	0.0020	3.19	6.5	0.0061	0%		6.2		7.6		8.1		8.2	1.7	12	2020	1.3	0.8	-0.5	-0.5	12
RE*WHILL	03	02	24	0.013	128.90	127.00	413	0.0046	4.90	9.9	0.0061	0%		6.2		7.6		8.1		8.2	-1.7	OK	NE					
RE*WHILL	02	01A	24	0.013	127.00	126.50	240	0.0021	3.29	6.7	0.0061	50% ulid4-x	1.17	7.4	1.35	9.0	1.43	9.5	1.45	9.6	3.0	15	2010	1.0	0.5	-0.5	-0.9	ignore
RE*WHILL	01A	01	24	0.013	126.50	126.40	96	0.0010	2.33	4.7	0.0061	0%		7.4		9.0		9.5		9.6	4.9	18	2010	0.4	0.1	-0.3	-0.3	ignore
RE*WHILL	01	S-31A	24	0.013	126.40	125.70	40	0.0175	9.55	19.4	0.0061	0%		7.4		9.0		9.5		9.6	-9.7	OK	NE					
RE*WHILL	S-31A	S-31B	24	0.013	125.70	125.50	294	0.0007	1.88	3.8	0.0061	0%		7.4		9.0		9.5		9.6	5.8	21	2010	1.3	0.2	-1.1	-1.1	21
	Section		24	0.013		29.80	5429	0.0055		10.8	0.0055	0%		7.4		9.0		9.5		9.6	-1.2	OK	NE					OK
RE*WHILL	S-31B	S-31	24	0.013	125.50	122.30	14	0.2286	34.52	70.0	0.0061	0%		7.4		9.0		9.5		9.6	-60.3	OK	NE					
RE*ULID1/4	S-31	S-30	24	0.013	122.30	121.50	448	0.0018	3.05	6.2	0.0015	0%		7.4		9.0		9.5		9.6	3.5	21	2010					
RE*ULID1/4	S-30	S-29	24	0.013	121.50	120.00	454	0.0033	4.15	8.4	0.0015	5% ulid4-x	0.12	7.5	0.13	9.1	0.14	9.7	0.14	9.8	1.4	15	2020					
RE*ULID1/4	S-29	S-28	24	0.013	120.00	119.90	443	0.0002	1.09	2.2	0.0015	0%		7.5		9.1		9.7		9.8	7.6	27	2010					
RE*ULID1/4	S-28	S-27	24	0.013	119.90	119.10	446	0.0018	3.06	6.2	0.0015	30% ulid4-x	0.70	8.2	0.81	9.9	0.86	10.5	0.87	10.7	4.5	24	2010					
RE*ULID1/4	S-27	S-26	24	0.013	119.10	118.10	463	0.0022	3.35	6.8	0.0015	0%		8.2		9.9		10.5		10.7	3.9	21	2010					
RE*ULID1/4	S-26	S-25	24	0.013	118.10	117.30	405	0.0020	3.21	6.5	0.0015	0%		8.2		9.9		10.5		10.7	4.2	24	2010					
RE*ULID1/4	S-25	S-24	24	0.013	117.30	116.70	285	0.0021	3.31	6.7	0.0015	0%		8.2		9.9		10.5		10.7	3.9	21	2010					
RE*ULID1/4	S-24	S-23	24	0.013	116.70	115.90	353	0.0023	3.44	7.0	0.0015	0%		8.2		9.9		10.5		10.7	3.7	21	2010					
	Section		24	0.013		6.40	3297	0.0019		6.4	0.0019	0%		8.2		9.9		10.5		10.7	4.2	21	2010					21
RE*ULID1/4	S-23	S-22	30	0.013	115.90	115.30	348	0.0017	3.48	11.0	0.0015	15% ulid4-x	0.35	8.6	0.40	10.3	0.43	10.9	0.43	11.1	0.1	6	2050					
RE*ULID1/4	S-22	S-20	30	0.013	115.30	115.00	409	0.0007	2.27	7.2	0.0015	0%		8.6		10.3		10.9		11.1	3.9	21	2010					
RE*ULID1/4	S-20	S-19	30	0.013	115.00	114.70	320	0.0009	2.56	8.1	0.0015	0%		8.6		10.3		10.9		11.1	3.0	21	2010					
RE*ULID1/4	S-19	S-18	30	0.013	114.70	114.50	201	0.0010	2.64	8.4	0.0015	20% 250s-x	0.66	9.2	0.80	11.1	0.85	11.8	0.86	11.9	3.6	21	2010					
RE*ULID1/4	S-18	S-17	30	0.013	114.50	114.20	185	0.0016	3.37	10.7	0.0015	0%		9.2		11.1		11.8		11.9	1.3	15	2020					
	Section		30	0.013		1.70	1463	0.0012		9.0	0.0012	0%		9.2		11.1		11.8		11.9	2.9	21	2010					21
RE*ULID250	S-17	S-16	30	0.013	114.20	114.00	290	0.0007	2.20	7.0	0.0015	0%		9.2		11.1		11.8		11.9	5.0	24	2010					
RE*ULID250	S-16	S-15A	30	0.013	114.00	113.60	500	0.0008	2.37	7.5	0.0015	0%		9.2		11.1		11.8		11.9	4.4	24	2010					
RE*ULID250	S-15	S-14	30	0.013	113.60	113.10	502	0.0010	2.64	8.4	0.0015	0%		9.2		11.1		11.8		11.9	3.6	21	2010					
RE*ULID250	S-14	S-13	30	0.013	113.10	112.60	500	0.0010	2.65	8.4	0.0015	0%		9.2		11.1		11.8		11.9	3.6	21	2010					
RE*ULID250	S-13	S-12	30	0.013	112.60	112.20	500	0.0008	2.37	7.5	0.0015	0%		9.2		11.1		11.8		11.9	4.4	24	2010					
RE*ULID250	S-12	S-11	30	0.013	112.20	111.40	324	0.0025	4.16	13.2	0.0015	0%		9.2		11.1		11.8		11.9	-1.2	OK	NE					
RE*ULID250	S-11	S-10	30	0.013	111.40	111.30	440	0.0002	1.26	4.0	0.0015	0%		9.2		11.1		11.8		11.9	7.9	30	2010					
	Section		30	0.013		2.90	3056	0.0009		8.2	0.0015	0%		9.2		11.1		11.8		11.9	3.8	21	2010					21
RE*ULID250	S-10	S-09	36	0.013	111.30	111.10	445	0.0004	2.01	9.1	0.0015	0%		9.2		11.1		11.8		11.9	2.8	21	2010					
RE*ULID250	S-09	S-08	36	0.013	111.10	110.90	446	0.0004	2.00	9.1	0.0015	0%		9.2		11.1		11.8		11.9	2.8	21	2010					
RE*ULID250	S-08	S-07	36	0.013	110.90	110.80	350	0.0003	1.60	7.3	0.0015	0%		9.2		11.1		11.8		11.9	4.7	24	2010					
RE*ULID250	S-07	S-06	36	0.013	110.80	110.50	497	0.0006	2.32	10.6	0.0015	0%		9.2		11.1		11.8		11.9	1.3	15	2020					
	Section*		36	0.013		0.80	1738	0.0005	2.03	9.3	0.0015	0%		9.2		11.1		11.8		11.9	2.7	21	2020					21
RE*ULID250	S-06	S-05	36	0.013	110.50	110.20	305	0.0010	2.97	13.5	0.0015	0%		9.2		11.1		11.8		11.9	-1.6	OK	NE	0.2	0.3	0.1	-0.1	ignore
RE*ULID250	S-05	S-04A	36	0.013	110.20	110.10	255	0.0004	1.87	8.5	0.0015	0%		9.2		11.1		11.8		11.9	3.4	21	2010	0.2	0.1	-0.1	-0.1	ignore
RE*ULID250	S-04A	S-03	36	0.013	110.10	109.60	430	0.0012	3.23	14.7	0.0015	80% 250s-x	2.66	11.9	3.22	14.3	3.40	15.2	3.43	15.4	0.7	12	2030	0.5	0.5	0.0	0.0	ignore
RE*ULID250	S-03	S-02	36	0.013	109.60	109.00	432	0.0014	3.53	16.1	0.0015	0%		11.9		14.3		15.2		15.4	-0.7	OK	NE					
RE*ULID250	S-02	S-01	36	0.013	109.00	108.40	455	0.0013	3.44	15.7	0.0015	0%		11.9		14.3		15.2		15.4	-0.3	OK	NE					
RE*ULID250	S-01	N-01	36	0.013	108.40	107.80	503	0.0012	3.27	14.9	0.0015	0%		11.9		14.3		15.2		15.4	0.5	12	2030	0.6	0.6	0.0	0.0	ignore
RE*ULID250	N-01	N-02	36	0.013	107.80	105.90	525	0.0036	5.69	26.0	0.0015	0%		11.9		14.3		15.2		15.4	-10.6	OK	NE					
	Section*		36	0.013		4.60	2905	0.0016		17.2	0.0015	0%		11.9		14.3		15.2		15.4	-1.8	OK	NE					OK
D ULID 250 #N-02																												

Task 240 Report:
KENT PLANNING ZONE - PARALLEL PIPE ALTERNATIVE

FACILITY	UP- STREAM MH #	DOWN-STREAM MH #	DIA (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow (%)	2010 Design Flow 2010 Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow 2020Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow 2030 Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow 2050 Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (MGD)	2050 Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW elev	Proposed Diameter (inches)
not delete this line												0%											X					
RE*ULID250	N-06G	N-06F	15	0.013	113.70	112.50	151	0.0079	4.70	3.7	0.0017	80% 250n-x	3.41	3.4	5.08	5.1	5.37	5.4	5.39	5.4	1.7	15	2020	2.5	1.2	-1.3	-1.3	ignore
RE*ULID250	N-06F	N-06E	27	0.013	112.50	110.70	455	0.0040	4.91	12.6	0.0017	0%		3.4		5.1		5.4		5.4	-7.2	OK	NE					
RE*ULID250	N-06E	N-06D	27	0.013	110.70	108.40	451	0.0051	5.58	14.3	0.0017	10% 250n-x	0.43	3.8	0.63	5.7	0.67	6.0	0.67	6.1	-8.2	OK	NE					
Section			27	0.013		5.30	1057	0.0050		14.2	0.0050	0%		3.8		5.7		6.0		6.1	-8.1	OK	NE					OK
RE*ULID250	N-06D	N-06C	36	0.013	108.40	108.20	387	0.0005	2.15	9.8	0.0017	0%		3.8		5.7		6.0		6.1	-3.7	OK	NE					
RE*ULID250	N-06C	N-06B	36	0.013	108.20	108.10	282	0.0004	1.78	8.1	0.0017	0%		3.8		5.7		6.0		6.1	-2.1	OK	NE					
RE*ULID250	N-06B	N-06A	36	0.013	108.10	107.90	327	0.0006	2.34	10.7	0.0017	0%		3.8		5.7		6.0		6.1	-4.6	OK	NE					
RE*ULID250	N-06A	N-06	36	0.013	107.90	107.80	422	0.0002	1.46	6.6	0.0017	0%		3.8		5.7		6.0		6.1	-0.6	OK	NE					
RE*ULID250	N-06	N-05	36	0.013	107.80	107.70	180	0.0006	2.23	10.2	0.0017	0%		3.8		5.7		6.0		6.1	-4.1	OK	NE					
RE*ULID250	N-05	N-04	36	0.013	107.70	107.40	423	0.0007	2.52	11.5	0.0017	10% 250n-x	0.43	4.3	0.63	6.3	0.67	6.7	0.67	6.7	-4.8	OK	NE					
RE*ULID250	N-04	N-03	36	0.013	107.40	107.20	441	0.0005	2.01	9.2	0.0017	0%		4.3		6.3		6.7		6.7	-2.5	OK	NE					
RE*ULID250	N-03	N-02A	36	0.013	107.20	107.10	287	0.0003	1.77	8.1	0.0017	0%		4.3		6.3		6.7		6.7	-1.3	OK	NE					
Section*			36	0.013		1.30	2749	0.0005	2.06	9.4	0.0005	0%		4.3		6.3		6.7		6.7	-2.6	OK	NE					OK
RE*ULID250	N-02A	N-02	36	0.013	107.10	105.90	135	0.0089		40.7	0.0089	100% ULID250S	11.90	16.2	14.33	20.7	15.20	21.9	15.38	22.1	-18.6	OK	NE					
Section*			36	0.013		1.20	135	0.0089	8.92	40.7	0.0089	0%		16.2		20.7		21.9		22.1	-18.6	OK	NE					OK
RE*KENTX	R18G-07	R18G-06	54	0.013	106.00	105.60	625	0.0006	3.14	32.2	0.0007	25% xval-x	0.29	16.4	0.30	21.0	0.32	22.2	0.32	22.4	-9.7	OK	NE					
RE*KENTX	R18G-06	R18G-05	54	0.013	105.60	105.20	618	0.0006	3.15	32.4	0.0007	0%		16.4		21.0		22.2		22.4	-9.9	OK	NE					
RE*KENTX	R18G-05	R18G-04	54	0.013	105.20	105.40	74	-0.0027			0.0007	0%		16.4		21.0		22.2		22.4	22.4	48	2010					
RE*KENTX	R18G-04	R18G-03	54	0.013	105.40	105.00	619	0.0006	3.15	32.3	0.0007	0%		16.4		21.0		22.2		22.4	-9.9	OK	NE					
RE*KENTX to SI	R18G-03	R18A-57	54	0.013	105.00	104.10	664	0.0014	4.56	46.8	0.0007	0%		16.4		21.0		22.2		22.4	-24.4	OK	NE					
Section			54	0.013		1.90	2600	0.0007	3.35	34.4	0.0007	0%		16.4		21.0		22.2		22.4	-11.9	OK	NE					OK
TO SOUTH INTERCEPTOR																												

Task 240 Report:
KENT PLANNING ZONE - PARALLEL PIPE ALTERNATIVE

FACILITY	UP- STREAM MH #	DOWN-STREAM MH #	DIA (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow (%)	2010 Design Flow 2010 Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow 2020Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow 2030 Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow 2050 Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (MGD)	2050 Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW elev	Proposed Diameter (inches)
												5% mill-x	0.58	0.6	0.67	0.7	0.71	0.7	0.74	0.7			X					
RE*GARISN	R18-30	R18-29	24	0.013	378.04	377.67	110	0.0034	4.18	8.5	0.0553	70% gar-x	4.17	4.7	5.05	5.7	5.37	6.1	5.53	6.3	-2.2	OK	NE					
RE*GARISN	R18-29	R18-28	12	0.013	377.67	347.35	206	0.1472	17.46	8.8	0.0553	0%		4.7		5.7		6.1		6.3	-2.6	OK	NE					
RE*GARISN	R18-28	R18-27	12	0.013	347.35	326.23	195	0.1083	14.97	7.6	0.0553	0%		4.7		5.7		6.1		6.3	-1.3	OK	NE					
RE*GARISN	R18-27	R18-26	12	0.013	326.23	302.19	152	0.1580	18.08	9.2	0.0553	0%		4.7		5.7		6.1		6.3	-2.9	OK	NE					
RE*GARISN	R18-26	R18-25	12	0.013	302.19	276.30	335	0.0773	12.64	6.4	0.0553	0%		4.7		5.7		6.1		6.3	-0.1	OK	NE					
	Section		12	0.013		101.74	999	0.1019		7.4	0.1019	0%		4.7		5.7		6.1		6.3	-1.1	OK	NE					OK
RE*GARISN	R18-25	R18-24	18	0.013	275.59	273.89	325	0.0052	4.31	4.9	0.0553	0%		4.7		5.7		6.1		6.3	1.4	9	2020	2.8	1.7	-1.1	-6.6	
RE*GARISN	R18-24	R18-23	18	0.013	273.89	272.28	330	0.0049	4.16	4.7	0.0553	0%		4.7		5.7		6.1		6.3	1.5	9	2020	2.8	1.6	-1.2	-5.5	
	Section		18	0.013		3.31	655	0.0051		4.8	0.0051	0%		4.7		5.7		6.1		6.3	1.4	12	2020					12
RE*GARISN	R18-23	R18-22	12	0.013	272.28	254.65	235	0.0751	12.47	6.3	0.0553	10% gar-x	0.60	5.3	0.72	6.4	0.77	6.9	0.79	7.1	0.7	6	2020	21.9	17.6	-4.3	-4.3	6
RE*GARISN	R18-22	R18-21	12	0.013	254.65	223.41	210	0.1488	17.55	8.9	0.0553	0%		5.3		6.4		6.9		7.1	-1.8	OK	NE					
RE*GARISN	R18-21	R18-20	12	0.013	219.39	202.44	69	0.2459	22.55	11.4	0.0553	0%		5.3		6.4		6.9		7.1	-4.4	OK	NE					
RE*GARISN	R18-20	R18-19	12	0.013	202.44	190.27	97	0.1250	16.08	8.1	0.0553	0%		5.3		6.4		6.9		7.1	-1.1	OK	NE					
	Section		12	0.013		82.01	611	0.1342		8.4	0.1342	0%		5.3		6.4		6.9		7.1	-1.4	OK	NE					OK
RE*GARISN	R18-19	R18-18	15	0.013	190.27	188.11	202	0.0107	5.45	4.3	0.0553	0%		5.3		6.4		6.9		7.1	2.7	12	2010	5.8	2.2	-3.6	-3.6	12
RE*GARISN @ creek	R18-18	R18-17	15	0.013	188.11	171.18	356	0.0475	11.51	9.1	0.0553	0%		5.3		6.4		6.9		7.1	-2.0	OK	NE					
	Section		15	0.013		19.09	559	0.0342		7.7	0.0342	0%		5.3		6.4		6.9		7.1	-0.7	OK	NE					OK
RE*GARISN @ creek drop	R18-17	R18-15	18	0.013	167.15	165.29	386	0.0048	4.14	4.7	0.0553	0%		5.3		6.4		6.9		7.1	2.3	9	2010	4.2	1.9	-2.3	-4.0	
RE*GARISN @ creek	R18-15	R18-14	18	0.013	165.29	163.34	339	0.0058	4.52	5.2	0.0553	0%		5.3		6.4		6.9		7.1	1.9	9	2010	3.6	1.9	-1.7	-1.7	
RE*GARISN @ creek	R18-14	R18-13	18	0.013	163.34	162.29	66	0.0159	7.51	8.6	0.0553	20% gar-x	1.19	6.5	1.44	7.9	1.54	8.4	1.58	8.6	0.1	3	2050	1.1	1.1	0.0	0.0	
	Section		18	0.013		4.86	791	0.0061		5.3	0.0061	0%		6.5		7.9		8.4		8.6	3.3	18	2010					18
RE*GARISN	R18-13	R18-12A	24	0.013	161.70	161.47	101	0.0023	3.44	7.0	0.0553	0%		6.5		7.9		8.4		8.6	1.7	9	2020	0.4	0.2	-0.1	-0.9	
RE*GARISN	R18-12A	R18-12	24	0.013	161.47	161.21	155	0.0017	2.96	6.0	0.0553	0%		6.5		7.9		8.4		8.6	2.6	12	2010	0.5	0.3	-0.3	-0.8	
RE*GARISN	R18-12	R18-11	24	0.013	161.21	160.79	259	0.0016	2.91	5.9	0.0553	0%		6.5		7.9		8.4		8.6	2.7	12	2010	0.9	0.4	-0.5	-0.5	
	Section		24	0.013		0.91	515	0.0018		6.2	0.0018	0%		6.5		7.9		8.4		8.6	2.5	18	2010					18
RE*GARISN	R18-11	R18-10	18	0.013	160.79	130.78	356	0.0842	17.30	19.7	0.0553	0%		6.5		7.9		8.4		8.6	-11.1	OK	NE	5.7	30.0	24.3	23.5	
RE*GARISN drop	R18-10	R18-09	18	0.013	118.98	115.51	260	0.0133	6.88	7.8	0.0553	0%		6.5		7.9		8.4		8.6	0.8	6	2020	4.2	3.5	-0.7	-0.7	ignore
	Section		18	0.013		45.28	617	0.0734		18.4	0.0734	0%		6.5		7.9		8.4		8.6	-9.8	OK	NE					OK
RE*GARISN	R18-09	R18-08	24	0.013	115.51	115.09	420	0.0010	2.29	4.6	0.0015	34% c5e-x	0.44	7.0	0.49	8.4	0.52	8.9	0.53	9.2	4.5	24	2010					
RE*GARISN	R18-08	R18-07	24	0.013	115.09	114.54	413	0.0013	2.64	5.3	0.0015	0%		7.0		8.4		8.9		9.2	3.8	21	2010					
RE*GARISN	R18-07	R18-06	24	0.013	114.54	114.29	94	0.0027	3.72	7.5	0.0015	0%		7.0		8.4		8.9		9.2	1.6	18	2020					
RE*GARISN	R18-06	R18-04	24	0.013	114.29	114.42	134	-0.0010			0.0015	0%		7.0		8.4		8.9		9.2	9.2	30	2010					
RE*GARISN	R18-04	R18-03	24	0.013	114.42	113.88	418	0.0013	2.59	5.3	0.0015	0%		7.0		8.4		8.9		9.2	3.9	21	2010					
RE*GARISN	R18-03	R18-02A	24	0.013	113.84	113.39	350	0.0013	2.59	5.2	0.0015	0%		7.0		8.4		8.9		9.2	3.9	21	2010					
RE*GARISN	R18-02A	R18-02	24	0.013	113.39	113.29	96	0.0010	2.33	4.7	0.0015	0%		7.0		8.4		8.9		9.2	4.4	24	2010					
RE*GARISN	R18-02	R18-01	24	0.013	113.29	112.63	365	0.0018	3.07	6.2	0.0015	33% c5e-x	0.43	7.4	0.48	8.9	0.51	9.4	0.51	9.7	3.5	21	2010					
RE*GARISN	R18-01	R18-57I-A	24	0.013	112.63	112.50	306	0.0004	1.49	3.0	0.0015	0%		7.4		8.9		9.4		9.7	6.7	27	2010					
RE*GARISN	R18-57I-A	57I	24	0.013	112.50	112.40	19	0.0053	5.24	10.6	0.0015	0%		7.4		8.9		9.4		9.7	-0.9	OK	NE					
	Section		24	0.013		3.11	2614	0.0012		5.0	0.0012	0%		7.4		8.9		9.4		9.7	4.6	24	2010					24
RE*ULID1/5	57I	57H	24	0.013	112.40	112.00	404	0.0010	2.27	4.6	0.0015	0%		7.4		8.9		9.4		9.7	5.1	24	2010					
RE*ULID1/5	57H	57G	24	0.013	112.00	111.50	403	0.0012	2.54	5.2	0.0015	0%		7.4		8.9		9.4		9.7	4.5	24	2010					
RE*ULID1/5	57G	57F	24	0.013	111.50	111.00	351	0.0014	2.72	5.5	0.0015	33% c5e-x	0.43	7.8	0.48	9.3	0.51	9.9	0.51	10.2	4.7	24	2010					
RE*ULID1/5	57F	57E	24	0.013	111.00	110.60	350	0.0011	2.44	4.9	0.0015	0%		7.8		9.3		9.9		10.2	5.2	24	2010					
RE*ULID1/5	57E	57D	24	0.013	110.60	110.00	400	0.0015	2.80	5.7	0.0015	0%		7.8		9.3		9.9		10.2	4.5	24	2010					
RE*ULID1/5	57D	57C	24	0.013	110.00	109.40	400	0.0015	2.80	5.7	0.0015	0%		7.8		9.3		9.9		10.2	4.5	24	2010					
RE*ULID1/5	57C	57B	24	0.013	109.40	109.30	130	0.0008	2.00	4.1	0.0015	0%		7.8		9.3		9.9		10.2	6.1	27	2010					
RE*ULID1/5	57B	57AA	24	0.013	109.30	108.90	217	0.0018	3.10	6.3	0.0015	0%		7.8		9.3		9.9		10.2	3.9	21	2010					
RE*ULID1/5	57AA	57A	24	0.013	108.90	108.50	268	0.0015	2.79	5.7	0.0015	0%		7.8		9.3		9.9		10.2	4.5	24	2010					
RE*ULID1/5	57A	57	24	0.013	108.50	106.40	500	0.0042	4.68	9.5	0.0015	0%		7.8		9.3		9.9		10.2	0.7	12	2030					
	Section		24	0.013		6.00	3423	0.0018		6.1	0.0018	0%		7.8		9.3		9.9		10.2	4.1	21	2010					21
TO ULID 1/5.#57																												

Task 240 Report:
KENT PLANNING ZONE - PARALLEL PIPE ALTERNATIVE

FACILITY	UP- STREAM MH #	DOWN-STREAM MH #	DIA (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow (%)	2010 Design Flow 2010 Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow 2020Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow 2030 Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow 2050 Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (MGD)	2050 Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW elev	Proposed Diameter (inches)
do not delete this line												100% mill-e	2.58	2.6	3.36	3.4	3.61	3.6	3.78	3.8			X					
RE*MILL	R18F-37A	R18F-37	27	0.013	444.60	442.00	440	0.0059	6.00	15.4	0.0218	25% mill-x	2.90	5.5	3.34	6.7	3.57	7.2	3.68	7.5	-7.9	OK	NE					
RE*MILL	R18F-37	R18F-36	21	0.013	442.00	434.70	428	0.0171	8.63	13.4	0.0218	0%		5.5		6.7		7.2		7.5	-5.9	OK	NE					
RE*MILL	R18F-36	R18F-35	21	0.013	434.70	428.90	335	0.0173	8.69	13.5	0.0218	0%		5.5		6.7		7.2		7.5	-6.0	OK	NE					
RE*MILL	R18F-35	R18F-34	21	0.013	428.90	423.00	340	0.0174	8.70	13.5	0.0218	0%		5.5		6.7		7.2		7.5	-6.0	OK	NE					
RE*MILL	R18F-34	R18F-33	21	0.013	423.00	417.00	358	0.0168	8.55	13.3	0.0218	0%		5.5		6.7		7.2		7.5	-5.8	OK	NE					
RE*MILL	R18F-33	R18F-32	21	0.013	417.00	411.00	358	0.0168	8.55	13.3	0.0218	0%		5.5		6.7		7.2		7.5	-5.8	OK	NE					
	Section		21	0.013		33.60	2259	0.0149		12.5	0.0149	0%		5.5		6.7		7.2		7.5	-5.0	OK	NE					OK
RE*MILL	R18F-32	R18F-31	24	0.013	411.00	408.50	408	0.0061	5.65	11.5	0.0218	0%		5.5		6.7		7.2		7.5	-4.0	OK	NE					
RE*MILL	R18F-31	R18F-30	24	0.013	408.50	406.70	307	0.0059	5.53	11.2	0.0218	0%		5.5		6.7		7.2		7.5	-3.7	OK	NE					
RE*MILL	R18F-30	R18F-29	24	0.013	406.70	404.80	320	0.0059	5.56	11.3	0.0218	0%		5.5		6.7		7.2		7.5	-3.8	OK	NE					
	Section		24	0.013		6.20	1035	0.0060		11.3	0.0060	0%		5.5		6.7		7.2		7.5	-3.9	OK	NE					OK
RE*MILL	R18F-29	R18F-28	21	0.013	404.80	400.50	359	0.0120	7.23	11.2	0.0218	12% mill-x	1.39	6.9	1.61	8.3	1.71	8.9	1.77	9.2	-2.0	OK	NE					
RE*MILL	R18F-28	R18F-27A	18	0.013	400.50	391.80	231	0.0377	11.57	13.2	0.0218	0%		6.9		8.3		8.9		9.2	-4.0	OK	NE					
RE*MILL	R18F-27A	R18F-27	18	0.013	391.80	388.20	80	0.0450	12.64	14.4	0.0218	0%		6.9		8.3		8.9		9.2	-5.2	OK	NE					
RE*MILL	R18F-27	R18F-26	18	0.013	388.20	371.10	379	0.0451	12.66	14.4	0.0218	0%		6.9		8.3		8.9		9.2	-5.2	OK	NE					
RE*MILL	R18F-26	R18F-25	18	0.013	371.10	348.40	367	0.0619	14.82	16.9	0.0218	0%		6.9		8.3		8.9		9.2	-7.7	OK	NE					
RE*MILL	R18F-25	R18F-24	18	0.013	348.40	334.30	318	0.0443	12.55	14.3	0.0218	0%		6.9		8.3		8.9		9.2	-5.1	OK	NE					
RE*MILL	R18F-24	R18F-23	18	0.013	334.30	309.00	405	0.0625	14.90	17.0	0.0218	0%		6.9		8.3		8.9		9.2	-7.8	OK	NE					
RE*MILL	R18F-23	R18F-22	18	0.013	309.00	278.20	395	0.0780	16.64	19.0	0.0218	0%		6.9		8.3		8.9		9.2	-9.7	OK	NE					
RE*MILL	R18F-22	R18F-21	18	0.013	278.20	263.00	195	0.0779	16.64	19.0	0.0218	0%		6.9		8.3		8.9		9.2	-9.7	OK	NE					
RE*MILL	R18F-21	R18F-20A	18	0.013	263.00	256.80	165	0.0376	11.56	13.2	0.0218	0%		6.9		8.3		8.9		9.2	-3.9	OK	NE					
RE*MILL	R18F-20A	R18F-20	18	0.013	256.80	252.30	90	0.0500	13.33	15.2	0.0218	0%		6.9		8.3		8.9		9.2	-6.0	OK	NE					
RE*MILL	R18F-20	R18F-19	18	0.013	252.30	238.80	292	0.0462	12.82	14.6	0.0218	0%		6.9		8.3		8.9		9.2	-5.4	OK	NE					
RE*MILL	R18F-19	R18F-18	18	0.013	238.80	216.90	347	0.0631	14.97	17.1	0.0218	0%		6.9		8.3		8.9		9.2	-7.8	OK	NE					
	Section		18	0.013		187.90	3623	0.0519	13.58	15.5	0.0519	0%		6.9		8.3		8.9		9.2	-6.2	OK	NE					OK
RE*MILL	R18F-18	R18F-17	21	0.013	216.90	213.00	290	0.0134	7.66	11.9	0.0218	0%		6.9		8.3		8.9		9.2	-2.7	OK	NE					
RE*MILL	R18F-17	R18F-16A	18	0.013	213.00	184.00	447	0.0649	15.18	17.3	0.0218	0%		6.9		8.3		8.9		9.2	-8.1	OK	NE					
RE*MILL	R18F-16A	R18F-16	18	0.013	184.00	182.70	14	0.0929	18.16	20.7	0.0218	0%		6.9		8.3		8.9		9.2	-11.5	OK	NE					
RE*MILL	R18F-16	R18F-15	18	0.013	182.70	174.60	118	0.0686	15.62	17.8	0.0218	0%		6.9		8.3		8.9		9.2	-8.6	OK	NE					
	Section		18	0.013		38.40	869	0.0442	12.53	14.3	0.0442	0%		6.9		8.3		8.9		9.2	-5.1	OK	NE					OK
RE*MILL	R18F-15	R18F-14	24	0.013	174.60	172.20	380	0.0063	5.74	11.6	0.0218	0%		6.9		8.3		8.9		9.2	-2.4	OK	NE					
RE*MILL	R18F-14	R18F-13	18	0.013	172.20	168.20	143	0.0280	9.97	11.4	0.0218	0%		6.9		8.3		8.9		9.2	-2.1	OK	NE					
RE*MILL	R18F-13	R18F-12	18	0.013	168.20	164.10	140	0.0293	10.20	11.6	0.0218	0%		6.9		8.3		8.9		9.2	-2.4	OK	NE					
RE*MILL	R18F-12	R18F-11	18	0.013	164.10	154.80	149	0.0624	14.89	17.0	0.0218	0%		6.9		8.3		8.9		9.2	-7.7	OK	NE					
RE*MILL	R18F-11	R18F-10	18	0.013	154.80	136.20	295	0.0631	14.97	17.1	0.0218	0%		6.9		8.3		8.9		9.2	-7.8	OK	NE					
	Section		18	0.013		38.40	1107	0.0347	11.10	12.7	0.0347	0%		6.9		8.3		8.9		9.2	-3.4	OK	NE					OK
RE*MILL	R18F-10	R18F-09	21	0.013	136.20	126.30	439	0.0226	9.92	15.4	0.0218	0%		6.9		8.3		8.9		9.2	-6.2	OK	NE					
	Section		21	0.013		9.90	439	0.0226	9.92	15.4	0.0218	0%		6.9		8.3		8.9		9.2	-6.2	OK	NE					OK
RE*MILL	R18F-09	R18F-07	30	0.013	126.30	125.00	465	0.0028	4.43	14.0	0.0218	25% mill-x	2.90	9.8	3.34	11.7	3.57	12.5	3.68	12.9	-1.1	OK	NE					
RE*MILL	R18F-07	R18F-06	30	0.013	125.00	124.40	424	0.0014	3.15	10.0	0.0218	0%		9.8		11.7		12.5		12.9	2.9	12	2020					
RE*MILL	R18F-06	R18F-05	30	0.013	124.40	123.40	483	0.0021	3.81	12.1	0.0218	25% mill-x	2.90	12.7	3.34	15.0	3.57	16.0	3.68	16.6	4.5	15	2010					
RE*MILL	R18F-05	R18F-04	30	0.013	123.40	122.00	547	0.0026	4.24	13.4	0.0218	0%		12.7		15.0		16.0		16.6	3.2	12	2020					
RE*MILL	R18F-04	R18F-03	30	0.013	122.00	120.60	540	0.0026	4.27	13.5	0.0218	0%		12.7		15.0		16.0		16.6	3.1	12	2020					
RE*MILL	R18F-03	R18F-02C	30	0.013	120.60	120.40	93	0.0022	3.88	12.3	0.0218	0%		12.7		15.0		16.0		16.6	4.3	15	2010					
RE*MILL	R18F-02C	R18F-02B	30	0.013	120.40	119.30	515	0.0021	3.87	12.3	0.0218	0%		12.7		15.0		16.0		16.6	4.3	15	2010					
RE*MILL	R18F-02B	R18F-02A	30	0.013	119.30	118.80	182	0.0027	4.39	13.9	0.0218	0%		12.7		15.0		16.0		16.6	2.7	12	2020					
RE*MILL	R18F-02A	R18F-02	30	0.013	118.80	118.70	67	0.0015	3.24	10.3	0.0218	0%		12.7		15.0		16.0		16.6	6.3	18	2010					
RE*MILL	R18F-02	R18F-01	30	0.013	118.70	117.50	375	0.0032	4.74	15.0	0.0218	0%		12.7		15.0		16.0		16.6	1.6	12	2030					
	Section		30	0.013		8.80	3691	0.0024	4.09	13.0	0.0024	0%		12.7		15.0		16.0		16.6	3.6	21	2020					21

Task 240 Report:
KENT PLANNING ZONE - PARALLEL PIPE ALTERNATIVE

FACILITY	UP- STREAM MH #	DOWN-STREAM MH #	DIA (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow (%)	2010 Design Flow 2010 Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow 2020Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow 2030 Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow 2050 Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (MGD)	2050 Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW elev	Proposed Diameter (inches)
RE*ULID1/5	R18F-01	75	30	0.013	117.50	117.60	43	-0.0023			0.0218	0%		12.7		15.0		16.0		16.6	16.6	24	2010					
RE*ULID1/5	75	74AA	30	0.013	117.60	117.50	11	0.0091	7.99	25.3	0.0218	0%		12.7		15.0		16.0		16.6	-8.7	OK	NE					
RE*ULID1/5	74AA	74	30	0.013	117.50	117.40	109	0.0009	2.54	8.0	0.0218	0%		12.7		15.0		16.0		16.6	8.6	18	2010					
RE*ULID1/5	74	73	30	0.013	117.40	116.80	348	0.0017	3.48	11.0	0.0218	0%		12.7		15.0		16.0		16.6	5.6	15	2010					
RE*ULID1/5	73	72	30	0.013	116.80	116.10	400	0.0018	3.50	11.1	0.0218	0%		12.7		15.0		16.0		16.6	5.5	15	2010					
RE*ULID1/5	72	71	30	0.013	116.10	115.60	315	0.0016	3.34	10.6	0.0218	0%		12.7		15.0		16.0		16.6	6.0	15	2010					
RE*ULID1/5	71	70	30	0.013	115.60	115.20	270	0.0015	3.22	10.2	0.0218	0%		12.7		15.0		16.0		16.6	6.4	18	2010					
RE*ULID1/5	70	69	30	0.013	115.20	114.40	494	0.0016	3.37	10.7	0.0218	0%		12.7		15.0		16.0		16.6	5.9	15	2010					
RE*ULID1/5	69	68	30	0.013	114.40	113.70	485	0.0014	3.18	10.1	0.0218	0%		12.7		15.0		16.0		16.6	6.5	18	2010					
RE*ULID1/5 @SR167	68	67	30	0.013	113.70	113.50	123	0.0016	3.38	10.7	0.0218	0%		12.7		15.0		16.0		16.6	5.9	15	2010					
	Section		30	0.013		4.00	2598	0.0015	3.29	10.4	0.0015	0%		12.7		15.0		16.0		16.6	6.2	27	2010					27
RE*ULID1/5	67	66	27	0.013	113.50	113.00	296	0.0017	3.21	8.2	0.0015	0%		12.7		15.0		16.0		16.6	8.4	30	2010					
RE*ULID1/5	66	65	27	0.013	113.00	112.40	412	0.0015	2.98	7.6	0.0015	25% xval-x	**0.29**	13.0	**0.30**	15.3	**0.32**	16.3	**0.32**	16.9	9.3	30	2010					
RE*ULID1/5	65	64	27	0.013	112.40	111.70	467	0.0015	3.02	7.8	0.0015	0%		13.0		15.3		16.3		16.9	9.2	30	2010					
RE*ULID1/5	64	63	27	0.013	111.70	111.20	258	0.0019	3.44	8.8	0.0015	0%		13.0		15.3		16.3		16.9	8.1	30	2010					
RE*ULID1/5	63	62	27	0.013	111.20	110.50	404	0.0017	3.25	8.3	0.0015	8% mill-x	**0.93**	13.9	**1.07**	16.4	**1.14**	17.5	**1.18**	18.1	9.8	30	2010					
RE*ULID1/5	62	61	27	0.013	110.50	110.00	322	0.0016	3.08	7.9	0.0015	0%		13.9		16.4		17.5		18.1	10.2	30	2010					
	Section		27	0.013		3.50	2159	0.0016		8.1	0.0016	0%		13.9		16.4		17.5		18.1	10.0	30	2010					30
RE*ULID1/5	61	60	30	0.013	110.00	109.20	469	0.0017	3.46	11.0	0.0015	0%		13.9		16.4		17.5		18.1	7.1	27	2010					
RE*ULID1/5	60	59	30	0.013	109.20	108.70	430	0.0012	2.86	9.0	0.0015	0%		13.9		16.4		17.5		18.1	9.1	30	2010					
RE*ULID1/5	59	58	30	0.013	108.70	108.10	504	0.0012	2.89	9.2	0.0015	0%		13.9		16.4		17.5		18.1	8.9	30	2010					
RE*ULID1/5	58	57	30	0.013	108.10	107.60	419	0.0012	2.89	9.2	0.0015	0%		13.9		16.4		17.5		18.1	8.9	30	2010					
	Section		30	0.013		2.40	1822	0.0013		9.6	0.0013	0%		13.9		16.4		17.5		18.1	8.5	30	2010					30
RE*ULID1/5	57	R18-30	42	0.013	106.60	106.40	404	0.0005	2.33	14.5	0.0004	100% ULID1/5 57A	**7.84**	21.7	**9.33**	25.7	**9.93**	27.4	**10.20**	28.3	13.8	45	2010					
RE*ULID1/5	56	55	42	0.013	106.40	106.30	393	0.0003	1.67	10.4	0.0004	0%		21.7		25.7		27.4		28.3	17.9	48	2010					
RE*ULID1/5	55	54	42	0.013	106.30	106.10	432	0.0005	2.26	14.0	0.0004	0%		21.7		25.7		27.4		28.3	14.3	45	2010					
RE*ULID1/5	54	53	42	0.013	106.10	105.90	442	0.0005	2.23	13.8	0.0004	0%		21.7		25.7		27.4		28.3	14.4	45	2010					
	Section		42	0.013		0.70	1671	0.0004	2.15	13.3	0.0004	0%		21.7		25.7		27.4		28.3	15.0	45	2010					45
RE*ULID1/5	53	52	42	0.013	105.90	103.70	436	0.0050			0.0050	0%		21.7		25.7		27.4		28.3	28.3	36	2010					
	Section		42	0.013		2.20	436	0.0050		46.2	0.0050	0%		21.7		25.7		27.4		28.3	-17.9	OK	NE					OK
RE*ULID1/2	52	51	72	0.012	103.70	103.60	353	0.0003	2.74	50.0	0.0050	35% AUBURN1-SPLIT	**29.92**	51.6	**40.20**	65.9	**42.71**	70.1	**43.44**	71.7	21.8	33	2010					
												100% KENTXVAL TO SI	**16.45**	16.4	**20.98**	21.0	**22.23**	22.2	**22.44**	22.4			2010					
												65% AUBURN1-SPLIT	**55.57**	55.6	**74.65**	74.7	**79.32**	79.3	**80.68**	80.7			2010					
*RWSP pipe or section data revised.																			174.9	174.9 check								

APPENDIX 240-H

KENT PLANNING ZONE REROUTING ALTERNATIVE FLOW ROUTING

Task 240 Report:
KENT PLANNING ZONE - REROUTING ALTERNATIVE

FACILITY	UP-STREAM MH #	DOWN-STREAM MH #	DIA. (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (+) (MGD)	2050 Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW (ft)	Proposed Diameter (inches)
do not delete this line																												
												45% ulid4-x	1.06	1.06	1.21	1.21	1.29	1.29	1.30	1.30			X					
MEEKER TRUNK from WHILL 6B	6B	MT2	24	0.013	131.10	125.58	2400	0.0023	3.46	7.0	0.0023	60% whill-x	3.74	4.80	4.57	5.78	4.85	6.14	4.92	6.22	-0.80	OK	NE					
MEEKER TRUNK to SW Trunk	MT2	SWK3	24	0.013	125.58	120.06	2400	0.0023	3.46	7.0	0.0023	0%		4.80		5.78		6.14		6.22	-0.80	OK	NE					
Section			24	0.013		11.04	4800	0.0023	3.46	7.0	0.0023	0%		4.80		5.78		6.14		6.22	-0.80	OK	NE					24
TO SOUTHWEST TRUNK																												
do not delete this line												0%																
JAMES TRUNK from MILL#6	R18F-06	JT2	36	0.013	123.90	118.14	3000	0.0019	4.15	18.9	0.0019	100% MILL #6	9.43	9.43	11.25	11.25	12.03	12.03	12.47	12.47	-6.44	OK	NE					
JAMES TRUNK to AUB1#19	JT2	AUB1#19	36	0.013	118.14	116.60	800	0.0019	4.15	18.9	0.0019	25% xval-x	0.29	9.71	0.30	11.55	0.32	12.35	0.32	12.79	-6.12	OK	NE					
Section			36	0.013		7.30	3800	0.0019	4.15	18.9	0.0019	0%		9.71		11.55		12.35		12.79	-6.12	OK	NE					36
TO SOUTHWEST TRUNK																												
do not delete this line												0%																
SOUTHWEST TRUNK												100% SW TRUNK from Kent	31.06	31.06	42.32	42.32	44.92	44.92	45.50	45.50			X					
SW TRUNK @Aub3#48@124.5	SWK1	SWK2	72	0.013	123.90	123.12	1000	0.0008	4.19	76.5	0.0008	39% AUBURN3 #48	18.31	49.38	24.13	66.45	25.65	70.58	26.18	71.67	-4.84	OK	NE					
SW TRUNK	SWK2	SWK3	72	0.013	123.12	116.10	9000	0.0008	4.19	76.5	0.0008	0%		49.38		66.45		70.58		71.67	-4.84	OK	NE					
SW TRUNK @ Meeker	SWK3	SWK4	72	0.013	116.10	108.09	8800	0.0009	4.53	82.6	0.0009	100% MEEKER TRUNK	4.80	54.17	5.78	72.23	6.14	76.72	6.22	77.90	-4.75	OK	NE					
SW TRUNK	SWK4	SWK5	72	0.013	108.09	107.91	200	0.0009	4.53	82.6	0.0009	0%		54.17		72.23		76.72		77.90	-4.75	OK	NE					
SW TRUNK	SWK5	SWK6	72	0.013	107.91	107.36	600	0.0009	4.53	82.6	0.0009	0%		54.17		72.23		76.72		77.90	-4.75	OK	NE					
SW TRUNK to S. Int.	SWK6	R18A-56	72	0.013	107.36	107.00	400	0.0009	4.53	82.6	0.0009	0%		54.17		72.23		76.72		77.90	-4.75	OK	NE					
Section			72	0.013		16.90	20000	0.0008	4.37	79.6	0.0008	0%		54.17		72.23		76.72		77.90	-1.74	OK	NE					72
TO SOUTH INTERCEPTOR																												

Task 240 Report:
KENT PLANNING ZONE - REROUTING ALTERNATIVE

FACILITY	UP-STREAM MH #	DOWN-STREAM MH #	DIA. (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (+) (MGD)	2050 Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW (ft)	Proposed Diameter (inches)
do not delete this line												100% AUBURN3 from Kent	23.59	23.59	28.38	28.38	30.16	30.16	30.72	30.72			X					
RE*AUBURN3	R18H-49	R18H-48	72	0.013	124.70	124.50	1000	0.0002	2.12	38.7	0.0008	0%		23.59		28.38		30.16		30.72	-8.02	OK	NE					
												100% S256TH CORR	20.10	43.68	27.93	56.31	29.66	59.82	30.22	60.94			X					
												100% S SOOS	3.27	46.95	5.56	61.87	5.96	65.78	6.18	67.12			X					
												-39% AUBURN3 #48	-18.31	28.64	-24.13	37.74	-25.65	40.13	-26.18	40.94			X					
RE*AUBURN3	R18H-48	R18H-47	72	0.013	124.50	123.70	659	0.0012	5.23	95.5	0.0008	0%		28.64		37.74		40.13		40.94	-54.52	OK	NE					
												0%		28.64		37.74		40.13		40.94			X					
RE*AUBURN3	R18H-47	R18H-45	72	0.013	123.70	123.30	827	0.0005	3.30	60.3	0.0008	0%		28.64		37.74		40.13		40.94	-19.31	OK	NE	0.18	0.40	0.22	0.21	
RE*AUBURN3	R18H-45	R18H-44	72	0.013	123.30	123.20	454	0.0002	2.23	40.7	0.0008	10% aub2-s	0.40	29.04	0.69	38.43	0.74	40.86	0.75	41.69	1.03	15	2030	0.10	0.10	0.00	0.00	ignore
RE*AUBURN3	R18H-44	R18H-43	72	0.013	123.20	122.90	592	0.0005	3.38	61.7	0.0008	0%		29.04		38.43		40.86		41.69	-19.98	OK	NE					
RE*AUBURN3	R18H-43	R18H-42	72	0.013	122.90	122.40	575	0.0009	4.43	80.8	0.0008	0%		29.04		38.43		40.86		41.69	-39.10	OK	NE					
	Section		72	0.013		2.30	3107	0.0007	4.09	74.5	0.0007	0%		29.04		38.43		40.86		41.69	-32.85	OK	NE					OK
RE*AUBURN2	R18H-42	R18H-41	72	0.013	122.40	122.00	575	0.0007	3.96	72.3	0.0008	68% aub2-s	2.71	31.75	4.71	43.15	5.01	45.87	5.10	46.79	-25.47	OK	NE					
RE*AUBURN2	R18H-41	R18H-40	72	0.013	122.00	121.60	575	0.0007	3.96	72.3	0.0008	0%		31.75		43.15		45.87		46.79	-25.47	OK	NE					
RE*AUBURN2	R18H-40	R18H-39	72	0.013	121.60	121.10	518	0.0010	4.67	85.1	0.0008	0%		31.75		43.15		45.87		46.79	-38.33	OK	NE					
RE*AUBURN2	R18H-39	R18H-38	72	0.013	121.10	120.80	570	0.0005	3.45	62.9	0.0008	0%		31.75		43.15		45.87		46.79	-16.06	OK	NE					
RE*AUBURN2	R18H-38	R18H-37	72	0.013	120.80	120.20	610	0.0010	4.71	85.9	0.0008	22% aub2-s	0.88	32.62	1.52	44.67	1.62	47.49	1.65	48.44	-37.49	OK	NE					
RE*AUBURN2*	R18H-37	R18H-36	72	0.013	120.20	119.51	610	0.0011	5.05	92.1	0.0008	0%		32.62		44.67		47.49		48.44	-43.70	OK	NE					
RE*AUBURN2*	R18H-36	R18H-35	72	0.013	119.51	119.56	155	-0.0003			0.0008	0%		32.62		44.67		47.49		48.44	48.44	63	2010					
	Section		72	0.013		2.84	3613	0.0008		76.8	0.0008	0%		32.62		44.67		47.49		48.44	-28.38	OK	NE					OK
RE*AUBURN2 SIPHON	R18H-35	R18H-34	54	0.013	119.56	118.40	200	0.0058	64%	96.9				32.62		44.67		47.49		48.44	-48.45	OK	NE					
RE*AUBURN2 SIPHON	R18H-35	R18H-34	42	0.013	119.56	118.40	200	0.0058	33%	49.6				32.62		44.67		47.49		48.44	-1.13	OK	NE					
RE*AUBURN2 SIPHON	R18H-35	R18H-34	18	0.013	119.56	118.40	200	0.0058	3%	5.2				32.62		44.67		47.49		48.44	43.26		2010					
	Section		64	0.013	119.56	118.40	200					0%		32.62		44.67		47.49		48.44								ok
RE*AUBURN2	R18H-34	R18H-33	72	0.013	118.40	118.30	186	0.0005	3.48	63.5	0.0008	70% aub2-n	1.76	34.38	1.88	46.55	2.00	49.49	2.03	50.47	-13.05	OK	NE					
RE*AUBURN2	R18H-33	R18H-32	72	0.013	118.30	117.90	535	0.0007	4.11	74.9	0.0008	0%		34.38		46.55		49.49		50.47	-24.44	OK	NE					
RE*AUBURN2	R18H-32	R18H-31	72	0.013	117.90	117.50	517	0.0008	4.18	76.2	0.0008	0%		34.38		46.55		49.49		50.47	-25.74	OK	NE					
RE*AUBURN2	R18H-31	R18H-30	72	0.013	117.50	117.10	518	0.0008	4.17	76.1	0.0008	0%		34.38		46.55		49.49		50.47	-25.66	OK	NE					
RE*AUBURN2	R18H-30	R18H-29	72	0.013	117.10	116.40	517	0.0014	5.53	100.8	0.0008	0%		34.38		46.55		49.49		50.47	-50.34	OK	NE					
RE*AUBURN2	R18H-29	R18H-28	72	0.013	116.40	115.90	517	0.0010	4.67	85.2	0.0008	0%		34.38		46.55		49.49		50.47	-34.73	OK	NE	0.17	0.50	0.33	0.05	
RE*AUBURN2 @SR516	R18H-28	R18H-27	72	0.013	115.90	116.10	220	-0.0009			0.0008	0%		34.38		46.55		49.49		50.47	50.47	63	2010	0.07	-0.20	-0.27	-0.27	ignore
RE*AUBURN2 @SR516	R18H-27	R18H-26	72	0.013	116.10	115.90	179	0.0011	5.02	91.6	0.0008	30% aub2-n	0.75	35.13	0.81	47.36	0.86	50.35	0.87	51.34	-40.23	OK	NE					
RE*AUBURN2	R18H-26	R18H-25	72	0.013	115.90	115.70	416	0.0005	3.29	60.1	0.0008	0%		35.13		47.36		50.35		51.34	-8.73	OK	NE					
RE*AUBURN2	R18H-25	R18H-24	72	0.013	115.70	114.40	736	0.0018	6.31	115.1	0.0008	0%		35.13		47.36		50.35		51.34	-63.80	OK	NE	0.26	1.30	1.04	0.70	
RE*AUBURN2	R18H-24	R18H-23	72	0.013	114.40	114.70	116	-0.0026			0.0008	0%		35.13		47.36		50.35		51.34	51.34	63	2010	0.04	-0.30	-0.34	-0.34	ignore
RE*AUBURN2	R18H-23	R18H-22	72	0.013	114.70	114.50	577	0.0003	2.80	51.0	0.0008	0%		35.13		47.36		50.35		51.34	0.33	12	2050	0.20	0.20	0.00	0.00	ignore
	Section		72	0.013		3.90	5034	0.0008	4.18	76.3	0.0008	0%		35.13		47.36		50.35		51.34	-24.92	OK	NE					OK
RE*AUBURN1	R18H-22	R18H-21A	72	0.013	114.50	114.20	410	0.0007	4.06	74.1	0.0008	0%		35.13		47.36		50.35		51.34	-22.77	OK	NE					
RE*AUBURN1	R18H-21A	R18H-21	72	0.013	114.20	113.90	410	0.0007	4.06	74.1	0.0008	0%		35.13		47.36		50.35		51.34	-22.77	OK	NE					
RE*AUBURN1	R18H-21	R18H-19	72	0.013	113.90	113.60	492	0.0006	3.71	67.7	0.0008	0%		35.13		47.36		50.35		51.34	-16.31	OK	NE					
RE*AUBURN1@ SR 167	R18H-19	R18H-18	72	0.013	113.60	113.20	260	0.0015	5.89	107.5	0.0008	100% JAMES TRUNK	9.71	44.84	11.55	58.91	12.35	62.70	12.79	64.13	-43.32	OK	NE					
RE*AUBURN1	R18H-18	R18H-17	72	0.013	113.20	112.90	260	0.0012	5.10	93.1	0.0008	0%		44.84		58.91		62.70		64.13	-28.93	OK	NE					
RE*AUBURN1	R18H-17	R18H-16	72	0.013	112.90	112.50	468	0.0009	4.39	80.1	0.0008	0%		44.84		58.91		62.70		64.13	-15.96	OK	NE					
RE*AUBURN1	R18H-16	R18H-15	72	0.013	112.50	112.20	413	0.0007	4.05	73.8	0.0008	0%		44.84		58.91		62.70		64.13	-9.70	OK	NE	0.23	0.30	0.07	0.07	
RE*AUBURN1	R18H-15	R18H-14	72	0.013	112.20	111.90	546	0.0005	3.52	64.2	0.0008	25% xval-x	0.29	45.13	0.30	59.21	0.32	63.02	0.32	64.46	0.24	9	2050	0.30	0.30	0.00	0.00	ignore
RE*AUBURN1	R18H-14	R18H-13	72	0.013	111.90	111.50	540	0.0007	4.09	74.6	0.0008	0%		45.13		59.21		63.02		64.46	-10.10	OK	NE					
RE*AUBURN1	R18H-13	R18H-12	72	0.013	111.50	111.00	530	0.0009	4.61	84.1	0.0008	0%		45.13		59.21		63.02		64.46	-19.69	OK	NE					
RE*AUBURN1	R18H-12	R18H-11	72	0.013	111.00	110.50	655	0.0008	4.15	75.7	0.0008	0%		45.13		59.21		63.02		64.46	-11.24	OK	NE					
RE*AUBURN1	R18H-11	R18H-10	72	0.013	110.50	110.00	640	0.0008	4.20	76.6	0.0008	0%		45.13		59.21		63.02		64.46	-12.12	OK	NE					
RE*AUBURN1	R18H-10	R18H-09	72	0.013	110.00	109.60	398	0.0010	4.76	86.9	0.0008	0%		45.13		59.21		63.02		64.46	-22.40	OK	NE					
RE*AUBURN1	R18H-09	R18H-08	72	0.013	109.60	109.40	112	0.0018	6.35	115.8	0.0008	100% xval-s	0.41	45.54	0.43	59.65	0.46	63.48	0.46	64.92	-50.85	OK	NE	0.06	0.20	0.14	0.09	

Task 240 Report:
KENT PLANNING ZONE - REROUTING ALTERNATIVE

FACILITY	UP-STREAM MH #	DOWN-STREAM MH #	DIA. (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (+) (MGD)	2050 Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW (ft)	Proposed Diameter (inches)
RE*AUBURN1	R18H-08	R18H-07	72	0.013	109.40	109.10	629	0.0005	3.28	59.8	0.0008	0%		45.54		59.65		63.48		64.92	5.09	27	2030	0.35	0.30	-0.05	-0.05	ignore
RE*AUBURN1	R18H-07	R18H-06	72	0.013	109.10	108.60	629	0.0008	4.23	77.2	0.0008	0%		45.54		59.65		63.48		64.92	-12.32	OK	NE					
RE*AUBURN1	R18H-06	R18H-05	72	0.013	108.60	108.00	534	0.0011	5.03	91.8	0.0008	0%		45.54		59.65		63.48		64.92	-26.91	OK	NE					
RE*AUBURN1	R18H-05	R18H-04	72	0.013	108.00	107.50	565	0.0009	4.47	81.5	0.0008	0%		45.54		59.65		63.48		64.92	-16.58	OK	NE					
RE*AUBURN1	R18H-04	R18H-03	72	0.013	107.50	107.20	494	0.0006	3.70	67.5	0.0008	0%		45.54		59.65		63.48		64.92	-2.60	OK	NE					
RE*AUBURN1	R18H-03	R18H-02	72	0.013	107.20	106.80	520	0.0008	4.17	76.0	0.0008	0%		45.54		59.65		63.48		64.92	-11.07	OK	NE					
RE*AUBURN1	R18H-02	R18H-01	72	0.013	106.80	106.40	520	0.0008	4.17	76.0	0.0008	0%		45.54		59.65		63.48		64.92	-11.07	OK	NE					
	Section		72	0.013		8.10	10025	0.0008	4.27	77.9	0.0008	0%		45.54		59.65		63.48		64.92	-12.96	OK	NE					OK
% TO SOUTH INTERCEPTOR												-50% AUBURN1	-22.77	22.77	-29.82	29.82	-31.74	31.74	-32.46	32.46			X					
RE*AUBURN1	R18H-01	R18G-01A	60	0.013	106.40	105.90	36	0.0139	15.67	198.6	0.0026	25% xval-x	0.29	23.06	0.30	30.13	0.32	32.06	0.32	32.78	-165.77	OK	NE					
RE*KENTX	R18G-01A	R18G-01	72	0.013	104.00	103.80	635	0.0003	2.67	48.6	0.0026	0%		23.06		30.13		32.06		32.78	-15.84	OK	NE					
RE*KENTX	R18G-01	52	72	0.013	103.80	103.70	353	0.0003	2.53	46.1	0.0026	0%		23.06		30.13		32.06		32.78	-13.33	OK	NE					
	Section		72	0.013		2.70	1024	0.0026	7.71	140.7	0.0026	0%		23.06		30.13		32.06		32.78	-107.90	OK	NE					OK
TO ULID1/5#52																												

Task 240 Report:
KENT PLANNING ZONE - REROUTING ALTERNATIVE

FACILITY	UP-STREAM MH #	DOWN-STREAM MH #	DIA. (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (+) (MGD)	2050 Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW (ft)	Proposed Diameter (inches)
RE*WHILL	15	14	24	0.013	155.30	153.30	221	0.0090	6.87	13.9	0.0055	100% whill-x	6.23	6.23	7.62	7.62	8.09	8.09	8.20	8.20	-5.72	OK	NE					
RE*WHILL	14	13	24	0.013	153.30	146.20	249	0.0285	12.19	24.7	0.0055	0%		6.23		7.62		8.09		8.20	-16.51	OK	NE	0.78	7.10	6.32	5.32	
RE*WHILL	13	12	24	0.013	146.20	145.40	286	0.0028	3.82	7.7	0.0055	0%		6.23		7.62		8.09		8.20	0.46	9	2030	0.89	0.80	-0.09	-1.00	ignore
RE*WHILL	12	11	24	0.013	145.40	144.60	514	0.0016	2.85	5.8	0.0055	0%		6.23		7.62		8.09		8.20	2.43	15	2010	1.61	0.80	-0.81	-0.90	ignore
RE*WHILL	11	10	24	0.013	144.60	144.40	95	0.0021	3.31	6.7	0.0055	0%		6.23		7.62		8.09		8.20	1.48	12	2020	0.30	0.20	-0.10	-0.10	ignore
RE*WHILL	10	09	24	0.013	144.40	143.50	222	0.0041	4.60	9.3	0.0055	0%		6.23		7.62		8.09		8.20	-1.12	OK	NE					
RE*WHILL	09	08	24	0.013	143.50	142.30	305	0.0039	4.53	9.2	0.0055	0%		6.23		7.62		8.09		8.20	-0.98	OK	NE					
RE*WHILL	08	07	24	0.013	142.30	140.00	344	0.0067	5.90	12.0	0.0055	0%		6.23		7.62		8.09		8.20	-3.77	OK	NE					
RE*WHILL	07	06A	24	0.013	140.00	131.20	500	0.0176	9.58	19.4	0.0055	0%		6.23		7.62		8.09		8.20	-11.21	OK	NE					
RE*WHILL	06A	06B	24	0.013	131.20	131.10	15	0.0067	5.90	11.9	0.0055	-60% whill-x	-3.74	2.49	-4.57	3.05	-4.85	3.24	-4.92	3.28	-8.67	OK	NE					
RE*WHILL	06B	06	24	0.013	131.10	130.40	335	0.0021	3.30	6.7	0.0055	0%		2.49		3.05		3.24		3.28	-3.41	OK	NE					
RE*WHILL	06	05	24	0.013	130.40	129.70	350	0.0020	3.23	6.5	0.0055	0%		2.49		3.05		3.24		3.28	-3.26	OK	NE					
RE*WHILL	05	04	24	0.013	129.70	128.70	500	0.0020	3.23	6.5	0.0055	0%		2.49		3.05		3.24		3.28	-3.26	OK	NE					
RE*WHILL	04	03	24	0.013	128.70	127.90	410	0.0020	3.19	6.5	0.0055	0%		2.49		3.05		3.24		3.28	-3.18	OK	NE					
RE*WHILL	03	02	24	0.013	128.90	127.00	413	0.0046	4.90	9.9	0.0055	0%		2.49		3.05		3.24		3.28	-6.65	OK	NE					
RE*WHILL	02	01A	24	0.013	127.00	126.50	240	0.0021	3.29	6.7	0.0055	5% ulid4-x	0.12	2.61	0.13	3.18	0.14	3.38	0.14	3.42	-3.25	OK	NE					
RE*WHILL	01A	01	24	0.013	126.50	126.40	96	0.0010	2.33	4.7	0.0055	0% whill-x		2.61		3.18		3.38		3.42	-1.30	OK	NE					
RE*WHILL	01	S-31A	24	0.013	126.40	125.70	40	0.0175	9.55	19.4	0.0055	0%		2.61		3.18		3.38		3.42	-15.94	OK	NE					
RE*WHILL	S-31A	S-31B	24	0.013	125.70	125.50	294	0.0007	1.88	3.8	0.0055	0%		2.61		3.18		3.38		3.42	-0.39	OK	NE					
	Section		24	0.013		29.80	5429	0.0055	5.35	10.8	0.0055	0%		2.61		3.18		3.38		3.42	-7.42	OK	NE					OK
RE*WHILL	S-31B	S-31	24	0.013	125.50	122.30	14	0.2286	34.52	70.0	0.2286	0%		2.61		3.18		3.38		3.42	-66.54	OK	NE					
RE*ULID1/4	S-31	S-30	24	0.013	122.30	121.50	448	0.0018	3.05	6.2	0.0013	0%		2.61		3.18		3.38		3.42	-2.76	OK	NE					
RE*ULID1/4	S-30	S-29	24	0.013	121.50	120.00	454	0.0033	4.15	8.4	0.0013	5% ulid4-x	0.12	2.73	0.13	3.32	0.14	3.52	0.14	3.57	-4.84	OK	NE	0.27	1.50	1.23	1.07	
RE*ULID1/4	S-29	S-28	24	0.013	120.00	119.90	443	0.0002	1.09	2.2	0.0013	0%		2.73		3.32		3.52		3.57	1.37	15	2010	0.26	0.10	-0.16	-0.16	ignore
RE*ULID1/4	S-28	S-27	24	0.013	119.90	119.10	446	0.0018	3.06	6.2	0.0013	30% ulid4-x	0.70	3.43	0.81	4.13	0.86	4.38	0.87	4.44	-1.76	OK	NE					
RE*ULID1/4	S-27	S-26	24	0.013	119.10	118.10	463	0.0022	3.35	6.8	0.0013	0%		3.43		4.13		4.38		4.44	-2.36	OK	NE					
RE*ULID1/4	S-26	S-25	24	0.013	118.10	117.30	405	0.0020	3.21	6.5	0.0013	0%		3.43		4.13		4.38		4.44	-2.07	OK	NE					
RE*ULID1/4	S-25	S-24	24	0.013	117.30	116.70	285	0.0021	3.31	6.7	0.0013	0%		3.43		4.13		4.38		4.44	-2.28	OK	NE					
RE*ULID1/4	S-24	S-23	24	0.013	116.70	115.90	353	0.0023	3.44	7.0	0.0013	0%		3.43		4.13		4.38		4.44	-2.53	OK	NE					
	Section		24	0.013		6.40	3297	0.0019	3.18	6.4	0.0019	0%		3.43		4.13		4.38		4.44	-2.01	OK	NE					OK
RE*ULID1/4	S-23	S-22	30	0.013	115.90	115.30	348	0.0017	3.48	11.0	0.0013	15% ulid4-x	0.35	3.78	0.40	4.53	0.43	4.81	0.43	4.87	-6.15	OK	NE					
RE*ULID1/4	S-22	S-20	30	0.013	115.30	115.00	409	0.0007	2.27	7.2	0.0013	0%		3.78		4.53		4.81		4.87	-2.32	OK	NE					
RE*ULID1/4	S-20	S-19	30	0.013	115.00	114.70	320	0.0009	2.56	8.1	0.0013	0%		3.78		4.53		4.81		4.87	-3.25	OK	NE					
RE*ULID1/4	S-19	S-18	30	0.013	114.70	114.50	201	0.0010	2.64	8.4	0.0013	20% 250s-x	0.66	4.45	0.80	5.33	0.85	5.66	0.86	5.73	-2.64	OK	NE					
RE*ULID1/4	S-18	S-17	30	0.013	114.50	114.20	185	0.0016	3.37	10.7	0.0013	0%		4.45		5.33		5.66		5.73	-4.96	OK	NE					
	Section		30	0.013		1.70	1463	0.0012	2.86	9.0	0.0012	0%		4.45		5.33		5.66		5.73	-3.32	OK	NE					OK
RE*ULID250	S-17	S-16	30	0.013	114.20	114.00	290	0.0007	2.20	7.0	0.0013	0%		4.45		5.33		5.66		5.73	-1.24	OK	NE					
RE*ULID250	S-16	S-15A	30	0.013	114.00	113.60	500	0.0008	2.37	7.5	0.0013	0%		4.45		5.33		5.66		5.73	-1.78	OK	NE					
RE*ULID250	S-15	S-14	30	0.013	113.60	113.10	502	0.0010	2.64	8.4	0.0013	0%		4.45		5.33		5.66		5.73	-2.65	OK	NE					
RE*ULID250	S-14	S-13	30	0.013	113.10	112.60	500	0.0010	2.65	8.4	0.0013	0%		4.45		5.33		5.66		5.73	-2.67	OK	NE					
RE*ULID250	S-13	S-12	30	0.013	112.60	112.20	500	0.0008	2.37	7.5	0.0013	0%		4.45		5.33		5.66		5.73	-1.78	OK	NE					
RE*ULID250	S-12	S-11	30	0.013	112.20	111.40	324	0.0025	4.16	13.2	0.0013	0%		4.45		5.33		5.66		5.73	-7.46	OK	NE	0.15	0.80	0.65	0.55	
RE*ULID250	S-11	S-10	30	0.013	111.40	111.30	440	0.0002	1.26	4.0	0.0013	0%		4.45		5.33		5.66		5.73	1.73	18	2010	0.20	0.10	-0.10	-0.10	ignore
	Section		30	0.013		2.90	3056	0.0009	2.58	8.2	0.0009	0%		4.45		5.33		5.66		5.73	-2.45	OK	NE					OK
RE*ULID250	S-10	S-09	36	0.013	111.30	111.10	445	0.0004	2.01	9.1	0.0013	0%		4.45		5.33		5.66		5.73	-3.42	OK	NE					
RE*ULID250	S-09	S-08	36	0.013	111.10	110.90	446	0.0004	2.00	9.1	0.0013	0%		4.45		5.33		5.66		5.73	-3.41	OK	NE					
RE*ULID250	S-08	S-07	36	0.013	110.90	110.80	350	0.0003	1.60	7.3	0.0013	0%		4.45		5.33		5.66		5.73	-1.56	OK	NE					
RE*ULID250	S-07	S-06	36	0.013	110.80	110.50	497	0.0006	2.32	10.6	0.0013	0%		4.45		5.33		5.66		5.73	-4.87	OK	NE					
	Section*		36	0.013		0.80	1738	0.0005	2.03	9.3	0.0005	0%		4.45		5.33		5.66		5.73	-3.53	OK	NE					
RE*ULID250	S-06	S-05	36	0.013	110.50	110.20	305	0.0010	2.97	13.5	0.0013	0%		4.45		5.33		5.66		5.73	-7.80	OK	NE					
RE*ULID250	S-05	S-04A	36	0.013	110.20	110.10	255	0.0004	1.87	8.5	0.0013	0%		4.45		5.33		5.66		5.73	-2.81	OK	NE					
RE*ULID250	S-04A	S-03	36	0.013	110.10	109.60	430	0.0012	3.23	14.7	0.0013	80% 250s-x	2.66	7.10	3.22	8.55	3.40	9.06	3.43	9.16	-5.56	OK	NE					
RE*ULID250	S-03	S-02	36	0.013	109.60	109.00	432	0.0014	3.53	16.1	0.0013	0%		7.10		8.55		9.06		9.16	-6.92	OK	NE					
RE*ULID250	S-02	S-01	36	0.013	109.00	108.40	455	0.0013	3.44	15.7	0.0013	0%		7.10		8.55		9.06		9.16	-6.51	OK	NE					
RE*ULID250	S-01	N-01	36	0.013	108.40	107.80	503	0.0012	3.27	14.9	0.0013	0%		7.10		8.55		9.06		9.16	-5.74	OK	NE					
RE*ULID250	N-01	N-02	36	0.013	107.80	105.90	525	0.0036	5.69	26.0	0.0036	0%		7.10		8.55		9.06		9.16	-16.80	OK	NE					
	Section*		36	0.013		4.60	2905	0.0016	3.76	17.2	0.0016	0%		7.10		8.55		9.06		9.16	-8.01	OK	NE					OK
TO ULID 250 #N-02																												

Task 240 Report:
KENT PLANNING ZONE - REROUTING ALTERNATIVE

FACILITY	UP-STREAM MH #	DOWN-STREAM MH #	DIA. (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (+) (MGD)	2050 Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW (ft)	Proposed Diameter (inches)
RE*ULID250	N-06G	N-06F	15	0.013	113.70	112.50	151	0.0079	4.70	3.7	0.0017	80% 250n-x	3.41	3.41	5.08	5.08	5.37	5.37	5.39	5.39	1.67	15	2020					
RE*ULID250	N-06F	N-06E	27	0.013	112.50	110.70	455	0.0040	4.91	12.6	0.0017	0%		3.41		5.08		5.37		5.39	-7.21	OK	NE					
RE*ULID250	N-06E	N-06D	27	0.013	110.70	108.40	451	0.0051	5.58	14.3	0.0017	10% 250n-x	0.43	3.84	0.63	5.71	0.67	6.04	0.67	6.06	-8.25	OK	NE					
	Section		27	0.013		5.30	1057	0.0050	5.53	14.2	0.0050	0%		3.84		5.71		6.04		6.06	-8.13	OK	NE					OK
RE*ULID250	N-06D	N-06C	36	0.013	108.40	108.20	387	0.0005	2.15	9.8	0.0017	0%		3.84		5.71		6.04		6.06	-3.74	OK	NE					
RE*ULID250	N-06C	N-06B	36	0.013	108.20	108.10	282	0.0004	1.78	8.1	0.0017	0%		3.84		5.71		6.04		6.06	-2.06	OK	NE					
RE*ULID250	N-06B	N-06A	36	0.013	108.10	107.90	327	0.0006	2.34	10.7	0.0017	0%		3.84		5.71		6.04		6.06	-4.61	OK	NE					
RE*ULID250	N-06A	N-06	36	0.013	107.90	107.80	422	0.0002	1.46	6.6	0.0017	0%		3.84		5.71		6.04		6.06	-0.58	OK	NE					
RE*ULID250	N-06	N-05	36	0.013	107.80	107.70	180	0.0006	2.23	10.2	0.0017	0%		3.84		5.71		6.04		6.06	-4.11	OK	NE					
RE*ULID250	N-05	N-04	36	0.013	107.70	107.40	423	0.0007	2.52	11.5	0.0017	10% 250n-x	0.43	4.26	0.63	6.35	0.67	6.71	0.67	6.74	-4.76	OK	NE					
RE*ULID250	N-04	N-03	36	0.013	107.40	107.20	441	0.0005	2.01	9.2	0.0017	0%		4.26		6.35		6.71		6.74	-2.45	OK	NE					
RE*ULID250	N-03	N-02A	36	0.013	107.20	107.10	287	0.0003	1.77	8.1	0.0017	0%		4.26		6.35		6.71		6.74	-1.32	OK	NE					
	Section*		36	0.013		1.30	2749	0.0005	2.06	9.4	0.0005	0%		4.26		6.35		6.71		6.74	-2.65	OK	NE					OK
RE*ULID250	N-02A	N-02	36	0.013	107.10	105.90	135	0.0089	8.92	40.7	0.0089	100% ULID250S	7.10	11.37	8.55	14.89	9.06	15.77	9.16	15.89	-24.78	OK	NE					
	Section*		36	0.013		1.20	135	0.0089	8.92	40.7	0.0089	0%		11.37		14.89		15.77		15.89	-24.78	OK	NE					OK
RE*KENTX	R18G-07	R18G-06	54	0.013	106.00	105.60	625	0.0006	3.14	32.2	0.0006	25% xval-x	0.29	11.65	0.30	15.20	0.32	16.09	0.32	16.22	-15.96	OK	NE					
RE*KENTX	R18G-06	R18G-05	54	0.013	105.60	105.20	618	0.0006	3.15	32.4	0.0006	0%		11.65		15.20		16.09		16.22	-16.15	OK	NE					
RE*KENTX	R18G-05	R18G-04	54	0.013	105.20	105.40	74	-0.0027			0.0006	0%		11.65		15.20		16.09		16.22	16.22	42	2010					
RE*KENTX	R18G-04	R18G-03	54	0.013	105.40	105.00	619	0.0006	3.15	32.3	0.0006	0%		11.65		15.20		16.09		16.22	-16.12	OK	NE					OK
RE*KENTX to SI	R18G-03	R18A-57	54	0.013	105.00	104.10	664	0.0014	4.56	46.8	0.0014	0%		11.65		15.20		16.09		16.22	-30.62	OK	NE					
	Section		54	0.013		1.90	2600	0.0007	3.35	34.4	0.0007	0%		11.65		15.20		16.09		16.22	-18.17	OK	NE					OK
TO SOUTH INTERCEPTOR																												

Task 240 Report:
KENT PLANNING ZONE - REROUTING ALTERNATIVE

FACILITY	UP-STREAM MH #	DOWN-STREAM MH #	DIA. (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (+) (MGD)	2050 Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW (ft)	Proposed Diameter (inches)
												8% mill-x	0.93	0.93	1.07	1.07	1.14	1.14	1.18	1.18	1.18	#DIV/0!						
RE*GARISN	R18-30	R18-29	24	0.013	378.04	377.67	110	0.0034	4.18	8.5	0.0034	55% gar-x	3.27	4.20	3.97	5.04	4.22	5.36	4.35	5.53	-2.95	OK	NE					
RE*GARISN	R18-29	R18-28	12	0.013	377.67	347.35	206	0.1472	17.46	8.8	0.1472	0%		4.20		5.04		5.36		5.53	-3.32	OK	NE					
RE*GARISN	R18-28	R18-27	12	0.013	347.35	326.23	195	0.1083	14.97	7.6	0.1083	0%		4.20		5.04		5.36		5.53	-2.06	OK	NE					
RE*GARISN	R18-27	R18-26	12	0.013	326.23	302.19	152	0.1580	18.08	9.2	0.1580	2% gar-x	0.12	4.32	0.14	5.18	0.15	5.52	0.16	5.68	-3.48	OK	NE					
RE*GARISN	R18-26	R18-25	12	0.013	302.19	276.30	335	0.0773	12.64	6.4	0.0052	0%		4.32		5.18		5.52		5.68	-0.72	OK	NE	20.30	25.89	5.59	5.02	
	Section		12	0.013		101.74	999	0.1019	14.51	7.4	0.0052	0%		4.32		5.18		5.52		5.68	-1.67	OK	NE					OK
RE*GARISN	R18-25	R18-24	18	0.013	275.59	273.89	325	0.0052	4.31	4.9	0.0051	0%		4.32		5.18		5.52		5.68	0.78	12	2020	2.27	1.70	-0.57	-1.26	
RE*GARISN	R18-24	R18-23	18	0.013	273.89	272.28	330	0.0049	4.16	4.7	0.0051	0%		4.32		5.18		5.52		5.68	0.94	12	2020	2.30	1.61	-0.69	-0.69	
	Section		18	0.013		3.31	655	0.0051	4.24	4.8	0.0051	0%		4.32		5.18		5.52		5.68	0.85	12	2020					12
RE*GARISN	R18-23	R18-22	12	0.013	272.28	254.65	235	0.0751	12.47	6.3	0.0751	5% gar-x	0.30	4.62	0.36	5.54	0.38	5.90	0.40	6.08	-0.24	OK	NE					
RE*GARISN	R18-22	R18-21	12	0.013	254.65	223.41	210	0.1488	17.55	8.9	0.1488	7% gar-x	0.42	5.04	0.50	6.05	0.54	6.44	0.55	6.63	-2.26	OK	NE					
RE*GARISN	R18-21	R18-20	12	0.013	219.39	202.44	69	0.2459	22.55	11.4	0.2459	0%		5.04		6.05		6.44		6.63	-4.79	OK	NE					
RE*GARISN	R18-20	R18-19	12	0.013	202.44	190.27	97	0.1250	16.08	8.1	0.1250	0%		5.04		6.05		6.44		6.63	-1.51	OK	NE	8.03	12.17	4.14	1.22	
	Section		12	0.013		82.01	611	0.1342	16.67	8.4	0.1342	0%		5.04		6.05		6.44		6.63	-1.81	OK	NE					OK
RE*GARISN	R18-19	R18-18	15	0.013	190.27	188.11	202	0.0107	5.45	4.3	0.0107	0%		5.04		6.05		6.44		6.63	2.32	12	2010	5.08	2.16	-2.92	-2.92	12
RE*GARISN @ creek	R18-18	R18-17	15	0.013	188.11	171.18	356	0.0475	11.51	9.1	0.0475	0%		5.04		6.05		6.44		6.63	-2.48	OK	NE					
	Section		15	0.013		19.09	559	0.0342	9.75	7.7	0.0342	0%		5.04		6.05		6.44		6.63	-1.09	OK	NE					OK
RE*GARISN @ creek drop	R18-17	R18-15	18	0.013	167.15	165.29	386	0.0048	4.14	4.7	0.0048	0%		5.04		6.05		6.44		6.63	1.92	15	2010	3.67	1.86	-1.81	-3.07	15
RE*GARISN @ creek	R18-15	R18-14	18	0.013	165.29	163.34	339	0.0058	4.52	5.2	0.0058	0%		5.04		6.05		6.44		6.63	1.48	12	2020	3.22	1.95	-1.27	-1.27	15
RE*GARISN @ creek	R18-14	R18-13	18	0.013	163.34	162.29	66	0.0159	7.51	8.6	0.0159	20% gar-x	1.19	6.23	1.44	7.49	1.54	7.97	1.58	8.21	-0.35	OK	NE					
	Section		18	0.013		4.86	791	0.0061	4.67	5.3	0.0061	0%		6.23		7.49		7.97		8.21	2.89	15	2010					ok
RE*GARISN	R18-13	R18-12A	24	0.013	161.70	161.47	101	0.0023	3.44	7.0	0.0023	0%		6.23		7.49		7.97		8.21	1.24	15	2020	0.32	0.23	-0.09	-0.71	
RE*GARISN	R18-12A	R18-12	24	0.013	161.47	161.21	155	0.0017	2.96	6.0	0.0017	0%		6.23		7.49		7.97		8.21	2.22	18	2010	0.49	0.26	-0.23	-0.62	
RE*GARISN	R18-12	R18-11	24	0.013	161.21	160.79	259	0.0016	2.91	5.9	0.0016	0%		6.23		7.49		7.97		8.21	2.32	18	2010	0.81	0.42	-0.39	-0.39	
	Section		24	0.013		0.91	515	0.0018	3.04	6.2	0.0018	0%		6.23		7.49		7.97		8.21	2.06	18	2010					ok
RE*GARISN	R18-11	R18-10	18	0.013	160.79	130.78	356	0.0842	17.30	19.7	0.0842	11% gar-x	0.65	6.88	0.79	8.28	0.84	8.82	0.87	9.08	-10.64	OK	NE	6.34	30.01	23.67	22.50	
RE*GARISN drop	R18-10	R18-09	18	0.013	118.98	115.51	260	0.0133	6.88	7.8	0.0133	0%		6.88		8.28		8.82		9.08	1.24	12	2020	4.64	3.47	-1.17	-1.17	ignore
	Section		18	0.013		45.28	617	0.0734	16.15	18.4	0.0133	0%		6.88		8.28		8.82		9.08	-9.33	OK	NE					OK
RE*GARISN	R18-09	R18-08	24	0.013	115.51	115.09	420	0.0010	2.29	4.6	0.0012	34% c5e-x	0.44	7.32	0.49	8.78	0.52	9.34	0.53	9.61	4.98	24	2010					
RE*GARISN	R18-08	R18-07	24	0.013	115.09	114.54	413	0.0013	2.64	5.3	0.0012	0%		7.32		8.78		9.34		9.61	4.27	24	2010					
RE*GARISN	R18-07	R18-06	24	0.013	114.54	114.29	94	0.0027	3.72	7.5	0.0012	0%		7.32		8.78		9.34		9.61	2.07	18	2020					
RE*GARISN	R18-06	R18-04	24	0.013	114.29	114.42	134	-0.0010			0.0012	0%		7.32		8.78		9.34		9.61	9.61	33	2010					
RE*GARISN	R18-04	R18-03	24	0.013	114.42	113.88	418	0.0013	2.59	5.3	0.0012	0%		7.32		8.78		9.34		9.61	4.35	24	2010					
RE*GARISN	R18-03	R18-02A	24	0.013	113.84	113.39	350	0.0013	2.59	5.2	0.0012	0%		7.32		8.78		9.34		9.61	4.37	24	2010					
RE*GARISN	R18-02A	R18-02	24	0.013	113.39	113.29	96	0.0010	2.33	4.7	0.0012	0%		7.32		8.78		9.34		9.61	4.89	24	2010					
RE*GARISN	R18-02	R18-01	24	0.013	113.29	112.63	365	0.0018	3.07	6.2	0.0012	33% c5e-x	0.43	7.75	0.48	9.26	0.51	9.85	0.51	10.13	3.90	24	2010					
RE*GARISN	R18-01	R18-57I-A	24	0.013	112.63	112.50	306	0.0004	1.49	3.0	0.0012	0%		7.75		9.26		9.85		10.13	7.11	30	2010					
RE*GARISN	R18-57I-A	57I	24	0.013	112.50	112.40	19	0.0053	5.24	10.6	0.0012	0%		7.75		9.26		9.85		10.13	-0.49	OK	NE					
	Section		24	0.013		3.11	2614	0.0012	2.49	5.0	0.0133	0%		7.75		9.26		9.85		10.13	5.08	18	2010					18
RE*ULID1/5	57I	57H	24	0.013	112.40	112.00	404	0.0010	2.27	4.6	0.0018	0%		7.75		9.26		9.85		10.13	5.52	24	2010					
RE*ULID1/5	57H	57G	24	0.013	112.00	111.50	403	0.0012	2.54	5.2	0.0018	0%		7.75		9.26		9.85		10.13	4.97	24	2010					
RE*ULID1/5	57G	57F	24	0.013	111.50	111.00	351	0.0014	2.72	5.5	0.0018	33% c5e-x	0.43	8.18	0.48	9.74	0.51	10.36	0.51	10.64	5.12	24	2010					
RE*ULID1/5	57F	57E	24	0.013	111.00	110.60	350	0.0011	2.44	4.9	0.0018	0%		8.18		9.74		10.36		10.64	5.69	24	2010					
RE*ULID1/5	57E	57D	24	0.013	110.60	110.00	400	0.0015	2.80	5.7	0.0018	0%		8.18		9.74		10.36		10.64	4.97	24	2010					
RE*ULID1/5	57D	57C	24	0.013	110.00	109.40	400	0.0015	2.80	5.7	0.0018	0%		8.18		9.74		10.36		10.64	4.97	24	2010					
RE*ULID1/5	57C	57B	24	0.013	109.40	109.30	130	0.0008	2.00	4.1	0.0018	0%		8.18		9.74		10.36		10.64	6.58	27	2010					
RE*ULID1/5	57B	57AA	24	0.013	109.30	108.90	217	0.0018	3.10	6.3	0.0018	0%		8.18		9.74		10.36		10.64	4.35	24	2010					
RE*ULID1/5	57AA	57A	24	0.013	108.90	108.50	268	0.0015	2.79	5.7	0.0018	0%		8.18		9.74		10.36		10.64	4.99	24	2010					
RE*ULID1/5	57A	57	24	0.013	108.50	106.40	500	0.0042	4.68	9.5	0.0018	0%		8.18		9.74		10.36		10.64	1.15	15	2020					
	Section		24	0.013		6.00	3423	0.0018	3.02	6.1	0.0018	0%		8.18		9.74		10.36		10.64	4.51	24	2010					24
TO ULID 1/5.#57																												

Task 240 Report:
KENT PLANNING ZONE - REROUTING ALTERNATIVE

FACILITY	UP-STREAM MH #	DOWN-STREAM MH #	DIA. (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (+) (MGD)	2050 Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW (ft)	Proposed Diameter (inches)
do not delete this line												25% mill-x	2.90	2.90	3.34	3.34	3.57	3.57	3.68	3.68			X					
RE*MILL	R18F-37A	R18F-37	27	0.013	444.60	442.00	440	0.0059	6.00	15.4	0.0149	100% mill-e	2.58	5.48	3.36	6.70	3.61	7.18	3.78	7.46	-7.94	OK	NE					
RE*MILL	R18F-37	R18F-36	21	0.013	442.00	434.70	428	0.0171	8.63	13.4	0.0149	0%		5.48		6.70		7.18		7.46	-5.92	OK	NE					
RE*MILL	R18F-36	R18F-35	21	0.013	434.70	428.90	335	0.0173	8.69	13.5	0.0149	0%		5.48		6.70		7.18		7.46	-6.03	OK	NE					
RE*MILL	R18F-35	R18F-34	21	0.013	428.90	423.00	340	0.0174	8.70	13.5	0.0149	0%		5.48		6.70		7.18		7.46	-6.04	OK	NE					
RE*MILL	R18F-34	R18F-33	21	0.013	423.00	417.00	358	0.0168	8.55	13.3	0.0149	0%		5.48		6.70		7.18		7.46	-5.81	OK	NE					
RE*MILL	R18F-33	R18F-32	21	0.013	417.00	411.00	358	0.0168	8.55	13.3	0.0149	0%		5.48		6.70		7.18		7.46	-5.81	OK	NE					
	Section		21	0.013		33.60	2259	0.0149	8.06	12.5	0.0149	0%		5.48		6.70		7.18		7.46	-5.04	OK	NE					OK
RE*MILL	R18F-32	R18F-31	24	0.013	411.00	408.50	408	0.0061	5.65	11.5	0.0060	0%		5.48		6.70		7.18		7.46	-4.00	OK	NE					
RE*MILL	R18F-31	R18F-30	24	0.013	408.50	406.70	307	0.0059	5.53	11.2	0.0060	0%		5.48		6.70		7.18		7.46	-3.74	OK	NE					
RE*MILL	R18F-30	R18F-29	24	0.013	406.70	404.80	320	0.0059	5.56	11.3	0.0060	0%		5.48		6.70		7.18		7.46	-3.81	OK	NE					
	Section		24	0.013		6.20	1035	0.0060	5.59	11.3	0.0060	0%		5.48		6.70		7.18		7.46	-3.87	OK	NE					OK
RE*MILL	R18F-29	R18F-28	21	0.013	404.80	400.50	359	0.0120	7.23	11.2	0.0519	12% mill-x	1.39	6.87	1.61	8.31	1.71	8.89	1.77	9.23	-1.99	OK	NE					
RE*MILL	R18F-28	R18F-27A	18	0.013	400.50	391.80	231	0.0377	11.57	13.2	0.0519	0%		6.87		8.31		8.89		9.23	-3.96	OK	NE					
RE*MILL	R18F-27A	R18F-27	18	0.013	391.80	388.20	80	0.0450	12.64	14.4	0.0519	0%		6.87		8.31		8.89		9.23	-5.18	OK	NE					
RE*MILL	R18F-27	R18F-26	18	0.013	388.20	371.10	379	0.0451	12.66	14.4	0.0519	0%		6.87		8.31		8.89		9.23	-5.20	OK	NE					
RE*MILL	R18F-26	R18F-25	18	0.013	371.10	348.40	367	0.0619	14.82	16.9	0.0519	0%		6.87		8.31		8.89		9.23	-7.67	OK	NE					
RE*MILL	R18F-25	R18F-24	18	0.013	348.40	334.30	318	0.0443	12.55	14.3	0.0519	0%		6.87		8.31		8.89		9.23	-5.08	OK	NE					
RE*MILL	R18F-24	R18F-23	18	0.013	334.30	309.00	405	0.0625	14.90	17.0	0.0519	0%		6.87		8.31		8.89		9.23	-7.76	OK	NE					
RE*MILL	R18F-23	R18F-22	18	0.013	309.00	278.20	395	0.0780	16.64	19.0	0.0519	0%		6.87		8.31		8.89		9.23	-9.74	OK	NE					
RE*MILL	R18F-22	R18F-21	18	0.013	278.20	263.00	195	0.0779	16.64	19.0	0.0519	0%		6.87		8.31		8.89		9.23	-9.74	OK	NE					
RE*MILL	R18F-21	R18F-20A	18	0.013	263.00	256.80	165	0.0376	11.56	13.2	0.0519	0%		6.87		8.31		8.89		9.23	-3.94	OK	NE					
RE*MILL	R18F-20A	R18F-20	18	0.013	256.80	252.30	90	0.0500	13.33	15.2	0.0519	0%		6.87		8.31		8.89		9.23	-5.96	OK	NE					
RE*MILL	R18F-20	R18F-19	18	0.013	252.30	238.80	292	0.0462	12.82	14.6	0.0519	0%		6.87		8.31		8.89		9.23	-5.38	OK	NE					
RE*MILL	R18F-19	R18F-18	18	0.013	238.80	216.90	347	0.0631	14.97	17.1	0.0519	0%		6.87		8.31		8.89		9.23	-7.84	OK	NE					
	Section		18	0.013		187.90	3623	0.0519	13.58	15.5	0.0519	0%		6.87		8.31		8.89		9.23	-6.25	OK	NE					OK
RE*MILL	R18F-18	R18F-17	21	0.013	216.90	213.00	290	0.0134	7.66	11.9	0.0442	0%		6.87		8.31		8.89		9.23	-2.65	OK	NE					
RE*MILL	R18F-17	R18F-16A	18	0.013	213.00	184.00	447	0.0649	15.18	17.3	0.0442	0%		6.87		8.31		8.89		9.23	-8.08	OK	NE					
RE*MILL	R18F-16A	R18F-16	18	0.013	184.00	182.70	14	0.0929	18.16	20.7	0.0442	0%		6.87		8.31		8.89		9.23	-11.48	OK	NE					
RE*MILL	R18F-16	R18F-15	18	0.013	182.70	174.60	118	0.0686	15.62	17.8	0.0442	0%		6.87		8.31		8.89		9.23	-8.58	OK	NE					
	Section		18	0.013		38.40	869	0.0442	12.53	14.3	0.0442	0%		6.87		8.31		8.89		9.23	-5.05	OK	NE					OK
RE*MILL	R18F-15	R18F-14	24	0.013	174.60	172.20	380	0.0063	5.74	11.6	0.0347	0%		6.87		8.31		8.89		9.23	-2.40	OK	NE					
RE*MILL	R18F-14	R18F-13	18	0.013	172.20	168.20	143	0.0280	9.97	11.4	0.0347	0%		6.87		8.31		8.89		9.23	-2.14	OK	NE					
RE*MILL	R18F-13	R18F-12	18	0.013	168.20	164.10	140	0.0293	10.20	11.6	0.0347	0%		6.87		8.31		8.89		9.23	-2.40	OK	NE					
RE*MILL	R18F-12	R18F-11	18	0.013	164.10	154.80	149	0.0624	14.89	17.0	0.0347	0%		6.87		8.31		8.89		9.23	-7.74	OK	NE					
RE*MILL	R18F-11	R18F-10	18	0.013	154.80	136.20	295	0.0631	14.97	17.1	0.0347	0%		6.87		8.31		8.89		9.23	-7.83	OK	NE					
	Section		18	0.013		38.40	1107	0.0347	11.10	12.7	0.0347	0%		6.87		8.31		8.89		9.23	-3.43	OK	NE					OK
RE*MILL	R18F-10	R18F-09	21	0.013	136.20	126.30	439	0.0226	9.92	15.4	0.0226	0%		6.87		8.31		8.89		9.23	-6.16	OK	NE					
	Section		21	0.013		9.90	439	0.0226	9.92	15.4	0.0226	0%		6.87		8.31		8.89		9.23	-6.16	OK	NE					OK
RE*MILL	R18F-09	R18F-07	30	0.013	126.30	125.00	465	0.0028	4.43	14.0	0.0024	22% mill-x	2.55	9.43	2.94	11.25	3.14	12.03	3.24	12.47	-1.56	OK	NE	1.02	1.30	0.28	-0.06	
RE*MILL	R18F-07	R18F-06	30	0.013	125.00	124.40	424	0.0014	3.15	10.0	0.0024	0%		9.43		11.25		12.03		12.47	2.49	18	2020	0.93	0.60	-0.33	-0.33	ignore
												-100% MILL #6	-9.43		-11.25		-12.03		-12.47				X					
RE*MILL	R18F-06	R18F-05	30	0.013	124.40	123.40	483	0.0021	3.81	12.1	0.0024	25% mill-x	2.90	2.90	3.34	3.34	3.57	3.57	3.68	3.68	-8.39	OK	NE					
RE*MILL	R18F-05	R18F-04	30	0.013	123.40	122.00	547	0.0026	4.24	13.4	0.0024	0%		2.90		3.34		3.57		3.68	-9.74	OK	NE					
RE*MILL	R18F-04	R18F-03	30	0.013	122.00	120.60	540	0.0026	4.27	13.5	0.0024	0%		2.90		3.34		3.57		3.68	-9.83	OK	NE					
RE*MILL	R18F-03	R18F-02C	30	0.013	120.60	120.40	93	0.0022	3.88	12.3	0.0024	0%		2.90		3.34		3.57		3.68	-8.62	OK	NE					
RE*MILL	R18F-02C	R18F-02B	30	0.013	120.40	119.30	515	0.0021	3.87	12.3	0.0024	0%		2.90		3.34		3.57		3.68	-8.58	OK	NE					
RE*MILL	R18F-02B	R18F-02A	30	0.013	119.30	118.80	182	0.0027	4.39	13.9	0.0024	0%		2.90		3.34		3.57		3.68	-10.23	OK	NE					
RE*MILL	R18F-02A	R18F-02	30	0.013	118.80	118.70	67	0.0015	3.24	10.3	0.0024	0%		2.90		3.34		3.57		3.68	-6.57	OK	NE					
RE*MILL	R18F-02	R18F-01	30	0.013	118.70	117.50	375	0.0032	4.74	15.0	0.0024	0%		2.90		3.34		3.57		3.68	-11.33	OK	NE	0.07	1.20	1.13	1.02	
	Section		30	0.013		8.80	3691	0.0024	4.09	13.0	0.0024	0%		2.90		3.34		3.57		3.68	-9.27	OK	NE					OK

Task 240 Report:
KENT PLANNING ZONE - REROUTING ALTERNATIVE

FACILITY	UP-STREAM MH #	DOWN-STREAM MH #	DIA. (IN)	Manning n	UP-STREAM INV ELEV	DOWN-STREAM INV ELEV	LENGTH (FT.)	SLOPE (FT/FT)	Vfull (FPS)	Cap. (MGD)	Herrera New Slope	Modification Origin of Flow Percent	2010 Design Flow Inflow (MGD)	2010 Design Flow Total (MGD)	2020 Design Flow Inflow (MGD)	2020 Design Flow Total (MGD)	2030 Design Flow Inflow (MGD)	2030 Design Flow Total (MGD)	2050 Design Flow Inflow (MGD)	2050 Design Flow Total (MGD)	Excess (+) (MGD)	2050 Parallel Pipe (in.)	Decade Exceeded	Surcharge: any negative value in "BW elev" Δ elev FULL pipe	Δ elev	Δ−Δfull	BW (ft)	Proposed Diameter (inches)
RE*ULID1/5	R18F-01	75	30	0.013	117.50	117.60	43	-0.0023			0.0015	0%		2.90		3.34		3.57		3.68	3.68	21	2010	0.01	-0.10	-0.11	-0.11	ignore
RE*ULID1/5	75	74AA	30	0.013	117.60	117.50	11	0.0091	7.99	25.3	0.0015	0%		2.90		3.34		3.57		3.68	-21.61	OK	NE					
RE*ULID1/5	74AA	74	30	0.013	117.50	117.40	109	0.0009	2.54	8.0	0.0015	0%		2.90		3.34		3.57		3.68	-4.36	OK	NE					
RE*ULID1/5	74	73	30	0.013	117.40	116.80	348	0.0017	3.48	11.0	0.0015	0%		2.90		3.34		3.57		3.68	-7.34	OK	NE					
RE*ULID1/5	73	72	30	0.013	116.80	116.10	400	0.0018	3.50	11.1	0.0015	0%		2.90		3.34		3.57		3.68	-7.41	OK	NE					
RE*ULID1/5	72	71	30	0.013	116.10	115.60	315	0.0016	3.34	10.6	0.0015	0%		2.90		3.34		3.57		3.68	-6.89	OK	NE					
RE*ULID1/5	71	70	30	0.013	115.60	115.20	270	0.0015	3.22	10.2	0.0015	0%		2.90		3.34		3.57		3.68	-6.53	OK	NE					
RE*ULID1/5	70	69	30	0.013	115.20	114.40	494	0.0016	3.37	10.7	0.0015	0%		2.90		3.34		3.57		3.68	-6.99	OK	NE					
RE*ULID1/5	69	68	30	0.013	114.40	113.70	485	0.0014	3.18	10.1	0.0015	0%		2.90		3.34		3.57		3.68	-6.39	OK	NE					
RE*ULID1/5 @SR167	68	67	30	0.013	113.70	113.50	123	0.0016	3.38	10.7	0.0015	0%		2.90		3.34		3.57		3.68	-7.01	OK	NE					
Section			30	0.013		4.00	2598	0.0015	3.29	10.4	0.0015	0%		2.90		3.34		3.57		3.68	-6.73	OK	NE					OK
RE*ULID1/5	67	66	27	0.013	113.50	113.00	296	0.0017	3.21	8.2	0.0016	0%		2.90		3.34		3.57		3.68	-4.55	OK	NE					
RE*ULID1/5	66	65	27	0.013	113.00	112.40	412	0.0015	2.98	7.6	0.0016	0% xval-x		2.90		3.34		3.57		3.68	-3.96	OK	NE					
RE*ULID1/5	65	64	27	0.013	112.40	111.70	467	0.0015	3.02	7.8	0.0016	0%		2.90		3.34		3.57		3.68	-4.07	OK	NE					
RE*ULID1/5	64	63	27	0.013	111.70	111.20	258	0.0019	3.44	8.8	0.0016	0%		2.90		3.34		3.57		3.68	-5.14	OK	NE					
RE*ULID1/5	63	62	27	0.013	111.20	110.50	404	0.0017	3.25	8.3	0.0016	8% mill-x	**0.93**	3.83	**1.07**	4.41	**1.14**	4.71	**1.18**	4.86	-3.48	OK	NE					
RE*ULID1/5	62	61	27	0.013	110.50	110.00	322	0.0016	3.08	7.9	0.0016	0%		3.83		4.41		4.71		4.86	-3.04	OK	NE					
Section			27	0.013		3.50	2159	0.0016	3.14	8.1	0.0016	0%		3.83		4.41		4.71		4.86	-3.20	OK	NE					OK
RE*ULID1/5	61	60	30	0.013	110.00	109.20	469	0.0017	3.46	11.0	0.0013	0%		3.83		4.41		4.71		4.86	-6.10	OK	NE					
RE*ULID1/5	60	59	30	0.013	109.20	108.70	430	0.0012	2.86	9.0	0.0013	0%		3.83		4.41		4.71		4.86	-4.18	OK	NE					
RE*ULID1/5	59	58	30	0.013	108.70	108.10	504	0.0012	2.89	9.2	0.0013	0%		3.83		4.41		4.71		4.86	-4.29	OK	NE					
RE*ULID1/5	58	57	30	0.013	108.10	107.60	419	0.0012	2.89	9.2	0.0013	0%		3.83		4.41		4.71		4.86	-4.31	OK	NE					
Section			30	0.013		2.40	1822	0.0013	3.04	9.6	0.0013	0%		3.83		4.41		4.71		4.86	-4.77	OK	NE					OK
RE*ULID1/5	57	R18-30	42	0.013	106.60	106.40	404	0.0005	2.33	14.5	0.0004	100% ULID1/5 57A	**8.18**	12.01	**9.74**	14.15	**10.36**	15.07	**10.64**	15.50	1.02	18	2030	0.23	0.20	-0.03	-0.24	ignore
RE*ULID1/5	56	55	42	0.013	106.40	106.30	393	0.0003	1.67	10.4	0.0004	0%		12.01		14.15		15.07		15.50	5.12	30	2010	0.22	0.10	-0.12	-0.22	ignore
RE*ULID1/5	55	54	42	0.013	106.30	106.10	432	0.0005	2.26	14.0	0.0004	0%		12.01		14.15		15.07		15.50	1.49	21	2020	0.24	0.20	-0.04	-0.09	ignore
RE*ULID1/5	54	53	42	0.013	106.10	105.90	442	0.0005	2.23	13.8	0.0004	0%		12.01		14.15		15.07		15.50	1.65	21	2020	0.25	0.20	-0.05	-0.05	ignore
Section			42	0.013		0.70	1671	0.0004	2.15	13.3	0.0004	0%		12.01		14.15		15.07		15.50	2.18	24	2020					ignore
RE*ULID1/5	53	52	42	0.013	105.90	103.70	436	0.0050	7.45	46.2	0.0050	0%		12.01		14.15		15.07		15.50	-30.73	OK	NE					
Section			42	0.013		2.20	436	0.0050	7.45	46.2	0.0050	0%		12.01		14.15		15.07		15.50	-30.73	OK	NE					OK
RE*ULID1/2	52	51	72	0.012	103.70	103.60	353	0.0003	2.74	50.0	0.0003	100% KXVAL	**23.06**	35.07	**30.13**	44.28	**32.06**	47.12	**32.78**	48.28	-1.67	OK	NE					
																			174.85	174.85	CHECK							

*RWSP pipe or section data revised.

APPENDIX 240-I

SOOS PLANNING ZONE ALTERNATIVES

Soos Planning Zone Alternatives
7% I/I Degradation per Decade

Retional Facility	Flowrate (mgd)	Total Head TDH (ft)	Upstream Elevation (ft)	Downstream or High Point Elevation (ft)	Downstream Invert Elevation (ft)	Static Head (ft)	Forcemain Diameter (inches)	Forcemain Length (ft)	HDR $ ($/LF)	Forcemain headloss w/ C=140 (ft)	Forcemain Velocity (fps)	Gravity Main Diameter (inches)	Gravity Main Length (ft)	calc'd slope	design slope	HDR $ ($/LF)	Preliminary Estimated Conveyance Cost
ALTERNATIVE 1			Criteria: TDH >200 ft & 8 fps velocity							140					0.013		
PS B	3.2	197	300	460	370		15			37.5	3.99						$2,500,000
Fm B		175				160	18	11,600	$418	15.4	2.77						$4,848,800
Gravity B		164					24			3.8	1.56	15	6,900	0.0130	0.0130	$398	$2,746,200
																	$10,095,000
PS C	30.8	197	360	490	410		24			67.5	9.85						$8,000,000
Fm C-parallel	20.0	168				130	27	6,800	$510	38.0	7.78						$3,468,000
Gravity C		153					30			22.8	6.30	27	6,500	0.0123	0.0120	$510	$3,315,000
	10.8	PS C - revised criteria to use 27" FM															$14,783,000
PS D																	
Fm D																	
Gravity D																	
PS E	8.6	216	380	490	410		15			105.9	6.07						$2,500,000
Fm E-parallel	4.8	154				110	18	15,100	$418	43.6	4.22						$6,311,800
Gravity E-parallel		131					21			20.6	3.10						
	3.7																$8,811,800
PS F	12.3	353	390	470	360		15			322.7	8.21						$3,000,000
Fm F-parallel	6.5	163				30	18	26,300	$418	132.9	5.70						$10,993,400
Gravity F-parallel		93		(Low Pt @ 340)			21			62.8	4.19						
	5.8																$13,993,400
PS G: no change																	
PS H	5.3	207	533	581	357		10			30.5	10.41						$2,000,000
Fm H	3.7	189				176	12	1,000	$363	12.6	7.23						$363,000
Gravity G-parallel		180					15			4.2	4.63	21	32,758	0.0068	0.00155	$439	$14,380,762
	1.6																$16,743,762
		5 pump stations		new pump stations:		5		60,800					46,158		ALTERNATIVE 1		**$64,430,000**
ALTERNATIVE 2			Criteria: TDH >200 ft & 8 fps velocity									**ALTERNATIVE 2**					
PS B	28.9	208	300	460	370		33			48.3	7.53						$12,500,000
Fm B		192				160	36	11,600	$645	31.7	6.33						$7,482,000
Gravity B		175					42			15.0	4.65	30	6,900	0.0130	0.0130	$561	$3,870,900
																	$23,852,900
PS C	5.1	285	360	490	410		12			154.6	9.96						
Fm C		182				130	15	6,800	$398	52.2	6.37						$2,706,400
Gravity C		152					18			21.5	4.43	18	6,500	0.0123	0.0120	$418	$2,717,000
																	$5,423,400
												USE EXISTING LS #10 & PIPES					-$5,423,400
PS D	25.7	128	360	450	300		27			38.4	10.01						$10,500,000
Fm D		113				90	30	4,300	$561	23.0	8.11						$2,412,300
Gravity D		99					36			9.5	5.63	27	6,300	0.0238	0.0230	$510	$3,213,000
																	$16,125,300
PT E	17.5		367	325													
Fm E																	
Gravity E												42	10,000	0.0325	0.00075	$735	$7,350,000
													change due to topography				$7,350,000
PS F	12.3	353	390	470	360		12			272.6	12.83		-				$3,000,000
Fm F-parallel	6.5	172				80	15	7,500	$398	92.0	8.21						$2,985,000
Gravity F		118					18			37.9	5.70	27	11,000	0.0100	0.0052	$510	$5,610,000
	5.8												change due to topography				$11,595,000
PS G: no change																	
PS H	5.3	206	533	581	357		10			29.9	10.30		-				$2,000,000
Fm H	3.6	188				176	12	1,000	$363	12.3	7.15						$363,000
Gravity H-parallel		180					15			4.2	4.58	21	32,758	0.0068	0.00155	$439	$14,380,762
	1.64																$16,743,762
		5 pump stations		new pump stations:		4		31,200					73,458		ALTERNATIVE 2		**$75,670,000**

Basins and 2050 flow (mgd) routed through each pump station

aub3-ne	2.43	sss-x	2.38	sss-x	0.42			ls-11n	3.29	lks-x	2.70	ls-11s	5.27
		mill-q	0.32	scrk-x	7.78					ls-15	9.57		
		ssm-q	0.47	ls-14	0.94								
				sss-ne	0.16								
				jenk-r	0.66								
PS C	30.8			PT E	8.6								
PS B	3.2			PS F	12.28			PS H	5.27				
PT A	36.4	**PS B**	3.2	**PS C**	30.8	**PS D**		**PT E**	8.6	**PS F**	12.3	**PS H**	5.3
mill-e	3.78	through Mill Creek Interceptor											
sss-sw	1.48	through Auburn											

ALTERNATIVE 2

aub3-ne	2.43	sss-x	2.38	scrk-x	5.06	sss-x	0.42			lks-x	2.70	ls-11s	5.27
		ssm-q	0.47			scrk-x	2.72			ls-15	9.57		
		mill-q	0.32			ls-14	0.94						
						sss-ne	0.16						
						jenk-r	0.66						
						ls-11n	3.29						
PS B	28.9							PS H	5.3				
PS C	5.1	PS D	25.74			PT E	17.55	PS F	12.28				
PT A	36.4	**PS B**	28.9	**PS C**	5.1	**PS D**	25.7	**PT E**	17.5	**PS F**	12.3	**PS H**	5.3
mill-e	3.78	through Mill Creek Interceptor											
sss-sw	1.48	through Auburn											

Soos Planning Zone Alternatives
7% I/I Degradation per Decade

Retional Facility	Flowrate (mgd)	Total Head TDH (ft)	Upstream Elevation (ft)	Downstream or High Point Elevation (ft)	Downstream Invert Elevation (ft)	Static Head (ft)	Forcemain Diameter (inches)	Forcemain Length (ft)	HDR $ ($/LF)	Forcemain headloss w/ C=140 (ft)	Forcemain Velocity (fps)	Gravity Main Diameter (inches)	Gravity Main Length (ft)	calc'd slope	design slope	HDR $ ($/LF)	Preliminary Estimated Conveyance Cost
ALTERNATIVE 3			Criteria: TDH >200 ft & 8 fps velocity									**ALTERNATIVE 3**					
PS B	3.2	210	300	450	360		12			60.2	6.24						$2,500,000
Fm B		170				150	15	6,300	$398	20.3	3.99						$2,507,400
Gravity B		158					18			8.4	2.77	12	4,300	0.0209	0.0200	$363	$1,560,900
																	$6,568,300
PS C	5.1	285	360	490	410		12			154.6	9.96						
Fm C		182				130	15	6,800	$398	52.2	6.37						$2,706,400
Gravity C		152					18			21.5	4.43	18	6,500	0.0123	0.0120	$418	$2,717,000
																	$5,423,400
														USE EXISTING LS #10 & PIPES			-$5,423,400
PS D	28.9	199	360	480	360		33			79.2	7.53						$12,000,000
Fm D		172				120	36	19,000	$645	51.8	6.33						$12,255,000
Gravity D		144					42			24.5	4.65	30	6,700	0.0179	0.0170	$561	$3,758,700
																	$28,013,700
PT E	17.5		367	325													
Fm E																	
Gravity E												42	10,000	0.0325	0.00075	$735	$7,350,000
														change due to topography			$7,350,000
PS F	12.3	353	390	470	360		12			272.6	12.83		-				$3,000,000
Fm F-parallel	6.5	172				80	15	7,500	$398	92.0	8.21						$2,985,000
Gravity F		118					18			37.9	5.70	27	11,000	0.0100	0.0052	$510	$5,610,000
PS F	5.8													change due to topography			$11,595,000
PS G: no change																	
PS G																	
PS H	5.3	207	533	581	357		10			30.5	10.41		-				$2,000,000
Fm H	3.7	189				176	12	1,000	$363	12.6	7.23						$363,000
Gravity H-parallel		180					15			4.2	4.63	21	32,758	0.0068	0.00155	$439	$14,380,762
PS H	1.6																$16,743,762
		5 pump stations		new pump stations:		4		40,600					71,258		ALTERNATIVE 3		**$70,270,000**
ALTERNATIVE 4			Criteria: TDH >200 ft & 8 fps velocity														
PS B	3.2	197	300	460	370		15			37.5	3.99						$2,500,000
Fm B		175				160	18	11,600	$418	15.4	2.77						$4,848,800
Gravity B		167					21			7.3	2.04	15	6,900	0.0130	0.0130	$398	$2,746,200
																	$10,095,000
PS C	5.1	285	360	490	410		12			154.6	9.96						
Fm C		182				130	15	6,800	$398	52.2	6.37						$2,706,400
Gravity C		152					18			21.5	4.43	18	6,500	0.0123	0.0120	$418	$2,717,000
																	$5,423,400
														USE EXISTING LS #10 & PIPES			-$5,423,400
PS D	25.7	222	360	480	360		30			101.6	8.11						$10,500,000
Fm D		184				120	33	19,000	$645	63.9	6.70						$12,255,000
Gravity D		162					36			41.8	5.63	27	6,700	0.0179	0.0170	$510	$3,417,000
																	$26,172,000
PT E	17.5		367	325													
Fm E																	
Gravity E												42	10,000	0.0325	0.00075	$735	$7,350,000
														change due to topography			$7,350,000
PS F	12.3	353	390	470	360		12			272.6	12.83						$3,000,000
Fm F-parallel	6.5	172				80	15	7,500	$398	92.0	8.21						$2,985,000
Gravity F		118					18			37.9	5.70	27	11,000	0.0100	0.0052	$510	$5,610,000
PS F	5.8													change due to topography			$11,595,000
PS G: no change																	
PS G																	
PS H	5.3	207	533	581	357		10			30.5	10.41		-				$2,000,000
Fm H	3.7	189				176	12	1,000	$363	12.6	7.23						$363,000
Gravity H-parallel		180					15			4.2	4.63	21	32,758	0.0068	0.00155	$439	$14,380,762
PS H	1.6																$16,743,762
		5 pump stations		new pump stations:		4		45,900					73,858		ALTERNATIVE 4		**$71,960,000**

Basins and 2050 flow (mgd) routed through each pump station

ALTERNATIVE 3

aub3-ne	2.43	sss-x	2.38	scrk-x	5.06	sss-x	0.42			lks-x	2.70	ls-11s	5.27
		ssm-q	0.47			scrk-x	2.72			ls-15	9.57		
		mill-q	0.32			ls-14	0.94						
						sss-ne	0.16						
						jenk-r	0.66						
						ls-11n	3.29						
PS C	5.1					PS B	3.17	PS H	5.3				
PS D	28.90					PT E	17.55	PS F	12.28				
PT A	36.4	**PS B**	3.2	**PS C**	5.1	**PS D**	28.9	**PT E**	17.5	**PS F**	12.3	**PS H**	5.3
mill-e	3.78	through Mill Creek Interceptor											
sss-sw	1.48	through Auburn											

ALTERNATIVE 4

aub3-ne	2.43	sss-x	2.38	scrk-x	5.06	sss-x	0.42			lks-x	2.70	ls-11s	5.27
		ssm-q	0.47			scrk-x	2.72			ls-15	9.57		
		mill-q	0.32			ls-14	0.94						
						sss-ne	0.16						
						jenk-r	0.66						
						ls-11n	3.29						
PS C	5.1												
PS B	3.2							PS H	5.3				
PS D	25.74					PT E	17.55	PS F	12.28				
PT A	36.4	**PS B**	3.2	**PS C**	5.1	**PS D**	25.7	**PT E**	17.5	**PS F**	12.3	**PS H**	5.3
mill-e	3.78	through Mill Creek Interceptor											
sss-sw	1.48	through Auburn											