



Errata Sheet

For
City of Morgan Hill

2017 Sewer System Master Plan

Published: August 2019

This errata sheet logs content errors that have been identified since the release of the master plan. Corrections of these errors will be made at the time of the next master plan release. The bolded font is used to emphasize the corrections.

No	Chapter/Location	Description of Correction	Date of Correction
1	Table ES.5/Table 8.2	Future system improvement "ED-P2", including its associated cost, has been removed from this table. Improvement previously labeled "ED-P3" is now labeled "ED-P2".	10/4/2018
2	Table ES.5/Table 8.2	The total pipeline capacity improvement costs have been updated as follows: <ul style="list-style-type: none"> • Capital Improvement Cost: Previously \$6,971,168, now \$6,674,477 • Existing User Cost Allocation: Previously \$4,092,500, now \$3,844,861 • Future User Cost Allocation: Previously \$2,878,668, now \$2,828,616 These changes in cost are also reflected in other subtotals throughout the table.	10/4/2018
3	Table ES.5/Table 8.2	The Construction Triggers have been updated for the following improvements: <ul style="list-style-type: none"> • BT-P2: Previously 1,900 EDUs, now 700 EDUs • HL-P1: Previously 675 EDUs, now 250 EDUs • ED-P2 (previously ED-P3): Previously 2,400 EDUs, now 1,350 EDUs • RM-P1: Previously 2,000 EDUs, now 1,125 EDUs • RM-P2: Previously 3,175 EDUs, now 1,775 EDUs 	10/4/2018
4	Chapter 7, Section 7.3.3, Page 7-7	Future system improvement "ED-P2" has been removed from this section. Improvement previously labeled "ED-P3" is now labeled "ED-P2".	10/4/2018
5	Table 7.1	Future system improvement "ED-P2" has been removed from this table. Improvement previously labeled "ED-P3" is now labeled "ED-P2".	10/4/2018
6	Table 8.3	The cost associated with previously recommended improvement "ED-P2" has been removed from the Pipeline Capacity Improvements for FY2021. The total FY 2021 costs previously listed as \$700,288, have been updated to \$403,596 . This change in cost is also reflected in other subtotals throughout the table.	10/4/2018
7	Table 8.4	The cost associated with previously recommended improvement "ED-P2" has been removed from the Intermediate Term Pipeline Capacity Improvement Costs. The costs, which were previously listed as \$2,133,295, have been updated to \$1,836,604 . This change in cost is also reflected in other subtotals throughout the table.	10/4/2018
8	Figure ES.3, 7.3, 8.1	Future system improvement "BT-P2" has been removed.	8/5/2019



Errata Sheet

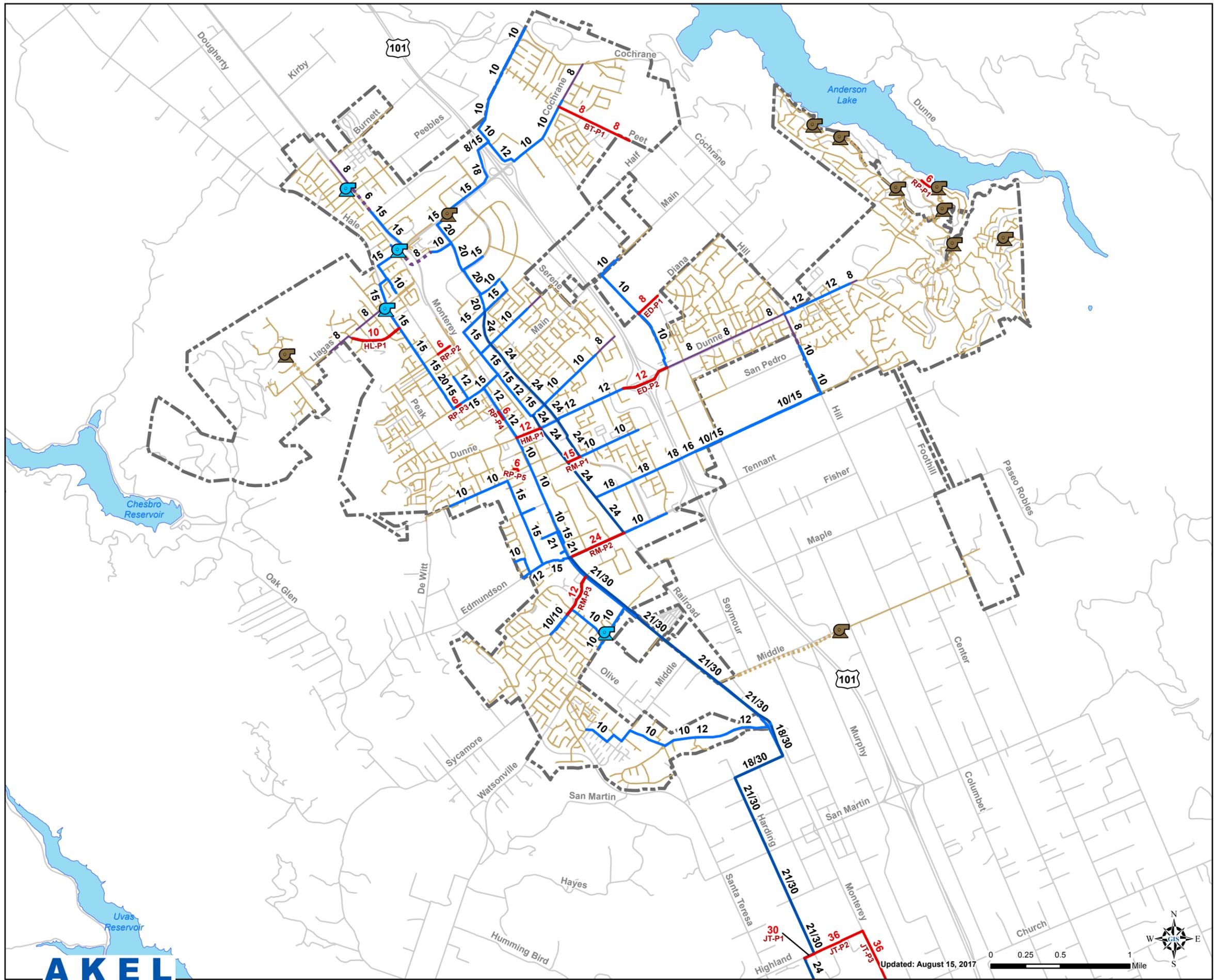
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9	Table ES.5/Table 8.2	Future system improvement " BT-P2 ", including its associated cost, has been removed from this table.	8/5/2019
10	Table ES.5/Table 8.2	<p>The total pipeline capacity improvement costs have been updated as follows:</p> <ul style="list-style-type: none"> • Capital Improvement Cost: Previously \$6,674,477, now \$6,270,880 • Existing User Cost Allocation: Previously \$3,844,861, now \$3,640,389 • Future User Cost Allocation: Previously \$2,829,616, now \$2,630,491 <p>These changes in cost are also reflected in other subtotals throughout the table.</p>	8/5/2019
11	Chapter 7, Section 7.3.1, Page 7-7	Future system improvement " BT-P2 " has been removed from this section.	8/5/2019
12	Table 7.1	Future system improvement " BT-P2 " has been removed from this table.	8/5/2019
13	Table 8.3	The cost associated with previously recommended improvement " BT-P2 " has been removed from the Pipeline Capacity Improvements for FY2021. The total FY 2021 costs previously listed as \$403,596 , have been updated to \$0 . This change in cost is also reflected in other subtotals throughout the table.	8/5/2019
14	Table 8.4	The cost associated with previously recommended improvement " BT-P2 " has been removed from the Intermediate Term Pipeline Capacity Improvement Costs. The costs, which were previously listed as \$1,807,775 , have been updated to \$1,404,179 . This change in cost is also reflected in other subtotals throughout the table.	8/5/2019
15	Various Figures	<p>City staff recently completed a review of the existing system pipelines crossing State Route 101, approximately 1,300 feet northwest of Cochrane Road. The Master Plan indicated parallel 8-inch and 15-inch pipelines, however, the survey indicated that the 15-inch pipeline was constructed as a 16-inch pipeline. This update affects labels on the following figures: 4.1, 4.3, 4.5, 6.1, 7.1, 7.2, 7.3, 8.1,</p> <p>This update does not significantly affect the analysis or recommended improvements.</p>	8/5/2019



Legend

- Proposed Pipe Improvements
- Existing Modeled System**
- Lift Stations
- Modeled Gravity Pipes by Size
- 8"
- 10" - 21"
- 24" - 30"
- Modeled Force Mains
- ⋯ 8" or Smaller
- Non-Modeled System**
- Lift Stations
- Gravity Pipes
- ⋯ Force Mains
- Roads
- City Limits
- Lakes

ES. 3 Proposed Improvements

Sewer System Master Plan
City of Morgan Hill



Table ES.5 Capital Improvement Program
Sewer System Master Plan
City of Morgan Hill

Improv. No.	Type of Improvement	Alignment	Limits	Pipeline Improvements		Infrastructure Costs				Baseline Constr. Costs ¹	Estimated Const. Costs ²	Capacity Improv. Cost ³	Suggested Expenditure Budget	Construction Trigger	Suggested Cost Allocation		Cost Allocation	
				Existing Diameter	New/Parallel/Replace	Diameter	Length	Unit Cost	Infr. Cost						Existing Users	Future Users	Existing Users	Future Users
				(in)		(in)	(ft)	(\$)	(\$)						(%)	(%)	(\$)	(\$)
Pipeline Capacity Improvements																		
Butterfield Trunk																		
BT-P1	Gravity Main	Peet Rd	From approximately 3,000 ft e/o Cochrane Rd to Cochrane Rd	-	New	8	3,000	171	511,745	511,745	665,269	864,849	2026-2030	-	0%	100%	0	864,849
Subtotal - Butterfield Trunk										511,745	665,269	864,849						
Hale-Llagas Trunk																		
HL-P1	Gravity Main	Llagas Creek Dr	From Eagle Springs Ct to Hale Ave	8	Replacement	10	1,950	185	360,354	360,354	468,460	608,998	2021-2025	250	72%	28%	435,981	173,017
Subtotal - Hale-Llagas Trunk										360,354	468,460	608,998						
East Dunne Trunk																		
ED-P1	Gravity Main	Diana Ave	From Murphy Ave to Condit Rd	-	New	8	1,000	171	170,582	170,582	221,756	288,283	2026-2030	-	0%	100%	0	288,283
ED-P2	Gravity Main	Dunne Ave	From Condit Rd to 530 ft e/o Walnut Grove Dr	8/10	Replacement	12	1,950	199	388,073	388,073	504,495	655,844	2021-2025	1,350	47%	53%	309,083	346,762
Subtotal - East Dunne Trunk										558,655	726,252	944,127						
Hale-Monterey Trunk																		
HM-P1	Gravity Main	Dunne Ave	From Monterey Rd to Railroad Ave	-	New	12	1,000	199	199,012	199,012	258,716	336,330	2018-2020	-	80%	20%	270,210	66,121
RP-P2	Gravity Main	Wright Ave	From 230 ft e/o Garden Ave to Del Monte Ave	6	Replacement	6	550	156	86,002	86,002	111,802	145,343	2018-2020	-	100%	0%	145,343	0
RP-P3	Gravity Main	Main Ave	From 120 ft e/o Hale Ave to 300 ft e/o Hale Ave	6	Replacement	6	175	156	27,364	27,364	35,573	46,245	2018-2020	-	100%	0%	46,245	0
RP-P4	Gravity Main	Monterey Rd	From 3rd to 4th Street	6	Replacement	6	350	156	54,728	54,728	71,147	92,491	2018-2020	-	100%	0%	92,491	0
RP-P5	Gravity Main	ROW	Right of Way e/o Manor Ct to 450 ft w/o Monterey Rd and Bisceglia Ave	6	Replacement	6	200	156	31,273	31,273	40,655	52,852	2018-2020	-	100%	0%	52,852	0
Subtotal - Hale-Monterey Trunk										398,379	517,893	673,261						
Railroad-Monterey Trunk																		
RM-P1	Gravity Main	San Pedro Ave	From Butterfield Blvd to Railroad Ave	10	Replacement	15	550	270	148,548	148,548	193,113	251,047	2026-2030	1,125	58%	42%	146,509	104,537
RM-P2 ⁴	Gravity Main	Tennant Ave	From Railroad Ave to Monterey Rd	18	Replacement	24	2,200	426	938,199	1,131,799	1,471,339	1,912,741	2018-2020	1,775	61%	39%	1,170,082	742,659
RM-P3	Gravity Main	La Crosse Dr / Vineyard Blvd	From La Mar Dr to Monterey Rd	10	Replacement	12	1,700	199	338,320	338,320	439,817	571,762	2021-2025	-	92%	8%	527,499	44,262
Subtotal - Railroad-Monterey Trunk										1,618,668	2,104,269	2,735,549						
Hill-Barrett Trunk																		
RP-P1	Gravity Main	ROW	Along Holiday Dr to Oak Ln	6	Replacement	6	400	156	62,547	62,547	81,311	105,704	2018-2020	-	100%	0%	105,704	0
Subtotal - Hill-Barrett Trunk										62,547	81,311	105,704						
Joint Trunk⁵																		
JT-P1	Gravity Main	Highland Ave	From Harding Ave to 400 ft w/o Harding Ave	21	Replacement	30	450	569	255,873	255,873	294,253	338,391	2018-2020	-	100%	0%	338,391	0
Subtotal - Joint Trunk										255,873	294,253	338,391						
Subtotal - Pipeline Capacity Improvements										3,766,221	4,857,706	6,270,880						
Relief Trunk Improvements⁵																		
JT-P2	Gravity Main	Highland Ave	From Harding Ave to Monterey Rd	-	New	30	2,050	569	1,165,642	1,165,642	1,340,488	1,541,561	2018-2020	-	25%	75%	385,390	1,156,171
JT-P3	Gravity Main	Monterey Rd	From Highland Ave to Las Animas Ave	-	New	36	19,700	569	11,201,533	11,201,533	12,881,763	14,814,028	2018-2020	-	25%	75%	3,703,507	11,110,521
JT-P4	Gravity Main	Las Animas Ave	From Monterey Rd to Murray Ave	-	New	36	1,750	569	995,060	995,060	1,144,319	1,315,967	2018-2020	-	25%	75%	328,992	986,975
JT-P5	Gravity Main	Murray Ave	From Las Animas Ave to Chestnut St	-	New	36	7,550	569	4,292,973	4,292,973	4,936,919	5,677,457	2018-2020	-	25%	75%	1,419,364	4,258,093
JT-P6	Gravity Main	Chestnut St	From Murray Ave to Lewis St	-	New	36	400	569	227,442	227,442	261,559	300,792	2018-2020	-	25%	75%	75,198	225,594
JT-P7	Gravity Main	Chestnut St	From Chestnut St to 7th St	-	New	36	2,100	569	1,194,072	1,194,072	1,373,183	1,579,160	2018-2020	-	25%	75%	394,790	1,184,370
JT-P8	Gravity Main	7th Street	From Chestnut St to US Highway 101.	-	New	36	1,450	569	824,478	824,478	948,150	1,090,373	2018-2020	-	25%	75%	272,593	817,779

Table ES.5 Capital Improvement Program
Sewer System Master Plan
City of Morgan Hill

Improv. No.	Type of Improvement	Alignment	Limits	Pipeline Improvements		Infrastructure Costs				Baseline Constr. Costs ¹	Estimated Const. Costs ²	Capacity Improv. Cost ³	Suggested Expenditure Budget	Construction Trigger (EDUs)	Suggested Cost Allocation		Cost Allocation	
				Existing Diameter	New/Parallel/Replace	Diameter	Length	Unit Cost	Infr. Cost						Existing Users	Future Users	Existing Users	Future Users
				(in)		(in)	(ft)	(\$)	(\$)						(\$)	(\$)	(\$)	(\$)
JT-P9	Gravity Main	Along US 101	Jogging from 7th St and US Highway 101 to Renz Lane	-	New	36	2,000	569	1,137,211	1,137,211	1,307,793	1,503,962	2018-2020	-	25%	75%	375,991	1,127,972
Subtotal - Joint Trunk Improvements										21,038,413	24,194,175	27,823,301					6,955,825	20,867,476
Joint Trunk Condition Assessment⁶																		
CCTV and Condition Assessment - Existing Joint Trunk							24,369		200,000	-	-	200,000	2018-2020		100%	0%	200,000	0
Subtotal - Joint Trunk Condition Assessment										-	-	200,000					200,000	0
Infiltration and Inflow Improvements																		
INI-P1	Gravity Main	Llagas Rd	From 80 ft e/o Hale Ave to 20 ft e/o Hale Ave (Group 5)	8	Trenchless Rehabilitation	8	100	41	4,127	4,127	5,365	6,975	2018-2020	-	100%	0%	6,975	0
INI-P2	Gravity Main	Llagas Rd	From Fox Hollow Cir to Murphy Springs Dr (Group 5)	8	Trenchless Rehabilitation	8	350	41	14,446	14,446	18,779	24,413	2018-2020	-	100%	0%	24,413	0
INI-P3	Gravity Main	Laurel Wood Ln	From 120 fts/o Almond Orchard Dr to 135 ft s/o Almond Orchard Dr (Grp 5)	6	Point Repair	6	15	162	2,429	2,429	3,157	4,104	2018-2020	-	100%	0%	4,104	0
INI-P4	Gravity Main	250 ft n/o Berkshire Ave	From 60 ft e/o Hale Ave to 115 ft e/o Hale Ave (Group 5)	15	Trenchless Rehabilitation	15	100	67	6,664	6,664	8,664	11,263	2018-2020	-	100%	0%	11,263	0
INI-P5	Gravity Main	110 ft s/o Wright Ave	From 180 ft w/o Crest Ave to 50 ft e/o Crest Ave (Group 4)	6	Trenchless Replacement	6	250	792	198,067	198,067	257,487	334,733	2018-2020	-	100%	0%	334,733	0
INI-P6	Gravity Main	Shady Lane Dr	From Trail Ridge Ln to Calico Ridge Trl (Group 2)	6	Trenchless Rehabilitation	6	150	46	6,965	6,965	9,054	11,771	2018-2020	-	100%	0%	11,771	0
INI-P7	Gravity Main	Trail Ridge Ln	From 150 ft w/o Shady Lane Dr to 70 ft e/o Shady Lane Dr (Group 2)	6	Trenchless Replacement	6	250	792	198,067	198,067	257,487	334,733	2018-2020	-	100%	0%	334,733	0
INI-P8	Gravity Main	50 ft n/o Copper Hill Pl	From 40 ft w/o Copper Hill Dr to 60 ft w/o Holiday Dr (Group 2)	6	Trenchless Rehabilitation	6	200	46	9,286	9,286	12,072	15,694	2018-2020	-	100%	0%	15,694	0
INI-P9	Gravity Main	Quail Ln	From 150 ft e/o Quail Ct to 110 ft w/o Quail Ct (Group 2)	6	Trenchless Rehabilitation	6	300	46	13,930	13,930	18,109	23,541	2018-2020	-	100%	0%	23,541	0
INI-P10	Gravity Main	175 ft s/o Oakridge Ct	From 180 ft n/o Oakridge Ln to Oakridge Ln (Group 1)	6	Trenchless Rehabilitation	6	200	46	9,286	9,286	12,072	15,694	2018-2020	-	100%	0%	15,694	0
Subtotal - Infiltration and Inflow Improvements										463,267	602,247	782,921					782,921	0
Rehabilitation Improvements																		
Group 1	Gravity Main	Various	See Group 1 Figure	Various	Various	Various	7,750	Various	2,426,606	2,426,606	3,154,588	4,100,964	2018	-	100%	0%	4,100,964	0
Group 2	Gravity Main	Various	See Group 2 Figure	Various	Various	Various	9,800	Various	1,167,715	1,167,715	1,518,029	1,973,438	2019	-	100%	0%	1,973,438	0
Group 3	Gravity Main	Various	See Group 3 Figure	Various	Various	Various	5,650	Various	363,053	363,053	471,968	613,559	2019	-	100%	0%	613,559	0
Group 4	Gravity Main	Various	See Group 4 Figure	Various	Various	Various	10,300	Various	907,288	907,288	1,179,475	1,533,317	2020	-	100%	0%	1,533,317	0
Group 5	Gravity Main	Various	See Group 5 Figure	Various	Various	Various	6,000	Various	371,370	371,370	482,781	627,615	2020	-	100%	0%	627,615	0
Group 6	Gravity Main	Various	See Group 6 Figure	Various	Various	Various	5,550	Various	597,377	597,377	776,590	1,009,566	2021	-	100%	0%	1,009,566	0
Group 7	Gravity Main	Various	See Group 7 Figure	Various	Various	Various	8,950	Various	1,784,493	1,784,493	2,319,841	3,015,794	2021	-	100%	0%	3,015,794	0
Group 8	Gravity Main	Various	See Group 8 Figure	Various	Various	Various	5,700	Various	653,074	653,074	848,996	1,103,695	2022	-	100%	0%	1,103,695	0
Group 9	Gravity Main	Various	See Group 9 Figure	Various	Various	Various	2,900	Various	356,669	356,669	463,670	602,771	2022	-	100%	0%	602,771	0
Subtotal - Rehabilitation Improvements										8,627,644	11,215,937	14,580,719					14,580,719	0
Comprehensive Plan Updates																		
Sewer System Master Plan Updates (Years 2021, 2026, 2031, 2036)									200,000	-	-	800,000	2021, 2026, 2031, 2036		65%	35%	520,000	280,000
Sewer System Management Plan Updates (Years 2021, 2026, 2031, 2036)									100,000	-	-	400,000	2021, 2026, 2031, 2036		65%	35%	260,000	140,000
Sewer Rate Study Updates (Years 2021, 2026, 2031, 2036)									100,000	-	-	400,000	2021, 2026, 2031, 2036		65%	35%	260,000	140,000
Subtotal - Comprehensive Plan Updates												1,600,000					1,040,000	560,000
On-Going CCTV Sewer System																		
CCTV of 16 miles of pipelines per year (From 2018 to 2035)							84,480	1.50	2,280,960	-	-	2,280,960	126,720 Annually		100%	0%	2,280,960	0
Subtotal - On-going CCTV System												2,280,960					2,280,960	0

Table 7.1 Schedule of Improvements
Sewer System Master Plan
City of Morgan Hill

PRELIMINARY

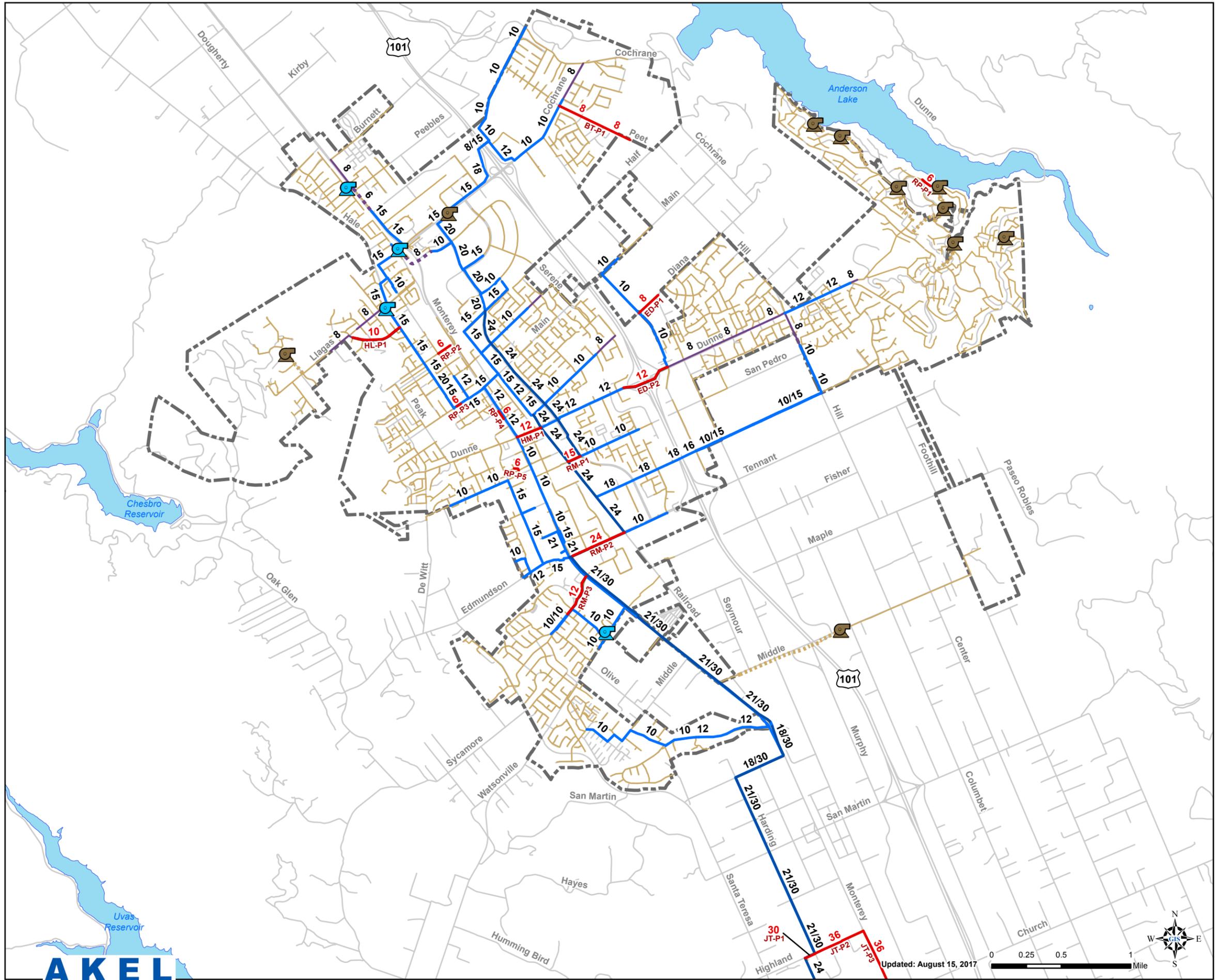
Improv. No.	Type of Improvement	Alignment	Limits	Existing Diameter (in)	Pipeline Improvements		
					New/Parallel/Replace	Diameter (in)	Length (ft)
Pipeline Capacity Improvements							
Butterfield Trunk							
BT-P1	Gravity Main	Peet Rd	From approximately 3,000 ft e/o Cochrane Rd to Cochrane Rd	-	New	8	3,000
Hale-Llagas Trunk							
HL-P1	Gravity Main	Llagas Creek Dr	From Eagle Springs Ct to Hale Ave	8	Replacement	10	1,950
East Dunne Trunk							
ED-P1	Gravity Main	Diana Ave	From Murphy Ave to Condit Rd	-	New	8	1,000
ED-P2	Gravity Main	Dunne Ave	From 230 ft e/o Murphy Ave to Condit Rd	8	Replacement	10	1,950
Hale-Monterey Trunk							
HM-P1	Gravity Main	Dunne Ave	From Monterey Rd to Railroad Ave	-	New	12	1,000
Railroad-Monterey Trunk							
RM-P1	Gravity Main	San Pedro Ave	From Butterfield Blvd to Railroad Ave	10	Replacement	15	550
RM-P2 ¹	Gravity Main	Tennant Ave	From Railroad Ave to Monterey Rd	18	Replacement	24	2,200
RM-P3	Gravity Main	La Crosse Dr / Vineyard Blvd	From La Mar Dr to Monterey Rd	10	Replacement	12	1,700
Joint Trunk							
JT-P1	Gravity Main	Highland Ave	From Harding Ave to 400 ft w/o Harding Ave	21	Replacement	30	450
Relief Trunk Improvements							
JT-P2	Gravity Main	Highland Ave	From Harding Ave to Monterey Rd	-	New	36	2,050
JT-P3	Gravity Main	Monterey Rd	From Highland Ave to Las Animas Ave	-	New	36	19,700
JT-P4	Gravity Main	Las Animas Ave	From Monterey Rd to Murray Ave	-	New	36	1,750
JT-P5	Gravity Main	Murray Ave	From Las Animas Ave to Chestnut St	-	New	36	7,550
JT-P6	Gravity Main	Chestnut St	From Murray Ave to Lewis St	-	New	36	400
JT-P7	Gravity Main	Chestnut St	From Chestnut St to 7th St	-	New	36	2,100
JT-P8	Gravity Main	7th Street	From Chestnut St to US Highway 101.	-	New	36	1,450
JT-P9	Gravity Main	Along US 101	Jogging from 7th St and US Highway 101 to Renz Lane	-	New	36	2,000
Infiltration and Inflow Improvements							
INI-P1	Gravity Main	Llagas Rd	From 80 ft e/o Hale Ave to 20 ft e/o Hale Ave (Group 5)	8	Trenchless Rehabilitation	8	100
INI-P2	Gravity Main	Llagas Rd	From Fox Hollow Cir to Murphy Springs Dr (Group 5)	8	Trenchless Rehabilitation	8	350
INI-P3	Gravity Main	Laurel Wood Ln	From 120 ft s/o Almond Orchard Dr to 135 ft s/o Almond Orchard Dr (Grp 5)	6	Point Repair	6	15
INI-P4	Gravity Main	250 ft n/o Berkshire Ave	From 60 ft e/o Hale Ave to 115 ft e/o Hale Ave (Group 5)	15	Trenchless Rehabilitation	15	100
INI-P5	Gravity Main	110 ft s/o Wright Ave	From 180 ft w/o Crest Ave to 50 ft e/o Crest Ave (Group 4)	6	Trenchless Replacement	6	250
INI-P6	Gravity Main	Shady Lane Dr	From Trail Ridge Ln to Calico Ridge Trl (Group 2)	6	Trenchless Rehabilitation	6	150
INI-P7	Gravity Main	Trail Ridge Ln	From 150 ft w/o Shady Lane Dr to 70 ft e/o Shady Lane Dr (Group 2)	6	Trenchless Replacement	6	250
INI-P8	Gravity Main	50 ft n/o Copper Hill Pl	From 40 ft w/o Copper Hill Dr to 60 ft w/o Holiday Dr (Group 2)	6	Trenchless Rehabilitation	6	200
INI-P9	Gravity Main	Quail Ln	From 150 ft e/o Quail Ct to 110 ft w/o Quail Ct (Group 2)	6	Trenchless Rehabilitation	6	300
INI-P10	Gravity Main	175 ft s/o Oakridge Ct	From 180 ft n/o Oakridge Ln to Oakridge Ln (Group 1)	6	Trenchless Rehabilitation	6	200
Rehabilitation Improvements							
Group 1	Gravity Main	Various	See Group 1 Figure	Various	Various	Various	7,750
Group 2	Gravity Main	Various	See Group 2 Figure	Various	Various	Various	9,800
Group 3	Gravity Main	Various	See Group 3 Figure	Various	Various	Various	5,650
Group 4	Gravity Main	Various	See Group 4 Figure	Various	Various	Various	10,300
Group 5	Gravity Main	Various	See Group 5 Figure	Various	Various	Various	6,000
Group 6	Gravity Main	Various	See Group 6 Figure	Various	Various	Various	5,550
Group 7	Gravity Main	Various	See Group 7 Figure	Various	Various	Various	8,950
Group 8	Gravity Main	Various	See Group 8 Figure	Various	Various	Various	5,700
Group 9	Gravity Main	Various	See Group 9 Figure	Various	Various	Various	2,900



NOTE:

- Improvement RM-P2 will require a casing where crossing railroad.

8/5/2019



Legend

Proposed Pipe Improvements

Existing Modeled System

- Lift Stations
- Modeled Gravity Pipes by Size
 - 8"
 - 10" - 21"
 - 24" - 30"

Modeled Force Mains

- 8" or Smaller

Non-Modeled System

- Lift Stations
- Gravity Pipes
- Force Mains
- Roads
- City Limits
- Lakes

Figure 8.1
Capital Improvement Program
 Sewer System Master Plan
 City of Morgan Hill



Table 8.2 Capital Improvement Program
Sewer System Master Plan
City of Morgan Hill

Improv. No.	Type of Improvement	Alignment	Limits	Pipeline Improvements		Infrastructure Costs				Baseline Constr. Costs ¹	Estimated Const. Costs ²	Capacity Improv. Cost ³	Suggested Expenditure Budget	Construction Trigger (EDUs)	Suggested Cost Allocation		Cost Allocation	
				Existing Diameter	New/Parallel/Replace	Diameter	Length	Unit Cost	Infr. Cost						Existing Users	Future Users	Existing Users	Future Users
				(in)		(in)	(ft)	(\$)	(\$)						(%)	(%)	(\$)	(\$)
Pipeline Capacity Improvements																		
Butterfield Trunk																		
BT-P1	Gravity Main	Peet Rd	From approximately 3,000 ft e/o Cochrane Rd to Cochrane Rd	-	New	8	3,000	171	511,745	511,745	665,269	864,849	2026-2030	-	0%	100%	0	864,849
Subtotal - Butterfield Trunk										511,745	665,269	864,849						
Hale-Llagas Trunk																		
HL-P1	Gravity Main	Llagas Creek Dr	From Eagle Springs Ct to Hale Ave	8	Replacement	10	1,950	185	360,354	360,354	468,460	608,998	2021-2025	250	72%	28%	435,981	173,017
Subtotal - Hale-Llagas Trunk										360,354	468,460	608,998						
East Dunne Trunk																		
ED-P1	Gravity Main	Diana Ave	From Murphy Ave to Condit Rd	-	New	8	1,000	171	170,582	170,582	221,756	288,283	2026-2030	-	0%	100%	0	288,283
ED-P2	Gravity Main	Dunne Ave	From Condit Rd to 530 ft e/o Walnut Grove Dr	8/10	Replacement	12	1,950	199	388,073	388,073	504,495	655,844	2021-2025	1,350	47%	53%	309,083	346,762
Subtotal - East Dunne Trunk										558,655	726,252	944,127						
Hale-Monterey Trunk																		
HM-P1	Gravity Main	Dunne Ave	From Monterey Rd to Railroad Ave	-	New	12	1,000	199	199,012	199,012	258,716	336,330	2018-2020	-	80%	20%	270,210	66,121
RP-P2	Gravity Main	Wright Ave	From 230 ft e/o Garden Ave to Del Monte Ave	6	Replacement	6	550	156	86,002	86,002	111,802	145,343	2018-2020	-	100%	0%	145,343	0
RP-P3	Gravity Main	Main Ave	From 120 ft e/o Hale Ave to 300 ft e/o Hale Ave	6	Replacement	6	175	156	27,364	27,364	35,573	46,245	2018-2020	-	100%	0%	46,245	0
RP-P4	Gravity Main	Monterey Rd	From 3rd to 4th Street	6	Replacement	6	350	156	54,728	54,728	71,147	92,491	2018-2020	-	100%	0%	92,491	0
RP-P5	Gravity Main	ROW	Right of Way e/o Manor Ct to 450 ft w/o Monterey Rd and Bisceglia Ave	6	Replacement	6	200	156	31,273	31,273	40,655	52,852	2018-2020	-	100%	0%	52,852	0
Subtotal - Hale-Monterey Trunk										398,379	517,893	673,261						
Railroad-Monterey Trunk																		
RM-P1	Gravity Main	San Pedro Ave	From Butterfield Blvd to Railroad Ave	10	Replacement	15	550	270	148,548	148,548	193,113	251,047	2026-2030	1,125	58%	42%	146,509	104,537
RM-P2 ⁴	Gravity Main	Tennant Ave	From Railroad Ave to Monterey Rd	18	Replacement	24	2,200	426	938,199	1,131,799	1,471,339	1,912,741	2018-2020	1,775	61%	39%	1,170,082	742,659
RM-P3	Gravity Main	La Crosse Dr / Vineyard Blvd	From La Mar Dr to Monterey Rd	10	Replacement	12	1,700	199	338,320	338,320	439,817	571,762	2021-2025	-	92%	8%	527,499	44,262
Subtotal - Railroad-Monterey Trunk										1,618,668	2,104,269	2,735,549						
Hill-Barrett Trunk																		
RP-P1	Gravity Main	ROW	Along Holiday Dr to Oak Ln	6	Replacement	6	400	156	62,547	62,547	81,311	105,704	2018-2020	-	100%	0%	105,704	0
Subtotal - Hill-Barrett Trunk										62,547	81,311	105,704						
Joint Trunk⁵																		
JT-P1	Gravity Main	Highland Ave	From Harding Ave to 400 ft w/o Harding Ave	21	Replacement	30	450	569	255,873	255,873	294,253	338,391	2018-2020	-	100%	0%	338,391	0
Subtotal - Joint Trunk										255,873	294,253	338,391						
Subtotal - Pipeline Capacity Improvements										3,766,221	4,857,706	6,270,880						
Relief Trunk Improvements⁵																		
JT-P2	Gravity Main	Highland Ave	From Harding Ave to Monterey Rd	-	New	30	2,050	569	1,165,642	1,165,642	1,340,488	1,541,561	2018-2020	-	25%	75%	385,390	1,156,171
JT-P3	Gravity Main	Monterey Rd	From Highland Ave to Las Animas Ave	-	New	36	19,700	569	11,201,533	11,201,533	12,881,763	14,814,028	2018-2020	-	25%	75%	3,703,507	11,110,521
JT-P4	Gravity Main	Las Animas Ave	From Monterey Rd to Murray Ave	-	New	36	1,750	569	995,060	995,060	1,144,319	1,315,967	2018-2020	-	25%	75%	328,992	986,975
JT-P5	Gravity Main	Murray Ave	From Las Animas Ave to Chestnut St	-	New	36	7,550	569	4,292,973	4,292,973	4,936,919	5,677,457	2018-2020	-	25%	75%	1,419,364	4,258,093
JT-P6	Gravity Main	Chestnut St	From Murray Ave to Lewis St	-	New	36	400	569	227,442	227,442	261,559	300,792	2018-2020	-	25%	75%	75,198	225,594
JT-P7	Gravity Main	Chestnut St	From Chestnut St to 7th St	-	New	36	2,100	569	1,194,072	1,194,072	1,373,183	1,579,160	2018-2020	-	25%	75%	394,790	1,184,370
JT-P8	Gravity Main	7th Street	From Chestnut St to US Highway 101.	-	New	36	1,450	569	824,478	824,478	948,150	1,090,373	2018-2020	-	25%	75%	272,593	817,779

Table 8.2 Capital Improvement Program
Sewer System Master Plan
City of Morgan Hill

Improv. No.	Type of Improvement	Alignment	Limits	Pipeline Improvements		Infrastructure Costs				Baseline Constr. Costs ¹	Estimated Const. Costs ²	Capacity Improv. Cost ³	Suggested Expenditure Budget	Construction Trigger (EDUs)	Suggested Cost Allocation		Cost Allocation	
				Existing Diameter	New/Parallel/Replace	Diameter	Length	Unit Cost	Infr. Cost						Existing Users	Future Users	Existing Users	Future Users
				(in)		(in)	(ft)	(\$)	(\$)						(%)	(%)	(\$)	(\$)
JT-P9	Gravity Main	Along US 101	Jogging from 7th St and US Highway 101 to Renz Lane	-	New	36	2,000	569	1,137,211	1,137,211	1,307,793	1,503,962	2018-2020	-	25%	75%	375,991	1,127,972
Subtotal - Joint Trunk Improvements										21,038,413	24,194,175	27,823,301					6,955,825	20,867,476
Joint Trunk Condition Assessment⁶																		
CCTV and Condition Assessment - Existing Joint Trunk							24,369		200,000	-	-	200,000	2018-2020		100%	0%	200,000	0
Subtotal - Joint Trunk Condition Assessment										-	-	200,000					200,000	0
Infiltration and Inflow Improvements																		
INI-P1	Gravity Main	Llagas Rd	From 80 ft e/o Hale Ave to 20 ft e/o Hale Ave (Group 5)	8	Trenchless Rehabilitation	8	100	41	4,127	4,127	5,365	6,975	2018-2020	-	100%	0%	6,975	0
INI-P2	Gravity Main	Llagas Rd	From Fox Hollow Cir to Murphy Springs Dr (Group 5)	8	Trenchless Rehabilitation	8	350	41	14,446	14,446	18,779	24,413	2018-2020	-	100%	0%	24,413	0
INI-P3	Gravity Main	Laurel Wood Ln	From 120 fts/o Almond Orchard Dr to 135 ft s/o Almond Orchard Dr (Grp 5)	6	Point Repair	6	15	162	2,429	2,429	3,157	4,104	2018-2020	-	100%	0%	4,104	0
INI-P4	Gravity Main	250 ft n/o Berkshire Ave	From 60 ft e/o Hale Ave to 115 ft e/o Hale Ave (Group 5)	15	Trenchless Rehabilitation	15	100	67	6,664	6,664	8,664	11,263	2018-2020	-	100%	0%	11,263	0
INI-P5	Gravity Main	110 ft s/o Wright Ave	From 180 ft w/o Crest Ave to 50 ft e/o Crest Ave (Group 4)	6	Trenchless Replacement	6	250	792	198,067	198,067	257,487	334,733	2018-2020	-	100%	0%	334,733	0
INI-P6	Gravity Main	Shady Lane Dr	From Trail Ridge Ln to Calico Ridge Trl (Group 2)	6	Trenchless Rehabilitation	6	150	46	6,965	6,965	9,054	11,771	2018-2020	-	100%	0%	11,771	0
INI-P7	Gravity Main	Trail Ridge Ln	From 150 ft w/o Shady Lane Dr to 70 ft e/o Shady Lane Dr (Group 2)	6	Trenchless Replacement	6	250	792	198,067	198,067	257,487	334,733	2018-2020	-	100%	0%	334,733	0
INI-P8	Gravity Main	50 ft n/o Copper Hill Pl	From 40 ft w/o Copper Hill Dr to 60 ft w/o Holiday Dr (Group 2)	6	Trenchless Rehabilitation	6	200	46	9,286	9,286	12,072	15,694	2018-2020	-	100%	0%	15,694	0
INI-P9	Gravity Main	Quail Ln	From 150 ft e/o Quail Ct to 110 ft w/o Quail Ct (Group 2)	6	Trenchless Rehabilitation	6	300	46	13,930	13,930	18,109	23,541	2018-2020	-	100%	0%	23,541	0
INI-P10	Gravity Main	175 ft s/o Oakridge Ct	From 180 ft n/o Oakridge Ln to Oakridge Ln (Group 1)	6	Trenchless Rehabilitation	6	200	46	9,286	9,286	12,072	15,694	2018-2020	-	100%	0%	15,694	0
Subtotal - Infiltration and Inflow Improvements										463,267	602,247	782,921					782,921	0
Rehabilitation Improvements																		
Group 1	Gravity Main	Various	See Group 1 Figure	Various	Various	Various	7,750	Various	2,426,606	2,426,606	3,154,588	4,100,964	2018	-	100%	0%	4,100,964	0
Group 2	Gravity Main	Various	See Group 2 Figure	Various	Various	Various	9,800	Various	1,167,715	1,167,715	1,518,029	1,973,438	2019	-	100%	0%	1,973,438	0
Group 3	Gravity Main	Various	See Group 3 Figure	Various	Various	Various	5,650	Various	363,053	363,053	471,968	613,559	2019	-	100%	0%	613,559	0
Group 4	Gravity Main	Various	See Group 4 Figure	Various	Various	Various	10,300	Various	907,288	907,288	1,179,475	1,533,317	2020	-	100%	0%	1,533,317	0
Group 5	Gravity Main	Various	See Group 5 Figure	Various	Various	Various	6,000	Various	371,370	371,370	482,781	627,615	2020	-	100%	0%	627,615	0
Group 6	Gravity Main	Various	See Group 6 Figure	Various	Various	Various	5,550	Various	597,377	597,377	776,590	1,009,566	2021	-	100%	0%	1,009,566	0
Group 7	Gravity Main	Various	See Group 7 Figure	Various	Various	Various	8,950	Various	1,784,493	1,784,493	2,319,841	3,015,794	2021	-	100%	0%	3,015,794	0
Group 8	Gravity Main	Various	See Group 8 Figure	Various	Various	Various	5,700	Various	653,074	653,074	848,996	1,103,695	2022	-	100%	0%	1,103,695	0
Group 9	Gravity Main	Various	See Group 9 Figure	Various	Various	Various	2,900	Various	356,669	356,669	463,670	602,771	2022	-	100%	0%	602,771	0
Subtotal - Rehabilitation Improvements										8,627,644	11,215,937	14,580,719					14,580,719	0
Comprehensive Plan Updates																		
Sewer System Master Plan Updates (Years 2021, 2026, 2031, 2036)									200,000	-	-	800,000	2021, 2026, 2031, 2036		65%	35%	520,000	280,000
Sewer System Management Plan Updates (Years 2021, 2026, 2031, 2036)									100,000	-	-	400,000	2021, 2026, 2031, 2036		65%	35%	260,000	140,000
Sewer Rate Study Updates (Years 2021, 2026, 2031, 2036)									100,000	-	-	400,000	2021, 2026, 2031, 2036		65%	35%	260,000	140,000
Subtotal - Comprehensive Plan Updates												1,600,000					1,040,000	560,000
On-Going CCTV Sewer System																		
CCTV of 16 miles of pipelines per year (From 2018 to 2035)							84,480	1.50	2,280,960	-	-	2,280,960	126,720 Annually		100%	0%	2,280,960	0
Subtotal - On-going CCTV System												2,280,960					2,280,960	0

Table 8.3 5-year Improvement Phasing
Sewer System Master Plan
City of Morgan Hill

CIP ID	Year			Fiscal Year Improvement Phasing							
	Range	Upgrade	Expansion	Repair & Replacement	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2017-2022 Total
		%	%	%	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
Pipeline Improvements											
Operational Improvements											
RP-P1	2017	0%	0%	100%	105,704	0	0	0	0	0	105,704
RP-P2	2017	0%	0%	100%	0	0	0	0	0	0	0
RP-P3	2017	0%	0%	100%	46,245	0	0	0	0	0	46,245
RP-P4	2017	0%	0%	100%	92,491	0	0	0	0	0	92,491
RP-P5	2017	0%	0%	100%	52,852	0	0	0	0	0	52,852
	Subtotal -Operational Improvements				297,292	0	0	0	0	0	297,292
Capacity Improvements											
HM-P1	2017	80%	20%	0%	312,307	0	0	0	0	0	312,307
RM-P2	2018	61%	39%	0%		1,912,741					1,912,741
RM-P3	2017	92%	8%	0%	571,762	0	0	0	0	0	571,762
HL-P1	2019	72%	28%	0%	0	0	608,998	0	0	0	608,998
JT-P1	2018	0%	100%	0%	0	338,391	0	0	0	0	338,391
	Subtotal - Pipeline Capacity Improvements				884,068	2,251,133	608,998	0	0	0	3,744,199
	Subtotal - Pipeline Improvements				1,181,360	2,251,133	608,998	0	0	0	4,041,491
Relief Trunk Improvements											
	2018	25%	75%		0	27,823,301	0	0	0	0	27,823,301
	Subtotal-Joint Trunk Improvements				0	27,823,301	0	0	0	0	27,823,301
Joint Trunk Condition Assessment											
CCTV and Condition Assessment	2017				200,000	0	0	0	0	0	200,000
	Subtotal - Joint Trunk Condition Assessment				200,000	0	0	0	0	0	200,000
Infiltration and Inflow											
I&I Improvements	2017	0%	0%	100%	782,921	0	0	0	0	0	782,921
	Subtotal - Infiltration and Inflow Improvements				782,921	0	0	0	0	0	782,921
Rehabilitation											
Group 1	2018	0%	0%	100%	0	4,100,964	0	0	0	0	4,100,964
Group 2	2019	0%	0%	100%	0	0	1,973,438	0	0	0	1,973,438
Group 3	2019	0%	0%	100%	0	0	613,559	0	0	0	613,559
Group 4	2020	0%	0%	100%	0	0	0	1,533,317	0	0	1,533,317
Group 5	2020	0%	0%	100%	0	0	0	627,615	0	0	627,615
Group 6	2020	0%	0%	100%	0	0	0	1,009,566	0	0	1,009,566
Group 7	2021	0%	0%	100%	0	0	0	0	3,015,794	0	3,015,794
Group 8	2022	0%	0%	100%	0	0	0	0	0	1,103,695	1,103,695
Group 9	2022	0%	0%	100%	0	0	0	0	0	602,771	602,771
	Subtotal - Rehabilitation Improvements				0	4,100,964	2,586,996	3,170,499	3,015,794	1,706,466	14,580,719
Comprehensive Plan Updates											
Sewer System Master Plan Updates	2022				0	0	0	0	0	200,000	200,000
Sewer System Management Plan Updates	2022				0	0	0	0	0	100,000	100,000
Sewer Rate Study Updates	2022				0	0	0	0	0	100,000	100,000
	Subtotal - Comprehensive Plan Updates				0	0	0	0	0	400,000	400,000
On-Going CCTV Sewer System											
	2017-2022				126,270	126,270	126,270	126,270	126,270	126,270	126,270
	Subtotal - On-going CCTV Sewer System				126,270	126,270	126,270	126,270	126,270	126,270	757,620
Currently Planned Projects											
Sewer Plant Expansion (SCRWA) ²	2017-2024	0%	100%	0%	560,000	420,000	420,000	10,500,000	8,400,000	8,400,000	32,700,000
Sewer Plant Maintenance/ Improvements	2017-2021	0%	0%	100%	4,500,000	2,600,000	830,000	750,000	750,000	0	9,430,000
Holiday Lakes Gravity Line Feasibility Study	2018	0%	0%	100%	0	60,000	0	0	0	0	60,000
Lift Station Condition Assessment	2019	0%	0%	100%	0	0	80,000	0	0	0	80,000
Lift Station W Repair and Refurbish	2017-2018	0%	0%	100%	750,000	250,000	0	0	0	0	1,000,000
Inflow and Infiltration Investigation and Cross Connection Elimination	2017-2020	0%	0%	100%	75,000	75,000	75,000	75,000	0	0	300,000
Wastewater Collection System Compliance Inspection	2017-2021	0%	0%	100%	1,000,000	1,000,000	1,100,000	2,300,000	2,300,000	2,300,000	10,000,000
Known Trouble Spots Evaluation and Repair	2018	0%	0%	100%	0	1,000,000	0	0	0	0	1,000,000
	Subtotal - Currently Planned Projects				6,885,000	5,405,000	2,505,000	13,625,000	11,450,000	10,700,000	54,570,000
Total Improvement Costs											
	Fiscal Year Total				\$9,175,552	\$39,706,667	\$5,827,264	\$16,921,769	\$14,592,064	\$12,932,736	\$103,156,052
	Cumulative Total				\$9,175,552	\$48,882,219	\$54,709,483	\$71,631,252	\$86,223,316	\$99,156,052	\$103,156,052

Notes:

1. This short-term and expenditure budget is not set, and is dependent on the City's rate of growth. The City is not bound by this budget and may implement capital improvement projects as funding is available.
2. Currently Planned Project "Sewer Plant Expansion" doesn't include additional costs of 4,000,000 USD in FY 2023 for a total project cost of 32,700,000USD.

Table 8.4 Suggested Expenditure Budget

Sewer System Master Plan

City of Morgan Hill

Project Type	Relief Trunk	Suggested Expenditure Budget ¹			
		General Plan Horizon			
		Near-Term	Intermediate Term	Long-Term	
		2018-2020	2021-2025	2026-2030	2031-2035
Pipeline Capacity	\$27,823,301	\$3,030,098	\$1,836,604	\$1,404,179	\$0
Infiltration and Inflow		\$782,921	\$0	\$0	\$0
Rehabilitation		\$8,848,893	\$5,731,826	\$0	\$0
Joint Trunk Condition Assessment		\$200,000	\$0	\$0	\$0
Comprehensive Plan Updates		\$400,000	\$400,000	\$400,000	\$400,000
CCTV-Sewer System		\$380,160	\$633,600	\$633,600	\$633,600
Currently Planned Projects		\$28,420,000	\$26,150,000	\$0	\$0
Total	\$27,823,301	\$42,062,072	\$34,752,029	\$2,437,779	\$1,033,600
Cumulative Cost	\$27,823,301	\$69,885,373	\$104,637,402	\$107,075,181	\$108,108,781



8/5/2019

Notes:

1. This expenditure budget is suggested, and is dependent on the City's rate of growth. The City is not bound by this budget and may implement capital improvement projects as funding is available.