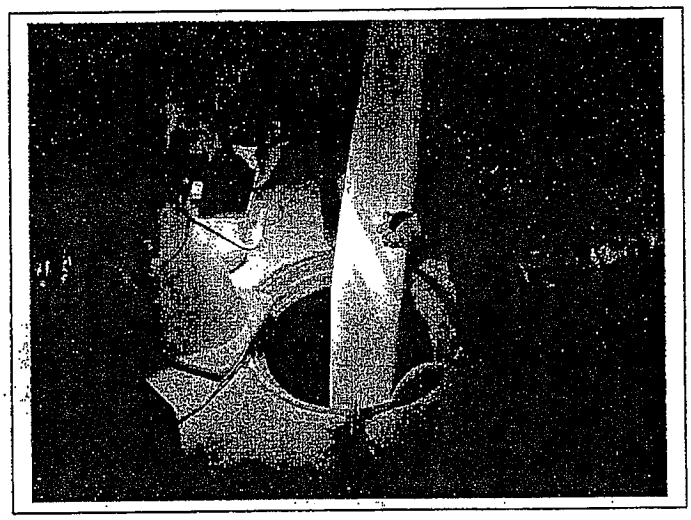
PHASE I
SEWER VIDEO ANALYSIS AND CONDITION ASSESSMENT



PREPARED FOR

CITY OF SOUTH PASADENA

SUBMITTED BY:

DMR Team, Inc.

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INTRODUCTION

As part of the City's effort to identify Citywide sewer system structural defficiencies, Phase I sewer video inspection of a 4 year inspection assessment and repair program has been completed. This report summarizes the results of the review and analysis of the video inspection, as well as the estimated cost of improvements for sewer lines that require attention. Based on the results of the Phases 1 assessment, an estimate of the repair cost is projected for the city's entire system.

RANKING CONSIDERATIONS

The sewer lines that were video inspected have been categorized into four groups of "A", "B", "C", & "D" depending on the condition of the lines within each reach.

Group "A" represents a no deficiency condition and Group "D" represents a high priority repair condition. Factors that were considered in rating a reach included root intrusion, joint separation, cracks and sags, along with the frequency of occurrence and their severity.

Local problems that require spot repair have been evaluated under a separate grouping.

CONDITION ASSESSMENT

The rating of the condition of the sewer mains are tabulated in Table 1. The reaches are identified as referenced in the sewer video inspection from manhole to manhole and in the same sequence.

In cases where there is a local condition that is significantly different that the condition of the main, the reach has been rated without taking the local problem into account. Local problems have been evaluated as a separate category, and prioritized according to the urgency of the required repair (see Table 2).

SEWER MAIN RANKING CLASSIFICATIONS

Group "A" represents sewer mains in optimal pipe condition that did not reflect an issue needing action.

Group "B" represents sewer mains that do not have a structural deficiency. The mains in this group do not require immediate attention, nor is it anticipated that they would need to be repaired within the next 15 years.

Group "C" represents sewer mains that display minor structural deficiencies such as minor cracks, and require attention within the next 10 years.

Group "D" represents sewer mains that exhibit more serious structural deficiencies such as multiple cracks and fractures, and in general need to be repaired within the first 5 years of the program.

SPOT REPAIR RANKING CLASSIFICATIONS

Spot repairs have been categorized as Group I, II, III & IV depending on the severity of the required repair. Group I represents the most severe conditions, and Group IV the least. Spot repair conditions have been classified as follows:

GROUP	DEFICIENCY
I	Fractures, holes, missing pipe
II	Joint displacement, multiple cracks, sags
III	Hair line cracks
IV	Root intrusion at lateral

RECOMMENDED REPAIR AND RECONNAISSANCE PROGRAM

The program is recommended to have 2 distinct components of repair and reconnaissance. A 20 year period is envisioned to complete the first cycle of the program, with major repairs completed in the first 10 years, minor repairs between 11th and 15th year, and re-inspection of mains that are not currently subject to any repair work due to their good condition in the last 5 years.

Considering that Group "D" of the sewer mains and Group "I" of the sewer spot repairs represent the worst conditions in the system, they have been classified as priority 1 in the program,

Sewer mains with Group "C" classification that exhibited minor structural defficiencies, and Group II of the spot repair have been classified as priority 2 in the program.

Group III of the Sewer priority spot repair that deals with less serious and non structural defficiencies has been classified as priority 3.

Video inspection and analysis of sewer mains with conditions "A" & "B", along with the Group IV of the spot repairs have been classified as priority 4.

INFORMATION TABLES

Table "A" shows the condition of the mains sorted alphabetically. Table "B" shows the condition of the spot repairs sorted alphabetically. Table "C" ranks the condition of the mains from worst to best, and Table "D" ranks the condition of the spot repairs from worst to best.

Table "E" identifies the DVD number, location, manhole #s, lengths of repair, number of laterals, condition assessment and implementation phasing order, as well as estimated repair costs.

ESTIMATED PHASE 1 REPAIR COST

The following table reflects the summary of the review of Phases 1 & 2 Sewer Video Inspection, with repair description and respective priority and estimated cost. The repair cost has been estimated based on unit prices of $180/LF for removal and replacement of mains, and $4,000 per each lateral repair.

Priority	Completion Years	Repair Description	Required Cost
1	1-5	Group "D" mains, and Group I of spot repairs	$ 630,000
2	6-10	Group "C" mains, and Group II spot repairs	$1,104,000
3	11-15	Group III spot repairs	$ 346,000
4	16-20	Group "A" & "B" mains and Group IV spot repairs	$ 309,000
TOTAL			**$ 2,389,000**

ESTIMATED REPAIR COSTS FOR THE ENTIRE SEWER SYSTEM

Phase 1 encompasses roughly 25% of the entire City's sewer system.

Assuming that Phase 1 deficiencies and costs are representative of the entire system, a 20 year repair program would require the repair cost as shown below

Priority	Completion Years	Repair Description	Cost
1	1-5	Group "D" mains, and Group I of spot repairs	$2,520,000
2	6-10	Group "C" mains, and Group II spot repairs	$4,416,000
3	11-15	Group III spot repairs	$1,384,000
4	16-20	Group "A" and "B" mains and Group IV spot repairs	$1,236,000
TOTAL			**$9,556,000**

The estimated repair cost shown above will be re-assessed as the results of the remaining phases' video analyses becomes available.

20 YEAR PROGRAM BUDGET

Based on the estimated improvements costs for the entire City's sewer deficiency upgrade and addition of soft costs and video inspection, a total preliminary annual budget of $760,000 would be required:

REQUIRED WORK DESCRIPTION	COST
Estimated Construction Cost	$ 9,560,000
Soft Cost (design, inspection, CM)	$ 2,500,000
Video Inspection	$ 400,000
Sub Total	$ 12,460,000
10% Contingency	$ 1,240,000
Total Cost	**$13,706,000 over a 20 year period**
	$685,000 annually

TABLE A
PHASE I
SEWER MAIN CONDITION (ALPHABETICAL ORDER OF STREET NAME)

Location	Limits	Condition	DVD No.
Avon Place	Mission - Oakley	B *	2
Bank Street	Fremont - Fair Oaks	B *	8
Bank Street	Marengo - Fair Oaks	B *	4
Bank Street Easement	Fremont - Diamond	B *	8
Beech Street	Fremont - Mid Pt.	B *	7
Brent Avenue	Grevelia - Monterey Road	A *	1
Brent Avenue	Grevelia - Viola	B	8
Brent Avenue	Hope - Monterey	B *	3
Brent Avenue	Monterey - Oxley	A *	5
Crestlake	Entire Roadway	A	7
Diamond Avenue	Bank - Oak	B *	3
Diamond Avenue	Monterey - Bank	B *	8
Diamond Avenue	Oak - Pine	B *	5
Donaldo Circle	Entire Roadway	B *	8
Easement	Fremont - Empress	A	7
Edison Lane	Mission - Oxley	B *	5
Edison Lane	Oxley - Monterey	B *	6
Edison Lane	Oxley - Monterey		7
El Centro	Fairview - Fremont	A *	4
El Centro Street	Fair Oaks - Fremont	A	6
Elm Park	Entire Roadway	C	4
Empress Avenue	Entire Roadway	C	4
Fair Oaks Avenue	E. Side, Lyndon - Bank	B *	6
Fair Oaks Avenue	Freeway - Mission	A	5
Fair Oaks Avenue	Lyndon - Rollin	A *	8
Fair Oaks Avenue	Oak Street - Alhambra Road	B *	7
Fair Oaks Avenue	Oak Street - Huntington	A	6
Fair Oaks Avenue	Rollin - Oak Street	B *	8
Fairview Avenue	El Centro - Monterey	B *	3
Fairview Avenue	Freeway - Mission	B	2
Fairview Avenue	Mission - El Centro	A	4
Fremont Alley	Fremont - midway	B *	6
Fremont Alley	Mid Pt - Maple Street	A	7
Fremont Avenue	Beach - Alhambra	B *	8
Fremont Avenue	Beach - Maple	A	7
Fremont Avenue	Huntington - Maple Street	A *	6
Fremont Avenue	Magnolia - Mission	B *	2
Fremont Avenue	Mission - Oxley	B *	6
Fremont Avenue	Monterey - Bank Street	A	8
Fremont Avenue	Oxley - Monterey	B *	7
Fremont Avenue	Rollin - Spruce	C *	4
Garfield Avenue	Freeway - Stratford	A	8
Grevelia Street	Fairview - Mound	A	8

* Denotes spot repair required

TABLE A
PHASE I
SEWER MAIN CONDITION (ALPHABETICAL ORDER OF STREET NAME)

Location	Limits	Condition	DVD No.
Hermosa Place	Cul de Sac - Grand	B *	C.O. 2
Highland Street	Meriden - Fairview	B	C.O. 2
Hope Circle	Entire Roadway	A	8
Hope Street	Fair Oaks - Park Avenue	A *	1
Hope Street	Meridian - Fair Oaks	A *	2
Huntington Drive	E. Side, Maple - Alhambra Road	B *	7
Huntington Drive	N Side - Fair Oaks - Marengo	B *	8
Huntington Drive	N. Side - Fremont - Fair Oaks	C	6
Huntington Drive	Ramona - Fremont	B *	5
Huntington Drive	S. Side Fremont - Fair Oaks	B *	7
Huntington Drive	S. Side Fremont - Marengo	B *	7
Huntington Drive	Westside - Pine Street - Alhambra Road	B *	7
Laurel Street	Marengo Avenue to Fair Oaks	B*	6
Lyndon Alley	Diamond - Fremont	A	5
Lyndon Alley	Lyndon Street - Monterey	A	3
Lyndon Street	Fremont - Fair Oaks	B *	8
Lyndon Street	Fair Oaks - Marengo	B *	6
Magnolia Street	Fairview - Freemont	A *	1
Magnolia Street	Mound - Meridian	A *	2
Marengo Avenue	Bank - Huntington	D	5
Marengo Avenue	Mission - Monterey	D	3
Marengo Avenue	Spruce -Huntington	B *	8
Meridian Avenue	Freeway - Mission	C	1
Meridian Avenue	Oak - Maple	C	C.O. 2
Milan Avenue	Garfield - Mission	B	1
Milan Avenue	Mission - Oxley	B	3
Mill Road	Garfield - End	B	1
Mission Alley	Hope - Mission	B	8
Mission Street	Brent - Mound	A	3
Mission Street	Brent - Park	B	8
Mission Street	Fair Oaks - Alley W. of Fair Oaks	B	8
Mission Street	Fair Oaks - Ramona	A	4
Mission Street	Meridian - Fair Oaks	B *	2
Mission Street	Milan -Stratford	A	2
Monterey Road	Fair Oaks - Marengo	B *	5
Monterey Road	Fairview - Fair Oaks	B *	3
Monterey Road	Milan - Marengo	B *	2
Monterey Road	Milan Avenue - Easement	B *	8
Monterey Road	W. Alley - Fair Oaks	B *	7
Monterey West	Meridian - Indian	B *	C.O. 2
Monterey West	Orange Grove - Pasadena	B *	C.O. 2

* Denotes spot repair required

TABLE A
PHASE I
SEWER MAIN CONDITION (ALPHABETICAL ORDER OF STREET NAME)

Location	Limits	Condition	DVD No.
Mound Alley	Oxley - Monterey	B	7
Mound Avenue	Freeway - Mission	A *	2
Mound Avenue	Hope - Mission	B *	8
Oak Street	Across Fair Oaks	B *	8
Oak Street	Diamond Avenue N and S	B *	5
Oak Street	Fremont - Fair Oaks	B *	6
Oak Street	Marengo - Fair Oaks	B *	4
Oneonta Knoll	Entire Roadway	D	4
Oxley Street	Brent - Marengo	B	1
Oxley Street	Diamond Ave - Mound Ave	B *	3
Oxley Street	Stratford - Milan	B *	3
Park Avenue	Garfield - Hope	D	1
Park Avenue	Hope - Oxley	C *	1
Pasadena Avenue	Hawthorne - Sycamore	B	C.O. 2
Pine Street	Meriden - Ramona	B *	5
Pinecrest Drive	Entire Roadway	B *	C.O. 2
Ramona Avenue	Rollin - Huntington	C	4
Raymond Lane	Monterey - Mission	C *	4
Rollin Street	Fremont - Fair Oaks	C *	6
Rollin Street	Marengo - Fair Oaks	B *	3
Spruce Street	Fremont to Fair Oaks	B*	6
Spruce Street	Ramona - Fremont	B	5
Spruce Street	Rollin - West	C	4
State Street	Easterly Part - Across Fair Oaks	A	C.O.1
State Street Easement	Fair Oaks - Fremont	D	C.O.1
Stratford Avenue	Grevelia - Mission	A *	1
Stratford Avenue	Mission - Monterey	C	2
Virginia Place	Mission - Monterey	A	3
Windsor Place	Oxley - Monterey	B *	7

* Denotes spot repair required

TABLE B
SPOT REPAIR CONDITION (ALPHABETICAL ORDER OF STREET NAME)

LOCATION	MANHOLE NOS.	PRIORITY	DVD NO.
Bank Street	12G-89C	II	8
Bank Street	12G-89C	IV	8
Bank Street	51C-53C	II	4
Bank Street	51D-51C	1	4
Bank Street	89C-47C	I	8
Bank Street Easement	84F-89A	I	8
Bank Street Easement	89B-12G	II	8
Beech Street	39D-141G	III	7
Beech Street	39D-141G	IV	7
Brent Avenue	13A-52H	III	5
Brent Avenue	52E-52F	II	3
Brent Avenue	52F-52D	III	3
Brent Avenue	52F-52G	II	3
Brent Avenue	52G-52H	III	3
Diamond Avenue	84D-84E	II	8
Diamond Avenue	84E-84F	II	8
Diamond Avenue	85B-85A	II	3
Diamond Avenue	85D-85C	II	3
Diamond Avenue	85D-85C	IV	3
Diamond Avenue	85D-85E	III	3
Diamond Avenue	85D-85E	IV	3
Diamond Avenue	85E-85F	III	5
Diamond Avenue	85E-85F	IV	5
Diamond Avenue	85F-95B	II	5
Diamond Avenue	85F-95B	IV	5
Donaldo Circle	13C-134F	IV	8
Edison Lane	76F-78A	III	5
Edison Lane	78B-86E	I	5
El Centro Street	85D-85C	II	4
Fair Oaks Avenue	29A-29B	I	5
Fair Oaks Avenue	45B-45A	II	5
Fair Oaks Avenue	45B-45C	II	5
Fair Oaks Avenue	45D-45E	III	7
Fair Oaks Avenue	46C-29A	I	5
Fair Oaks Avenue	47A-47B	II	7
Fair Oaks Avenue	47B-47C	III	8
Fair Oaks Avenue	47C-47D	II	8
Fair Oaks Avenue	47D-92C	IV	8
Fair Oaks Avenue	48C-48D	I	7
Fair Oaks Avenue	48C-48D	II	5
Fair Oaks Avenue	48C-48D	IV	7
Fairview Avenue	69C-64B	III	2
Fairview Avenue	83D-65B	II	3
Fairview Avenue	83D-65B	IV	3
Fairview Avenue	86A-65C	II	3
Freemont Avenue Alley	39C-39D	II	6
Fremont Avenue	39C-39D	III	6
Fremont Avenue	39F-39G	IV	8
Fremont Avenue	39G-39H	II	8
Fremont Avenue	59F-59G	IV	2
Fremont Avenue	62B-62A	II	4

TABLE B
SPOT REPAIR CONDITION (ALPHABETICAL ORDER OF STREET NAME)

LOCATION	MANHOLE NOS.	PRIORITY	DVD NO.
Fremont Avenue	62C-62B	II	4
Fremont Avenue	62C-62D	II	4
Fremont Avenue	62D-62E	I	7
Fremont Avenue	62D-62E	IV	7
Fremont Avenue	63D-60B	IV	5
Fremont Avenue	69C-76D	I	2
Fremont Avenue	86C-60C	I	7
Grevelia Street	144B-144C	III	1
Grevelia Street	59H-67B	IV	8
Grevelia Street	71D-67A	III	1
Hardison Place	133B-133A	II	8
Hermosa Place	115A-115B	III	C.O.2
Hermosa Place	115C-115C	II	C.O.2
Hermosa Place	149B-115A	III	C.O.2
Hermosa Place	149B-149A	II	C.O.2
Hope Street	55C-55D		1
Hope Street	69B-69A	II	2
Hope Street	69C-59G	II	2
Huntington Drive	29B-62E	I	6
Huntington Drive	29D-29C	II	7
Huntington Drive	29D-29C	IV	7
Huntington Drive	29D-39A	II	7
Huntington Drive	29F-29E	II	7
Huntington Drive	29F-31A	I	7
Huntington Drive	29H-29J	II	8
Huntington Drive	29H-29J	IV	8
Huntington Drive	29J-32C	II	8
Huntington Drive	30B-30A	II	7
Huntington Drive	30B-30A	IV	7
Huntington Drive	30C-30B	I	7
Huntington Drive	30C-30D	III	7
Huntington Drive	30D-30E	II	7
Huntington Drive	30J-30H	I	7
Huntington Drive	30J-30K	I	7
Huntington Drive	30J-30K	IV	7
Huntington Drive	30K-30L	I	7
Huntington Drive	95C-95D	II	5
Huntington Drive	95C-95D	IV	5
Laurel Street	46E-46D	II	5
Laurel Street	46E-46D	IV	5
Laurel Street	49A-49B	IV	6
Laurel Street	49B-32A	II	6
Lyndon Street	47B-88C	II	8
Lyndon Street	47B-88C	IV	8
Lyndon Street	51A-51B	IV	5
Magnolia Street	57G-70A	I	2
Magnolia Street	68B-59F	II	1
Marengo Avenue	32C-32B	IV	8
Marengo Avenue	33A-13E	IV	5
Marengo Avenue	33B-33A	III	5
Marengo Avenue	33B-33A	IV	5

TABLE B
SPOT REPAIR CONDITION (ALPHABETICAL ORDER OF STREET NAME)

LOCATION	MANHOLE NOS.	PRIORITY	DVD NO.
Marengo Avenue	33C-33D	II	5
Marengo Avenue	33C-33D	IV	5
Marengo Avenue	33E-33C	I	5
Marengo Avenue	34B-34C	II	3
Marengo Avenue	34C-13D	I	3
Marengo Avenue	35D-50C	I	5
Marengo Avenue	35D-50C	IV	5
Marengo Avenue	50C-32A	II	5
Marengo Avenue	50C-32A	IV	5
Milan Avenue	11D-9B	IV	3
Milan Avenue	1C-7C	III	2
Mission Street	52E-54C	I	3
Mission Street	54E-54D	IV	8
Mission Street	76B-76A	I	2
Mission Street	76D-76E	III	2
Monterey Road	136-13F	II	2
Monterey Road	136-14E	IV	2
Monterey Road	13A-13B	IV	5
Monterey Road	13C-13D	I	5
Monterey Road	13C-13D	IV	5
Monterey Road	13G-13H	IV	8
Monterey Road	86A-86B	II	3
Monterey Road	86B-86C	II	3
Monterey Road	86C-86D	II	3
Monterey Road	86D-86E	II	3
Monterey Road	86E-47A	III	7
Monterey Road East	12B-12C	III	C.O.2
Monterey Road East	12C-12D	I	C.O.2
Monterey Road West	105B-131A	I	C.O.2
Monterey Road West	105C-105D	I	C.O.2
Monterey Road West	105E-105F	II	C.O.2
Monterey Road West	87B-166G	I	C.O.2
Monterey Road West	87E-84C	I	C.O.2
Monterey Road West	97E-87A	II	C.O.2
Mound Alley	86D-79B	IV	7
Mound Avenue	57G-57F	III	2
Mound Avenue	57G-57H	I	2
Mound Avenue	57H-76E	I	8
Oak Street	50B-50A	II	4
Oak Street	50B-50A	IV	4
Oak Street	50B-50C	III	4
Oak Street	85E-92E	IV	5
Oak Street	92B-92A	IV	6
Oak Street	92B-92C	II	6
Oak Street	92C-45C	II	8
Oxley Street	11E-10A	III	3
Oxley Street	83B-83C	IV	3
Oxley Street	83C-83D	II	3
Oxley Street	83D-78B	II	3
Park Avenue	55C-11G	II	1
Park Avenue	55D-55E	II	1

TABLE B
SPOT REPAIR CONDITION (ALPHABETICAL ORDER OF STREET NAME)

LOCATION	MANHOLE NOS.	PRIORITY	DVD NO.
Pasadena Avenue	132D-132E	II	C.O.2
Pasadena Avenue	132E-132F	I	C.O.2
Pasadena Avenue	132F-118K	I	C.O.2
Pasadena Avenue	132F-132G	I	C.O.2
Pasadena Avenue	132G-132D	I	C.O.2
Pinecrest Drive	120A-121A	1	C.O.2
Pinecrest Drive	120A-121D	I	C.O.2
Rollin Street	50E-35D	II	3
Rollin Street	50E-35D	IV	3
Rollin Street	85B-90C	II	3
Rollin Street	85B-90C	II	3
Rollin Street	90B-47D	II	6
Rollin Street	90B-47D	IV	6
Rollin Street	90B-90A	I	6
Spruce Street	32B-49D	II	6
Stratford Avenue	10A-13F	II	2
Stratford Avenue	6C-6D	II	1
Stratford Avenue	6D-6E	III	1
Stratford Avenue	6E-7B	I	1
Stratford Avenue	7A-10A	II	2
Windsor Place	86B-79A	II	7

TABLE C
PHASE I
SEWER MAIN CONDITION (WORST TO BEST)

Location	Limits	Condition
Marengo Avenue	Bank - Huntington	D
Marengo Avenue	Mission - Monterey	D
Oneonta Knoll	Entire Roadway	D
Park Avenue	Garfield - Hope	D
State Street Easement	Fair Oaks - Fremont	D
Fremont Avenue	Rollin - Spruce	C *
Elm Park Avenue	Entire Roadway	C
Empress Avenue	Entire Roadway	C
Huntington Drive	N. Side - Fremont - Fair Oaks	C
Meridian Avenue	Freeway - Mission	C
Meridian Avenue	Oak - Maple	C
Park Avenue	Hope - Oxley	C *
Ramona Avenue	Rollin - Huntington	C
Raymond Lane	Monterey - Mission	C *
Rollin Street	Fremont - Fair Oaks	C *
Spruce Street	Rollin - West	C
Stratford Avenue	Mission - Monterey	C
Avon Place	Mission - Oakley	B *
Bank Street	Fremont - Fair Oaks	B *
Bank Street	Marengo - Fair Oaks	B *
Bank Street Easement	Fremont - Diamond	B *
Beech Street	Fremont - Mid Pt.	B *
Brent Avenue	Hope - Monterey	B *
Brent Avenue	Grevelia - Viola	B
Diamond Avenue	Bank - Oak	B *
Diamond Avenue	Monterey - Bank	B *
Diamond Avenue	Oak - Pine	B *
Donaldo Circle	Entire Roadway	B *
Edison Lane	Oxley - Monterey	B*
Edison Lane	Mission - Oxley	B *
Edison Lane	Oxley - Monterey	B *
Fair Oaks Avenue	E. Side, Lyndon - Bank	B *
Fair Oaks Avenue	Oak Street - Alhambra Road	B *
Fair Oaks Avenue	Rollin - Oak Street	B *
Fairview Avenue	El Centro - Monterey	B *
Fairview Avenue	Freeway - Mission	B
Fremont Alley	Fremont - midway	B *
Fremont Avenue	Beach - Alhambra	B *
Fremont Avenue	Magnolia - Mission	B *
Fremont Avenue	Mission - Oxley	B *
Fremont Avenue	Oxley - Monterey	B *
Hermosa Place	Cul de Sac - Grand	B *
Highland Avenue	Meridian - Fairview	B

* Denotes spot repair required

TABLE C
PHASE I
SEWER MAIN CONDITION (WORST TO BEST)

Location	Limits	Condition
Huntington Drive	E. Side, Maple - Alhambra Road	B *
Huntington Drive	N Side - Fair Oaks - Marengo	B *
Huntington Drive	Ramona - Fremont	B *
Huntington Drive	S. Side Fremont - Fair Oaks	B *
Huntington Drive	S. Side Fremont - Marengo	B *
Huntington Drive	Westside - Pine Street - Alhambra Road	B *
Laurel Street	Marengo Avenue - Fair Oaks	B*
Lyndon Street	Fremont - Fair Oaks	B *
Lyndon Street	Fair Oaks - Marengo	B *
Marengo Avenue	Spruce -Huntington	B *
Milan Avenue	Garfield - Mission	B
Milan Avenue	Mission - Oxley	B
Mill Road	Garfield - End	B
Mission Alley	Hope - Mission	B
Mission Street	Meridian - Fair Oaks	B *
Mission Street	Brent - Park	B
Mission Street	Fair Oaks - Alley W. of Fair Oaks	B
Monterey Road	Fair Oaks - Marengo	B *
Monterey Road	Fairview - Fair Oaks	B *
Monterey Road	Milan - Marengo	B *
Monterey Road	Milan Avenue - Easement	B *
Monterey Road	W. Alley - Fair Oaks	B *
Monterey Road West	Meridian - Indian	B *
Monterey Road West	Orange Grove - Pasadena	B *
Mound Alley	Oxley - Monterey	B
Mound Avenue	Hope - Mission	B *
Oak Street	Across Fair Oaks	B *
Oak Street	Diamond	B *
Oak Street	Fremont - Fair Oaks	B *
Oak Street	Marengo - Fair Oaks	B *
Oxley Street	Diamond Ave - Mound Ave	B *
Oxley Street	Stratford - Milan	B *
Oxley Street *	Brent - Marengo	B
Pasadena Avenue	Hawthorne - Sycamore	B
Pine Street	Meridian - Ramona	B *
Pinecrest Drive	Entire Roadway	B *
Rollin Street	Marengo - Fair Oaks	B *
Spruce Street	Fremont - Fair Oaks	B*
Spruce Street	Ramona - Fremont	B
Windsor Place	Oxley - Monterey	B *
Brent Avenue	Grevelia - Monterey Road	A *

* Denotes spot repair required

TABLE C
PHASE I
SEWER MAIN CONDITION (WORST TO BEST)

Location	Limits	Condition
Brent Avenue	Monterey - Northerly Terminus	A *
Crestlake Avenue	Entire Roadway	A
Easement	Fremont - Empress	A
El Centro Street	Fairview - Fremont	A *
El Centro Street	Fair Oaks - Fremont	A
Fair Oaks Avenue	Lyndon - Rollin	A *
Fair Oaks Avenue	Freeway - Mission	A
Fair Oaks Avenue	Oak Street - Huntington	A
Fairview Avenue	Mission - El Centro	A
Fremont Alley	Mid Pt - Maple Street	A
Fremont Avenue	Huntington - Maple Street	A *
Fremont Avenue	Beach - Maple	A
Fremont Avenue	Monterey - Bank Street	A
Garfield Street	Freeway - Stratford	A
Grevelia Street	Fairview - Mound	A
Hope Circle	Entire Roadway	A
Hope Street	Fair Oaks - Park Avenue	A *
Hope Street	Meridian - Fair Oaks	A *
Lyndon Alley	Diamond - Fremont	A
Lyndon Alley	Lyndon - Monterey	A
Magnolia Street	Fairview - Freemont	A *
Magnolia Street	Mound - Meridian	A *
Mission Street	Brent - Mound	A
Mission Street	Fair Oaks - Ramona	A
Mission Street	Milan -Stratford	A
Mound Avenue	Freeway - Mission	A *
State Street	Easterly Part - Across Fair Oaks	A
Stratford Avenue	Grevelia - Mission	A *
Virginia Place	Mission - Monterey	A

* Denotes spot repair required

TABLE D
PHASE I
SPOT REPAIR CONDITION (WORST TO BEST)

LOCATION	MANHOLE NOS.	PRIORITY
Bank Street	51D-51C	I
Bank Street	89C-47C	I
Bank Street Easement	84F-89A	I
Edison Lane	78B-86E	I
Fair Oaks Avenue	29A-29B	I
Fair Oaks Avenue	46C-29A	I
Fair Oaks Avenue	48C-48D	I
Fremont Avenue	62D-62E	I
Fremont Avenue	69C-76D	I
Fremont Avenue	86C-60C	I
Huntington Drive	29B-62E	I
Huntington Drive	29F-31A	I
Huntington Drive	30C-30B	I
Huntington Drive	30J-30H	I
Huntington Drive	30J-30K	I
Huntington Drive	30K-30L	I
Magnolia Street	57G-70A	I
Marengo Avenue	33E-33C	I
Marengo Avenue	34C-13D	I
Marengo Avenue	35D-50C	I
Mission Street	52E-54C	I
Mission Street	76B-76A	I
Monterey Road	13C-13D	I
Monterey Road East	12C-12D	I
Monterey Road West	105B-131A	I
Monterey Road West	105C-105D	I
Monterey Road West	87B-166G	I
Monterey Road West	87E-84C	I
Mound Avenue	57G-57H	I
Mound Avenue	57H-76E	I
Pasadena Avenue	132E-132F	I
Pasadena Avenue	132F-118K	I
Pasadena Avenue	132F-132G	I
Pasadena Avenue	132G-132D	I
Pinecrest Drive	120A-121A	I
Pinecrest Drive	120A-121D	I
Rollin Street	90B-90A	I
Stratford Avenue	6E-7B	I
Bank Street	12G-89C	II
Bank Street	51C-53C	II
Bank Street Easement	89B-12G	II
Brent Avenue	52E-52F	II
Brent Avenue	52F-52G	II
Diamond Avenue	84D-84E	II
Diamond Avenue	84E-84F	II
Diamond Avenue	85B-85A	II
Diamond Avenue	85D-85C	II
Diamond Avenue	85F-95B	II
El Centro Street		II
Fair Oaks Avenue	45B-45A	II

TABLE D
PHASE I
SPOT REPAIR CONDITION (WORST TO BEST)

LOCATION	MANHOLE NOS.	PRIORITY
Fair Oaks Avenue	45B-45C	II
Fair Oaks Avenue	47A-47B	II
Fair Oaks Avenue	47C-47D	II
Fair Oaks Avenue	48C-48D	II
Fairview Avenue	83D-65B	II
Fairview Avenue	86A-65C	II
Fremont Alley		II
Fremont Avenue	39G-39H	II
Fremont Avenue	62B-62A	II
Fremont Avenue	62C-62B	II
Fremont Avenue	62C-62D	II
Hardison Place	133B-133A	II
Hermosa Place	115C-115C	II
Hermosa Place	149B-149A	II
Hope Street	69B-69A	II
Hope Street	69C-59G	II
Huntington Drive	29D29C	II
Huntington Drive	29D-39A	II
Huntington Drive	29F-29E	II
Huntington Drive	29H-29J	II
Huntington Drive	29J-32C	II
Huntington Drive	30B-30A	II
Huntington Drive	30D-30E	II
Huntington Drive	95C-95D	II
Laurel Street	46E-46D	II
Laurel Street	49B-32A	II
Lyndon Street	47B-88C	II
Marengo Avenue	33C-33D	II
Marengo Avenue	34B-34C	II
Marengo Avenue	50C-32A	II
Monterey Road	136-13F	II
Monterey Road	86A-86B	II
Monterey Road	86B-86C	II
Monterey Road	86C-86D	II
Monterey Road	86D-86E	II
Monterey Road West	105E-105F	II
Monterey Road West	97E-87A	II
Oak Street	50B-50A	II
Oak Street	92B-92C	II
Oak Street	92C-45C	II
Oxley Street	83C-83D	II
Oxley Street	83D-78B	II
Park Avenue	55C-11G	II
Park Avenue	55D-55E	II
Pasadena Avenue	132D-132E	II
Rollin Street	50E-35D	II
Rollin Street	85B-90C	II
Rollin Street	85B-90C	II
Rollin Street	90B-47D	II
Spruce Street	32B-49D	II

TABLE D
PHASE I
SPOT REPAIR CONDITION (WORST TO BEST)

LOCATION	MANHOLE NOS.	PRIORITY
Stratford Avenue	10A-13F	II
Stratford Avenue	68B-59F	II
Stratford Avenue	6C-6D	II
Stratford Avenue	7A-10A	II
Windsor Place	86B-79A	II
Beech Street	39D-141G	III
Brent Avenue	13A-52H	III
Brent Avenue	52F-52D	III
Brent Avenue	52G-52H	III
Diamond Avenue	85D-85E	III
Diamond Avenue	85E-85F	III
Edison Lane	76F-78A	III
Fair Oaks Avenue	45D45E	III
Fair Oaks Avenue	47B-47C	III
Fairview Avenue	69C-64B	III
Fremont Avenue	39C-39D	III
Grevelia Street	144B-144C	III
Grevelia Street	71D-67A	III
Hermosa Place	115A-115B	III
Hermosa Place	149B-115A	III
Huntington Drive	30C-30D	III
Marengo Avenue	33B-33A	III
Milan Avenue	1C-7C	III
Mission Street	76D-76E	III
Monterey Road	86E-47A	III
Monterey Road East	12B-12C	III
Mound Avenue	57G-57F	III
Oak Street	50B-50C	III
Oxley Street	11E-10A	III
Stratford Avenue	6D-6E	III
Bank Street	12G-89C	IV
Beech Street	39D-141G	IV
Diamond Avene	85D-85E	IV
Diamond Avenue	85D-85C	IV
Diamond Avenue	85E-85F	IV
Diamond Avenue	85F-95B	IV
Donaldo Circle	13C-134F	IV
Fair Oaks Avenue	47D-92C	IV
Fair Oaks Avenue	48C-48D	IV
Fairview Avenue	83D-65B	IV
Fremont Avenue	39F-39G	IV
Fremont Avenue	59F-59G	IV
Fremont Avenue	62D-62E	IV
Fremont Avenue	63D-60B	IV
Grevelia Street	59H-67B	IV
Hope Street	55C-55D	IV
Huntington Drive	29D29C	IV
Huntington Drive	29H-29J	IV
Huntington Drive	30B-30A	IV
Huntington Drive	30J-30K	IV

TABLE D
PHASE I
SPOT REPAIR CONDITION (WORST TO BEST)

LOCATION	MANHOLE NOS.	PRIORITY
Huntington Drive	95C-95D	IV
Laurel Street	46E-46D	IV
Laurel Street	49A-49B	IV
Lyndon Street	47B-88C	IV
Lyndon Street	51A-51B	IV
Marengo Avenue	32C-32B	IV
Marengo Avenue	33A-13E	IV
Marengo Avenue	33B-33A	IV
Marengo Avenue	33C-33D	IV
Marengo Avenue	35D-50C	IV
Marengo Avenue	50C-32A	IV
Milan Avenue	11D-9B	IV
Mission Street	54E-54D	IV
Monterey Road	136-14E	IV
Monterey Road	13A-13B	IV
Monterey Road	13C-13D	IV
Monterey Road	13G-13H	IV
Mound Alley	86D-79B	IV
Oak Street	50B-50A	IV
Oak Street	85E-92E	IV
Oak Street	92B-92A	IV
Oxley Street	83B-83C	IV
Rollin Street	50E-35D	IV
Rollin Street	90B-47D	IV

TABLE E
PHASE I
ESTIMATED COST OF SEWER REPAIRS

					REPAIR COST IN THOUSANDS			
DVD NO.	LOCATION	MANHOLE NOS.	R&R PIPE (FT.)	REPAIR LATERAL (EA)	PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY 4
1	Grevelia	144B-144C	75				17	
		71D-67A						
	Park Avenue	55D-55E	75			17		
		55C-11G						
	Stratford Avenue	6C-6D	25			6		
		6D-6E	25				6	
		6E-7B	75		17			
	Magnolia Street	68B-59F	25			6		
	Meridian Avenue	71D-71C	125				34	
		71C-71B						
		71B-71A						
2	Milan Avenue	1C-7C	75				17	
	Stratford Avenue	7A-10A	125			26		
		10A-13F	150			34		
	Mission Street	76B-76A	25		6			
		76D-76E	25				6	
	Mound Avenue	57G-57F		1				4
		57G-57H	75		17			
	Magnolia Street	57G-70A	50		12			
	Hope Street	69B-69A	50			12		
		69C-59G						
	Fairview	69C-64B	25				6	
	Fremont	69C-76D	100		23			
		59F-59G		1				4
	Monterey Road	136-13F	75			17		
		136-14E		1				4
3	Oxley Street	11E-10A	25				6	
		83B-83C		1				4
	Milan Avenue	11D-9B		4				16
	Brent Avenue	52E-52F	25			6		
		52F-52G	25			6		
		52G-52H	50				12	
		52F-52D	50				12	

TABLE E
PHASE I
ESTIMATED COST OF SEWER REPAIRS

					REPAIR COST IN THOUSANDS			
DVD NO.	LOCATION	MANHOLE NOS.	R&R PIPE (FT.)	REPAIR LATERAL (EA)	PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY 4
3	Meridian Avenue	71B-71A	25				6	
			3					12
	Marengo	34B-34C	25				6	
		34C-13D	25		6			
	Mission Street	52E-54C	25		6			
	Rollin Street	50E-35D	75			17		
				1				4
	Oxley Street	83C-83D	50			11		
		83D-78B	25			6		
	Fairview Avenue	83D-65B	25		6			
				2				8
	Monterey Road	86A-86B	50			12		
		86B-86C	25			6		
		86C-86D	75			17		
		86D-86E	100			23		
	Fairview Avenue	86A-65C	25			6		
	Diamond Avenue	85B-85A	25			6		
		85D-85E	50				12	
				4				16
	Rollin Street	85B-90C	25			6		
				1				4
	Diamond Avenue	85D-85C		4				16
4	El Centro Street		50			12		
	Bank Street	51D-51C	75		17			
		51C-53C	100			23		
	Oak Street	50B-50A	25		6			
				2				8
		50B-50C	75				17	
	Fremont Avenue	62C-62B	50			12		
		62B-62A	50			12		
		62C-62D	100			23		
	Raymond Lane	53A-53B	850			85*		
		53B-53C						

TABLE E
PHASE I
ESTIMATED COST OF SEWER REPAIRS

					REPAIR COST IN THOUSANDS			
DVD NO.	LOCATION	MANHOLE NOS.	R&R PIPE (FT.)	REPAIR LATERAL (EA)	PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY 4
4	Ramona Avenue	93C-93D	580			58*		
	Spruce Street	93D-94A	280			28*		
	Elm Park	148A-148B	530			53*		
		148B-39F						
	Empress Avenue	148C-148D	650			65*		
		148D-148E						
	Oneonta Knoll	141D-39C	170		38			
5	Diamond Avenue	85E-85F	25				6	
				1				4
		85F-95B	25			6		
				5				20
	Oak Street	85E-92E		1				4
	Marengo	33C-33D	50			12		
				3				12
		35D-50C	50		12			
				1				4
		50C-32A	50			12		
				1				4
		33E-33C	50		12			
		33B-33A	25				6	
				2				8
		33A-13E		1				4
	Edison Lane	76F-78A	25				6	
	Monterey Road	13A-13B		2				8
		13C-13D	75		17			
				1				4
	Brent Avenue	13A-52H	25				6	
	Huntington Drive	95C-95D	75			17		
				1				4
	Fair Oaks Avenue	48C-48D	100			23		
	Laurel Street	46E-46D	25			6		
				1				4
	Lyndon Street	51A-51B		4				16

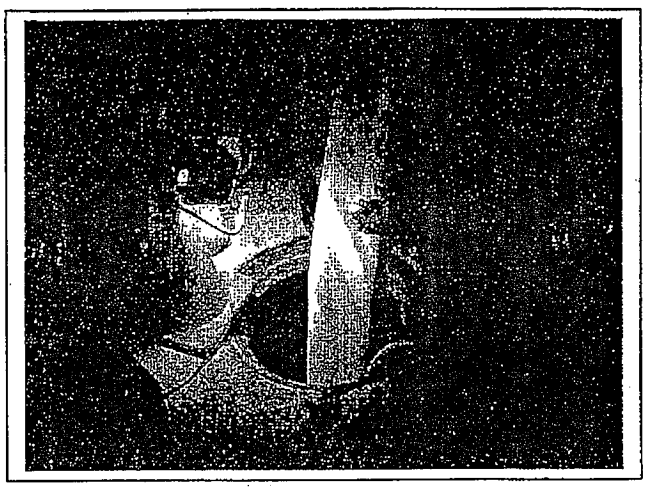
TABLE E
PHASE I
ESTIMATED COST OF SEWER REPAIRS

					REPAIR COST IN THOUSANDS			
DVD NO.	LOCATION	MANHOLE NOS.	R&R PIPE (FT.)	REPAIR LATERAL (EA)	PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY 4
5	Fremont Avenue	63D-60B		1				4
	Edison Lane	78B-86E	75		17			
	Fair Oaks Avenue	46C-29A	125		28			
	Fair Oaks Avenue	29A-29B	50		11			
		45B-45C	50			12		
		45B-45A	25			6		
6	Huntington Drive	29B-62E	150		34			
	Laurel Street	49B-32A	25			6		
		49A-49B		4				16
	Huntington Drive	29B-62E	500			50*		
	Rollin Street	90B-90A	75		17			
7	Beech Street	39D-141G	50				12	
				6				24
8	Fair Oaks Avenue	47B-47C	25				6	
		47C-47D	50			12		
	Fremont Avenue	39F-39G	25				6	
				1				4
		39G-39H	100			23		
CO2	Mound Avenue	57H-76E	100		23			
	Mission Street	54E-54D		1				4
	Bank Street	12G-89C	50			12		
				1				4
		89C-47C	125		28			
				1				4
	Huntington Drive	29J-32C	75			17		
	Marengo Avenue	32C-32B		3				17
	Huntington Drive	29H-29J	75			17		
				2				8
	Fair Oaks Avenue	47D-92C		1				4
	Oak Street	92C-45C	25			6		
	Bank Street Easem	84F-89A	75		17			
		89B-12G	50			12		
	Diamond Avenue	84D-84E	25			6		
		84E-84F	100			23		

TABLE E
PHASE I
ESTIMATED COST OF SEWER REPAIRS

					REPAIR COST IN THOUSANDS			
DVD NO.	LOCATION	MANHOLE NOS.	R&R PIPE (FT.)	REPAIR LATERAL (EA)	PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY 4
CO2	Grevelia Street	59H-67B		1				4
	Lyndon Street	47B-88C	25			6		
				1				4
	Donaldo Circle	13C-134F		2				8
	Monterey Road	13G-13H		2				8
	Hardison Place	133B-133A	125			28		
	Meridian Avenue	127M-75B	820			82*		
		75B-75C						
		75C-75D						
		74E-127M						
	Hermosa Place	149 B-149A	25			6		
			270				61	
		149B-115A	90				20	
		115A-115B	240				54	
		115B-115C	230			52		
	Pinecrest	120A-121D	50		12			
		120A-121A	480					
	Monterey West	105B-131A	75		17			
		105C-105D	25		6			
		105E-105F	50			17		
	Monterey East	12B-12C	25				6	
		12C-12D	75		17			
	Monterey West	87E-84C	100		73			
		87B-166G	50		12			
		97E-87A	50			12		
	Pasadena Avenue	132G-132DE	50		12			
		132D-132E	50			12		
		132E-132F	50		12			
		132F-132G	170		36			
		132F-118K	280		63			
	TOTALS		11,643	73	630	1,104	346	309

PHASE II
SEWER VIDEO ANALYSIS AND CONDITION ASSESSMENT



PREPARED FOR

CITY OF SOUTH PASADENA

SUBMITTED BY:

DMR Team, Inc.

July 9, 2010
Revised August 4, 2010

INTRODUCTION

As part of the City's effort to identify Citywide sewer system structural defficiencies, Phase 2 sewer video inspection of a 4 year inspection assessment and repair program has been completed. This report summarizes the results of the review and analysis of the video inspection, as well as the estimated cost of improvements for sewer lines that require attention. Moreover, based on the results of the Phases 1 & 2 assessments, an updated estimate of the repair cost is projected for the city's entire system.

RANKING CONSIDERATIONS

The sewer lines that were video inspected have been categorized into four groups of "A", "B", "C", & "D" depending on the condition of the lines within each reach.

Group "A" represents a no deficiency condition and Group "D" represents a high priority repair condition. Factors that were considered in rating a reach included root intrusion, joint separation, cracks and sags, along with the frequency of occurrence and their severity.

Local problems that require spot repair have been evaluated under a separate grouping.

CONDITION ASSESSMENT

The rating of the condition of the sewer mains are tabulated in Table 1. The reaches are identified as referenced in the sewer video inspection from manhole to manhole and in the same sequence.

In cases where there is a local condition that is significantly different that the condition of the main, the reach has been rated without taking the local problem into account. Local problems have been evaluated as a separate category, and prioritized according to the urgency of the required repair (see Table 2).

SEWER MAIN RANKING CLASSIFICATIONS

Group "A" represents sewer mains in optimal pipe condition that did not reflect an issue needing action.

Group "B" represents sewer mains that do not have a structural deficiency. The mains in this group do not require immediate attention, nor is it anticipated that they would need to be repaired within the next 15 years.

Group "C" represents sewer mains that display minor structural deficiencies such as minor cracks, and require attention within the next 10 years.

Group "D" represents sewer mains that exhibit more serious structural deficiencies such as multiple cracks and fractures, and in general need to be repaired within the first 5 years of the program.

SPOT REPAIR RANKING CLASSIFICATIONS

Spot repairs have been categorized as Group I, II, III & IV depending on the severity of the required repair. Group I represents the most severe conditions, and Group IV the least. Spot repair conditions have been classified as follows:

GROUP	DEFICIENCY
I	Fractures, holes, missing pipe
II	Joint displacement, multiple cracks, sags
III	Hair line cracks
IV	Root intrusion at lateral

RECOMMENDED REPAIR AND RECONNAISSANCE PROGRAM

The program is recommended to have 2 distinct components of repair and reconnaissance. A 20 year period is envisioned to complete the first cycle of the program, with major repairs completed in the first 10 years, minor repairs between 11th and 15th year, and re-inspection of mains that are not currently subject to any repair work due to their good condition in the last 5 years.

Considering that Group "D" of the sewer mains and Group "I" of the sewer spot repairs represent the worst conditions in the system, they have been classified as priority 1 in the program,

Sewer mains with Group "C" classification that exhibited minor structural defficiencies, and Group II of the spot repair have been classified as priority 2 in the program.

Group III of the Sewer priority spot repair that deals with less serious and non structural defficiencies has been classified as priority 3.

Video inspection and analysis of sewer mains with conditions "A" & "B", along with the Group IV of the spot repairs have been classified as priority 4.

INFORMATION TABLES

Table "A" shows the condition of the mains sorted alphabetically. Table "B" shows the condition of the spot repairs sorted alphabetically. Table "C" ranks the condition of the mains from worst to best, and Table "D" ranks the condition of the spot repairs from worst to best.

Table "E" identifies the DVD number, location, manhole #s, lengths of repair, number of laterals, condition assessment and implementation phasing order, as well as estimated repair costs.

ESTIMATED PHASE 2 REPAIR COST

The following table reflects the summary of the review of Phases 1 & 2 Sewer Video Inspection, with repair description and respective priority and estimated cost. The repair cost has been estimated based on unit prices of $180/LF for removal and replacement of mains, and $4,000 per each lateral repair.

Priority	Completion Years	Repair Description	Required Cost
1	1-5	Group "D" mains, and Group I of spot repairs	$ 989,000
2	6-10	Group "C" mains, and Group II spot repairs	$1,390,000
3	11-15	Group III spot repairs	$ 140,000
4	16-20	Group "A" & "B" mains and Group IV spot repairs	$ 580,000
TOTAL			**$ 3,099,000**

SUMMARY OF ESTIMATED REPAIR COSTS FOR PHASES 1 & 2

The following table reflects the overall cost summary of the review of Phases 1 & 2, Sewer Video Inspection, with repair description and respective priority and estimated cost. The repair cost has been estimated based on unit prices of $180/LF for removal and replacement of mains, and $4,000 per each lateral repair.

Priority	Completion Years	Phase 1		Phase 2		
		Repair Description	Required Costs	Repair Description	Required Cost	Total of Phases 1 &2
1	One to Five	Group "D" mains and Group I spot repairs	$ 630,000.00	Group "D" mains and Group I spot repairs	$ 989,000.00	$ 1,619,000.00
2	Six to Ten	Group "C" mains and Group II spot repairs	$ 1,104,000.00	Group "C" mains and Group II spot repairs	$ 1,390,000.00	$ 2,494,000.00
3	Eleven to Fifteen	Group III spot repairs	$ 346,000.00	Group III spot repairs	$ 140,000.00	$ 486,000.00
4	Sixteen to Twenty	Group IV spot repairs and Group "A" & "B" mains	$ 309,000.00	Group IV spot repairs and Group "A" & "B" mains	$ 580,000.00	$ 889,000.00
TOTAL			$ 2,389,000.00		$ 3,099,000.00	$ 5,488,000.00

ESTIMATED REPAIR COSTS FOR THE ENTIRE SEWER SYSTEM

Phases 1 & 2 video inspection includes approximately half of the entire City's sewer system.

Assuming that phases 1 & 2 deficiencies and costs are representative of the entire system, a 20 year repair program would require the repair cost as shown below

Priority	Completion Years	Repair Description	Cost
1	1-5	Group "D" mains, and Group I of spot repairs	$3,238,000
2	6-10	Group "C" mains, and Group II spot repairs	$4,988,000
3	11-15	Group III spot repairs	$972,000
4	16-20	Group "A" and "B" mains and Group IV spot repairs	$1,778,000
TOTAL			**$10,976,000**

The estimated repair cost shown above will be re-assessed as the results of the phases 3 and 4 video analysis becomes available.

20 YEAR PROGRAM BUDGET

Based on the estimated improvements costs for the entire City's sewer deficiency upgrade and addition of soft costs and video inspection, a total preliminary annual budget of $760,000 would be required:

REQUIRED WORK DESCRIPTION	COST
Estimated Construction Cost	$ 10,976,000
Soft Cost (design, inspection, CM)	$ 2,500,000
Video Inspection	$ 400,000
Sub Total	$ 13,888,000
10% Contingency	$ 1,389,000
Total Cost	**$15,277,000 over a 20 year period**
	$764,000 annually

TABLE A
PHASE II
SEWER MAIN CONDITION (ALPHABETICAL ORDER OF STREET NAME)

Location	Limits	Condition	DVD No.
Amherst Drive	Wayne Avenue to Mid Pt.	B*	1
Atlantic Boulevard	Garfield Avenue to Pine Street	B*	10
Beech Street	Primrose Avenue to 2/3 Way	B*	2
Bushnell Avenue	Oak Street to Huntington Drive	B*	5
Camden Avenue	Oak lane to 1/2 Point	D	3
Camden Avenue	Huntington Drive to 1/2 Point	C	3
Chelton Way	Edgewood Drive to Oak Street	B*	1
Chelton Way	Oaks Street to Edgewood Drive	B*	4
Court Avenue	Huntington Drive to Northerly Terminus	C	3
Court Avenue	Oak Street to 1/2 Point	B*	3
Edgewood Drive	Milan Avenue to Wayne Avenue	B*	1
Fair Oaks Avenue	Maple Street to Alhambra Road	B*	4
Fair Oaks Avenue	Alhambra Road to Midway to Maple	B*	11
Fletcher Avenue	Oak to 1/2 Point S	B*	1
Fletcher Avenue	Huntington Drive to Alhambra Road	B*	10
Garfield Avenue	Huntington Drive to Atlantic Boulevard	B*	11
Garfield Avenue	Mill Road to Huntington Drive	B*	6, 7 & 8
Huntington Drive	South Side to Court Avenue to Wayne Avenue	D	8
Huntington Drive	N Side, Court Avenue to Garfield Avenue	B*	2
Huntington Drive	Fletcher Avenue to Marengo Avenue	B*	6
Huntington Drive	South Side to La Senda Avenue to Bushnell Avenue	B*	8
Huntington Drive	South Side, La Senda Place to Garfield Avenue	B*	8
Huntington Drive N	Fletcher Avenue to Court Avenue	B*	10
Huntington Drive S	Morengo Avenue to Bushnell Avenue	B	10
Indiana Avenue	Monterey Road to El Centro Street	B*	11
La France Avenue	Huntington Dr. to Alhambra Road	B*	2
La France Avenue	Maple Street to Mid Block	B*	11
La Senda Place	Huntington Drive to Garfield Avenue	B*	5
Laurel Street	Milan Avenue to Marengo Avenue	B*	3
Le Droit Drive	Milan Avenue to Montrose Avenue	B*	1
Le Droit Drive	Montrose Avenue to Garfield Avenue	B*	9
Leman Street	Milan Avenue to Huntington Drive	B*	2
Maple Street	Fremont Avenue to Primrose Avenue	B*	4
Milan Avenue	Monterey Road to Huntington Drive	C* & B*	2,3,4
Milan Avenue	Monterey Road to Edgewood Drive	B*	1

* Denotes Spot Repair Required. See Table "B" for Details

TABLE A
PHASE II
SEWER MAIN CONDITION (ALPHABETICAL ORDER OF STREET NAME)

Location	Limits	Condition	DVD No.
Milan Avenue	Huntington Drive to Spruce Street	B*	6
Milan Avenue	Oxley Street to Monterey Road	B*	9
Mission Street	Montrose Avenue to Garfield Avenue	B*	6
Mission Street	Milan Avenue to Montrose Avenue	A	2
Monterey Road	Milan Avenue to Montrose Avenue	B*	9
Monterey Road	Montrose Avenue to Garfield Avenue	B*	8
Montrose Avenue	Mission Street to Oxley Street	D	1
Montrose Avenue	Oxley Street to Le Droit Drive	B*	1
Montrose Avenue	Mission Street to Garfield Avenue	B*	2
Montrose Avenue	Monterey Road to Le Droit	A	9
Oak Meadow Lane	Oak Street to Cul de Sac	B*	9
Oak Street	Milan Avenue to Mid Point to Chelton Way	D	4
Oak Street	Chelton Way to Garfield Avenue	B*	3
Oak Street	Chelton Way to Mid Point to Milan Avenue	B*	4
Oak Street	Stratford Avenue to Milan Avenue	B*	5
Olive Street	Pine Street to Huntington Drive	B*	6
Oneonta Knoll	Primrose Avenue to 1/2 Point	B*	2
Oxley Street	Montrose Avenue to Garfield Avenue	B*	7
Pine Street	Huntington Drive to Garfield Avenue	B*	6
Primrose Avenue	Hunting Drive to Maple Street	B*	2
Primrose Avenue	Maple Street to Alhambra Road	B*	4
Primrose Avenue	Alhambra Road to Maple Road	B*	9
Spruce Street	Milan Avenue to Marengo Avenue	B*	3
Spruce Street	Milan to Southerly Terminus	A	6
Stratford Avenue	Along the Park	D	1
Stratford Avenue	Monterey Road to North of Park	B*	1
Stratford Avenue	Alhambra Road to Cul de Sac	B*	2
Stratford Avenue	Oak Street to Rollin Street	B*	5
Stratford Avenue	Oak street to Banks	B*	9
Stratford Avenue	Along Marengo Park	B*	11
Wayne Avenue	Amherst Drive to S. of Ashbourne Drive	B*	1
Wayne Avenue	Huntington Drive to Amherst Drive	B*	3
Wayne Avenue	Huntington Avenue to Oak Street	B*	5 & 6
Wayne Avenue	Huntington Drive and Oak Street	B*	8

* Denotes Spot Repair Required. See Table "B" for Details

TABLE B
PHASE II
SPOT REPAIR CONDITION (ALPHABETICAL ORDER OF STREET NAME)

Location	Manhole No.	Group	DVD No.
Amherst Drive	17D-127B	I	1
Atlantic Boulevard	117E-117L	II	10
Atlantic Boulevard	23B-28C	II	10
Beech Street	141F-141E	I	2
Beech Street	141F-36D	I	2
Bushnell Avenue	22B-22A	II	5
Bushnell Avenue	22B-22E	II	5
Camden Avenue	20B-20A	I	3
Camden Avenue	20B-20C	I	3
Camden Avenue	20C-27A	IV	3
Chelten Way	19E-16D	I	4
Chelten Way	16C-16B	II	1
Court Avenue	20D-20E	II	3
Court Avenue	20G-20F	II	3
Edgewood Drive	16C-17E	II	1
Edgewood Drive	16C-17F	II	1
Edgewood Drive	17F-17C	II	1
Fair Oaks Avenue	37A-37B	I	4
Fair Oaks Avenue	38B-37A	II	4
Fletcher Avenue	23B-23A	II	1
Fletcher Avenue	28H-24A	II	10
Fletcher Avenue	24A-24B	II	10
Fletcher Avenue	24B-24C	II	10
Garfield Avenue	117L-117K	III	11
Garfield Avenue	12D-3D	I	8
Garfield Avenue	12D-3D	I	7
Garfield Avenue	2B-2A	IV	7
Garfield Avenue	2C-2B Drop	IV	7
Garfield Avenue	2C-2D	IV	7
Garfield Avenue	2D-2E	III	6
Garfield Avenue	2E-3A	IV	7
Garfield Avenue	3A-3B	IV	7
Garfield Avenue	3C-12D	III	7
Garfield Avenue	4A-27H	II	8
Garfield Avenue	4A-27H	II	8
Garfield Avenue	4B-4A	II	8
Garfield Avenue	4B-4A	II	8
Huntington Drive	27F-27G	I	8
Huntington Drive	27H-27G	I	8
Huntington Drive	27C-27D	II	2
Huntington Drive	27C-27B	II	2
Huntington Drive	25D-28C	II	6
Huntington Drive	25D-28B	II	6
Huntington Drive	28B-28A	II	6
Huntington Drive	27E-28K	II	8
Huntington Drive	28K-28J	II	8
Huntington Drive	28K-28F	II	8
Huntington Drive	27H-27G	II	8
Huntington Drive N	27A-21B	I	10

TABLE B
PHASE II
SPOT REPAIR CONDITION (ALPHABETICAL ORDER OF STREET NAME)

Location	Manhole No.	Group	DVD No.
Huntington Drive N	28E-21B	I	10
Huntington Drive S	28G-28H	I	10
Huntington Drive S	28J-28H	II	10
Huntington Drive S	28G-28F	III	10
Indiana Avenue	131A-103D	I	11
Indiana Avenue	103D-104C	I	11
Indiana Avenue	103C-82E	I	11
La France Avenue	35B-35C	I	2
La France Avenue	35C-35D	I	2
La France Avenue	36B-36A	II	2
La France Avenue	35D-35C	II	11
La Senda Place	27C-126B	II	5
La Senda Place	126B-126A	II	5
Laurel Street	25B-19F	II	3
Le Droit Drive	11C-3B	I	9
Le Droit Drive	8D-8E	II	1
Le Droit Drive	11C-11B	III	9
Leman Street	26B-37D	II	2
Leman Street	37D-37C	II	2
Maple Street	38B-38A	I	4
Maple Street	38B-38C	III	4
Milan Avenue	25B-25C	I	3
Milan Avenue	15A-9C	I	9
Milan Avenue	15B-15A	II	1
Milan Avenue	15B-15C	II	1
Milan Avenue	15C-15D	II	1
Milan Avenue	25B-19C	II	3
Milan Avenue	26B-26C	II	4
Milan Avenue	26E-26F	II	4
Milan Avenue	25D-220B	II	6
Milan Avenue	15D-19C	II	4
Milan Avenue	26C-26D	III	4
Milan Avenue	26D-26E	III	4
Mission Street	7E-2D	III	6
Monterey Road	12B-12A	III	9
Monterey Road	12D-12C	I	8
Monterey Road	12C-12B	I	8
Montrose Avenue	7E-6A	I	2
Montrose Avenue	8D-8C	III	1
Oak Meadow Lane	19D-232A	II	9
Oak Street	18B-18C	I	3
Oak Street	18B-18A	I	3
Oak Street	18D-18E	II	3
Oak Street	18B-18C	II	3
Oak Street	19D-19C	II	4
Oak Street	19E-19D	III	4
Oak Street	19B-19C	III	5
Olive Street	117C-128E	II	6
Olive Street	128E-128D	II	6

TABLE B
PHASE II
SPOT REPAIR CONDITION (ALPHABETICAL ORDER OF STREET NAME)

Location	Manhole No.	Group	DVD No.
Oneonta Knoll	36B-141B	I	2
Oneonta Knoll	141B-141A	II	2
Oxley Street	3A-11A	II	7
Pine Street	117C-117B	I	6
Pine Street	117C-117D	I	6
Pine Street	117D-117E	II	6
Pine Street	117E-117F	II	6
Pine Street	117F-117G	II	6
Pine Street	117B-117A	III	6
Primrose Avenue	36G-36H	I	4
Primrose Avenue	36H-36G	I	9
Primrose Avenue	36D-36E	II	2
Primrose Avenue	36F-36G	II	4
Primrose Avenue	36B-36A	III	2
Primrose Avenue	36B-36C	III	2
Primrose Avenue	36C-36D	III	2
Primrose Avenue	36E-36F	III	2
Spruce Street	25C-25A	III	3
Stratford Avenue	129A-129B	I	2
Stratford Avenue	129D-129C	II	9
Stratford Avenue	134B-134A	II	2
Stratford Avenue	134C-134B	I	2
Stratford Avenue	14C-14A	II	1
Stratford Avenue	14D-14C	III	11
Stratford Avenue	19B-14D	II	5
Wayne Avenue	17C-17D	II	1
Wayne Avenue	17C-17B	II	1
Wayne Avenue	17D-18C	II	3
Wayne Avenue	18B-21A	II	5
Wayne Avenue	21A-2B	II	6
Wayne Avenue	21B-21A	III	8

TABLE C
PHASE II
SEWER MAIN CONDITION (WORST TO BEST)

Condition	Location	Limits	DVD No.
D	Camden Avenue	Oak lane to 1/2 Point	3
D	Huntington Drive	South Side to Court Avenue to Wayne Avenue	8
D	Montrose Avenue	Mission Street to Oxley Street	1
D	Oak Street	Milan Avenue to Mid Point to Chelton Way	4
D	Stratford Avenue	Along the Park	1
C* & B*	Milan Avenue	Monterey Road to Huntington Drive	2,3,4
C	Camden Avenue	Huntington Drive to 1/2 Point	3
C	Court Avenue	Huntington Drive to Northerly Terminus	3
B*	Amherst Drive	Wayne Avenue to Mid Pt.	1
B*	Atlantic Boulevard	Garfield Avenue to Pine Street	10
B*	Beech Street	Primrose Avenue to 2/3 Way	2
B*	Bushnell Avenue	Oak Street to Huntington Drive	5
B*	Chelten Way	Edgewood Drive to Oak Street	1
B*	Chelten Way	Oaks Street to Edgewood Drive	4
B*	Court Avenue	Oak Street to 1/2 Point	3
B*	Edgewood Drive	Milan Avenue to Wayne Avenue	1
B*	Fair Oaks Avenue	Alhambra Road to Midway to Maple	11
B*	Fair Oaks Avenue	Maple Street to Alhambra Road	4
B*	Fletcher Avenue	Huntington Drive to Alhambra Road	10
B*	Fletcher Avenue	Oak to 1/2 Point S	1
B*	Garfield Avenue	Huntington Drive to Atlantic Boulevard	11
B*	Garfield Avenue	Mill Road to Huntington Drive	6, 7 & 8
B*	Huntington Drive	Fletcher Avenue to Marengo Avenue	6
B*	Huntington Drive	N Side, Court Avenue to Garfield Avenue	2
B*	Huntington Drive	South Side to La Senda Avenue to Bushnell Avenue	8
B*	Huntington Drive	South Side, La Senda Place to Garfield Avenue	8
B*	Huntington Drive N	Fletcher Avenue to Court Avenue	10
B	Huntington Drive S	Morengo Avenue to Bushnell Avenue	10
B*	Indiana Avenue	Monterey Road to El Centro Street	11
B*	La France Avenue	Huntington Dr. to Alhambra Road	2
B*	La France Avenue	Maple Street to Mid Block	11
B*	La Senda Place	Huntington Drive to Garfield Avenue	5
B*	Laurel Street	Milan Avenue to Marengo Avenue	3
B*	Le Droit Drive	Milan Avenue to Montrose Avenue	1
B*	Le Droit Drive	Montrose Avenue to Garfield Avenue	9
B*	Leman Street	Milan Avenue to Huntington Drive	2

* Denotes Spot Repair Required. See Table "B" for Details

TABLE C
PHASE II
SEWER MAIN CONDITION (WORST TO BEST)

B*	Maple Street	Fremont Avenue to Primrose Avenue	4
B*	Milan Avenue	Huntington Drive to Spruce Street	6
B*	Milan Avenue	Monterey Road to Edgewood Drive	1
B*	Milan Avenue	Oxley Street to Monterey Road	9
B*	Mission Street	Montrose Avenue to Garfield Avenue	6
B*	Monterey Avenue	Milan Avenue to Montrose Avenue	9
B*	Monterey Road	Montrose Avenue to Garfield Avenue	8
B*	Montrose Avenue	Mission Street to Garfield Avenue	2
B*	Montrose Avenue	Oxley Street to Le Droit Drive	1
B*	Oak Meadow Lane	Oak Street to Cul de Sac	9
B*	Oak Street	Chelton Way to Garfield Avenue	3
B*	Oak Street	Chelton Way to Mid Point to Milan Avenue	4
B*	Oak Street	Stratford Avenue to Milan Avenue	5
B*	Olive Street	Pine Street to Huntington Drive	6
B*	Oneonta Knoll	Primrose Avenue to 1/2 Point	2
B*	Oxley Street	Montrose Avenue to Garfield Avenue	7
B*	Pine Street	Huntington Drive to Garfield Avenue	6
B*	Primrose Avenue	Alhambra Road to Maple Road	9
B*	Primrose Avenue	Huntington Drive to Maple Street	2
B*	Primrose Avenue	Maple Street to Alhambra Road	4
B*	Spruce Street	Milan Avenue to Marengo Avenue	3
B*	Stratford Avenue	Alhambra Road to Cul de Sac	2
B*	Stratford Avenue	Along Marengo Park	11
B*	Stratford Avenue	Monterey Road to North of Park	1
B*	Stratford Avenue	Oak Street to Banks	9
B*	Stratford Avenue	Oak Street to Rollin Street	5
B*	Wayne Avenue	Amherst Drive to S. of Ashbourne Drive	1
B*	Wayne Avenue	Huntington Avenue to Oak Street	5 & 6
B*	Wayne Avenue	Huntington Drive and Oak Street	8
B*	Wayne Avenue	Huntington Drive to Amherst Drive	3
A	Mission Street	Milan Avenue to Montrose Avenue	2
A	Montrose Avenue	Monterey Road to Le Droit	9
A	Spruce Street	Milan to Southerly Terminus	6

* Denotes Spot Repair Required. See Table "B" for Details

TABLE D
PHASE II
SPOT REPAIR CONDITION (WORST TO BEST)

Group	Location	Manhole No.	DVD No.
I	Amherst Drive	17D-127B	1
I	Beech Street	141F-141E	2
I	Beech Street	141F-36D	2
I	Camden Avenue	20B-20A	3
I	Camden Avenue	20B-20C	3
I	Chelten Way	19E-16D	4
I	Fair Oaks Avenue	37A-37B	4
I	Garfield Avenue	12D-3D	8
I	Garfield Avenue	12D-3D	7
I	Huntington Drive	27F-27G	8
I	Huntington Drive	27H-27G	8
I	Huntington Drive N	27A-21B	10
I	Huntington Drive N	28E-21B	10
I	Huntington Drive S	28G-28H	10
I	Indiana Avenue	131A-103D	11
I	Indiana Avenue	103D-104C	11
I	Indiana Avenue	103C-82E	11
I	La France Avenue	35B-35C	2
I	La France Avenue	35C-35D	2
I	Le Droit Drive	11C-3B	9
I	Maple Street	38B-38A	4
I	Milan Avenue	25B-25C	3
I	Milan Avenue	15A-9C	9
I	Monterey Road	12D-12C	8
I	Monterey Road	12C-12B	8
I	Montrose Avenue	7E-6A	2
I	Oak Street	18B-18C	3
I	Oak Street	18B-18A	3
I	Oneonta Knoll	36B-141B	2
I	Pine Street	117C-117B	6
I	Pine Street	117C-117D	6
I	Primrose Avenue	36G-36H	4
I	Primrose Avenue	36H-36G	9
I	Stratford Avenue	134C-134B	2
I	Stratford Avenue	129A-129B	2
II	Atlantic Boulevard	117E-117L	10
II	Atlantic Boulevard	23B-28C	10
II	Bushnell Avenue	22B-22A	5
II	Bushnell Avenue	22B-22E	5
II	Chelten Way	16C-16B	1
II	Court Avenue	20D-20E	3
II	Court Avenue	20G-20F	3
II	Edgewood Drive	16C-17E	1
II	Edgewood Drive	16C-17F	1
II	Edgewood Drive	17F-17C	1
II	Fair Oaks Avenue	38B-37A	4
II	Fletcher Avenue	23B-23A	1
II	Fletcher Avenue	28H-24A	10
II	Fletcher Avenue	24A-24B	10

TABLE D
PHASE II
SPOT REPAIR CONDITION (WORST TO BEST)

Group	Location	Manhole No.	DVD No.
II	Fletcher Avenue	24B-24C	10
II	Garfield Avenue	4B-4A	8
II	Garfield Avenue	4A-27H	8
II	Garfield Avenue	4B-4A	8
II	Garfield Avenue	4A-27H	8
II	Huntington Drive	27C-27D	2
II	Huntington Drive	27H-27G	8
II	Huntington Drive	27C-27B	2
II	Huntington Drive	25D-28C	6
II	Huntington Drive	25D-28B	6
II	Huntington Drive	28B-28A	6
II	Huntington Drive	27E-28K	8
II	Huntington Drive	28K-28J	8
II	Huntington Drive	28K-28F	8
II	Huntington Drive S	28J-28H	10
II	La France Avenue	36B-36A	2
II	La France Avenue	35D-35C	11
II	La Senda Place	27C-126B	5
II	La Senda Place	126B-126A	5
II	Laurel Street	25B-19F	3
II	Le Droit Drive	8D-8E	1
II	Leman Street	26B-37D	2
II	Leman Street	37D-37C	2
II	Milan Avenue	15B-15A	1
II	Milan Avenue	15B-15C	1
II	Milan Avenue	15C-15D	1
II	Milan Avenue	25B-19C	3
II	Milan Avenue	26B-26C	4
II	Milan Avenue	26E-26F	4
II	Milan Avenue	25D-220B	6
II	Milan Avenue	15D-19C	4
II	Oak Meadow Lane	19D-232A	9
II	Oak Street	18D-18E	3
II	Oak Street	18B-18C	3
II	Oak Street	19D-19C	4
II	Olive Street	117C-128E	6
II	Olive Street	128E-128D	6
II	Oneonta Knoll	141B-141A	2
II	Oxley Street	3A-11A	7
II	Pine Street	117D-117E	6
II	Pine Street	117E-117F	6
II	Pine Street	117F-117G	6
II	Primrose Avenue	36D-36E	2
II	Primrose Avenue	36F-36G	4
II	Stratford Avenue	129D-129C	9
II	Stratford Avenue	134B-134A	2
II	Stratford Avenue	14C-14A	1
II	Stratford Avenue	19B-14D	5
II	Wayne Avenue	17C-17D	1

TABLE D
PHASE II
SPOT REPAIR CONDITION (WORST TO BEST)

Group	Location	Manhole No.	DVD No.
II	Wayne Avenue	17C-17B	1
II	Wayne Avenue	17D-18C	3
II	Wayne Avenue	18B-21A	5
II	Wayne Avenue	21A-2B	6
III	Garfield Avenue	117L-117K	11
III	Garfield Avenue	2D-2E	6
III	Garfield Avenue	3C-12D	7
III	Huntington Drive S	28G-28F	10
III	Le Droit Drive	11C-11B	9
III	Maple Street	38B-38C	4
III	Milan Avenue	26C-26D	4
III	Milan Avenue	26D-26E	4
III	Mission Street	7E-2D	6
III	Monterey Avenue	12B-12A	9
III	Montrose Avenue	8D-8C	1
III	Oak Street	19B-19C	5
III	Oak Street	19E-19D	4
III	Pine Street	117B-117A	6
III	Primrose Avenue	36B-36A	2
III	Primrose Avenue	36B-36C	2
III	Primrose Avenue	36C-36D	2
III	Primrose Avenue	36E-36F	2
III	Spruce Street	25C-25A	3
III	Stratford Avenue	14D-14C	11
III	Wayne Avenue	21B-21A	8
IV	Camden Avenue	20C-27A	3
IV	Garfield Avenue	3A-3B	7
IV	Garfield Avenue	2B-2A	7
IV	Garfield Avenue	2C-2B Drop	7
IV	Garfield Avenue	2C-2D	7
IV	Garfield Avenue	2E-3A	7

TABLE E
PHASE II
ESTIMATED COST OF SEWER REPAIRS

				REPAIR COST IN THOUSANDS				
DVD No.	LOCATION	MANHOLE NOS.	R&R PIPE (FT.)	REPAIR LATERAL (EA)	PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY 4
1	Montrose Avenue	8D-8C	25	1			4	4
		8C-8B	325		59			
	Le Droit Drive	8D-8E	100	1		18		4
	Milan Avenue	15B-15A	125			23		
		15B-15C	225	1		41		4
		15C-15D	175			32		
	Edgewood Drive	16C-17E	60			11		
		16C-17F	75		14			
		17F-17C	75	2		14		8
	Chelton Way	16C-16B	25			4		
	Wayne Avenue	17C-17D	150	1		27		4
		17C-17B	25	1		4		4
	Amherst Drive	17D-127B	150	3	27			12
	Fletcher Avenue	23B-23A	50	2		9		8
	Stanford Avenue	14C-14A	50			9		
		14C-14D	400		72			
2	Primrose Avenue	36B-36A	25				4	
		36B-36C	25				4	
		36C-36D	25				4	
		36D-36E	25			4		
		36E-36F	50				9	
	Oneonta Knoll	36B-141B	100		18			
		141B-141A	150			27		
	Beech Street	141F-36D	150'		27			
		141F-141E	100		18			
	Montrose Avenue	7E-6A	150		27			
	La France Avenue	36B-36A	25	1		9		4
		35B-35C	175	8	32			32
		35C-35D	200	11	36			44
	Stratford Avenue	134C-134B	25	1	5			4
		134B-134A	50			9		
		134C-129A	125		23			
		129A-129B	175	4	32			16
		129B-129D	305		55			
	Milan Avenue	26B-26A		5				20

TABLE E
PHASE II
ESTIMATED COST OF SEWER REPAIRS

				REPAIR COST IN THOUSANDS				
DVD No.	LOCATION	MANHOLE NOS.	R&R PIPE (FT.)	REPAIR LATERAL (EA)	PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY 4
2	Leman Street	26B-37D	50			9		
		37D-37C	200			36		
	Huntington Drive	27C-27D	50			9		
		27C-27B	150			36		
3	Court Avenue	20F-27B	450			81		
	Camden Avenue	20C-27A	300	5		64		20
	Wayne Avenue	17D-18C	75	1		14		4
	Oak Street	18B-18C	25	1	5			4
		18D-18E	25	1		5		4
		18B-18A	100		18			
	Milan Avenue	25B-19C	100			18		
		25B-25C	200	4	36			16
	Laurel Street	25B-19F	150	1		18		4
	Spruce Street	25C-25A	75				14	
	Camden Avenue	20B-20A	400		72			
		20B-20C	100			18		
	Court Avenue	20D-20E	75			14		
		20G-20F	25			5		
4	Chelton Way	19E-16D	200		36			
	Oak Street	19E-19D	50	2			9	8
		19D-19C	330		60			
	Milan Avenue	15D-19C	375			68		
	Maple Street	38B-38C	50	2	9			8
		38B-38A	50					
	Fair Oaks Avenue	38B-37A	250			45		
	Primrose Avenue	36F-36G	250	10		45		40
		36G-36H	100	1	18			4
	Milan Avenue	26B-26C	100	4		18		16
		26C-26D	75				14	
		26D-26E	75	5			14	20
		26E-26F	200	4		36		16
	Fair Oaks Avenue	37A-37B	75	1	14			4
5	Oak Street	19B-19C	50	2			9	8
	Stratford Avenue	19B-14D	75			14		

TABLE E
PHASE II
ESTIMATED COST OF SEWER REPAIRS

					REPAIR COST IN THOUSANDS			
DVD No.	LOCATION	MANHOLE NOS.	R&R PIPE (FT.)	REPAIR LATERAL (EA)	PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY 4
5	La Senda Place	27C-126B	100			18		
		126B-126A	400			72		
	Bushnell Avenue	22B-22A	225	7		41		28
		22B-22E	200	2		36		8
	Wayne Avenue	18B-21A	200	11		36		44
6	Wayne Avenue	21A-2B	75			14		
	Huntington Drive	25D-28C	225			41		
		25D-28B	175			32		
		28B-28A	100			18		
	Milan Avenue	25D-220B	150	1		27		4
	Pine Street	117C-117B	25		5			
		117B-117A	75	3			14	12
	Olive Street	117C-128E	25	1		4		4
		128E-128D	25			4		
	Pine Street	117C-117D						
		117D-117E	150			27		
		117E-117F	25		5			
		117F-117G	125			23		
7	Garfield Street	2C-2D		2				8
		2D-2E	25				4	
		2E-3A		1				4
		2C-2B Drop		4				16
		2B-2A		6				24
	Mission Street	7E-2D	25				4	
	Oxley Street	3A-11A	25	1		4		4
	Garfield Avenue	3A-3B		1				4
		3C-12D	25	1	5		4	4
8	Garfield Avenue	12D-3D	50		9			
	Monterey Road	12D-12C	50		9			
	Garfield Avenue	4B-4A	75			14		
		4A-27H	75			14		
	Huntington Drive	27F-27E	410		74			
		27E-28K	75			14		
		27F-27G	50		9			
		28K-28J	25			4		

TABLE E
PHASE II
ESTIMATED COST OF SEWER REPAIRS

				REPAIR COST IN THOUSANDS				
DVD No.	LOCATION	MANHOLE NOS.	R&R PIPE (FT.)	REPAIR LATERAL (EA)	PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY 4
8	Wayne Avenue	21B-21A	25	1			4	4
	Huntington Drive	27H-27G	100		18			
9	Stratford Avenue	129D-129C	25	2		4		8
		36D-36E		2				8
	Primrose Avenue	36H-36G	100	2	18			8
	Oak Meadow Lane	19D-232A	25			4		
	Milan Avenue	15A-9C	75	1	14			4
	Monterey Avenue	12B-12A	25	1			4	4
	Le Droit Drive	11C-3B	100		18			
		11C-11B	50				9	
10	Huntington Drive N	27A-21B	100	1	18			4
		27A-27B	75			14		
		28E-21B	100					
	Atlantic Boulevard	117E-117L	75			14		
		23B-28C	50	2		9		8
	Huntington Drive S	28G-28F	25				4	
		28G-28H	75		14			
		28J-28H	125			23		
	Fletcher Avenue	28H-24A	225	6		41		24
		24A-24B	200			36		
		24B-24C	75			14		
11	Garfield Avenue	117L-117K	25				4	
	Stratford Avenue	14D-14C	25				4	
	La France Avenue	35D-35C	25			4		
	Indiana Avenue	131A-103D	75		14			
		103D-104C	75		14			
		103C-82E	175		32			
TOTALS			**13880**	**145**	**989**	**1390**	**140**	**580**

2. Current Sewer Rates

CITY OF SOUTH PASADENA

2010 Water, Sewer and Refuse Rate Adjustments

Dear South Pasadena Water, Sewer and Refuse customers:

This month's bill is longer than usual due to rate adjustments effective July 1, 2010. The first part of your bill represents services received in June 2010. The second part is for services in July 2010.

Effective July 1, 2010, the water and sewer rates have been adjusted per City Resolutions 7046, 7047 and 7048 adopted in May 2009. The old and new rates are presented below.

Water Bi-Monthly Charges

Meter Charge	Old Total	New Total
3/4"	$44.34	$51.00
1"	62.08	71.40
1 1/2"	79.82	91.80
2"	128.60	147.90
3"	487.84	561.00
4"	620.88	714.00
6"	931.32	1,071.02
8"	1,286.10	1,479.02
Consumption Charge	**Old Total**	**New Total**
Per Hundred Cubic Feet of Consumption	$0.92	$1.06

Sewer Bi-Monthly Charges

Sewer Charge	Old	New
Single Family	$ 12.67	$ 14.57
Multi-Family	8.56	9.84
Commercial	12.67	14.57

Refuse Bi-Monthly Charges

Refuse Change	Old	New
Standard	$ 69.60	$ 71.46
3 Yard Bin	268.76	277.04
Roll-Off	416.60	424.54

Refuse rates, effective July 1, 2010, reflect a rate increase of approximately 2.67%. The increase is based on the percentage change in the Consumer Price Index from April 2009 to April 2010 and "pass through" increase for increased landfill fees per the contract approved by the City Council.

For further questions, contact the Finance Department at (626) 403-7259