WALKER
RESTORATION CONSULTANTS

CAPITAL IMPROVEMENT AND
PROTECTION PROGRAM

CITY OF MANHATTAN BEACH PARKING STRUCTURES LOTS 2, 3 & 4


LOT 2 PARKING STRUCTURE


LOT 3 PARKING STRUCTURE


LOT 4 PARKING STRUCTURE

Prepared for:
CITY OF MANHATTAN BEACH

WALKER
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LOT 2 PARKING STRUCTURE

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CAPITAL IMPROVEMENT AND PROTECTION PROGRAM

CITY OF MANHATTAN BEACH LOTS 2, 3 & 4 PARKING STRUCTURES

Prepared for:
CITY OF MANHATTAN BEACH
PROJECT NO. 37-8377.00

SEPTEMBER 2013

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PROGRAM EXECUTIVE SUMMARY

The purpose of this report is to provide the City of Manhattan Beach (City) with a management tool that offers the recommendations needed to make informed, cost-effective decisions regarding capital improvements and maintenance work for the Parking Structures at Lots 2, 3 & 4.

The three parking structures are in fair condition. The Capital Improvement Protection Programs (CIPP) outlined in this report will help the City plan for the funding needed for current and future restoration/maintenance work in order to keep the structures operating safely for another 10 to 20 years. Over the next ten years (starting in 2014) we recommend budgeting $2,117,000 in 2013 dollars ($2,344,200 in future value dollars) for restoration capital improvements for the three structures. We recommend prioritizing Lot 2 repairs first, followed by Lot 3 and Lot 4.

10-yr Budget Breakdown

Lot 2: $457,000
Lot 3: $1,291,000
Lot 4: $368, 500
Total: $2,117,000

As an immediate concern, the existing vehicular barriers in the three structures were noted to not meet current code. While the barriers have been in place since the original construction and may be grandfathered in under the current code, we recommend the City take a proactive approach by installing a new vehicular barrier system on the upper levels. This would minimize any potential hazards that exist with the current systems and bring them up to current code.

Immediate Concerns

- Vehicular barriers
- Height restraint bars

As an additional immediate concern, no height restraint bars were noted at the entries to the supported levels at any of the structures. This allows for over-sized vehicles to access the upper levels and possibly overload the structure. This is of particular concern in Lot 2, where several Post-Tensioning strands in the elevated slab were noted to be de-stressed. We recommend installing height restraint bars at the entries to the upper levels in all three garages to prevent the access of over-sized vehicles.

We recognize that one of the biggest challenges for property owners is to fund annual capital improvement projects with limited budgets. This CIPP will help the City prioritize annual capital maintenance work in order to maximize both the dollars spent and life expectancy of each structure.

Please note that the recommended budget outlined in this report is based on our condition assessment of each parking

facility. The CIPP is a dynamic working tool and actual conditions may vary at the time the repairs are actually carried out; this may affect the project costs and the type of work necessary. Accordingly, we suggest that the work items and budget recommendations be periodically updated as the program is evaluated.

The information provided in this report is intended to help the City understand the cost impact of work needed on each structure over the next ten years by providing budgeting information based on professional judgment and experience of Walker Restoration Consultants/Engineers Inc. The recommended budget does not provide a warranty as to the accuracy of such recommendations with regards to contractor bids or negotiated prices for restoration improvements.

For the purpose of this CIPP and report, we have assumed that the City would like each structure to continue in its present use throughout the entire ten year forecast. It must be understood that some deterioration will take place over time with continued service and environmental exposure of these structures; however implementation of a restoration capital improvements program, as outlined in this CIPP and report, can significantly slow the rate of deterioration and minimize the associated cost impact.

We invite you to review the "Combined Parking Structures 2, 3, 4 Executive Summary – 10 Year Budget Forecast" on the following page. A detailed report and CIPP Table for each of the Parking Structures at Lots 2, 3 & 4 follow the combined ten year budget forecast.

Sept.19, 2013
Nima Patel, Project Engineer Date

Sept.19, 2013
Pawan Gupta, Project Manager Date

Sept.19, 2013
Dan Johns, Principal-In-Charge Date

Combined Parking Structures 2, 3, 4
Executive Summary - 10 year Budget Forecast

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NO.	WORK DESCRIPTION	TOTAL COST	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Executive Work Description Summary											
1	Concrete	$ 327,000	$ 128,000	$ 169,500	$ -	$ -	$ -	$ 15,500	$ 9,000	$ -	$ -	$ 5,000
2	Waterproofing	$ 639,800	$ -	$ 309,000	$ 85,000	$ -	$ -	$ -	$ 49,500	$ 7,000	$ -	$ 187,500
3	Stairs	$ 7,500	$ 1,000	$ 1,500	$ 1,000	$ -	$ -	$ -	$ -	$ 2,500	$ -	$ -
4	Drainage/Lighting	$ 22,000	$ -	$ 16,000	$ -	$ -	$ -	$ -	$ 4,500	$ -	$ -	$ -
5	Miscellaneous/Architectural Repairs	$ 479,000	$ 288,000	$ 98,000	$ 81,500	$ -	$ -	$ -	$ 4,000	$ 7,500	$ -	$ -
6	Enhancements	$ 161,500	$ -	$ 27,500	$ 111,500	$ -	$ -	$ -	$ -	$ -	$ -	$ 22,500
7	Mobilization	$ 171,000	$ 43,000	$ 64,000	$ 29,000	$ -	$ -	$ 2,000	$ 8,000	$ 2,000	$ -	$ 23,000
7	Engineering and Construction Administration Allowance	$ 157,000	$ 43,000	$ 64,000	$ 15,000	$ -	$ -	$ 2,000	$ 8,000	$ 2,000	$ -	$ 23,000
7	Construction Contingency	$ 157,000	$ 43,000	$ 64,000	$ 15,000	$ -	$ -	$ 2,000	$ 8,000	$ 2,000	$ -	$ 23,000
11	Opinion of Annual Budget (2013 Dollars)	$ 2,117,000	$ 546,000	$ 813,500	$ 338,000	$ -	$ -	$ 21,500	$ 91,000	$ 23,000	$ -	$ 284,000
12	**Opinion of Annual Budget (Adjusted Future Value)**	**$ 2,344,200**	**$ 562,600**	**$ 863,200**	**$ 369,400**	**$ -**	**$ -**	**$ 25,800**	**$ 112,100**	**$ 29,300**	**$ -**	**$ 381,800**
	Combined Structure Totals											
1	Parking Structure 2	$ 457,000	$ 135,000	$ 138,500	$ 49,500	$ -	$ -	$ 5,000	$ 11,500	$ 6,000	$ -	$ 111,500
2	Parking Structure 3	$ 1,291,500	$ 270,500	$ 605,500	$ 150,500	$ -	$ -	$ 12,000	$ 69,000	$ 11,500	$ -	$ 172,500
3	Parking Structure 4	$ 368,500	$ 140,500	$ 69,500	$ 138,000	$ -	$ -	$ 4,500	$ 10,500	$ 5,500	$ -	$ -
7	**Combined Ramp Annual Budget (2013 Dollars)**	**$ 2,117,000**	**$ 546,000**	**$ 813,500**	**$ 338,000**	**$ -**	**$ -**	**$ 21,500**	**$ 91,000**	**$ 23,000**	**$ -**	**$ 284,000**
8	**Combined Ramp Annual Budget (Adjusted Future Value)**	**$ 2,344,200**	**$ 562,600**	**$ 863,200**	**$ 369,400**	**$ -**	**$ -**	**$ 25,800**	**$ 112,100**	**$ 29,300**	**$ -**	**$ 381,800**
9	**Combined Ramp Opinion of 10-Year Budget**	**$ 2,344,200**										

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RESTORATION CONSULTANTS

CAPITAL IMPROVEMENT AND PROTECTION PROGRAM

LOT 2 PARKING STRUCTURE

CITY OF MANHATTAN BEACH

MANHATTAN BEACH, CA

Prepared for:
CITY OF MANHATTAN BEACH
PROJECT NO. 37-8377.00

SEPTEMBER 2013

LOT 2 PARKING STRUCTURE

EXECUTIVE SUMMARY

The Lot 2 Parking Structure is 34 years old and considered to be in fair condition for its age. Over the next ten years (starting in 2014) we recommend budgeting $457,000 in 2013 dollars ($518,000 in future value dollars) for capital improvements and repair/maintenance work.

The Capital Improvement and Protection Program (CIPP) contained in this report is based upon the results of our condition assessment and recommendations for the City in performing budgeted capital improvements and routine maintenance on the Lot 2 Parking Structure over the next 10 years.

We recommend the following components of this budget be given first priority ("Priority-1"):

- Concrete Repairs (floor, beams and stairs): $22,500
- New Vehicular Barrier System: $26,500
- Post-Tension Strand Repair and Protection: $45,000
- Height Restraint Bar at Upper Level Entry: $8,000

Total recommended budget for "Priority-1" repairs in Lot 2 Parking Structure: $102,000*

**This cost estimate does not include contractor mobilization, engineering and construction administration, and contingency fees.*

If the City of Manhattan Beach (City) were to elect to rebuild the upper level of this structure (maintain the columns and foundations), we estimate the replacement cost, including demolition, to range between $500,000 and $600,000.

The existing vehicular barriers in this structure have been in place since the original construction and may be grandfathered in under the current code. We recommend the City take a proactive approach by installing a new vehicular barrier system on the upper level that would meet current code requirements and minimize any potential hazards that exist with the current system.

Additionally, no height restraint bar was noted at the entry to the upper level from 12th Street. This allows for over-sized vehicles to access the upper level and possibly overload the structure. This is of particular concern in this structure because several PT tendons in the elevated slab were noted to be broken. In addition to repairing the broken PT tendons,

we recommend installing a height restraint bar at the entry to the upper level to avoid possible overloading.

Partial depth spalls and failed patchwork were noted on the upper level. Spalls were also noted in the cast-in-place concrete stairs and at the exposed ends of the beams. We recommended the failed patchwork and spalled concrete be removed, underlying reinforcement and exposed PT tendons cleaned and protected, and the areas patched with a high quality mortar to stop further deterioration.

Concrete testing showed poor durability characteristics, increasing the susceptibility to deterioration due to moisture infiltration. To help mitigate this deterioration, routing and sealing all floor cracks in addition to installing a protective urethane topping over the floor area of the upper level are a large portion of the "Priority-2" waterproofing repairs.

A Tier 1 seismic evaluation was completed to rapidly identify potential deficiencies in the design of the structure. Though the Tier 1 screening phase identified this structure to be non-compliant for torsion and redundancy requirements as defined by ASCE 31-03, results of "quick check" calculations indicate that the lateral-force-resisting shear walls in this structure have enough strength to resist calculated seismic forces. As such, we do not recommend pursuing a Tier 2 evaluation to further investigate the potential deficiencies identified in the Tier 1 screening phase.

Budgeting for capital improvements will help the City plan for the necessary funding needed for the recommended work required to maintain the structural integrity and keep the garage operating safely for another 10 to 20 years.

Please see the CIPP table on page 2-8 for a prioritized recommended annual budget breakdown through 2023.

OBJECTIVE

This ten-year budget for the outlined CIPP is based on the understanding that the City plans to maintain the Lot 2 Parking Structure based on the recommended program for at least the next 10 years of the structure's service life.

The objectives of this CIPP are to provide the City with an asset management tool for planning and budgeting, and to recommend restoration improvements and work items in order to maximize the service-life of this parking facility while planning for an adequate amount of capital funding. The benefit for the City is the ability to plan and budget in confidence for each year thus allowing the maximization of dollars spent. This CIPP is specific to the Lot 2 Parking Structure. If desired, our plan has the flexibility to defer certain work items to future years of the repair program.

FACILITY DESCRIPTION/ BACKGROUND INFORMATION

The Lot 2 Parking Structure is located at 222 12th Street in Manhattan Beach, California. The parking facility was built in 1979 and is constructed of one way cast-in-place post-tensioned (PT) slabs and beams supported on cast-in-place concrete columns. The facility has one supported level with two separated slab-on-grade levels on either side of 12th street. The lateral load resisting system consists of two shear walls in the east-west direction and one shear wall in the north-south direction. The facility was designed for a parking capacity of 66 vehicles. The focus of our investigation was on the portion of this parking facility located on the south side of 12th street.

A vehicular entrance to the upper level is provided on 12th Street and access to the lower level is gained from the Center Place alleyway on the south side of the structure. Vehicles park in 2-hour metered spaces, which are enforced daily from 8am-9pm. Vehicles that have purchased permits may park in the facility for longer durations. The parking facility serves patrons of the nearby shops, restaurants, and businessnes in the downtown Manhattan Beach area.

IMMEDIATE CONCERNS

The existing vehicular barriers in this structure do not appear to meet current code requirements for maximum spacing and load resistance. This could pose a potential hazard to the users of this structure. While the existing barriers may be grandfathered in under the current code, we recommend the City take a proactive approach and install a new vehicular barrier system that would replace the existing system and meet current code.

RECOMMENDATIONS

Additionally, no restrictions are currently placed on over-sized vehicles parking in the structure. This could induce greater loads on the upper level than it was designed for. We recommend the City install a height restraint bar at the upper level entry to restrict larger vehicles from using the parking structure.

These items and our corresponding recommendations are further discussed in this report.

RECOMMENDED CAPITAL IMPROVEMENTS

The following capital improvements for the Lot 2 Parking Structure are recommended over the next ten years:

- Repair concrete spalls, delaminations and failed patchwork identified on the floor and ceilings of the supported slab and slab soffit.
- Replace de-stressed PT tendons that have been exposed on top of the upper level. Functional PT tendons that are uncovered during the partial or full-depth concrete repair work should be protected with new sheathing to mitigate deterioration.
- Repair damaged curbs located on the upper level.
- Repair damaged concrete at ends of beams to protect and prevent corrosion and deterioration of the PT anchors.
- Repair spalls in the concrete walls and repair damaged stucco where necessary.
- Repair concrete as necessary in conjunction with routine maintenance performed in 2019 and 2023.
- Rout and seal typical floor cracks and install cove sealants at cold joints to prevent ingress of water and other environmental contaminants.
- Apply a new urethane traffic topping on the floor of the upper level.
- Inject epoxy in large cracks identified in ceiling, beams and walls to prevent deterioration from infiltrating water and maintain structural integrity.
- Inject chemical grout at the joint between the walls and slab to reduce the possibility of water infiltration through the joint.
- Repair the large spall identified in the top tread of the cast-in-place concrete stairs.

- Repair identified non-working light fixtures.
- Clean the existing floor drain.
- Repair identified cracking in the masonry wall.
- Install a concrete cap along the top of the masonry wall on the east side of the structure to prevent water from collecting.
- Repair the stucco skim coat at de-bonded areas.
- Clean staining from walls and repaint to improve the aesthetics of the facility.
- Repaint traffic markings to eliminate conflicts that exist with old striping.
- Replace existing signage at the south entry into the lower level.
- Remove unused and non-functional fire hose cabinet, as it is not required by code.

PREVENTIVE ITEMS

We recommend the following preventative work items over the next ten years for the Lot 2 Parking Structure:

- Cut a drip edge into the ceiling on the western side of the structure. This will help to keep water from entering the lower level of the garage.
- Maintain sealants and urethane traffic topping every five to seven years to prevent premature deterioration from water intrusion into the concrete. Once the sealants are installed in 2015 we recommend replacing the most critical areas in 2020 as they will be nearing the end of their useful service life. We have recommended the traffic topping be replaced in 2023 if originally installed in 2015.

ENHANCEMENT OPTIONS

Painting the ceilings will brighten the appearance of the parking facility. This can be completed when your budget allows.

Lighting in the parking structure is provided by fluorescent T5 light fixtures, with embedded conduit. Light level measurements were not part of the scope of this project. A number of light bulbs at select locations were not functional. Corrosion damage was noted on the lighting fixtures at select locations.

Replacing the fixtures with more energy efficient LED lighting will reduce the energy costs, and have a longer bulb life, which can contribute to further savings. A lighting study is recommended to determine actual light levels and provide a present value cost of implementing energy efficient lighting.

OPINION OF PROBABLE COSTS

OPINION OF PROBABLE COSTS

The Lot 2 Parking Structure CIPP anticipates a total budget of $457,000 in 2013 dollars ($518,000 in future value dollars) to perform capital improvements over the next ten years. Future value dollars were determined using an annual inflation rate of 3% and include estimated General Conditions and Contingencies.

The primary cost components of this budget are:

"Priority-1":

Concrete:

- Repairs of delamination and spalls in the upper level floor and curbs in 2014: $21,500.

Miscellaneous Repair:

- Post-Tension strand repair and protection in 2014: $45,000.
- Installation of a new vehicular barrier system in 2014: $26,500.
- Addition of height restraint bar in 2014: $8,000.

"Priority-2":

Waterproofing:

- Traffic topping application in 2015: $57,000.
- Routing/Sealing Floor cracks in 2015: $6,000

"Priority-3":

Waterproofing:

- Epoxy and chemical grout injection in 2016: $23,000.

Please note that the "Contingency and General Conditions" in the CIPP table are strictly for budgeting purposes. Actual Contingency and General Conditions will be determined when contractor bids are received for the work performed by a qualified restoration contractor.

It is our experience that the repairs we have recommended on a structure of this age would extend its service life for another 10-20 years. As such, we suggest considering the option of demolishing the existing structure, while salvaging the columns and foundations, and constructing a new elevated parking slab of a similar design. The cost of this option, including demolition, would amount to approximately $58.00-$70.00/s.f., or about $500,000-$600,000 for the 8,650s.f. elevated slab. Pursuing this option would reduce the potential for continuous and costly maintenance repairs resulting from durability issues, which makes up the majority of this CIPP. Further information on this option can be discussed if the City so chooses.

Parking Structure 2
10 Year Budget Forecast

WALKER RESTORATION CONSULTANTS

LEGEND	
Priority-1	
Priority-2	
Priority-3	

NO.	WORK DESCRIPTION	TOTAL COST	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1	**Concrete**	**$ 36,000**	**$ 21,500**	**$ 4,500**	**$ -**	**$ -**	**$-**	**$ 3,500**	**$ 1,500**	**$ -**	**$-**	**$ 5,000**
1.1	Floor Repair - Partial Depth	$ 17,000	$ 14,000					$ 1,500				$ 1,500
1.2	Floor Repair - Full Depth	$ 3,000	$ 2,000					$ 500				$ 500
1.3	Floor Repair - Curbs	$ 2,500	$ 1,500					$ 500				$ 500
1.4	Ceiling Repair - Partial Depth	$ 4,000		$ 2,000					$ 1,000			$ 1,000
1.5	Beam Repair - Partial Depth	$ 6,000	$ 4,000					$ 1,000				$ 1,000
1.6	Wall Repair - Partial Depth	$ 3,500		$ 2,500					$ 500			$ 500
2	**Waterproofing**	**$ 153,000**	**$ -**	**$ 65,500**	**$23,000**	**$ -**	**$-**	**$ -**	**$ 4,500**	**$ 3,000**	**$-**	**$ 57,000**
2.1	Cove Sealant	$ 4,000		$ 2,500					$ 1,500			
2.2	Rout/Seal Floor Cracks	$ 9,000		$ 6,000					$ 3,000			
2.3	Traffic Topping	$ 114,000		$ 57,000								$ 57,000
2.4	Chemical Grout Injection	$ 4,000			$ 2,500					$ 1,500		
2.5	Epoxy Injection - Walls	$ 8,500			$ 8,000					$ 500		
2.6	Epoxy Injection - Ceilings	$ 12,500			$ 12,000					$ 500		
2.7	Epoxy Injection - Beams	$ 1,000			$ 500					$ 500		
3	**Stairs**	**$ 1,000**	**$ 1,000**	**$ -**	**$ -**	**$ -**	**$-**	**$ -**	**$ -**	**$ -**	**$-**	**$ -**
3.1	Concrete Stair Tread Repair	$ 1,000	$ 1,000									
4	**Drainage/Lighting**	**$ 4,000**	**$ -**	**$ 2,500**	**$ -**	**$ -**	**$-**	**$ -**	**$ 1,500**	**$ -**	**$-**	**$ -**
4.1	Clean Existing Drain	$ 1,000		$ 500					$ 500			
4.2	Electrical Allowance	$ 1,000		$ 500					$ 500			
4.3	Repair Light Fixtures	$ 2,000		$ 1,500					$ 500			
5	**Miscellaneous/Architectural Repairs**	**$ 102,000**	**$ 79,500**	**$ 5,500**	**$14,500**	**$ -**	**$ -**	**$ -**	**$ 1,000**	**$ 1,500**	**$ -**	**$ -**
5.1	New Vehicular Barrier System	$ 26,500	$ 26,500									
5.2	Post Tension Strand Repair	$ 40,000	$ 40,000									
5.3	Post Tension Protection	$ 5,000	$ 5,000									
5.4	Masonry Wall Repair	$ 1,000		$ 500					$ 500			
5.5	Add Concrete Masonry Cap	$ 2,500		$ 2,500								
5.6	Wall Repair - Skim Coat	$ 3,000		$ 2,500					$ 500			
5.7	Paint Interior Walls	$ 7,000			$ 7,000							
5.8	Repaint Stall Striping	$ 3,000			$ 1,500					$ 1,500		
5.9	Entry/Exit Signange Updates	$ 1,000			$ 1,000							
5.10	Flatten Transition at Upper Level Entry	$ 4,000			$ 4,000							
5.11	Cut Drip Edge in Ceiling	$ 1,000			$ 1,000							
5.12	Add Height Restriction Bar at Upper Level Vehicular Entry	$ 8,000	$ 8,000									
6	**Enhancements**	**$ 50,000**	**$ -**	**$ 27,500**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 22,500**
6.1	Clean and Paint Ceilings	$ 45,000		$ 22,500								$ 22,500
6.2	Lighting Study	$ 5,000		$ 5,000								
Sub Total		$ 346,000	$102,000	$ 105,500	$37,500	$ -	$ -	$ 3,500	$ 8,500	$ 4,500	$ -	$ 84,500
Mobilization		$ 37,000	$ 11,000	$ 11,000	$ 4,000	$ -	$ -	$ 500	$ 1,000	$ 500	$ -	$ 9,000
Engineering and Construction Administration Allowance		$ 37,000	$ 11,000	$ 11,000	$ 4,000	$ -	$ -	$ 500	$ 1,000	$ 500	$ -	$ 9,000
Construction Contingency		$ 37,000	$ 11,000	$ 11,000	$ 4,000	$ -	$ -	$ 500	$ 1,000	$ 500	$ -	$ 9,000
Opinion of Annual Budget (2013 Dollars)		**$ 457,000**	**$135,000**	**$ 138,500**	**$49,500**	**$ -**	**$ -**	**$ 5,000**	**$11,500**	**$ 6,000**	**$ -**	**$ 111,500**
Opinion of Annual Budget (Adjusted Future Value)			**$139,100**	**$ 147,000**	**$54,100**	**$ -**	**$ -**	**$ 6,000**	**$14,200**	**$ 7,700**	**$ -**	**$ 149,900**
Opinion of Total 10-Year Budget (Adjusted Future Value)		**$ 518,000**		Note: Future value cost based on inflation; 3% annually								

Note 1: Contingency based on 10% of Sub Total rounded up to the nearest $500.
Note 2: General Conditions based on 10% of Sub Total rounded up to the nearest $500.
Note 3: Consulting & Engineering Fees based on 10% of Sub Total rounded up to the nearest $500.

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CAPITAL IMPROVEMENT AND PROTECTION PROGRAM

LOT 3 PARKING STRUCTURE

CITY OF MANHATTAN BEACH

MANHATTAN BEACH, CA

Prepared for:
CITY OF MANHATTAN BEACH
PROJECT NO. 37-8377.00

SEPTEMBER 2013

LOT 3 PARKING STRUCTURE

EXECUTIVE SUMMARY

The Lot 3 Parking Structure is 42 years old and is considered to be in fair condition for its age. Over the next ten years (starting in 2014) we recommend budgeting $1,291,500 in 2013 dollars ($1,432,000 in future value dollars) for capital improvements and repair/maintenance work.

The Capital Improvement and Protection Program (CIPP) contained in this report is based upon the results of our condition assessment and recommendations for the City in performing budgeted capital improvements and routine maintenance on the Lot 3 Parking Structure over the next 10 years.

We recommend the following components of this budget be given first priority ("Priority-1"):

- Concrete Repairs (floors): $73,000
- New Vehicular Barrier System: $80,000
- Height Restraint Bar at Entries: $4,500
- Tier-2 Seismic Evaluation: $50,000

Total recommended budget for "Priority-1" repairs in Lot 3 Parking Structure: $207,500*

**This cost estimate does not include contractor mobilization, engineering and construction administration, and contingency fees.*

The existing vehicular barriers in this structure have been in place since the original construction and may be grandfathered in under the current code. We recommend the City take a proactive approach by installing a new vehicular barrier system on the upper level that would meet current code requirements and minimize any potential hazards that exist with the current system.

Additionally, no height restraint bars were noted at any of the entries. This allows for over-sized vehicles to access the upper levels and possibly overload the structure. We recommend installing a height restraint bars at the entry lanes to avoid possible overloading.

Partial depth spalls were noted on the upper level ceilings and floors. We recommended the spalled concrete be removed, underlying reinforcement and exposed PT tendons cleaned and protected, and the areas patched with a high quality mortar to stop further deterioration.

Concrete testing showed poor durability characteristics, increasing the susceptibility to deterioration due to moisture infiltration. To help mitigate this deterioration, routing and sealing all floor cracks and joints in addition to installing a protective urethane topping on the roof level and a concrete siloxane sealer on the second level make up a large portion of the "Priority-2" waterproofing repairs.

A Tier 1 seismic evaluation was completed to rapidly identify potential deficiencies in the design of the structure. This structure was identified as non-compliant per ASCE-31 Tier-1 requirements due to the vertical discontinuity that exists in the lateral-load resisting system. Further, this structure utilizes mixed lateral-force-resisting systems (reinforced masonry shear walls and steel braced frames). As such, we recommend pursuing a Tier 2 evaluation to further investigate the potential deficiencies identified in the Tier 1 screening phase.

Budgeting for capital improvements will help the City plan for the necessary funding needed for the recommended work required to maintain the structural integrity and keep the garage operating safely for another 10 to 20 years.

Please see the CIPP table on page 3-7 for a prioritized recommended annual budget breakdown through 2023.

OBJECTIVE

INTRODUCTION

This ten-year budget for the outlined CIPP is based on the understanding that the City plans to maintain the Lot 3 Parking Structure based on the recommended program for at least the next 10 years of the structure's service life.

The objectives of this CIPP are to provide the City with an asset management tool for planning and budgeting, and to recommend restoration improvements and work items in order to maximize the service-life of this parking facility while planning for an adequate amount of capital funding. The benefit for the City is the ability to plan and budget in confidence for each year thus allowing the maximization of dollars spent. This CIPP is specific to the Lot 3 Parking Structure. If desired, our plan has the flexibility to defer certain work items to future years of the repair program.

FACILITY DESCRIPTION/ BACKGROUND INFORMATION

Lot 3 Parking Structure is located at 1155 Morningside Drive in Manhattan Beach, California. The parking facility was built in 1971 and is constructed of cast-in-place reinforced concrete slabs supported on wide flange steel beams and steel pipe columns. The facility has two supported levels and one slab-on-grade level. The facility was designed for a parking capacity of 135 vehicles.

Vehicular entrances to the ground level are provided from 12th Street on the north and from Center Place on the south. Entry to the second level is gained from a ramp that is accessed from 12th street. No direct vehicular access is provided from the first level to the second level. Access to the roof level is gained from a ramp on the second level. One continuous exit ramp to 12th street is provided from the upper two levels along the east side of the structure. The ground level exit is located on the east side of the structure onto Morningside Drive. Vehicles park in 2-hour metered spaces on the ground and second levels, and at 10-hour metered spaces on the roof level. All meters are enforced daily from 8am-9pm. The parking facility mainly serves the nearby shops, restaurants, and offices.

IMMEDIATE CONCERNS

RECOMMENDATIONS

The existing vehicular barriers in this structure do not appear to meet current code requirements for maximum spacing and load resistance. This could pose a potential hazard to the users of this structure. While the existing barriers may be grandfathered in under the current code, we recommend the City take a proactive approach and install a new vehicular barrier system that would replace the existing system and meet current code.

Additionally, no height restrictions are currently placed at the entry lanes. This allows over-sized vehicles to enter the upper levels, which could cause damage to the structure and to the vehicles. We recommend the City install height restraint bars to restrict larger vehicles from using the parking structure.

We noted several areas where there is an imminent potential of falling concrete. This could pose a potential risk

if one of these falling pieces strikes a pedestrian or a vehicle. We recommend removing the areas of loose concrete in the ceilings.

These items and our corresponding recommendations are further discussed in this report.

RECOMMENDED CAPITAL IMPROVEMENTS

The following repairs and capital improvements for the Lot 3 Parking Structure are recommended over the next ten years:

- Repair concrete spalls, delaminations and failed patchwork identified on the upper levels.
- Repair damaged curbs.
- Repair damaged concrete at the top of the east stair connection.
- Repair concrete as necessary in conjunction with routine maintenance performed in 2019 and 2023.
- Rout and seal typical floor cracks and install cove sealants at cold joints to prevent ingress of water and other environmental contaminants.
- Apply a new urethane traffic topping on the floor area of the roof level.
- Apply a concrete floor sealer on the floor area of the second level.
- Wash prefabricated metal stairs and paint handrails.
- Clean the existing floor drains.
- Repair damaged and non-functioning light fixtures.
- Install galvanic sheets for cathodic corrosion protection.
- Repair identified cracks and damage in masonry walls.
- Patch areas of deteriorated steel with epoxy coating.
- Add steel jackets to strengthen select columns at their base.
- Install concrete enclosure to protect select columns at their base.
- Clean and paint existing column concrete enclosures.
- Replace the expansion joint located on the west side of the second level. This work would require cooperation of the neighboring property owner.
- Clean and paint gate anchors at second floor opening to adjacent lot.

- Repair and repaint existing pedestrian handrails at or near the stairs.
- Restripe parking stalls.
- Perform a Tier 2 seismic evaluation to analyze potential deficiencies identified in Tier 1 screening.

PREVENTIVE ITEMS

As a preemptive measure, we recommend maintaining sealants every five to seven years to prevent premature deterioration from water intrusion into the concrete. Once the sealants are installed in 2015 we recommend replacing the most critical areas in 2020 as they will be nearing the end of their useful service life.

ENHANCEMENT OPTIONS

Painting the ceilings will brighten the appearance of the parking facility. This can be completed when your budget allows.

Lighting on the second level is provided by fluorescent T5 light fixtures, with embedded conduit. The light level measurements were not part of the scope of this project; however the overall lighting appeared to be low on the second level. A number of light bulbs at select locations appeared non-functional and were missing in some cases. Extensive corrosion damage was noted on the lighting fixtures at select locations.

Replacing the fixtures on the second level with more energy efficient lighting will reduce the energy costs, and have a longer bulb life, which can contribute to further savings. A lighting study is recommended as an enhancement to determine actual light levels and provide a present value cost of implementing energy efficient lighting.

OPINION OF PROBABLE COSTS

OPINION OF PROBABLE COSTS

Our Lot 3 Parking Structure CIPP anticipates a total budget of $1,291,500 in 2013 dollars ($1,432,000 in future value dollars) to perform repairs and capital improvements over the next ten years. Future value dollars were determined using an annual inflation rate of 3% and include estimated General Conditions and Contingencies.

The primary cost components of this budget are:

"Priority-1":

Concrete:

- Repairs of delamination and spalls in the upper level floors in 2014: $73,000.

Miscellaneous Repairs:

- Installation of a new vehicular barrier system in 2014: $80,000.
- Addition of height restraint bars in 2014: $4,500.
- Tier-2 Seismic evaluation: $50,000

"Priority-2":

Concrete:

- Repairs of delamination and spalls in the upper level ceilings and curbs in 2015: $152,000.

Waterproofing:

- Urethane traffic topping on roof level in 2015: $120,500.
- Siloxane concrete sealer on second level in 2015: $10,000.
- Routing/Sealing Floor cracks in 2015: $65,000

Miscellaneous Repairs:

- Galvanic corrosion protection in 2015 and 2016: $125,000.
- Epoxy paint patch on beams in 2015: $12,500.
- Expansion joint replacement in 2015: $4,000.

Please note that the "Contingency and General Conditions" in the CIPP table are strictly for budgeting purposes. Actual Contingency and General Conditions will be determined when contractor bids are received for the work performed by a qualified restoration contractor.

Parking Structure 3
10 Year Budget Forecast

WALKER RESTORATION CONSULTANTS

LEGEND	
Priority-1	
Priority-2	
Priority-3	

NO.	WORK DESCRIPTION	TOTAL COST	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1	**Concrete**	**$ 241,000**	**$ 73,000**	**$ 152,000**	**$ -**	**$ -**	**$ -**	**$ 9,000**	**$ 7,000**	**$ -**	**$ -**	**$ -**
1.1	Floor Repair - Partial Depth	$ 56,000	$ 49,000					$ 7,000				
1.2	Floor Repair - Full Depth	$ 26,000	$ 24,000					$ 2,000				
1.3	Floor Repair - Curbs	$ 2,000		$ 1,500					$ 500			
1.4	Ceiling Repair - Partial Depth	$ 156,500		$ 150,000					$ 6,500			
1.5	Slab Edge Repair at Stair Connection	$ 500		$ 500								
2	**Waterproofing**	**$ 380,300**	**$ -**	**$ 208,500**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 39,500**	**$ -**	**$ -**	**$ 130,500**
2.1	Cove Sealant	$ 13,300		$ 7,500					$ 4,000			
2.2	Rout/Seal Floor Cracks	$ 97,500		$ 65,000					$ 32,500			
2.3	Tool/Seal Construction Joints	$ 8,500		$ 5,500					$ 3,000			
2.4	Traffic Topping (Roof Level)	$ 241,000		$ 120,500								$ 120,500
2.5	Concrete Floor Sealer (Second Level)	$ 20,000		$ 10,000								$ 10,000
3	**Stair Towers**	**$ 6,500**	**$ -**	**$ 1,500**	**$ 1,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,500**	**$ -**	**$ -**
3.1	Clean and Repair Stair Tread Connections	$ 1,500		$ 1,500								
3.2	Paint Stair Handrails	$ 3,000			$ 1,500					$ 1,500		
3.3	Wash Stair Treads	$ 2,000			$ 1,000					$ 1,000		
4	**Drainage/Lighting**	**$ 14,500**	**$ -**	**$ 11,500**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,000**	**$ -**	**$ -**	**$ -**
4.1	Mechanical Allowance	$ 2,500		1,500					$ 1,000			
4.2	Clean Existing Drain and Lines	$ 2,000		1,000					$ 1,000			
4.3	Electrical Allowance	$ 3,500		2,500					$ 1,000			
4.4	Repair Light Fixtures	$ 9,000		8,000					$ 1,000			
5	**Miscellaneous/Architectural Repairs**	**$ 297,500**	**$ 134,500**	**$ 91,000**	**$ 64,500**	**$ -**	**$ -**	**$ -**	**$ 1,500**	**$ 6,000**	**$ -**	**$ -**
5.1	New Vehicular Barrier System	$ 80,000	$ 80,000									
5.2	Galvanic Corrosion Protection	$ 125,000		$ 67,000	$ 58,000							
5.3	Masonry Wall Repair	$ 2,500		$ 2,000					$ 500			
5.4	Epoxy Paint Patch on Beams and Anchor Plates	$ 13,500		$ 12,500					$ 1,000			
5.5	Steel Jacket at Perimeter Column Base	$ 500		$ 500								
5.6	Concrete Enclosures at Column Base	$ 5,000		$ 5,000								
5.7	Paint Existing Concrete Enclosures at Columns	$ 5,000			$ 2,500					$ 2,500		
5.8	Expansion Joint Replacement	$ 4,000		$ 4,000								
5.9	Clean and Paint Gate Anchors	$ 500			$ 500							
5.10	Repair/Repaint Pedestrian Handrails	$ 1,000			$ 500					$ 500		
5.11	Repaint Stall Striping	$ 6,000			$ 3,000					$ 3,000		
5.12	Height Restriction Bar at Vehicular Entries	$ 4,500	$ 4,500									
5.13	Tier 2 Seismic Evaluation	$ 50,000	$ 50,000									
6	**Enhancements**	**$ 71,000**	**$ -**	**$ -**	**$ 71,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
6.1	Clean and Paint Ceilings	$ 66,000			$ 66,000							
6.2	Lighting Study	$ 5,000			$ 5,000							
Sub Total		$ 1,007,500	$ 207,500	$ 464,500	$ 136,500	$ -	$ -	$ 9,000	$ 51,000	$ 8,500	$ -	$ 130,500
Mobilization		$ 104,000	$ 21,000	$ 47,000	$ 14,000	$ -	$ -	$ 1,000	$ 6,000	$ 1,000	$ -	$ 14,000
Engineering and Construction Administration Allowance		$ 90,000	$ 21,000	$ 47,000	$ -	$ -	$ -	$ 1,000	$ 6,000	$ 1,000	$ -	$ 14,000
Construction Contingency		$ 90,000	$ 21,000	$ 47,000	$ -	$ -	$ -	$ 1,000	$ 6,000	$ 1,000	$ -	$ 14,000
Opinion of Annual Budget (2013 Dollars)		$ 1,291,500	**$ 270,500**	**$ 605,500**	**$ 150,500**	**$ -**	**$ -**	**$ 12,000**	**$ 69,000**	**$ 11,500**	**$ -**	**$ 172,500**
Opinion of Annual Budget (Adjusted Future Value)			**$ 278,700**	**$ 642,400**	**$ 164,500**	**$ -**	**$ -**	**$ 14,400**	**$ 84,900**	**$ 14,600**	**$ -**	**$ 231,900**
Opinion of Total 10-Year Budget (Adjusted Future Value)		**$ 1,432,000**		Note: Future value cost based on inflation; 3% annually								

Note 1: Contingency based on 10% of Sub Total rounded up to the nearest $500.
Note 2: General Conditions based on 10% of Sub Total rounded up to the nearest $500.
Note 3: Consulting & Engineering Fees based on 10% of Sub Total rounded up to the nearest $500.

WALKER
RESTORATION CONSULTANTS

CAPITAL IMPROVEMENT AND PROTECTION PROGRAM

LOT 4 PARKING STRUCTURE

CITY OF MANHATTAN BEACH

MANHATTAN BEACH, CA

Prepared for:
CITY OF MANHATTAN BEACH
PROJECT NO. 37-8377.00

SEPTEMBER 2013

LOT 4 PARKING STRUCTURE

EXECUTIVE SUMMARY

The Lot 4 Parking Structure is 34 years old and considered to be in fair condition for its age. Over the next ten years (starting in 2014) we recommend budgeting $368,000 in 2013 dollars ($395,000 in future value dollars) for capital improvements and repair/maintenance work.

The Capital Improvement and Protection Program (CIPP) contained in this report is based upon the results of our condition assessment and recommendations for the City in performing budgeted capital improvements and routine maintenance on the Lot 4 Parking Structure over the next 10 years.

We recommend the following components of this budget be given first priority ("Priority-1"):

- Concrete Repairs (floor, columns and ceiling): $33,500
- New Vehicular Barrier System: $42,000
- Post-Tension Strand Repair and Protection: $22,500
- Height Restraint Bar at Upper Level Entry: $8,000
- Removing Trip Hazard: $1,500

Total recommended budget for "Priority-1" repairs in Lot 4 Parking Structure: $107,500*

**This cost estimate does not include contractor mobilization, engineering and construction administration, and contingency fees.*

If the City of Manhattan Beach (City) were to elect to rebuild the upper level of this structure (maintain the columns and foundations), we estimate the replacement cost, including demolition, to range between $800,000 and $1,300,000.

The existing vehicular barriers in this structure have been in place since the original construction and may be grandfathered in under the current code. We recommend the City take a proactive approach by installing a new vehicular barrier system on the upper level that would meet current code requirements and minimize any potential hazards that exist with the current system.

Additionally, no height restraint bar was noted at the entry to the upper level from 38th Street. This allows for over-sized vehicles to access the upper level and possibly overload the structure. We recommend installing a height restraint bar at the entry to the upper level to avoid possible overloading.

Partial depth spalls and failed patchwork were noted on the upper level. Spalls were also noted in the ceilings and concrete columns. We recommended the failed patchwork and spalled concrete be removed, underlying reinforcement and exposed PT tendons cleaned and protected, and the areas patched with a high quality mortar to stop further deterioration.

A Tier 1 seismic evaluation was completed to rapidly identify potential deficiencies in the design of the structure. Though the Tier 1 screening phase identified this structure to be non-compliant for torsion and redundancy requirements as defined by ASCE 31-03, results of "quick check" calculations indicate that the lateral-force-resisting shear walls in this structure have enough strength to resist calculated seismic forces. As such, we do not recommend pursuing a Tier 2 evaluation to further investigate the potential deficiencies identified in the Tier 1 screening phase.

Budgeting for capital improvements will help the City plan for the necessary funding needed for the recommended work required to maintain the structural integrity and keep the garage operating safely for another 10 to 20 years.

Please see the CIPP table on page 4-7 for a prioritized recommended annual budget breakdown through 2023.

OBJECTIVE

INTRODUCTION

This ten-year budget for the outlined CIPP is based on the understanding that the City plans to maintain the Lot 4 Parking Structure based on the recommended program for at least the next 10 years of the structure's service life.

The objectives of this CIPP are to provide the City with an asset management tool for planning and budgeting, and to recommend restoration improvements and work items in order to maximize the service-life of this parking facility while planning for an adequate amount of capital funding. The benefit for the City is the ability to plan and budget in confidence for each year thus allowing the maximization of dollars spent. This CIPP is specific to the Lot 4 Parking Structure. If desired, our plan has the flexibility to defer certain work items to future years of the repair program.

FACILITY DESCRIPTION/ BACKGROUND INFORMATION

The Lot 4 Parking Structure is located at 3714 Highland Avenue in Manhattan Beach, California. The parking facility was built in 1980 and is constructed of one way cast-in-place post-tensioned (PT) slabs supported on wide-shallow PT beams and cast-in-place concrete columns. The facility has one supported level and one slab-on-grade level. The lateral load resisting system consists of three shear walls in the east-west direction and two shear walls in the north-south direction. The facility was designed for a parking capacity of 78 vehicles.

A vehicular entrance to the upper level is provided on 38th Street and access to the lower level is gained from Highland Avenue. Vehicles park in 2-hour metered spaces, which are enforced daily from 8am-9pm. The parking facility mainly serves patrons of the nearby shops, restaurants, offices and beach.

IMMEDIATE CONCERNS

RECOMMENDATIONS

The existing vehicular barriers in this structure do not appear to meet current code requirements for maximum spacing and load resistance. This could pose a potential hazard to the users of this structure. While the existing barriers may be grandfathered in under the current code, we recommend the City take a proactive approach and install a new vehicular barrier system that would replace the existing system and meet current code.

Additionally, no restrictions are currently placed on over-sized vehicles parking in the structure. This could induce greater loads on the upper level than it was designed for. We recommend the City install a height restraint bar at the upper level entry to restrict larger vehicles from using the parking structure.

The uneven transition between the sidewalk and the upper level at the pedestrian access point from Rosecrans Ave. is a trip hazard. We recommend this transitioned be flattened to eliminate the risk to pedestrians.

We noted several areas where there is an imminent potential of falling concrete. This could pose a potential risk

if one of these falling pieces strikes a pedestrian or a vehicle. We recommend removing the areas of loose concrete in the ceilings.

These items and our corresponding recommendations are further discussed in this report.

RECOMMENDED CAPITAL IMPROVEMENTS

The following capital improvements and repairs for the Lot 4 Parking Structure are recommended over the next ten years:

- Repair concrete spalls, delaminations and failed patchwork identified on the upper level.
- Repair concrete spalls identified in the columns.
- Repair damaged curbs located on the upper level.
- Repair spalls in the concrete walls and repair damaged stucco where necessary.
- Remove and reconstruct concrete drain enclosure.
- Repair concrete as necessary in conjunction with routine maintenance performed in 2019 and 2023.
- Inject typical floor cracks that run parallel to the PT drop panels with epoxy.
- Inject epoxy in large floor cracks to prevent deterioration from water infiltration and to maintain structural integrity.
- Rout and seal typical floor cracks and install cove sealants at cold joints to prevent ingress of water and other environmental contaminants.
- Inject chemical grout at the joint between the walls and slab to reduce the possibility of water infiltration through the joint.
- Work with adjoining property owner(s) to install a waterproofing membrane as a moisture barrier in the planter adjacent to concrete retaining walls.
- Replace de-stressed PT tendons that are uncovered during the partial or full-depth concrete repair work. Functional PT tendons that are uncovered during the partial or full-depth concrete repair work should be protected with new sheathing to mitigate deterioration.
- Clean staining on floor deck and walls to improve the aesthetics of the facility.
- Repaint traffic stall striping and markings.

PREVENTIVE ITEMS

We recommend the following preventative work items over the next ten years for the Lot 4 Parking Structure:

- Cut a drip edge into the ceiling on the western side of the structure. This will help to keep water from entering the lower level of the garage.
- Maintain sealants every five to seven years to prevent premature deterioration from water intrusion into the concrete. Once the sealants are installed in 2013 we recommend replacing the most critical areas in 2018 as they will be nearing the end of their useful service life.

ENHANCEMENT OPTIONS

Painting the ceilings, columns and walls will brighten the appearance of the parking facility. This can be completed when your budget allows.

OPINION OF PROBABLE COSTS

OPINION OF PROBABLE COSTS

The Lot 4 Parking Structure CIPP anticipates a total budget of $368,500 in 2013 dollars ($395,000 in future value dollars) to perform repairs and capital improvements over the next ten years. Future value dollars were determined using an annual inflation rate of 3% and include estimated General Conditions and Contingencies.

The primary cost components of this budget are:

<u>"Priority-1":</u>

Concrete:

- Repairs of delamination and spalls in the upper level floor and curbs, ceilings, and columns in 2014: $33,500.

Miscellaneous Repair:

- Installation of a new vehicular barrier system in 2014: $42,500.

- Post-Tension strand repair and protection in 2014: $22,000.
- Addition of height restraint bar in 2014: $8,000.
- Removing trip hazard in 2014: $1,500.

"Priority-2":

Waterproofing:

- Planter waterproofing in 2015: $25,000.
- Routing/Sealing floor cracks in 2015: $6,000.
- Cove and joint sealants: $4,000.

"Priority-3":

Waterproofing:

- Epoxy and chemical grout injection in 2016: $62,000.

Please note that the "Contingency and General Conditions" in the CIPP table are strictly for budgeting purposes. Actual Contingency and General Conditions will be determined when contractor bids are received for the work performed by a qualified restoration contractor.

It is our experience that the repairs we have recommended on a structure of this age would extend its service life for another 10-20 years. As such, we suggest considering the option of demolishing the existing structure, while salvaging the columns and foundations, and constructing a new elevated parking slab of a similar design. The cost of this option, including demolition, would amount to approximately $58.00-$70.00/s.f., or about $800,000-$1,300,000 for the 13,800s.f. elevated slab. Pursuing this option would reduce the potential for continuous and costly maintenance repairs resulting from durability issues, which makes up the majority of this CIPP. Further information on this option can be discussed if the City so chooses.

Parking Structure 4
10 Year Budget Forecast

LEGEND	
Priority-1	
Priority-2	
Priority-3	

NO.	WORK DESCRIPTION	TOTAL COST	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1	**Concrete**	**$ 50,000**	**$ 33,500**	**$ 13,000**	**$ -**	**$-**	**$-**	**$ 3,000**	**$ 500**	**$ -**	**$ -**	**$ -**
1.1	Floor Repair - Partial Depth	$ 11,500	$ 10,500					$ 1,000				
1.2	Floor Repair - Curbs	$ 10,500	$ 10,000					$ 500				
1.3	Ceiling Repair - Partial Depth	$ 13,500	$ 12,500					$ 1,000				
1.4	Wall Repair - Partial Depth	$ 5,500		$ 5,000					$ 500			
1.5	Column Repair	$ 1,000	$ 500					$ 500				
1.6	Concrete Drain Enclosure Reconstruction	$ 8,000		$ 8,000								
2	**Waterproofing**	**$ 106,500**	**$ -**	**$ 35,000**	**$ 62,000**	**$-**	**$-**	**$ -**	**$ 5,500**	**$ 4,000**	**$ -**	**$ -**
2.1	Wall (Planter) Waterproofing	$ 25,000		$ 25,000								
2.2	Epoxy Injection - Ceiling	$ 33,000			$ 32,000					$ 1,000		
2.3	Epoxy Injection - Floor	$ 2,500			$ 2,000					$ 500		
2.4	Epoxy Injection - Walls	$ 24,500			$ 24,000					$ 500		
2.5	Epoxy Injection - Beams	$ 1,500			$ 1,000					$ 500		
2.6	Rout/Seal Floor Cracks	$ 9,000		$ 6,000					$ 3,000			
2.7	Cove Sealant	$ 5,500		$ 3,500					$ 2,000			
2.8	Tool/Seal Control Joints	$ 1,000		$ 500					$ 500			
2.9	Chemical Grout Injection	$ 4,500			$ 3,000					$ 1,500		
4	**Drainage/Lighting**	**$ 3,500**	**$ -**	**$ 2,000**	**$ -**	**$-**	**$-**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
4.1	Clean Existing Drain	$ 2,000		$ 1,000					$ 1,000			
4.2	Electrical Allowance	$ 1,000		$ 500					$ 500			
4.3	Replace LED Light Fixture Cover	$ 500		$ 500								
5	**Miscellaneous/Architectural Repairs**	**$ 79,500**	**$ 74,000**	**$ 1,500**	**$ 2,500**	**$ -**	$ -	**$ -**	**$ 1,500**	**$ -**	**$ -**	**$ -**
5.1	New Vehicular Barrier System	$ 42,000	$ 42,000									
5.2	Post Tension Strand Repair	$ 20,000	$ 20,000									
5.3	Post Tension Protection	$ 2,500	$ 2,500									
5.4	Sandblast Walls	$ 1,500		$ 1,500								
5.5	Repaint Stall Striping	$ 3,000			$ 1,500				$ 1,500			
5.6	Add Height Restriction Bar at Upper Level Vehicular Entry	$ 8,000	$ 8,000									
5.7	Remove Trip Hazard at Upper Level Pedestrian Entry	$ 1,500	$ 1,500									
5.8	Cut Drip Edge in Ceiling	$ 1,000			$ 1,000							
6	**Enhancements**	**$ 40,500**	**$ -**	**$ -**	**$ 40,500**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
6.1	Clean and Paint Ceilings	$ 34,000			$ 34,000							
6.2	Paint Columns and Walls	$ 6,500			$ 6,500							
Sub Total		$ 278,500	$ 107,500	$ 51,500	$ 105,000	$ -	$ -	$ 3,000	$ 7,500	$ 4,000	$ -	$ -
Mobilization		$ 30,000	$ 11,000	$ 6,000	$ 11,000	$ -	$ -	$ 500	$ 1,000	$ 500	$ -	$ -
Engineering and Construction Administration Allowance		$ 30,000	$ 11,000	$ 6,000	$ 11,000	$ -	$ -	$ 500	$ 1,000	$ 500	$ -	$ -
Construction Contingency		$ 30,000	$ 11,000	$ 6,000	$ 11,000	$ -	$ -	$ 500	$ 1,000	$ 500	$ -	$ -
Opinion of Annual Budget (2013 Dollars)		$ 368,500	**$ 140,500**	**$ 69,500**	**$ 138,000**	**$ -**	**$ -**	**$ 4,500**	**$ 10,500**	**$ 5,500**	**$ -**	**$ -**
Opinion of Annual Budget (Adjusted Future Value)			**$ 144,800**	**$ 73,800**	**$ 150,800**	**$ -**	**$ -**	**$ 5,400**	**$ 13,000**	**$ 7,000**	**$ -**	**$ -**
Opinion of Total 10-Year Budget (Adjusted Future Value)		**$ 395,000**		Note: Future value cost based on inflation; 3% annually								

Note 1: Contingency based on 10% of Sub Total rounded up to the nearest $500.
Note 2: General Conditions based on 10% of Sub Total rounded up to the nearest $500.
Note 3: Consulting & Engineering Fees based on 10% of Sub Total rounded up to the nearest $500.