FINAL REPORT

Deep Injection Wells No. 3 and No. 4 Fiscal Sustainability Plan

Prepared for
City of Hollywood
Department Public Utilities
October 2023

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Brown AND Caldwell

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List of Abbreviations

CIP	Capital Improvement Plan
DIW	Deep Injection Well
DIW-3	Deep Injection Well No. 3
DIW-4	Deep Injection Well No. 3
DI	Ductile Iron
FDEP	Florida Department of Environmental Protection
F&I	Furnished and Installed
FRP	Fiberglass Reinforced Plastic
FSP	Fiscal Sustainability Plan
FWPCA	Federal Water Pollution Control Act
LF	Linear Feet
LS	Lump Sum
LOS	Level of Service
MIT	Mechanical Integrity Testing
MW	Monitoring Well
MW-2	Monitoring Well No. 2
O&M	Operations and Maintenance
OOL	Ocean Outfall Legislation
SRF	State Revolving Fund
SS	Stainless Steel
SDSS	Super Duplex Stainless Steel
SRWWTP	Southern Regional Wastewater Treatment Plant

Executive Summary

To serve the needs and wellbeing of their communities, the City of Hollywood (City), pursues grant funding opportunities from the State of Florida for their capital improvement projects. One such project is the Deep Injection Wells No. 3 And No. 4, Project No. 19-9119A (Phase I), which is part of the City's goal to meet the 2008 Ocean Outfall Legislation (OOL) requirements. This was funded by the Florida Department of Environmental Protection (FDEP) State Revolving Fund (SRF) Loan Program.

The project area is within the northeast section of the City of Hollywood's Southern Regional Wastewater Treatment Plant (SRWWTP) located at 1621 North 14th Avenue, Hollywood, FL. The overall scope of work involved the installation of two deep injection wells (DIWs) and one monitoring well (MW). Brown and Caldwell performed the design, permitting, bid services, and construction oversight for this project. The original contract price for this project is $39,939,939.00. The construction commenced on December 17, 2019, and cost $37,985,737.57. This project was substantially complete on March 7, 2022.

For this effort, Brown and Caldwell is assisting the City of Hollywood with the preparation of this Deep Injection Wells No. 3 and No. 4 Fiscal Sustainability Plan (FSP) to satisfy the requirements of the SRF Loan Program for the asset management of the newly constructed critical deep injection wells infrastructure.

The Florida Administration Code 62-503.200 define FSP as "a plan to be implemented by the project sponsor to perform an initial and continued inventory and evaluation of treatment works proposed for repair, replacement, or expansion in accordance with section 603 (33 USC § 1383) of the Act."

The following describes the requirements of the SRF Loan Program per the project agreement. "The Local Government shall either develop and implement a Fiscal Sustainability Plan or certify that it has developed and implemented a Fiscal Sustainability Plan, which includes the following:

- An inventory of critical assets that are part of the project.
- An evaluation of the condition and performance of inventoried assets or asset groupings.
- A certification that the recipient has evaluated and will be implementing water and energy conservation efforts as part of the plan.
- And a plan for maintaining, repairing, and, as necessary, replacing the assets and a plan for funding such activities.

A Fiscal Sustainability Plan certification is a certification by the Local Government that the FSP has been developed and is being implemented. The requirement is to develop and implement a FSP is a condition of the Loan Agreement and is due before final disbursement is approved."

The City entered into the SRF Loan Program agreement on November 20, 2019. This FSP will provide the City with a fiscal plan for maintenance, upgrades, and/or replacement of the Deep Injection Well No. 3 (DIW-3) and the Deep Injection Well No. 4 (DIW-4) assets within a period of 50 years.

Section 1
Introduction

1.1 Background

The City of Hollywood (City) has historically and currently relied upon the Florida Department of Environmental Protection SRF Loan Program as a source of funding for its capital improvement projects. One of the more recent revisions to the SRF Loan Program requires that the City prepare a Fiscal Sustainability Plan on an SRF Loan. Brown and Caldwell has assisted the City with the preparation of this Fiscal Sustainability Plan for the Deep Injection Wells No. 3 and No. 4 Project No. 19-9119A to meet the project Loan Agreement requirements. Please refer to Figure 1-1 for the project location area map. The constructed wells are located in the northeast section of the South Regional Wastewater Treatment Plant (SRWWTP).

The Deep Injection Wells No. 3 and No. 4 Project:

1. Construction of Deep Injection Wells No. 3 (DIW-3) And No. 4 (DIW-4).
2. Construction of Monitoring Well No. 2 (MW-2).

Figure 1-1. Location Area Map

1.2 Deep Injection Wells Installation (19-9119A)

The DIWs construction consisted of the following: site preparation including installation of temporary drilling pads, mobilization, maintenance of wells and site, demobilization and cleanup, installation of two Class I injection wells with 36-inch diameter final casing and 24-inch diameter Fiberglass Reinforced Pipe (FRP) and a super duplex stainless steel transition piece to a total depth of approximately 3,500 feet, one dual-zone MW with a total depth of 1,545 feet, installation of permanent wellheads and associated instrumentation, and injection testing of the two injection wells.

The total construction cost for DIW-3, DIW-4, and MW-2 was $37,985,737.57.

Section 2
Asset Inventory

2.1 Asset Inventory, Condition, and Performance

The following critical assets will allow the City to increase injection well disposal capacity and meet the requirements of the 2008 Ocean Outfall Legislation (OOL). These assets are in excellent condition since they have been recently constructed.

2.2 Inventory of Critical Wells Assets

The inventory of the DIW-3 assets is listed in Table 2-1 below. It is based on completed quantities and reflect the final count of the design as furnished and installed (F&I) during the construction effort. This includes fiber reinforced plastic (FRP) tubing, super duplex stainless steel (SDSS), stainless steel (SS) and ductile iron (DI) components.

Table 2-1. Deep Injection Well No. 3 Assets Inventory

No.	Asset Description	Quantity	Unit	Installation Cost*
1	F&I 66-inch carbon steel casing	205	LF	$205,000.00
2	F&I 56-inch carbon steel casing	892	LF	$847,400.00
3	F&I 46-inch carbon steel casing	1460	LF	$1,095,000.00
4	F&I 36-inch carbon steel casing	2850	LF	$2,707,500.00
5	F&I nom. 24-inch FRP Tubing with cement packer	2830	LF	$3,877,100.00
6	Development of DIW-3 and Other**	1	LS	$875,000.00
7	Drill, ream, and logging of pilot holes	1	LS	$2,701,700.00
8	F&I cement, perform cement bond, temperature, top temperature, and video logs	1	LS	$1,232,680.00
9	F&I Wellhead and surface equipment	1	LS	$200,000.00
10	Furnish 24-inch DI Ball Valves, Complete	1	EA	$90,000.00
Subtotal				$13,831,380.00

*Installation cost includes the cost to furnish and install the total amount for quantities associated with that asset item. It excludes restoration work, mobilization, maintenance of traffic, bonds, insurance, testing, and permit fees.

**Other includes all costs related to set-up and performance of tests/analyses including but not limited to pressure tests, water quality tests, packer tests, injection tests, and core analyses.

The inventory of the DIW-4 assets is listed in Table 2-2 on the following page. It is based on completed quantities and reflect the final count of the design as F&I during the construction effort.

Table 2-2. Deep Injection Well No. 4 Assets Inventory				
No.	Asset Description	Quantity	Unit	Installation Cost*
1	F&I 66-inch carbon steel casing	197	LF	$197,000.00
2	F&I 56-inch carbon steel casing	890	LF	$845,500.00
3	F&I 46-inch carbon steel casing	1424	LF	$1,068,000.00
4	F&I 36-inch carbon steel casing	2850	LF	$2,707,500.00
5	F&I nom. 24-inch FRP Tubing with cement packer	2840	LF	$3,777,200.00
6	Development of DIW-4 and Other**	1	LS	$869,000.00
7	Drill, ream, and logging of pilot holes	1	LS	$2,646,500.00
8	F&I cement, perform cement bond, temperature, top temperature, and video logs	1	LS	$1,420,028.00
9	F&I Wellhead and surface equipment	1	LS	$180,000.00
10	Furnish 24-inch DI Ball Valves, Complete	1	EA	$90,000.00
Total				$13,800,728.00

*Installation cost includes the cost to furnish and install the total amount for quantities associated with that asset item. It excludes restoration work, mobilization, maintenance of traffic, bonds, insurance, testing, and permit fees.

**Other includes all costs related to set-up and performance of tests/analyses including but not limited to pressure tests, water quality tests, packer tests, injection tests, and core analyses.

The inventory of the MW-2 assets is listed in Table 2-3 below. It is based on completed quantities and reflect the final count of the design as F&I during the construction effort.

Table 2-3. Monitoring Well No. 2 Assets Inventory				
No.	Asset Description	Quantity	Unit	Installation Cost*
1	F&I 34-inch carbon steel casing	198	LF	$69,300.00
2	F&I 24-inch carbon steel casing	890	LF	$222,500.00
3	F&I 16-inch carbon steel casing	1227	LF	$245,400.00
4	F&I 6.625-inch FRP Tubing with external casing packer	1545	LF	$185,400.00
5	Development of MW-2 and Other**	1	LS	$287,500.00
6	Drill, ream, and logging of pilot holes	1	LS	$1,030,100.00
7	F&I cement, perform cement bond, temperature, top temperature, and video logs	1	LS	$116,448.00
8	F&I Wellhead and surface equipment	1	LS	$120,000.00
Subtotal				$2,276,648.00

*Installation cost includes the cost to furnish and install the total amount for quantities associated with that asset item. It excludes restoration work, mobilization, maintenance of traffic, bonds, insurance, testing, and permit fees.

**Other includes all costs related to set-up and performance of tests/analyses including but not limited to pressure tests, water quality tests, packer tests, injection tests, and core analyses.

The inventory of the General Cost is listed in Table 2-4 on the following page. It is based on completed quantities and reflect the final count of the design as F&I during the construction effort.

Table 2-4. General Cost				
No.	Asset Description	Quantity	Unit	Installation Cost*
1	Remove and disposal of piping, dirt and vegetation and relocation of existing piping and structures	LS	1	$235,029.00
2	Mobilization 60% and Demobilization 40%	LS	1	$7,839,989.80
3	Consideration for Indemnification	LS	1	$10.00
4	Permit, Licenses Fees and Materials Testing Allowance	LS	1	$1,952.77
Total				$8,076,981.57

*Installation cost includes the cost to furnish and install the total amount for quantities associated with that asset item. It excludes restoration work, mobilization, maintenance of traffic, bonds, insurance, testing, and permit fees.

The Total Construction Cost is listed in Table 2-5. It is based on completed quantities and reflect the final count of the design as F&I during the construction effort.

Table 2-5. Total Construction Cost		
No.	Inventory Type	Installation Cost
1	Deep Injection Well No. 3 Assets	$13,831,380.00
2	Deep Injection Well No. 4 Assets	$13,800,728.00
3	Monitoring Well No. 2 Assets	$2,276,648.00
4	General Cost	$8,076,981.57
Total		$37,985,737.57

2.3 Condition Assessment

All the DIWs critical assets that were constructed as part of this project are brand new and in excellent condition. Maintenance is to be scheduled annually and/or as recommended by the product manufacturer. The history of regular repairs, maintenance, as-built, record drawings, shop drawings, products catalogs, and condition assessment are to be maintained by the City.

Listed below are the main points of the condition assessment evaluation for the critical assets:

- Visual condition assessment of mechanical performance testing to be scheduled and performed in conjunction with the products recommended operations and maintenance (O&M) manual process.
- Conduct a performance measurement evaluation of the assets.
- Assess condition of DIW and MW facilities after major events, such as hurricanes, power outages, etc.

2.3.1 Condition Assessment Rating System

A standardized condition assessment form and methodology is to be utilized for visual condition assessment of civil and mechanical infrastructure (Refer to **Appendix A** for attached template). The condition rating criteria is summarized on the following page.

General Condition Rating

1. (New) - New or nearly new equipment or structure.
2. (Good) - Well maintained, like-new condition of equipment or structure.
3. (Fair) - Visible degradation of equipment or structure.
4. (Poor) - Equipment or structure integrity compromised by corrosion and wear.
5. (Critical) - Equipment or structure integrity severely compromised by corrosion and wear. Possible imminent failure.

General Functionality Rating

1. (New) - Structure or equipment functions better than other similar structures or equipment.
2. (Good) - Structure or equipment functions as intended.
3. (Fair) - Structure or equipment is in service, but maintenance or operational requirements are excessive.
4. (Poor) - Structure or equipment is in service, but function is highly impaired.
5. (Critical) - Structure or equipment is not currently functioning for its intended use.

A visual condition assessment of the new DIWs and MW is to be performed by the City in 5 to 10 years from the installation date to determine rehabilitation and or replacement improvements.

The following components are to be visually assessed:

- Civil/Site
- Piping

2.3.2 Current Condition, Probability of Failure and Consequence of Failure

Each asset will be evaluated based on its current condition, probability of failure, and consequence of failure as defined below. Table 2-6 depicts the various ratings with the corresponding probability of failure and description.

1. Condition: "*the state of something with regard to its appearance, quality, or working order.*"
2. Probability of Failure: *"is the probability that a specific item, such as a piece of equipment, material or system fails at a certain time interval."*
3. Consequence of Failure: "*is defined for all consequences in safety, economy and environment that is evaluated as the outcome of a failure based on the assumptions that such a failure will occur."*

Table 2-6. Probability of Failure to Direct Observation		
Rating	**Probability**	**Description**
Very High	Likely to occur within a year	Already in functional failure mode (Mortality – already broken, collapsed; Level of Service - not doing what it is supposed to; Capacity – Not sufficiently sized; Financial Inefficiency – costing too much to continue to use) or expected to be in functional failure mode within 1 year. A failure of one of the four types is imminent, if the asset is not already in failure mode.
High	Estimated 50% chance of occurring in any year	Asset is in potential failure, but not functional failure mode. Functional failure not expected within the next year. Potential failure means the asset is showing signs of failure, such as cracks, root intrusions, vibration, noise, excessive rust, but is still delivering all or most of the required service. The potential failure issues will need to be addressed to prevent a functional failure. Functional failure occurs when the asset is in one of the four failure modes
Moderate	Expected to occur within 10 years	Asset shows signs of concern but has not yet entered a potential failure state. Asset has the potential to be maintained for some period of time if the proper maintenance is completed and repairs are made. Asset may show light rust, some light wear and tear, be nearing but not at physical capacity.
Low	Expected to occur within 50 years	Asset is not brand new but shows no more than cosmetic signs of wear and tear. Asset failure is not anticipated in the near future. The asset receives regular maintenance.
Very Low	Expected to occur within useful life	Asset is brand new or like new. Failure not anticipated within the foreseeable future.

Source: Asset management determine business risk (epa.gov); Criticality / Probability of Failure / Creating Probability of Failure Ratings - Integrated Asset Management Framework (unm.edu)

Table 2-7 depicts the various ratings with the corresponding consequence of failure and description.

Table 2-7. Consequence of Failure to Direct Observation		
Rating	**Consequence**	**Description**
Very High	Catastrophic disruption	Massive system failure, severe economic, environmental, health, and/or social consequences, persistent and extensive damage, unable to meet Level of Service (LOS) goals.
High	Major disruption	Major effect, loss of system capacity, major consequences or costs, LOS compromised
Moderate	Moderate disruption	Moderate effects, loss of some system capacity, yet important LOS still achieved
Low	Minor disruption	Minor effect, some loss of system capacity, but minimal costs or impacts
Very Low	Insignificant disruption	Negligible effect on costs; no significant consequences or impact on LOS

Source: Asset management determine business risk (epa.gov); Criticality / Probability of Failure / Creating Probability of Failure Ratings - Integrated Asset Management Framework (unm.edu)

The asset's condition, probability of failure and consequence of failure are displayed in Tables 2-8, 2-9, and 2-10.

Table 2-8. Deep Injection Well No. 3 Assets 2022 Condition				
No.	Asset Group	Condition	Probability of Failure	Consequence of Failure
1	Carbon Steel Casing	New	Very Low	Very Low
2	FRP Tubing with cement packer	New	Very Low	Very Low
3	DI Ball Valves	New	Very Low	Very Low
4	SDSS Transition Piece	New	Very Low	Very Low
5	SS Appurtenances and Small Diameter Valves	New	Very Low	Very Low

Table 2-9. Deep Injection Well No. 4 Assets 2022 Condition				
No.	Asset Group	Condition	Probability of Failure	Consequence of Failure
1	Carbon Steel Casing	New	Very Low	Very Low
2	FRP Tubing with cement packer	New	Very Low	Very Low
3	DI Ball Valves	New	Very Low	Very Low
4	SDSS Transition Piece	New	Very Low	Very Low
5	SS Appurtenances and Small Diameter Valves	New	Very Low	Very Low

Table 2-10. Monitoring Well No. 2 Assets 2022 Condition				
No.	Asset Group	Condition	Probability of Failure	Consequence of Failure
1	Carbon Steel Casing	New	Very Low	Very Low
2	FRP Tubing with cement packer	New	Very Low	Very Low
3	SS Appurtenances and Small Diameter Valves	New	Very Low	Very Low

2.4 Expected Useful Life

The expected useful life of assets is represented on Table 2-11. DIW and MW structures typically have a useful life of 50 years. The useful life of DIW and MW equipment and structures can be prolonged by using corrosion-resistant materials and protective coatings as well as regular maintenance. Records of the City's infrastructure are maintained in their ArcMap GIS database. The City evaluates future upgrades and/or replacements of the DIW and MW infrastructure through their master planning.

Table 2-11. Asset Expected Useful Life	
Deep Injection Well No. 3	
Asset Type	**Expected Useful Life (Years)**
Large Diameter DI Ball Valves	15
SDSS Transition Piece	50
SS Appurtenances and Small Diameter Valves	15
Carbon Steel Casing	100
Deep Injection Well No. 4	
Asset Type	**Expected Useful Life (Years)**
Large Diameter DI Ball Valves	15
SDSS Transition Piece	50
SS Appurtenances and Small Diameter Valves	15
Carbon Steel Casing	100
Monitoring Well No. 2	
Asset Type	**Expected Useful Life (Years)**
SS Appurtenances and Small Diameter Valves	15
Carbon Steel Casing	25

Source: Asset Management: A Handbook for Small Water Systems - EPA 816-R-03-016 - September 2003 and an average manufacturer information of product estimated useful life.

Section 3

Evaluation of Water and Energy Conservation Efforts

3.1 Conservation Efforts

The DIWs are a critical infrastructure to the City of Hollywood's goal to meet the requirements of the 2008 Ocean Outfall Legislation (OOL) for ceasing effluent discharge to the outfall. The DIWs do not directly contribute to conservation of water efforts. However, future construction and equipment connected to the DIWs will use energy to pump secondary effluent mixed with concentrate down to substrate zones. The energy used by this equipment will be severely affected by the state of the casings of these DIWs. Therefore, constant cleaning of these casings needs to be performed in order to conserve energy and allow for future equipment connected upstream to last.

3.2 Integrity Test

The assessment of the civil and mechanical infrastructure of the DIWs will require mechanical integrity testing (MIT) along with cleaning of the casings. During the MIT, there are lower injection pressures reducing the overall pumping cost. MIT consists of conducting a video survey, casing pressure test, high-resolution temperature log and radioactive tracer survey of each DIW. For the cleaning of the casings, a casing brush shall be placed on the packer used for pressure testing the well during each MIT. Testing will require that the wells be out of service for approximately 5 days. Each Class I injection well is required to demonstrate MIT at a minimum of every 5 years. The next MIT for DIW-3 is due by April 25, 2026 (this date should be updated following each MIT) and the next MIT for DIW-4 is due by September 6, 2026 (this date should be updated following each MIT). An MIT plan providing proposed testing procedures is required to be submitted to the FDEP for approval a minimum of 90 days prior to the MIT due date. In order to allow time for bidding the MIT work to a testing contractor, it is recommended that the MIT plan be submitted to FDEP about 6 months ahead of the due date. FDEP requires that the Southeast District office of the FDEP be notified at least 7 calendar days prior to the beginning the MIT work. Additionally, a report describing the testing procedures and results, along with a summary interpretation of the most recent 5 years of operating and monitoring data must be submitted to the FDEP for approval within 90 days of the completion of testing. An electronic copy of the MIT report cover letter should be submitted via email to the U.S. Environmental Protection Agency at R4gwuic@epa.gov.

Section 4
Asset Management

4.1 Asset Management and Fiscal Planning

The DIWs and MW assets in the City of Hollywood's SRWWTP was completed by April 2022.

4.2 Rehabilitation/Replacement of Assets

Each asset type is presented on Table 4-1 with its end of useful life based on the life expectancy of the product subjective to good maintenance.

Table 4-1. Asset Management Rehabilitation/ Replacement Schedule

Asset Type	Need	Year Needed
15-Year Planning		
Ductile Iron (DI) Ball Valves for DIWs	Reaching end of useful life	2035
SS Appurtenances and Small Diameter Valves for DIWs and MW	Reaching end of useful life	2035
25-Year Planning		
Carbon Steel Casing for MW	Reaching end of useful life	2045
50-Year Planning		
SDSS Transition Piece for DIWs	Reaching end of useful life	2070
100-Year Planning		
Cement encased Carbon Steel Casing for DIWs	Reaching end of useful life	2120

4.3 Assets Funding

To implement the FSP the City has the following listed types of funding source available for rehabilitation, upgrades, and replacement of assets:

1. Water and Sewer Revenues
2. Utility Rate Increases (URI)
3. Federal and State Municipal Grants (MG)
4. State Revolving Fund Loans (SRF)

Table 4-2 provides the funding source availability for the different asset types. Each asset as it reaches the end of useful life, requires emergency repairs, and/or needs replacement. This type of expenditure will be budgeted in the City's fiscal Capital Improvement Plan (CIP). Please refer to Appendix B for the DIWs and MW assets management inventory spreadsheet to be maintained updated annually.

Table 4-2. Fiscal Planning Financial Funding Sources		
Asset Type	**Funding Source**	**Alternative Funding Source**
Ductile Iron (DI) Ball Valves	SRF/AR	MG/URI
Super Duplex Stainless Steel (SS) Transition Piece	SRF	MG
SS Appurtenances and Small Diameter Valves	AR	MG
Carbon Steel Casing	SRF	MG
Cement Encased Carbon Steel Casing	SRF	MG

Section 5

Limitations

This document was prepared solely for the City of Hollywood in accordance with professional standards at the time the services were performed and in accordance with the contract between the City of Hollywood and Brown and Caldwell dated January 21, 2020. This document is governed by the specific scope of work authorized by the City of Hollywood; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by the City of Hollywood and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

Further, Brown and Caldwell make no warranties, express or implied, with respect to this document, except for those, if any, contained in the agreement pursuant to which the document was prepared. All data, drawings, documents, or information contained this report have been prepared exclusively for the person or entity to whom it was addressed and may not be relied upon by any other person or entity without the prior written consent of Brown and Caldwell unless otherwise provided by the Agreement pursuant to which these services were provided.

Appendix A: Condition Assessment Form

WELL CONDITION ASSESSMENT FORM

PROJECT:	PROJECT NUMBER:
ADDRESS:	LOCATION:
REVIEWER:	CITY REP:
WEATHER CONDITIONS:	DATE:

RATING CRITERIA (1 best to 5 worst)

General Condition Rating		General Functionality Rating	
1	New or nearly-new	1	Functions better that similar equipment
2	Well maintained, like-new	2	Functions as intended
3	Visible degradation	3	In service but maintenance is excessive
4	Integrity compromised	4	In service but function highly impaired
5	Integrity severely compromised	5	Not currently functioning

Site

	Access	Rating	Comments
1	General Condition Rating		
2	General Functionality Rating		
	Turf / Landscaping		
3	General Condition Rating		
4	General Functionality Rating		
	Future Expansion Area		
5	Space available for future expansion	☐Y ☐N	

Valves and Piping

	Discharge Piping and Valves	Rating	Comments
6	General Condition Rating		
7	General Functionality Rating		
	Discharge Isolation Valve		
8	Accessible for operation and maintenance	☐Y ☐N	
9	Horizontal	☐Y ☐N	
10	Evidence of leaks	☐Y ☐N	
	Piping		
11	Evidence of corrosion	☐Y ☐N	
12	Evidence of leaks	☐Y ☐N	

WELL CONDITION ASSESSMENT FORM

Valves and Piping

	Small Diameter Valves	Rating	Comments
13	Accessible for operation and maintenance	☐ Y ☐ N	
14	Evidence of corrosion	☐ Y ☐ N	
15	Evidence of leaks	☐ Y ☐ N	
16	Pressure instruments functional	☐ Y ☐ N	

Appendix B: Assets Management Inventory

Deep Injection Well No. 3 Assets Management Inventory											
No.	Asset Description	Quantity	Unit	Installation Cost*	Date of Acquisition	Life Expectancy	Target Dates	Replacement Cost at Target Date (5% Yr) (Max 50 Yr Planning)	Comments	Reserves Required Each Year	Remaining Useful Life in Years
1	F&I 66-inch carbon steel casing	ft.	205	$205,000.00	2022	100	2120	$717,500.00		$14,350.00	100
2	F&I 56-inch carbon steel casing	ft.	892	$847,400.00	2022	100	2120	$2,965,900.00		$59,318.00	100
3	F&I 46-inch carbon steel casing	ft.	1460	$1,095,000.00	2022	100	2120	$3,832,500.00		$76,650.00	100
4	F&I 36-inch carbon steel casing	ft.	2850	$2,707,500.00	2022	100	2120	$9,476,250.00		$189,525.00	100
5	F&I nom. 24-inch FRP Tubing with cement packer	ft.	2830	$3,877,100.00	2022	100	2120	$13,569,850.00		$271,397.00	100
6	Development of DIW-3, and Other**	LS	1	$875,000.00	N/A	N/A	N/A	N/A	Performed during construction	N/A	N/A
7	Drill, ream, and logging of pilot holes	LS	1	$2,701,700.00	N/A	N/A	N/A	N/A	Performed during construction	N/A	N/A
8	Furnish and install cement, perform cement bond, temperature, top temperature, and video logs	LS	1	$1,232,680.00	2022	100	2120	$4,314,380.00		$86,287.60	100
9	Prepare site, furnish and install, wellhead, and surface equipment	LS	1	$200,000.00	2022	25	2045	$450,000.00		$18,000.00	25
10	Furnish 24-inch DI Ball Valves, Complete	ea.	1	$90,000.00	2022	15	2035	$157,500.00		$10,500.00	15
Total				$13,831,380.00				$35,483,880.00			

*Installation cost includes the cost to furnish and install the total amount for quantities associated with that asset item. It excludes restoration work, mobilization, maintenance of traffic, bonds, insurance, testing, and permit fees.

**Other includes all costs related to set-up and performance of tests/analyzes including but not limited to pressure tests, water quality tests, packer tests, and injection tests, core analyze.

Deep Injection Well No. 4 Assets Management Inventory											
No.	Asset Description	Quantity	Unit	Installation Cost*	Date of Acquisition	Life Expectancy	Target Dates	Replacement Cost at Target Date (5% Yr) (Max 50 Yr Planning)	Comments	Reserves Required Each Year	Remaining Useful Life in Years
1	F&I 66-inch carbon steel casing	ft.	225	$197,000.00	2022	100	2120	$689,500.00		$13,790.00	100
2	F&I 56-inch carbon steel casing	ft.	900	$845,500.00	2022	100	2120	$2,959,250.00		$59,185.00	100
3	F&I 46-inch carbon steel casing	ft.	1500	$1,068,000.00	2022	100	2120	$3,738,000.00		$74,760.00	100
4	F&I 36-inch carbon steel casing	ft.	2900	$2,707,500.00	2022	100	2120	$9,476,250.00		$189,525.00	100
5	F&I nom. 24-inch FRP Tubing with cement packer	ft.	2890	$3,777,200.00	2022	100	2120	$13,220,200.00		$264,404.00	100
6	Development of DIW-4, and Other**	LS	1	$869,000.00	N/A	N/A	N/A	N/A	Performed during construction	N/A	N/A
7	Drill, ream, and logging of pilot holes	LS	1	$2,646,500.00	N/A	N/A	N/A	N/A	Performed during construction	N/A	N/A
8	Furnish and install cement, perform cement bond, temperature, top temperature, and video logs	LS	1	$1,420,028.00	2022	100	2120	$4,970,098.00		$99,401.96	100
9	Prepare site, furnish and install, wellhead, and surface equipment	LS	1	$180,000.00	2022	25	2045	$405,000.00		$16,200.00	25
10	Furnish 24-inch DI Ball Valves, Complete	ea.	1	$90,000.00	2022	15	2035	$157,500.00		$10,500.00	15
Total				$13,800,728.00				$35,615,798.00			

*Installation cost includes the cost to furnish and install the total amount for quantities associated with that asset item. It excludes restoration work, mobilization, maintenance of traffic, bonds, insurance, testing, and permit fees.

**Other includes all costs related to set-up and performance of tests/analyzes including but not limited to pressure tests, water quality tests, packer tests, and injection tests, core analyze.

Monitoring Well No. 2 Assets Management Inventory											
No.	Asset Description	Quantity	Unit	Installation Cost*	Date of Acquisition	Life Expectancy	Target Dates	Replacement Cost at Target Date (5% Yr) (Max 50 Yr Planning)	Comments	Reserves Required Each Year	Remaining Useful Life in Years
1	F&I 34-inch carbon steel casing	LF	198	$69,300.00	2022	25	2045	$155,925.00		$6,237.00	25
2	F&I 24-inch carbon steel casing	LF	890	$222,500.00	2022	25	2045	$500,625.00		$20,025.00	25
3	F&I 16-inch carbon steel casing	LF	1227	$245,400.00	2022	25	2045	$552,150.00		$22,086.00	25
4	F&I 6.625-inch FRP Tubing with external casing packer	LF	1545	$185,400.00	2022	25	2045	$417,150.00		$16,686.00	25
5	Development of MW-2, Logging of Wells, and Other**	LS	1	$287,500.00	N/A	N/A	N/A	N/A	Performed during construction	N/A	N/A
6	Drill, ream, and logging of pilot holes	LS	1	$1,030,100.00	N/A	N/A	N/A	N/A	Performed during construction	N/A	N/A
7	Furnish and install cement, perform cement bond, temperature, top temperature, and video logs	LS	1	$116,448.00	2022	100	2120	$407,568.00		$8,151.36	100
8	F&I permanent wellhead, prepare site and install surface equipment	LS	1	$120,000.00	2022	25	2045	$270,000.00		$10,800.00	25
Total				$2,276,648.00				$2,303,418.00			

*Installation cost includes the cost to furnish and install the total amount for quantities associated with that asset item. It excludes restoration work, mobilization, maintenance of traffic, bonds, insurance, testing, and permit fees.

**Other includes all costs related to set-up and performance of tests/analyzes including but not limited to pressure tests, water quality tests, packer tests, and injection tests, core analyze.

General Cost					
No.	Asset Description	Quantity	Unit	Installation Cost*	Replacement Cost at Target Date (5% Yr) (Max 50 Yr Planning)
1	Remove and disposal of piping, dirt and vegetation and relocation of existing piping and structures	LS	1	$235,029.00	$822,601.50
2	Mobilization 60% and Demobilization 40%	LS	1	$7,709,660.00	$26,983,810.00
3	Consideration for Indemnification	LS	1	$10.00	$35.00
Subtotal				$7,944,699.00	$27,806,446.50

*Installation cost includes the cost to furnish and install the total amount for quantities associated with that asset item. It excludes restoration work, mobilization, maintenance of traffic, bonds, insurance, testing, and permit fees.

Appendix C: Fiscal Sustainability Certification

STATE OF FLORIDA STATE REVOLVING FUND (SRF)
PROJECT'S FISCAL SUSTAINABILITY PLAN CERTIFICATION

Project Owner: City of Hollywood

Project Name: Deep Injection Wells No. 3 and No. 4 PH. 1

Project Number: WW0604A0

On 11/20/2019, the Clean Water State Revolving Fund (CWSRF) Loan Program project agreement no. WW0604A0 was signed. The following describes the requirements of the CWSRF Loan Program per the project agreement.

"The Clean Water State Revolving Fund requires a recipient of a Loan for a project that involves the repair, replacement, or expansion of a publicly-owned treatment works to develop and implement a Fiscal Sustainability Plan (FSP) or certify that it has developed and implemented such a plan.

The Local Government shall either develop and implement a Fiscal Sustainability Plan or certify that it has developed and implemented a Fiscal Sustainability Plan, that includes the following:

- *An inventory of critical assets that are a part of the project;*
- *An evaluation of the condition and performance of inventoried assets or asset groupings;*
- *A certification that the recipient has evaluated and will be implementing water and energy conservation efforts as part of the plan;*
- *And a plan for maintaining, repairing, and, as necessary, replacing the assets and a plan for funding such activities.*

A Fiscal Sustainability Plan certification is a certification by the Local Government that the FSP has been developed and is being implemented. The requirement to develop and implement a FSP is a condition of the Loan Agreement and is due before final disbursement is approved."

I understand that a fiscal sustainability plan must be developed and implemented for the above referenced project and certify that the developed plan meets the requirements set forth with Section.

I also certify that this fiscal sustainability plan will be implemented prior to the final loan disbursement.

I understand that falsifying information on this certification may be grounds of termination of the SRF loan agreement.

Josh Levy, Mayor
Typed Name and Title of the Owner's Authorized Representative

Signature of the Owner's Authorized Representative

Date

Appendix D: Fiscal Sustainability Resolution