



Miami Dade Water and Sewer Department Engineering & Construction Connect to Protect Work Plan

2022 THROUGH 2027





VERSION CONTROL DOCUMENTATION

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LIST OF ACRONYMS

Abbreviation	Definition
AWWA	American Water Works Association
AWIA	America's Water Infrastructure Act
CDWWTP	Central District Wastewater Treatment Plant
C2P	Connect to Protect
DERM	Miami-Dade County Department of Environmental Resources Management
DOH	Department of Health
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
ERP	Emergency Response Plan
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
FlaWARN	Florida's Water/Wastewater Agency Response Network
FPL	Florida Power & Light
gph	gallon(s) per hour
gpm	gallon(s) per minute
HMA	Hazard Mitigation Assistance
hp	horsepower
kVA	kilovolt-amperes
MDWASD	Miami-Dade Water and Sewer Department
MG	million gallon
mph	mile(s) per hour
N/A	not applicable
No.	number
OSHA	Occupational Safety and Health Administration
PO	purchase order
psi	pounds per square inch
PWD	Public Works Department
Qty	quantity
ROW	Right-of-Way
rpm	revolutions per minute
SCADA	supervisory control and data acquisition
SEOC	State Emergency Operations Center
SFWMD	South Florida Water Management District
SOP	standard operating procedure



List of Acronyms
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Abbreviation	Definition
SSO	sanitary sewer overflow
USACE	US Army Corps of Engineers
Warehouse	Public Works Department Warehouse (located at 451 Dade Boulevard)
Yard	Public Works Department Yard (located at 451 Dade Boulevard)



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1. PURPOSE

The Miami-Dade Water and Sewer Department (WASD) has embarked on the Connect to Protect (C2P) program, a countywide program that will provide sanitary sewer service to residents with septic systems. The program will provide an opportunity for properties, which currently have septic systems, to Connect to the centralized sanitary sewer system. The C2P program prioritizes neighborhoods that have the highest quantity of septic systems that are either currently compromised or failing, or that are projected to be compromised or failing by the year 2040. Such neighborhoods are typically either in low-lying areas or watersheds, or near to canals, lakes, and Biscayne Bay. The septic to sewer conversions under the C2P Program are necessary to ensure that the County's sewer infrastructure remains resilient and to ensure the environmental protection of Biscayne Bay.



2. BACKGROUND

In collaboration with other County Departments, including the Miami-Dade County Department of Regulatory & Economic Resources (RER) and the Florida Department of Health in Miami-Dade County (FDOH), WASD evaluated how sea level rise impacts septic systems throughout the County (Miami-Dade County, November 2018). Following the completion of this report, WASD collaborated with RER to develop a Plan of Action (POA) for addressing septic systems throughout the County, in preparation for sea level rise (Miami-Dade County, December 2020). The Plan prioritizes the county's most vulnerable septic systems, many of which are abutting existing sewer (referred to herein as abutting septic systems, i.e., properties that are currently being served by septic systems, but which have existing sewer lines available). The vulnerability of each septic system was determined based on projected groundwater levels, due to sea level rise, by the year 2040. If a septic system was projected to maintain at least two feet of dry ground beneath it, it was considered non-vulnerable; if the system was currently or projected to be at groundwater level or partially submerged, it was considered to be failing; and if the system was projected to have less than two feet of dry ground beneath it (but not yet at the groundwater level), it was considered to be compromised. Note that the quantity of vulnerable septic systems is defined as the sum of compromised and failing for each atlas.



3. METHODOLOGY

The proposed atlas grids (i.e., one-square-mile areas) are ranked based primarily on the total quantity of vulnerable septic systems. Secondary criteria were then applied if more than one atlas had the same number of vulnerable septic systems. These secondary criteria are as follows (in the following order): the quantity of failing septic systems, then the quantity of compromised septic systems, then finally the quantity of total abutting septic systems. There are currently an estimated 320 atlas grids in MDC that have at least one abutting septic system. An abutting septic system is one that is in proximity (within ~100 ft or so) of an existing sewer.

Priorities are based on the combined weighted and unweighted ranking, as described above, and as defined below:

1. Urgent: Top 5% (the top 16 atlas grids)
2. Very High: Between Top 5% and 10% (the next 16 atlas grids)
3. High: Between Top 10% and Top 20% (the next 32 atlas grids)
4. Medium: Between Top 20% and Top 50% (the next 128 atlas grids)
5. Low: Bottom 50% (the last 160 atlas grids)



4. PRIORITIZATION OF CONNECT TO PROTECT PROGRAM

4.1 CURRENT PROJECTS

The following table summarizes the current C2P Projects:

Table 1: Current Connect to Protect (C2P) Projects

Atlas	Current Phase	Description of current phase	Consulting firm	Area	Estimated quantity of septic systems (SS)	Estimated quantity of vulnerable SS
D8/E8	Construction	Little River Coastal Parcels	Corradino Group	UIMDC*	38	12
F9**	Design	West Little River - Sewer Design	Corradino Group	UIMDC	330	190
J11	Pre-Design	Feasibility Study - Sewer Laterals	Chen Moore & Associates, Inc.	Brownsville	446	64
B1	Pre-Design	Feasibility Study - Sewer Laterals	300 Engineering, Group, P.A.	Aventura	70	35
S14	Pre-Design	Feasibility Study - Sewer Laterals	Ross Engineering, Inc.	Sweetwater	115	93
H11	Pre-Design	Feasibility Study - Sewer Laterals	Premiere Design Solutions, Inc.	Brownsville	360	30
J12	Pre-Design	Feasibility Study - Sewer Laterals	SRS Engineering, Inc.	Allapattah	190	95
Q16	Pre-Design	Feasibility Study - Sewer Laterals	ADA Engineering, Inc	West Dade - UIMDC	44	20
R14	Pre-Design	Feasibility Study - Sewer Laterals	HSQ Group, Inc.	Sweetwater	55	74

* Unincorporated Miami-Dade County (UIMDC)

** The current project in the F9 atlas has a different funding source than the rest of the atlases in this table, primarily because the project scope is to extend sewer service, whereas the remaining atlas projects are for installation of laterals on existing sewers. As such, not all abutting septic systems are being addressed in the current project within the F9 atlas.

4.2 PROPOSED PROJECTS

Proposed projects are identified based on the methodology described above, and shown in the map in below. The full prioritization table, which includes current and proposed projects, is in Appendix A. Brief analyses of key information for some of the Urgent-prioritized atlases is in Appendix

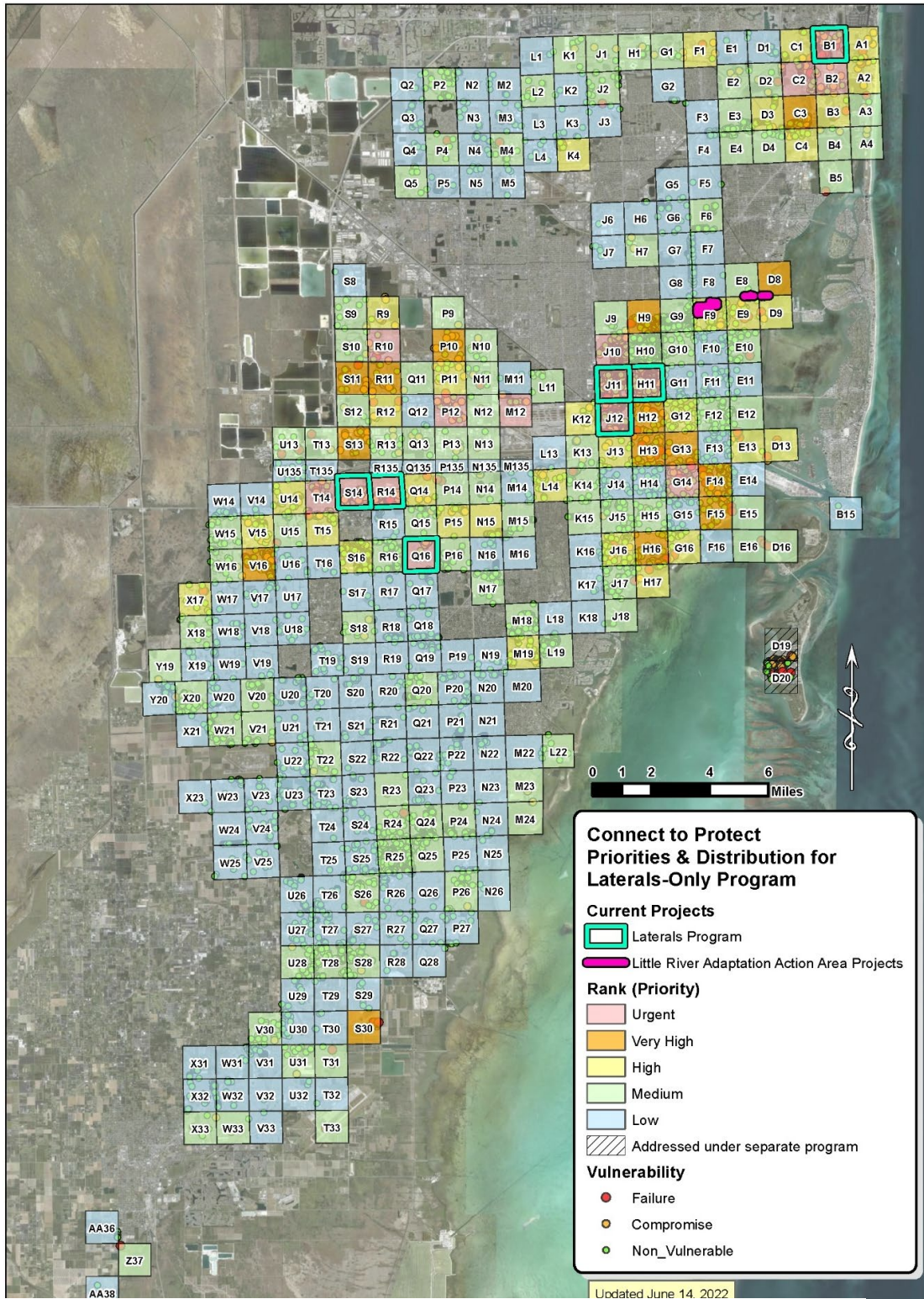


Figure 1: Map with atlas grids prioritized based on quantities of vulnerable tanks in each atlas



4.3 SUMMARY OF CURRENT AND PROPOSED PROJECTS

Based on current projects, the total cost per lateral is estimated to be approximately \$35,100 per lateral. This cost includes planning, design, construction, and project close-out. Note that the cost estimates presented herein exclude private-side costs (e.g., private-side building drains to connect to laterals, in-place septic system abandonments, private-side permits, etc...).

Table 2: Summary of current and proposed Connect to Protect projects for the Laterals Program, which addresses only abutting septic systems. Quantities of septic systems shown are abutting septic systems only.

Atlas	Area	Estimated quantity of septic systems (SS)	Estimated quantity of vulnerable SS	ER number	Current or projected budget	Cumulative total cost
D8/E8	UIMDC*	38	12	S050240	\$1,646,729	\$1,646,729
J11	Brownsville	446	64	S050254	\$16,736,400	\$18,383,129
B1	Aventura	70	35	S050358	\$2,727,840	\$21,110,969
S14	Sweetwater	115	93	S050360	\$3,727,380	\$24,838,349
H11	Brownsville	360	30	S050366	\$12,441,180	\$37,279,529
J12	Allapattah	190	95	S050363	\$6,662,100	\$43,941,629
Q16	UIMDC (West Dade)	44	20	S050362	\$1,570,200	\$45,511,829
R14	Sweetwater	55	74	S050361	\$2,736,780	\$48,248,609
C2	UIMDC (North Miami Beach)	58	27	TBD	\$2,035,800	\$50,284,409
M12	Virginia Gardens	32	18	TBD	\$1,123,200	\$51,407,609
T14	UIMDC (Sweetwater)	34	16	TBD	\$1,193,400	\$52,601,009
P12	Doral	24	17	TBD	\$842,400	\$53,443,409
J10	UIMDC (Near Hialeah)	499	19	TBD	\$17,514,900	\$70,958,309
H9	UIMDC (Little River)	90	11	TBD	\$3,159,000	\$74,117,309

*Unincorporated Miami-Dade County (UIMDC)

4.3.1 LATERALS PROJECTS FOR CONSTRUCTION ONLY

The current 5-year funding for laterals projects is \$90 Million. The analysis above uses a total of approximately \$75 Million, resulting in a remaining \$15 Million. This remaining amount can be used to provide laterals to parcels containing vulnerable systems throughout the county, or to



provide laterals to property owners requesting a lateral, or to property owners who have received a Notice of Required Connection (NORC) by RER-DERM. This \$15 Million can be used on this case-by-case basis.

4.4 PROPOSED PLAN AND SCHEDULE FOR 2022 THROUGH 2027

Estimated timelines for completing projects (i.e., completion of all project phases, including pre-design, design, construction, and project close-out) are as follows:

- Projects with ~75 septic systems or less are expected to have a duration of two (2) years or less;
- Projects with ~75 to ~150 septic systems are estimated to have a duration of three (3) years;
- Projects with ~150 to ~300 septic systems are estimated to have a duration of four (4) years;
- Projects with 300 septic systems or more are expected to have a duration of about five (5) years.

Subject to available WASD staff and resources, WASD plans on conducting developing Preliminary Engineering Reports (PERs) for the remaining eight (8) urgent-priority atlas grids, and for the fifteen (15) very-high-priority atlas grids. Each PER will include, but not necessarily be limited to, the following:

1. Estimate of total septic systems and total abutting septic systems, parsed out by quantities of compromised, failing, and non-vulnerable septic systems.
2. Tabular and mapped information on any properties with potentially inaccurate data. This includes properties showing septic systems but which appear to be connected to sewer, or vice versa. For example, an abutting septic system on a recently constructed high-rise condominium may be suspect. Conversely, a property showing as connected to sewer, but on a street where all other properties are still on septic systems, may also be suspect.
3. Review and listing of all relevant as-builts for the atlas grid, including as-builts for sewer and water.
4. Review and analysis of potential conflicts that may create challenges for lateral installations, with proposed solution(s) to address each potential conflict. This includes stormwater infrastructure, buried electrical and gas lines, water lines, or very deep or very shallow sewers. This analysis will require contacting 811, reviewing as-builts, and may also require limited field visits.



5. Proposed schedule and estimated costs for design, construction, and project close-out.

The development of each PER is dependent on the unique characteristics of each atlas, with the most labor-intensive task expected to be review of as-builts and potential conflicts to lateral installations.

Table 3: Schedule of current and proposed C2P Projects.

Atlas	Estimated quantity of septic systems (SS)	Complete pre-design	Complete design	Complete construction
D8/E8	38	Complete	Complete	November 2022
J11	446	September 2022	May 2024	February 2026
B1	70	October 2022	June 2023	February 2024
S14	115	October 2022	July 2023	May 2024
H11	360	October 2022	March 2024	September 2025
J12	190	October 2022	October 2023	October 2024
Q16	44	October 2022	May 2023	December 2023
R14	55	September 2022	April 2023	December 2023
C2	58	February 2024	September 2024	May 2025
M12	32	January 2023	August 2023	February 2024
T14	34	January 2023	August 2023	March 2024
P12	24	January 2023	July 2023	February 2024
J10	499	April 2023	February 2025	December 2026
H9	90	March 2023	November 2023	August 2024

4.5 OTHER CONSIDERATIONS

4.5.1 SPECIAL FUNDING AND GRANTS

As special funding and grants become available for additional projects, such as sewer extensions and private-side property building drain construction, the proposed project ordering can be adjusted to take advantage of these special funding and grant awards.



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5. REFERENCES

- Miami-Dade County. (December 2020). *Plan of Action Report: A Risk-Based Approach to Septic Systems Vulnerable to Sea Level Rise*. Miami-Dade County.
- Miami-Dade County. (November 2018). *Septic Systems Vulnerable to Sea Level Rise*. Miami-Dade County.

APPENDIX A – PRIORITIZATION (RANKINGS) OF LATERALS PROGRAM PROJECTS FOR CONNECT TO PROTECT

Table 4: Prioritization of atlas grids based on quantities of vulnerable septic systems in each atlas. Color-coding for the Rank column are Urgent, Very High, High, Medium, and Low priority; Color-coding for rows signify Current Projects and Projects addressed by separate programs.

Rank	Atlas	Total Abutting	Total Vulnerable	Non-Vulnerable	Compromised	Failing
1	J12	190	95	95	64	31
2	S14	105	93	12	92	1
3	D20	102	76	26	46	30
4	R14	77	74	3	66	8
5	J11	436	64	372	37	27
6	B1	54	35	19	16	19
7	H11	357	30	327	30	0
8	C2	58	27	31	25	2
9	G14*	39	20	19	14	6
10	Q16	44	20	24	17	3
11	J10	499	19	480	19	0
12	M12	32	18	14	18	0
13	P12	24	17	7	16	1
14	R10*	24	17	7	16	1
15	T14	34	16	18	15	1
16	B2*	22	15	7	14	1
17	R11	20	14	6	14	0
18	D8	14	13	1	7	6
19	H13	30	13	17	9	4
20	S13	27	13	14	12	1
21	F14*	75	11	64	7	4
22	D19	14	11	3	7	4
23	H9	90	11	79	8	3
24	V16	79	11	68	8	3
25	H12	32	11	21	8	3
26	S30	11	11	0	9	2
27	G13	22	11	11	10	1



Rank	Atlas	Total Abutting	Total Vulnerable	Non-Vulnerable	Compromised	Failing
28	P10	14	11	3	11	0
29	S11	19	10	9	8	2
30	C3	68	9	59	6	3
31	H16	36	9	27	6	3
32	F15	38	8	30	4	4
33	C4	30	8	22	7	1
34	P11	14	8	6	7	1
35	A1	10	8	2	7	1
36	T15	29	7	22	4	3
37	R9	9	7	2	6	1
38	E13	9	6	3	1	5
39	E9	25	6	19	3	3
40	A2	10	6	1	4	2
41	B3	8	6	2	4	2
42	S16	137	6	131	6	0
43	U14	28	6	22	6	0
44	P15	19	6	13	6	0
45	G16	19	5	14	1	4
46	J16	64	5	59	3	2
47	N15	27	5	22	3	2
48	R12	8	5	3	3	2
49	C1	64	5	59	4	1
50	F9	35	5	30	4	1
51	L14	25	5	20	4	1
52	Q14	8	5	3	4	1
53	V15	40	5	35	5	0
54	J13	18	5	13	5	0
55	K12	10	5	5	5	0
56	X17	12	4	8	0	4
57	D13	5	4	1	2	2
58	D9	4	4	0	2	2
59	M19	85	4	81	3	1
60	H17	7	4	3	3	1
61	F1	5	4	1	3	1
62	D3	61	4	57	4	0
63	G12	45	4	41	4	0



Rank	Atlas	Total Abutting	Total Vulnerable	Non-Vulnerable	Compromised	Failing
64	K4	28	4	24	4	0
65	S18	16	4	12	4	0
66	U13	7	3	4	0	3
67	D2	16	3	13	2	1
68	N11	9	3	6	2	1
69	K13	8	3	5	2	1
70	R13	11	3	8	3	0
71	G1	7	3	4	3	0
72	Q13	6	3	3	3	0
73	E2	5	3	2	3	0
74	M24	3	3	0	3	0
75	E10	27	2	25	0	2
76	P14	3	2	1	0	2
77	E16	2	2	0	0	2
78	K14	17	2	15	1	1
79	T31	3	2	1	1	1
80	A3	3	2	1	1	1
81	T13	2	2	0	1	1
82	S28	53	2	51	2	0
83	E8	33	2	31	2	0
84	X18	30	2	28	2	0
85	X20	25	2	23	2	0
86	Q15	21	2	19	2	0
87	W16	16	2	14	2	0
88	U31	13	2	11	2	0
89	N14	13	2	11	2	0
90	S9	10	2	8	2	0
91	N10	6	2	4	2	0
92	P13	6	2	4	2	0
93	J1	5	2	3	2	0
94	A4	4	2	2	2	0
95	H1	4	2	2	2	0
96	H7	3	2	1	2	0
97	B4	3	2	1	2	0
98	J17	48	1	47	0	1
99	Q20	29	1	28	0	1



Rank	Atlas	Total Abutting	Total Vulnerable	Non-Vulnerable	Compromised	Failing
100	R24	28	1	27	0	1
101	S26	21	1	20	0	1
102	J2	20	1	19	0	1
103	M4	9	1	8	0	1
104	U15	7	1	6	0	1
105	E12	7	1	6	0	1
106	P4	5	1	4	0	1
107	Z37	1	1	0	0	1
108	D16	1	1	0	0	1
109	T33	1	1	0	0	1
110	B5	1	1	0	0	1
111	E15	1	1	0	0	1
112	V20	56	1	55	1	0
113	T22	49	1	48	1	0
114	F6	48	1	47	1	0
115	P26	46	1	45	1	0
116	P16	39	1	38	1	0
117	J15	33	1	32	1	0
118	G10	29	1	28	1	0
119	W15	29	1	28	1	0
120	U28	27	1	26	1	0
121	V30	26	1	25	1	0
122	H15	18	1	17	1	0
123	J18	15	1	14	1	0
124	D4	12	1	11	1	0
125	V21	12	1	11	1	0
126	L2	11	1	10	1	0
127	L22	9	1	8	1	0
128	J9	9	1	8	1	0
129	X33	8	1	7	1	0
130	Q5	8	1	7	1	0
131	L11	7	1	6	1	0
132	K1	7	1	6	1	0
133	S10	7	1	6	1	0
134	S12	3	1	2	1	0
135	N13	2	1	1	1	0
136	M23	2	1	1	1	0



Rank	Atlas	Total Abutting	Total Vulnerable	Non-Vulnerable	Compromised	Failing
137	R23	2	1	1	1	0
138	N12	2	1	1	1	0
139	W33	2	1	1	1	0
140	Q11	1	1	0	1	0
141	Y19	1	1	0	1	0
142	P9	1	1	0	1	0
143	H10	541	0	541	0	0
144	G9	433	0	433	0	0
145	R25	215	0	215	0	0
146	M18	134	0	134	0	0
147	W21	108	0	108	0	0
148	R16	98	0	98	0	0
149	Q24	89	0	89	0	0
150	E3	81	0	81	0	0
151	T28	75	0	75	0	0
152	L19	67	0	67	0	0
153	Q25	55	0	55	0	0
154	M15	55	0	55	0	0
155	P24	52	0	52	0	0
156	N17	44	0	44	0	0
157	F12	42	0	42	0	0
158	P2	42	0	42	0	0
159	E4	41	0	41	0	0
160	K15	40	0	40	0	0
161	U20	36	0	36	0	0
162	V31	35	0	35	0	0
163	T27	35	0	35	0	0
164	X32	34	0	34	0	0
165	P22	33	0	33	0	0
166	Q3	33	0	33	0	0
167	F13	32	0	32	0	0
168	P21	32	0	32	0	0
169	F8	32	0	32	0	0
170	R18	31	0	31	0	0
171	W20	31	0	31	0	0
172	N22	30	0	30	0	0



Rank	Atlas	Total Abutting	Total Vulnerable	Non-Vulnerable	Compromised	Failing
173	U26	30	0	30	0	0
174	H14	30	0	30	0	0
175	U23	29	0	29	0	0
176	T23	28	0	28	0	0
177	Q18	28	0	28	0	0
178	P5	27	0	27	0	0
179	F10	27	0	27	0	0
180	W14	27	0	27	0	0
181	N20	26	0	26	0	0
182	T19	25	0	25	0	0
183	T26	25	0	25	0	0
184	Q17	24	0	24	0	0
185	S25	24	0	24	0	0
186	W24	24	0	24	0	0
187	J14	24	0	24	0	0
188	Q19	23	0	23	0	0
189	D1	23	0	23	0	0
190	U22	23	0	23	0	0
191	U16	23	0	23	0	0
192	R21	22	0	22	0	0
193	U135	22	0	22	0	0
194	R22	22	0	22	0	0
195	G6	22	0	22	0	0
196	Y20	21	0	21	0	0
197	U27	20	0	20	0	0
198	G15	20	0	20	0	0
199	G7	20	0	20	0	0
200	P20	20	0	20	0	0
201	U30	19	0	19	0	0
202	F7	18	0	18	0	0
203	G11	18	0	18	0	0
204	R26	17	0	17	0	0
205	M3	17	0	17	0	0
206	N4	17	0	17	0	0
207	S23	17	0	17	0	0
208	W32	17	0	17	0	0
209	S27	17	0	17	0	0



Rank	Atlas	Total Abutting	Total Vulnerable	Non-Vulnerable	Compromised	Failing
210	F11	17	0	17	0	0
211	U18	17	0	17	0	0
212	Q22	17	0	17	0	0
213	R15	16	0	16	0	0
214	W23	16	0	16	0	0
215	T20	15	0	15	0	0
216	V24	15	0	15	0	0
217	S21	14	0	14	0	0
218	V17	14	0	14	0	0
219	P27	14	0	14	0	0
220	W18	13	0	13	0	0
221	G8	13	0	13	0	0
222	W19	13	0	13	0	0
223	N16	13	0	13	0	0
224	Q23	12	0	12	0	0
225	F4	11	0	11	0	0
226	Q27	11	0	11	0	0
227	X19	11	0	11	0	0
228	S24	11	0	11	0	0
229	U29	11	0	11	0	0
230	M14	10	0	10	0	0
231	S29	10	0	10	0	0
232	R17	10	0	10	0	0
233	V25	10	0	10	0	0
234	V23	9	0	9	0	0
235	W25	9	0	9	0	0
236	P25	9	0	9	0	0
237	X31	9	0	9	0	0
238	R27	8	0	8	0	0
239	N19	8	0	8	0	0
240	K3	8	0	8	0	0
241	S20	8	0	8	0	0
242	M16	8	0	8	0	0
243	R28	8	0	8	0	0
244	Q4	8	0	8	0	0
245	N3	7	0	7	0	0
246	E14	7	0	7	0	0



Rank	Atlas	Total Abutting	Total Vulnerable	Non-Vulnerable	Compromised	Failing
247	F3	7	0	7	0	0
248	N2	7	0	7	0	0
249	M2	7	0	7	0	0
250	T30	7	0	7	0	0
251	L4	6	0	6	0	0
252	N5	6	0	6	0	0
253	U21	5	0	5	0	0
254	K2	5	0	5	0	0
255	T21	5	0	5	0	0
256	V19	5	0	5	0	0
257	J7	5	0	5	0	0
258	AA36	5	0	5	0	0
259	Q21	5	0	5	0	0
260	N24	5	0	5	0	0
261	H6	5	0	5	0	0
262	G5	4	0	4	0	0
263	Q26	4	0	4	0	0
264	W17	4	0	4	0	0
265	X23	4	0	4	0	0
266	G2	4	0	4	0	0
267	W31	4	0	4	0	0
268	Q2	4	0	4	0	0
269	P23	4	0	4	0	0
270	S17	4	0	4	0	0
271	U17	4	0	4	0	0
272	Q12	3	0	3	0	0
273	T25	3	0	3	0	0
274	N21	3	0	3	0	0
275	Q28	3	0	3	0	0
276	T16	3	0	3	0	0
277	R20	3	0	3	0	0
278	K16	3	0	3	0	0
279	J3	3	0	3	0	0
280	V18	3	0	3	0	0
281	K17	3	0	3	0	0
282	X21	3	0	3	0	0
283	M5	3	0	3	0	0



Rank	Atlas	Total Abutting	Total Vulnerable	Non-Vulnerable	Compromised	Failing
284	E11	3	0	3	0	0
285	V32	2	0	2	0	0
286	V14	2	0	2	0	0
287	R19	2	0	2	0	0
288	N135	2	0	2	0	0
289	M20	2	0	2	0	0
290	N25	2	0	2	0	0
291	S22	2	0	2	0	0
292	F5	2	0	2	0	0
293	U32	2	0	2	0	0
294	M11	2	0	2	0	0
295	M22	2	0	2	0	0
296	S19	2	0	2	0	0
297	T135	2	0	2	0	0
298	N26	2	0	2	0	0
299	S8	1	0	1	0	0
300	P135	1	0	1	0	0
301	L13	1	0	1	0	0
302	T24	1	0	1	0	0
303	B15	1	0	1	0	0
304	F16	1	0	1	0	0
305	Q135	1	0	1	0	0
306	AA38	1	0	1	0	0
307	R135	1	0	1	0	0
308	V33	1	0	1	0	0
309	E1	1	0	1	0	0
310	P19	1	0	1	0	0
311	T32	1	0	1	0	0
312	L3	1	0	1	0	0
313	T29	1	0	1	0	0
314	J6	1	0	1	0	0
315	L1	1	0	1	0	0
316	L18	1	0	1	0	0
317	K18	1	0	1	0	0
318	N23	1	0	1	0	0
319	M135	1	0	1	0	0



Appendix A
August 2022
FINAL

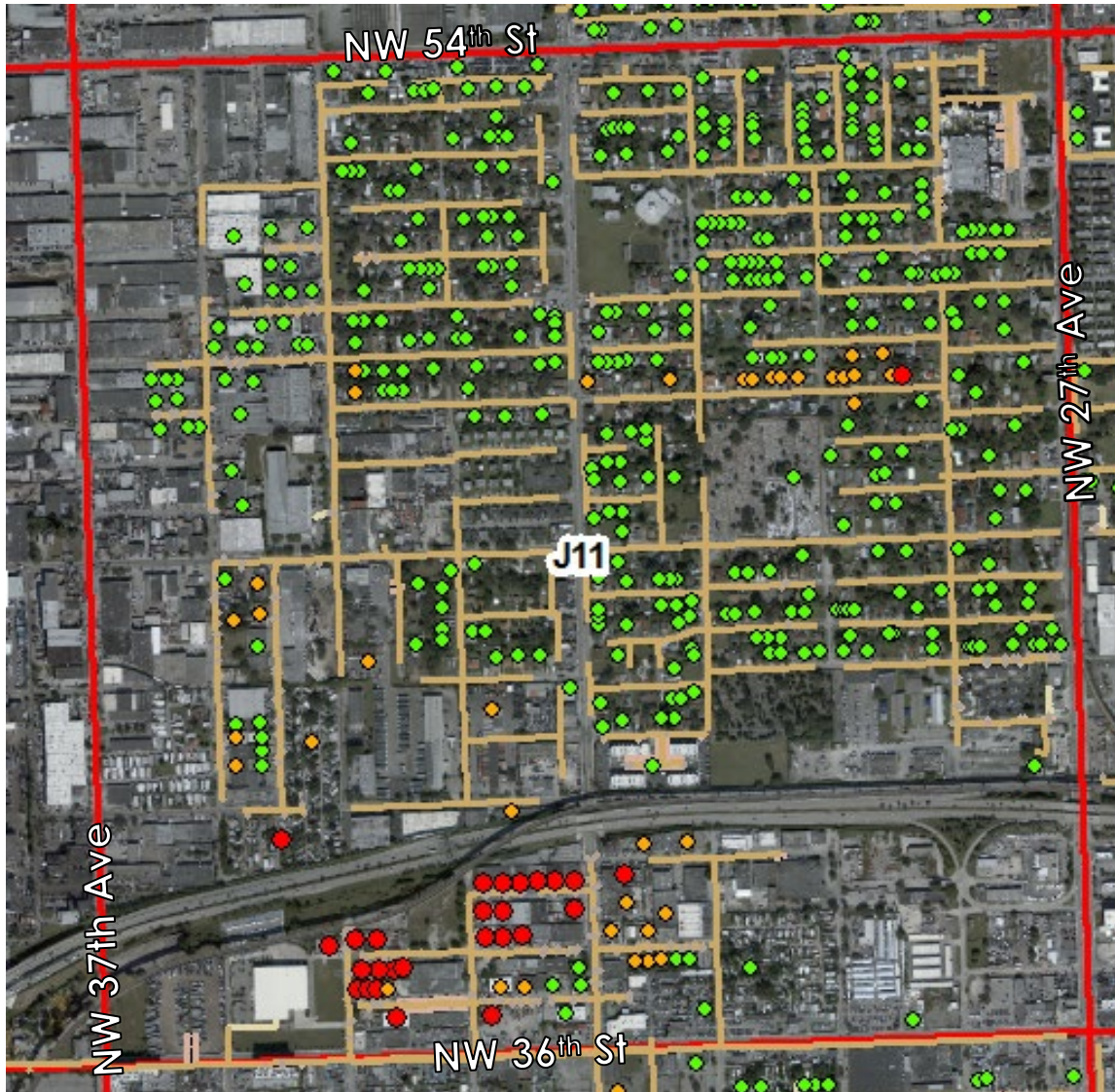


*This atlas was reviewed by WASD staff and appears to contain spurious data regarding quantity of septic systems. Data verification in this atlas is necessary for confirming whether some of the properties served by septic systems, as listed in WASD's geographic information system (GIS) database for this atlas, are actually present, or if the GIS data is inaccurate and these properties are already connected to sewer.

APPENDIX B – FACT SHEETS ON CURRENT & PROPOSED CONNECT TO PROTECT PROJECTS

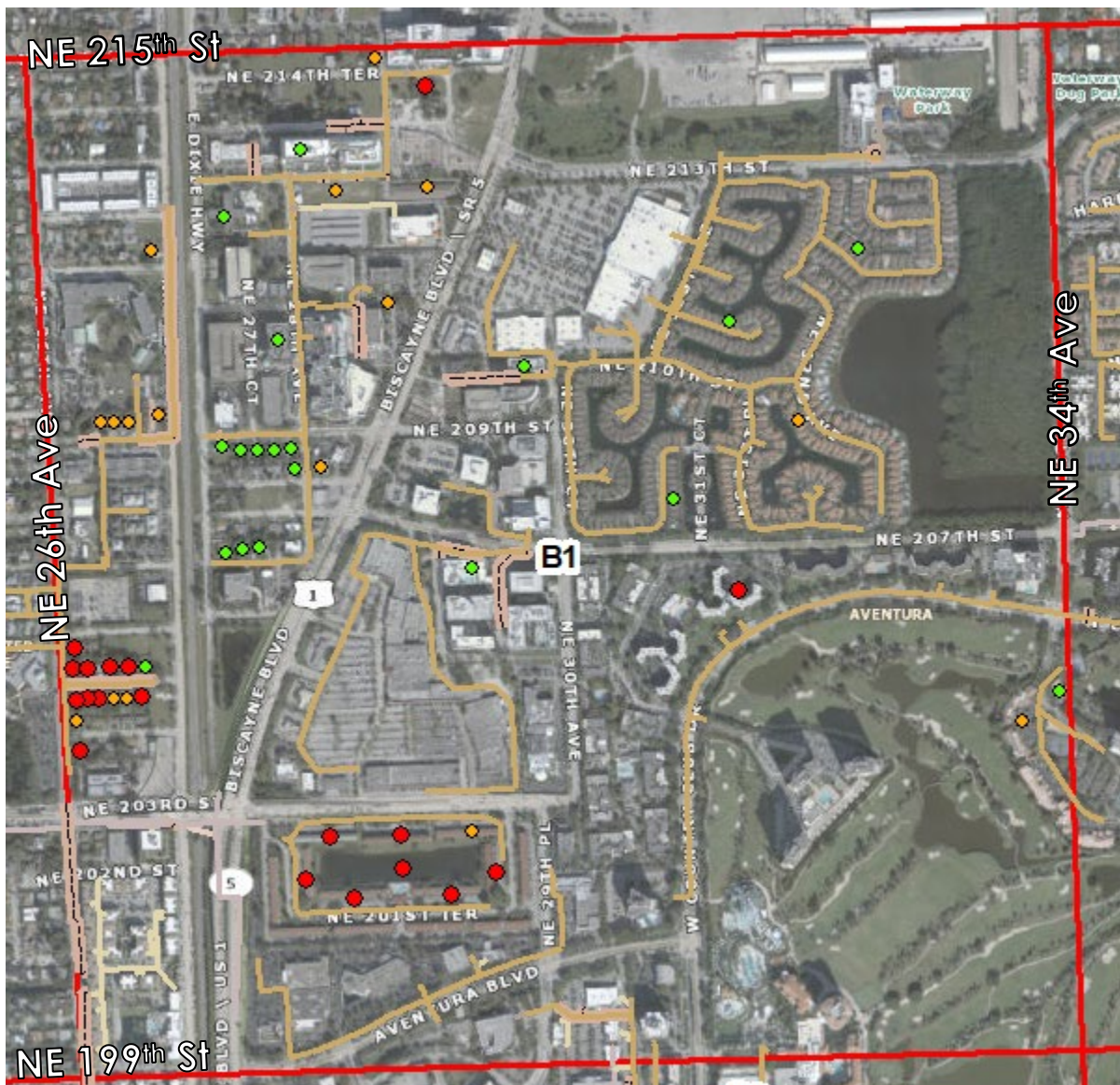
Atlas J11

Neighborhood:	UIMDC (adjacent to Hialeah)
Approx. Boundaries (N; E; S; W):	NW 54 th St; NW 27 th Ave.; NW 36 th St; NW 37 th Ave.
Total Abutting Septic Systems:	436
Vulnerable Abutting Systems:	64
Estimated Total Cost:	\$ 15,303,600
Comments:	The vulnerable systems are in residential and commercial areas within this atlas. However, many of the commercial systems had laterals installed recently (~2016), and some even show up as water and sewer customers, but many still show up as water-only customers. Some data cleanup is necessary.



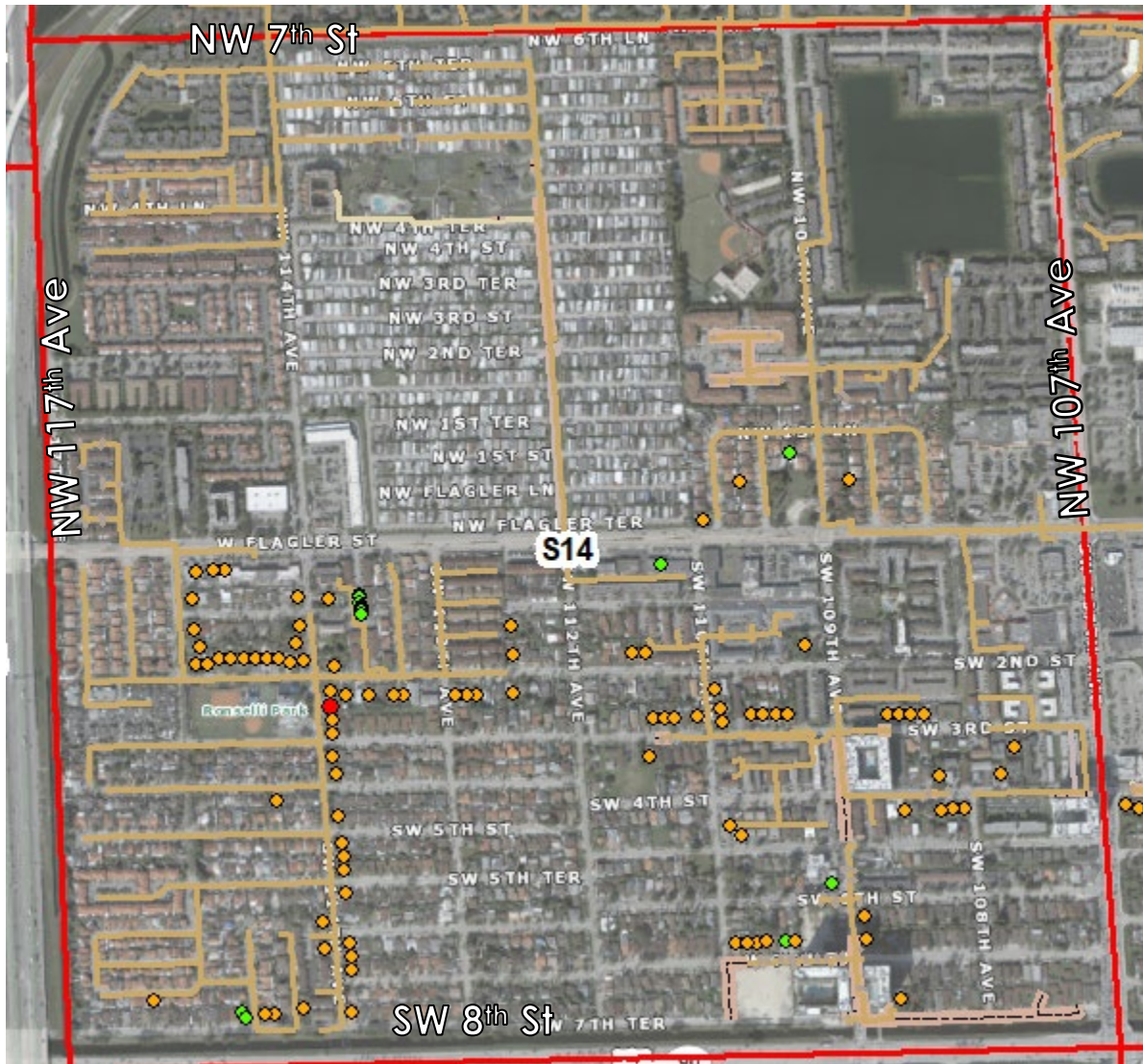
Atlas B1

Neighborhood:	Aventura and UIMDC
Approx. Boundaries (N; E; S; W):	NE 215 th St (county line); NE 34 th Ave; NE 199 th St; NE 26 th Ave.
Total Abutting Septic Systems:	54
Vulnerable Abutting Systems:	35
Estimated Total Cost:	\$ 1,895,400
Comments:	The abutting septic systems in this atlas are sparsely distributed, with small clusters throughout. Some systems appear to serve multifamily buildings; as such, some data cleanup may reveal less systems than initially estimated.



Atlas S14

Neighborhood: Sweetwater & UIMDC
 Approx. Boundaries (N; E; S; W): NW 7th St; NW 107th Ave; SW 8th St; NW 117th Ave.
 Total Abutting Septic Systems: 105
 Vulnerable Abutting Systems: 93
 Estimated Total Cost: \$ 3,685,500
 Comments: Almost all of the abutting septic systems in this atlas are vulnerable, likely due to the proximity of the C4 Tamiami Canal.



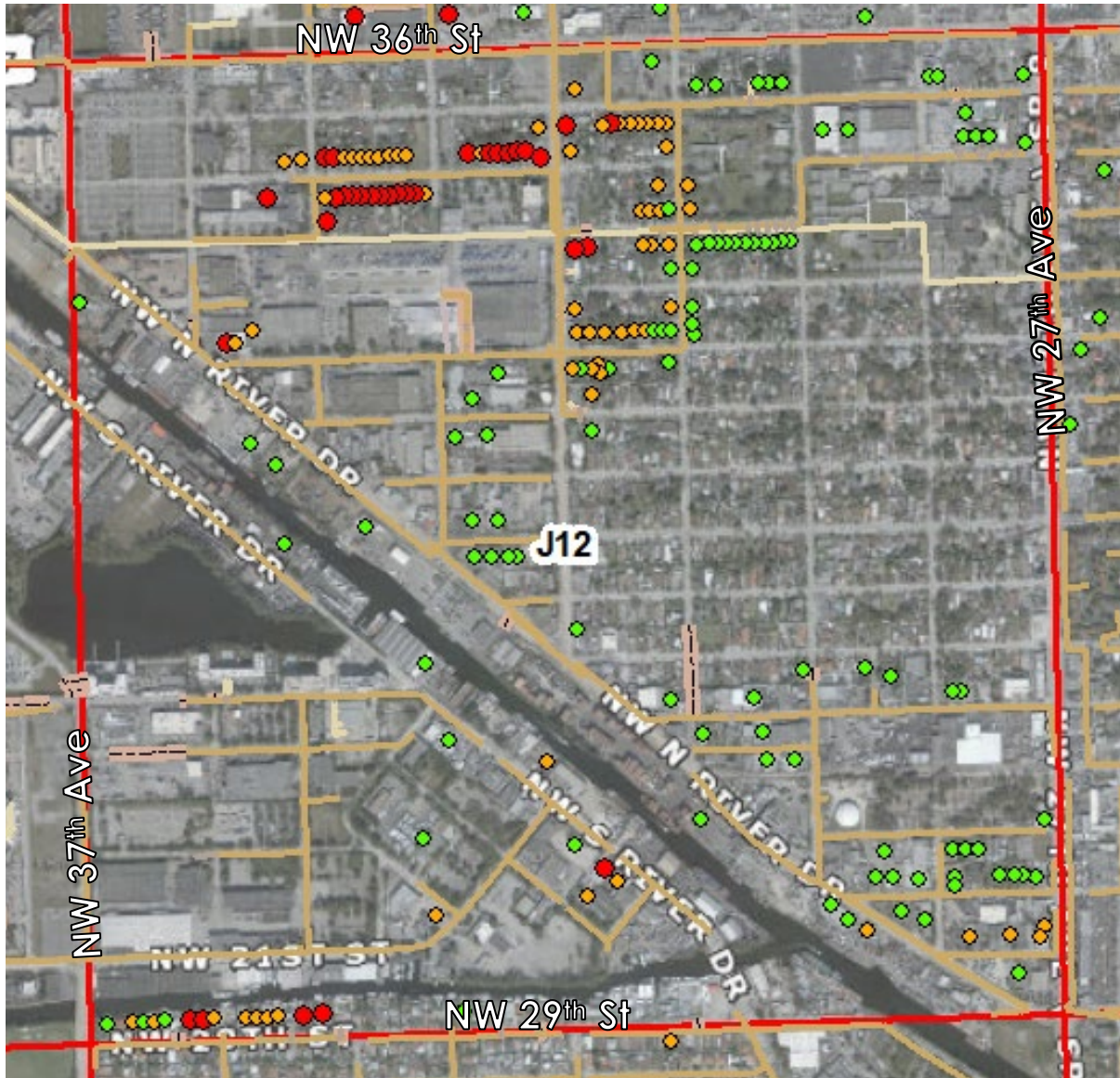
Atlas H11

Neighborhood:	UIMDC (near Little River)
Approx. Boundaries (N; E; S; W):	NW 54 th St; NW 17 th Ave; NW 36 th St; NW 27 th Ave.
Total Abutting Septic Systems:	357
Vulnerable Abutting Systems:	30
Estimated Total Cost:	\$ 12,530,700
Comments:	Most of the vulnerable abutting tanks in this atlas are within a two-block area in the NE quadrant of the atlas. Most of the abutting systems in this atlas appear to be in residential areas.



Atlas J12

Neighborhood:	UIMDC (adjacent to Cities of Miami and Hialeah)
Approx. Boundaries (N; E; S; W):	NW 36 th St; NW 27 th Ave; NW 20 th St; NW 37 th Ave.
Total Abutting Septic Systems:	190
Vulnerable Abutting Systems:	95
Estimated Total Cost:	\$ 6,669,000
Comments:	The Miami River runs through this atlas. Many of the abutting vulnerable systems are along or within several blocks of the river.



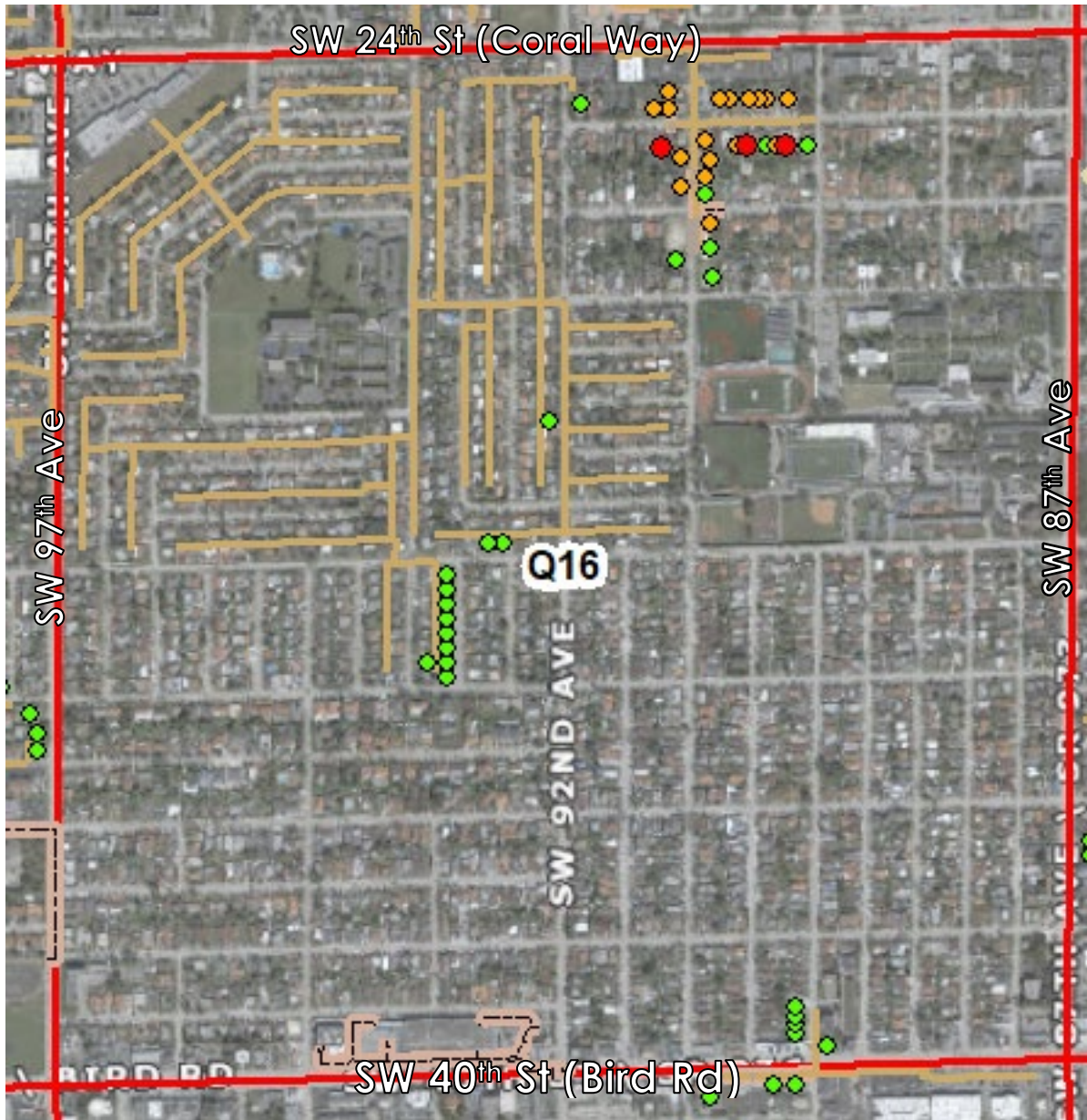


Appendix B
August 2022
FINAL



Atlas Q16

Neighborhood:	UIMDC (West Dade area)
Approx. Boundaries (N; E; S; W):	SW 24 th St (Coral Way); SW 87 th Ave; SW 40 th St (Bird Road); SW 97 th Ave.
Total Abutting Septic Systems:	44
Vulnerable Abutting Systems:	20
Estimated Total Cost:	\$ 1,544,400
Comments:	Most of the abutting septic systems in this atlas are in two clusters.



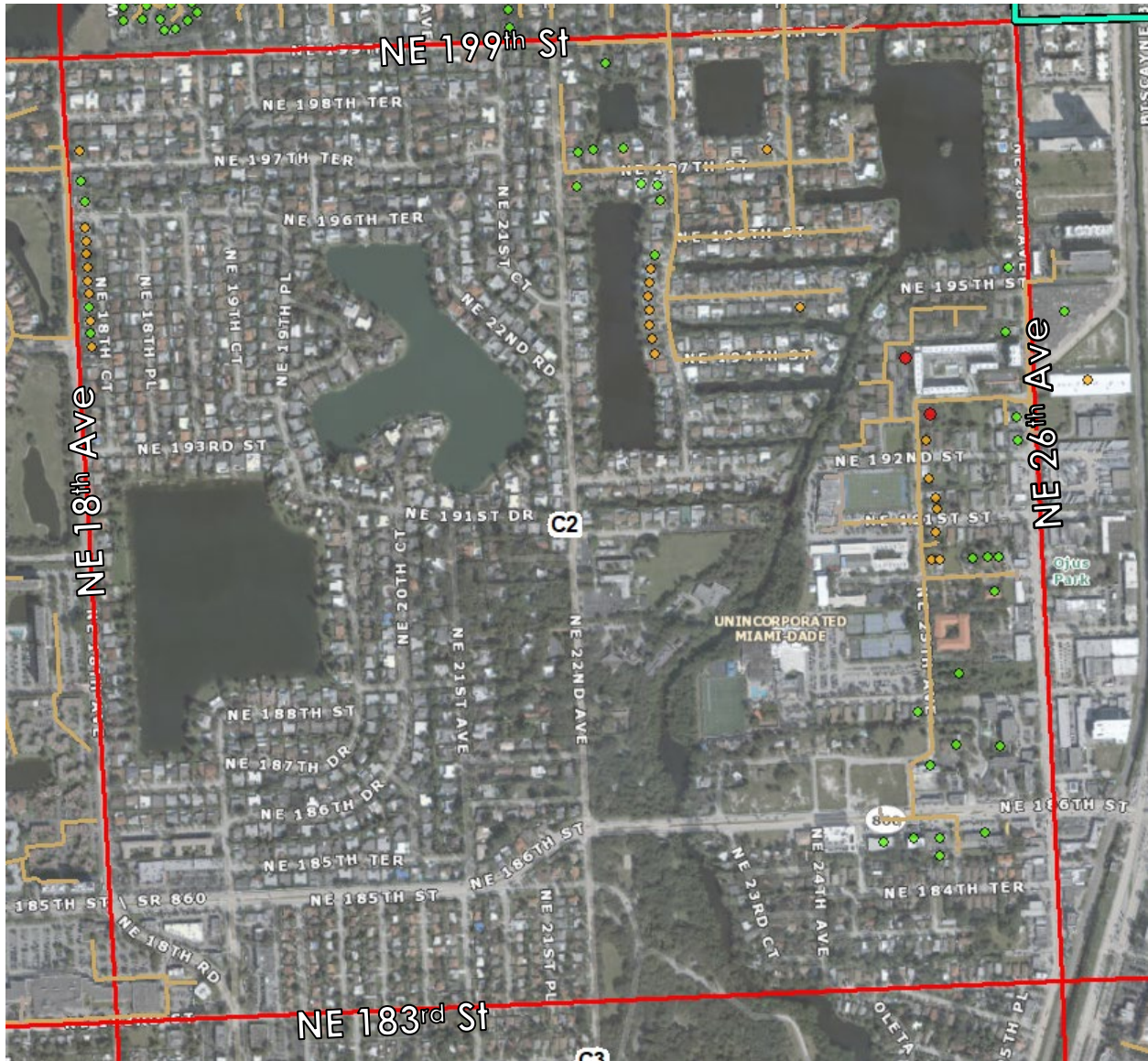
Atlas R14

Neighborhood:	Sweetwater & UIMDC
Approx. Boundaries (N; E; S; W):	NW 7 th St; NW 97 th Ave; SW 8 th St; NW 107 th Ave.
Total Abutting Septic Systems:	77
Vulnerable Abutting Systems:	74
Estimated Total Cost:	\$ 2,702,700
Comments:	Almost all of the abutting septic systems in this atlas are vulnerable and located in the lower half of the atlas, likely due to the proximity of the C4 Tamiami Canal.



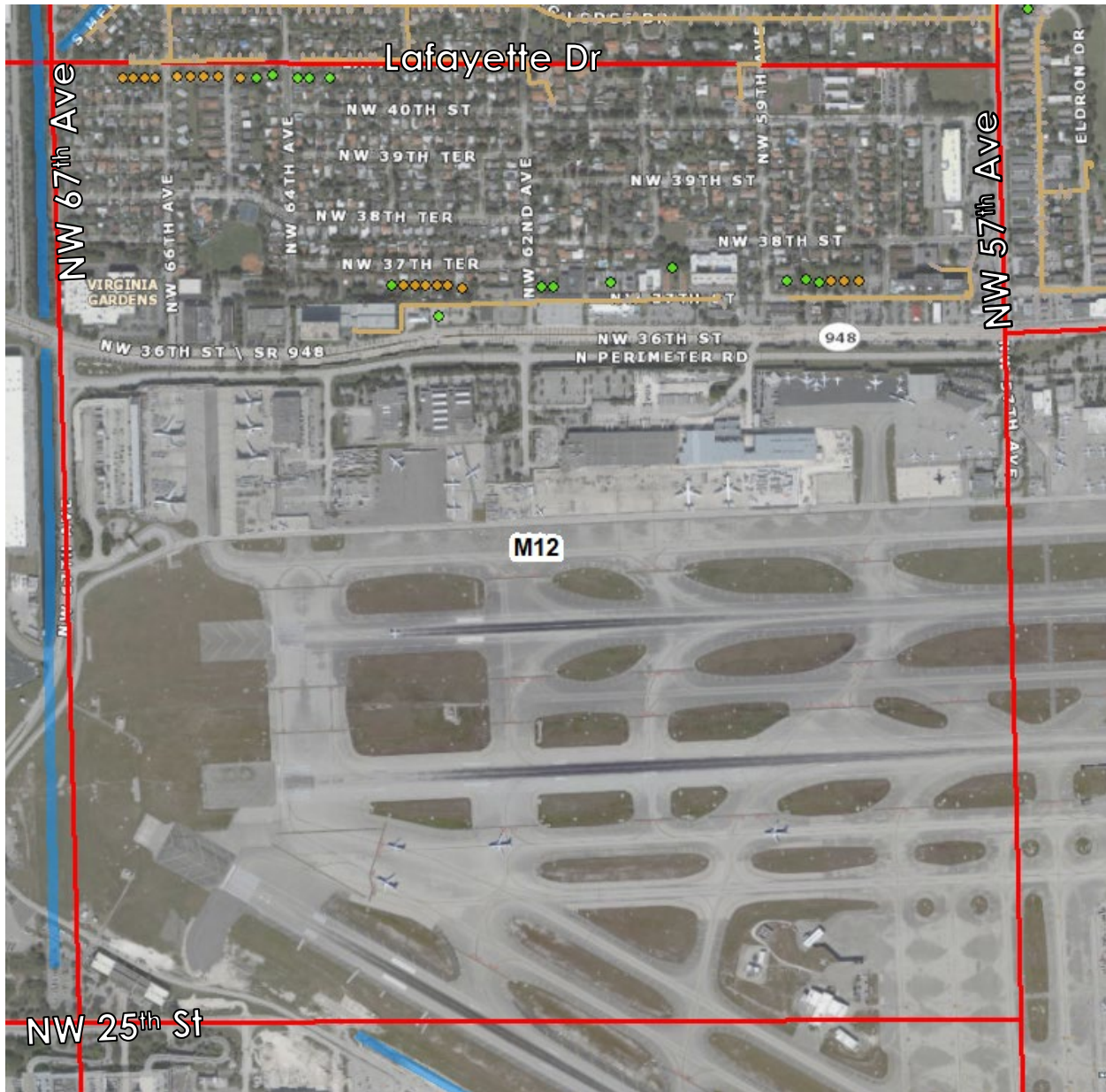
Atlas C2

Neighborhood: Unincorporated MDC (UIMDC) near N. Miami Beach
 Approx. Boundaries (N; E; S; W): NE199th St; NE 26th Ave; NE 183rd St; NE 18th Ave
 Total Abutting Septic Systems: 58
 Vulnerable Abutting Systems: 27
 Estimated Total Cost: \$ 2,035,800
 Comments: The Oleta River runs through this Atlas.



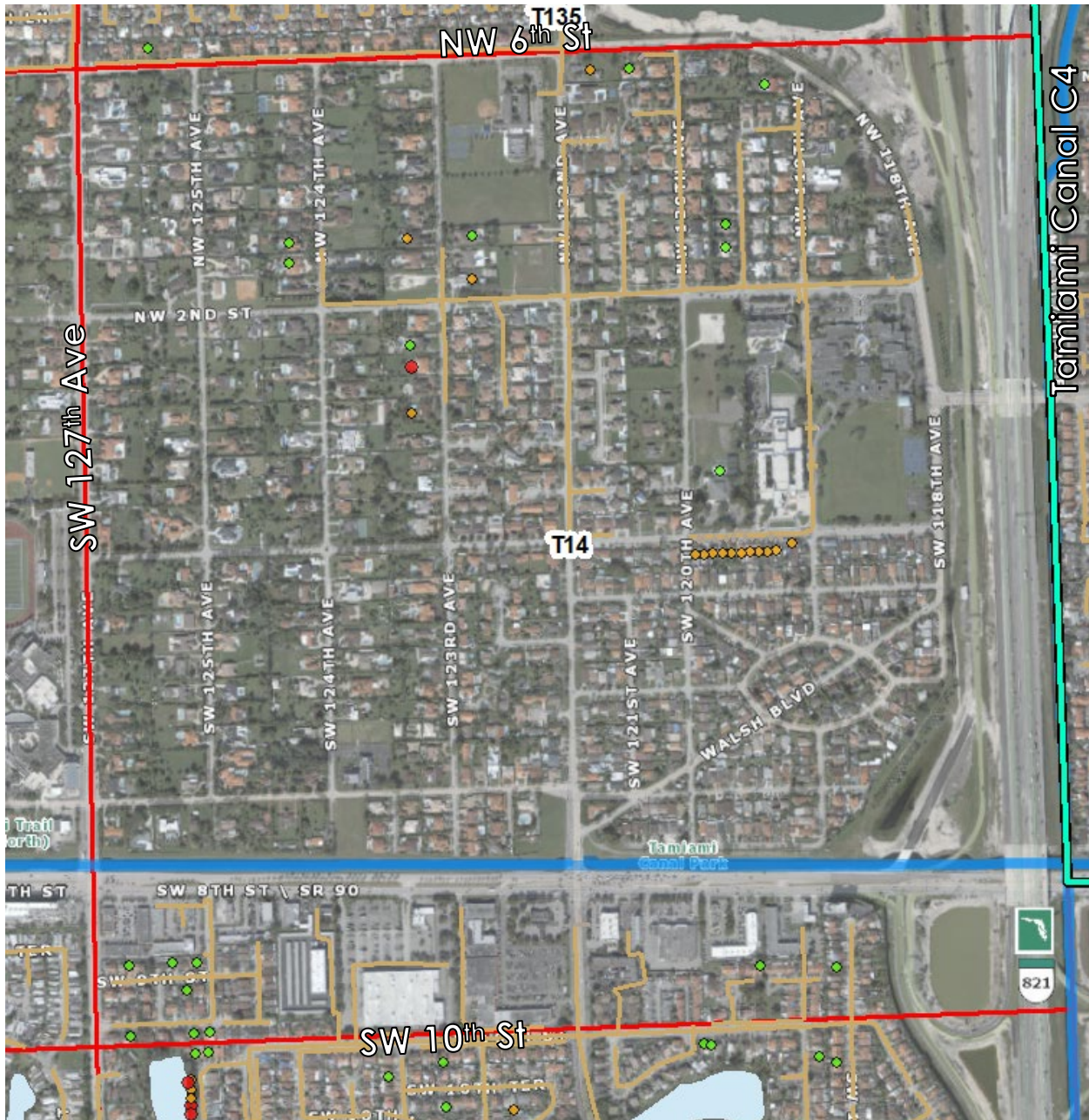
Atlas M12

Neighborhood:	Virginia Gardens
Approx. Boundaries (N; E; S; W):	Lafayette Dr; NW 57 th Ave; NW 25 th St; NW 67 th Ave
Total Abutting Septic Systems:	32
Vulnerable Abutting Systems:	18
Estimated Total Cost:	\$ 1,123,200
Comments:	Most of this atlas is comprised of the Northwest corner of the Miami International Airport.



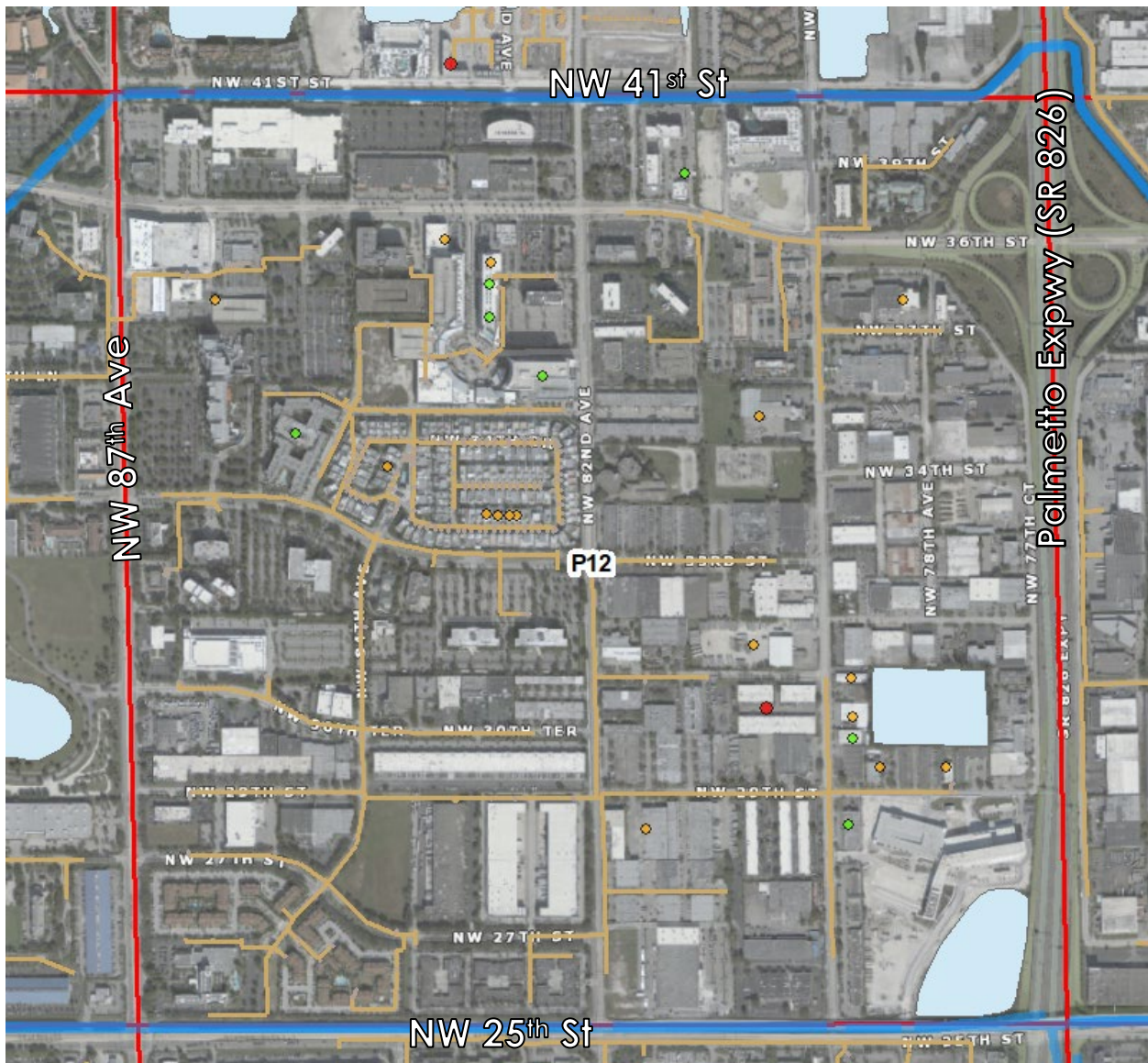
Atlas T14

City/Neighborhood/Locale: UIMDC (west of Sweetwater)
 Approx. Boundaries (N; E; S; W): NW 6th St; Tamiami Canal C4; SW 10th St.; SW 127th Ave.
 Total Abutting Septic Systems: 34
 Vulnerable Abutting Systems: 16
 Estimated Total Cost: \$ 1,193,400
 Comments: This atlas is located adjacent to the C4 Tamiami Canal.



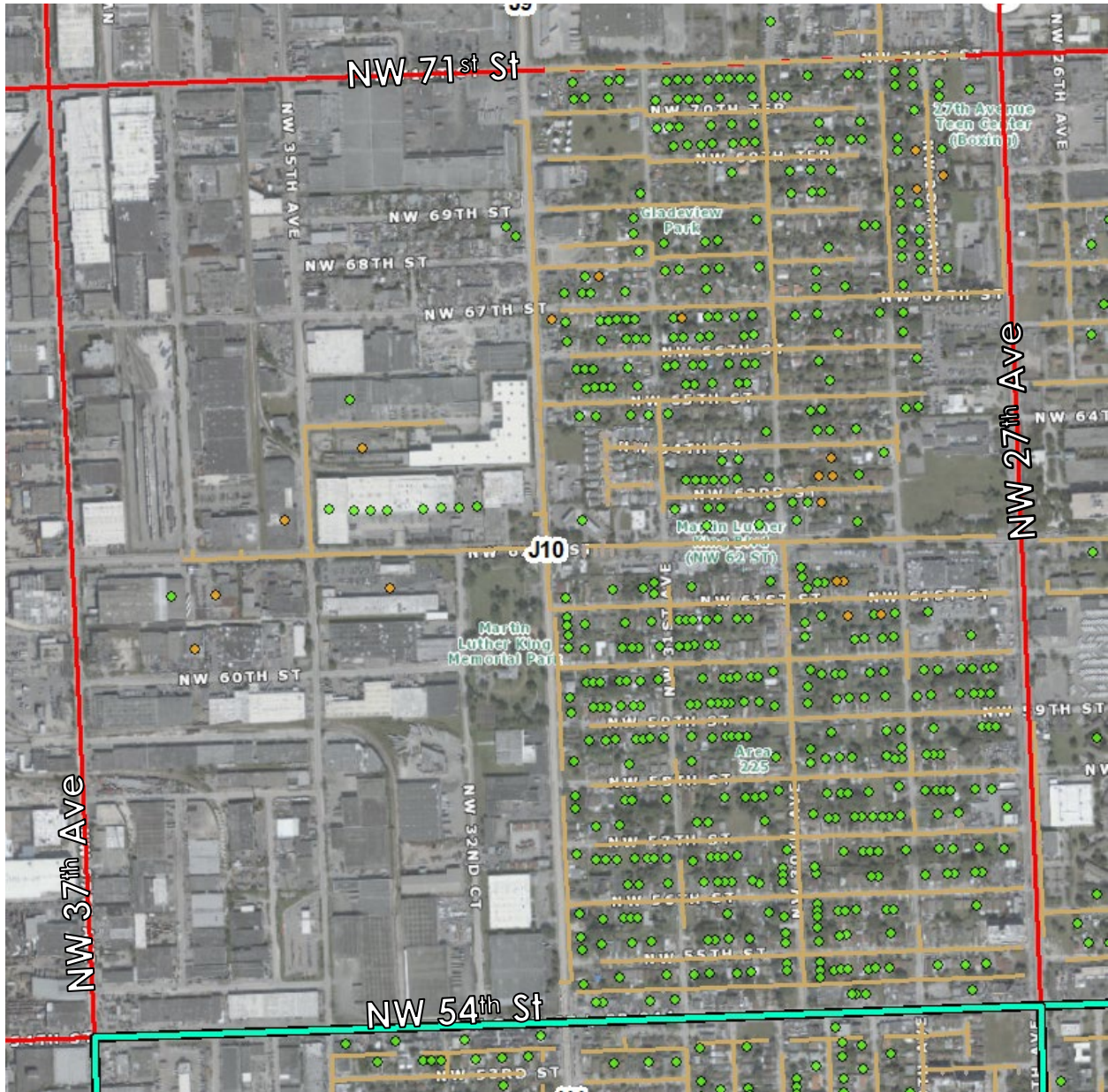
Atlas P12

City/Neighborhood/Locale:	Doral
Approx. Boundaries (N; E; S; W):	NW 41 st St.; Palmetto Expwy (SR 826); NW 25 th St; NW 87 th Ave.
Total Abutting Septic Systems:	24
Vulnerable Abutting Systems:	17
Estimated Total Cost:	\$ 842,400
Comments:	The septic systems in this atlas appear to be spread out and include commercial and residential properties. There are numerous surface water bodies in this atlas.



Atlas J10

Neighborhood:	UIMDC (adjacent to Hialeah)
Approx. Boundaries (N; E; S; W):	NW 71 st St; NW 27 th Ave.; NW 54 th St; NW 37 th Ave.
Total Abutting Septic Systems:	499
Vulnerable Abutting Systems:	19
Estimated Total Cost:	\$ 17,514,900
Comments:	The vulnerability of the estimated 19 vulnerable septic systems is likely based on topography since there are no major surface waters within this square mile area. There are no failing systems in this atlas, only compromised.



Atlas H9

Neighborhood: UIMDC (near Little River)
 Approx. Boundaries (N; E; S; W): NW 87th St; NW 17th Ave. NW 71st St.; NW 27th Ave.
 Total Abutting Septic Systems: 90
 Vulnerable Abutting Systems: 11
 Estimated Total Cost: \$ 3,159,000
 Comments: A portion of the Little River is due Northeast of this Atlas, in an adjacent atlas (G8).

