miamidade.gov

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**VIA ELECTRONIC CORRESPONDENCE**

October 16, 2015

CCN: 59762
File No: 8.DC.20.23 & 82

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 20044-7611
RE: DOJ No. 90-5-1-1-4022/1
Walter.Benjamin.Fisherow@usdoj.gov

Chief, Clean Water Enforcement Branch
Water Protection Division
Attn: Brad Ammons
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, S.W.
Atlanta, Georgia 30303
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Rachael Amy Kamons
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Florida Department of Environmental Protection
Southeast District – Suite 200
400 N. Congress Ave.
West Palm Beach, FL 33401
Attn: Compliance/Enforcement Section
Diane.Pupa@dep.state.fl.us

**RE: Consent Decree (Case: No. 1:12-cv-24400-FAM)**
**Reference DOJ Case No. 90-5-1-1-4022/1**
**Section VIII –Supplemental Environmental Project, Paragraph 23**
**Section XX – Modification**
**Appendix E – Supplemental Environmental Project Plan**
**Request for Non-Material Change – Supplemental Environmental Project Plan**

Dear Sir/Madam:

Pursuant to our discussions during our September 17, 2015 telephone conference, Miami-Dade County respectfully requests approval of a non-material change to Appendix E, Supplemental Environmental Project (SEP) Plan, in conformance with Sections VIII and XX of the above referenced Consent Decree. Attached for your reference is a presentation outlining the requested non-material change to SEP made by the Miami-Dade Water and Sewer Department (WASD) to representatives from the US Environmental Protection Agency (EPA) and Florida Department of Environmental Protection (FDEP) during our September 17, 2015 telephone call along with a Technical Memorandum which provides additional details supporting this request.

Appendix E provided a written description of the Consent Decree requirements for the SEP. The locations of "proposed gravity mains" shown on the Appendix E graphic were drawn by the County based on planning-level analysis, and were therefore subject to refinement based upon further engineering study and design. Due to low existing ground elevations within a portion of the area identified in Appendix E, which result in insufficient soil cover over new pipes in certain areas, the County concluded a new gravity sewer main system was not technically feasible within a portion of the area identified in Appendix E without the usage of low pressure systems or a new sub-basin lift station. In light of the technical problems the County is proposing a solution that would not only meet, but exceed, the SEP Consent Decree requirements in the following manner:

- Provide a total of approximately 7,789 linear feet of new gravity sanitary sewer main, whereas the Consent Decree requires a minimum of 7,660 linear feet, thereby exceeding the requirement by approximately 129 linear feet
- Service approximately 100 properties currently reliant upon septic systems, including 81 "Business" properties, whereas the Consent Decree requires connecting to a minimum of 74 "Businesses", thereby exceeding the requirement by 7 businesses
- Cost an estimated $2,200,000 for construction only, whereas the Consent Decree requires at least $2,047,200 be spent by Miami-Dade County on construction costs plus other WASD project-related expenses (i.e., planning, design, permitting, procurement and construction management), thereby exceeding the costs by at least $152,000

At the September 17, 2015 telephone conference, the connection charges that the businesses will have to pay, to be connected to the SEP Project, were discussed. Connection charges are used solely to pay for the cost of the expansion of sewage treatment facilities and transmission mains, referred to as "regional" facilities. The cost associated with the SEP Project is to pay for the sewage collection system, defined as "local" facilities. The "local" facilities are typically constructed and paid for by developers and then donated to WASD. Therefore, WASD will not be reimbursed for the cost of the SEP Project when collecting for connection charges.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Should you have any questions regarding this matter, please call me at (786) 552-8120.

Sincerely,

Bertha M. Goldenberg, P.E., LEED® Green Associate
Assistant Director, Regulatory Compliance and Planning

Attachments: Supplemental Environmental Project Plan Presentation
SEP Technical Memorandum

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| | |
|---|---|
| To | Daniel J. Edwards, PE |
| CC | David Haywood, PE, Maricela Fuentes, PE, Franklin A. Torrealba, PE |
| Subject | CD PROJECT # 6.00, PCTS: 13547<br>Supplemental Environmental Project |
| From | Donald Miller, PE / Consent Decree PMCM Team |
| Date | October 7, 2015 |
| Page | 7 |

# Technical Memorandum

## 1. INTRODUCTION

In accordance with the Supplemental Environmental Project (SEP) Plan outlined in Appendix E of the Consent Decree, Miami-Dade County is required to install at least 7,660 linear feet of proposed gravity sewer mains in an industrial area within Basin 0086 which currently has limited access to sanitary sewers; service a minimum of 74 existing businesses with no current access to sanitary sewers and relying upon septic systems; and spend at least $2,047,200 to complete the SEP. The Consent Decree Construction Compliance Date for the SEP is December 6, 2018. This Technical Memorandum includes specific information on the identified CD Project # 6.00, SEP, PCTS # 13547. (See Figure 1 for the Appendix E graphic showing the SEP project area).

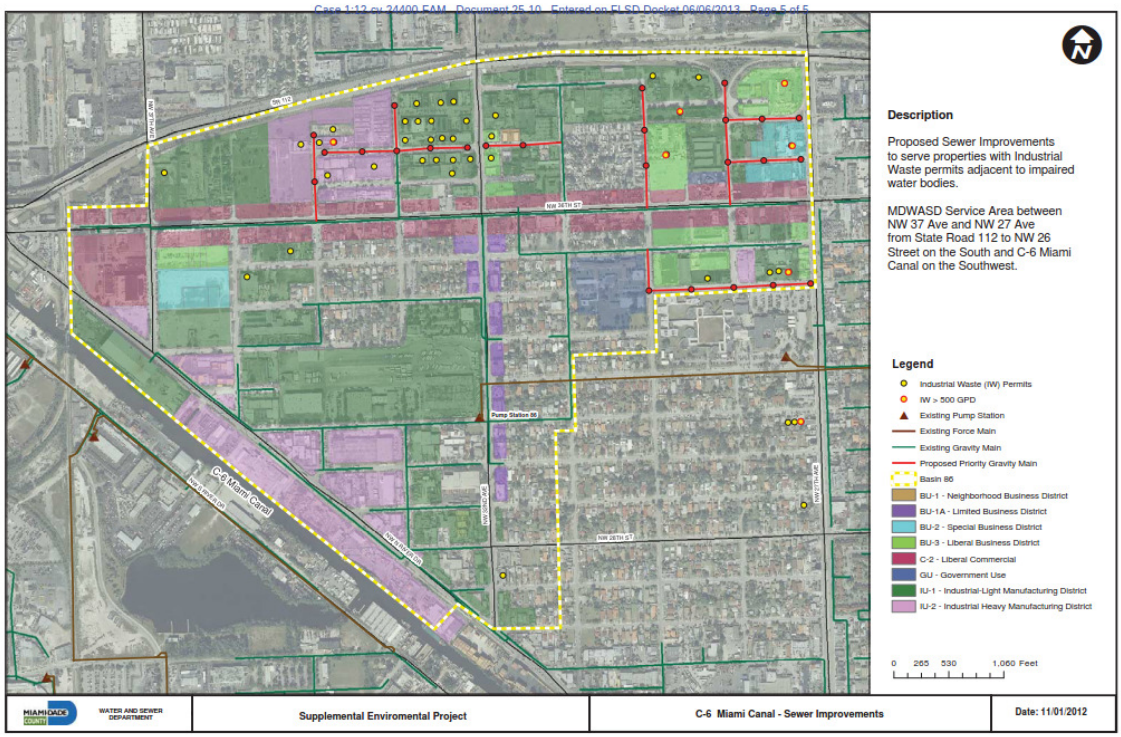



*Figure 1: Miami-Dade County, Consent Decree, Appendix E, SEP Graphic*

The CD 6.00 SEP area is located within Miami-Dade County Water and Sewer Department (WASD) Basin 0086. In particular, the SEP area is focused within the north-central and north-east portions of Basin 0086. Within this area, Appendix E provided a written description of the Consent Decree requirements for the SEP, which are summarized above. The locations of "proposed gravity mains" shown on the Appendix E graphic (i.e., see Figure 1 above), were drawn by WASD based on planning-level analysis, and were therefore subject to refinement based upon further engineering study and design.

WASD contracted HDR Engineering, Inc. (HDR) to conduct further engineering study and prepare a Basis of Design Report (BODR). On September 13, 2015 HDR submitted the SEP Draft Basis of Design Report (dBODR). The major findings of this analysis, and subsequent Technical Workshop discussions with WASD and the Consent Decree Program Management and Construction Management (PMCM) Team, are presented herein. Overall, HDR's analysis found a) the written SEP Consent Decree requirements could not only be met, but exceeded; b) the far north-eastern portion of the SEP area was found to be technically not feasible to install new gravity sewer mains; and c) certain "proposed gravity mains" were best re-routed or new routes added.

## 2. EXISTING CONDITIONS

The overall Basin 0086, which includes the SEP area, is bounded on the West by NW 37th Avenue, on the North by SR 112, on the East by NW 27th Avenue, and on the South by North River Drive parallel to the Miami River. As shown on Figure 1, there are some areas within Basin 0086 that are currently served by "existing gravity mains", while there are other areas not served with sewer mains that currently rely upon septic systems.

The SEP area is located in Unincorporated Miami-Dade County (although the NW 36$^{th}$ Street corridor is located within City of Miami jurisdictional limits), all within Commission District 2. The Basin 0086 area encompasses numerous zoning classifications including but not limited to various Business Districts (i.e., BU-1, BU-1A, BU-2, BU-3), C-2 Liberal Commercial, GU Government, several Industrial Manufacturing Districts (i.e., IU-1, IU-2), and various Residential Districts (i.e., RU-2, RU-3, RU-4).

## 3. APPROACH OF BASIS OF DESIGN REPORT

To understand basin-wide impacts, HDR's BODR investigated the potential for collecting sanitary flows from all properties within Basin 0086 currently relying upon septic systems, including the SEP area. This approach allowed the BODR to determine if new gravity sewer mains could technically collect all un-served areas, and what impact the new sanitary collections would have on the existing Basin 0086 Pump Station and its downstream forcemain. After understanding these basin-wide impacts, the BODR would be better able to offer specific recommendations for the development of the SEP Plan.

To differentiate these two (2) study areas for the BODR, HDR defined the CD SEP area as the "Phase I" area, and the broader remaining area within Basin 0086 as the "Phase II" area. Figure 2 shows this delineation by HDR.

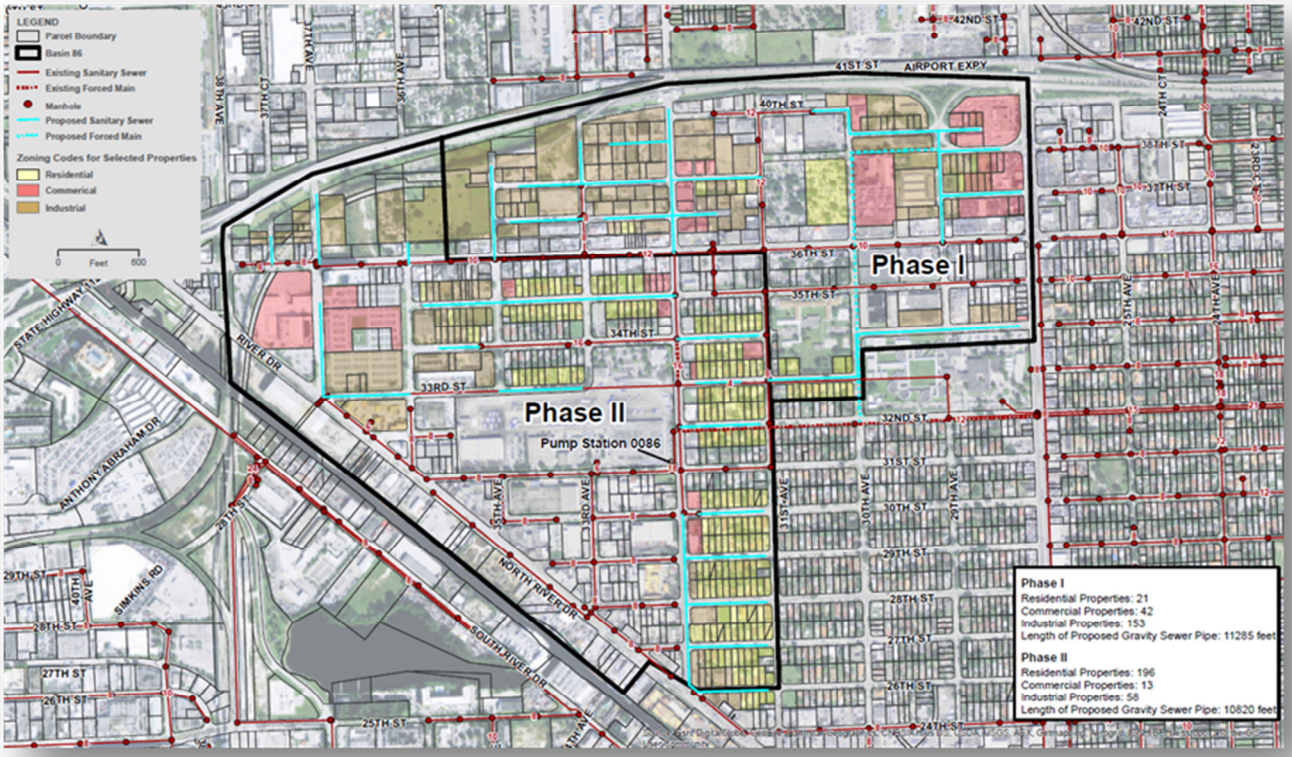



*Figure 2: CD SEP area (i.e., Phase I) and Broader Basin 0086 area (i.e., Phase II)*
*[Source: HDR 9/13/2015 dBODR]*

HDR further subdivided the Phase I and Phase II study areas into five (5) Sectors, as shown in Figure 3. Sectors II, III and V encompass the Phase I SEP area. Sectors I and IV encompass the broader Phase II Basin 0086 area. In particular, these Sectors were delineated based upon the following issues:

- NW 36th Street which is an FDOT-maintained roadway, a major east-west traffic corridor within Basin 0086, and is currently subject to an FDOT paving moratorium
- Sector III has lower existing ground elevations than the rest of Basin 0086, and thus has less ability to provide sufficient soil cover over potential gravity sewer mains, as required by WASD design standards

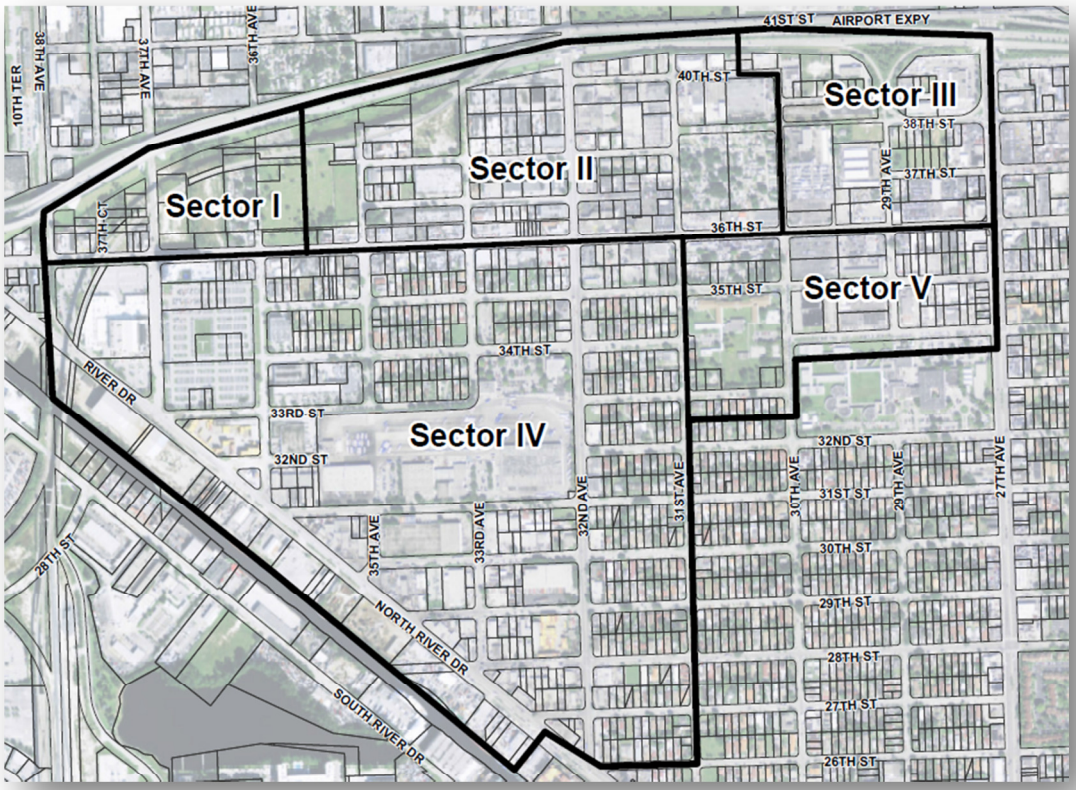



*Figure 3: Sectors Within Basin 0086*
*[Source: HDR 9/13/2015 dBODR]*

For each Sector, HDR obtained as-built and existing utility information, performed site investigations, reviewed aerial photos, coordinated with recent and future projects, determined zoning and municipal jurisdictions, assessed the existing gravity sewer network, and determined potential sanitary collection methods and layouts. To estimate contributing sanitary flows from new collection areas, HDR used the WASD "*Schedule of Daily Gallonage For Various Occupancy*" table. No specific sewer pipe hydraulic analyses were performed for the BODR, but HDR used WASD design standards and minimum pipe size/slope/capacity criteria to develop potential sanitary collection systems for each Sector. The BODR also included a "Level I Environmental Contamination Assessment" for the Basin 0086 area.

## 4. BASIS OF DESIGN REPORT FINDINGS

HDR determined the development of Sectors II, III and V with a new WASD sanitary sewer network would service approximately 145 new properties and result in an approximate flow projection of 49,000 gallons per day added to the existing Pump Station 0086. HDR concluded this added flow would not require upgrades to the existing Pump Station 0086 due to its current reserve capacity.

Due to low existing ground elevations within Sector III, which results in insufficient soil cover over new pipes in certain areas, HDR concluded a new gravity sewer main system was not technically feasible within Sector III without the usage of low pressure systems or a new sub-basin lift station. Figure 4 below shows with "red lines" the proposed gravity sanitary sewer reaches that have sufficient soil cover according to WASD design criteria (i.e., one short reach on NW 30$^{th}$ Avenue and the other on NW 29$^{th}$ Avenue). As Figure 4 demonstrates, there are large areas within Sector III that new gravity sanitary sewer mains could not serve.

*Figure 4: Proposed Gravity Sanitary Sewer with Sufficient Soil Cover (shown with red lines)*
*[Source: HDR 7/30/2015 Draft Technical Memorandum]*

In light of the technical problems within Sector III, HDR investigated a build-out of only Sectors II and V (see Figure 5) and found that these two (2) sectors would not only meet, but exceed, the SEP Consent Decree requirements in the following manner:

- Provide a total of approximately 7,789 linear feet of new gravity sanitary sewer main, whereas the Consent Decree requires a minimum of 7,660 linear feet, thereby exceeding the requirement by approximately 129 linear feet
- Service approximately 100 properties currently reliant upon septic systems, including 81 “Business” properties, whereas the Consent Decree requires connecting to a minimum of 74 “Businesses”, thereby exceeding the requirement by 7 businesses
- Cost an estimated $2,200,000 for construction only, whereas the Consent Decree requires at least $2,047,200 be spent by Miami-Dade County on construction costs plus other WASD project-related expenses (i.e., planning, design, permitting, procurement and construction management), thereby exceeding the costs by at least $152,000

HDR’s new wastewater flow projections are approximately 32,623 gallons per day for Sector II, and 5,296 gallons per day for Sector V. For Sectors II and V combined, this results in approximately 37,900 gallons per day of wastewater being removed from a septic system treatment, and being treated at a Miami-Dade wastewater treatment plant.

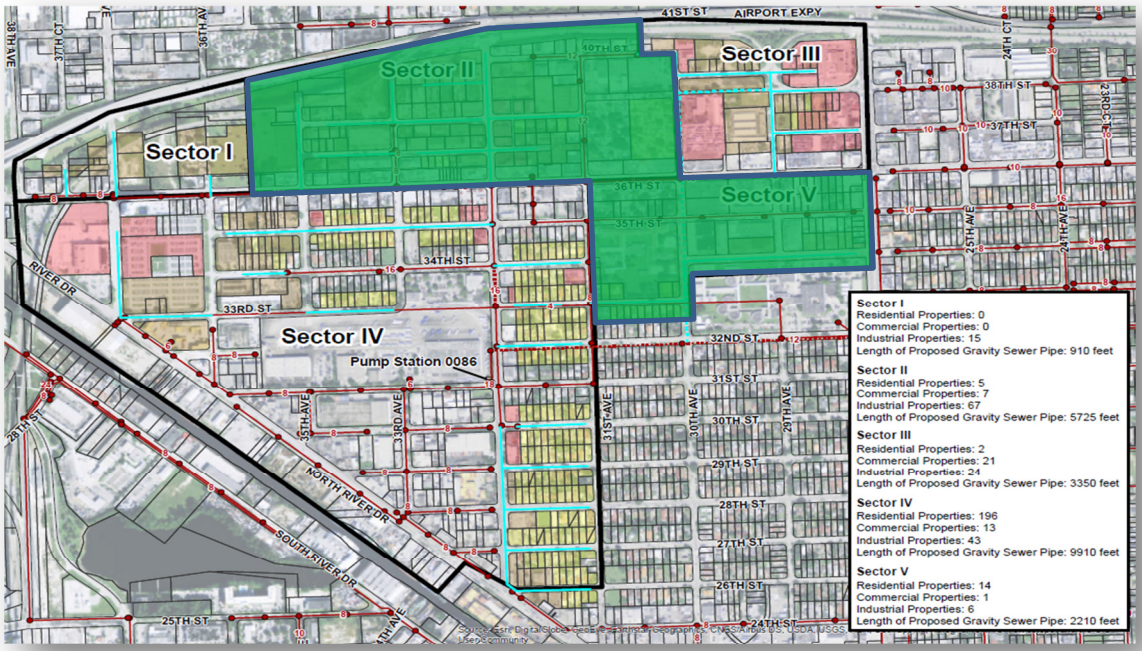



*Figure 5: Build-Out of Sectors II and V*
*[Source: HDR 9/13/2015 dBODR]*

Figure 6 shows the approximate locations of the new gravity sanitary sewer mains proposed within Sectors II and V.

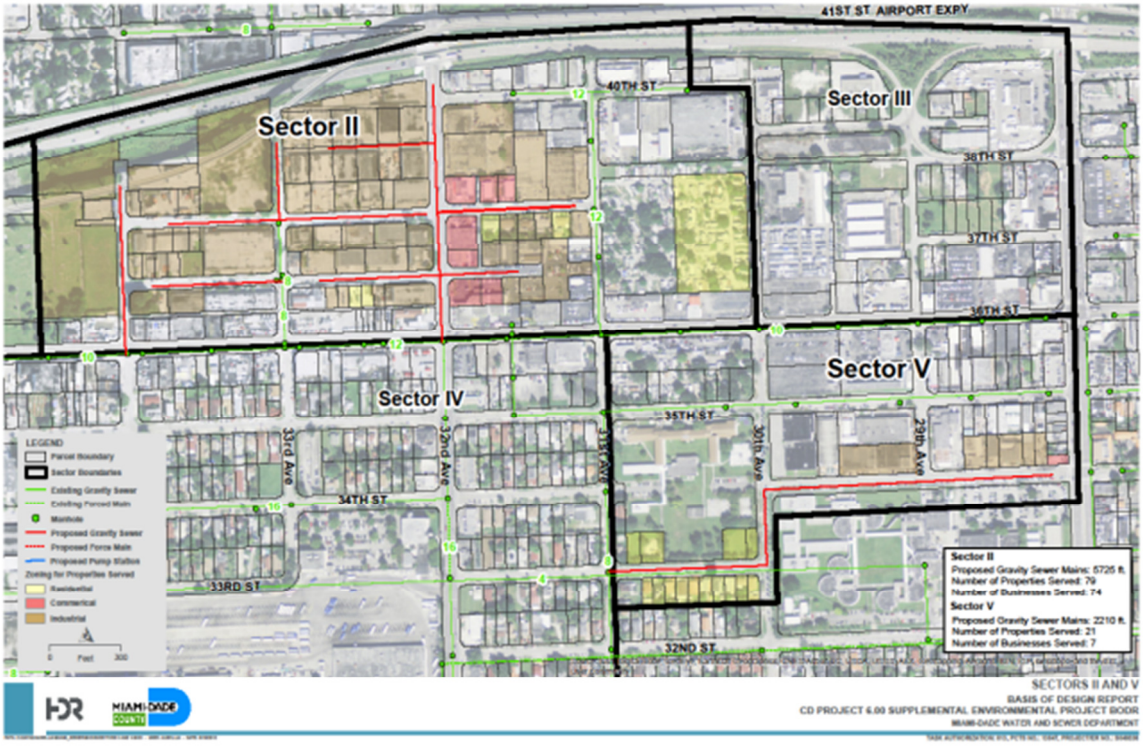



*Figure 6: Approximate Locations of New Gravity Sanitary Sewer Mains Proposed Within Sectors II and V*
*[Source: HDR 9/13/2015 dBODR]*

## 5. CONCLUSIONS

HDR's findings show that if Sector II and Sector V are developed with a new WASD wastewater collection system, they will result in:

- Installation of approximately 7,789 linear feet of new gravity sanitary sewer main
- New sanitary lateral connections to 81 "Business" properties currently reliant upon septic systems
- Cost Miami-Dade County an estimated $2,200,000 for construction only

Based upon these findings, HDR's proposed gravity sanitary sewer mains for Sectors II and V not only meet, but exceed the Consent Decree requirements for the SEP. Furthermore, HDR calculated approximately 37,900 gallons per day of wastewater being removed from septic system treatment within Sectors II and V, and being treated at a Miami-Dade wastewater treatment plant. By providing these new WASD sanitary sewer connections to these properties currently relying upon septic systems, some of which pre-date existing septic system regulations, the SEP Plan's goal of improving water quality in the aquifer and nearby surface waters and preventing future contamination will be achieved.

After completion of the SEP Consent Decree work, WASD may design and install new wastewater collection systems within Basin 0086 and other surrounding areas within the "Miami-Dade Green Technology Corridor". It is anticipated Sector III and other basin areas could be developed by WASD under future non-Consent Decree improvement projects, including any necessary upgrades to the existing Pump Station 0086.

## 6. RECOMMENDATION

The CD PMCM Team recommends development of Sectors II and V with new gravity sanitary sewer mains to comply with the Consent Decree SEP requirements.

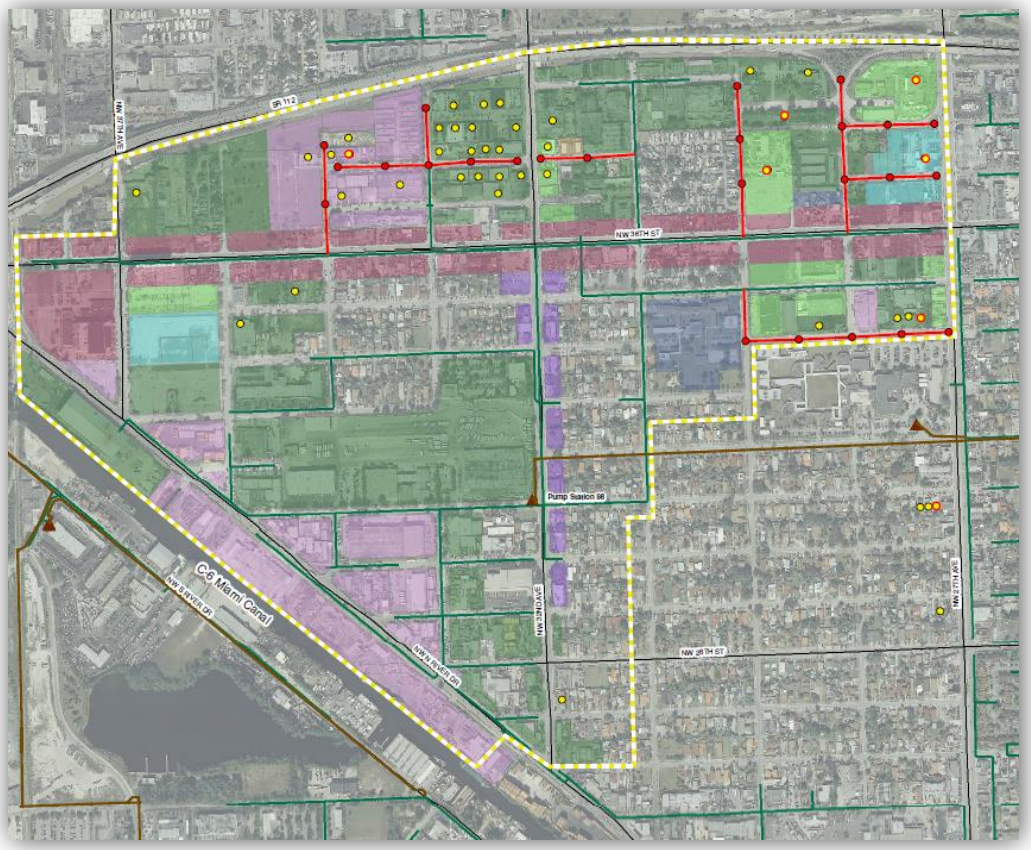
# COMPLIANCE REQUIREMENTS FOR USEPA CONSENT DECREE SEP (CD 6.00)

08.27.2015

WCTS

# CD REQUIREMENTS

- Miami-Dade shall install a least **seven thousand six hundred sixty (7,660)** linear feet of Gravity Sewer Main
- Gravity Sewer Main will service a minimum **seventy-four (74) business** entities
- Miami-Dade commits to spending at least **$2,047,200.00** to complete the SEP
- ….*improve water quality in the aquifer and nearby surface waters, and prevent future contamination*.
- Design Completion Milestones December 6, 2016
- Substantial Completion December 6, 2018



# BODR SCOPE

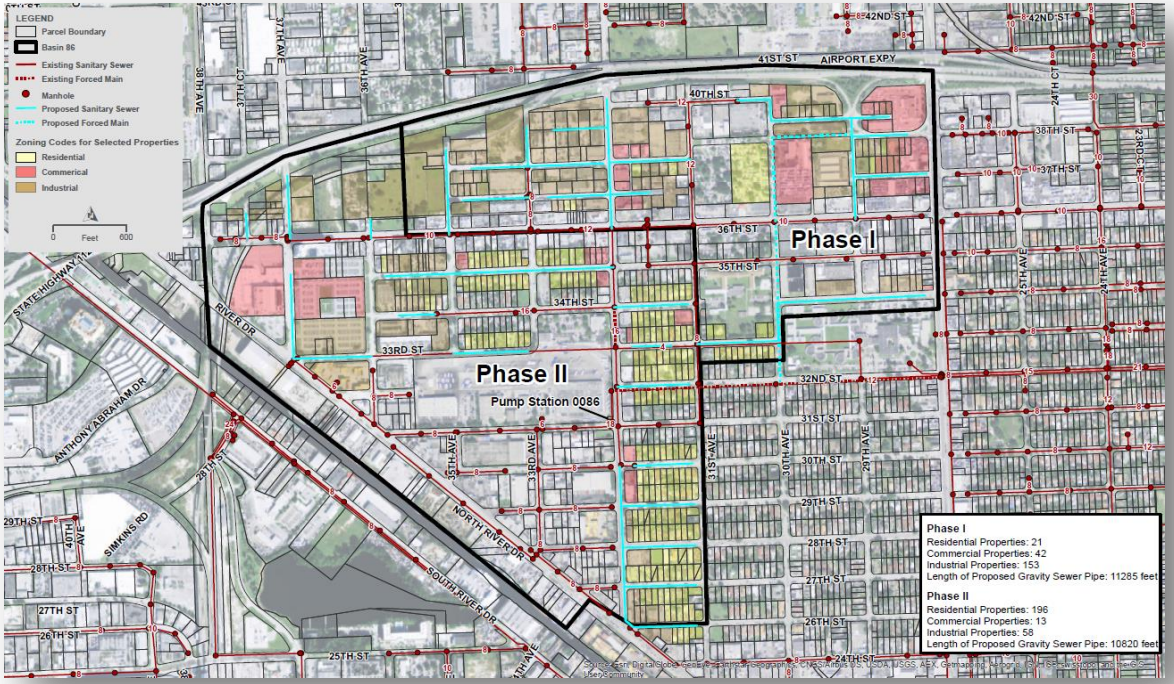
- Phase I:

  CD SEP Area

- Phase II:

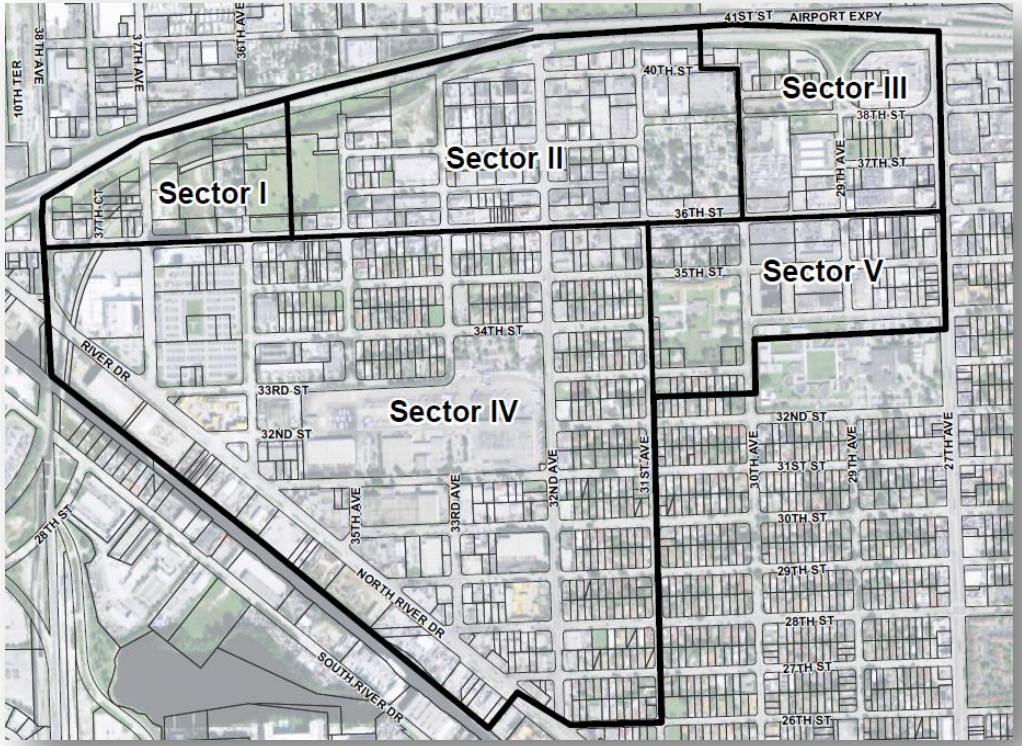
  Broader Basin 0086

  Sanitary sewer upgrade



# BODR STUDY AREA BREAKDOWN

- Five (5) different sectors identified
- Phase I (SEP area): Sector II, Sector III and Sector V
- Phase II: Sector I and Sector IV

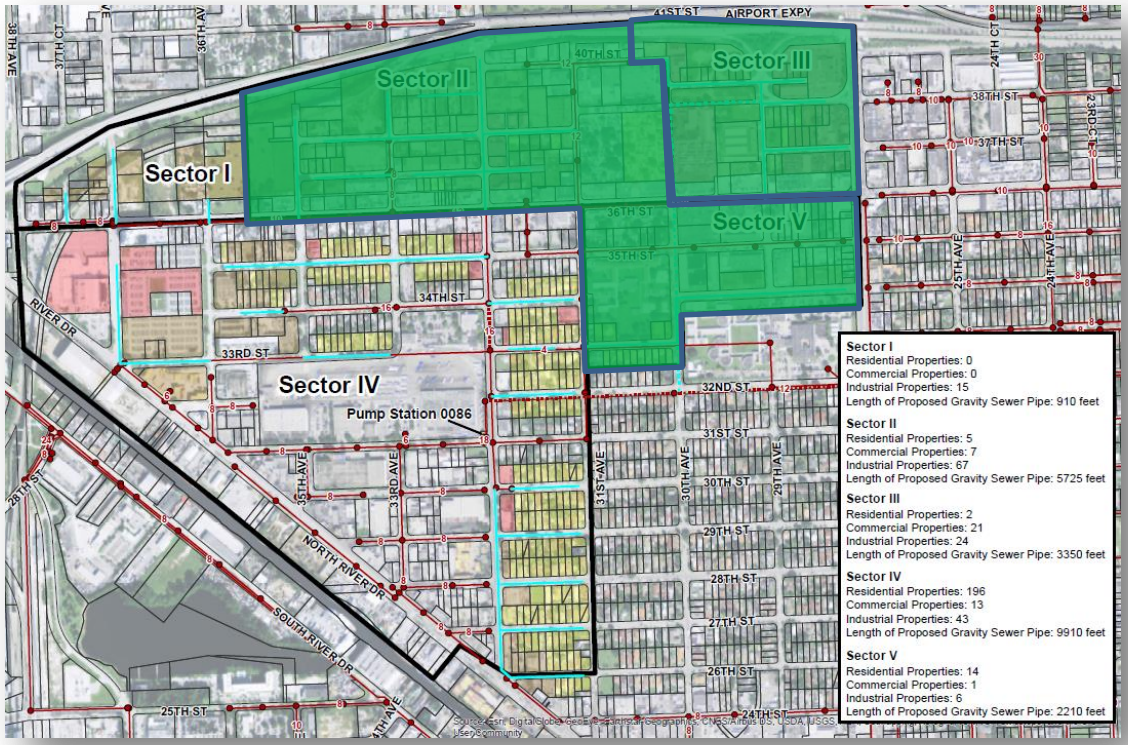


# SANITARY CONVEYANCE OPTIONS

| | Gravity Sewer | Pressure Sewer | Low- Pressure Sewer | Vacuum Sewer |
|---|---|---|---|---|
| Advantages | • inexpensive means to convey water<br>• minimally visible.<br>• reduced O&M | • layout independent of topography reduced excavation compared to gravity<br>• sewer system infiltration greatly reduced<br>• eliminates manholes<br>• requires less power than vacuum system<br>• lower construction life cycle cost than other alternatives<br>• backup generator is provided/designed power outage will not disturbs service | • layout independent of topography<br>• reduced excavation compared to gravity sewer system<br>• infiltration greatly reduced<br>• eliminates manholes<br>• requires less power than vacuum system | • electrical power not needed at each residence \<br>• reduced excavation compared to gravity sewer system<br>• grade and depth not critical<br>• exfiltration virtually impossible manholes not needed |
| Disadvantages | • odor control may be necessary.<br>• higher public disruption during installation<br>• requires large amounts of excavation<br>• high Infiltration/Inflow | • electrical power required<br>• air release valves needed<br>• easement/property acquisition required for the pump station.<br>• pumps fail require immediate repair | • effluent pump or grinder pump needed at each residence<br>• power outage disturbs service<br>• O&M higher than other alternatives<br>• on-lot components high serviceability and access to is required<br>• existing facilities may need to upgrade electrical mains and power board<br>• GP installations should have reserve holding- capacity | • electrical power required at central vacuum station<br>• vacuum valves have a shorter life than pumps<br>• higher energy consumption than other alternatives<br>• major odor problem at central vacuum station<br>• vacuum loss requires immediate repair<br>• easement/property acquisition required for the vacuum station |

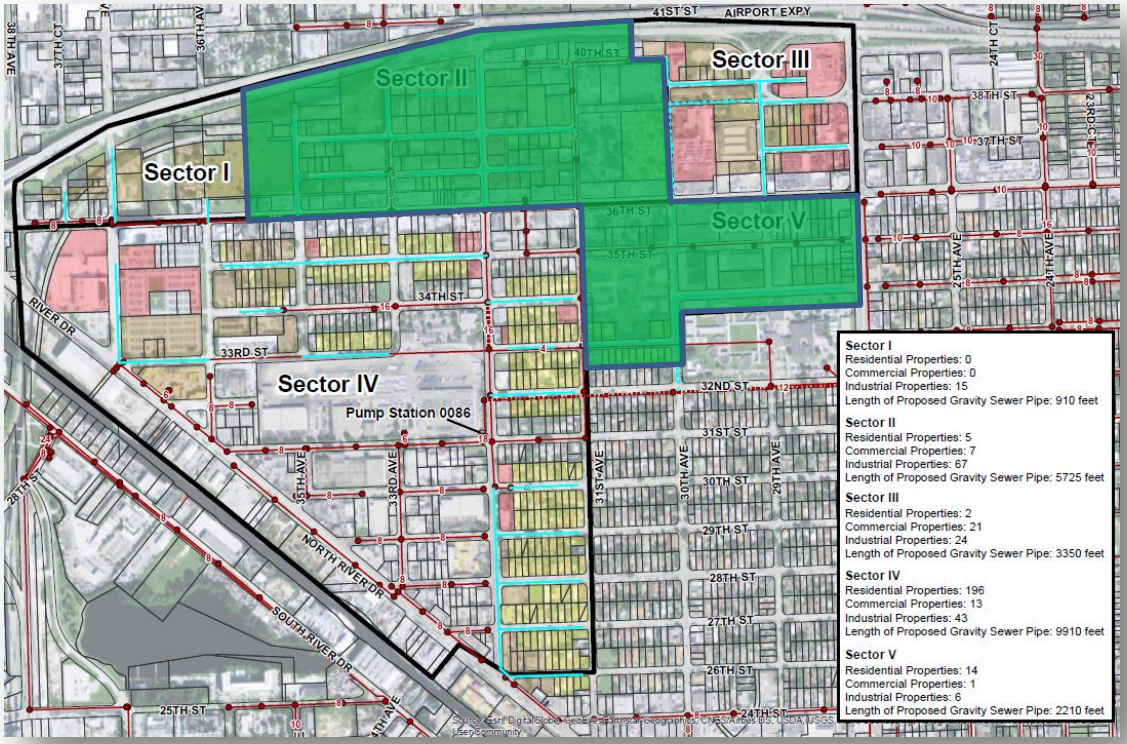
# PHASE I (SEP) AREA PROJECTIONS

- Approximately 147 properties (126 Business) were identified in Sectors II, III & V with Flow Projection ≅ 30,000 GPD (per MDWASD Schedule of Daily Rated Gallonage)
- not expected that PS 0086 will need to be upgraded as a result of implemented Phase I



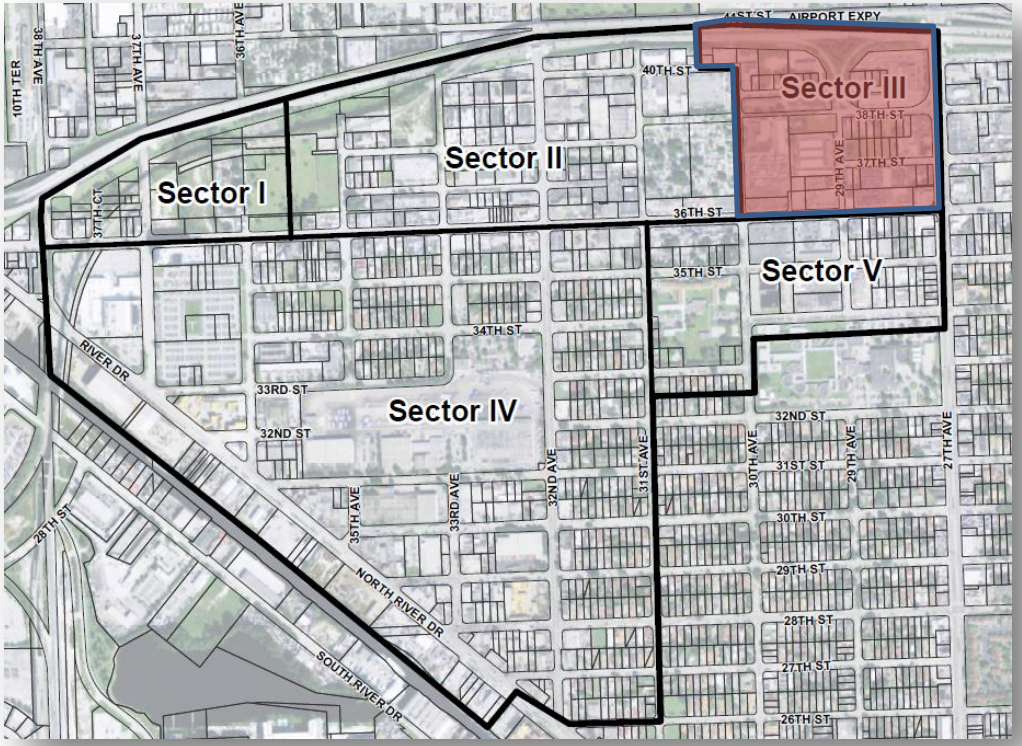
# PHASE I (SEP) CONCLUSION # 1

- Build-Out of Sectors II & V fulfill SEP compliance
- Approximately 100 properties were identified in Sectors II & V, including 81 Business Properties [74 Reqd]
- Total ≅ 7,935 LF of new Gravity Sewer Main [7,660 Reqd]
- Total Cost ≅ $ 2,200,000 construction only [$2,047,200 Total Cost Reqd]



# PHASE I (SEP) CONCLUSION # 2

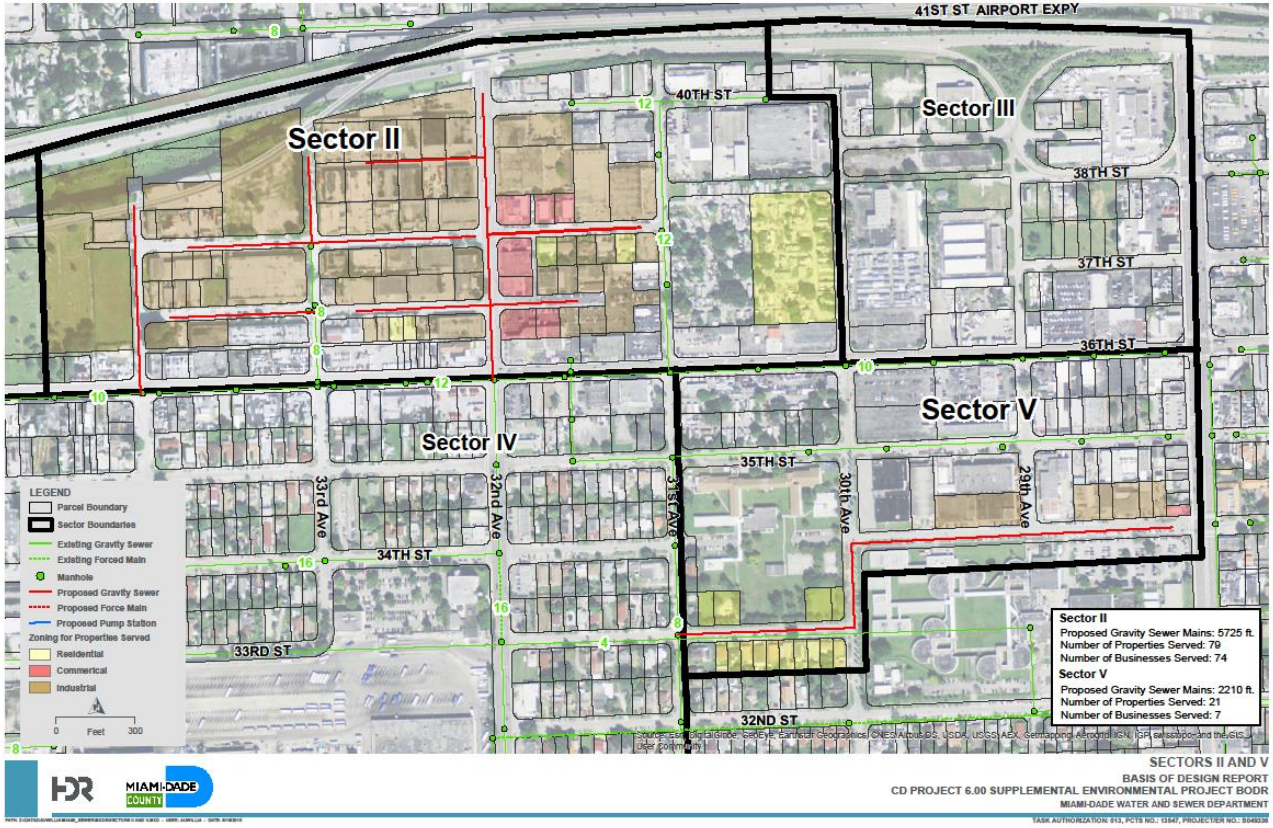
- Sector III, cannot be entirely served by gravity sewer while maintaining a constructible depth of cover
- Sector III can be served with gravity collection system with a localized pump station that would discharge to the receiving forcemain from PS086

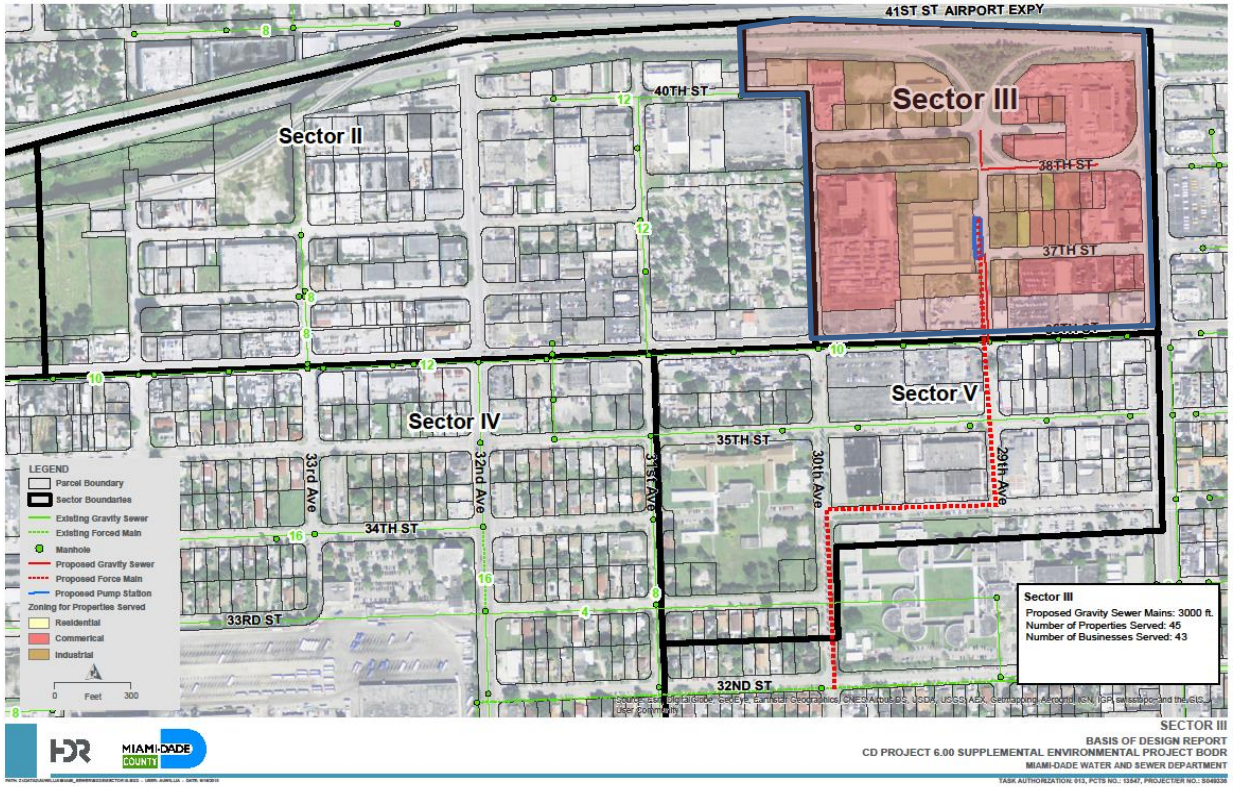


# RECOMMENDED SEP DESIGN

Design Gravity Sewer Mains Build-Out for:

- Sector II
- Sector V



# RECOMMENDED SEP DESIGN

- Incorporate Sector III into future Basin 0086 Green Tech Corridor improvements