

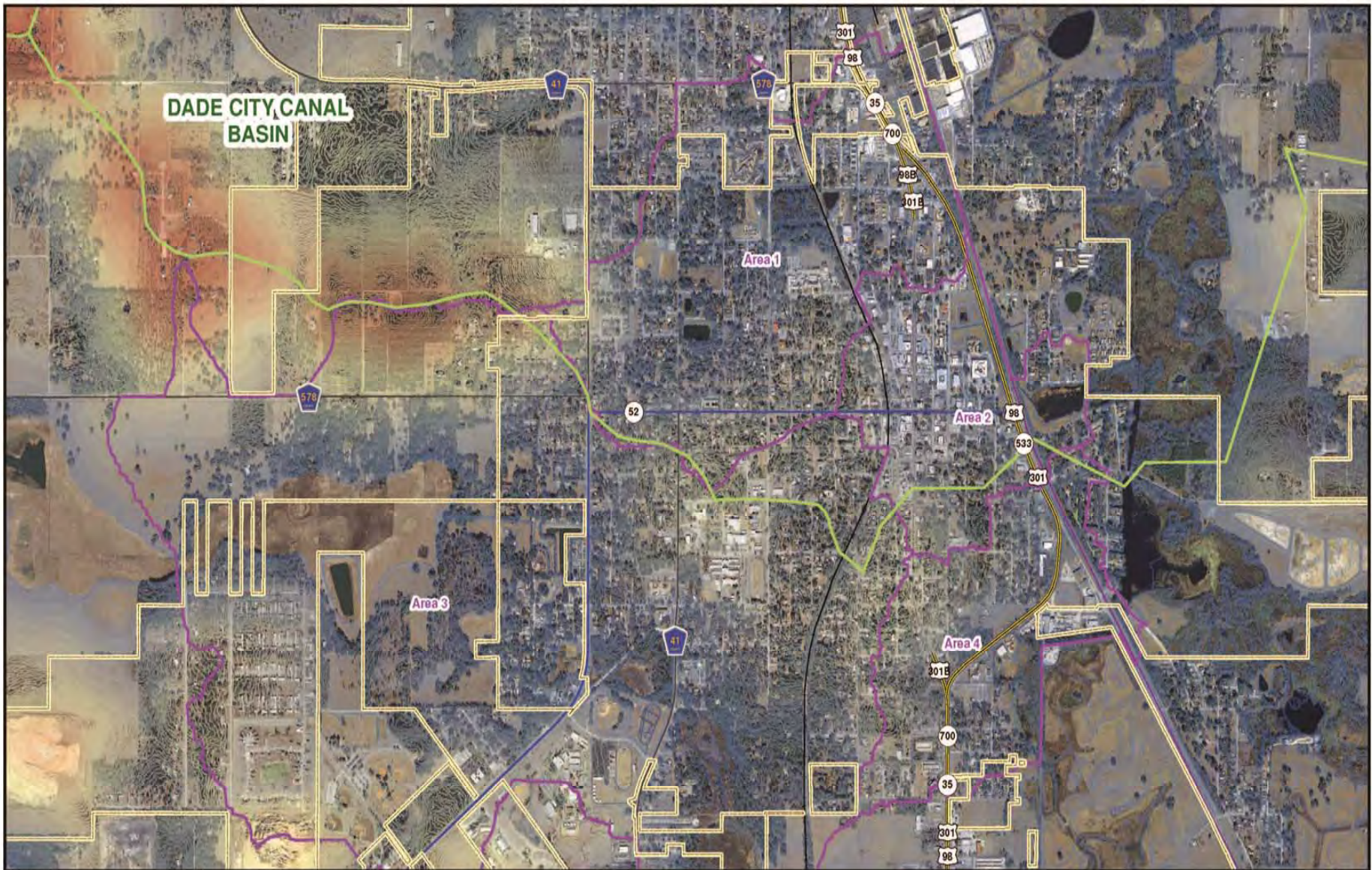


# Stormwater Master Plan Workshop

Establishing “Levels of Service” Definitions to allow for  
assessment of drainage infrastructure performance,  
needs, estimated costs and comparisons

October 22, 2012



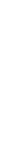
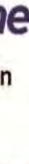
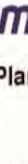
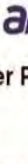
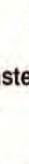
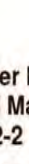
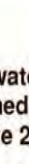
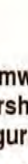
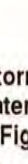
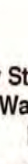
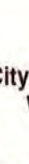
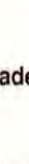
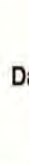
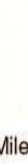
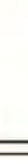
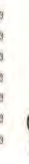
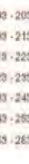
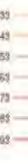
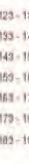
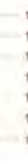
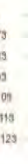
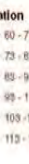
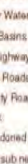
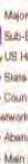


#### Notes:

- 1- Project No.: 19545x1.5
- 2- Data Sources - 2011 SWFWMD Aerial Imagery
- 3- SWFWMD, FDOT, Pasco County, Dade City
- 4- The map shown here has been created with all due and reasonable care and is strictly for use with AMEC Project Number: 19545x1.5. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. AMEC assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

Date: 03/06/12  
 Prepared By: WH  
 Checked By: JDP

#### Explanation of Features



**Dade City Stormwater Master Plan  
 Watershed Map  
 Figure 2-2**

0 0.125 0.25 0.5 0.75 1 Miles



# Whitehouse Avenue/10<sup>th</sup> Street





# Downtown



# Howard Avenue





# Other Problem Areas



**Church parcel at  
Pond & 6th**



# Level of Service Definition

## Interpretations

Comprehensive Plan Rating	City Comprehensive Plan Definitions	Master Plan Interpretation- LOS Description	Master Plan Interpretation- LOS Rating
Excellent	No flooding or property damage during significant 25 year- 24 hour storm event	No flooding	A
Good	Only very minor flooding and no property damage during significant 25 year- 24 hour storm event	Street flooding is 3" or less above the crown	B
Satisfactory	Periodic minor flooding for a few hours and no property damage during a 25 year- 24 hour storm event or a 10 year- 1 hour storm event	Street flooding is more than 3" above the crown of road, but less than 6"	C
Poor	Chronic flooding and minor property damage (yards, not building flooding) during a 25 year- 24 hour storm event	Street flooding is more than 6" above the crown of road, but less than 12"	D
Unsatisfactory	Chronic flooding and minor property damage and disruption of traffic flow during a 25 year- 24 hour storm event	Structure flooding; Street flooding is more than 12" above the crown of road	F



# Drainage Level of Service for Downtown and Business Areas<sup>1</sup>

Comprehensive Plan Rating	City Comprehensive Plan Definitions	Master Plan Interpretation- LOS Description	Master Plan Interpretation - LOS Rating
Excellent	No flooding or property damage during significant 25 year- 24 hour storm event or a 10 year- 1 hour storm event	No flooding	A
Good	Only very minor flooding and no property damage during a 25 year- 24 hour storm event or a 10 year- 1 hour storm event	Street flooding is 3" or less above the curb line	B
Satisfactory	Periodic minor flooding and no property damage during a 25 year- 24 hour storm event or a 10 year- 1 hour storm event	Street flooding is 3" or less above the crown	C
Poor	Chronic flooding and disruption of traffic flow during a 25 year- 24 hour storm event or a 10 year- 1 hour storm event	Street flooding is more than 3" above the crown of road, but less than 6"	D
Unsatisfactory	Chronic flooding and minor property damage and disruption of traffic flow during a 25 year- 24 hour storm event or a 10 year- 1 hour storm event	Structure flooding; Street flooding is more than 6" above the crown of road.	F





# Comment on the Flood Modeling

- Reports from staff and residents
- Hurricane Season (September 2004)
- Tropical Storm Debbie (June 2012)
  - Match high water “trash” lines with model results



# Existing Drainage Level of Service

Location (ID)	Predicted Existing Drainage Level of Service
Whitehouse Ave/10 <sup>th</sup> St	“F” rating for all 24 hour storm events
Downtown Area	“F” rating through “B” rating depending on location and storm event
Howard Avenue	“F” rating through “C” rating depending on storm event



# Existing Drainage Level of Service- Comparison

## **Low Lying Areas**

- Whitehouse Avenue area- at the bottom of a “bowl” with the only existing relief being the Pasco Cogen Plant stormwater pumping station
- Howard Avenue- drainage to this area occurs too quickly for the pumping station and flooding occurs

## **Downtown Area**

- Highly impervious
- Shallow flood depths move with sufficient velocity that safety to pedestrians or property damage from flows and waves is a concern

<b>CIP Description</b>	<b>PRIMARY PURPOSE/ Secondary Benefits</b>
Whitehouse Ave/10 <sup>th</sup> St.- Pond Construction	-FLOOD REDUCTION (REGIONAL) -Water Quality -Natural System Enhancement -Preservation of Water Resource - Public Education
Moseri Avenue Pond Construction	-FLOOD REDUCTION (REGIONAL)
Osceola Street at Davis Avenue Ditch Improvements	-FLOOD REDUCTION (LOCAL)
Oak Court Ditch Improvements (Pave ditch)	-FLOOD REDUCTION (LOCAL)
Pipe conveyance ditch along 17 <sup>th</sup> Street and under Oak Ct.	-FLOOD REDUCTION (LOCAL)
17 <sup>th</sup> Street Storm sewer from Meridian Ave. to Oak Court to Beauchamp Pond	-EROSION REDUCTION (LOCAL)
Beauchamp Pond Expansion	-FLOOD REDUCTION (REGIONAL)
St. Joe Road Ditch Erosion Repair	-EROSION REPAIR (LOCAL)
Downtown Storm sewer & Irvin pond Modifications	-FLOOD REDUCTION (REGIONAL) -Water Quality -Preservation of Water Resource -Public Education - Passive Recreation
6 <sup>th</sup> Street/ Pond Avenue Berm Construction	-FLOOD REDUCTION (LOCAL)
Howard Avenue Storm Lift Station Upgrade	-FLOOD REDUCTION (LOCAL)
Ferguson Avenue Canal Improvements	-NUISANCE STAGNANT WATER COMPLAINTS (LOCAL)





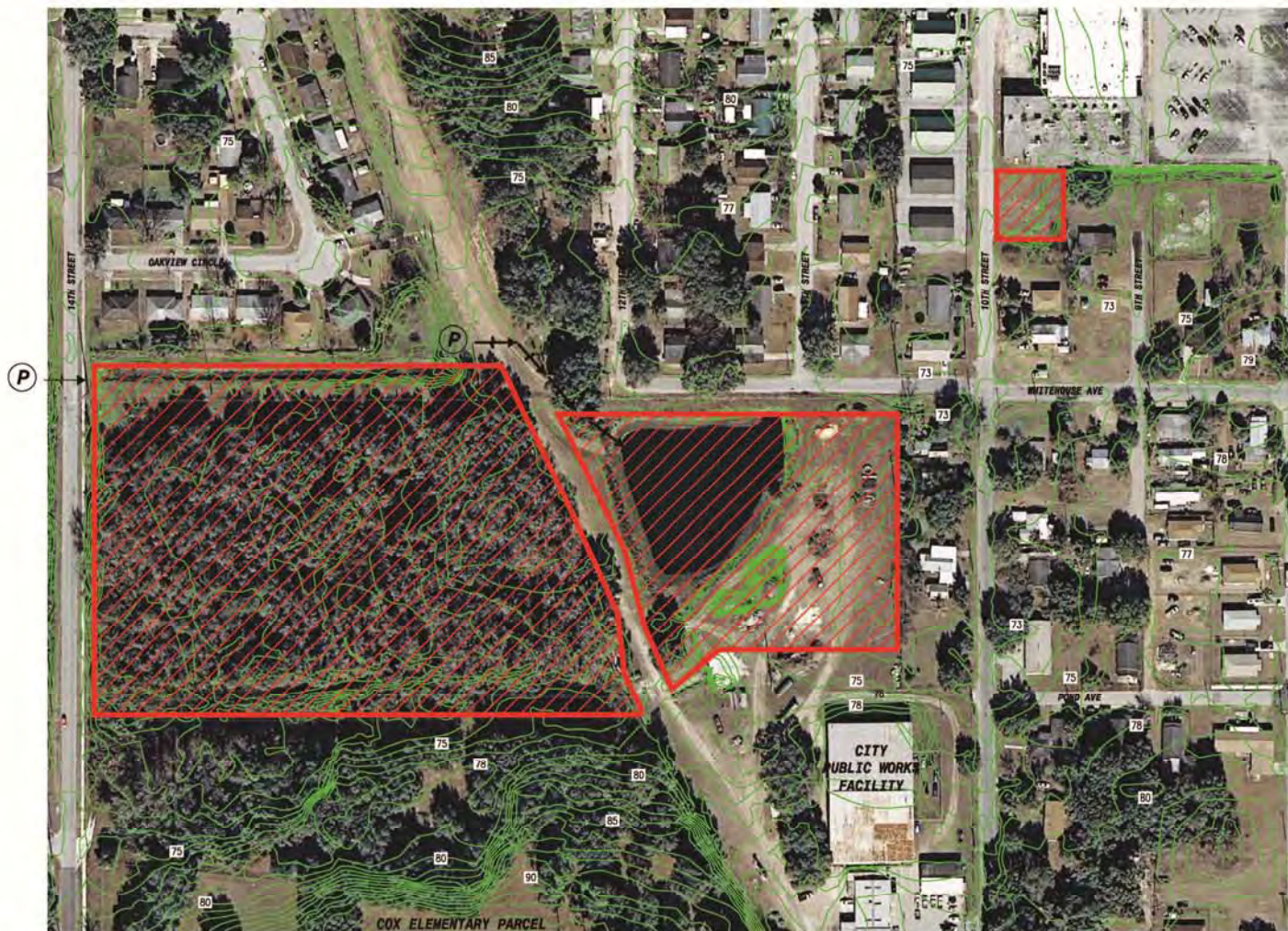
# Conceptual Improvements to Reduce Flooding

- Whitehouse Ave/10<sup>th</sup> St.
- Beauchamp Avenue
- Downtown
- Howard Avenue

# Whitehouse Avenue/10<sup>th</sup> Street








#### LEGEND

- (P) → EXISTING PASCO COUNTY HOUSING AUTHORITY PUMP STATION AND DIRECTION OF DISCHARGE
- 72 — ELEVATION CONTOUR (NAVD 88)  
SOURCE OF ELEVATION CONTOUR DATA: SWFMD 2004
- CONCEPT AREA FOR EXCAVATION

EXHIBIT 1

DATE	REVISIONS	 <b>AMEC Environment &amp; Infrastructure, Inc.</b> 2000 E Edgewood Dr., Ste #215 Lakeland, FL 33803 Phone: 863.667.2345 Fax: 863.667.2062 www.amec.com CA-5392	DESIGNED BY:	J.D.P.	SCALE:	1"=150'	<b>DADE CITY STORMWATER MASTER PLAN</b> <b>WHITEHOUSE AVENUE &amp; 10th STREET</b> <b>CONCEPT FLOOD RELIEF PROJECT</b> <b>CONCEPT AREAS FOR EXCAVATION FOR FLOOD REDUCTION</b>
			DRAWN BY:	L.K.W.	DATE:	09/21/2012	
			CHECKED BY:	J.D.P.	PROJECT NO.	19545	
			APPROVED BY:				



# Beauchamp Avenue





# Downtown



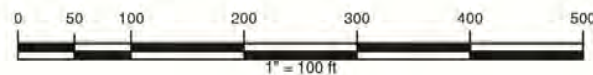




**Notes:**  
 1. Project No.: 19545  
 2. Data Sources: 2011 SWFWMD Aerial Image, AMEC CAD  
 3. The map shown here has been created with all due and reasonable care and is strictly for use with AMEC Project Number: 19545. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. AMEC assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

Date: 1/26/2012  
 Prepared By: SJK  
 Checked By:

#### Proposed Pond Slopes and Berms



#### EXHIBIT 8



**CITY OF DADE CITY  
 DOWNTOWN STORMWATER  
 CAPITAL IMPROVEMENTS PROJECT  
 PROPOSED CHANGES TO IRVIN PARK POND**

AMEC - 2000 E. Edgewood Drive Ste #215 - Lakeland, FL 33803 - CA-007967 - (888) 667-2343



# Howard Avenue







#### Notes:

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Date: 06/09/12  
Prepared By: SJK  
Checked By: TJK

#### Explanation of Features

- Flow Arrows
- Pipes
- Pump Stations
- Structures
- Channel/Ditch
- Florida Avenue Lift Station Contributing Basins
- Area 3 Subbasins
- State Roads
- County Roads

0 105 210 420 630 840 1,050 Feet



#### Dade City Stormwater Master Plan Subwatershed Area 3 Map Figure 3-15 - Howard Avenue

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# Other Problem Areas





# Other Problem Areas



**Church at  
Pond & 6th**





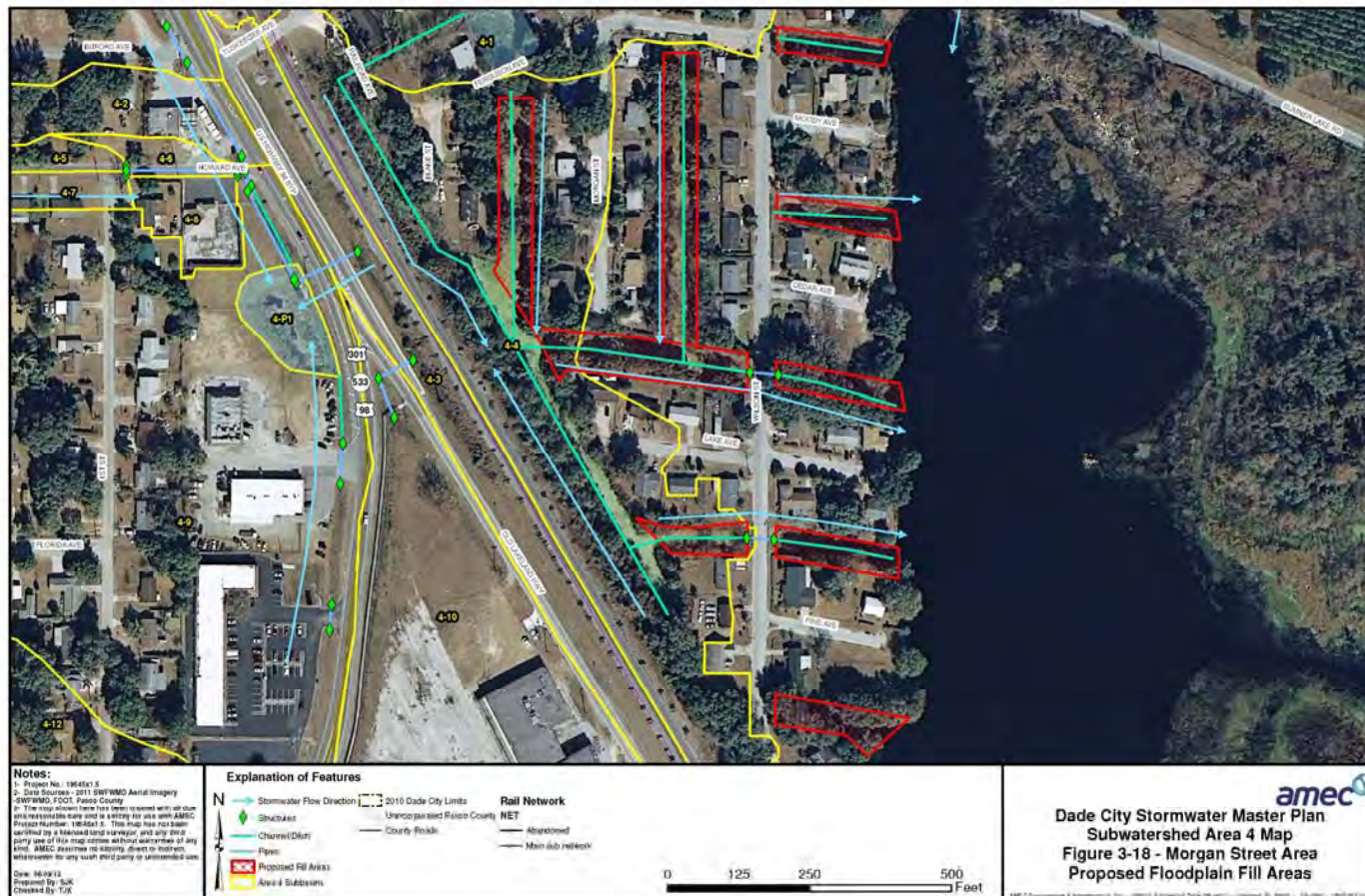


# Other Problem Areas





# Other Problem Areas





# Other Problem Areas





CIP Description	Estimated Benefits	Estimated Implementation Costs
Whitehouse Ave/10 <sup>th</sup> St.- Pond Construction (Phase 1- Initial Pond Expansion only)	Property <sup>1</sup> flooding reduced from 35± to 12± units (25 YR storm) & 25± to isolated yard flooding (5 YR Storm) (after Phase 2 Implementation)	\$110,000±
Whitehouse Ave/10 <sup>th</sup> St.- Pond Construction (Phase 2- Expanded Pond Construction)	“	\$500,000±
Moseri Avenue Pond Construction	Flood reduction not modeled separately however flood prone Dade Oaks Apartments will benefit.	\$58,000±
Osceola Street at Davis Avenue Ditch Improvements	Flood reduction not modeled separately however hydraulic capacity will improve and existing flow “bottleneck” will be eliminated.	\$106,000±
Oak Court Ditch Improvements (Pave ditch)	Improved flow capacity of ditch will reduce ditch overflows onto private properties. Reduced routine maintenance.	\$48,000±
Pipe part of conveyance ditch along 17 <sup>th</sup> Street, and under Oak Court	Reduction in instances of hazardous flows on 17 <sup>th</sup> Street near Oak Court during intense storm events, improved conveyance to pond system at Beauchamp Avenue, reduction in maintenance costs.	\$25,000±



CIP Description	Estimated Benefits	Estimated Implementation Costs
17 <sup>th</sup> Street Storm sewer from Meridian Ave. to Oak Court to Beauchamp Pond	Reduction in erosion of private property at outfall location and controlled conveyance of stormwater to pond.	\$219,000±
Beauchamp Pond Expansion	Flood reduction not modeled separately however the severity of the infrequent flooding of adjacent properties will be reduced.	\$115,000±
St. Joe Road Ditch Erosion Repair	Reduction in erosion of private property at outfall location.	\$31,000±
Downtown Storm sewer & Irvin pond Modifications	Street and parking area <sup>5</sup> flooding reduced from 6-12” down to none (5 YR Storm) and 3-6” down to none (Mean Annual Storm <sup>4</sup> )	\$1,800,000±
6 <sup>th</sup> Street/ Pond Avenue Berm Construction	Flood reduction not modeled separately however improvements may reduce frequency and severity of flooding at church property.	\$25,000±
Howard Avenue Storm Lift Station Upgrade	Street flooding reduced from 3-6” down to none (5 YR Storm) <sup>6</sup>	\$82,000±
Ferguson Avenue Canal Improvements	Stagnant pools will be graded to reduce the frequency and depth of standing water behind homes.	\$40,000±



Project	Potential Partnering Agencies/Reasons	Estimated Cost Range to City
Whitehouse Ave/10 <sup>th</sup> St.- Phase 1 - Pond Construction	FDOT/Contribution at Outfall PCHA/Contribution of Stormwater PCSB/Property Owner State of Florida (CDBG)	\$36,000-\$110,000
Phase 2 – Expanded Pond Construction	PCSB/Property Owner PCHA/Contribution of Stormwater State of Florida (CDBG)	\$250,000 - \$500,000
Moseri Avenue Pond Construction	PCHA/Benefits from Project	\$29,000 - \$58,000
Osceola St. at Davis Ave. Ditch Improvements	None	\$95,000 - \$106,000
Oak Court Ditch Capacity Improvements	None	\$40,000-\$50,000
Pipe part of conveyance Ditch along 17 <sup>th</sup> Street, and under Oak Ct. (&17 <sup>th</sup> Street Existing Storm Sewer Upgrade)	None	\$80,000-\$95,000
17 <sup>th</sup> Street Storm sewer from SR 52 to Oak Ct.	FDOT	\$125,000-\$150,000
Beauchamp Pond Expansion	State of Florida (CDBG)	\$65,000-\$130,000
St. Joe Road Ditch Erosion Improvements	Pasco County	\$26,000-\$31,000
Irvin pond Modifications	SWFWMD/Cooperative Funding FDOT/Meridian Ave. Drainage Improvements FDEP <sup>1</sup>	\$450,000-\$1.8M
6 <sup>th</sup> Street/Pond Avenue Berm Construction	None	\$22,000 - \$25,000
Howard Avenue Storm Lift Station Upgrade	None	\$80,000-\$90,000
Ferguson Avenue Canal Improvements	None	\$25,000 - \$40,000
<b>Total</b>		<b>\$1.31M-\$3.19M</b>