Longhollow Drainage Analysis

Presentation Agenda

Study Area
Basin Characteristics
Storm Intensity Comparison
Calibration/High water marks
Storm Simulation
Existing Conditions
Conceptual Alternatives
Considerations/Recommendations







Study Area .23 sq miles

Contributing area 3 sq miles Pensacola **Bay Basin** 6.58 sq miles Grade **Differential** Natural Drainage Flow



Study Area

Pensacola Bay Basin

Existing Conditions Nodal Network Map

1/3 of basin in County 24" pipes HDR 2007 Basin Study



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Precipitation Rate Storm Event Comparison



April 2014 Storm Event Data from Weather Underground, Personal Weather Station @ Cordova Park, (KFLPENSA29)

Cumulative Rainfall Storm Event Comparison



April 2014 Storm Event Data from Weather Underground, Personal Weather Station @ Cordova Park, (KFLPENSA29)

High Water Marks/Calibration of Model









East door - EL = 37.10

Storm simulation April 29-30, 2014



April 2014 Storm Event Data from Weather Underground, Personal Weather Station @ Cordova Park, KFLPENSA29)



April 29 4:00 PM



Storm 5 Year 8-hour



Storm 10 Year 8-hour



Storm 25 Year 8-hour



Storm 100 Year 8-hour



<u>Storm</u> April 29/30 2014



Contributing Areas

Intersection Flooding N. Palafox St at Maxwell St



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Alternative 1 - Conveyance

Level of Service	25 year
Estimated Costs	\$59.1 million
Roadway Impacts	High
Utility Impacts	High
Parcels Impacted	0
Number of new ponds	0

Pipe location Beginning	<u>Flow (cfs</u>) 115	<u>Size</u> 4' diameter
Pond Discharge	900	8'X12' box
End	1225	2- 6'X 12' box



Alternative 1 Conveyance





Before & After Alternative 1



<u>100 year</u> <u>8 hr storm</u>

Before & After Alternative 1



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Alternative 2 - Storage

Level of Service25 yearEstimated Costs*\$57.4 millionRoadway ImpactsMedUtility ImpactsMedParcels Impacted75Number of new ponds4Existing pond expansion1

Pond	Size(acres)
Longhollow expansion	21
Pond 1	9
Pond 2	7
Pond 3	7
Pond 4	_7
	18

*Does not include loss of long term tax revenues



Alternative 2 Storage



Alternative 2

25 – year 8 hour storm



Alternative 2

100 – year 8 hour storm



Considerations/Recommendations

City/County working together

Upstream impacts downstream (especially on large events)
 Combination of storage and conveyance
 Update model to include <u>funded</u> county projects/re-examine
 Generally projects nearest source are most cost efficient
 Flood proofing and/or purchasing critical properties

Impervious Area Plan (5 year & 10 year plan) ✓ City/County facilities ✓ School facilities ✓ Roads • City • County • State ✓ Large private developments (incentives) ✓ Identify cost effective urban retrofit projects

Policy changes