

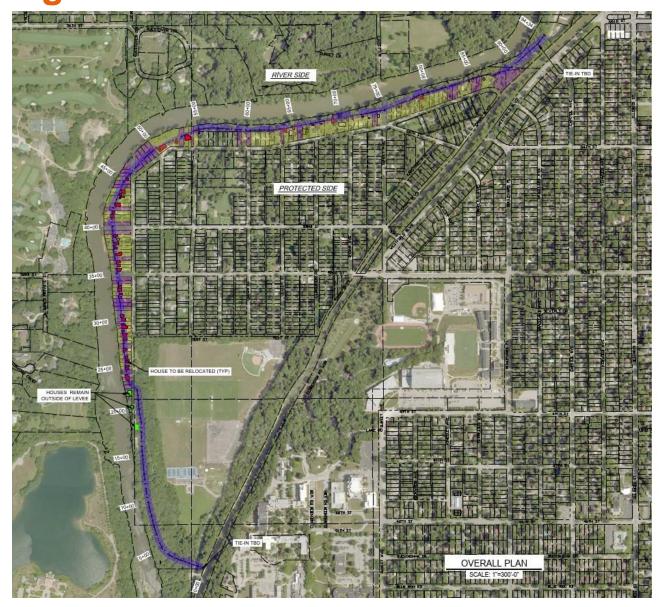


Local effort began in 2017

- AECOM study identified four alternatives
 - Alternative 1 Earthen Levee
 - Alternative 2 Least Impact Levee/Floodwall
 - Alternative 3 Low Impact Levee/Floodwall
 - Alternative 4 Low Impact Levee/Floodwall and impinge on White River

Background Alternative 1 – Earthen Levee





PROJECT DESCRIPTION

 ALTERNATIVE 1 IS AN EARTHEN LEVEE ALONG THE CENTER LINE OF THE EXISTING LEVEE.

REAL ESTATE IMPACTS

ITEM	QUANTITY	UNIT
HOUSES NOT PROTECTED	3	EA
RELOCATE HOUSE	41	EA
RELOCATE SHED	15	EA
OCCUPIED PARCELS IMPACTED	77	EA
VACANT PARCELS IMPACTED	34	EA
CITY PARCELS	4	EA
PARCELS NOT IMPACTED	х	EA

PROJECT FEATURES

COMPACTED EMBANKMENT	214,000	CY
EXCAVATION	110,000	CY
EARTHEN LEVEE	9,351	LF
FLOODWALL	0	LF

^{*} DOES NOT INCLUDE MISCELLANEOUS STRUCTURES SUCH AS FENCES, PATIOS, SITE RETAINING WALLS, ETC

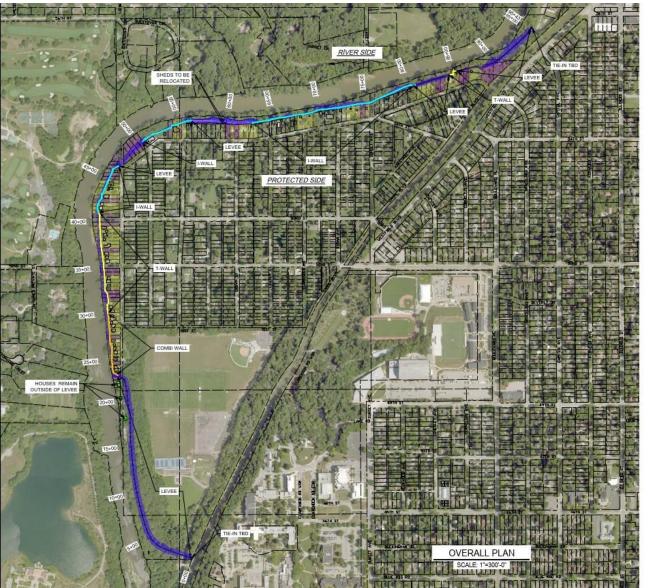
LEGEND

HOUSES REMAIN OUTSIDE OF LEVEE
RELOCATE HOUSE OR SHED
OCCUPIED PARCELS IMPACTED
VACANT PARCELS IMPACTED
LEVEE / EMBANKMENT FILL



Alternative 2 – Least Impact Levee/Floodwall







PROJECT DESCRIPTION

ALTERNATIVE 2 IS A COMBINATION OF AN EARTHEN LEVEE, COMBI-WALL, T-WALL, AND I-WALL

REAL ESTATE IMPACTS

ITEM	QUANTITY	UNIT	
HOUSES NOT PROTECTED	3	EA	
RELOCATE HOUSE	0	EA	
RELOCATE SHED	3	EA	
OCCUPIED PARCELS IMPACTED	56	EA	
VACANT PARCELS IMPACTED	34	EA	
CITY PARCELS	4	EA	
PARCELS NOT IMPACTED	31	EA	

PROJECT FEATURES

COMPACTED EMBANKMENT	140,000	CY
EXCAVATION	84,000	CY
EARTHEN LEVEE	4,650	LF
COMBI WALL	650	LF
T-WALL	1,210	LF
I-WALL	2,970	LF

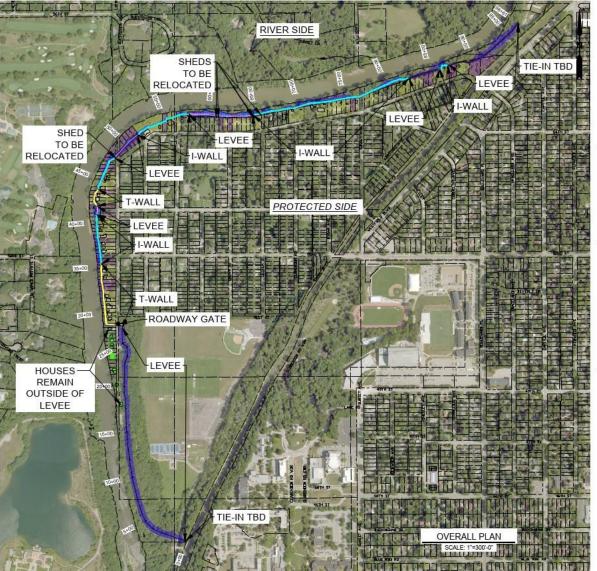
^{*} DOES NOT INCLUDE MISCELLANEOUS STRUCTURES SUCH AS FENCES, PATIOS, SITE RETAINING WALLS, ETC.

LEGEND

HOUSES REMAIN OUTSIDE OF LEVEE
RELOCATE HOUSE OR SHED
OCCUPIED PARCELS IMPACTED
VACANT PARCELS IMPACTED
LEVEE / EMBANKMENT FILL
COMBI WALL
T-WALL
I-WALL

Alternative 3 – Low Impact Levee/Floodwall





PROJECT DESCRIPTION

 ALTERNATIVE 3 IS A COMBINATION OF EARTHEN LEVEE, T-WALL AND I-WALL.

REAL ESTATE IMPACTS

ITEM	QUANTITY	UNIT
HOUSES NOT PROTECTED	9	EA
RELOCATE HOUSE	0	EA
RELOCATE SHED	6	EA
OCCUPIED PARCELS IMPACTED	58	EA
VACANT PARCELS IMPACTED	31	EA
CITY PARCELS	4	EA
PARCELS NOT IMPACTED	35	EA

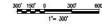
PROJECT FEATURES

COMPACTED EMBANKMENT	162,700	CY
EXCAVATION	93,300	CY
EARTHEN LEVEE	5,020	LF
COMBI WALL	0	LF
T-WALL	1,062	LF
I-WALL	3,468	LF

* DOES NOT INCLUDE MISCELLANEOUS STRUCTURES SUCH AS FENCES, PATIOS, SITE RETAINING WALLS, ETC

LEGEND

	HOUSES REMAIN OUTSIDE OF LEVEE
	RELOCATE HOUSE OR SHED
	OCCUPIED PARCELS IMPACTED
	VACANT PARCELS IMPACTED
	LEVEE / EMBANKMENT FILL
	COMBI WALL
,,	T-WALL
	I-WALL



Alternative 4 – Low Impact Levee/Floodwall





PROJECT DESCRIPTION

 ALTERNATIVE 4 IS A COMBINATION OF AN EARTHEN LEVEE, AND I-WALL.

REAL ESTATE IMPACTS

ITEM	QUANTITY	UNIT
HOUSES NOT PROTECTED	9	EA
RELOCATE HOUSE	0	EA
RELOCATE SHED	5	EA
OCCUPIED PARCELS IMPACTED	59	EA
VACANT PARCELS IMPACTED	30	EA
CITY PARCELS	4	EA
PARCELS NOT IMPACTED	35	EA

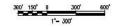
PROJECT FEATURES

COMPACTED EMBANKMENT	177,000	CY
EXCAVATION	107,900	CY
EARTHEN LEVEE	5,296	LF
COMBI WALL	0	LF
T-WALL	0	LF
I-WALL	4,283	LF

DOES NOT INCLUDE MISCELLANEOUS STRUCTURES

LEGEND

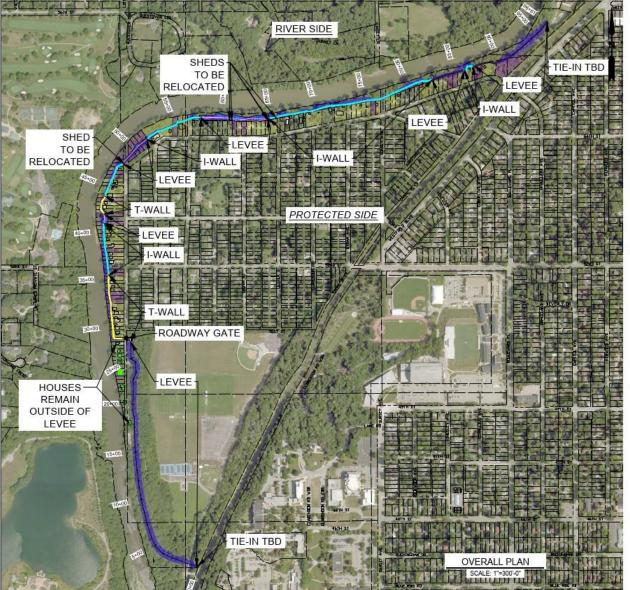
HOUSES REMAIN OUTSIDE OF LEVEE
RELOCATE HOUSE OR SHED
OCCUPIED PARCELS IMPACTED
VACANT PARCELS IMPACTED
LEVEE / EMBANKMENT FILL
COMBI WALL
T-WALL
I-WALL



Background Alternative 3 – Low Impact Levee/Floodwall was Selected







PROJECT DESCRIPTION

ALTERNATIVE 3 IS A COMBINATION OF EARTHEN LEVEE, T-WALL AND I-WALL.

REAL ESTATE IMPACTS

ITEM	QUANTITY	UNIT
HOUSES NOT PROTECTED	9	EA
RELOCATE HOUSE	0	EA
RELOCATE SHED	6	EA
OCCUPIED PARCELS IMPACTED	58	EA
VACANT PARCELS IMPACTED	31	EA
CITY PARCELS	4	EA
PARCELS NOT IMPACTED	35	EA

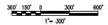
PROJECT FEATURES

COMPACTED EMBANKMENT	162,700	CY
EXCAVATION	93,300	CY
EARTHEN LEVEE	5,020	LF
COMBI WALL	0	LF
T-WALL	1,062	LF
I-WALL	3,468	LF

^{*} DOES NOT INCLUDE MISCELLANEOUS STRUCTURES SUCH AS FENCES, PATIOS, SITE RETAINING WALLS, ETC

LEGEND

	HOUSES REMAIN OUTSIDE OF LEVEE
	RELOCATE HOUSE OR SHED
	OCCUPIED PARCELS IMPACTED
	VACANT PARCELS IMPACTED
	LEVEE / EMBANKMENT FILL
II.	COMBI WALL
	T-WALL
	I-WALL



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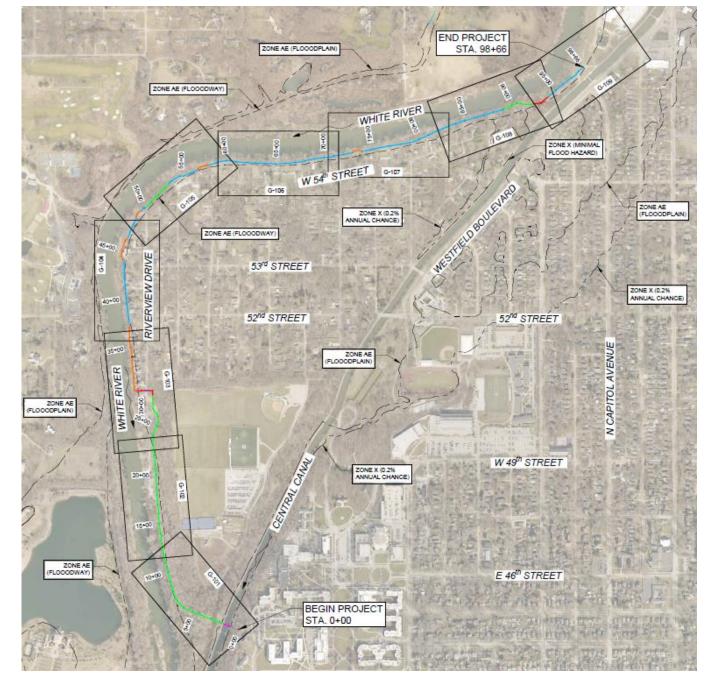
- Alternative 3 Alignment Low Impact Levee/Floodwall was further revised in 2021 to include components of Alternative 2 and 3 to include combi-wall based on additional hydraulic analyses to account for
 - Fill on Riverside
 - Zero rise in River



Currently

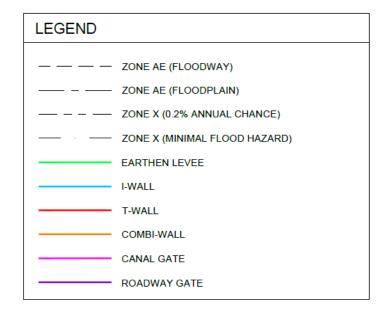
 30% Alignment is consistent with Indianapolis DPW Rocky Ripple Local Flood Damage Reduction project plans completed in earlier this year by the DPW

 30% Design Level Cost completed by both the Designer and the DPW Owner's Technical Reviewer resulted in comparative costs estimates





30% Alignment



30% Design Cost Estimates



Current Factors Influencing Construction Costs (all types of Public, Private, State and Federal Construction Projects)

- Productivity of workforce has substantially changed in last 2-years (decrease of 10 to 25%)
- Escalating Material Costs (2021 increase ~10% overall, Steel ~25%, Fuel ~30%, Trucking ~15%, Lumber ~15% (and higher at times, US Tariff on Canadian lumber to double in 2022)
- Cost increase 40 to 50% over 2018 estimates

Other cost influences

- Restricted Construction Corridor
- Project Alignment and Wall Types

30% Alignment Probable Construction Costs – \$95 million

Alternate Alignment Considerations



Criteria Influencing Alternate Alignment Considerations

- Maintaining FEMA no-rise criteria in the White River
- Reduction of complex wall designs (combi walls)
- Maximizes homes removed from the flood risk area





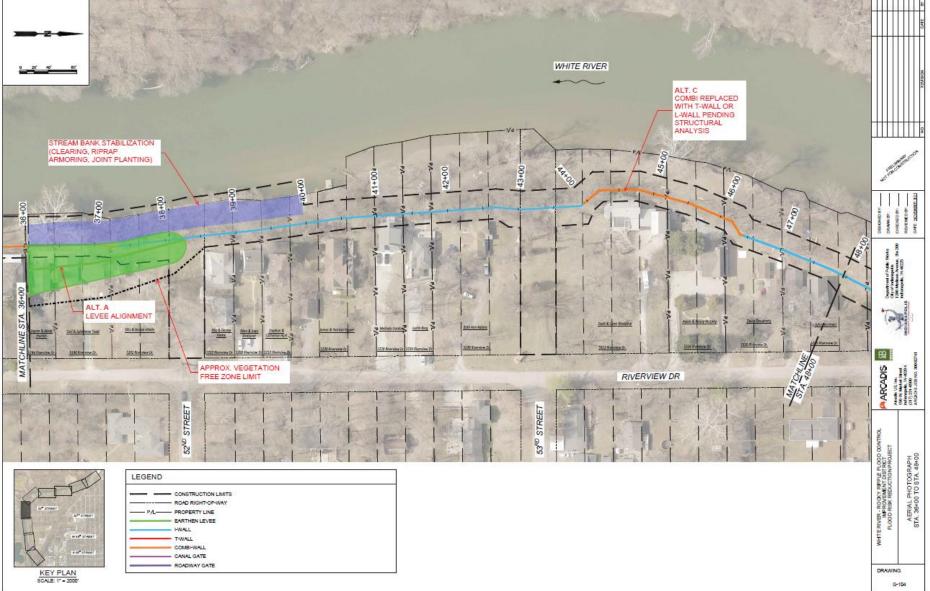




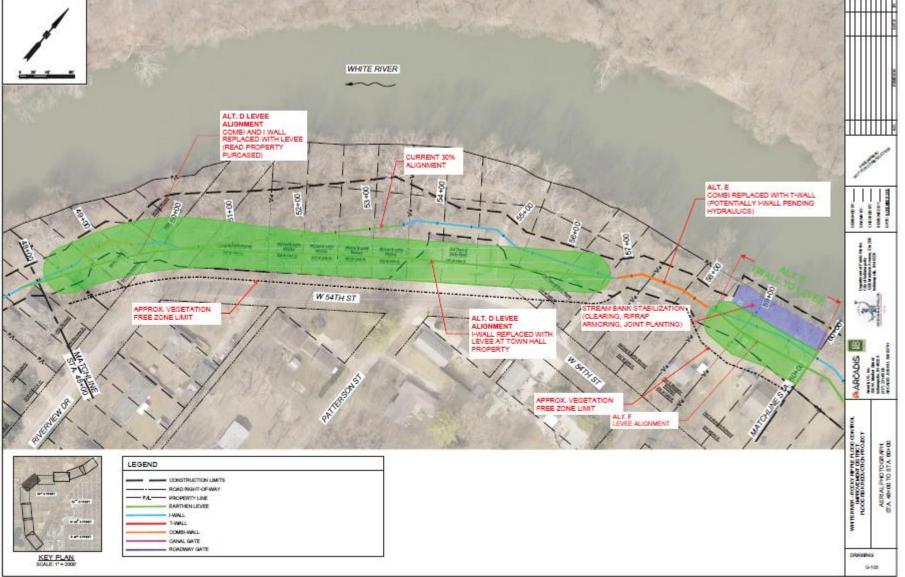




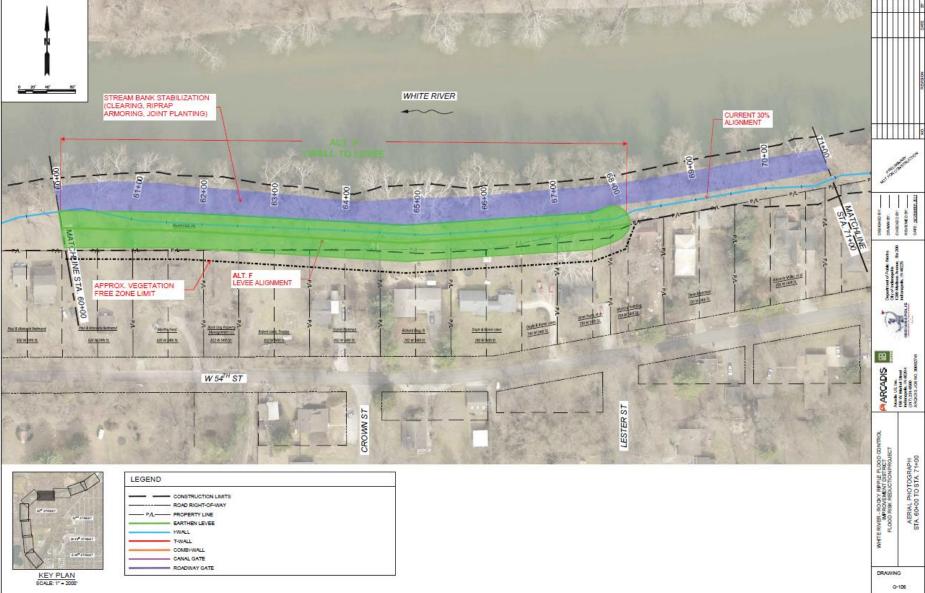


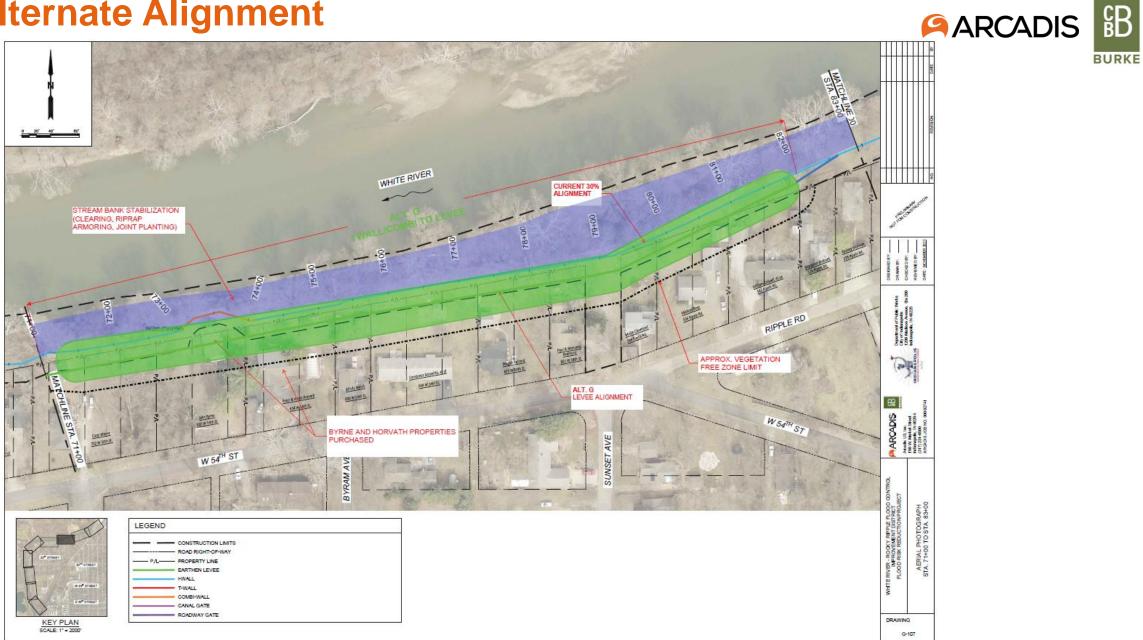






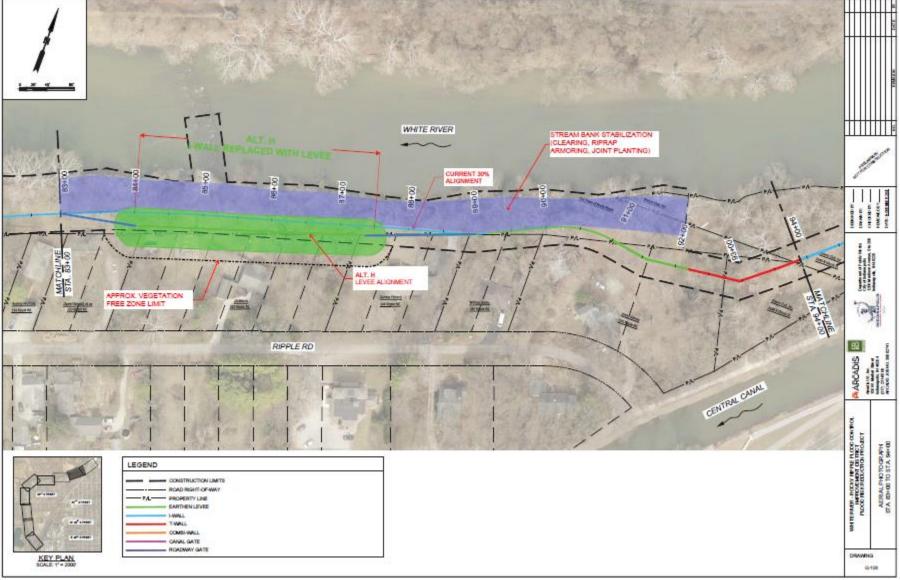






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Alignment Summary



	Current 30% Alignment	Alternative Alignment
Levee	3,127 LF	6,690 LF
I-Wall	4,738 LF	2,066 LF
T-Wall	358 LF	753 LF
Combi Wall	1,286 LF	0 LF
Roadway gate	1	1
Houses not protected	9	9
Relocated houses	0	13
Parcels reduced in size	0	17
Probable cost	\$95 million	\$80 million
Potential cost reduction		\$15 million



Questions?