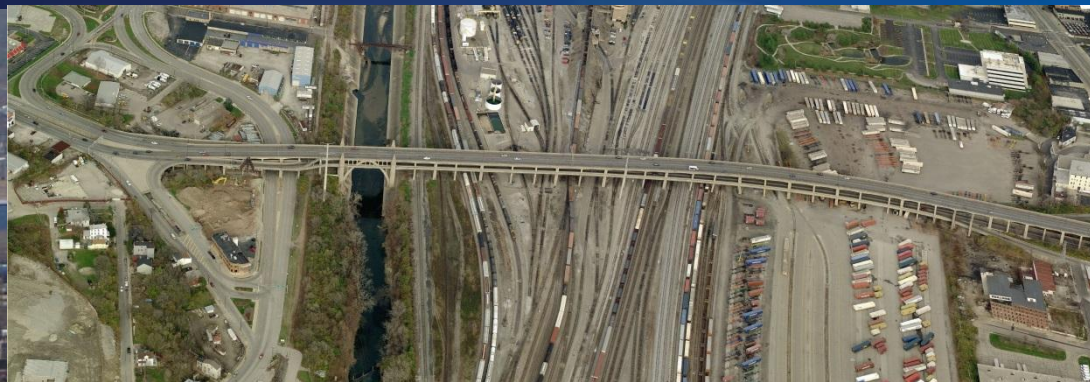


# Western Hills Viaduct Hamilton County Transportation Improvement District



August 28, 2017 - ODOT PID 85388

Presented By: Richard Szekeresh, Principal Structural Engineer  
William Shefcik, Supervising Structural Engineer

# Background Information

- The Western Hills Viaduct is over a half mile long, double deck bridge that carries over 55,000 vehicles per day.
- Constructed in 1932. Last and only major rehabilitation in 1977.
- Widespread Concrete and Structural Steel Deterioration.
- Structurally deficient (condition rating of 5 or less).
- Functionally obsolete (geometry does not meet current design standards).
- Reaching the end of its design life.
- DOTE along with the Hamilton County Engineer's Office is actively pursuing a phased plan for its replacement.

# Preliminary Engineering

- Preliminary Engineering for replacement or major rehabilitation started in 2011.
- Developed and evaluated 17 replacement alternatives (6 single deck structures, 11 double deck structures, and 3 rehabilitation alternatives).
- Three rounds of Public Involvement meetings have been held in January 2012, September 2013, and December 2016.
- Five Railroad Coordination meetings have been held with CSX and two with Norfolk Southern.
- Five Utility Coordination meetings have been held with Duke Electric.
- A three day Value Engineering workshop was held with ODOT, FHWA, the Railroads, and City and Hamilton County representatives in August 2015.
- Preliminary Engineering scheduled to be completed by the end of 2017.



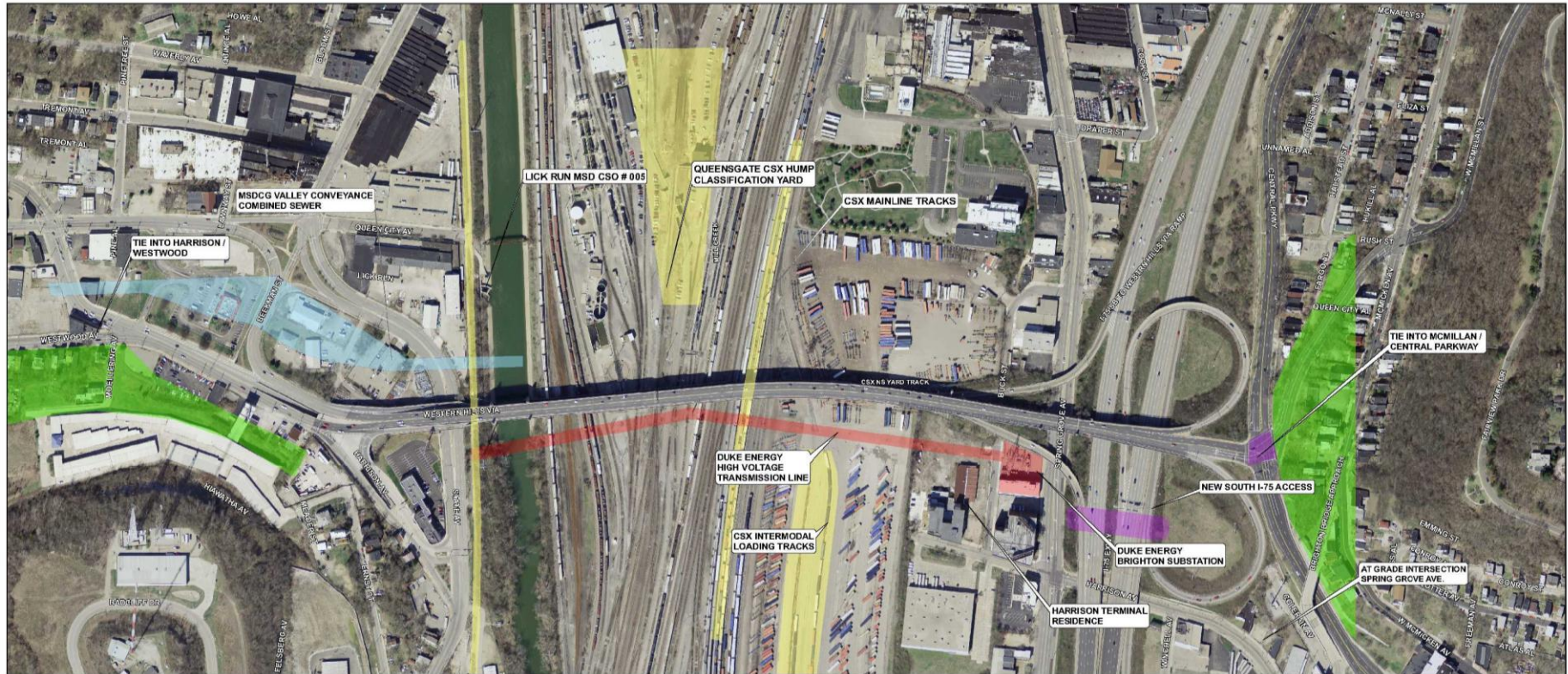
# ODOT Coordination

## Coordination with ODOT for the reconstruction of I-75 interchange at the Western Hills Viaduct

- Partial Interchange (I-75 access provided only to and from the west)
- All Interstate Traffic moved to the lower deck
- Location of I-75 access ramps fixed due adjacent interchanges
- Relocation of Duke Substation
- Project funding



# Design Constraints





**The Preferred Alternative recommendation is replacement with a new, large span, double deck structure immediately south of the existing viaduct.**





# Preferred Alternative

## West Approach





# Preferred Alternative

## East Approach





# Phasing Plan Overview

Const. Year	Project	Estimated Cost
2019	Construction Phase 1 - <b>PID 105314, HAM-WHV Western Approach</b> , Western Approach Demolition and Reconstruction	\$15M
2020	Construction Phase 2 - <b>PID 105315, HAM-WHV Eastern Approach</b> , Eastern Approach Demolition and Reconstruction	\$10M
2020	Maintenance Phase - <b>PID 105316, HAM - WHV S Utility Trough Removal</b> , Remove South Utility Trough	\$3M
2020	Maintenance Phase - <b>PID 105343, HAM-WHV Viaduct Repair 1</b>	\$5M
2021	Maintenance Phase - <b>PID 105346, HAM-WHV N Utility Trough Removal</b> , Remove North Utility Trough	\$3M
2021	Construction Phase 3 - <b>PID 105349, HAM-WHV New Viaduct Construction</b> , Duke Brighton Substation Relocation	\$10M
2023	Construction Phase 4 - <b>PID 105347, HAM-WHV Mill Creek Bridge &amp; RR</b> , Mill Creek Bridge & Bypass Track Relocation	\$8M
2024	Maintenance Phase - <b>PID 105348, Viaduct Repairs</b>	\$5M
2025	Construction Phase 5 - <b>PID 105349, HAM-WHV New Viaduct Construction</b> , Viaduct Construction	\$235M
2028	Construction Phase 6 - <b>PID 105350, HAM-WHV Demolition</b> , Demolition of Existing Viaduct	\$41M
	<b>Estimated Total Project Cost (Design, R/W, Construction, Demolition)</b>	<b>\$335M</b>

# Phasing Plan Schedule

**WHV Replacement Project Phasing and Maintenance Plan (Subject to Change Pending Funding Availability)**

	OPWC 2016 App. TRAC 2016 App. TIGER 2016 App.				OPWC 2017 App. TRAC 2017 App. TIGER 2017 App.				OKI STP 2016 App. OPWC 2018 App. TRAC 2018 App. TIGER 2018 App.				OPWC 2019 App. TRAC 2019 App. TIGER 2019 App.				OKI STP 2018 App. OPWC 2020 App. TRAC 2020 App. TIGER 2020 App.				OPWC 2021 App. TRAC 2021 App. TIGER 2021 App.				OKI STP 2020 App. OPWC 2022 App. TRAC 2022 App. TIGER 2022 App.				OPWC 2023 App. TRAC 2023 App. TIGER 2023 App.				OKI STP 2022 App. OPWC 2024 App. TRAC 2024 App. TIGER 2024 App.				OPWC 2025 App. TRAC 2025 App. TIGER 2025 App.				OKI STP 2024 App. OPWC 2026 App. TRAC 2026 App. TIGER 2026 App.				OPWC 2027 App. TRAC 2027 App. TIGER 2027 App.							
	2017				2018				2019				2020				2021				2022				2023				2024				2025				2026				2027				2028				2029			
Project	1st.	2nd.	3rd.	4th.	1st.	2nd.	3rd.	4th.	1st.	2nd.	3rd.	4th.	1st.	2nd.	3rd.	4th.	1st.	2nd.	3rd.	4th.	1st.	2nd.	3rd.	4th.	1st.	2nd.	3rd.	4th.	1st.	2nd.	3rd.	4th.	1st.	2nd.	3rd.	4th.	1st.	2nd.	3rd.	4th.	1st.	2nd.	3rd.	4th.								
Phase 1 - PID 105314, HAM-VHY Western Approach, Western Approach Demolition and Reconstruction, Design Consultant #1				0.6	W. App. Detail Plans & R/W Plans																																															
			4.0		3.0																																															
								0.7																																												
								6.0																																												
Phase 2 - PID 105315, HAM-VHY Eastern Approach, Eastern Approach Demolition and Reconstruction, Design Consultant #1				0.6	E. App. Detail Plans & R/W Plans																																															
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Phase 5 - PID 105349, HAM-VHY New Viaduct Construction, Viaduct Construction, Design Consultant #1																																																				
Phase 6 - PID 105350, HAM-VHY Demolition, Demolition of Existing Viaduct, Design Consultant #3																																																				



# Secured Funding Table

Item	Secured Federal & Funding Source		Local 20% Match & Funding Source	
Right-of-Way	\$5.4M	OKI-STP	\$1.35M	County Administered MRF allocated through Existing Bridge Maintenance Agreement
Detailed Design (Alternatives Evaluation Report, Stage 1 Plans, Western Plans, Eastern Approach Plans)	\$5.0M	TRAC	\$1.25M	County Administered MRF (\$250,000) County Administered MRF allocated through Existing Bridge Maint. Agreement (\$250,000) County Engineer's Office (\$250,000) City Capital (\$500,000)
Right-of-Way	\$5.0M	TRAC	\$1.25M	Anticipated: County Administered MRF (\$250,000) TID (\$250,000) County Engineer's Office (\$250,000) City Capital (\$500,000)
Detail Design or Right-of-Way	\$2.8M	Ear Marks	\$0.00M	Reallocated from FWW. Local match already met.
<b>TOTAL (\$22M)</b>	<b>\$18.2M</b>		<b>\$3.85M</b>	

NOTE: An additional \$1.75M in Local Funds has been spent on Preliminary Engineering.

# Next Steps

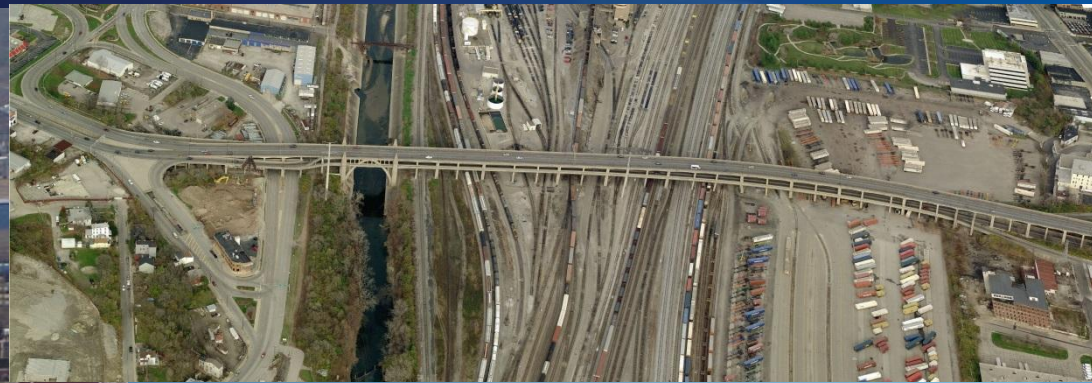
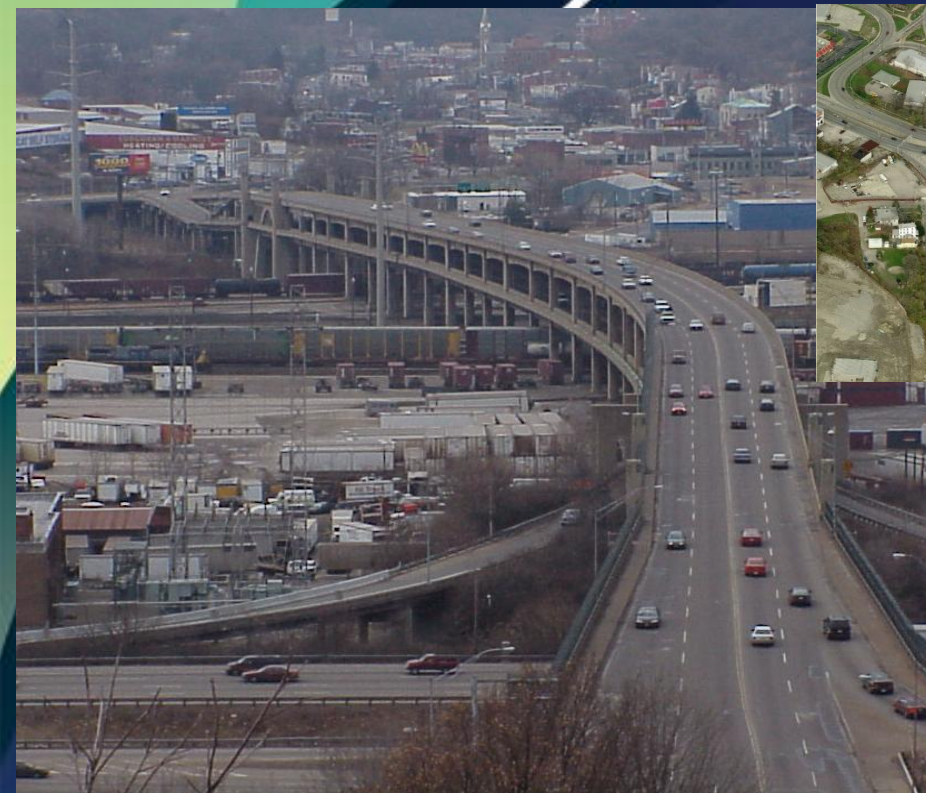
- **Investigate Installation of netting above and adjacent to lower deck.**
- **Complete Preliminary Engineering by end of 2017.**
  - The Draft Feasibility Study is presently being finalized.
  - The Historical Resources portion of the Environmental Document is scheduled to be completed 10/15/17.
- **Select a consultant for detailed design.**
  - Complete the ongoing selection process to determine the most qualified detailed design consultant,
  - negotiate a fee, and
  - enter into a contract.



# Next Steps

- **Start acquiring needed Right-of-Way up to the limits of present funding.**
- **Develop a Financial plan**
  - **Develop Local Match Funding Plan. Expected to fund 20% of the project.**
  - **Develop Non-Local Funding Plan. Expected to fund 80% of the project.**
- **Continue to seek Federal & State funding for the project.**

# Western Hills Viaduct Hamilton County Transportation Improvement District



# Questions?