

## What Points to the Proposed Action

- Continued Bridge Deterioration
- Impacts to Historic Resources
- Impacts to Homes and Businesses
- Availability of TIGER GRANT



## Potential Parcel Impacts

Are you taking some of my property?

Are you taking my entire property?

Approximate Right-of-Way Impacts			
	Parcel Effected <sup>2</sup>	Relocations <sup>2</sup>	Eligible/Contributing <sup>3</sup>
Superstructure Minimal Approaches	0 (0)	0 (0)	1 (1)
Superstructure Full Approaches <sup>1</sup>	50 (36)	23 (15)	17 (12)
Tiber Creek A <sup>1</sup>	74 (50)	16 (9)	22 (14)
Tiber Creek B <sup>1</sup>	96 (72)	26 (19)	23 (14)
Canip Creek <sup>1</sup>	96 (75)	31 (23)	25 (14)

<sup>1</sup> Includes SR 56 improvements.

<sup>2</sup> Total (Landmark, Madison NHD, 3rd Street NHD and Hunter's Bottom NHD)

<sup>3</sup> Total (Landmark) based on Preliminary Recommendations



## Section 110 & Section 4(f)

- **Section 110(f) of the National Historic Preservation Act**
  - Higher standard of care for projects that may directly or adversely affect National Historic Landmarks
  - "To the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark"
  - Agency should consider all prudent & feasible alternatives to avoid effect on National Historic Landmarks
- **Section 4(f) of the US Dept of Transportation Act**
  - Protects publicly owned parks, recreation areas, wildlife refuges, historic sites
  - May be converted to a transportation use ONLY IF there is no prudent and feasible alternative AND project includes all possible planning to minimize harm



## Preliminary Planning Costs

	Super Structure Minimal Approaches	Super Structure Full Approaches	Tiber Creek A	Tiber Creek B	Canip Creek
River Crossing	\$56	\$56	\$87	\$89	\$88
Approach Viaduct and Roadway	\$9	\$27	\$33	\$39	\$55
Foundation Mitigation	\$17	\$17	n/a	n/a	n/a
Demolition	\$10	\$10	\$7	\$7	\$7
Ferry	\$2	\$2	n/a	n/a	n/a
Other	\$37	\$55	\$62	\$64	\$69
<b>TOTAL</b>	<b>\$131</b>	<b>\$167</b>	<b>\$189</b>	<b>\$199</b>	<b>\$219</b>

Other Includes: ROW, Utilities, Mitigation, Design, Inspection, Contingencies



## TIGER Grant – Transportation Infrastructure Generating Economic Recovery

Part of American Recovery & Reinvestment Act (ARRA) of 2009

Total of \$1.5 Billion available for transportation projects that meet long-term outcomes, create jobs, and stimulate economy

- Improve condition of existing infrastructure
- Improve economic competitiveness
- Improve community quality of life
- Promote sustainability (energy efficiency, less dependence on oil)
- Improve safety

Application deadline is September 15, 2009

Priority given to projects completed in early 2012



## Proposed Action

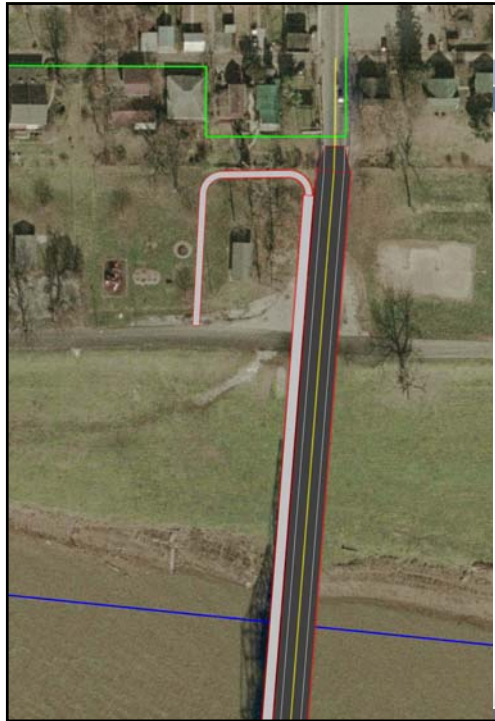
### Superstructure with Minimal Approaches

- 40-foot wide bridge with sidewalk connection
- Truss mimics existing Bridge appearance
- No Property takes
- No Right of Way Impacts in National Landmark
- Temporary Ferry Service
- Mitigation of other Impacts
- Emergency Services
- Shortest Construction Time - Open to Traffic in 2012







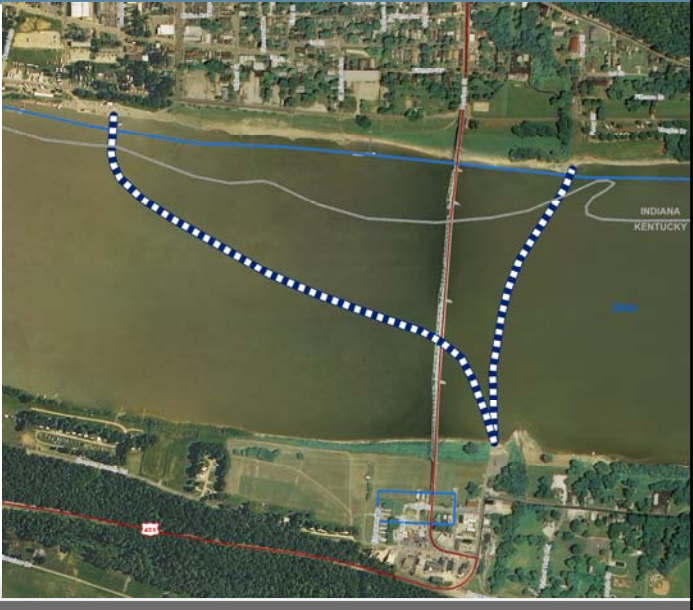
### Superstructure Replacement Minimal KY Approach


	Pavement
	Sidewalk
	Third St Historic District



Superstructure Replacement  
Minimal  
IN Approach

	Pavement
	Sidewalk
	Landmark Historic District
	Madison Historic District



 MILTON-MADISON BRIDGE PROJECT

## Ferry Service

- Free
- Capacity to be determined
- Hours of operation to be determined

INDIANA  
KENTUCKY



## What Will it Look Like?

- Based on BTS Meeting #1 Feb 2009
  - Section 106 Input
  - Public Input
- Visual Consideration in the Historic Districts
- Constructability



## Polling Summary

February 12, 2009, Public Meeting Participants at the Brown Gym in Madison

168 citizens attended

- 18 Public Advisory Group (PAG) Members
- 14 Section 106 Representatives
- 6 People on the PAG and serving as 106 Reps
- 130 Citizens

Keypads were used to collect data (overlap of groups)

- General public, PAG, Section 106 Parties

Preference scores

- Public and the PAG members were very similar
- Section 106 parties were statistically different
- Two models were built to understand the data
  - 1) Public and PAG
  - 2) Section 106

The results are intended to help designers understand visual/aesthetic preferences of participants.



## Polling Summary

### Bridge Concepts

- 18 bridge design concepts were presented
  - 6 arch designs
  - 1 truss-arch
  - 5 trusses
  - 6 cable-stay concepts
- Each concept included various combinations of bridge design properties
  - Visual complexity (low to high)
  - Color value (lightness to darkness)
  - Type of enclosure (overhead closed or open) “A” to “H”
  - Overall profile of the structure (number of peaks)

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## Polling Summary

### General Observations

- More agreement on dislikes
- Preferred Cable-Stays (High Standard Deviation)
- Preferred profiles that repeat themselves
- Public/PAG and Section 106 average scores were often different
  - Higher highs and lower lows for Section 106 responses
- Process was well liked
  - 85% scored 7 or higher

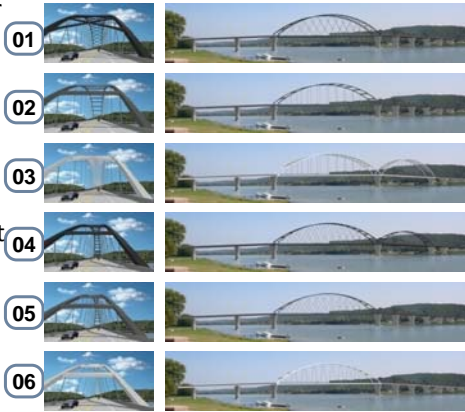
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# Polling Summary

## Arch Preference Summary

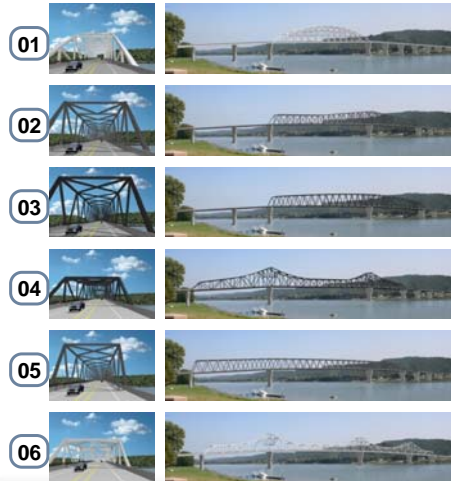
- Twin Arches Generally Preferred Over Singles
- Light Color preferred with Low to Moderate Complexity
- Single Arches
  - “H” shape preferred with Light Colors and Low/Moderate Complexity
- Twin Arches
  - “A” or “Modified A” shape preferred



# Polling Summary

## Truss Preference Summary

- More Haunches preferred
- Less Enclosure preferred
- Color & Haunches
  - Lighter Color Values preferred for Multiple Haunches (Peaks)
  - 106 preferred More Haunches regardless of Color
- Trusses slightly preferred by 106 Parties compared to Public
- Strongest Negatives generated by 3 of the Trusses shown

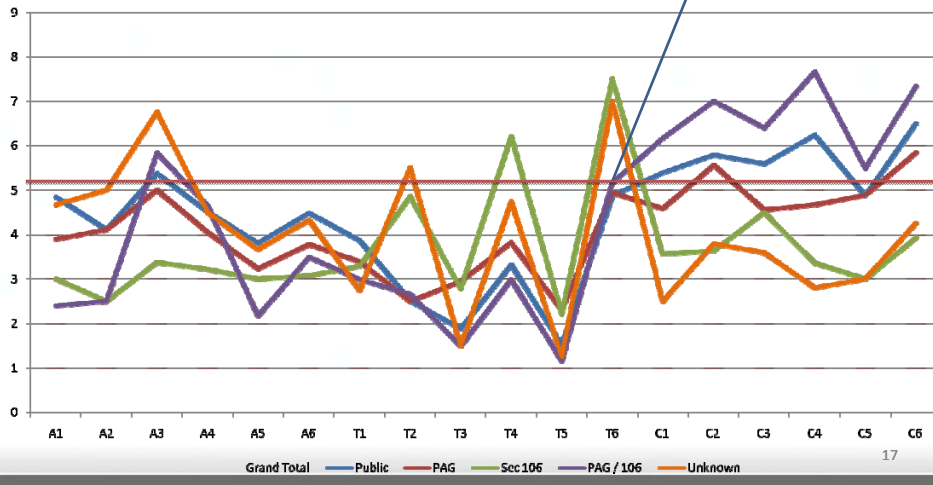




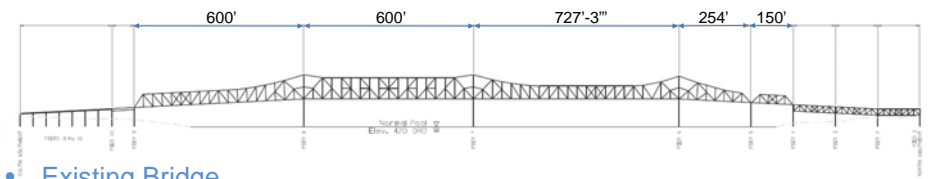
# Polling Summary

## Milton Madison Average Mean Scores

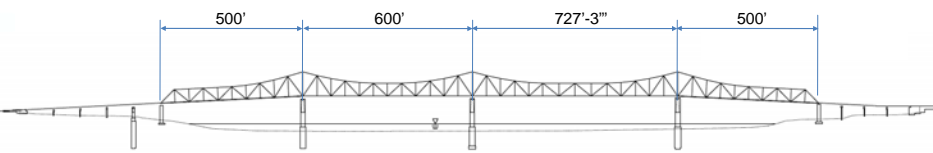
Recommended Action  
4 Span Truss Bridge  
Similar to the Existing



# Truss Bridge Structure



• Existing Bridge



• Proposed Bridge



## View from Madison



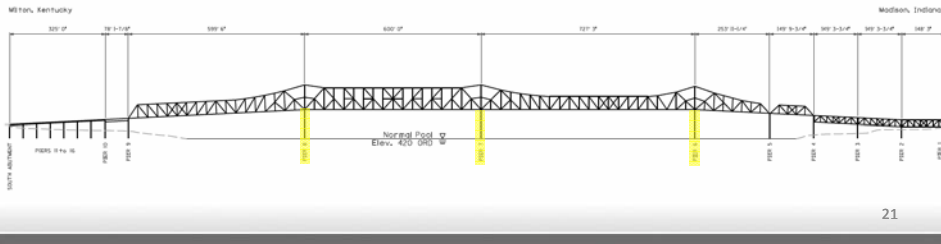
## View from Milton





## Pier Investigation Update

- Piers 6-8
  - Generally Sound
  - No obvious durability issues
  - Minor to moderate rehabilitation necessary

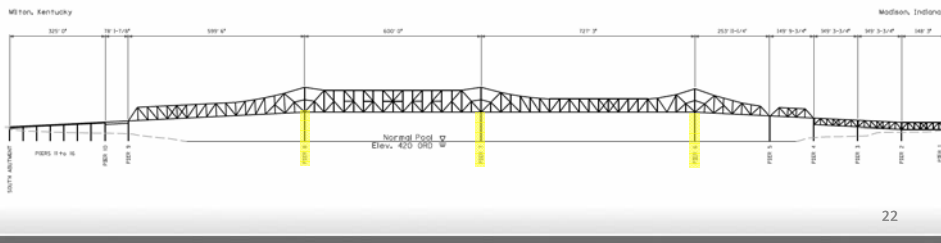


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## Pier Investigation Update

- Service Life Analysis
  - Expect Piers 6-8 to have 80 year service life remaining with minor to moderate rehabilitation



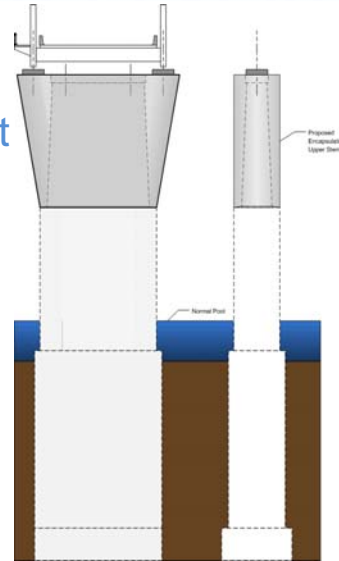
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## Foundation Analysis

- Superstructure Replacement Alternative

- Alternative will continue to be developed
- Additional construction costs:
  - For wider structure
  - To address lateral loading



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## Pier 6-8 Retrofit

- Foundation retrofits may include
  - Scour Mitigation
  - Additional Strengthening Alternatives
    - Drilled Shafts
    - Micro Piles
    - Enlarge Foundations
    - Internal Strengthening
  - Traffic Remains on the Bridge

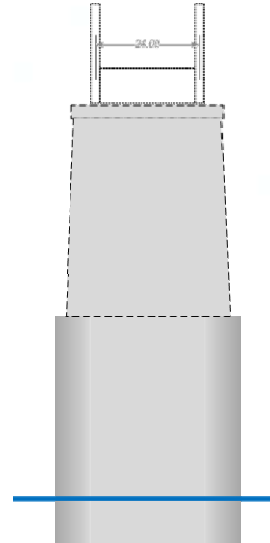


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## Pier 6-8 Modification

- Pier Cap Widening

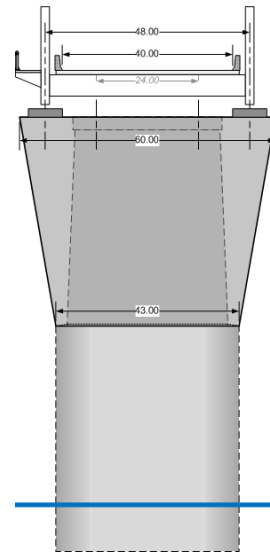


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## Pier 6-8 Modification

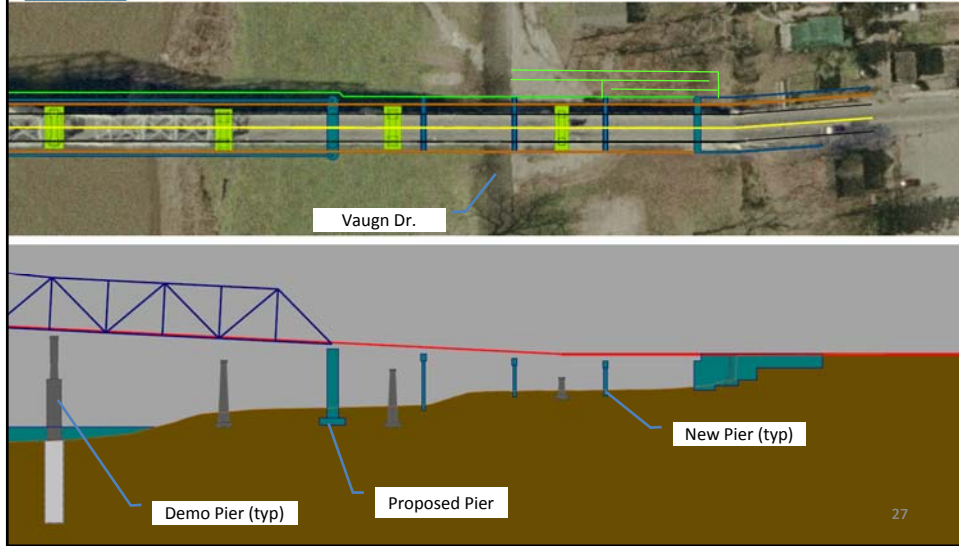
- Pier Cap Widening
  - Encase the Existing Piers
  - Post-tensioned Caps
  - Done while Traffic Remains on the Bridge
  - Demolish Bridge
  - Reconstruct bridge ~12 Mo Closure.



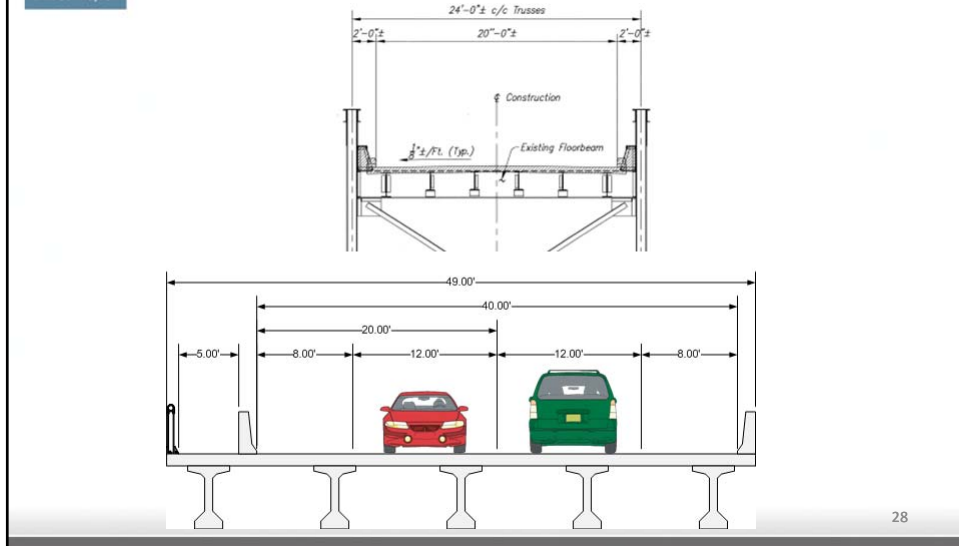
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# Indiana Approach Spans

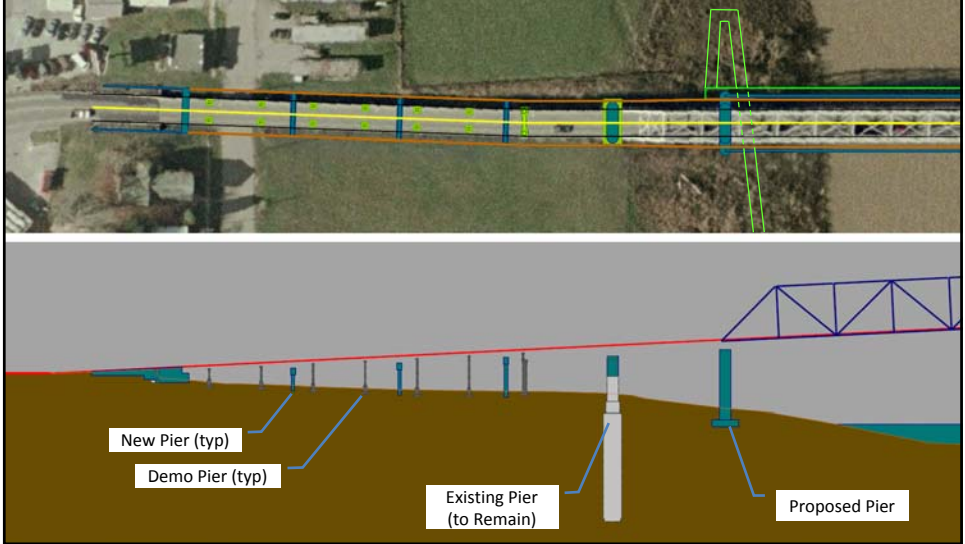


# TYP Section - IN Approach Spans

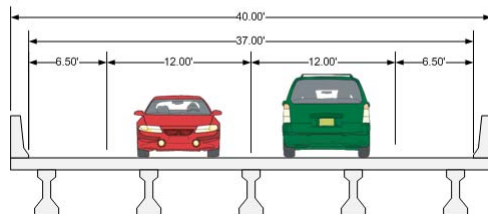
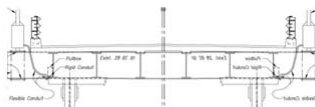




# Kentucky Approach Spans

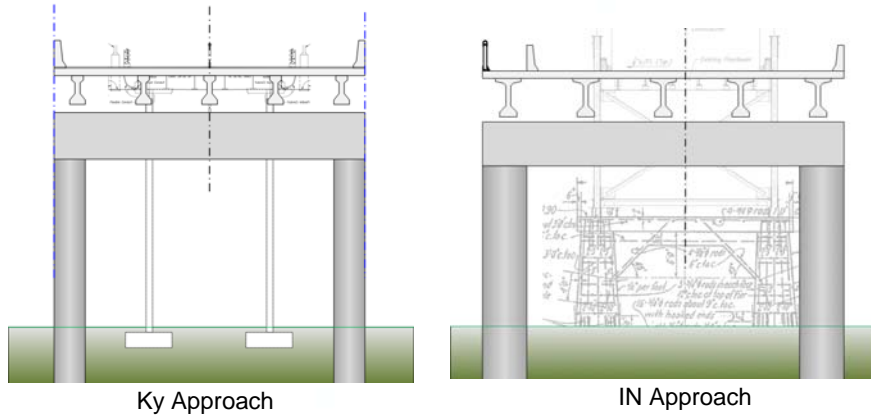


# TYP Section - KY Approach Spans





## Pier Construction



Looking North

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## Timeline

- 2010
  - Late Spring / Early Summer Letting
  - Substructure Modification (July-Oct)
  - Traffic Remains on Bridge
- 2011
  - Demolition of Bridge (Jan/Feb)
- 2012
  - Open to Traffic (Jan/Feb)

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