Emerging Issues in Managed Lanes Operations, Planning and Design

prepared by
N. Craig Miller, MS, PE
Principal / Senior Vice President
Privatization and Finance Group
TranSystems

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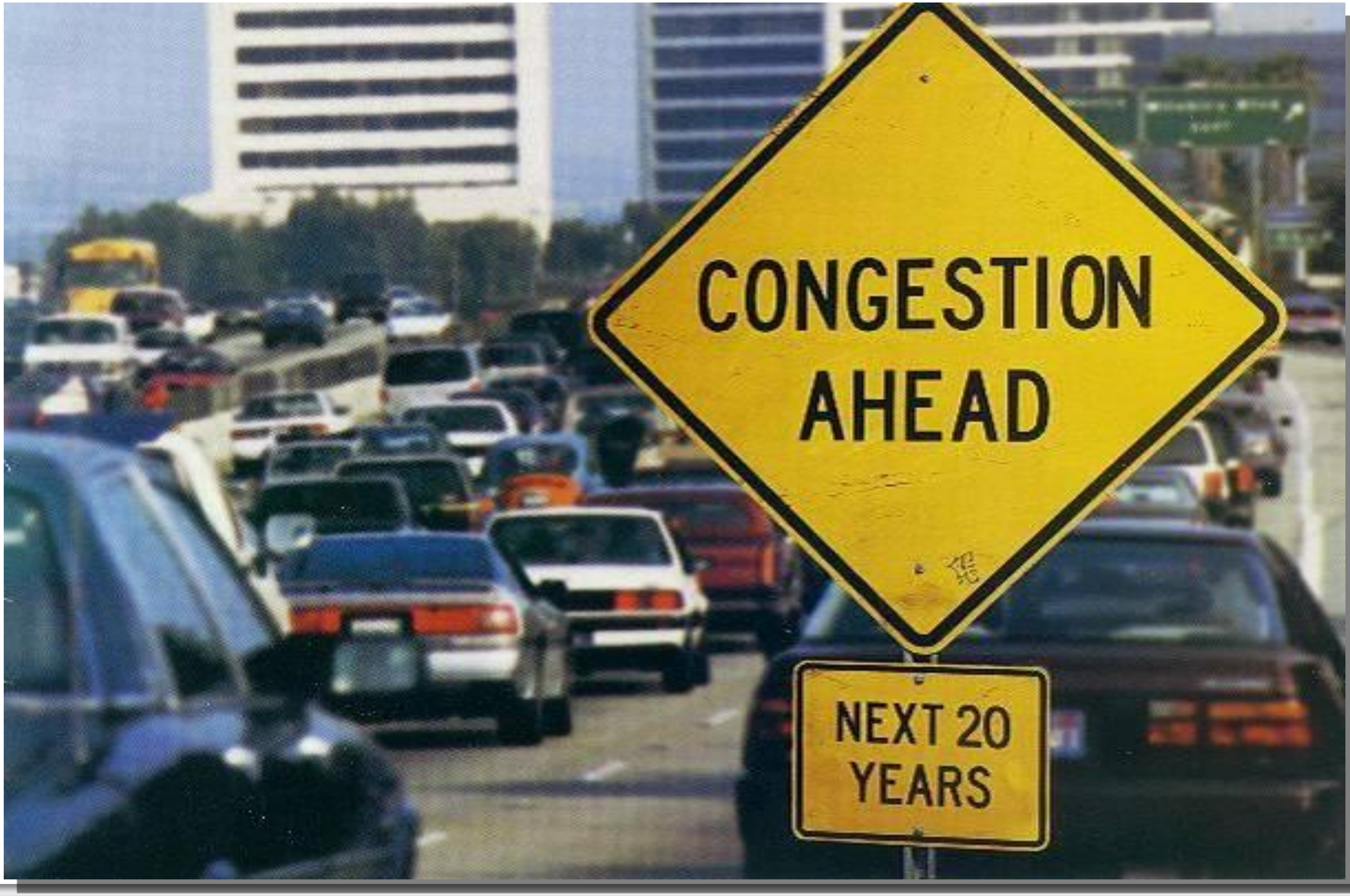
A New Paradigm: Congestion Pricing Changes Everything



Case Study No. 1

- 9-mile Managed Lanes (ML) Project added 4 MLs to existing 10 lane Interstate
- No intermediate access points
- Reason: LOS "F" in MLs
- What's wrong with this picture?
- The New Paradigm: We ***WANT*** "congestion" in MLs
  - Increase the tollrate to get LOS you want!
  - Do not limit access due to LOS.
  - Tollrate can manage the LOS.
  - Somehow, this is being forgotten by some.

Case Study No. 2

- New Urban Tollroad on New Alignment
- Proposed as a 8-lane Tollroad w/ Huge Impacts
- Traditional Road Pricing
- Over One Billion Dollars in Cost
- Revenue Stream Supports $300M to $500M Project
- Over $500M Shortfall

- Solution:
- Congestion Pricing (CP) and 4-Lane Tollroad
- Use CP to Control and Manage LOS for 4-Lanes

Problem: Gold – Plated Projects

- Projects Designed to Full Interstate Standards
- Few or No Design Variances

"The easiest way to finance a project is to reduce its costs."

Case Study No. 3

- Add 4 MLs and 2 General Lanes (GLs) to Existing Interstate
- Preliminary Concessionaire Cost Estimate: Over $1 Billion
- Capitalized Toll Revenue: Less than $250M
- Shortfall: Over $750M
- DOT Willing to Provide Over $500M in Availability Payments

- Scope Reductions Suggested:
- Reduce Typical & Avoid Right of Way Takings
- Postpone General Lanes
- Use “Pylon Concept” not Jersey Barriers/Saves 36’ of Pav’t
- Reduce Flyovers and Interchanges
- No Serious Degradation of Standards for Suggested Design Variances
- Some Suggestions Accepted by DOT

Pylon Concept

- Use tubular safety pylons, instead of 2 jersey barriers, expensive right-of-way acquisitions and 36 feet of wasted shoulder pavement.
- FHWA - Approved Concept
- SR 91 Express Lanes in California:

Case Study No. 4

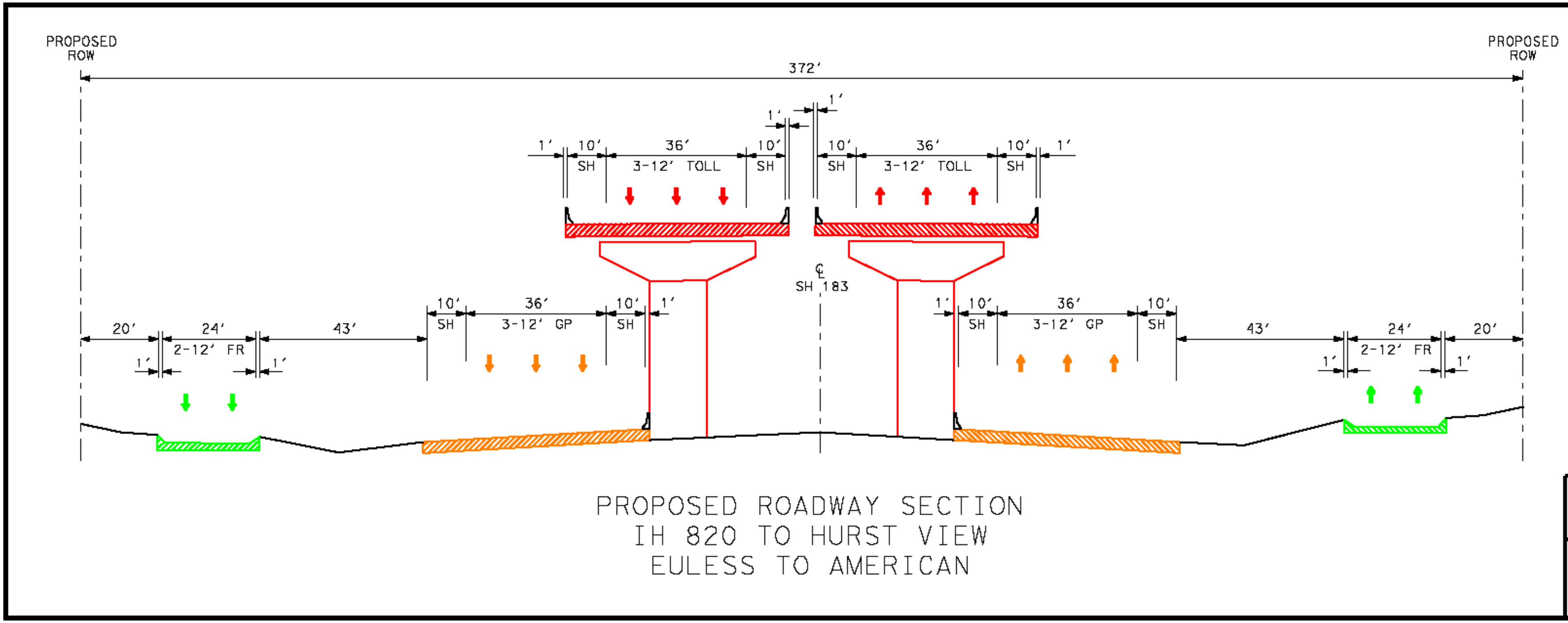
- 4-Lane Elevated ML Viaduct in Median of Existing Freeway
- VE Concept: Use Pylon Concept At-Grade
- Saved Over $500M
- No R/W Required
- Feasible Project
- Flexibility Allowed on this Project

Case Study No. 5

- Add 4 MLs to Existing Interstate
- Extensive Study of Elevated Viaduct Options
- All Elevated Options Exceeded Toll Revenue Budget by $0.5B to $1.0B
- 4-Lane At - grade Alternative Selected After Considerable Study Cost and Delay
- Lesson: Unless you Have an Extra Billion or Two, Screen Out Elevated Options Early.

Elevated ML Concepts Very Expensive

- **Expensive elevated sections are often not worthy of exhaustive study; can be eliminated early in most cases due to cost feasibility.**



Summary: Integrated, Systematic Road Pricing, Operations Planning and Conceptual Design Needed

- Some DOTs are not yet comfortable with the new ML/CP paradigm
- In each case presented, teams of high-powered Consultants were available to each DOT.

New Policies Needed in Some Agencies:

- Check Revenue Before Resolving Engineering Concept Issues – "Fit" concept to available capital - No Gold-Plating!
- Use Congestion Pricing to Reduce Traffic and Costs, and Increase Revenues
- If Project is Upside Down, Make Sure Public Sources Can Defeat Shortfall
- Allow Private Sector to Bring Cash *AND* Intellectual Capital - - Be Flexible Toward Private Sector VE Ideas; employ cost saving tactics

- **"We have entered an exciting new, complex Paradigm where congestion pricing, operations and design are interrelated elements that must be systematically integrated in the planning phase."**

Thank You!

- Please contact ncmiller@transystems.com with any comments or questions.