

Cal-Poly ITE Student Leadership Summit

February 3, 2024

*More than job: Leading Change in Project Development:
Overcoming yesterday's inertia to implement today's projects*



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Agenda

- **Welcome**
- Overview
- Leadership: What is it?
- Overcoming Inertia
- Advancing Projects
- Technical Transformation
- Careers in Transportation
- Discussion



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Welcome

- **Introductions**

- Students: Grade Level, Degree, Practice Area, Career Interests
- Overview
- Leadership: What is it?
- Overcoming Inertia
- Advancing Projects
- Technical Transformation
- Careers in Transportation
- Discussion



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Overview—What we hope to share

- Professionals must find new and creative ways to plan, design, and implement projects.
- Agency and industry inertia create challenges in integrating and implementing new ideas.
- We have taken unique career paths and share common values and professional passions to support positive change.
- Leadership is critical to successfully engage in the industry.
- Professional success is about how you approach your career and not because of your specific role or employer



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Our industry continues to evolve to better serve users and adapt to changing needs and values.



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Part 1: Where were we?

- 100 plus years ago, we were a mostly rural society with funding and focus very localized.
- Anything beyond local trade and community connections was beyond the ability of local governments.
- Federal government reach and capabilities were limited



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Part 2: How did we get here?

- Good Roads movement of 1870s and the 1920s was grass roots by bicylists, postal service, and farmers.
- US Government had to adapt to support a national highway system.
- AASHO (No "T") was focused on design, material, and methods consistency.
- Post WW II all agencies were adapting to mass production and ownership to ease congestion.
- Choices for policy and design were more reactive than deliberate.



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Part 3: Getting to today

- Choices of the 50s and 60s led to an awareness of ramifications, set the seeds for value-focused decisions, and changes in policy (e.g. NEPA, ISTEA, etc), to adapt to emerging and future needs.
- AASHTO, FHWA and NCHRP have published several documents that address context sensitive principles and concepts in everyday design practices
- Funding gaps, political positions, stakeholder views create challenges in implementing projects while agency and industry inertia creates challenges in integrating and implementing new ideas.



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Thoughts?



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Leadership: What is it?

Summit:

- A high-level meeting between leaders, usually with a relatively narrow focus.

Leadership:

- Influencing, inspiring, helping others become their best selves.
- Different than “management”: Organizing people, activities, and effort.

What does it mean to you?

- What are you seeking from this summit?
- This work shop?



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Leadership: What is it in Transportation?

What types of leadership are there in the transportation profession?

- What are your thoughts on this?

Here are things Paul and Brian see:

- Organizational,
- Agency Consensus,
- Technical,
- Project Implementation,
- others?

“...anything to deliver worthwhile projects...” or “...knock down invisible barriers...”



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Other thoughts?



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Inertia

“...the tendency of objects in motion to stay in motion, and objects at rest to stay at rest, unless a force causes its speed or direction to change....”



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Overcoming Inertia: Advancing Projects

- Conducting our work goes beyond a “job description” or “duty statement.”
- Focusing on outcomes allows us to navigate “process.”
- Professional leadership combined with organization and process management is what gets things done.
- Technical leadership and integrating new guidelines, philosophies, and approaches supports project development



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Agenda

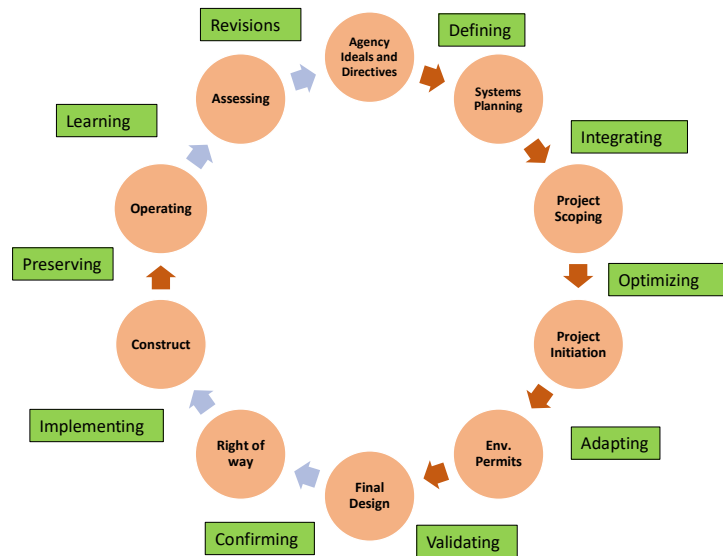
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Advancing Projects

- Understanding vision
- Applying the vision
- Integrating to projects
- Adapting to site conditions
- Validating to final plans
- Implementing
- Learning and observing
- Revising and recommending



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Advancing Projects

Avila Ramps Roundabout

- Understanding vision
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Advancing Projects

Avila Ramps Roundabout

- Understanding vision
- Applying the vision
 - Caltrans Intersection Control Evaluation ([ICE](#), [TOPD 13-02](#))
 - County of San Luis Obispo Avila Circulation Study and Road Improvement Fee Update ([link](#))
 - Avila Valley Advisory Council ([AVAC](#)), local Context Sensitive Solutions and Design



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Advancing Projects

Avila Ramps Roundabout

- Integrating to projects
- Adapting to site conditions
 - Caltrans District 5 Field Maintenance Policy to treat all Roundabout Central Islands with Paved Landscape
 - This Countered AVAC's and other Local Priorities for this Project



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Advancing Projects

Avila Ramps Roundabout

- Validating to final plans
- Implementing
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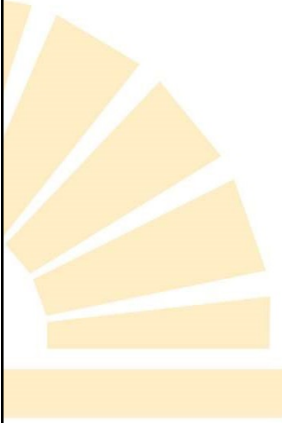
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Overcoming Inertia: Advancing Projects




- Project delivery professionals will consistently rely on established policies, procedures, and standards.
- As a healthy and needed counterbalance, most projects should vie for optimization by way of innovation as well as pursuing and applying local context.
- These ostensibly competing priorities, if incorporated as a unified project delivery team, can be the vehicle to **Leading Change** by way of **Advancing Projects**.



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Technical Transformation

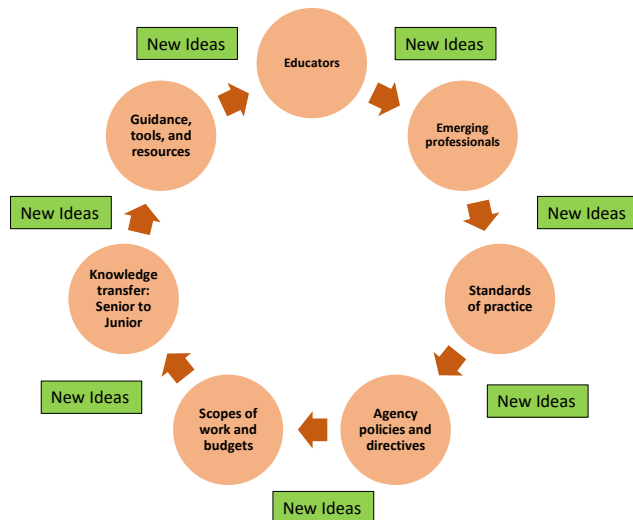
- Doing things “like it was done before” limits opportunities
- “Meeting Standards” should not be THE intended outcome
- Owner’s interpretation of success must match the community’s
- Low cost often directs decisions—the focus should be “value”
- Outcomes have often focused on first serving automobiles



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Technical Transformation

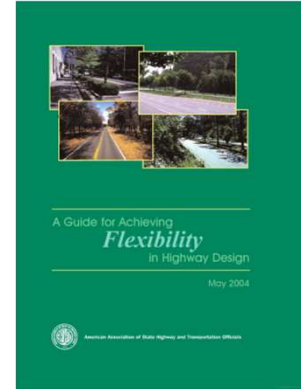
- Desire to change
- Courage to try
- Deliberate focus
- Changes at all steps
- Learn from mis-steps
- Celebrate advances
- Continual learning
- Never getting comfortable



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Technical Transformation

- 1997 FHWA *Flexibility in Highway Design*
- 1998 *Thinking Beyond the Pavement Workshop*
- 1998 FHWA Pilot Program for Context Sensitive Solutions
- 2002 NCHRP Report 480 *A Guide for Achieving Context Sensitive Solutions*
- 2004 AASHTO *A Guide for Achieving Flexibility in Highway Design*



Technical Transformation

Performance-based decision making

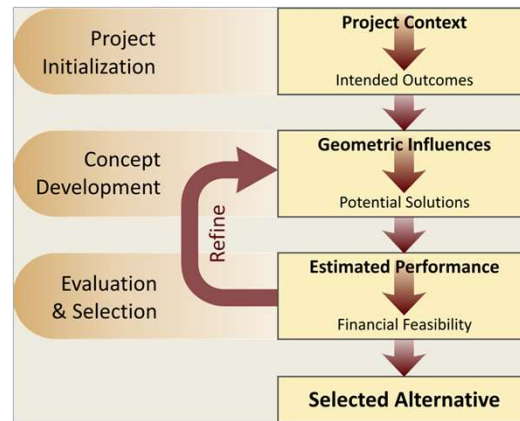
- Focusing on outcomes versus prescriptive directives
 - Fire-design: How long to burn-through versus thickness or material
 - Aeronautical: How many cycles until failure
 - Concrete and Steel: Load based dimensions
- Requires understanding intended outcomes
 - Performance
 - Design year or service life
 - User dimensions and characteristics

Performance-based decisions!

NCHRP Report 785:
Performance-based Analysis of Geometric Design of Highways and Streets

“Intended Project Outcomes”

- Whom are we trying to serve?
- What are we trying to achieve?



Source: NCHRP Report 785 Exhibit 5-1



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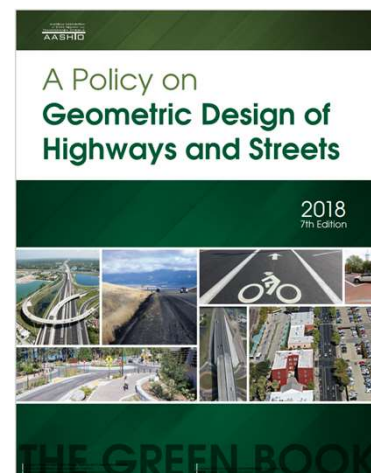
Technical Transformation

Chapter 1: *New Framework for Geometric Design*
 noted meeting nominal design values:

“...may have led to overdesign, constructing projects that were more costly than they needed to be or were inappropriate for the roadway context...”

- Introduces “Context Classification”
- Introduced “project types”
 - New construction
 - Reconstruction
 - Projects on existing roads

Greenbook, 7th Edition (2018)



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Where are we going?

- Increasing passion for people-oriented planning and design
- Recognizing opportunities to address past impacts and damages
- Passion for environmental stewardship
- Integrating equity and public health factors



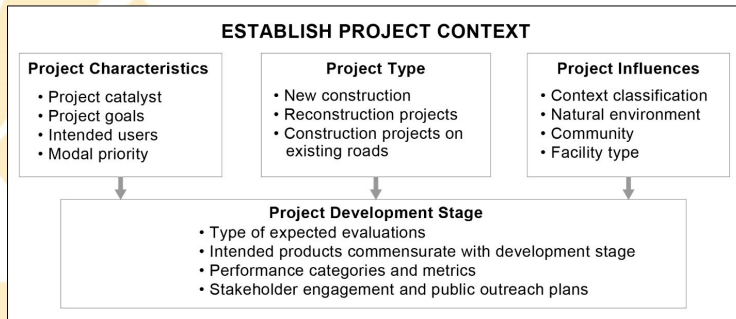
Source: NCHRP Report 785

...we just need to consider intended project outcomes...

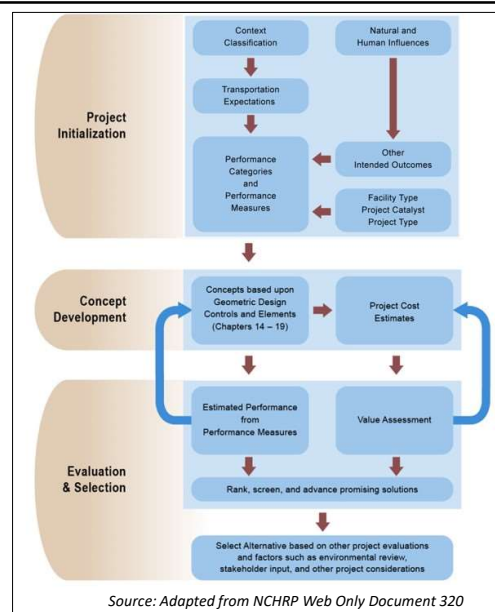


Performance-Based Models are Ready

- AASHTO Green Book 8 Part IV Draft Chapter
- NCHRP Research Report 1043 *Guide for Roundabouts*



Source: NCHRP Research Report 1043 Exhibit 10.1



Source: Adapted from NCHRP Web Only Document 320



Overcoming Inertia: Technical Transformation

- New tools can help planners and engineers carry out a flexible, multimodal, performance-based, and context-sensitive design process.
- The tools supplement historically common performance metrics with contemporary considerations such as multimodal quality of service and safety performance (crash frequency and severity).
- The tools can integrate contemporary and emerging issues related to public health, community and transportation equity, local cultures, and other community values.



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Careers in Transportation

- The transportation profession is exciting and dynamic—everchanging and evolving in a positive way.
- Regardless of your technical focus or employer preferences, there are endless ways to engage and contribute.
- Make the effort to learn for yourself of what interests you most—avoid employer stereotypes and clichés.
- Prepare for your career to evolve into areas and opportunities beyond what you can “see” in your first 5-plus years.



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Careers in Transportation--Discussion

- What are your concerns or inhibitors as you consider your evolution into the transportation profession?
- What inspires you and stirs your professional passion?
- What questions might we try to answer for you?



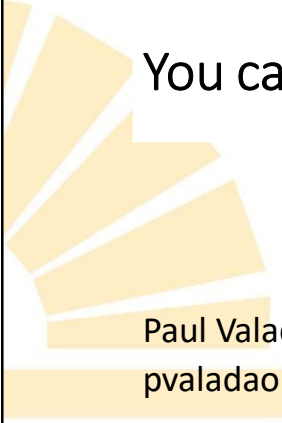
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Close out

- Leadership happens in all aspects of your professional life.
- Professional “success” comes many ways—follow your passion.
- Employee “duty statements” paint an incomplete picture.
- Partnerships and perseverance make a difference.
- You are playing the long game. Be patient and never burn a bridge
- Welcome to a challenging but rewarding career.



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You can be the ones to do things differently!

Thank you!

Paul Valadao
pvaladao@calpoly.edu

Brian Ray
brianlray1962@outlook.com

