



Process Improvements Overview

30%, 60% & 90% PID policy

M224 Policy

Programming Document (PIR): 30/60/90 PID process

30% PID Process

The purpose and need of the project is clearly defined.

List of deliverables for the Project:

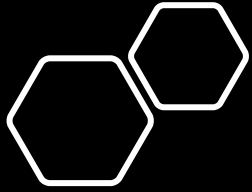
- Purpose & Need
- Scope
- Alternatives
- Assets to be delivered

60% PID Process

- Functional input is incorporated into: schedule, risk management plan and support cost estimate.
- The workplan is confirmed.
- Resources and schedule are loaded into PRSM for review by all.
- PDT review and comments

90% PID Process

- PDT final review and comments on the 90% PIR. .
- The Risk Management Plan is reviewed and certified by executive staff.
- Final PIR comments are incorporated.



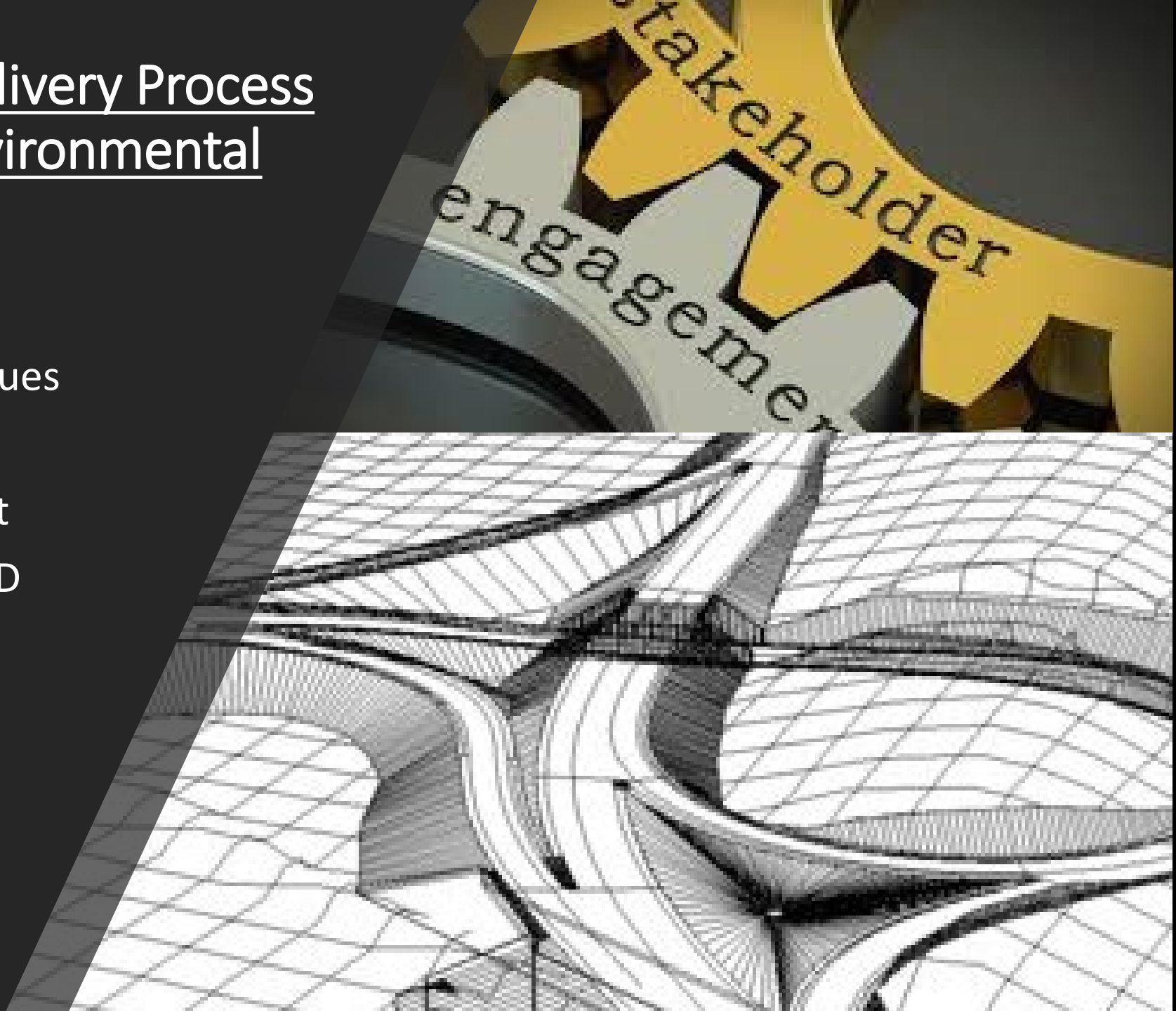
Need for DATA collection

Transportation project development is a circular process and having stored reusable data for the system will help future projects to deliver efficiently and on schedule while having better understanding of the risks.



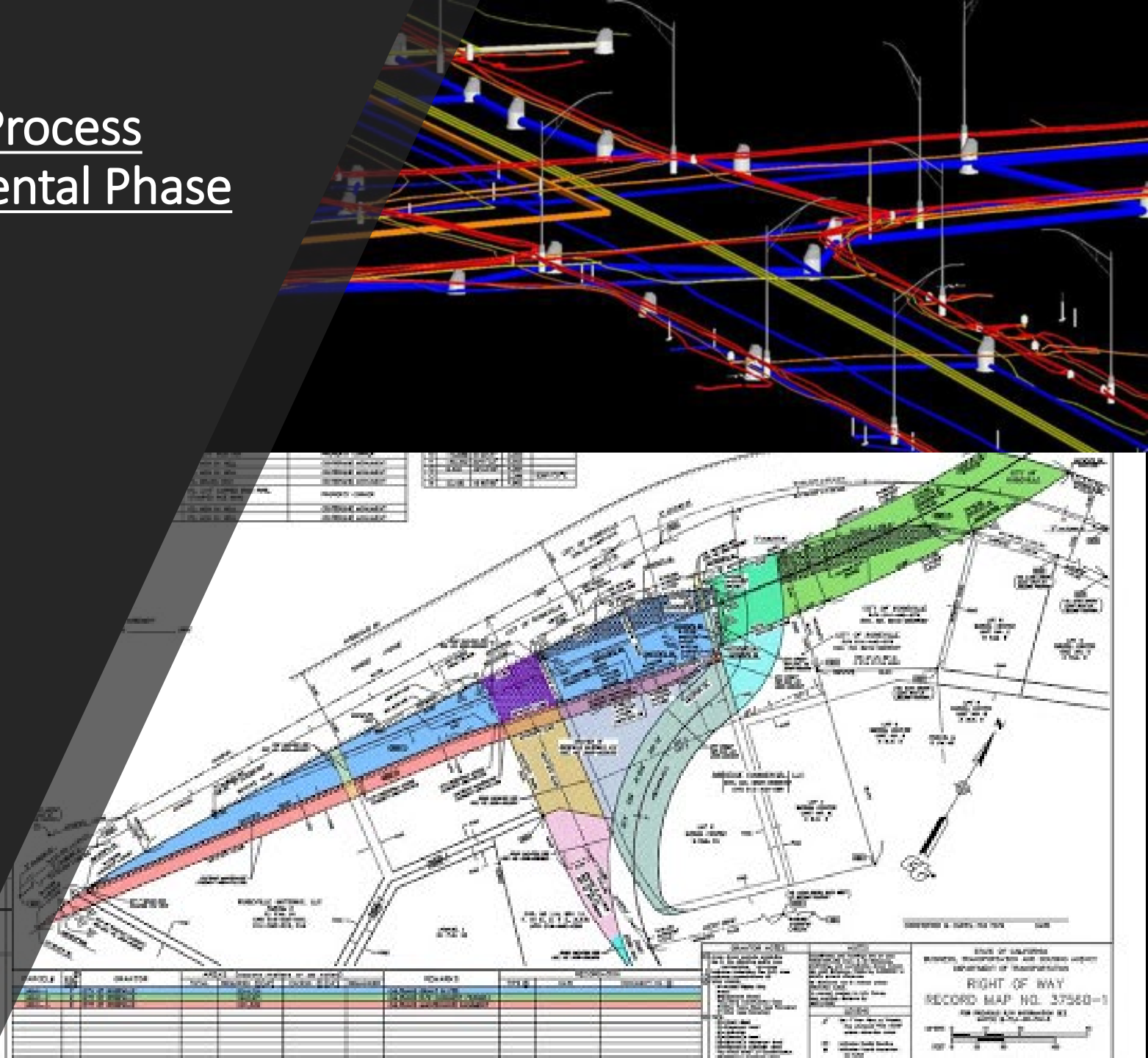
Improved Project Delivery Process highlights during Environmental Phase

- Early Surveys using advanced survey techniques
- Early Designs
- Stake holder engagement
- Well developed Design 3D model



Improved Project Delivery Process highlights during Environmental Phase

- Identifying Utility Conflicts
- Developing Utility Relocation plans and identifying utility easements
- Identifying RW needs
- Better understanding of environmental impacts with early designs.



Achievable Targets with the Improved Project Delivery Process:



- Minimizes or eliminates changes to project scope, cost and schedule.
- Identification of all Right of Way (R/W) requirements during Environmental Phase
- Utility relocation plans and identification of easements during environmental phase.
- Better assessment of environmental impacts with early designs.
- Relocation of utilities that are in conflict prior to begin construction.
- Avoids or minimizes Project delivery delays related to R/W, utilities and permits to begin construction.

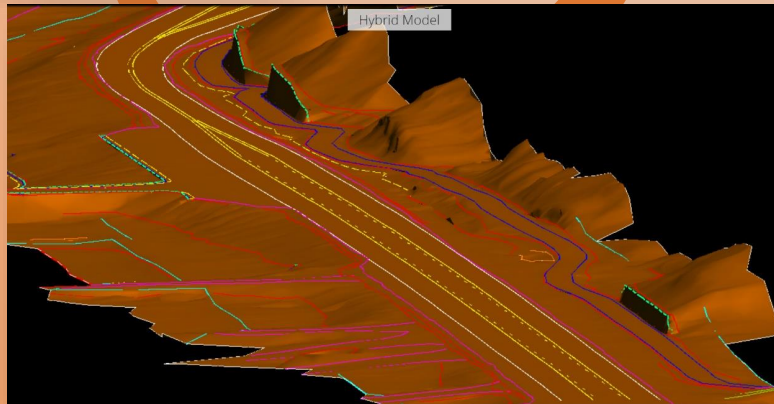


VISION

Shifting Paradigms: Virtual Design and Construction

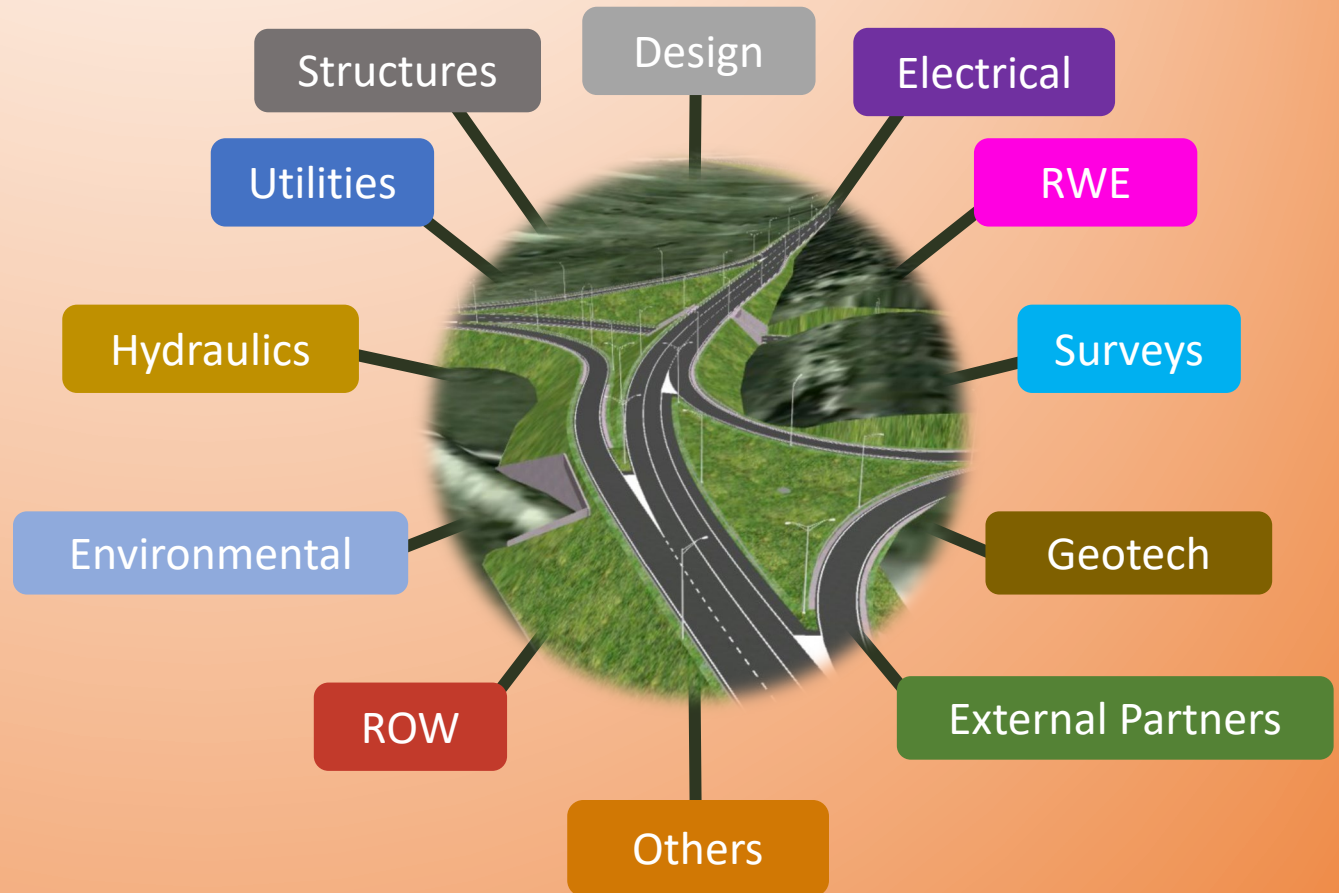


CALTRANS Virtual Integrated Project Modelling



Culture Shift to 3D Model

- Unified Platform based on a "living" C3D model.
- Virtual Design and Construction throughout the entire process and across all functions.



- Augmented Reality (AR)
- Preview Design impacts on-site with new AR technology

