Welcome

NCTCOG Public Works Roundup

Best Practices in Construction Management

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James Pruitt, Senior Vice President
CRIADO and Associates

Challenges facing the Construction Management Field
- Commercial
- Residential
- **Highway / Roadway**
- Industrial Applications

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What is Construction Management?

Delivering A Successful Product - Meeting the Requirements of
The **Owner/Key Stakeholders**

Safely, On Time And On Budget

Challenges:

- Experienced CM Staff and Resource Allocation
- Design Concerns and Differing Site Conditions
- Schedule Management

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Experienced CM Staff and Resource Allocation

- An Experienced Chief Construction Inspector Who Can Make Daily Decisions In The Field And Work Well With The Contractor
  - ➤ Knows When to Call The Project Manager For Assistance

- A Materials Testing Lab Who's Field Personnel Can Also Function As An On-Site Construction Inspector.
  - ➤ Adds Capacity And Saves Overall CM Cost

- Staff The Project Appropriately Based On Complexity And Construction Schedule (MSE Walls, Tech Walls, Bridge Construction, Paving OPS)
  - ➤ Utilize Staff Resource Leveling for Multiple Projects

- Provide And Enforce The Use of Proper Safety Equipment (PPE & Marked Vehicles With Safety Lighting)

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# Design Concerns and Differing Site Conditions

Design concerns:
- Work to promptly resolve. Many can be resolved in the field, some cannot
- Site Survey Control / Level Loops / GPS
- Traffic Control Plan (Any Modifications Signed/Sealed By A PE)
- Temporary Drainage During Construction (Often missed during design)
- Local Design Standards Not Followed (Pavement Section etc..)
- Improper Materials or Mix Designs Specified (Submittal Review)

Differing Site Conditions:
- Unforeseen Utilities (Invest in SUE up front during the design phase)
- In Situ Materials (Unforeseen materials not indicated on Boring Logs)
- Retaining Walls – CM Inspector to be familiar with report and requirements. MSE Walls in particular.

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CPM Schedule Management

- Require an initial project schedule submittal showing the baseline critical path

- Require monthly updates to the baseline schedule looking for any changes to the critical path

- Changes to the critical path need to be justified by the Contractor and agreed upon by the Owner prior to acceptance

- Accept or reject schedule updates in writing.

- Review % Paid vs. % Time Charged

- CPM Schedule Review is a Key tool for delay claim mitigation

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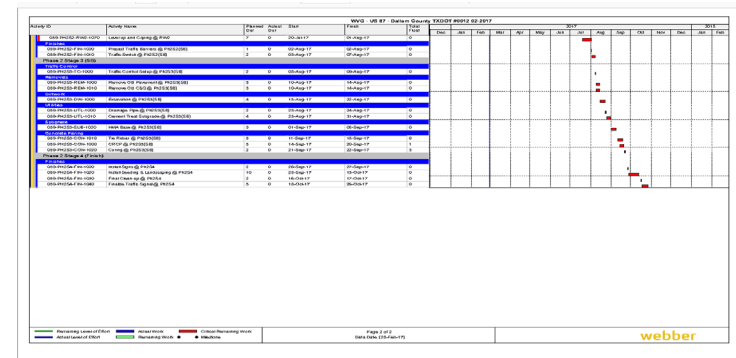
General Site Housekeeping Observations

- Project Barricades not Maintained
- SWP3 and Erosion Control not Maintained
- Overall Jobsite Cleanliness

Good Partnering and Communication between the Owner, CM and Contractor is Key to a successful project

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Dr. Ghassan Khankarli, PE, PMP
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Flow

Plan → Design → Construct → Maintain & Operate
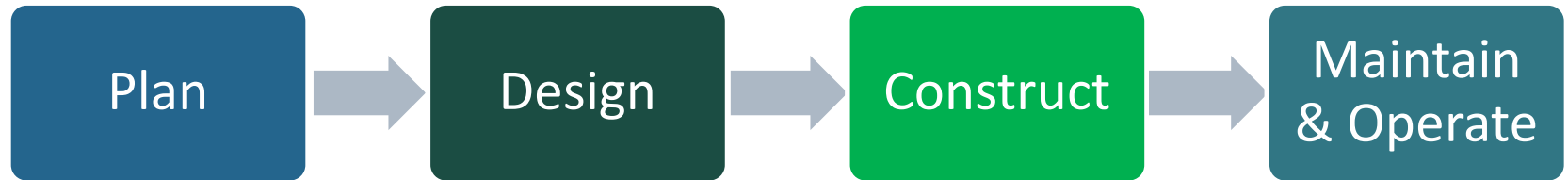
Challenges

- Staffing
  - Knowledge, skills, and abilities
  - Succession planning
  - Technology/innovation

- Processes
  - Outdated procedures
  - Outdated guidelines
- Technology
  - Smart cities/Roadways/CV/AV
  - Economic trends/consumer behavior/freight/on-time delivery
- Management
  - Overall Project Management skills of responsible staff

Construction Cost Drivers

- Initial Construction Cost

- Construction Design Support Cost

- Construction Engineering and Inspection (CEI) Cost
  - In-house
  - Outsourced

- Change Orders Allowances

Overcoming Challenges

- Optimized staffing levels
- Control of change orders
  - Needs/wants
  - Utilities/Site issues
  - Constructability (supplemented by experienced CEI team)
- Construction Engineering and Inspection (CEI)
  - In-house staff
  - Outsourced through targeted procurement
    - Reduced Liability
    - Supplementation Of Staffing
    - Expanded Experience
    - Training Of Respective Organization Staff
- Overall improved performance and budget management

Thank you!

Q&A

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