CMAR AT THE WWTP: A TALE OF LESSONS LEARNED

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A BRIEF HISTORY OF THE PROJECT

➢ WWTP Expansion $34.5M
  • Reg-85 / Reduce Nutrient Loading (Nitrogen & Phosphorus) to River
  • Increase Capacity to Meet Population Growth (10MGD - 12MGD)
  • Replacement of Aging Infrastructure

➢ Experience with Collaborative Project Delivery
  • W/ WW Engineering, Purchasing, Legal, Individual Staff

➢ Single Largest Capital Construction Project in the History of the City of Loveland
A CHALLENGE FROM THE BEGINNING

- Department, Purchasing, and Legal Approval
- Selling “Best Value” and “Quality”, not “Low Bid”
- 3rd Party Cost Validation
LAYING THE FRAMEWORK FOR CMAR

- Colorado State Statute Allows Collaborative Project Delivery
- City of Loveland is a Home Rule Municipality
- Municipal Code Allowed for Collaborative Project Delivery
- Purchasing Guidelines Were Vague – 3 Sentences
- Legal was not Familiar with Contracts Between Owner & CMAR
- Purchasing Guidelines were Amended – 1 Page
- Internal Approval Process Took 4-Months
THE LESSONS LEARNED...

- Select the Right Individual to Champion the Internal Process
- Utilize the Many Resources Related to Collaborative Delivery
- Build a Purchasing and Legal Framework for Success
- Internal Approval Process Complete Before CMAR is Needed
- Don’t let the Largest Project be the First
“NO ROOM IN THE INN…”

- Three Engineering Firms
- Two Design Engineers, One Resident Engineer
- Two Separate Capital Projects Become One Large Project
- Two Design Firms Under Contract
- Specification Challenges
- Delineating Responsibility for “Common Drawings”
- Extremely “Hands On” Owner
- Compatible Team
THE LESSONS LEARNED...

- Limit the Number of Design Engineers if Possible
- Build a Team that’s Open, Honest Who Feel Included & Valued
- Partnering Sessions in Design and Through Construction
BREAKING DOWN THE D-B-B BARRIERS

- CMAR’s Design Phase Involvement
- Continuity from Design to Construction
- Bring the “Builder”

- CMAR was Reactive, not Proactive during Design
- CMAR’s Team is Key to Success
- A+ Builder, B- Pre-Con Services
- Superintendent’s Involvement Came Late
- Constructability Comments Came During Construction
BEGS THE QUESTION…

- Could the Original Design Have Been Improved Upon and Challenges in Construction Minimized Based on the Constructability Comments we have Received Throughout Construction?
- How Could that have Impacted the GMP?
THE LESSONS LEARNED...

- CMAR on Board from Beginning or Provided the Time to Get up to Speed
- CMAR’s Team will be Actively Engaged
- Engineer Must be Open to Working in this Collaborative Environment
- CMAR’s General Superintendent will play a Significant Role in Design
- CMAR to Break the Mold of a Traditional Builder and Question the Engineering Design with Regards to Constructability
TODAY, AND BEYOND…

- Project Completion in August 2019
- Added Value Through Project Savings
- Department Success on 2nd CMAR Project - $10M
- Will Continue to use Collaborative Delivery when Warranted

- WWTP Project Looks to Have a Strong Finish – On Budget!
- Project Savings to Owner Turned into Added Scope and Value
- Limited Owner Contingency
- Under Budget + Value Added Scope = Success!

2nd CMAR:
- Linear Distribution & Collection
- Challenging Alignment & Coordination
- Significant CMAR Involvement
- The Right Team + Collaboration + Cost Savings = Success!
QUESTIONS?