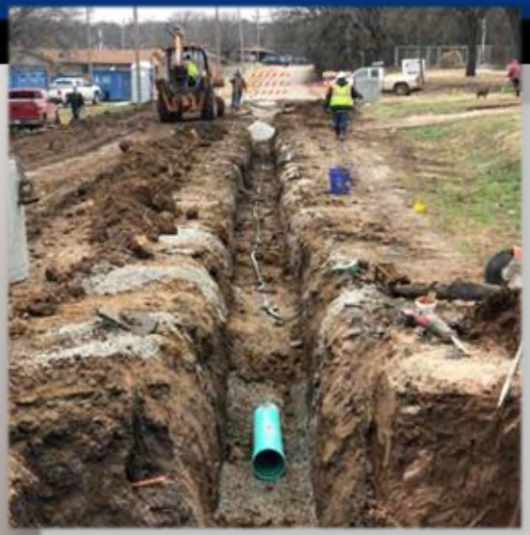
CM/GC Roundtable Discussion

November 18, 2020



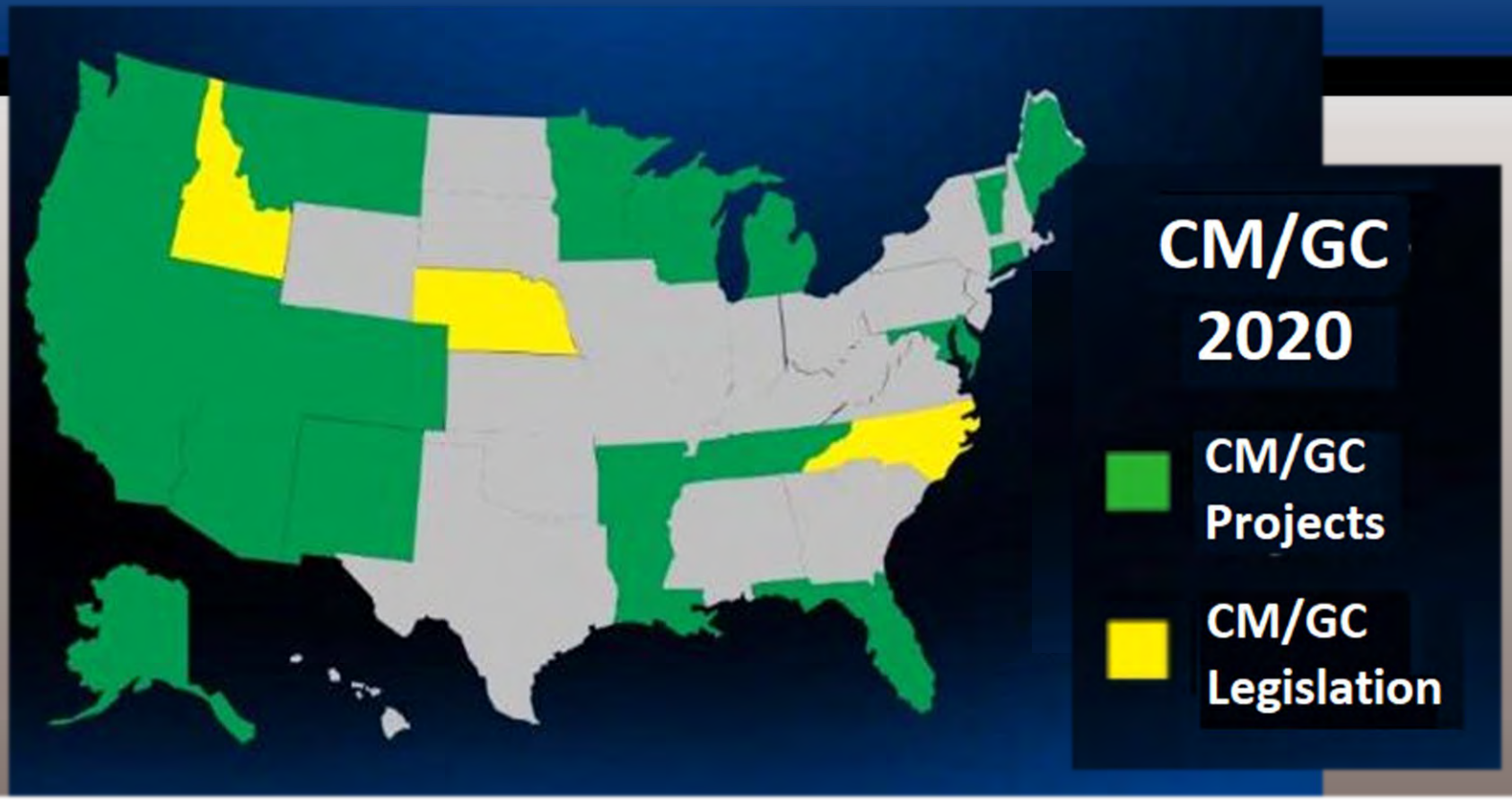
Overview for Tribes

Construction Manager / General Contractor (CM/GC)

Karl Gleason, Tribal Coordinator
FHWA Office of Tribal Transportation

U.S. Department of Transportation
Federal Highway Administration

CM/GC Projects: Gaining Ground



- Tribes in all States can have CM/GC projects.
- Some States may limit using State funds for CM/GC projects.

Tribes & Consortiums with CM/GC Projects

- ***Cahuilla Band of Indians***, CA..... 16 projects.
- ***Pueblo of Acoma***, NM: 1st Contract.... 9 projects,
  2nd Contract.... 6 projects.
- ***Pawnee Nation of Oklahoma***..... 13 projects.
- ***Confederated Salish and Kootenai Tribes of the Flathead Reservation***, MT ..... 8 projects.
- ***Gila River Indian Community***, AZ – Sacaton Road Bridge.
- ***Kenaitze Indian Tribe***, Alaska – Kenaitze Education Building.

- ***Pueblo of Jemez***, NM – Currently considering CM/GC.
- ***Kawerak, Inc.***, Alaska – Currently considering CM/GC.

CM/GC – A Team Approach

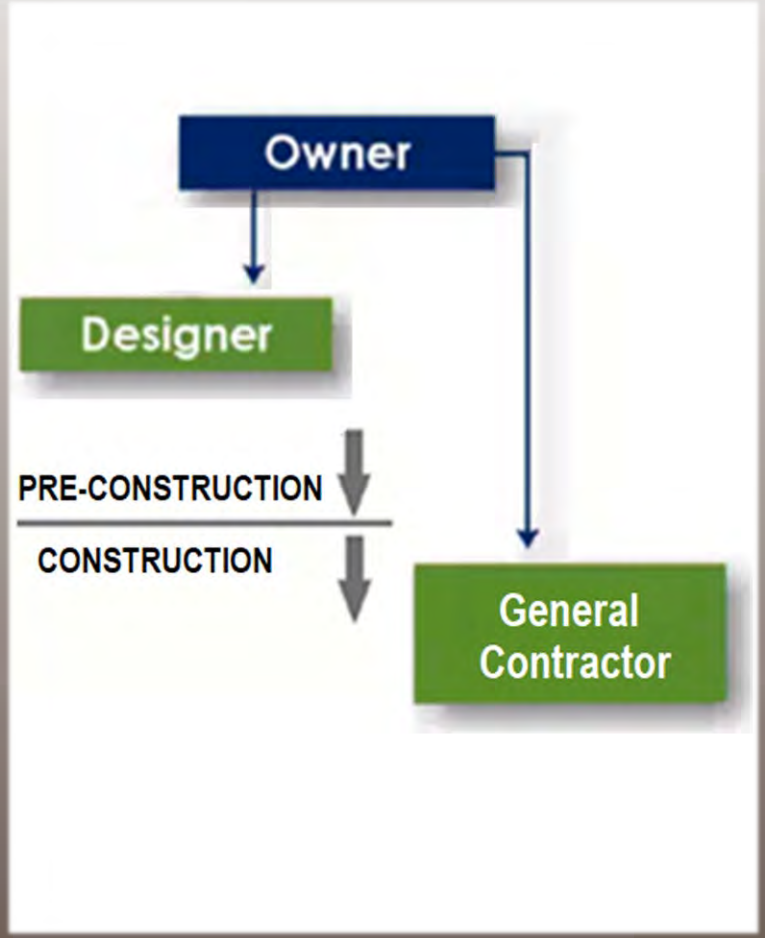
- Owner* has/gets a **Project Lead** to run the CM/GC process.

- Owner hires **Project Team** at start of design phase:
  - **Designer (DM),**
  - **Independent Cost Estimator (ICE),**
  - **Construction Manager (CM)** – part of CM-GC Firm.
  - Team works with the Project Lead (owner's rep)

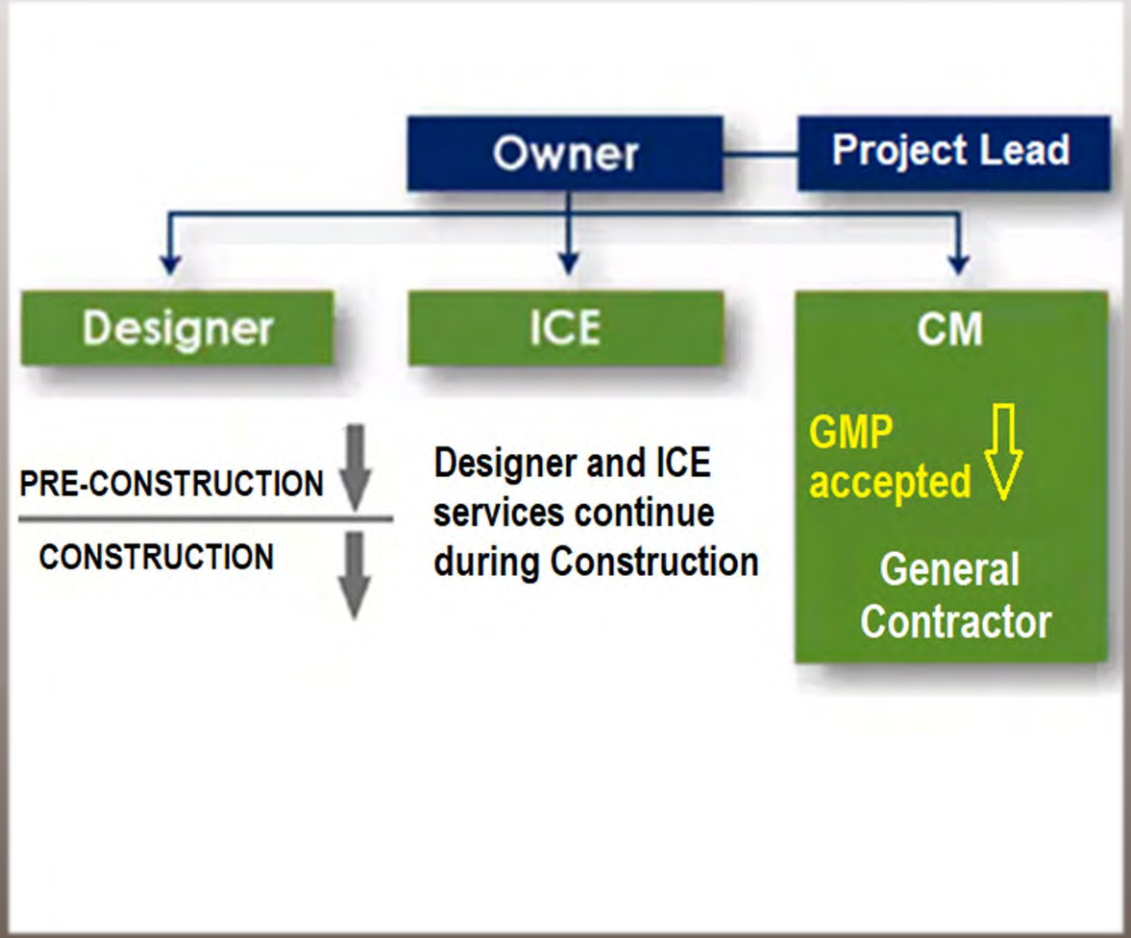
* Note: "Owner" is the Tribe, not the facility owner.

Comparison:

Design-Bid-Build



CM/GC



* GMP = Guaranteed Maximum Price submitted by the CM.

Advantages of CM/GC

The Project Team:

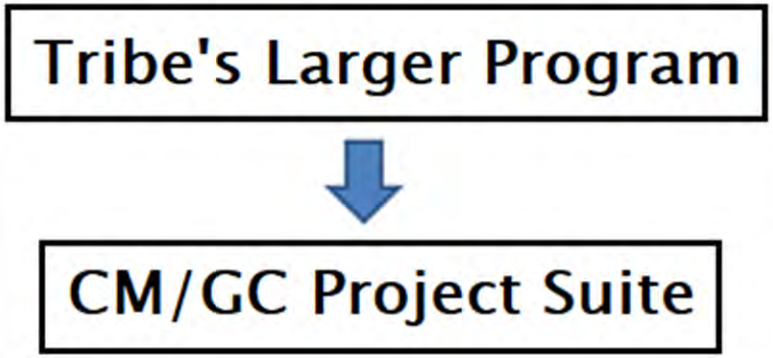
- Works together to reduce risks & costs.
- Meets from start of design thru end of construction.
- The CM works with the Designer to:
  - Provide constructability, solutions, and innovation.
- Project Team accelerates delivery time:
  - Plans are shortened and streamlined.
  - Parts of a Project can be built earlier than the rest.

Is CM/GC the Right Fit for Your Project(s)?

It can be, if any of these apply:

- Large enough Project (or Project Suite) for CM/GC savings to offset cost of the ICE, CM, & Project Lead.
- Project is complex – with high or unknown risks.
- Need innovative design and construction solutions.
- Quick delivery of multiple Projects is desired.
- Tribe has, or gets, a good **Project Lead** person.

Select the Projects to Include in CM/GC



- Tribe's larger **Program**:
  - Transportation projects in Tribe's TIP;
  - Water, sewer, buildings, etc. planned;
  - Projects not funded yet;
    - Competitive grants, etc.
- From these, the Owner selects Projects for the CM/GC **Project Suite**:
  - Ask for public and Tribal Government input.
  - Good to have the ICE on board to help with selection.

CM/GC Project Suite – Example

No.	Project Name	Budgeted Cost ($)	Funding Source	Desired Start Date
1	North Highway	14,000,000.00	FLAP	June 2022
3	Housing Development	8,500,000.00	HUD	August 2022
2	Village Streets	7,500,000.00	TTP	June 2023
4	Town Water and Sewer	15,000,000.00	Sewer District	June 2023
5	Barge Landing	5,000,000.00	TTP	August 2023
6	Clinic Building	5,000,000.00	IHS	August 2023
Total Budgeted Cost		55,000,000.00		

- Include Project Suite in the CM-GC Firm RFP & contract.
- Cannot add more projects after contract is awarded.

The Independent Cost Estimator (ICE) – Role:

Designer | ICE | CM

- Provides independent "***Cost-Based***" estimates.
  - Not an Engineers Estimate.
- Evaluates the GMP for price fairness;
  - Advises Owner to accept or reject the GMP.
- Provides Project schedules to compare with CM's.
- Tracks Project risks and costs.
- Tracks time reductions & design innovations enabled by CM/GC.

Guaranteed Maximum Price (GMP)

- A **GMP** is a fixed price offer to construct a Project.
- Owner asks the CM to submit a GMP at about 60-90% design completion for a Project.
- The CM guarantees the GMP will not be increased during construction.
- The GMP should include a contingency fee for changes;
  - Unused balance returns to Owner for other work in the "Project Suite".
- GMP can include a TERO fee.

CM/GC "Bid" Process

Owner compares GMP to the ICE's independent estimate;

- If GMP price **not acceptable** to Owner,
  - Owner is not obligated to have the Project built.
  - May have another contractor build it.

- If GMP price **is acceptable** to Owner,
  - Owner executes a contract with the CM to build the Project.
  - Then the CM becomes the General Contractor (GC).

Construction Phase

- The **Project Team** meets, as needed, during construction;
  - To support any Project changes, and
  - To find cost-cutting opportunities.
- The **ICE** continues to provide pricing and scheduling support.

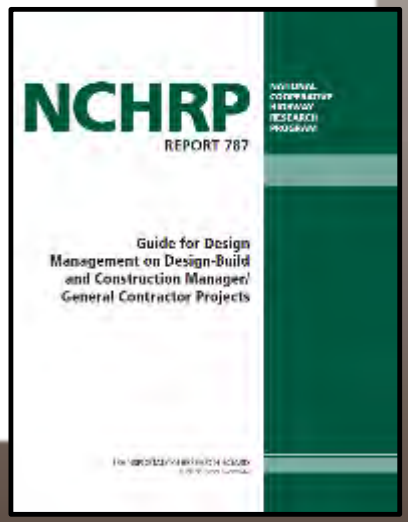
CONSTRUCTION
General Contractor

Construction Services

Price Agreement: GMP

CM/GC Resources

- FHWA CM/GC Project Delivery Program Guide www.fhwa.dot.gov/construction/cqit/cm.cfm
- FHWA CM/GC website is at https://www.fhwa.dot.gov/construction/contracts/acm/CM/GC.cfm
- NCHRP Report 787–Guide for Design Management on Design-Build and Construction Manager/General Contractor Projects at http://media.oregonlive.com/portland_impact/other/Guide for Design Management.pdf



CM/GC Resources (cont'd.)

- Alternative Contracting Method Performance in U.S. Highway Construction (FHWA Publication No: FHWA-HRT-17-100) at https://www.fhwa.dot.gov/publications/research/infrastructure/17100/17100.pdf
- Project Delivery Selection Matrix (PDSM) website at https://www.colorado.edu/tcm/ project-delivery-selection-matrix
- FHWA Project Bundling website at https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/project_bundling.cfm

Contact & Program Info

- **Karl Gleason** – FHWA TTP Tribal Coordinator
  - (360) 619-7823
  - email: karl.gleason@dot.gov
- **FHWA Office of Tribal Transportation (OTT):**
  - https://highways.dot.gov/federal-lands/programs-tribal
- **FHWA Tribal Transportation Program Delivery Guide:**
  - https://highways.dot.gov/federal-lands/programs-tribal/guide

Pawnee Nation and CM/GC

CM/GC Webinar

November 18, 2020

CM/GC Planning Process

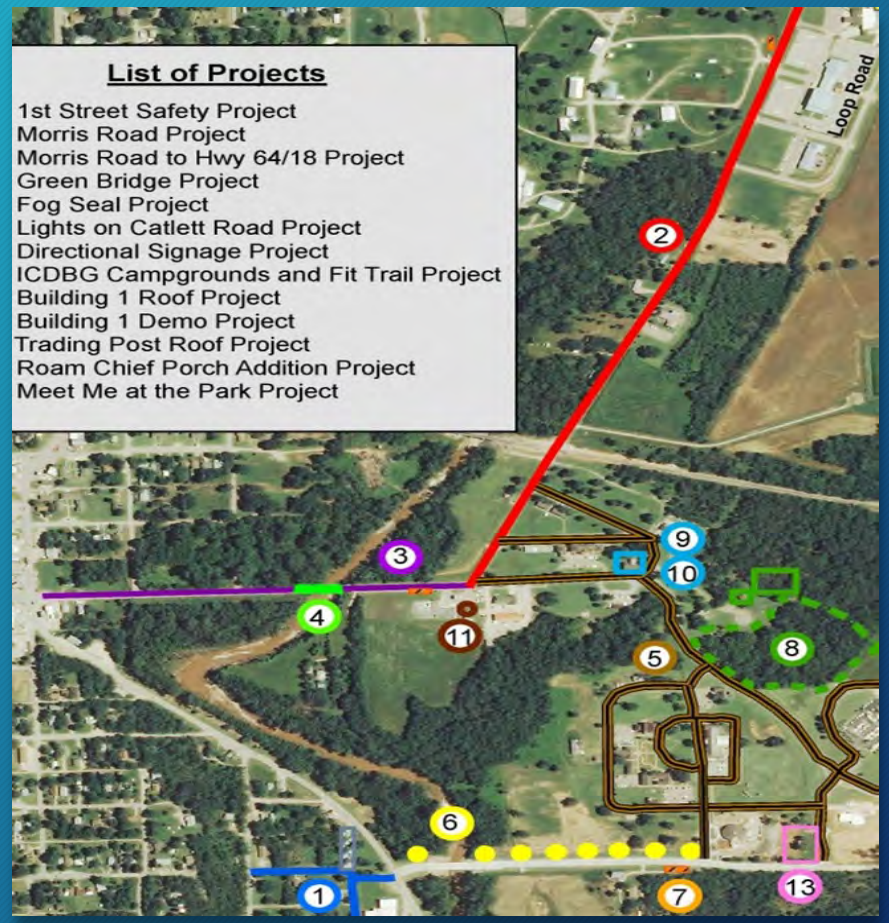
- CM/GC Training April 3-4, 2018
- Weekly Meetings
- Engaged Executive Director, TERO, Finance, Procurement & others from the beginning
- Developed projects
- Developed RFP/Q's

Taking Hold of Innovation and Running…….

- Training April 3-4, 2018
- RFP/Qs Notice – June 15, 2018
- Selection – August 8, 2018
- Kickoff Meeting - August 13-14, 2018
- 1st Guaranteed Maximum Price (GMP) Contract - September 7, 2018
- 1st Notice To Proceed – September 10, 2018

Pawnee Nation Safety and Enhancement Projects

- 7 – FHWA funded projects
- 4 – Tribal funded projects
- 1 – ICDBG funded project
- 1- Disney grant project



CM/GC & TERO

- Setup a job fair with the Construction Manager/ General Contractor
  - Described the projects and what type of skills that would be needed
- Started a list of applicants and skills
- Agenda item for our Production meetings for TERO
  - Updates
  - Needs
  - Requests
  - Challenges
  - Questions

CM/GC & TERO

- Over 12 different TERO workers have been employed throughout ALL the projects
- 3 TERO workers continuously working
- 850 Hours worked
- 75% of the workers on ALL the projects have been Native American
- 5 out of 8 of the CM/GC sub-contractors have been Native American owned companies
- 95% of employees of the CM/GC on the projects are Native American
- The CM/GC and Independent Cost Estimator (ICE) companies are both 100% Native American Owned companies
- The Design company was recently acquired in a merger which negated being a Native American owned company; 2 of their 5 subs are Native American owned companies.
- Using local businesses for materials (rock, concrete, wood, etc.)
- TERO sending people to Construction training (i.e. Flagger, OSHA, etc

Guaranteed Maximum Price (GMP)

- The CM/GC Team works together to create a Guaranteed Maximum Price (GMP).
- The GMP is validated with numbers generated by Independent Cost Estimator (ICE).
- When we agree the numbers line up we execute the GMP.
- There could be multiple GMP's per project. (Ex. 1st Street Safety – 4 GMPs to date)

Item	Construction Category	ICDBG Campground ph 2 campsites totals	Adj Mat'l Est	Adj Labor Est	Equipment Est	Sub Est	Est Const Cost
	Project Subtotals						
	General Conditions		0.00	3,690.00	750.00	0.00	4,440.00
	Exisiting Conditions		0.00	0.00	0.00	0.00	0.00
	Concrete		120.00	0.00	0.00	0.00	120.00
	Masonry		0.00	0.00	0.00	0.00	0.00
	Metals		0.00	0.00	0.00	0.00	0.00
	Wood, Plastics & Composites		0.00	0.00	0.00	0.00	0.00
	Thermal & Moisture Protection		0.00	0.00	0.00	0.00	0.00
	Doors/Frames/Windows		0.00	0.00	0.00	0.00	0.00
	Finishes		0.00	0.00	0.00	0.00	0.00
	Specialties		0.00	0.00	0.00	0.00	0.00
	Equipment		0.00	0.00	0.00	0.00	0.00
	Furnishings		0.00	0.00	0.00	0.00	0.00
	Special Construction		0.00	0.00	0.00	0.00	0.00
	Plumbing		0.00	0.00	0.00	6,500.00	6,500.00
	HVAC		0.00	0.00	0.00	0.00	0.00
	Electrical		0.00	0.00	0.00	14,590.00	14,590.00
	Earthwork		0.00	0.00	0.00	0.00	0.00
	Site Improvements		0.00	0.00	0.00	0.00	0.00
	Utilities		0.00	0.00	0.00	0.00	0.00
	Subtotal		120.00	3,690.00	750.00	21,090.00	25,650.00
	Labor Burden @ 26%						959.40
	Subtotal						959.40
	TOTAL PROJECT ESTIMATE						26,609.40
	Contingency						2,913.00
	CM Fee (5.41%)						1,439.57
	Insurance (.0092%)						258.05
	Bonds (1.85%)						523.68
	TERO Fee (3%)						864.92
				Total Mini GMP			32,608.62

1st Street Safety Project

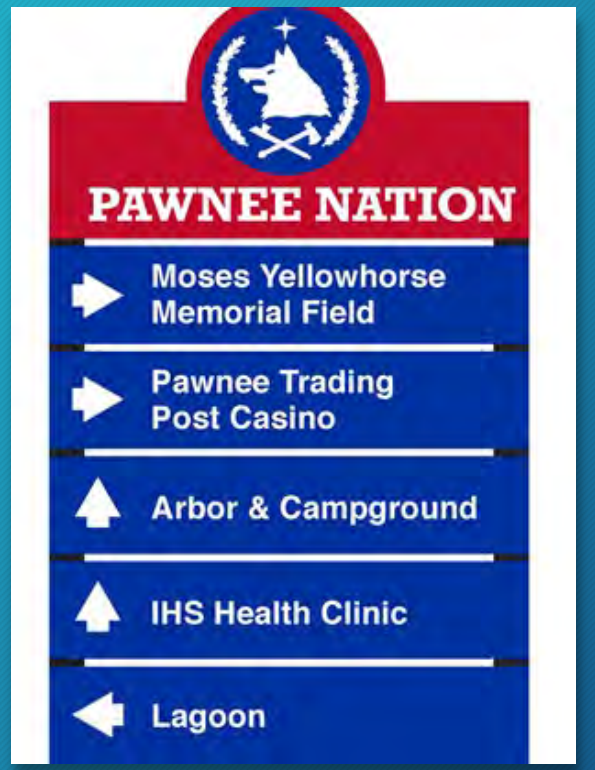
- **Schedule**
  - Completion Date May 2020
  - Projected Completion Date October 2019
- **Budget**
  - Construction Budget $1.8 million
  - Target Budget $1.26 million
  - Projected Actual Cost $1.5 million (16.6% under budget)
- **Innovation**
  - Minimized lane widths
  - Elimination of a portion of curb and gutter
  - Low cost retaining wall
  - Forta –Fiber pavement design $300,000 in savings
  - Savings funded additional underground utility work
  - Savings funded brick stamped crosswalk enhancements
  - Rapid Flashing Beacon (RFB) for pedestrian access across highway

Morris Rd. Project

- **Schedule**
  - Completion Date May 2020
  - Projected Completion Date September 2019
- **Budget**
  - Construction Budget $737,500
  - Target Budget $516,250
  - Projected Actual Cost $600,000 (18.6% under budget)
- **Innovation**
  - Used existing terrain to eliminate the need for curb and gutter, $150,000 in savings
  - LED lights

Other Road Projects

- Fog Sealing
- LED Street Lights
- Directional Signage
- Sidewalk Improvements
- Entrance Signs
- Work done simultaneously with other projects, over $30,000 savings

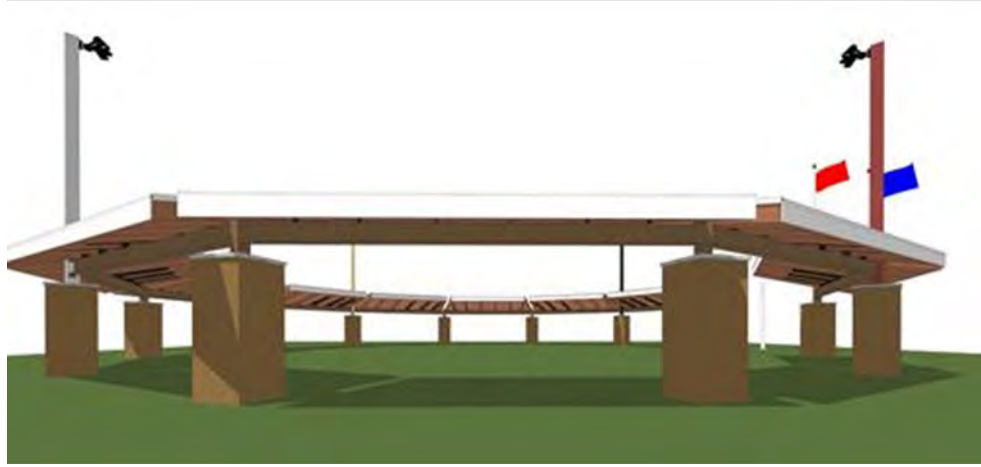


Green Bridge Project

- **Objectives**
  - Replace or rehabilitation Fracture Critical Bridge
- **Schedule**
  - Projected Completion Date November 2021
- **Budget**
  - Construction Budget $ 1.3 million
  - Target Budget $910,000
  - Projected Actual Cost $ 1.1 million
- **Innovation**
  - Received FHWA Bridge Design funds
  - Waiting on FHWA Bridge Construction funds

ICDBG Campgrounds and Fit Trail Project

- **Schedule**
  - Completion Date October 2019
  - Projected Completion Date October 2019
- **Budget**
  - Construction Budget $800,000
  - Target Budget $800,000
  - Projected Actual Cost $800,000 (grant objective to spend all funds)
- **Innovation**
  - Underground electric
  - Metal building with rock veneer for bathroom, $75,000 savings
  - Single post design for Dance Arbor
  - Fast Cast Bridge system for a pedestrian bridge
  - First time combination Vertical and Horizontal CM/GC projects



Other Building Projects

- Remove, Repair and Replace roof
- Demolition a 348 sq.ft. non-original additional
- Funded through insurance and tribal funds
- Work done simultaneously with other projects

Meet Me at the Park Project

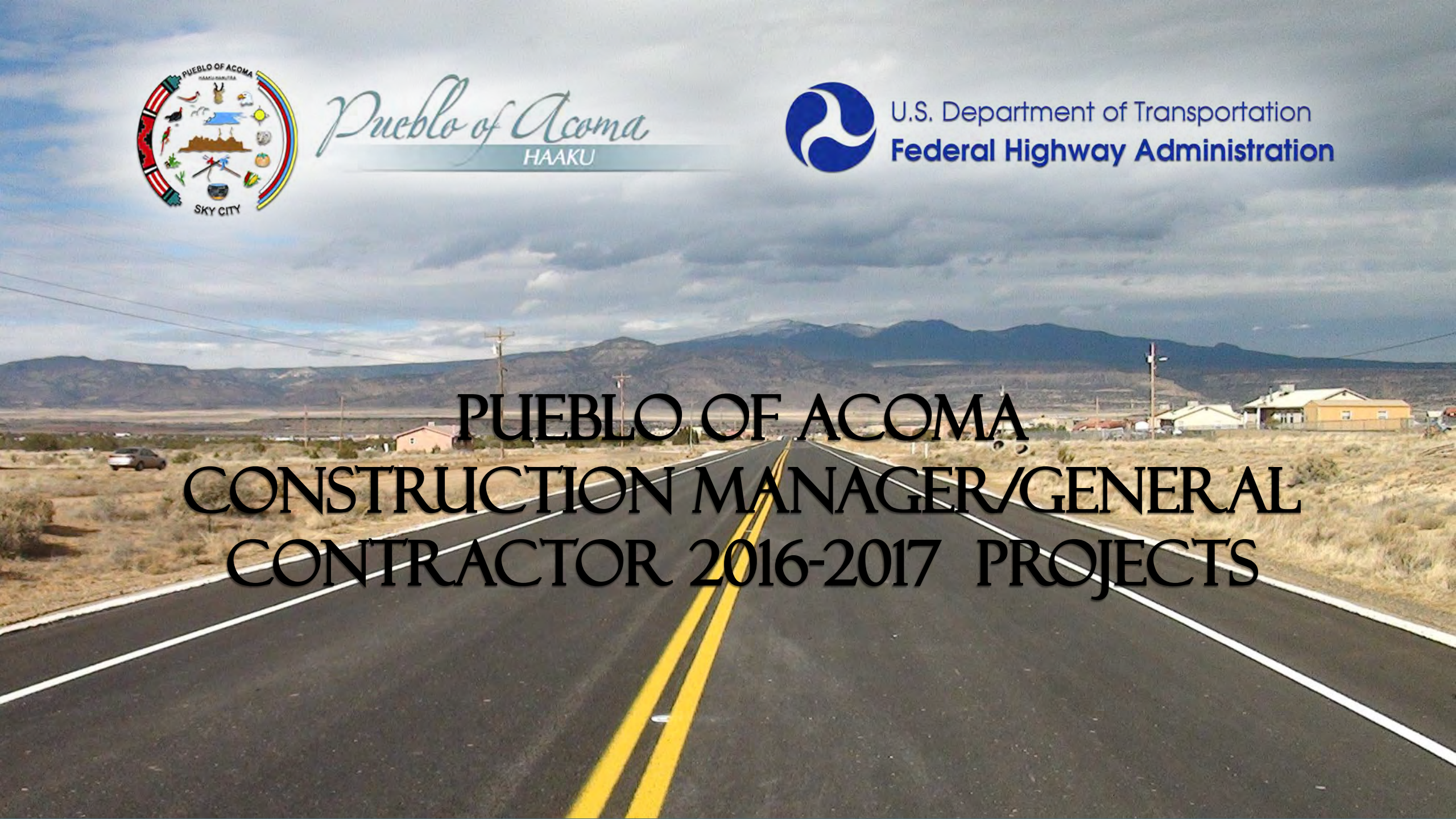
- **Objectives**
  - Expansion of existing Pirau Park
  - Full-court Basketball area
  - Horseshoe area
  - Installation of Frost-free water hydrants
  - Renovation of existing bathroom
- **Schedule**
  - Completion Date October 2018
  - Projected Completion Date October 2018
- **Budget**
  - Construction Budget $30,000
  - Target Budget $30,000
  - Projected Actual Cost $30,000 (grant objective to spend all funds)
- **Innovation**
  - Had a Volunteer day with over 20 participants
  - Used free wood chip mulch
  - Used rehabilitated equipment for bathroom
  - Some Park equipment purchased by tribal programs
  - 1st time grant awarded to Native American tribe

CM/GC Results

- 3rd Tribe in the Nation to use CM/GC
- First successful bundling of horizontal and vertical construction on tribal lands
- 20 different mini GMP's between 11 different projects
- Completed 11 of 13 projects, $4 million +, in 13 months;
- Over $150,00 in savings using existing terrain to eliminate the need for curb and gutter on Morris Rd.
- Over $300,000 in savings from the 1st Street Safety Project, mostly from using the innovation of Forta Fiber Asphalt
- Over $30,000 in savings from Contractor General Conditions

Questions?
Contact Information

- **Chris McCray**
- Pawnee Nation Transportation & Safety
- (918) 762-3655 cmccray@pawneenation.org


PUEBLO OF ACOMA
HAAKU HANUTRA
SKY CITY
Pueblo of Acoma
HAAKU
U.S. Department of Transportation
Federal Highway Administration
PUEBLO OF ACOMA
CONSTRUCTION MANAGER/GENERAL
CONTRACTOR 2016-2017 PROJECTS

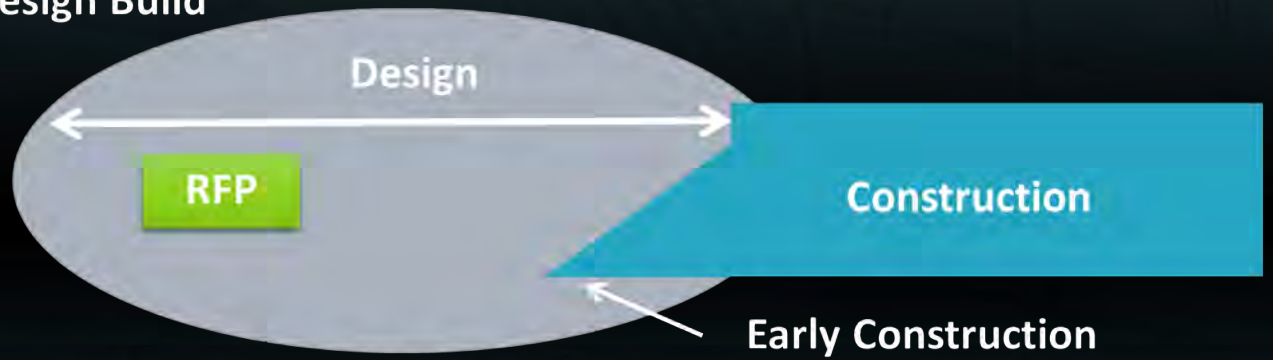
What did we ask the team to do?

- Complete construction of all projects by June 2017
- Commit to a budget of $6.9 M
- Hire locally from Cibola County
- Innovate to meet these goals
- Work as a team to deliver

Deliver a 7-10 year program in 18 months

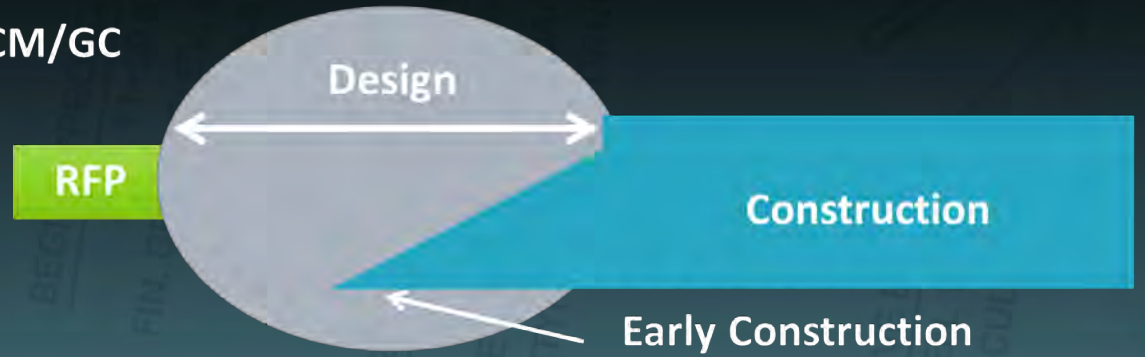
Traditional Design Bid Build

Design Build



Selection of both Designer and Builder

CM/GC



Selection of both Designer and CM/GC

CMGC PROJECT LIST

- CMGC-1 PINSBAARI DRIVE
- CMGC-2 RICONADO BRIDGE
- CMGC-3 VETERANS PARKING LOT
- CMGC-4 T-INTERSECTION
- CMGC-5 FEMA PROJECTS
- CMGC-6 STOCKYARD BRIDGE
- CMGC-7 PARKING LOT
- CMGC-8 ROAD STABILIZATION PROJECTS
- CMGC-9 ROCK RETAINING WALL REPLACEMENT
- CMGC-9B INVENTORY AND ASSEST MANAGEMENT
- CMGC-9C HEAVY EQUIPMENT TRAINING
- CMGC-1 PINSBAARI DRIVE PHASE B

CMGC-1 Pinsbaari Drive – Phase A

2-Lane Roadway Reconstruction

Objectives

- Reconstruct as much of 2-lane roadway as possible with budget
- Use cost savings from other projects

CMGC-1 Pinsbaari Drive – Phase A

Scheduled Completion

- Contract: March 2017
- Kick-Off Meeting: June 2017
- Actual: November 2016

Budget

- Contract: $ 2,200,000
- Target: $ 1,540,000
- Actual: $ 1,890,800 (14% under budget)

CMGC-1 Pinsbaari Drive – Phase A

Innovation

- Design exception for side slopes to balance project
- 3-lane design eliminated
- Geogrid in lieu of additional ABC
- Reuse of millings for parking lots
- Construct concurrently with parking lots

Hire Local

- Employed 10 local workers

CMGC-2 Rinconado Bridge

Replace 3-Cell Box Culvert

Objectives

- Provide clear span (no walls or piers)
- Provide 8’ minimum vertical clearance for maintenance
- Maintain existing roadway profile
- Minimize potential for overtopping

CMGC-2 Rinconado Bridge

Scheduled Completion

- Contract: June 2016
- Kick-Off Meeting: October 2016
- Actual: September 2016

Budget

- Contract: $ 900,000
- Target: $ 639,000
- Actual: $ 636,400
  (30% under budget)

CMGC-2 Rinconado Bridge

Innovation

- “Super Box” design
- No deep foundation needed
- Contingency plan for flooding
- Reuse of existing guardrail
- Relocation of intersecting dirt road
- Construction problems resolved quickly by team:
  - Staking problem
  - Reinforcing steel layout

Hire Local

- Employed 5 local workers

CMGC-3 Veteran's Parking Lot

Pave Existing Gravel Parking Lot

Objectives

- Construct as many stalls as possible within budget
- Provide minimum stall size of 9-ft x 18-ft
- Provide landscaping if budget allows

CMGC-3 Veteran's Parking Lot

Scheduled Completion

- Contract: March 2016
- Kick-off Meeting: August 2016
- Actual: October 2016 (decision made to sacrifice schedule for

Budget

- Contract: $ 90,000
- Target: $ 81,000
- Actual: $ 90,000 (on budget)

CMGC-3 Veteran's Parking Lot

Innovation

- Eliminated concrete curbs and added rubber curb stops as needed
- Combined construction activities with Pinsbaari Dr., reducing mobilization costs
- Value engineered layout for elimination of "dead" pavement space
- Used millings from Pinsbaari Dr.

Hire Local

- Employed 10 local workers

CMGC-4 T-Intersection

E. Pueblo Rd. & Dichuuna Rd.

Objectives

- Correct deficient sight distance
- Install new signage and striping as appropriate

CMGC-4 T-Intersection

Innovation

- Rock excavation verses roadway realignment
- Gabion retaining walls with reuse of stones from demolished buildings
- Excavated rock to be used as riprap for bridge projects

Hire Local

- NA – Project did not go to construction

Project Challenge That Could Not be Overcome

- Agreement could not be reached with land assignee; project was discontinued.

CMGC-5 A & B FEMA Projects

FEMA Funded Maintenance Projects

Objectives

- Bundling under CM/GC
- Rapid delivery
- Site recovery minimized by use of same contractor
- Regular communication with FEMA streamlined approvals

Hire Local

- Employed 6 local workers

CMGC-6 Stockyard Bridge

FEMA Project – Replacement of Failed Culvert

Objectives

- Replace corrugated metal pipe culvert washed out by flooding
- Install a more robust structure that can resist overtopping and washout

CMGC-6 Stockyard Bridge

Scheduled Completion

- Contract: December 2016
- Kick-off Meeting: December 2016
- Actual: November 2017 (Projected, FEMA approval delays)

Budget

- Contract: $ 108,500 (original); $ 213,000 (with HMP funds)
- Target: $ 130,200
- Actual: $ 213,000 (GMP)

CMGC-6 Stockyard Bridge

Innovation

- Submitted and received approval from FEMA on Hazard Mitigation Plan
  - Additional funds to improve hydraulic and maintenance performance
  - Bridge size (NBIS qualifying) box culvert
  - Vertical clearance of 8-ft for maintenance
- Improved safety features
- Partnered with ACOE on Hydrologic/Hydraulic study at no cost to the project

Hire Local

- Employing 6 local workers

CMGC-7 Parking Lot

Reconstruct and Expand Parking Lot from Post Office to Food Distribution

Objectives

- Construct as many stalls as possible within budget
- Provide minimum stall size of 9-ft x 18-ft

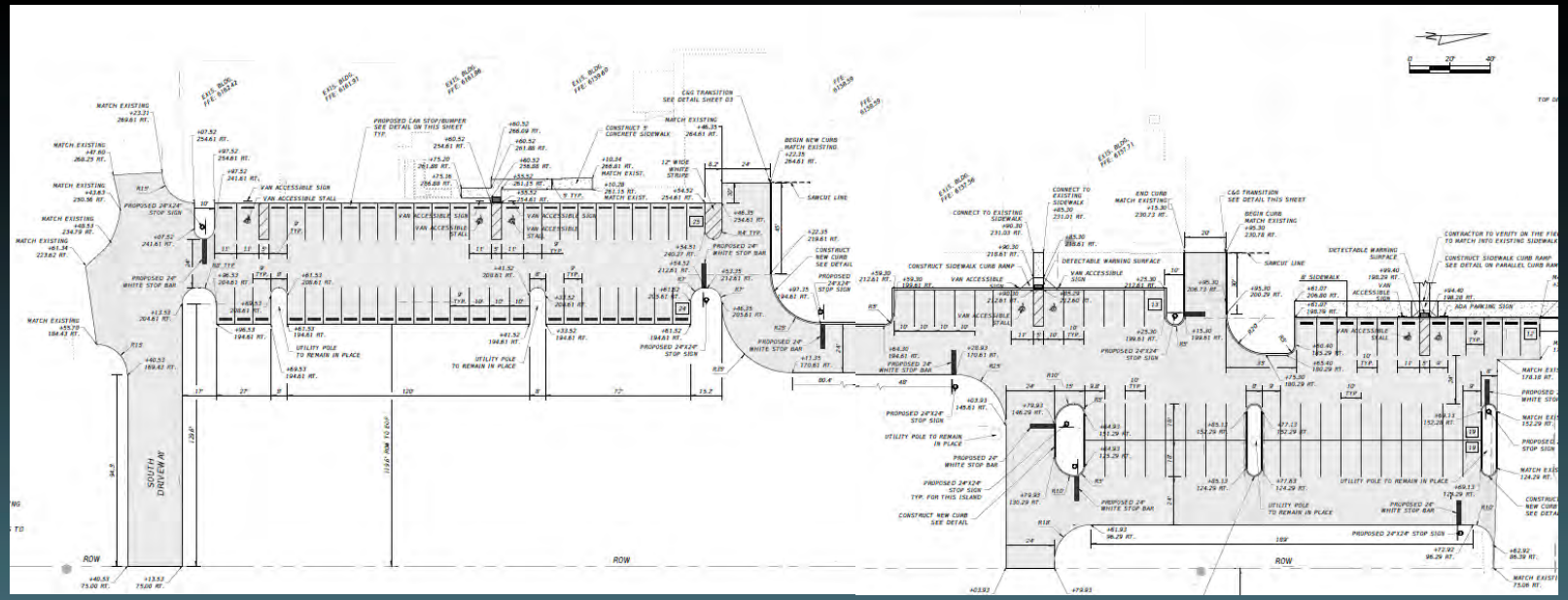
CMGC-7 Parking Lot

Scheduled Completion

- Contract: June 2016
- Kick-Off Meeting: June 2016
- Actual: October 2016 (decision made to sacrifice schedule for cost-savings)

Budget

- Contract: $ 450,000
- Target: $ 315,000
- Actual : $ 333,300 under budget)



CMGC-7 Parking Lot

Innovation

- Eliminated concrete curbs and added rubber curb stops as needed
- Combined construction activities with Pinsbaari Dr., reducing mobilization costs
- Value engineered layout for elimination of “dead” pavement space
- Used millings from Pinsbaari Dr.

Hire Local

- Employed 10 local workers

CMGC-8 Roadway Stabilization

Stabilization and Dust Control for Dirt Roads

Objectives

- Provide best means of roadway stabilization with available budget for 3 to 5 existing dirt roads
- Provide best means of dust control with available budget for 3 to 5 existing dirt roads

CMGC-8 Roadway Stabilization

Scheduled Completion

- Contract: June 2016
- Target: June 2016
- Actual: August 2016

Budget

- Contract: $ 450,000
- Target: $ 315,000
- Actual: $ 512,900
  (14% over budget)

Hire Local

- Employing 6 local workers

CMGC-8 Roadway Stabilization

Innovation

- Consultation with FHWA's leading expert
- Extensive research on chemical applications
- Used recycled asphalt pavement (RAP) millings from local supplier
  - Recommended by FHWA
  - Yielded 5 miles of stabilized roadway
  - Best overall "bank for the buck"

CMGC-9 Rock Retaining Wall Replacement

Roadway Maintenance Project

Objectives

- Replace failing stacked rock retaining wall
- New wall should satisfy engineering requirements and homeowner aesthetic concerns

CMGC-9 Rock Retaining Wall Replacement

Scheduled Completion

- Contract: April 2016
- Kick-off Meeting: April 2016
- Actual: June 2016

Budget

- Contract: $ 470,000
- Target: $ 329,000
- Actual: $ 249,000 (47% under budget)

CMGC-9 Rock Retaining Wall Replacement

Innovation

- Final field review by team resulted in large reduction in wall area
- Handrail length reduced as a result of final field review
- Eliminated need for temporary utility poles
- Low cost masonry wall system allowed use of local labor

Hire Local

- Employed 6 local workers

CMGC-9B Asset Maintenance & CMGC-9C Heavy Equipment Training

Roadway Maintenance Project

Objectives

- Prepare GIS asset inventory
- Provide maintenance and equipment training

Scheduled Completion

- Contract: June 2017
- Kick-off Meeting: June 2017
- Actual: December 2016

Budget

- Contract: $ 80,000
- Target: $ 56,000
- Actual: $ 40,100
  (50% below budget)

CMGC-1 Pinsbaari Drive – Phase B

2-Lane Roadway Reconstruction

Objectives

- Reconstruct remaining 3.3 miles of Pinsbaari Drive
- Use cost savings from other CM/GC projects and other available funds

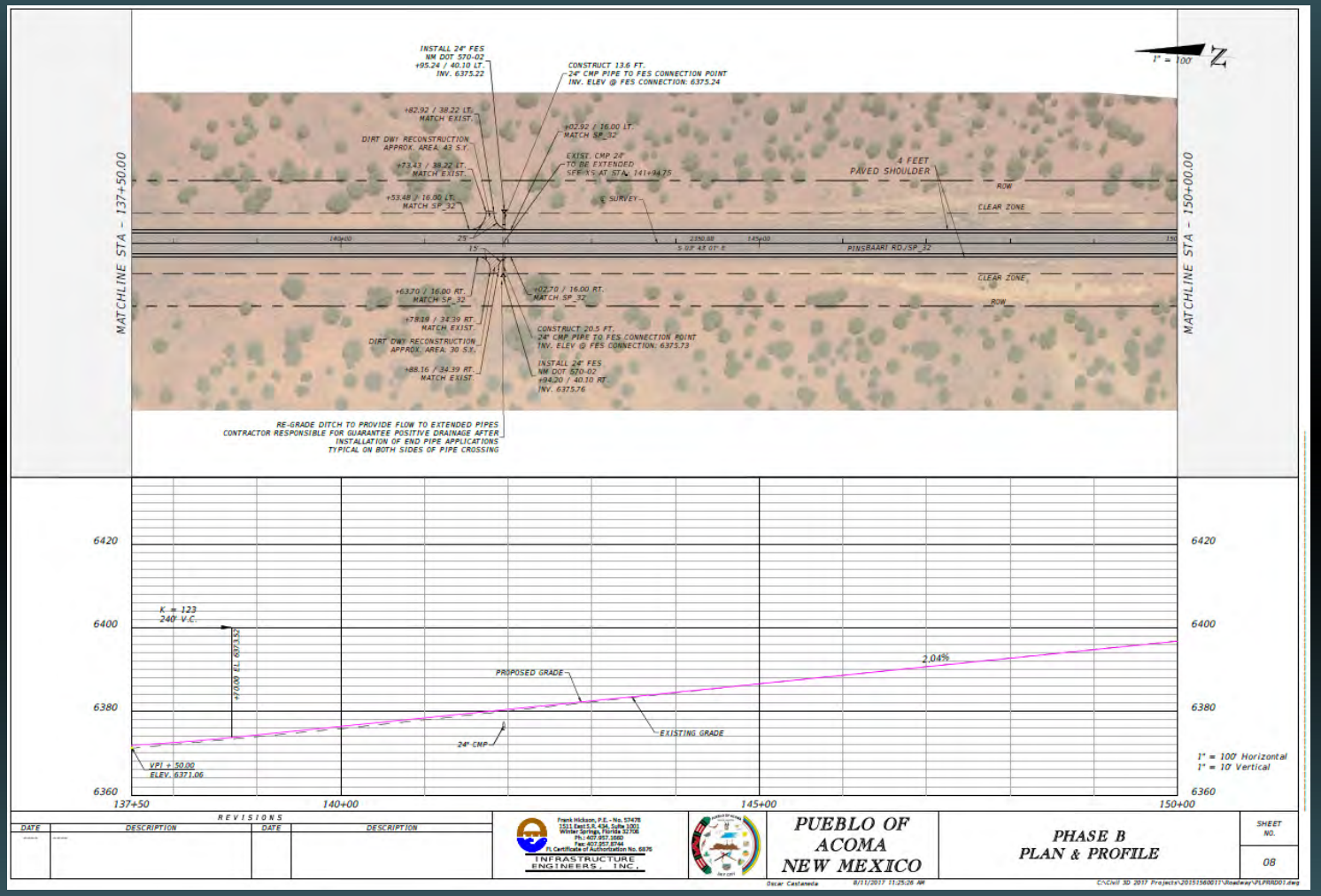
CMGC-1 Pinsbaari Drive – Phase B

Scheduled Completion

- Contract: October 2017
- Target: October 2017
- Actual: October 2017

Budget

- Contract: $2,800,000
- Target: $ 3,800,000
- Actual: $ 2,800,000 (GMP)



CMGC-1 Pinsbaari Drive – Phase B

Innovation

- Design exception for side slopes to balance project
- Geogrid in lieu of additional ABC
- Employ lessons learned from Phase A
- Use of UAV (Drone) imagery to supplement survey data

Hire Local

- Employing 6 local workers

What can we improve?

Lessons Learned

- Make sure you have a Project Leader on day one of the project
- Clearly outline the minimum needs in the Request for Proposal
- Cost modeling needs to be discussed at pre-bid and kick-off meeting
- Keep your stakeholders informed as team makes changes

What can we celebrate?

Success Stories

- All projects, with exception of FEMA work and T-Intersection, completed in 10 months, including permitting and design
- Cumulative $ 1.15 million in cost savings used to fund large portion of Pinsbaari Dr. Phase B
- Team overcame significant challenges by always working together on the solution verses pointing fingers
- First programmatic use of CM/GC on tribal lands
- CM/GC delivers big results when properly implemented!

Pueblo of Acoma
HAAKU

U.S. Department of Transportation
Federal Highway Administration

- FNF Construction
- Infrastructure Engineers
- Manhattan Construction
- Advanced System Design
- New Mexico Department of Transportation
- NM Department of Homeland Security and Emergency Management
- NM Department of Indian Affairs
- NM Department of Finance and Administration
- Bureau of Indian Affairs

Pueblo of Acoma
HAAKU

U.S. Department of Transportation
Federal Highway Administration

CMGC2- $16M

- RPF DECEMBER 2018
- KICKOFF APRIL 2019
- RISK DEVELOPMENT
- COST MODEL DEVELOPMENT
- STARTED FIRST PROJECT MAY 2019
- COMPLETION DECEMBER 2020 WITH INTIAL PROJECTS, ADDITIONAL SPRING 2021.

THE ABC's OF THE GILA RIVER (SACATON ROAD) BRIDGE REPLACEMENT

FHWA Tribal Transportation CM/GC Roundtable Webinar

GILA RIVER INDIAN COMMUNITY 1939 ARIZONA

U.S. Department of Transportation
Federal Highway Administration

SHRP2 SOLUTIONS
TOOLS FOR THE ROAD AHEAD

FNF CONSTRUCTION, INC.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
AASHTO

AZTEC
TYPSA Group
www.typsa.es
www.aztec.us

The Justification for Replacement

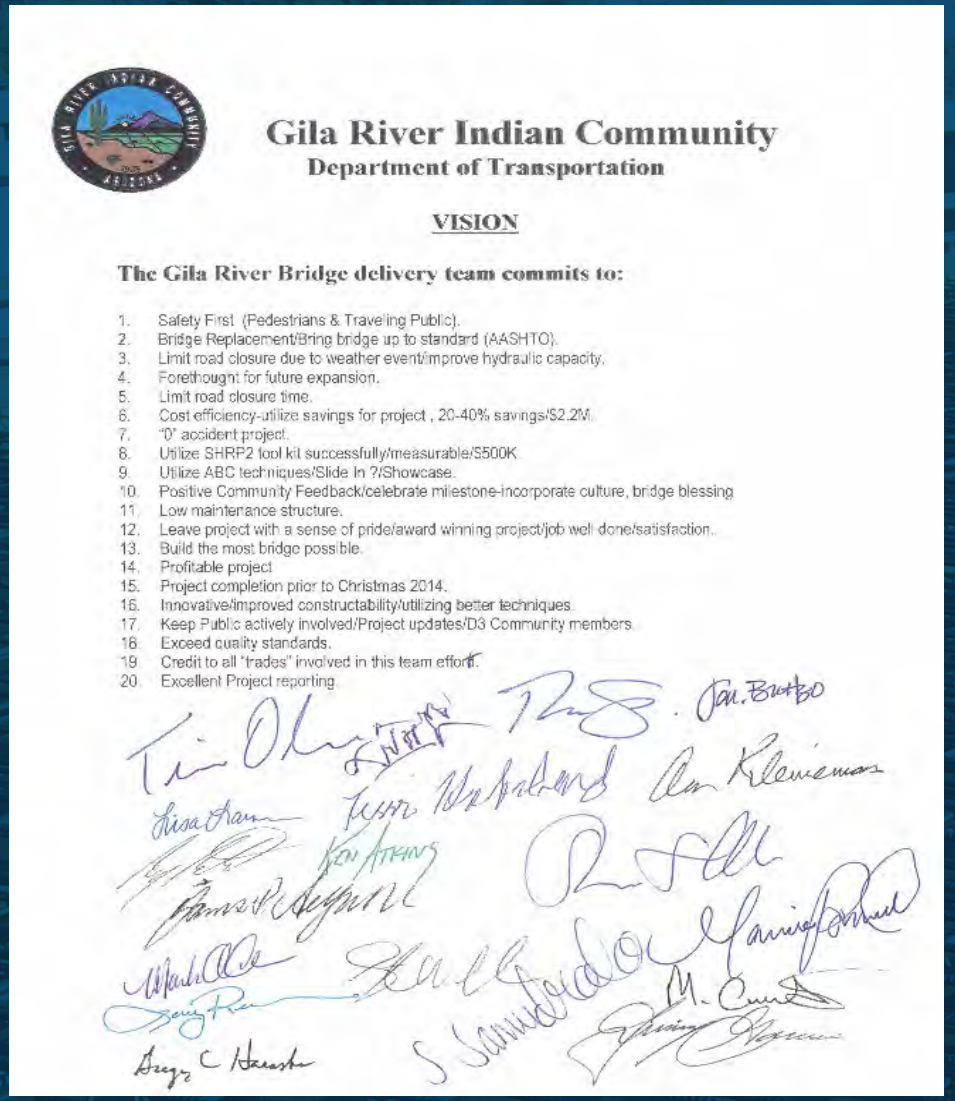
- 140-foot 4 Span Bridge built in 1961
- Structurally Deficient
- Functionally Obsolete
- Bridge Rating Score of 36 out of 100
- Sacaton Road carried over 5000 vehicles per day

Why use CM/GC Contracting Method

- It forces you to Build Trust with Your Partners up Front
- It allows Flexibility with the Design
- It can help Reduce or Redistribute Reduce Risk
- It can Breed Innovation
- It can Streamline Delivery
- It can Generate Cost Savings and/or Time Savings

So how did we do these things at Gila River?

Team Selection, Partnering, and Trust



Gila River Indian Community
Department of Transportation

VISION

The Gila River Bridge delivery team commits to:

1. Safety First (Pedestrians & Traveling Public).
2. Bridge Replacement/Bring bridge up to standard (AASHTO).
3. Limit road closure due to weather event/improve hydraulic capacity.
4. Forethought for future expansion.
5. Limit road closure time.
6. Cost efficiency-utilize savings for project , 20-40% savings/$2.2M.
7. "0" accident project.
8. Utilize SHRP2 tool kit successfully/measurable/$500K
9. Utilize ABC techniques/Slide In ?/Showcase.
10. Positive Community Feedback/celebrate milestone-incorporate culture, bridge blessing
11. Low maintenance structure.
12. Leave project with a sense of pride/award winning project/job well done/satisfaction.
13. Build the most bridge possible.
14. Profitable project
15. Project completion prior to Christmas 2014.
16. Innovative/improved constructability/utilizing better techniques
17. Keep Public actively involved/Project updates/D3 Community members.
18. Exceed quality standards.
19. Credit to all "trades" involved in this team effort.
20. Excellent Project reporting

Flexibility

- Revisited our Bridge Selection Report
- Generated new Alternatives/Approaches
- Utilized Matrix Evaluation (helped with decision making)
- Carried GMP through Alternatives Analysis
- Risk Identification (most Important)

Risk Reduction, and Constructability

- Lateral Slide Precast Mini Girders
- Common Themes During Evaluation
  - Temporary Supports
    - Minimize Throw-away
    - Mitigate Risk (River Flows)
  - Keep it Simple
    - Use available tools vs. buying/making expensive new ones (something you can only get if your contractor is in the room during alternatives analysis and final design)

Risk Avoidance

- Risk Identification
  - River Flows
  - Materials / Techniques / Safety
  - Long-term Performance
- Risk Evaluation & Allocation
  - Value to project
  - Clear understanding of risk assignment and cost implications

Innovation

- Slide System – Keep it Simple
  - Steel on Steel (Lithium Grease or Dish Soap)
  - No Bearings to Walk
  - Simple Fabrication
  - Standard Bearing Plate – Salvage/Reuse
  - Undertook with small Hydraulic Jacks

Streamlined Plans and Aggressive Delivery

- May 2014 – Initiated CM/GC
  - Type/Approach Selection
- July 2014 to August 2014
  - Final Design Production
- September 2014
  - Final GMP / Contract / Final Plans & Detail
- October 2014
  - Commence Construction
- March 2015
  - Completed Construction

Time savings

- Some Quick “Figures”
  - Bridge Capital Cost (GMP) – $2.75M
  - Contingencies/Allowances - ~$0.3M (8%)
- Traffic Impact
  - 9 days + 1 weekend vs. 4-6 Months Closure
    - 14-22 weeks saved
  - 700K vehicle miles vs. 6M to 9M traveled
    - 5M to 8M vehicle miles saved

User Savings

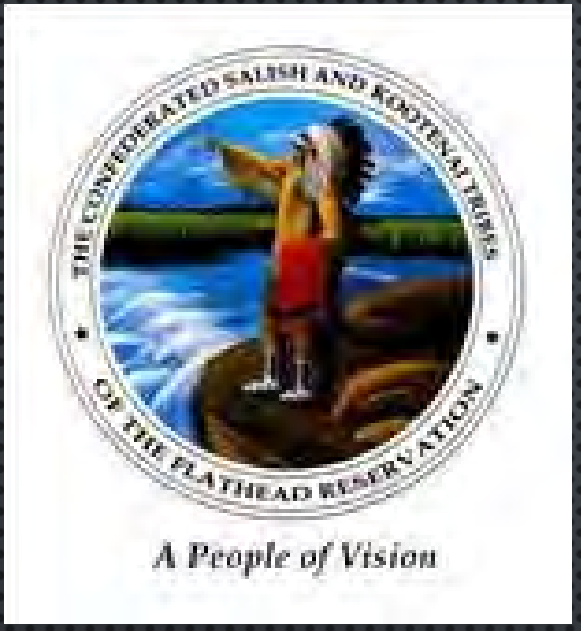
- Traffic Impact
  - 3 hours vs. 24 to 36 hours user time
    - 21 to 33 hours savings per roadway user
  - $0.2M vs. $0.9M to $1.4M
    - Lateral Slide vs. Detour (User Fuel Only Cost)
    - Savings $0.7M to $1.2M

Old Bridge

Built on cast in place girders

Small Hydraulic Jacks

New Bridge



U.S. Department of Transportation
Federal Highway Administration

The Confederated Salish and Kootenai Tribes of the Flathead Nation

CM/GC Bundle of Transportation Projects

FHWA OTT - CM/GC Roundtable Webinar
November 18, 2020

CSKT'S CM/GC PROJECT BACKGROUND

- CSKT worked with FHWA since February, 2018 to position themselves to pilot this project delivery method
- Why?
  - Potential to mitigate risks and foster innovation through the CM/GC method
  - Potential to complete large quantities of similar work across the reservation efficiently

More information on process can be found at:

https://www.fhwa.dot.gov/construction/contracts/acm/cmgc.cfm

CSKT's CM/GC Project Background

- September, 2018: Prepared and solicited proposals
- October, 2018: Opened proposals
- November, 2018: Interviews, then Awarded CM/GC Pilot Project to the selected Construction Manager/General Contractor and Independent Cost Estimator (ICE)

CSKT'S
CM/GC PROJECT BACKGROUND

- November 28 & 29, 2018: Kickoff Meeting
- December, 2018-January 2019: Weekly Meetings, Project selection and design, Cost Estimates by CM and ICE
- February, 2019: Fully Executed CM/GC Contract Agreement including first two Work Packages with Guaranteed Maximum Price

CSKT's CM/GC Project Background

- Additional work packages were added by Contract Modification as they were developed
- Work packages were added with their additional Guaranteed Maximum Price and completion dates
- November, 2020: Completed final work package

CSKT'S CM/GC TEAM

- Owner- The Confederated Salish and Kootenai Tribe
- Design- DJ&A
- Construction Manager/General Contractor- Dick Anderson Construction, Inc.
- Independent Cost Estimator- Stanton Constructability Services, LLC

CM-GC WORK PACKAGE DETAILS

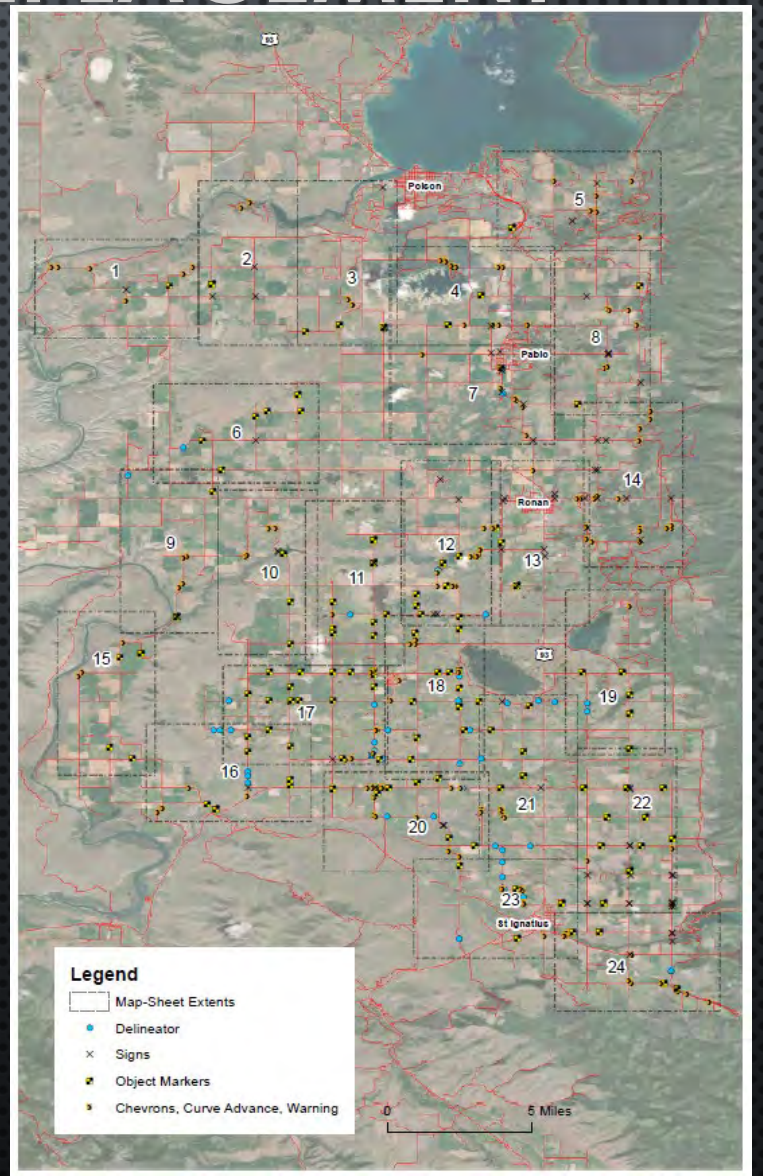
- The Project consisted of eight sub-projects and alternates
  - **1) Mission Valley Sign Installation and Upgrade**
  - **2) Road Maintenance Shop**
  - **3) Reservation Sign Work**
  - **4) Resurfacing/Sealing/Pavement Preservation of Homesite Roads**
  - **5) Mission Valley Guardrail Installation and Upgrades**
  - 6) Crow Creek Bridge Replacement – Eliminated (County rec'd grant)
  - 7) Brushing and Blading Roads – Eliminated (Decided to use own forces)
  - 8) St. Mary's Lake Bridge Replacement- Eliminated (ROW issues)
  - **Alt. Project) Schley Homesite Reconstruction**

RESERVATION SIGN PROJECT

- Removed, repaired, painted and replaced 19 wooden community and reservation signs across the reservation
- Installed New Wooden and Metal Reservation Entrance and Exit Signs
- GMP $219K

Mission Valley Sign Installation and Replacement Project

- Addressed issues identified in CSKT's 2015 Safety Audit
- Replacement of approx. 900 road signs, markers, etc. along Lake County Roads
- GMP $296K

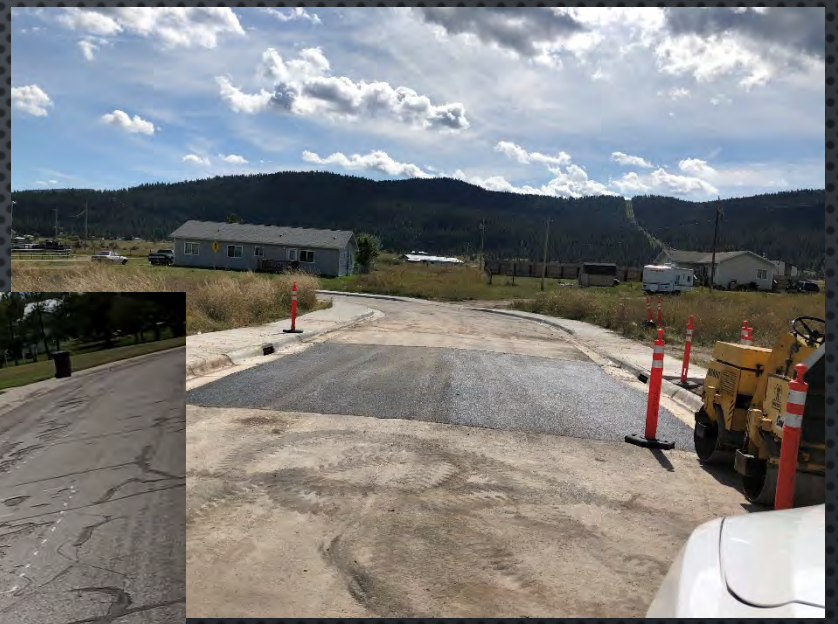


ROAD MAINTENANCE BUILDING IMPROVEMENTS

- MUCH NEEDED STORAGE FOR PLOWS AND ROAD MAINTENANCE
- RENOVATION OF 4,000 SF MAINTENANCE SHOP INCLUDING INSULATION, OVERHEAD DOORS AND LEAN-TO
- GMP $386K

PAVEMENT PRESERVATION OF HOMESITE ROADS

- Work completed at 16 separate Homesite roads across the reservation
- Targeted Crack Seal
- Chip Seal
- Asphalt Patching
- Curb & Gutter Repair
- GMP $986K



MISSION VALLEY GUARDRAILS

- Addressed safety issues identified in CSKT's 2015 Safety Audit
- Replacement and Installation of guardrail at 17 locations including shoulder and bridge approach guardrail
- GMP $560K

SCHLEY HOMESITE PAVEMENT RECONSTRUCTION

- Alternate CMGC Project
- Full Depth Pavement Reclamation
- Aggregate
- New Asphalt Pavement
- Drainage Improvements
- GMP $750K

The Benefits Recognized

- Completed $3.1 Million construction in 2 years
- Much of the work would have taken several contracts expending time and additional funds
- Many roads repaired and signs installed that may not have been addressed if smaller contracts were awarded
- Risk were addressed during design and Cost Estimating to negotiate fair Guaranteed Maximum Price
- CM/GC Team worked very well together learning process and developed relationships

Lessons Learned

- Consider alternative projects when developing broad vision and goals
- Regular team meetings and discussions are critical throughout entire process
- Would consider CM/GC contracting mechanism again if large enough need was anticipated

QUESTIONS?

- Scott B. Johnston, Roads Program Manager
- The Confederated Salish and Kootenai Tribes
- 406-676-2600