



1



2





3

<b>TEAM CONTINUITY</b>  <b>GRANITE</b>	 <p><b>CHRIS BURKE</b> REGIONAL VICE PRESIDENT</p>	 <p><b>BRIAN ROLL</b> PROJECT DIRECTOR</p>	 <p><b>JOHN O'DAY</b> PROJECT MANAGER/QC</p>
	 <p><b>RYAN FLOYD</b> PRECON SERVICES MANAGER</p>	 <p><b>TINA MUDD</b> ENVIRONMENTAL MANAGER</p>	 <p><b>DONAVIN GREENWELL</b> PROJECT SUPERINTENDENT</p>

4



## EXPERIENCE

- Delivered NDOT's first CMAR
- LT 60 Lake Tahoe Basin infrastructure projects
- Innovations to meet 100% GMP success
- Award-winning collaboration



5

## EXPERIENCE

SR-28 LAKE TAHOE  
EAST SHORE TRAIL CMAR



6





7

## PROJECT COMPLEXITIES

- ✓ Limited Construction Season
- ✓ Mountainous Terrain
- ✓ Extreme Environmental Requirements
- ✓ Day & Night Work
- ✓ On & Off Each Week
- ✓ Pressure Pipeline
- ✓ Multiple Stakeholders
- ✓ Access / Staging / Delivery

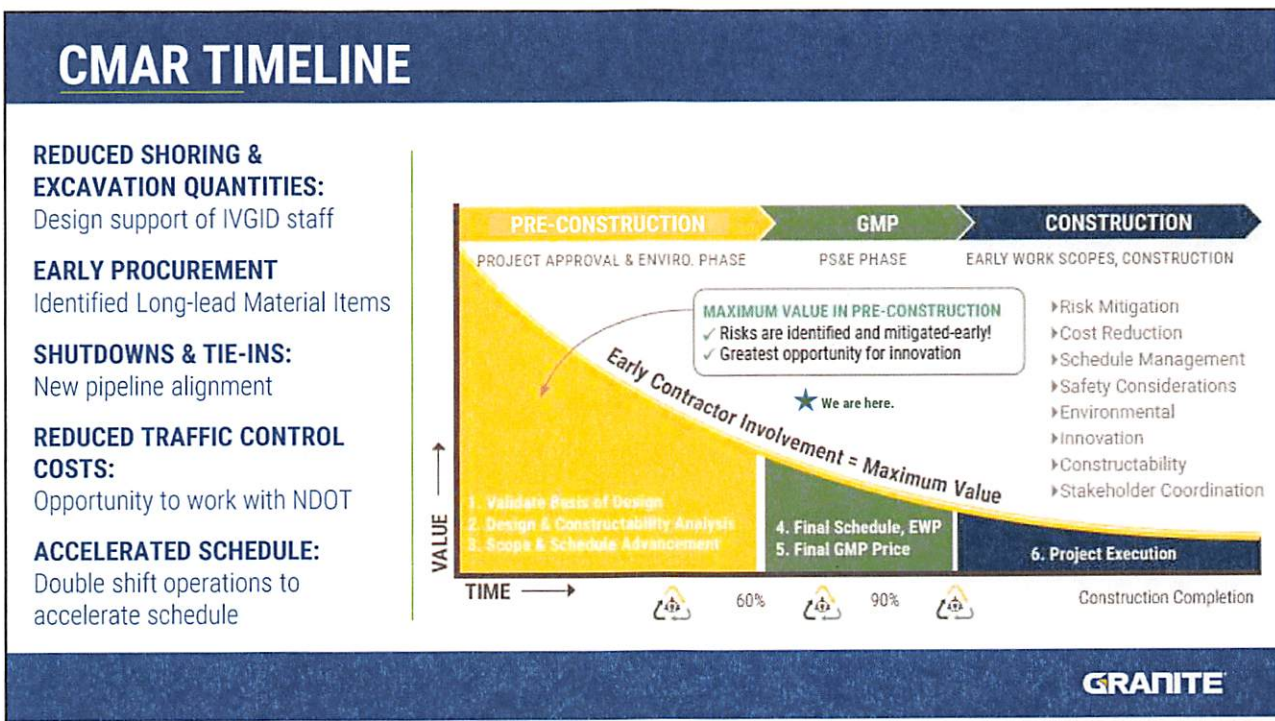
**GRANITE**

8





9



10





11

Estimate Date	2012	2021	10/2021	10/2022
Cost Estimate Level	Pre-Design	Pre-Design	Pre-Design	60% OPCC
Provider	HDR	HDR	HDR / GC	GC
Direct & Indirect Cost	\$12 M	\$16 M	\$33 M	\$58 M
<b>Other Costs Considered:</b>				
Construction Contingencies	20%	20%	20%	12.5%
Design	8%	8%	8%	8%
Administrative	8%	8%	2%	8%
Construction Management	8%	8%	8%	8%
<b>TOTAL ESTIMATED PROJECT COST</b>	<b>\$18 M</b>	<b>\$23 M</b>	<b>*\$46 M</b>	<b>**\$66 M</b>
<b>*Engineer's Estimate vs. Granite's Initial Cost Calibration Estimate</b>				
<b>SCOPE GAP</b>				
- Scope Increases (qty's as much as 145%)				
- Updated pricing with current industry cost				
- Access / Staging / Delivery				
- \$ 7 M of other costs automatically doubled				
<b>**Granite's Initial Cost Calibration Estimate vs. 60% OPCC</b>				
<b>NEW SCOPE (\$9 M)</b>				
- Implementing Temporary Portable Barrier	\$1 M			
- 25% Welded Steel Pipe – NEW	\$2 M			
- 25% DIP (Higher Pressure, Zinc Coatings)	\$0.5 M			
- 50% HDPE Pipe	\$3.5 M			
- Slower productions = increased TC durations	\$2 M			
<b>MACROECONOMIC IMPACTS (\$10 M)</b>				
- Trucking rate increases and fuel surcharges (32% increase from 8/2021)	\$3.5 M			
- 5% year-over-year escalations carried in item cost	\$6.5 M			

12





13

## NEXT STEPS

### Risk Mitigation

ID	Category	Status	Description	Mitigation Strategy	Start	End	Cost (\$)	Impact (\$)	Severity	Frequency	Notes
20	NEOT	Open	Are there any conditions of existing culverts that need to be corrected? What method of repair would NEOT require?	Review conditions of existing culverts (existing conditions of existing culverts) Verify the NEOT provided condition, are in compliance or accurate. Develop strategy for repair to completion.	Jan 6, Schedule	2023	\$ 665,000.00	\$ 131,800.00	1	0.2	16 messages 50 CF E, 4 in 1 1000 LF
21	NEOT	Open	GC Can we use existing culverts to host NEW fiber optic umbilics?	NEP Opportunity?	Jan 6, Schedule	2023	\$ -	\$ -	0	0	
21	NEOT	Open	Full closure of Hwy 29 during shoulder re-asc.	NEP Opportunity?	Jan 6, Schedule	2023	\$ 83,000,000.00	\$ -	0	0	Plugged assumed opportunity cost. (Double production, reduced TC, reduced per week parking required, Open/Grade restrictions)
22	NEOT	Open	NEOT right-of-way staging areas available for proper use at time of construction?	Use VGO property or other location, outside of basin & bottom of US SQ	Cont	25%	\$ 7,317,624.00	\$ 1,629,408.50	0	0	Internal double hauling cost. One reason for not having access to yards ***Analysis in progress***
23	NEOT	Open	NEOT needing to perform maintenance on some existing culverts (Bike Coves)	NEOT to perform culvert cleaning??	Schedule		\$ -	\$ -	0	0	Unknown-NA More detail needed
###	Public	Open	Emergency response - Wildlife/Traffic accident	Emergency Response Plan	Jan 6, Schedule	25%	\$ 11594,000.00	\$ 396,000.00	88	22	GC = \$18,000/day + Teamwork 4 seasons
###	Public	Open	Added requirements to modify traffic control plan/boom	Added for Car	Cont	10%	\$ 1234,066.00	\$ 123,406.60	0	0	Wet Car 4 Seasons
###	Quality	Open	Failed pressure test and leak detected in new pipeline	Develop Testing Procedure and Plan	Jan 6, Schedule	25%	\$ 520,000.00	\$ 100,125.00	10	2.5	1% of overall pipe length = 200 LF = 8875 LF Traffic Control = \$7,000/day x 15 days GC = \$18 x 10 days
###	Stakeholder	Open	Unknown Special Events (Races & Marathons)	Consult Stakeholders Early & Often	Jan 6, Schedule	25%	\$ 516,000.00	\$ 129,000.00	20	5	4 Seasons X 5 Days x 20 Days Traffic Control = \$7,000/day x 20 days GC = \$18 x 20 days
###	Weather	Open	Weather (Thunderstorms / Fresh Plant Events / Average Rainfall)	Account for additional days in CPM Schedule	Jan 6, Schedule	25%	\$ 516,000.00	\$ 129,000.00	20	5	15 days/Season accounted for in CPM Additional 5 Days/Season Traffic Control = \$7,000/day x 5 days x 4 seasons GC = \$18 x 5 days x 4 seasons
	Stakeholder		Unknown TRPA required remediation measures at staging yards		Cont	25%	\$ 100,000.00	\$ 25,000.00	0	0	
	Design		Classification of Cathodic protection system locations, offshore, and depth of anodes	Design detail classification	Cont	10%	\$ 190,000.00	\$ -			
###	Weather	Open	Construction Water Purchase		Cont	10%	\$ -	\$ -	0	0	
							<b>\$ 10,317,526.60</b>	<b>\$ 178,430.00</b>			

14

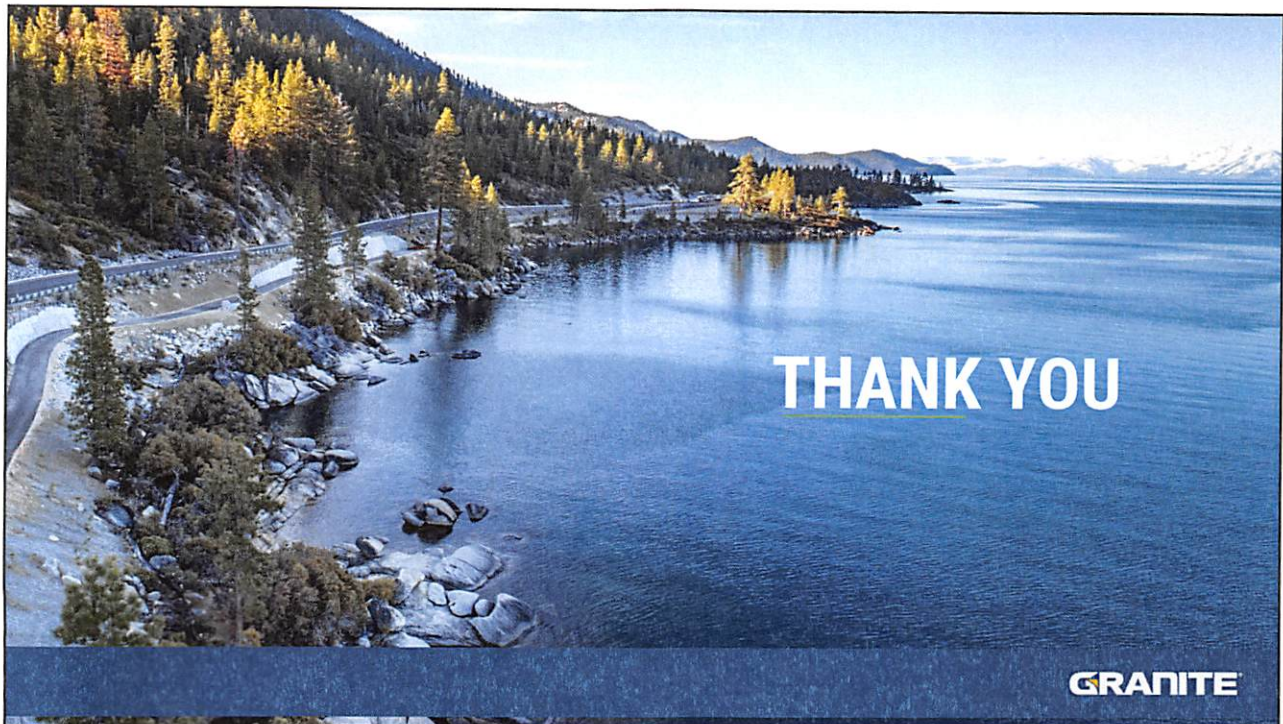


## NEXT STEPS

- Finish Design
- Task Force Meetings w/Key Stakeholders (e.g. NDOT)
- Utilize ICE for Cost Reconciliation = **COST CERTAINTY**
- Advertise for Subcontractor Packages
- EWP (Price/Schedule Certainties) = **SCHEDULE CERTAINTY**
  - Early Procurement
  - Exploration
  - Pothole
  - Ground Penetrating Radar
- **DELIVER BEST VALUE**

GRANITE

15



16