



Date: February 19, 2021

To: Jeff Martin, Gross Reservoir Expansion Project Manager

From: Doug Raitt, Engineering Manager

Subject: Gross Reservoir Expansion Project Schedule

The Gross Reservoir Expansion (GRE) Project schedule represents Denver Water's plan for project delivery adhering to the requirements set forth in the Federal Energy Regulatory Commission's (FERC's) amended order issued on 16-Jul-2020. The order requires Denver Water to start and complete the authorized activities within two years and seven years, respectively, from the 16-Jul-2020 issue date of the order. Timely execution of critical activities is fundamental to Denver Water's plan for compliant project delivery. The following narrative describes the path through dam construction based on design, procurement, permitting, and construction information currently available. Ultimately, the Issued for Construction plans and specifications will be the basis for the Contractor's detailed construction schedule which may vary from current plans.

As shown on the figure on page 2 below, the path through dam construction consists of 1041 approval, necessary property acquisition, local permitting, and construction. The first part of the path, 1041 permit approval, begins with Denver Water's review and response to referral agency comments scheduled for 19-Feb-2021. The submission is followed by a 7-week period for Denver Water and Boulder County to finalize the 1041 permit application on 16-Apr-2021. The path continues through the Land Use Director's determination followed by the Board of County Commissioner's (BOCC) hearing on 27-Jul-2021 with BOCC approval on 10-Aug-2021.

Upon receipt of BOCC approval, the path moves through submittal of 90% design for Gross Dam Road (GDR) to Boulder County for referral and comment prior to Denver Water beginning the property acquisition process for easements along GDR. The acquisition process consists of surveys, appraisals, initial offers, final offers with time allocated for contested acquisitions, if required. Once property acquisition is complete, Denver Water will submit applications and receive permits for roadway construction and stormwater management prior to the start of work on the GDR, anticipated for 07-Jul-2022. GDR construction is planned for about 6 months with a forecasted completion date of 20-Dec-2022.

While GDR improvement is the driver of the longest path through construction, State Highway 72 (SH-72) / GDR intersection construction and dam surface preparation are near-critical construction packages which must also be completed prior to the start of dam foundation excavation. The SH-72 / GDR intersection package has similar permitting and property acquisition predecessors that drive the start of its construction to late Apr-2022 with a forecast completion of 29-Nov-2022. Dam surface preparation mobilization is forecast to start on 11-Mar-2022 to support a construction start date of 01-Apr-2022 with a forecast finish on 16-Dec-2022.

The path continues through foundation excavation from 20-Dec-2022 through 12-Feb-2024 followed by placement of the stilling basin foundation prior to the start of main dam roller compacted concrete (RCC) placement beginning on 15-Arp-2024 and continuing through 04-May-2026. RCC placement is constrained to take place between 15-Apr and 15-Nov each year with seasonal shutdowns planned outside of that window. Once RCC placement is complete, the final structural concrete elements will be installed leading to a forecast for substantial completion on 13-May-2027. Site restoration and demobilization are expected to continue through 08-Jul-2027.

The current planned start date for construction activities, 01-Apr-2022, results in substantial completion in mid-2027. Short delays in the planned start date may cause disproportional delays to the substantial completion date. A large portion of the construction work is weather dependent including foundation excavation, RCC placement and structural concrete placement. As such, if these activities are pushed into non-favorable weather conditions, significant logistical complications can arise. The subsequent cascading effects through the construction schedule would certainly result in a longer total construction period (i.e., ending after mid-2027) and increased costs to Denver Water. Therefore, it is vital that construction activities begin as planned.

Figure: Path Through Gross Reservoir Expansion Construction with 1041 Process

Data Date: 27-Dec-20	Path Th	rough	h Gross Re	eservoir Ex	pansion Construction with 1041 Process Page 1 Run Date: 16-Fe
tivity Name	O Du	riginal uration	Start	Finish	2021 2022 2023 2024 2025 2026 2027 2028 2 1 Q1 Q2 Q3 Q4 Q1
Path Through Gross Reservoir Expansion Construction	1	637	18-Dec-20 A	08-Jul-27	
Denver Water Addresses Referral Comments and Supple	ements Application	19 1	18-Dec-20 A	19-Feb-21	Denver Water Addresses Referral Comments and Supplements Application
Boulder County and Denver Water Referral and Respons	e Period	35	22-Feb-21	09-Apr-21	■ Boulder County and Denver Water Referral and Response Period
Boulder County Accepts Application as Complete		5	12-Apr-21	16-Apr-21	I Boulder County Accepts Application as Complete
Planning Commission Prepares Recommendation		20	19-Apr-21	14-May-21	Planning Commission Prepares Recommendation
Receive Land Use Director's Determination		10	17-May-21	28-May-21	Receive Land Use Director's Determination
Receive BOCC Hearing Date		20	01-Jun-21	28-Jun-21	■ Receive BOC¢ Hearing Date
Boulder County Issues Public Notice of BOCC Hearing		2	29-Jun-21	30-Jun-21	I Boulder County Issues Public Notice of BOCC Hearing
Attend BOCC Hearing		1	27-Jul-21	27-Jul-21	L Attend BOCC Hearing
Receive BOCC Decision		10	27-Jul-21	10-Aug-21	Receive BOCC Decision
90% Design - Boulder County Referral and Comment (SF	1-72 to HQ)	20	10-Aug-21	08-Sep-21	■ 90% Design - Boulder County Referral and Comment (SH-72 to HQ)
Gross Dam Road Property Acquisition Summary (WP2A)	1	180	08-Sep-21	24-May-22	Gross Dam Road Property Acquisition Summary (WP2A)
CDPHE Stormwater Construction Permit (SH-72 to HQ)		30	24-May-22	07-Jul-22	■ CDPHE Stormwater Construction Permit (SH-72 to HQ)
Boulder County Roadway Construction Permit (SH-72 to I	HQ)	30	24-May-22	07-Jul-22	■ Boulder County Roadway Construction Permit (SH-72 to HQ)
SH-72 and GDR Intersection Construction Summary (WP	(4)	150	26-Apr-22	29-Nov-22	SH-72 and GDR Intersection Construction Summary (WP4)
Dam Surface Preparation Construction Summary	1	195	11-Mar-22	16-Dec-22	Dam Surface Preparation Construction Summary
Gross Dam Road Construction Summary (WP2A)		115	07-Jul-22	20-Dec-22	Gross Dam Road Construction Summary (MP2A)
Foundation Excavation Preparation		50	20-Dec-22	02-Mar-23	Foundation Excavation Preparation
Foundation Excavation - Left Abutment	2	200	02-Mar-23	14-Dec-23	Foundation Excavation - Left Abutment
Stilling Basin Excavation		40	14-Dec-23	12-Feb-24	□ Stilling Basin Excavation
Stilling Basin Foundation		30	12-Feb-24	25-Mar-24	■ Stilfing Basin Foundation
RCC Placement Summary	3	320	15-Apr-24	04-May-26	RCC Placement:Summary
Structural Concrete Placement	1	160	05-May-26	13-May-27	Structural Concrete Placer
Demobilization		40	14-May-27	08-Jul-27	☐ Demobilization
Dam Construction Complete		0		08-Jul-27	◆ Daim Construction Comp