



## Board Report

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File #:2016-0235, File Type:Project

Agenda Number:22

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**CONSTRUCTION COMMITTEE  
APRIL 14, 2016**

**SUBJECT: DIVISION 20 PORTAL WIDENING AND TURNBACK FACILITY**

**ACTION: APPROVE FUNDING FOR THE DESIGN PHASE**

**RECOMMENDATION**

CONSIDER:

- A. ESTABLISHING a total budget of \$3.5 million for the **design phase of the Portal Widening and preliminary design of the Turnback Facility at Division 20** to accommodate system capacity need; and
- B. AMENDING the FY16 budget to include \$0.8M for start of design efforts.

**ISSUE**

As part of the Full Funding Grant Agreement for the Purple Line Section 1, the Federal Transit Administration (FTA) has required that Metro undertake certain core-capacity infrastructure improvements to the existing Purple and Red Line systems to operate at improved train frequencies (headways).

To achieve the required headway improvements for both the Metro Red and Purple Lines the subway Portal where trains enter and leave the rail storage and maintenance yard at Division 20 must be widened and track must be modified. In addition to the Portal Widening, a Turnback Facility must be constructed to improve turnaround times for subway trains entering and leaving service at Union Station. Staff is requesting Board authorization of \$3.5 million to establish a project for this work and to amend the FY 16 budget by \$0.8 million to initiate work.

**DISCUSSION**

The Full Funding Grant Agreement requires that core capacity upgrades to the combined Red/Purple Line system that include improved headway capability be achieved by the time that the Metro Purple Line Section 1 Project is opened for service in 2024. Several factors will influence Metro's ability to

design and construct infrastructure needed to achieve the required headway by 2024:

- Funding for the Environmental work, Real Estate, Design and Construction of the Portal and Turnback must be identified and allocated to the project.
- The Project must be environmentally cleared.
- Real estate requirements to temporarily relocate a business in order to construct the portal widening. A temporary location must be identified and brought to appropriate safety and security standards so that the business can proceed with their daily operations.
- Construction of the Portal Widening and Turnback Facility must be performed while the Red and Purple lines are under operation. Protection of existing track, train control and communication systems will be required during the construction process. Limited work windows may also be required to allow for safe operations.
- A track welding area identified in the Purple Line Section 1 contract must be accommodated to prevent delays to the Purple Line Section 1 contract.

In order to meet all of these requirements, staff recommends use of a design-bid-build delivery method (Attachment A). Staff also recommends a phased approach (Attachment B - Preliminary Schedule) for the design, construction and funding of the project as follows:

**Phase 1 - Design of the Portal Widening and Preliminary Design of the Turnback Facility:**

Secure funding of \$3.5M for design of the Portal Widening and preliminary design of the Turnback Facility. Phase 1 will include procurement of a design consultant for 100% design of the Portal Widening and preparation of bid documents for the Portal Widening. Environmental services and construction cost estimate development will also be included as part of the design scope of work. A full Life of Project budget will be established prior to award of a construction contract in phases 2 and 3.

**Phase 2 - Construction of the Portal Widening and 100% Design of the Turnback Facility:**

Secure funding (based on Phase 1 final design) for construction of the Portal Widening, as well as funding for 100% design of the Turnback Facility. Proceed with acquisition of real estate, procurement of a construction management consultant, and construction of the Portal Widening. Complete final design of the Turnback Facility.

**Phase 3 - Construction of the Turnback Facility:** Secure funding (based on Phase 2 final design) for construction of the Turnback Facility. Procure a consultant for construction management of the Turnback Facility and proceed with bid, award and construction of the Turnback Facility.

## **DETERMINATION OF SAFETY IMPACT**

There are no safety impacts as a result of this authorization.

## **FINANCIAL IMPACT**

Upon approval of the recommendations, a project number and Life of Project Budget will be established to execute the design and procurement efforts. The design services budget will be programmed to the FY16 and FY17 budgets under Cost Center 8510 - Construction Procurement, Account number 50316 - Professional and Technical Services and task number 2.2.01 - Preliminary Engineering and Final Design.

Since this is a multi-year project, the cost center manager, project manager, and the Executive Director, Program Management would be responsible for budgeting project costs in future fiscal years. The project expenditure and funding plan for the Design Phase is included in Attachment C.

### **Impact to Bus and Rail Operating and Capital Budget**

The FY16 budget amendment funding for this action will come from Measure R (MR) Admin 1.5%, Proposition A (PA), Proposition C (PC) and TDA Planning sources. The funding sources are required as a result of this effort related to the FFGA Application associated with the Westside Purple Line Extensions (WSE PLE) project. Staff will continue to pursue resolution of this item as it relates to the FFGA requirements. The MR/PA/PC/TDA Planning funds are eligible for planning and preliminary engineering through design. They are not eligible for bus and rail capital and operating expense. They do not affect other Operations or Capital funding sources. No other funding sources were considered.

## **ALTERNATIVES CONSIDERED**

The Board could defer the design and construction of the Portal Widening and Turnback Facility until completion of Sections 2 or 3 of the Purple Line. This approach is not recommended as it has the potential for increased conflicts between operations and construction as more Red and Purple Line trains are introduced into the tunnel by the more frequent headways.

## **NEXT STEPS**

With Board approval, the budget will be amended and staff will initiate the procurement process and design of the Portal Widening. Upon completion of design, staff will identify the necessary funding for construction of the project and return to the Board with a recommended funding plan and schedule

for construction .

**ATTACHMENTS**

Attachment A - Analysis of Design-Bid-Build delivery method

Attachment B - Portal Widening and Turnback Facility Preliminary Phased Schedule


Attachment C - Portal Design Cashflow FY16 and FY107

Prepared by:

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Reviewed by:

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Phillip A. Washington  
Chief Executive Officer



**Metro**

# Interoffice Memo

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**Date** February 9, 2016

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**To** Richard Clarke

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**From** Rick Meade

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**Subject** Portal/Turnback Facility - Analysis of Delivery Method

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Rick,

Design-Build and Design-Bid-Build delivery methods were considered for Portal Widening and Turnback Facility.

The advantages of design-build delivery are time savings gained by starting construction before the design is complete and transfer of risk to the contractor. Disadvantage of this delivery method for this project are highlighted by three primary challenges:

1. Phasing and access to the work due to the requirement to build this project while Red and Purple lines are under operation.
2. Real Estate is in conflict with the project boundaries and will need to be acquired on a temporary basis.
3. Access is constrained to the work area due to requirements of the Purple Line Section 1 Contract.

Design-Bid-Build delivery approach addresses these challenges.

1. Construction of the Portal and Turnback will be conducted while the Red Line is operating. Phasing of the construction will be critical to prevent impacts to operations. A completed design will provide greater understanding of phasing and necessary protection of existing facilities for utility conflicts, demolition, excavation and building of infrastructure directly adjacent to working rail lines. A fully designed project will provide a complete picture of physical coordination with Operations through each construction activity.
2. The tunnel portion of the project is located below an existing towing company. In order to construct the Portal Widening, the towing company will have to be relocated temporarily. A design-bid-build approach will allow the design of shoring, excavation and construction of the tunnel structure to more clearly define temporary property, schedule and phasing requirements.

In addition, the towing company must be moved temporarily to another property as a temporary facility. A Design-Bid-Build approach will allow time during the design phase for Metro to secure another facility.

3. Purple Line Section 1 has committed to providing a laydown and rail welding area in a location that conflicts with construction of the Turnback Facility. This commitment adds time to the Portal/Turnback schedule that negates any time gained by a Design-Build strategy and provides very adequate time to develop a complete design for the project.

Staff recommends a Design-Bid-Build delivery approach.



# Attachment C

**Division 20 Portal Widening and Preliminary Engineering for Turnback**

Cash Flow FY16 and FY17

Item							FY 16	FY 17
	SCC	Task Number	Cost Center	Account Number	Element of Work	Division 20 Portal Widening		
1	80	2.2.01	8510	50316	Design & PE (Portal)	\$ 2,500,000	\$ 500,000	\$ 2,000,000
2	80	3.1.01	8510	Various	Metro Staff Labor (Ops, Wayside, IT, Engr, Comm)	\$ 1,000,000	\$ 300,000	\$ 700,000
					<b>FY Totals</b>	<b>\$3,500,000</b>	<b>\$ 800,000</b>	<b>\$ 2,700,000</b>