# ENVIRONMENTAL RE-EVALUATION CONSULTATION

**Note: The purpose of this worksheet is to assist sponsoring agencies in gathering and organizing materials for re-evaluations required under the National Environmental Policy Act (NEPA). It is designed to provide FTA with information needed to do a re-evaluation. In lieu of the worksheet, the sponsoring agency may submit the same information in a different format. Submission of the worksheet by itself does not meet NEPA requirements. FTA must concur in writing with its determination and/or the sponsoring agency's NEPA recommendation. Contact the FTA Region 10 office at (206) 220-7954 if you have any questions regarding this worksheet. We strongly encourage you to contact us to discuss your project changes before you fill out this worksheet.**

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|---|---|
| *For Agency Use*<br>*Date Received:* | |
| *Recommendation by Planner or Engineer:*<br>☐ *Accept* ☐ *Return for Revisions*<br>☐ *Not Eligible* | *Reviewed By:*<br>*Date:* |
| *Comments:* | |
| *Concurrence by Regional Counsel:*<br>☐ *Accept Recommendation* ☐ *Return with Comments* | *Reviewed By:*<br>*Date:* |
| *Comments:* | |
| *Concurrence by Approving Official:* | *Date:* |

Please answer the following questions, fill out the impact chart and attach project area and site maps. Using a site map from the previously approved NEPA document, show project changes using a different color. Include additional site maps to help reviewer understand project changes.

**PROJECT TITLE**
Madison Street Bus Rapid Transit (BRT) Project

**LIST CURRENT, APPROVED ENVIRONMENTAL DOCUMENTS (e.g. EIS/ROD, EA/FONSI, BA, RE-EVALUATION, etc.) If Re-evaluation, briefly describe.**

**Title:** Madison Bus Rapid Transit (BRT) NEPA Re-evaluation **Date:** May 3, 2019
**Type and Date of Last Federal Action:** NEPA Documented Categorical Exclusion, December 27, 2017

**Title:** ESA Biological Evaluation Letter of No Effect Addendum **Date:** April 16, 2019
**Type and Date of Last Federal Action** ESA Biological Evaluation Letter of No Effect**,** September 9, 2016

**Title:** **Date:** **Type and Date of Last Federal Action**

**HAS THE MOST CURRENT AND OTHER PERTINENT APPROVED ENVIRONMENTAL DOCUMENTS BEEN *RE-READ* TO COMPARE PROPOSED PROJECT CHANGES?**

☐ **NO (STOP! The most current approved environmental document MUST be re-read prior to completing a re-evaluation.)**
☒ **YES** **NAME:** Madison Street Bus Rapid Transit NEPA Documented Categorical Exclusion

**DATE:** December 2017 **BY**: Josh Shippy & Sandra Gurkewitz, December 2018

**IS THE PROJECT CURRENTLY UNDER** ☒ **DESIGN** **OR** ☐ **CONSTRUCTION?**

**REASON FOR RE-EVALUATION**

Since publication of the DCE, SDOT will now utilize diesel hybrid buses to meet the operational needs of the project. As a result, only minor modifications to the existing Overhead Contact System (OCS) are required and the Traction-Powered System Substation (TPSS) is no longer required, resulting in a large reduction in the number of new poles and wires to be installed. OCS poles would still be required at their current locations to support existing Metro trolley bus routes. Some OCS poles would need to be removed and replaced to accommodate construction of the Madison BRT Project (e.g., due to channelization changes, curb bulbs, or a new lane of roadway). Construction has been delayed 2 years from 2018 to 2020 due to funding constraints and to identify an alternative project fleet, and therefore the service start date has also been delayed 2 years from 2020 to 2022. In addition, as the design has been further refined and developed, two station locations have been adjusted. Intersection design modifications, signal phases, and green time adjustments at signals have all been refined in order to optimize operation of the BRT service.

**DESCRIPTION OF PROJECT CHANGES OR NEW INFORMATION**

## Detailed Project Description

Describe the project and explain how it satisfies the purpose and need identified in Part I.

The City of Seattle's Department of Transportation (SDOT) proposes to provide new Bus Rapid Transit (BRT) service on Madison St between 1st Ave and Martin Luther King, Jr. Way E (MLK Jr. Way E.), Spring St between 1st Ave and 9th Ave, and 1st Ave and 9th Ave between Madison St and Spring St as part of the Madison Street Bus Rapid Transit (Madison BRT) Project (Figures 1 and 2). The Madison BRT Project would operate the diesel hybrid buses Monday through Saturday from 5 a.m. to 1 a.m. and on Sundays and holidays from 6 a.m. to 11 p.m. Buses would run every six minutes between 6 a.m. and 7 p.m. on weekdays and Saturdays, and every 15 minutes during all other hours of operation. Project elements include:

- Nine sixty-foot diesel hybrid buses;
- Approximately 10 new and 40 replacement OCS poles;
- Eleven BRT station areas with 21 directional platforms;
- 2.6 miles of Transit Only Lanes (TOL) and Business Access and Transit (BAT) lanes replacing parking or general purpose lanes (this includes replacement of 0.18 miles of exiting BAT lanes and TOLs on Spring St after new pavement is installed);
- Transit Signal Priority (TSP) and Adaptive Traffic Signal Control at 23 intersections in addition to a transit queue jump signal that was installed at the intersection of Spring St and 6th Ave in the Spring of 2017;
- 8.3 lane-miles of full-depth Portland Cement Concrete Pavement;
- 2.6 lane-miles of Warm Mix Asphalt pavement mill and overlay;
- 15,000 square yards of sidewalk repair or replacement;
- 0.67 miles of bicycle lanes, including 0.23 miles of existing bicycle lanes on Spring St between

1st Ave and 6th Ave to be replaced after new pavement is installed; and

- Approximately 86 new trees and removal of approximately 43 existing trees (to meet the City's 2-to-1 replacement requirements).

**Purpose and Need**

The Madison St corridor is one of seven High Capacity Transit (HCT) corridors identified for priority implementation in the City of Seattle's 2016 Transit Master Plan Update (TMP). The purpose of the Madison BRT Project is to improve transit capacity, travel time, reliability, connectivity, comfort, visibility, and legibility in the Madison St corridor, while also making related improvements to pedestrian and bicycle access to the corridor, and improving the streetscape and public realm. In so doing, the project will improve overall mobility in a dense and rapidly developing corridor that spans diverse neighborhoods.

Madison Street BRT provides a vital link in the region's high-capacity transit network, with transfers to the Seattle Ferry Terminal at Colman Dock via the Marion St pedestrian bridge, the future Center City Connector Streetcar on 1st Ave, the 3rd Ave Transit Spine, numerous regional transit opportunities on King County Metro routes, Link light rail via the University St Station, the First Hill Streetcar on Capitol Hill, and the King County Metro route 48 on 23rd Ave. The primary public transit providers in the service area are: King County, providing local bus service and passenger-only ferry service; Sound Transit (ST), offering ST Express regional bus service, Link light rail, and Sounder Commuter Rail providing regional rail service; Community Transit, providing commuter bus service; Kitsap Transit, providing passenger-only ferry service; the City of Seattle, owner of the Seattle Streetcar including the future Center City Connector Streetcar, and the Washington State Department of Transportation (WSDOT), operating ferry service to and from the Seattle Ferry Terminal at Colman Dock as part of the Marine Highway System.

Despite the intensity of existing bus service along Madison St and east-west arterials, there is little continuous transit service from downtown Seattle to the northern part of the Central Area along any one of the corridors. King County Metro Routes 2, 3, and 4 provide service from downtown Seattle to the Central Area, but serve points over one-half mile from Madison toward the east edge of the neighborhood (Route 2 operates on Union St, which crosses MLK Jr. Way 0.75 miles south of Madison St. Routes 3 and 4 operate on Cherry St, which crosses MLK Jr. Way one-mile south of Madison St). Furthermore, services that do operate on portions of Madison St (Metro Routes 11 and 12) are at or near capacity (e.g., maximum passenger load exceeds seated capacity on over 80% of AM peak trips traveling on Madison St between the 3rd Ave Transit Spine and First Hill). These conditions all point to the need for transit service that will provide a continuous connection between Seattle's downtown, First Hill and Central Area (Central District) neighborhoods.

**Project Location**

The project site is located in Seattle, Washington (Figures 1 and 2). The 4.6-mile roundtrip route will begin and end at MLK Jr. Way E in the east. Figure 2 shows that from MLK Jr. Way E the Madison BRT Project will head west on Madison St for 2.3 miles to 1st Ave, head north on 1st Ave for 290 feet, head east on Spring St for 0.4 mile, south on 9th Ave for 290 feet, and head east on Madison St for 1.8 miles.

**Changes from the 2017 NEPA DCE**

**Fleet Change** - Originally, electric trolley buses (ETBs) were proposed for the Madison BRT route. However, the supplier informed the City that the standard ETB would not meet King County Metro's requirements. The supplier was unable to provide functional ETBs within the project schedule; therefore, in conjunction with King County Metro, the City has decided to use diesel hybrid buses.

The change in fleet does not affect the pavement sections planned for the corridor, which are designed to City standard pavement sections for bus traffic. The weight of the diesel hybrid buses is within the

normal range for this design standard.

**Change in Overhead Contact System (OCS) Poles** - Originally, 174 new and 86 replacement poles were required to power the OCS in the following areas:

- Spring St – 1st Ave to 3rd Ave and 7th Ave to 9th Ave;
- Madison St – 19th Ave to MLK Jr. Way;
- MLK Jr. Way – Madison St to Harrison St/Arthur Place; and
- Arthur Place/Harrison St – layover area.

The change to diesel buses eliminates the need to expand the OCS. However, modifications are necessary to maintain the existing OCS for operation of existing electric trolley bus routes and to maintain flexibility in operation. As a result, the number of new and replacement poles has been greatly reduced to the following:

- The project will no longer require the addition of new OCS poles for the BRT service.
- Approximately 10 new poles will be required due to changes in channelization on Madison and Union between 11th Ave and 13th Ave.
- There are approximately 40 existing poles that need to be relocated, often within a few feet of the original pole location, to maintain the existing overhead catenary system due to changes in channelization. Some locations will be adjusted slightly during replacement due to changes in channelization.

**Change in Overhead Contact System (OCS) Wires** - Originally, 1.2 miles of new OCS wire were proposed to support the electric trolley buses in the following areas:

- Spring St – 1st Ave to 3rd Ave and 7th Ave to 9th Ave
- Madison St – 19th Ave to MLK Jr. Way
- 1st Ave and 9th Ave – Madison St to Spring St
- MLK Jr. Way – Madison St to Harrison St/Arthur Place

The project will no longer require the addition of this new OCS wire for the BRT service.

The changes in channelization on Madison between 11th Ave and 13th Ave/Union require modifications to the OCS wire. To minimize the modifications required, Metro evaluated the necessary routing required to maintain the operational needs of the existing routes and identified modifications to OCS to accommodate left turns at the 11th Ave and 13th Ave intersections with E Union St in lieu of modifications to OCS on Madison St.

**Change in Power Source** - A Traction-Powered System Substation (TPSS) was originally proposed on the corner of Madison St and E John St to support the new OCS. Because the new OCS was eliminated by switching to diesel hybrid buses, the TPSS is no longer required and will not be constructed.

**Schedule Change** - Construction has been delayed 2 years from 2018 to 2020 due to funding constraints and additional time needed to identify an alternative project fleet (because of change in vendor ability to provide electric-trolley fleet). Subsequently, service start has also been delayed 2 years from 2020 to 2022.

**1st Avenue Station Location Change** - Madison BRT was to share the 1st Ave station with Center City Connector (CCC) streetcar. It was assumed that this station would be completed by the CCC project before the Madison BRT was operational. Due to delays in the CCC schedule, Madison BRT will be completed first. The current Madison BRT design will construct a station curb side on 1st Ave in a

similar location as the initially proposed center loading platform. Buses will operate in the same route described in the 2017 DCE (See Figure 1). If and when the CCC project is constructed, the bus route would use Western Ave as a detour route with a temporary stop on Western Ave at a location to be determined between Madison St and Spring St. At that time, further evaluation will be completed by the CCC project to determine where on 1st Ave the final station location would be – either on the center platform or curb side. Funding to move the King County Metro kit of parts would also be included in that analysis.

**MLK JR. Way Station Location Change** - The Madison BRT easternmost station was to be located at MLK Jr. Way. The stop has been moved to 27th Ave at Metro's request so RapidRide customers could easily transfer to the Route 11, which currently stops at 27th Ave and serves Madison Park.

**Stormwater Changes** – As stated in the 2017 DCE, the project will meet the 2016 Seattle Stormwater Code (Seattle Municipal Code and manual (SMC), Chapter 22) which includes flow control, water quality, and on-site stormwater requirements. Table 4 of the DCE lists the planned detention facilities within Madison St. Seattle Public Utilities (SPU) has since confirmed that their existing conveyance system and detention facility at Washington Park has capacity to provide flow control for runoff from Basin 5B. The project will also use the fee-in-lieu option for alternative compliance for Basin 5A flow control, and as such, the planned detention facilities in Basin 5 have been eliminated from the project.

Replaced pavement quantities have increased in Sub-basin 3B, requiring an additional four-foot diameter, 150-foot long detention pipe located in Pine St, at Madison St and 16th Ave. One proposed detention tank will be moved from Madison St at 10th Ave to within 10th Ave just north of Madison Ave.

The detention pipe in Basin 4 has been shifted from being located on Madison St between 13th Ave and 14th Ave, to Madison St between 12th Ave and 13th Ave.

**HAVE ANY NEW OR REVISED LAWS OR REGULATIONS BEEN ISSUED SINCE APPROVAL OF THE LAST ENVIRONMENTAL DOCUMENT THAT AFFECTS THIS PROJECT? If yes, please explain.**

☒ **NO**
☐ **YES**

**IS THE LIST OF THREATENED AND ENDANGERED SPECIES (NMFS AND USFWS) MORE THAN 6 MONTHS OLD?**

☐ **NO**
☒ **YES (STOP! Endangered Species lists and analysis MUST be updated.)** The updated ESA species list documentation is attached.

**WILL THE NEW INFORMATION HAVE THE POTENTIAL TO CAUSE A CHANGE IN THE DETERMINATION OF IMPACTS FROM WHAT WAS DESCRIBED IN THE ORIGINAL ENVIRONMENTAL DOCUMENT FOR ANY OF THE AREAS LISTED BELOW?** For each impact category, please indicate whether there will be a change in impacts. For all categories with a change, continue to the table at the end of this worksheet and provide detailed descriptions of the impacts as initially disclosed, new impacts and a discussion of the changes. The change in impact may be beneficial or adverse.

| | | |
|---|---|---|
| **Transportation** | ☒ **Yes** | ☐ **No** |
| **Land Use and Economics** | ☒ **Yes** | ☐ **No** |
| **Acquisitions, Displacements, & Relocations** | ☒ **Yes** | ☐ **No** |

| | | |
|---|---|---|
| **Neighborhoods & Populations (Social)** | ☐ **Yes** | ☒ **No** |
| **Visual Resources & Aesthetics** | ☒ **Yes** | ☐ **No** |
| **Air Quality** | ☒ **Yes** | ☐ **No** |
| **Noise & Vibration** | ☒ **Yes** | ☐ **No** |
| **Ecosystems (Vegetation & Wildlife)** | ☐ **Yes** | ☒ **No** |
| **Water Resources** | ☐ **Yes** | ☒ **No** |
| **Energy & Natural Resources** | ☒ **Yes** | ☐ **No** |
| **Geology & Soils** | ☐ **Yes** | ☒ **No** |
| **Hazardous Materials** | ☐ **Yes** | ☒ **No** |
| **Public Services** | ☐ **Yes** | ☒ **No** |
| **Utilities** | ☒ **Yes** | ☐ **No** |
| **Historic, Cultural & Archaeological Resources** | ☒ **Yes** | ☐ **No** |
| **Parklands & Recreation** | ☒ **Yes** | ☐ **No** |
| **Construction** | ☒ **Yes** | ☐ **No** |
| **Secondary and Cumulative** | ☒ **Yes** | ☐ **No** |

**Will the changed conditions or new information result in revised documentation or determination under the following federal regulations?**

| | | |
|---|---|---|
| **Endangered Species Act** | ☒ **Yes** | ☐ **No** |
| **Magnuson-Stevens Act** | ☐ **Yes** | ☒ **No** |
| **Farmland Preservation Act** | ☐ **Yes** | ☒ **No** |
| **Section 404-Clean Water Act** | ☐ **Yes** | ☒ **No** |
| **Floodplain Management Act** | ☐ **Yes** | ☒ **No** |
| **CERCLA (Hazardous Materials)** | ☐ **Yes** | ☒ **No** |
| **Section 106 National Historic Preservation Act** | ☒ **Yes** | ☐ **No** |
| **Uniform Relocation Act** | ☐ **Yes** | ☒ **No** |
| **Section 4(f) Lands** | ☐ **Yes** | ☒ **No** |
| **Section 6(f) Lands** | ☐ **Yes** | ☒ **No** |
| **Wild & Scenic Rivers** | ☐ **Yes** | ☒ **No** |
| **Coastal Barriers** | ☐ **Yes** | ☒ **No** |
| **Coastal Zone** | ☐ **Yes** | ☒ **No** |
| **Sole Source Aquifer** | ☐ **Yes** | ☒ **No** |
| **National Scenic Byways** | ☐ **Yes** | ☒ **No** |
| **Other** | ☐ **Yes** | ☒ **No** |

**If you checked yes to any of these, describe how the changes impact compliance and any actions needed to ensure compliance of the new project:** Document updates for Endangered Species Act and Section 106 compliance are attached.

**Will these changes or new information likely result in substantial public controversy?**
☐ **Yes** ☒ **No**

| **Comments:** |
|---|

**COMMENTS:**

**CONCLUSIONS AND RECOMMENDATIONS:**

**LIST OF ATTACHMENTS**:

- ESA Update Listing
- Transportation Technical Memorandum Update
- Air Quality Discipline Report Addendum
- Noise Discipline Report Addendum
- Energy Technical Memorandum Addendum
- Supplemental Cultural Resources Assessment

**SUBMITTED BY:**
By signing this, I certify that to the best of my knowledge this document is complete and accurate.

| Name<br><br>Title | Date |
|---|---|

Submit two paper copies of this form, attachments, and a transmittal letter recommending a NEPA finding to the address below. Or you may submit one electronic version to fta.tro10mail@dot.gov. When the document is approved, FTA may request additional copies.

Federal Transit Administration, Region 10
915 2nd Avenue, Suite 3142
Seattle, WA 98174-1002

phone: (206) 220-7954
fax: (206) 220-7959

| Impact Category | Impacts as Initially Disclosed | New Impacts | Change in Impacts |
|---|---|---|---|
| **Transportation** | ***Vehicle Travel Times***<br>• Westbound vehicle travel time would increase by approximately 2.1 minutes.<br>• Eastbound vehicle travel time would increase by about 2.1 min.<br>***Transit Travel Times***<br>• Westbound transit travel time would be reduced by about 7.6 minutes.<br>• Eastbound would be reduced by more than 5 minutes.<br>***Intersection LOS***<br>• The 2017 analysis showed that all intersections would operate at an acceptable LOS with mitigation.<br>***Emergency Vehicle Access***<br>• Changes in emergency vehicle access and routes to hospitals located on the BRT route. | ***Vehicle Travel Times***<br>• Green times have been adjusted at multiple intersections.<br>***Transit Travel Times***<br>• Green times have been adjusted at multiple intersections.<br>***Intersection LOS***<br>• Intersection design modifications at 10th Ave/Madison St, 11th Ave/Madison St, and 14th Ave/Madison St intersections.<br>• Signal phasing changes at 9th Ave/Spring St, 12th Ave/Madison St, and 13th Ave/Madison St intersections.<br>• Green time adjustments at signalized intersections along Madison and Spring Sts to reduce BRT delays.<br>• Re-optimization of traffic signal offsets at all signalized intersections outside of downtown Seattle.<br>• Signal detection added on cross streets.<br>***Construction***<br>• 2-year construction delay; new construction schedule is 2020 to 2022.<br>***Emergency Vehicle Access***<br>• No new impacts are anticipated from those described in the 2017 DCE. | ***Vehicle Travel Times***<br>• Westbound vehicle travel time in the PM peak would increase by 2.1 minutes over the 2017 design, resulting in an overall increase of 4.2 minutes over the 2019 No-Build condition.<br>• Westbound vehicle travel time in the AM peak would decrease by 1.1 minutes over the 2017 design, resulting in an overall increase of 2.1 minutes over the 2019 No-Build condition.<br>• Eastbound vehicle travel time in the PM peak would increase by 1.8 minutes over the 2017 design, resulting in an overall increase of 3.9 minutes over the 2019 No-Build condition.<br>• Eastbound vehicle travel time in the AM peak would decrease by 1.4 minutes over the 2017 design, resulting in an overall increase of 1.1 minutes over the 2019 No-Build condition.<br>***Transit Travel Times***<br>• There would be no new significant impacts from those identified in the 2017 DCE.<br>***Intersection LOS***<br>• The updated Synchro analysis shows that all intersections are expected to continue to operate at acceptable LOS. See Table 1 of the attached updated Traffic Operations Memo for a breakout of the changes by intersection. |

| Impact Category | Impacts as Initially Disclosed | New Impacts | Change in Impacts |
|---|---|---|---|
| | | ***Station Location***<br>• Construct a curb side station on 1st Ave instead of the center loaded platform.<br>• Construct easternmost station at 27th Ave instead of MLK Jr. Way.<br>• Please see the updated Traffic Operations Memo for more detail | ***Construction***<br>• There would be no peak hour traffic volume changes due to the later construction schedule.<br>***Station Location***<br>• Peak hour traffic volume would not be affected by station location changes.<br>• Please see the updated Traffic Operations Memo for more detail<br>• There would be no new significant impacts from those identified in the 2017 DCE. |
| | | | |
| **Land Use and Economics** | • One new traction-powered system substation (TPSS) installed on a King County parcel at Madison St/John St. | • No TPSS is proposed, so no title transfer is required for that parcel. | • The King County parcel is no longer needed for the project.<br>• Impacts would be reduced from those identified in the 2017 DCE. |
| | | | |
| **Acquisitions, Displacements, & Relocations** | • A title transfer would be required between County departments for acquisition of the TPSS site on the northeast corner of the intersection of Madison St and John St (2401 Madison St). | • No TPSS is proposed, so no title transfer is required for that parcel. | • The King County parcel is no longer needed for the project, so the impact is eliminated.<br>• Impacts would be reduced from those identified in the 2017 DCE. |
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| Impact Category | Impacts as Initially Disclosed | New Impacts | Change in Impacts |
|---|---|---|---|
| **Neighborhoods & Populations (Social)** | • Construction related impacts would occur in the immediate vicinity of the project site. Construction would be sequenced so as to move along the project corridor, which would shorten the duration of impacts in any one area.<br>• No minority or low-income populations would be disproportionately affected, nor would the project disrupt underlying community cohesion or hinder access to key services. | • No new impacts are anticipated from those described in the 2017 DCE. | • No change in impacts are anticipated from those described in the 2017 DCE. |
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| **Visual Resources & Aesthetics** | • 110 new OCS poles and wire installed in areas with no existing OCS poles or wire. This includes on Spring St from 1st to 3rd Aves and from 7th to 9th Aves and on Madison St from 19th Ave to the layover area.<br>• 64 new OCS poles will be added in areas with existing OCS to meet additional load requirements. This includes on Madison between 1st Ave and 19th Ave, Spring between 3rd Ave and 7th Ave, 9th between Spring and Madison, and 1st between Madison and Spring.<br>• 86 existing OCS poles would be replaced. | • The project will no longer require the addition of new OCS poles and wires for the BRT service.<br>• Approximately 10 new poles will be required on Madison and Union between 11th Ave and 13th Ave due to changes in channelization.<br>• Approximately 40 existing OCS poles will be replaced to maintain the existing bus system due to changes in channelization. | • The project changes result in 210 fewer new and replaced poles.<br>• Impacts would be reduced from those identified in the 2017 DCE. |
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| Impact Category | Impacts as Initially Disclosed | New Impacts | Change in Impacts |
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| **Air Quality** | • CO modeling results indicated no violations of the CO 1-hour or 8-hour ambient standards under any of the scenarios.<br>• Project operation would not result in significant CO impacts based on the results of the hotspot analysis. | • The change from all-electric to a diesel hybrid bus fleet would result in a slight increase in vehicular running exhaust and idling emission rates.<br>• Project design refinements resulted in some change in peak hour turning movements compared to the 2017 DCE.<br>• Please see Air Quality Addendum for more detail. | • As a result of the change in peak hour traffic volumes and bus fleet type, the Environmental Protection Agency (EPA) MOVES2014 model (version 20151201) was used to re-estimate CO emission rates. The emissions rates were used with the CAL3QHCR model to estimate peak 1-hour and 8-hour CO concentrations at receptors located near these intersections. The modeling results indicate no violations of the standards.<br>• Although the change in fleet vehicles would result in an increase in vehicle emissions, the net benefit of the project would still result in lower emissions than under current conditions.<br>• The FTA GHG Emissions tool estimated that the project would result in a net reduction of ~75 metric tons of $CO_2$ equivalent as compared to the No Action alternative.<br>• There would be no new impacts from those identified in the 2017 DCE.<br>• Please see Air Quality Addendum for more detail. |
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| Impact Category | Impacts as Initially Disclosed | New Impacts | Change in Impacts |
|---|---|---|---|
| **Noise & Vibration** | • Noise and vibration impacts are expected to be less than significant for all land use categories.<br>• Noise produced by the proposed TPSS is expected to be minimally audible when standing at the edge of the site during the quietest periods of the night. | • Due to the change of bus type from electric to diesel hybrid, there is an increased potential for adverse impacts to Land Use Category 2 receivers.<br>• The TPSS is no longer required for the project, thus would not create any new noise.<br>• Please see the Noise and Vibration Addendum for more detail. | • Due to the greater potential for adverse impacts with the 2018 PD design, noise measurements were conducted at locations where Land Use Category 2 receivers are located to refine the results from the 2016 analysis.<br>The additional modeling showed no new significant impacts from those identified in the 2017 DCE.<br>• Potential impacts would be reduced with elimination of the TPSS.<br>• Please see the Noise and Vibration Addendum for more detail. |
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| **Ecosystems (Wildlife & Vegetation)** | • The September 2016 Biological Assessment Letter of "No Effect" concluded that the project would have no effect on any ESA-listed species or on any designated critical habitat for any listed species. Similarly, it concluded that the project would have no adverse effect on designated essential fish habitat. | • The project is changing the bus type from electric to diesel hybrid.<br>• Since the Letter of "No Effect" was written in September 2016 the North American Wolverine has been proposed as Threatened and the Gray Wolf has been proposed as Endangered.<br>• An updated Letter of "No Effect" was prepared as part of this NEPA re-evaluation to include these new species. | • While the change from electric buses to diesel hybrid may result in incremental change in noise and emissions impacts, it would not affect any ESA-listed species or their critical habitat.<br>• The project will have no effect on the North American Wolverine or the Gray Wolf or their habitat.<br>• No change in impacts are anticipated from those described in the 2017 DCE. |
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| Impact Category | Impacts as Initially Disclosed | New Impacts | Change in Impacts |
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| **Water Resources** | • Stormwater detention and water quality treatment facilities would be installed in accordance with the City's Stormwater Code and in compliance with the City's NPDES Municipal Stormwater Permit and national water quality standards<br>• Although the project would increase the amount of impervious surface, upgrades to the stormwater system are expected to be beneficial. | • No new impacts are anticipated from those described in the 2017 DCE. See also Utilities section, below. | • There would be no new significant impacts from those identified in the 2017 DCE. |
| | | | |
| **Energy & Natural Resources** | • The buses would consume approximately 14.44 kWh per roundtrip. | • Based on the energy efficiency of electric buses in comparison to non-electric buses, it is likely that implementation of the 2018 PD design would result in an overall increase in energy use.<br>• Please see the Energy Addendum for more detail. | • Although the change in fleet vehicles would result in an increase in vehicle emissions, the net benefit of the project would still result in lower emissions than under current conditions.<br>• There would be no new significant impacts from those identified in the 2017 DCE.<br>• Please see the Energy Addendum for more detail. |
| | | | |
| **Geology & Soils** | • There are no anticipated impacts related to geology or soils that would result from the project. | • No new impacts are anticipated from those described in the 2017 DCE. | • There would be no new significant impacts from those identified in the 2017 DCE. |
| | | | |

| Impact Category | Impacts as Initially Disclosed | New Impacts | Change in Impacts |
|---|---|---|---|
| **Hazardous Materials** | • There is the potential for hazardous wastes to be released during channelization or if construction related hazardous materials are spilled during construction.<br>• Pre-existing contaminated material may be encountered during site grading or subsurface work. | • There is no new project work proposed outside the study area analyzed in the October 2016 Hazardous Materials Discipline Report.<br>• Potential impacts identified in the 2017 DCE would remain the same. | • There would be no new significant impacts from those identified in the 2017 DCE. |
| | | | |
| **Public Services** | • There are no anticipated impacts to public services that would result from the project. | • No new impacts are anticipated from those described in the 2017 DCE. | • There would be no new significant impacts from those identified in the 2017 DCE. |
| | | | |
| **Utilities** | • The project would replace existing stormwater infrastructure impacted by the project. All changes to the stormwater system are expected to be beneficial. | • One proposed stormwater detention tank between 13th Ave and 14th Ave will be relocated under the 12th/Madison BRT platform between 12th Ave and 13th Ave.<br>• One proposed detention tank will be moved from Madison St at 10th Ave to within 10th Ave just north of Madison Ave. | • There would be no new significant impacts from those identified in the 2017 DCE. |
| | | | |

| Impact Category | Impacts as Initially Disclosed | New Impacts | Change in Impacts |
|---|---|---|---|
| **Historic, Cultural & Archaeological Resources** | • Ground-disturbing activities could encounter old roadways or other infrastructure. | • Intersection improvements for signal detection, stormwater infrastructure, intersection signalization, and temporary construction routing fall outside of the 2017 APE.<br>• A potential resource, the former streetcar line, was found to be located within the project area. | • The project APE has been expanded to account for construction and operation outside of the original corridor. Additional analysis of the amended APE areas has been completed (see attached Supplemental Cultural Resources Assessment (CRA)). Potentially historic structures adjacent to the amended APE areas have been evaluated.<br>• The Supplemental CRA addresses the potential that a former streetcar line could be encountered below pavement during construction; any discoveries during construction will be considered "post-review discoveries," and will follow the procedures outlined in 36 CFR 800.13. As noted in the CRA, an archaeologist will review the 100% plans, once they are available, in order to determine if any changes to the cultural resources approach are recommended. An Inadvertent Discovery Plan has been prepared and is included in the CRA.<br>• Please see the Supplemental CRA for more detail. |
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| **Parklands & Recreation** | • OCS poles could be located near all of the park properties, but outside of the park boundaries. | • The park near the east layover area is now owned by the City (Julia Lee's Park).<br>• No new OCS poles would be located near parks. | • No poles located near Julia Lee's Park, McGilvra Place, or Cayton Corner Park.<br>• Impacts would be reduced from those identified in the 2017 DCE. |
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| Impact Category | Impacts as Initially Disclosed | New Impacts | Change in Impacts |
|---|---|---|---|
| **Construction** | • Construction impacts would include noise, vibration, and dust impacts to areas immediately adjacent to active work sites.<br>• Impacts would include temporary closures of sidewalks and traffic lanes, requiring detours for pedestrians, transit, and motor vehicle traffic.<br>• There would be brief disruptions in utility service due to the need to relocate or connect to existing utilities. | • The start date of construction for the 2018 PD design is two years later than the original project.<br>• The TPSS is no longer required for the project.<br>• The project no longer requires the addition of new OCS poles and wires for the BRT service. | • Impacts associated with construction of the TPSS and installation of new OCS poles and wires would be eliminated.<br>• There would be no new significant impacts from those identified in the 2017 DCE. |
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| Impact Category | Impacts as Initially Disclosed | New Impacts | Change in Impacts |
|---|---|---|---|
| **Secondary and Cumulative** | ***Construction***<br>• No overlap of construction work zones will occur between the Center City Connector Streetcar Project and the Madison Street BRT Project.<br>• Potential cumulative construction impacts with other projects in the area. SDOT will continue its ongoing Major Projects coordination with representatives of SDOT, the Washington State Department of Transportation, King County Metro, Washington State Ferries, the Port of Seattle, and Community Transit.<br>***Operation***<br>• Cumulative effects on transportation over the long term would be neutral, and possibly beneficial, as the transportation networks increase services and operate more safely and efficiently.<br>• On-street parking reduction and channelization changes would result in cumulative transportation impacts. | • The start date of construction for the 2018 PD design is two years later than the original project.<br>• There is now the potential for construction work zones to overlap between the Center City Connector Streetcar Project and the Madison Street BRT Project. | • The number and type of concurrent projects in the downtown area is expected to stay consistent for the life of the Madison BRT construction project. As the Center City Connector Streetcar Project and the Madison Street BRT Project are both being undertaken by SDOT, the project construction schedules will be coordinated closely to ensure impacts in the overlapping areas are not compounded.<br>• The delay in project schedule is not expected to change the cumulative construction impacts.<br>• There would be no new significant impacts from those identified in the 2017 DCE. |