



Exhibit F – Alternative Site Analysis

Section 6 – Alternative Site Analysis

Introduction

This document provides a comparative evaluation of the 12 Build Alternatives and a no build alternative for the Baltimore-Washington SCMAGLEV Project identified in the DEIS. The evaluation is based on the USACE definition of practicability and considers both water resource and other environmental impacts. The analysis concludes the sponsor’s proposal (Alternative J-03) is the most practicable alternative. The impact values in this document were calculated prior to the publication of the DEIS using the data available at that time. Since then, the impact values for the Sponsor’s Preferred Alternative (J-03) were refined as shown on the Joint Permit Application (JPA) wetland impact plates and tables.

The 12 Build Alternatives represent combinations of different alignment (J and J1), Baltimore station (Cherry Hill and Camden Yards), and trainset maintenance facility (TMF, BARC West, BARC Airstrip, and MD 198) options. The 12 alignment-Baltimore station-TMF options presented in the DEIS are as follow:

J Alignment-based DEIS Build Alternatives		J1 Alignment-based DEIS Build Alternatives	
J-01	J-Cherry Hill-MD 198	J1-01	J1-Cherry Hill-MD 198
J-02	J-Cherry Hill-BARC Airstrip	J1-02	J1-Cherry Hill-BARC Airstrip
J-03	J-Cherry Hill-BARC West	J1-03	J1-Cherry Hill-BARC West
J-04	J-Camden Yards-MD 198	J1-04	J1-Camden Yards-MD 198
J-05	J-Camden Yards-BARC Airstrip	J1-05	J1-Camden Yards-BARC Airstrip
J-06	J-Camden Yards-BARC West	J1-06	J1-Camden Yards-BARC West

As noted in paragraph 2 of DEIS Section 3.2.3 Alternatives Refinements:

“Following the 2018 Alternatives Report, the Project Sponsor further examined Build Alternatives J (BWP Modified-East), Build Alternatives J1 (BWP Modified-West), making refinements to the alignment and ancillary SCMAGLEV facilities to improve operational efficiency, safety, constructability, and overall SCMAGLEV Project cost-effectiveness. In this activity, the Project Sponsor applied newly adopted design criteria provided by Japanese designers and operators of existing SCMAGLEV systems. Based on the updated design criteria, the Project Sponsor re-evaluated the requirements for TMF sites and undertook an alternatives analysis to consider fourteen potential sites³. They considered smaller, disaggregated sites (approximately 120 acres), as well as single, consolidated sites (up to approximately 180 acres). Sites were evaluated for sufficient size and shape; proximity to the Washington, D.C. terminus station, between D.C. and Baltimore; proximity to the mainline alignment and suitable geometry and orientation of TMF ramp connections; worker and material delivery access; and impacts (residential relocations, wetlands, parks, and other notable features). The study concluded that the disaggregated footprints could not meet operational and maintenance requirements and eliminated these sites from consideration.”

All the Build Alternatives involve discharges of fill material into waters of the United States, including wetlands. None of the Build Alternatives are water dependent. DEIS Build Alternative J-03 is BWRR’s Preferred Alternative and is the basis for the “Project” descriptions and evaluations in this application.

The Section 404(b)(1) Guidelines (40 CFR 230.10(a)) specifically require that "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." Practicable alternatives are those alternatives that are "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." 40 CFR 230.10(a)(2).

Consistent with the intent of the Guidelines, BWRR as the applicant has evaluated the DEIS Build Alternatives and the No-Build Alternative with respect to practicability. For practicable alternatives, BWRR has comparatively evaluated the impact of each on the aquatic ecosystem and other environmental resource areas within the Project Limits of Disturbance (LOD). Based on this evaluation, BWRR concludes the following:

1. That the No-Build Alternative is not a practicable alternative.
2. That Build Alternatives that include Camden Yards as the Baltimore station option – J-04, J-05, J-06, J1-04, J1-05, and J1-06 – are not practicable alternatives.
3. That Build Alternatives that include the MD 198 TMF option – J-01, J-04, J1-01, and J1-04 – are not practicable alternatives.
4. That Build Alternatives J-02, J1-02, and J1-03 are practicable alternatives to the Project.
5. That there is no practicable alternative to the Project that would have less adverse impact on the aquatic ecosystem.
6. That the practicable alternatives have other significant adverse environmental consequences.

The following sections provide evaluations in support of the above conclusions.

Practicability Analysis of the No-Build and Build Alternatives Discharge

An alternative is practicable if it is "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes."

With respect to cost, "the level of analysis required for determining which alternatives are practicable will vary depending on the type of project proposed. The determination of what constitutes an unreasonable expense should generally consider whether the projected cost is substantially greater than the costs normally associated with the particular type of project. Generally, as the scope/cost of the project increases, the level of analysis should also increase." (Memorandum: Appropriate Level of Analysis Required for Evaluating Compliance with the CWA Section 404(b)(1) Guidelines Alternatives Requirements, USEPA and USACE, April 11, 2019)

The basic project purpose of the SCMAGLEV Project is to evaluate, and ultimately construct and operate, a safe, revenue-producing, high-speed ground transportation system that achieves the optimum operating speed of the SCMAGLEV technology to significantly reduce travel time to meet the capacity and ridership needs of the Baltimore-Washington region. To achieve the operational and safety metrics needed for a SCMAGLEV system, the Project must include:

- Infrastructure, vehicles, and operating procedures required for the SCMAGLEV system,
- An alignment which allows the highest practical speed that can be attained by SCMAGLEV technology at a given location and which avoids the need for reduction in speed other than that imposed by the normal acceleration and braking curves into and out of stations,

- A system that complies with federal safety requirements, and
- Avoidance, minimization, and mitigation of impacts to the human and natural environment.

The underpinning of the basic project purpose are Sections 1101(a)(18) and 1307 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act:

A Legacy for Users (SAFETEA-LU) (Pub. L. 109–59), as amended by section 102 of the SAFETEA-LU Technical Corrections Act of 2008 (Pub. L. 110–244), which authorized funding for pre-construction planning activities for eligible Maglev transportation projects. The Federal Railroad Administration (FRA) noted in its Notice of Funding Availability and Solicitations of Applications for Magnetic Levitation Projects that it “interprets the statute as a whole as evidencing a Congressional intent that the Federal funds be used to directly advance and result in the construction of a maglev project.” 80 Fed. Reg. 15053 (March 20, 2015)

The No-Build Alternative is Not a Practicable Alternative

The No-Build Alternative is not a practicable alternative to the Proposed Project’s discharge of fill to regulated waters because it does not fulfill the basic project purpose nor with the intent of Congress. With the No-Build Alternative, the capacity and ridership needs of the Baltimore-Washington region would not be met nor would the Congressional intent that the Federal Magnetic Levitation Transportation Technology Deployment Program funds would not have directly advanced and resulted in the construction of a Maglev project.

Build Alternatives J-04, J-05, J-06, J1-04, J1-05, and J1-06 Are Not Practicable Alternatives

Build Alternatives J-04, J-05, J-06, J1-04, J1-05, and J1-06 are not practicable alternatives because each of these alternatives includes a Camden Yards Baltimore station alternative which has unreasonably high cost and significant construction logistics issues which cannot be reasonably addressed. The engineering of a Camden Yards station and the estimate of the incremental project cost of constructing a Camden Yards station was performed to the same level as the Project as a whole, including the Cherry Hill Baltimore station alternative. The estimated incremental construction cost of a Camden Yards station, exclusive of the cost of acquiring several properties with multistory buildings in Downtown Baltimore, would be \$1.18B. This would increase the construction cost by over 13 percent compared to the project with a Cherry Hill station option and represents an unreasonable expense.

The logistical issues of constructing a Camden Yards station are significant and complex, even for a project of SCMAGLEV’s scope and scale, and cannot be reasonably addressed. Construction of the Camden Yards station would require the demolition of major buildings (including the office building housing Federal Reserve Bank of Richmond, Bank of America office building, and a section of the Baltimore Convention Center), the relocation of the National Register Old Otterbein Church, extended closure of the critical CSX Howard Street freight rail tunnel, extended closure of MARC commuter rail train station, extended closure of MTA Light Rail Line service, and extended closures of I-395, Pratt Street, and West Conway Street. The logistical challenges of acquiring property interests and staging construction activities in this multimodal transportation and activity hub of Baltimore and the region would be immense, as would the cost to the project of compensating building owners, tenants, and transportation operators for economic damages due to business operations and lost revenue.

The unreasonably high cost and the unmitigable logistical challenges of a Camden Yards station renders Build Alternatives J-04, J-05, J-06, J1-04, J1-05, and J1-06 as not being practicable alternatives to the Project and its proposed discharges of fill material to regulated waters.

Build Alternatives J-01, J-04, J1-01, and J1-04 Are Not Practicable Alternatives

Build Alternatives J-01, J-04, J1-01, and J1-04 are not practicable alternatives because each of these alternatives includes a MD 198 TMF alternative which has significant construction logistics issues that cannot be reasonably addressed. In addition, an MD 198 TMF would not fulfill the basic project purpose as it would violate Federal safety requirements.

The engineering of a MD 198 TMF was performed to the same level as the Project as a whole, including the two BARC TMF alternatives. The logistical issues of constructing an MD 198 TMF are significant and complex, even for a project of SCMAGLEV's scope and scale, and cannot be reasonably addressed. Construction of the MD 198 TMF would require the placement of extensive earthwork in the form of piers and filled retaining walls to build a level grade for the TMF storage yard, buildings and track. The resulting new ground surface would in places be 80 feet above existing ground surface as the terrain slopes downward from the mainline alignment adjacent to Route 295 toward the Little Patuxent River and its surrounding valley. The MD 198 TMF would encroach on an area protected by an irrevocable Oak Hill Conservation Easement along the Little Patuxent River.

Another logistical challenge of constructing an MD 198 TMF would be construction around BGE above ground and underground power lines which supply the nearby National Security Administration complex with uninterrupted power. BGE has stated that relocation of such critical power supply for relocation to accommodate construction of the TMF would be unacceptable.

The final logistical challenge, and inconsistency with the basic project purpose objective of compliance with Federal safety requirements. The MD 198 TMF would penetrate FAA regulated airspace of nearby Tipton Airport, by up to 30 feet. The airspace is regulated under Federal Aviation Administration Part 77. A new structure penetrating FAA regulated airspace is typically not permitted by FAA for aircraft operational hazard and safety reasons.

The logistical challenges of a MD 198 TMF cannot be reasonably addressed and they render Build Alternatives J-01, J-04, J1-01, and J1-04 as not being practicable alternatives to the Project and its proposed discharges of fill material to regulated waters.

The Build Alternatives that do not include a Camden Yards Baltimore station alternative nor an MD 198 TMF alternative, i.e., J-02, J1-02, and J1-03, are practicable alternatives to the Project (J-03).

Analysis of Practicable Alternatives to the Proposed Discharge

Impacts on Wetlands, Waterways, and Floodplains

A comprehensive analysis of impacts by alternative as compared with the project was conducted for the DEIS by the NEPA team and by BWRR for this application. The includes key measures of aquatic sites and of other key environmental resources.

Watersheds

Table 6.1 details the summary of limits-of-disturbance (LOD) within watersheds for the alternatives and the Project, as well as major waterways crossed. Except for FA/EE's and Substations, there is no LOD at

the ground surface in tunneled sections. As shown, the alternatives all cross the same waterways with the only crossing type difference being at the Little Patuxent River and tributaries where J1-02 and J1-03 cross under in tunnel and J-02 and the Project (J-03) cross over on viaduct structure. Overall LOD is essentially the same with the greatest individual watershed variation being in the Little Patuxent River watershed where J1-02 and J1-03 have approximately 5 acres of LOD, and J-02 and the Project (J-03) have 52 acres of LOD.

Table 6-1. Summary of LOD Impact (acres) by Watershed

Watershed	Major Waterway Crossings	Location	Project & Alternatives			
			Project (J-03)	J-02	J1-02	J1-03
Anacostia River	Anacostia River & tributaries (under); Beaverdam Creek & tributaries; Beck Branch; Brier Ditch & tributaries (under); Indian Creek tributaries (under)	Washington, D.C. Prince George's Co.	703	699	710	717
Western Branch	None	Prince George's Co.	3	3	3	3
Patuxent River Upper	Patuxent River & tributaries	Prince George's Co. Anne Arundel Co.	78	88	89	80
Little Patuxent River	Little Patuxent & tributaries (J1-02 and J1-03 under) Dorsey Run & tributaries (under)	Anne Arundel Co.	52	52	5	5
Patapsco R. Lower N. Branch	Patapsco River & tributaries (under) Stony Run & tributaries (under)	Anne Arundel Co. Baltimore Co. Baltimore City	163	163	163	163
Baltimore Harbor	None	Anne Arundel Co. Baltimore City	74	74	74	74
Gwynns Falls	None	Baltimore City	37	37	37	37
Totals			1,110	1,115	1,081	1,078

Wetlands

The measurement of the wetland impact of alternatives as compared with the Project (J-03) impact is illustrated in Tables 6.2-6-4. Table 6.2 shows estimated permanent and temporary wetland impact of the alternatives as compared with the Project. As shown, the alternatives are estimated to have approximately one to five acres higher permanent wetland impact than the Project. Alternative J-02 has approximately nine acres of temporary wetland impact, J1-02 eight acres temporary, and Alternative J1-03 five acres of temporary impact, while the Project is estimated to have approximately eight acres of temporary wetland impact.

Table 6-2. Permanent and Temporary Wetland Impact¹

Project & Alternatives	Alignment		Station		TMF				Total Permanent Acres of Wetland Impact
			Cherry Hill		BARC Airstrip		BARC West		
	P	T	P	T	P	T	P	T	
Project (J-03)	11	6	<1	<1			10	1	22
J-02	11	6	<1	<1	14	2			26
J1-02	13	4	<1	<1	13	3			27
J1-03	13	3	<1	<1			10	1	23

Table 6.3 shows estimated permanent and temporary impact on Non-Tidal Wetlands of Special State Concern (NTWSSC) of the alternatives as compared with the Project. The separate analysis of impacts to NTWSSC is based on state-published NTWSSC boundaries, not field-delineated boundaries, to present the most conservative estimate of impacts for the purposes of the DEIS. This information is presented due to the need for regulatory agreement and confirmation of NTWSSC boundaries. The field delineated wetlands within or adjacent to NTWSSC boundaries resulted in variable wetland sizes. This is a separate analysis and is not in addition to the calculated wetland impacts detailed in Table 6.2.

As shown in Table 6.3, Alternative J1-03 is estimated to have 5 acres of permanent and 2 acres of temporary impact on NTWSSC, Alternative J1-02 14 acres of permanent and 4 acres of temporary impact, and Alternative J-02 19 acres of permanent and 2 acres of temporary impact, while the Project is estimated to have approximately 9 acres of permanent and 3 acres of temporary impact on NTWSSC.

Table 6-3. Permanent and Temporary NTWSSC Impacts of Project and Alternatives

Project & Alternatives	Alignment		TMF				Total Permanent Acres of NTWSSC Impact
			BARC Airstrip		BARC WEST		
	P	T	P	T	P	T	
Project (J-03)	6	2			3	1	9
J-02	6	1	12	1			19
J1-02	3	2	11	2			14
J1-03	3	<1			2	1	5

Table 6.4 provides an estimated breakdown of permanent wetland impact by type. The notable difference in estimated permanent impact by wetland type is in the higher functional value Palustrine Forested

¹ Note: values for calculated impacts in this and other wetlands tables are preliminary and are based on the assumption that all LOD's constitute a loss of resource. Habitat conversions, e.g., from PFO to PEM are not considered.

Wetland (PFO) type for which Alternative J1-02 has 24 acres of PFO impact, J-02 22 acres, J1-03 20 acres, and the Project 18 acres.

Table 6-4. Summary of Permanent Wetland Impact

Project & Alternatives	Acres of Permanent Impact by Wetland Type			
	PUB	PEM	PFO	TOTAL
Project (J-03)	1	3	18	22
J-02	1	2	22	26
J1-02	<1	3	24	27
J1-03	<1	3	20	23

Waterways and Floodplains

The measurement of the waterway and floodplain impact of alternatives as compared with the Project impact is illustrated in Tables 6.5-6-7. Table 6.5 shows estimated permanent and temporary waterway impact of the alternatives as compared with the Project. As shown, the alternatives are estimated to have similar permanent waterway impact to each other (ranging between 12,108 and 12,659 linear feet) and to the Project (J-03) (12,896 linear feet). Alternative J1-03 is estimated to have 2,340 linear feet of temporary waterway impact, Alternative J-02 4,528 linear feet of temporary impact, and Alternative J1-02 8,364 linear feet of temporary impact, while the Project is estimated to have approximately 3,626 linear feet of temporary waterway impact.

Table 6-5. Permanent and Temporary Waterway Impact (Linear Feet)

Project & Alternatives	Alignment		Station		TMF				Total Permanent Linear Feet of Waterway Impact
			Cherry Hill		BARC Airstrip		BARC WEST		
	P	T	P	T	P	T	P	T	
Project (J-03)	7,799	3,156	315	241			4,782	229	12,896
J-02	7,721	3,127	315	241	4,589	1,160			12,624
J1-02	7,375	2,147	315	241	4,419	1,448			12,108
J1-03	7,323	1,728	315	241			5,021	371	12,659

Table 6.6 provides an estimated breakdown of permanent waterway impact by type, i.e., ephemeral, intermittent, and perennial. The notable difference in estimated permanent impact by waterway type is in the perennial waterway type for which J1-03 has an estimated 8,189 linear feet of permanent impact, J1-02 7,728 linear feet of impact, J-02 5,557 linear feet of impact, and the Project 5,962 linear feet of impact.

Table 6-6. Summary of Permanent Waterway Impact

Project & Alternatives	Linear Feet of Impact by Waterway Type			
	Ephemeral	Intermittent	Perennial	TOTAL
Project (J-03)	1,549	5,385	5,962	12,896
J-02	1,418	5,649	5,557	12,624
J1-02	893	3,487	7,728	12,108
J1-03	852	3,617	8,189	12,659

Table 6.7 shows estimated permanent and temporary impact on floodplains of the alternatives as compared with the Project. As shown, Alternative J-02 is estimated to have 59 acres of permanent and 8 acres of temporary impact on floodplains, Alternative J1-02 52 acres of permanent and 4 acres of temporary impact, and Alternative J-02 19 acres of permanent and 6 acres of temporary impact, and Alternative J1-03 40 acres of permanent and 6 acres of temporary impact, while the Project is estimated to have approximately 46 acres of permanent and 7 acres of temporary impact on floodplains.

Table 6-7. Temporary and Permanent Floodplain Impact

Project & Alternatives	Alignment		Station		TMF				Total Permanent Acres of Floodplain Impact
			Cherry Hill		BARC Airstrip		BARC WEST		
	P	T	P	T	P	T	P	T	
Project (J-03)	15	6	28	0			3	1	46
J-02	15	6	28	0	16	2			59
J1-02	10	5	28	0	14	1			52
J1-03	10	5	28	0			2	1	40

Comparative Analysis of Wetland, Waterway, and Floodplain Impacts

Based on the above estimates, the alternatives have comparatively similar, order-of-magnitude impact to the Project's impact on most wetland, waterway, and floodplain measures. None of the alternatives has less overall impact on wetlands, waterways, and floodplains than the Project. Indeed, all the alternatives have greater permanent wetland impact and greater impact on PFO wetlands than the Project (J-03).

Alternative J-02

Alternative J-02 has the same mainline alignment alternative as the Project (J-03) and a different TMF alternative: BARC Airstrip rather than BARC West. A comparison of Alternative J-02 to the Project shows that Alternative J-02 has greater impact as measured by the following: permanent wetland (26 acres vs. 22 acres), temporary wetland (9 acres vs. 8 acres), permanent NTWSSC (19 acres vs. 9 acres), permanent PFO wetland (22 acres vs. 18 acres), temporary waterway (4,520 linear feet vs. 3,626 linear feet), permanent floodplain (59 acres vs. 46 acres), and temporary floodplain (8 acres vs. 7 acres).

Alternative J-02 has less impact than the Project on three measures: temporary NTWSSC (2 acres vs. 3 acres), permanent waterway (12,624 linear feet vs. 12,896 linear feet) and permanent perennial waterway (5,557 linear feet vs. 5,952 linear feet).

Alternative J1-02

Alternative J1-02 has a different mainline alignment alternative and TMF than the Project (J-03). A comparison of Alternative J-02 to the Project shows that Alternative J-02 has greater impact as measured by the following: permanent wetland (27 acres vs. 22 acres), permanent NTWSSC (14 acres vs. 9 acres), temporary NTWSSC (4 acres vs. 3 acres), permanent PFO wetland (24 acres vs. 18 acres), temporary waterway (8,364 linear feet vs. 3,626 linear feet), and permanent floodplain (52 acres vs. 46 acres).

Alternative J1-02 has the same estimated temporary wetland impact as the Project (J-03), and Alternative J1-02 has less impact than the Project on the following measures: permanent waterway (12,108 linear feet vs. 12,896 linear feet) and temporary floodplain (6 acres vs. 7 acres).

Alternative J1-03

Alternative J1-03 has the same TMF alternative as the Project, BARC West, and a different mainline alignment alternative. A comparison of Alternative J1-03 to the Project shows that Alternative J1-03 has greater impact as measured by the following: permanent wetland (23 acres vs. 22 acres), permanent PFO wetland (20 acres vs. 18 acres), and permanent perennial waterway (8,189 linear feet vs. 5,952 linear feet).

Alternative J1-03 has less impact than the Project on the following measures: temporary wetland (5 acres vs. 8 acres), permanent NTWSSC (5 acres vs. 9 acres), temporary NTWSSC (2 acres vs. 3 acres), permanent waterway (12,659 linear feet vs. 12,896 linear feet), temporary waterway (2,340 linear feet vs. 3,626 linear feet), permanent floodplain (40 acres vs. 46 acres), and temporary floodplain (6 acres vs. 7 acres).

Comparative Analysis of Other Environmental Resource Impacts

Other relevant environmental resources evaluated for impacts by the Project and alternatives include the following categories and measures:

- Forest Habitat – acres directly impacted by construction.
- Beltsville Agricultural Research Center (BARC) Land – acres of BARC land directly impacted.
- National Park Service (NPS) Land – acres of NPS land (Baltimore-Washington Parkway right-of-way) directly impacted.
- Patuxent Wildlife Research Refuge Land – acres of Refuge land directly impacted.
- County Park Land – acres of County park (Maryland City Park in Anne Arundel County) directly impacted.
- Construction Truck Trips – number of truck trips to and from construction.
- Residential Units within 200 feet of Construction – number of residential units in proximity to construction activity.
- Residential Units within 200 feet of the Guideway and TMF – number of residential units in proximity to the above-ground guideway and TMF.

The range of resources evaluated cover both the natural and human environment. Except for truck trips, all impact measurements were conducted in GIS based on the LOD of the Project and alternatives or, in the case of Residential Units within 200 feet of the Guideway, the Guideway alignment of the Project and alternatives. Truck trips were calculated based on the volume of truck activity for hauling construction materials and tunnel boring spoils.

The results of the impact measurements are provided in Table 6-8. As shown, all the alternatives have other significant adverse environmental consequences.

Table 6-8. Other Environmental Resource Measures

Project & Alternatives	Other Environmental Resource Measures							
	Forest Habitat (acres)	BARC Land (acres)	NPS Land acres)	Patuxent Wildlife Research Refuge Land (acres)	County Park Land (acres)	Construction Truck Trips (1,000 trips)	Residential Units within 200 feet of Construction (# units)	Residential Units within 200 feet of Guideway and TMF (# units)
Project (J-03)	451	233	97	49	<1	2,250	650	205
J-02	381	250	93	49	<1	2,250	650	187
J1-02	324	223	52	0	72	2,480	852	267
J1-03	392	240	53	0	72	2,480	836	250

Alternative J-02 has generally similar or the same impact as the project in each resource category. While Alternatives J1-02 and J1-03 have less impact on NPS than the Project, and no impact on Patuxent Refuge lands, these alternatives have substantially greater impact (72 acres vs. less than 1 acre) than the Project on County park land. Alternatives J1-02 and J1-03 also have greater impact on neighborhoods as measured by construction truck trips, residences' proximity to construction activity, and residences' proximity to the operating guideway and viaduct.

Conclusion

BWRR has analyzed alternatives to the Project's discharge of fill material into regulated waters applying the Section 404(b)(1) Guidelines. The Baltimore-Washington SCMAGLEV Project DEIS evaluates 12 Build Alternatives, as well as the No-Build. BWRR's Preferred Alternative is among the 12 Build Alternatives in the DEIS, designated as J-03 (J Alignment, Cherry Hill Baltimore station, and BARC West TMF). All the Build Alternatives involve discharges of fill material into waters of the United States, including wetlands. None of the Build Alternatives is water dependent.

Applying the Guidelines, the No-Build Alternative is not a practicable alternative to the Proposed Project's discharge of fill to regulated waters because it does not fulfill the basic project purpose nor with the intent of Congress that Maglev Deployment Program funds, of which the Baltimore-Washington SCMAGLEV Project is a recipient, be used to directly advance and result in the construction of a Maglev project.

Build Alternatives J-04, J-05, J-06, J1-04, J1-05, and J1-06 are not practicable alternatives because each of these alternatives includes a Camden Yards Baltimore station alternative which has unreasonably high cost and significant construction logistics issues which cannot be reasonably addressed. Meanwhile, Build Alternatives J-01, J-04, J1-01, and J1-04 are not practicable alternatives because each of these alternatives includes an MD 198 TMF alternative which has significant construction logistics issues which cannot be reasonably addressed.

The Build Alternatives that do not include a Camden Yards Baltimore station alternative nor an MD 198 TMF alternative, i.e., J-02, J1-02, and J1-03, are practicable alternatives to the Project (J-03). Applying the Guidelines, the analysis of wetland, waterway, and floodplain impacts demonstrates that there is no practicable alternative to the Project which would have less adverse impact on the aquatic ecosystem. Further, all the alternatives to the Project have significant adverse environmental consequences, except for the no-build, which does not meet the purpose and need.

The analysis supports the conclusion that BWRR' Preferred Alternative (DEIS Build Alternative J-03), which is the Project for which BWRR has submitted the Joint Permit Application, is the least environmentally damaging practicable alternative.