

## 2 Alternatives

### 2.1 Introduction / Background

This chapter describes the process used to identify and evaluate alternatives to the Proposed Action for the SAMP NTPs.

### 2.2 Regulatory Requirements

The Washington Legislature enacted SEPA in 1971 (Revised Code of Washington [RCW] 43.21C). The SEPA Rules (WAC 197-11) establish uniform requirements for compliance with SEPA. The law requires that all state and local governments consider environmental information before taking an action. The Port of Seattle's Resolution No. 3650, as amended, sets out the Port's SEPA policies.

The Port decided to prepare an EIS to evaluate the impacts of the Action Alternatives. The EIS process is used to identify and analyze probable adverse environmental impacts, reasonable alternatives to achieve a proposal's objectives, and possible mitigation to lessen impacts. This document meets those objectives.

### 2.3 Alternative Evaluation Process

Alternatives were evaluated using a two-step screening process. The first level screening examined whether the alternative met the Purpose and Need. If the alternative satisfied the Purpose and Need, it moved to the second level. The second level screening evaluated which alternatives were reasonable and feasible based on a qualitative evaluation of factors related to operational impacts and cost. Alternatives that were determined to be reasonable and feasible were carried forward for detailed environmental impact analysis. An alternative is reasonable if it is technically and economically feasible and meets the Purpose and Need.

The alternatives considered in this EIS were derived from the SAMP process, as well as public input during the scoping process. In accordance with SEPA, a No Action Alternative is included (WAC 197-11-440(5)(b)(ii)).

#### 2.3.1 Alternatives Derived from the SAMP

The SAMP included an extensive evaluation of a full range of alternatives for each of SEA's primary functional areas. The SAMP alternatives were reviewed to determine which ones should be brought forward for environmental review. These alternatives are described in Section 2.5, Potential Action Alternatives.

#### 2.3.2 Alternatives Suggested During Scoping Process

During the scoping process, several commenters suggested alternatives to be considered as part of the environmental review. After careful consideration and review, most of the suggestions received during scoping were not carried forward for further evaluation because they would not address the Purpose and Need and / or were found to not be reasonable or feasible. The alternatives received during scoping that were reviewed, evaluated, and eliminated from further consideration are listed in **Table 2.3-1**. More information on each of these scoping alternatives is provided in **Appendix B, Purpose & Need and Alternatives Supporting Information**, and **Appendix N, Scoping**.

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**TABLE 2.3-1: EVALUATION OF ALTERNATIVES FROM THE SCOPING PROCESS**

Scoping Suggestion	Does it meet Purpose and Need? (Level 1 Screening)	If Yes, Other Considerations (Level 2 Screening)
<b>Phased Construction of Passenger Gates:</b> Suggested phasing the construction of gates (9 or 10 gates to serve 56 MAP and additional gates in a second phase that would accommodate up to 110 operations per hour) and an extension of Concourse D in the first phase rather than a Second Terminal. A new concourse was included as part of the second phase.	NO Does not provide the required number of passenger gates and holdrooms to meet the need for serving 56 MAP at an optimal LOS. A connection to Concourse D is included in Alternatives 1-B and 1-E.	N/A
<b>Terminal Processing Facilities:</b> Suggested smaller expansion of terminal processing facilities.	NO Would result in sub-optimum LOS, inconsistent with Purpose and Need.	N/A
<b>Roadway and Curbside Changes:</b> Suggested greater reliance on mass transit, a set of roadway / curbside changes, and operational options, but with no preferred option provided.	NO Material provided did not demonstrate that any of the submitted options could meet Purpose and Need.	N/A
<b>Fully Comply with Taxiway Separation Requirements Immediately (Not Phased):</b> Suggested to include a full 500-foot separation between Runway 16L/34R and Taxiway B.	YES	NO Eliminated due to operational impacts and cost associated with implementation (Alternative 3-C2).
<b>Limited or Reduced Growth:</b> Suggested to reduce the project size, put in place policies to limit growth versus accommodating growth, or restrict usage of Runway 16R/34L.	NO Does not meet the stated needs and the Port / FAA have limited authority to restrict access to SEA.	N/A
<b>Use of Other Existing Airports:</b> Suggestion to use existing airports instead of expanding facilities at SEA.	NO Neither the Port nor FAA have the authority to require users to use another airport. In addition, none of the other existing airports, either individually or collectively, could accommodate the current or projected passenger and cargo demands within the needed timeframe.	N/A
<b>Build a New Airport:</b> Several commenters suggested constructing a new regional airport instead of expanding facilities at SEA.	NO Does not meet the stated need for serving 56 MAP at an optimal LOS at SEA.	N/A

**TABLE 2.3-1: EVALUATION OF ALTERNATIVES FROM THE SCOPING PROCESS (CONTINUED)**

Scoping Suggestion	Does it meet Purpose and Need? (Level 1 Screening)	If Yes, Other Considerations (Level 2 Screening)
<b>Utilize Other Modes of Transportation:</b> Suggestion to use other modes of transportation or technologies instead of expanding facilities at SEA. Examples included high-speed rail, “hyperloop,” and mass transit.	NO Replacing aircraft operations with other modes of transportation would not provide the efficient long-distance connections needed to address current and future demand.	N/A
<b>Limit the project to only the FAA compliance needs.</b>	NO The suggestion does not address the other identified needs.	N/A
<b>Eliminate North Employee Surface Parking Lot (L06):</b> Suggestion to eliminate the proposed north employee surface parking lot (L06) and relocate them to new locations.	YES	The Proposed Action was updated after scoping to eliminate L06 and instead construct a larger employee parking garage (L07).
<b>Public/Private Transit Incentives:</b> Suggestion to implement incentives to reduce the need for the lots.	NO This suggestion on its own does not directly meet Purpose and Need. Reducing the amount of parking to force a shift in modes was not feasible, given employee shift times, transit availability, and historic employee behavior when demand has exceeded capacity.	N/A
<b>Terminal Connection:</b> Suggestion of a secure-side (post-security) connection between the Main Terminal and the proposed new gates.	N/A This suggestion on its own does not meet Purpose and Need. However, the Passenger Terminal and Concourse alternatives carried forward includes an option with a secure-side connection to Concourse D, as well as a secure-side connection from the proposed north gates to the North Satellite.	N/A

Note: Table 2.3-1 was Table 2-1 of the NEPA Final EA.

Source: Analysis completed by Landrum & Brown, 2020.

## 2.4 No Action Alternative

The No Action Alternative assumes none of the federal actions or the additional physical improvements included in the Proposed Action would occur at SEA, but includes projects that have recently been constructed, or will be constructed by 2032, as part of the future base case (which is the same for all alternatives carried forward). This includes North Satellite Redevelopment program, International Arrivals Facility, Terminal Renovations, C Concourse Expansion, A Concourse Building

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Expansion, Widen Arrivals Drive project, and Runway Renumbering. These projects are independent from the Proposed Action in this EIS and have received or will receive separate environmental reviews and approvals.

Under the No Action Alternative, operational and passenger volumes would continue to increase because the Port cannot deny airlines access to SEA and the projections show continuing increases in demand. Without additional improvements to accommodate the increased demand, passenger LOS would degrade. To accommodate additional operations, the Port and airlines would have to implement irregular operational strategies, such as designating taxiways for overnight aircraft parking or using cargo aircraft positions as passenger hardstands with bus transport between terminal holdrooms and aircraft. Reliance on these strategies would increase passenger connection times and increase congestion throughout the terminal (e.g. holdrooms, check-in counters, baggage claim, security screening). Congestion would also increase on airport drives, and at parking areas in and around the airport, due to the additional passenger volumes.

## **2.5 Potential Action Alternatives**

Because the Proposed Action reflects five separate and distinct areas of need, the alternatives development process considered each need separately. The potential action alternatives were developed from the range of alternatives considered during the SAMP process, scoping comments, and a separate assessment of potential options conducted specifically for this EIS. Appendix B provides additional information related to the identification and evaluation of alternatives for each Need.

### **2.5.1 Need #1: Insufficient Passenger Processing Facilities and Gates to Accommodate 56 MAP at an Optimal LOS**

Passenger processing alternatives were developed to address Need #1. These alternatives all include the following primary elements:

- Passenger Terminal and Concourse: Construct adequate passenger check-in facilities, baggage processing facilities, security screening checkpoints, and aircraft boarding gates to serve 56 MAP at an optimal LOS.
- Passenger Parking and Ground Access Facilities: Construct sufficient passenger parking facilities and arrival and departure curbs to accommodate 56 MAP at an optimal LOS.
- Employee Parking: Construct sufficient employee parking facilities to accommodate 56 MAP at an optimal LOS.

#### **2.5.1.1 Passenger Terminal and Concourse Options**

The key factors influencing development of the passenger processing facility and gate alternatives were the existing terminal area configuration and the built environment surrounding SEA. The Port considered how the terminal facilities could be expanded in all directions. The areas north and south of the existing terminal were found to provide the only reasonable opportunities for development. Expansion to the east would be infeasible given the location of SR 99, and the heavy development along that corridor. Relocation to the west is infeasible because it would either require a shift of all three parallel runways and associated taxiways, or the elimination of Runway 16L/34R, the primary departure runway at SEA.

Once a general development area was identified, extensive planning and concept development occurred as part of the SAMP process. In the initial stages, 16 different terminal concepts were identified and evaluated. These concepts included “one-terminal” and “two-terminal” concepts. One-

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terminal concepts maintain all passenger processing within the existing Main Terminal, modifying it to the extent possible to accommodate the forecast growth in passenger demand. Two-terminal concepts add a second passenger terminal and minimize modifications to the existing Main Terminal.<sup>17</sup>

It should be noted that passenger parking facilities and arrival and departure curbs are dependent on the terminal concourse option, due to space limitations. As a result, those elements do not have a separate alternatives analysis. The preliminary passenger processing facility alternatives, and their ability to meet the screening criteria, are summarized in **Table 2.5-1**. Employee parking alternatives are discussed in Section 2.5.1.2.

**TABLE 2.5-1: NEED #1 – FIRST LEVEL SCREENING (DOES ALTERNATIVE MEET SEA’S NEEDS?)**

Alternative Description	Criterion 1: Passenger Check-in Facilities	Criterion 2: Security Screening Checkpoint	Criterion 3: Aircraft Gates / Parking	Criterion 4: On-Airport Public Parking	Criterion 5: Departing and Arriving Curbs
Alternative 1-A: Proposed Action Construct a new Second Terminal to the north of the Main Terminal	YES	YES	YES	YES	YES
Alternative 1-B: Main Terminal Option Expand the Main Terminal	NO	NO	YES	YES	NO
Alternative 1-C: Hardstand Option Hardstand Approach – Expand Main Terminal and build satellite hardstand concourse	NO	NO	NO	YES	NO
Alternative 1-D: South Option Construct a new Second Terminal to the south	YES	YES	YES	YES	YES
Alternative 1-E: Hybrid Option Construct additional concourse north of the Main Terminal connected to Concourse D and construct a new Second Terminal to the north	YES	YES	YES	YES	YES

Note: Table 2.5-1 was Table 2-2 of the NEPA Final EA.  
 Source: Analysis completed by Landrum & Brown, 2020.

<sup>17</sup> SAMP Technical Memorandum No. 6, Alternatives; Chapter 1. Available for review at: <https://www.portseattle.org/plans/sustainable-airport-master-plan-samp>

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The results of the second level screening criteria for the preliminary passenger terminal facility alternatives are summarized in **Table 2.5-2**. Alternatives 1-A and 1-E were found to fully meet the Purpose and Need and have similar or better operational considerations and substantially lower cost when compared with Alternative 1-D. Therefore, these alternatives are reasonable and feasible and were carried forward for detailed environmental impact analysis.

**TABLE 2.5-2: NEED #1 – SECOND LEVEL SCREENING**

Alternative Description	Operational Criteria	Cost Criteria	Carried Forward?
Alternative 1-A: Proposed Action Construct a new Second Terminal to the north of the Main Terminal	<ul style="list-style-type: none"> <li>Impacts to Airport roadways during construction</li> <li>Limited impacts to operation of existing terminal and concourses during construction</li> <li>Improved LOS to passengers and users once constructed</li> </ul>	Commensurate with the magnitude of the proposed construction	<p style="text-align: center;">YES</p> <p>This alternative is reasonable and feasible and was carried forward for detailed environmental impact analysis.</p>
Alternative 1-D: South Option Construct a new Second Terminal to the south	<ul style="list-style-type: none"> <li>Impacts to Airport roadways during construction</li> <li>Substantially higher operational impacts after construction due to the additional gates and associated activity in an area that is already heavily congested during peak times, exacerbating airfield congestion</li> <li>Improved LOS to passengers and users once constructed</li> </ul>	Construction costs would be substantially higher than the Proposed Action due to relocation and / or replacement of additional facilities, extensive earthwork, and construction of additional airfield pavement	<p style="text-align: center;">NO</p> <p>This alternative is not reasonable and was not carried forward for detailed environmental impact analysis.</p>
Alternative 1-E: Hybrid Option Construct additional concourse to the north of the Main Terminal connected to Concourse D and construct a new Second Terminal to the north	<ul style="list-style-type: none"> <li>Impacts to Airport roadways during construction</li> <li>Operational impacts due to temporary gate closures during construction</li> <li>Improved LOS to passengers once constructed</li> </ul>	Similar to the Proposed Action	<p style="text-align: center;">YES</p> <p>This alternative is reasonable and feasible and was carried forward for detailed environmental impact analysis.</p>

Note: Table 2.5-2 was Table 2-3 of the NEPA Final EA.

Source: Analysis completed by Landrum & Brown, 2020.

### **2.5.1.2 Employee Parking Options**

Employee parking, which is not dependent on the terminal concourse option, has a separate alternatives evaluation to identify the Employee Parking Option carried forward as part of the terminal alternatives evaluated in this EIS.

During scoping, several commenters requested that Proposed Action element L06 Employee Parking Surface Lot be removed or altered due primarily to concerns about additional traffic in the adjacent neighborhoods and impacts to North SeaTac Park. The Port reviewed the suggestions from the scoping comments and eliminated L06 as an option for employee parking.

**Employee Parking Option 1:** Provides incentives for employees to use mass transit. These incentives would include transit subsidies, promotion of ride-share opportunities, or other similar programs with an intent to reduce the overall number of employee vehicles being parked at the Airport, thereby eliminating the need to provide more employee parking capacity. Employee Parking Option 1 is not a feasible option to fully accommodate employee parking needs and is eliminated from consideration in this EIS. However, the Port will continue to explore incentivized transit options for employees and passengers to reduce traffic at and around the Airport as part of its overall sustainability goals.

**Employee Parking Option 2:** Locates employee parking in an area on the south side of the Airport. A south location for the additional employee parking is not considered reasonable and is eliminated from consideration in this EIS because it would require relocation of several facilities and more shuttle buses to access both the existing employee parking lot to the north and the new employee parking lot to the south.

**Employee Parking Option 3:** Adds an additional employee parking area on the north side of the Airport. From an operational perspective, consolidating employee parking into one general area provides an opportunity to operate fewer shuttle buses than if there were lots on both the north and south of the Airport (like Option 2), which would reduce traffic on the roadways at and around the Airport.

Based on the evaluation of each of the Employee Parking Options, the Port identified Employee Parking Option 3 as the only reasonable and feasible option. As a result, this Employee Parking Option is included as part of the Proposed Action with the other Need #1 alternatives.

### **2.5.2 Need #2: Insufficient Facilities to Accommodate Projected Cargo Levels**

Cargo alternatives developed to address Need #2 include the necessary facilities to meet the projected warehousing facility needs and related cargo aircraft parking needs. The alternatives from the SAMP formed the initial list of potential alternatives for this analysis. The key factors that influenced the development of air cargo alternatives are the existing cargo conditions, projected cargo needs, the impact on airfield operations, and the impact of future passenger facilities in the area where the cargo functions are currently located. Alternatives were limited by the physical constraints at SEA and the space requirements of the cargo facilities. Given these factors, the only viable alternatives would place new facilities in the north or south areas of SEA.

The cargo alternatives were screened to eliminate the ones that would not fulfill the cargo-related Purpose and Need. The preliminary alternatives, and their ability to meet the screening criteria, are summarized in **Table 2.5-3**.

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**TABLE 2.5-3: NEED #2 – FIRST LEVEL SCREENING (DOES ALTERNATIVE MEET SEA’S NEEDS?)**

Alternative Description	Cargo Aircraft Parking Positions (with airfield access)	Warehousing Facilities (with landside access)	Support Facilities
Alternative 2-A: Proposed Action Construct new cargo facilities in the North Cargo area, and on the Port’s L-shaped parcel of land north of SR 518	YES	YES	YES
Alternative 2-B: South Option Construct new cargo facilities on the south side of SEA (south aviation support area)	YES	YES	YES

Note: Table 2.5-3 was Table 2-4 of the NEPA Final EA.  
Source: Analysis completed by Landrum & Brown, 2020.

The results of the second level screening for the preliminary cargo alternatives are summarized in **Table 2.5-4**. Alternative 2-A was found to fully meet the Purpose and Need and would have substantially fewer operational impacts and less cost when compared with Alternative 2-B. Therefore, this alternative is reasonable and feasible and was carried forward for detailed environmental impact analysis.

**TABLE 2.5-4: NEED #2 – SECOND LEVEL SCREENING**

Alternative Description	Operational	Cost	Carried Forward?
Alternative 2-A: Proposed Action Construct new cargo facilities in the North Cargo area, and on the Port’s L-shaped parcel of land north of SR 518	<ul style="list-style-type: none"> <li>Limited impacts to operation of existing Airport during construction</li> <li>Increased cargo facilities once constructed</li> </ul>	Commensurate with the magnitude of the proposed construction	<b>YES</b> This alternative is reasonable and feasible and was carried forward for detailed environmental impact analysis.
Alternative 2-B: South Option Construct new cargo facilities on the south side of SEA (south aviation support area)	<ul style="list-style-type: none"> <li>Impacts to Airport roadways during construction</li> <li>Increased cargo facilities once constructed</li> <li>Substantially higher operational impacts after construction due to additional congestion on Taxiways A and B near the passenger terminal area from having more cargo aircraft and support vehicles moving between the two cargo sites</li> </ul>	Construction costs would be substantially higher than the Proposed Action due to the need for new access roads, bridges, and additional cargo apron; additional earthwork, and relocation / replacement of facilities. The level of additional cost would preclude construction in the timeframe when the improvements are needed.	<b>NO</b> This alternative is not reasonable or feasible and was not carried forward for detailed environmental impact analysis.

Note: Table 2.5-4 was Table 2-5 of the NEPA Final EA.  
Source: Analysis completed by Landrum & Brown, 2020.

**2.5.3 Need #3: Portions of the Airfield No Longer Meet Current FAA Airport Design Standards**

Preliminary alternatives were developed to address the areas of the airfield that are no longer in compliance with FAA design standards (Need #3). One of the key factors that influenced the development of the FAA airfield design standards alternatives is the ability to bring an area up to standards without unreasonable impacts to other important airport functions. The preliminary alternatives, and their ability to meet the screening criteria, are summarized in **Table 2.5-5**.

**TABLE 2.5-5: NEED #3 – FIRST LEVEL SCREENING (DOES ALTERNATIVE MEET SEA’S NEEDS?)**

Alternative Description	Runway 16R/34L Blast Pads	Taxiway Geometry	Taxiway B Separation
Non-Standard Blast Pads Alternative 3-A1 (Proposed Action): Expand Runway 16R/34L blast pads to meet standards	YES	N/A	N/A
Non-Standard Blast Pads Alternative 3-A2 (Existing Blast Pad Option): Meet standards by using existing runway pavement, with a shortened useable length for takeoffs	YES	N/A	N/A
Non-standard Taxiway Geometry Alternative 3-B (Proposed Action): Reconfigure non-standard taxiway geometry	N/A	YES	N/A
Taxiway B Separation Alternative 3-C1 (Proposed Action) Reconfigure Taxiway B in the areas where other project elements are being constructed to provide 500-foot separation to partially meet standards	N/A	N/A	YES
Taxiway B Separation Alternative 3-C2 (Full Separation Option) Provide full 500-foot separation from Taxiway 16L/34R	N/A	N/A	YES

Note: Table 2.5-5 was Table 2-6 of the NEPA Final EA. None of the alternatives meet all needs. The alternatives only meet a specific FAA Airport Design Standard need.

Source: Analysis completed by Landrum & Brown, 2020.

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Alternative 3-B (Proposed Action for Reconfigure Non-standard Taxiway Geometry) was found to satisfy the first level screening criteria and there are no additional alternatives identified (aside from the No Action Alternative). Therefore, second level screening was not required. The results of the second level screening of the FAA design standards for the remaining alternatives are summarized in **Table 2.5-6**. Based on the second level screening, Alternative 3-A1 and Alternative 3-C1, in addition to Alternative 3-B, are carried forward for detailed evaluation.

**TABLE 2.5-6: NEED #3 – SECOND LEVEL SCREENING**

Alternative Description	Operational Criteria	Cost Criteria	Carried Forward?
Non-Standard Blast Pads Alternative 3-A1 (Proposed Action)	<ul style="list-style-type: none"> <li>Limited impacts to operation of existing Airport during construction</li> <li>No impact after construction</li> </ul>	Minor cost	YES This alternative is reasonable and feasible and was carried forward for detailed environmental impact analysis.
Non-Standard Blast Pads Alternative 3-A2 (Existing Blast Pad Option)	<ul style="list-style-type: none"> <li>Limited impacts to operation of existing Airport during construction</li> <li>Reduction in airfield capability after construction</li> </ul>	Minor cost	NO This alternative is not reasonable and was not carried forward for detailed environmental impact analysis.
Taxiway B Separation Alternative 3-C1 (Proposed Action)	<ul style="list-style-type: none"> <li>Limited impacts to operation of existing Airport during construction</li> <li>Bring more of the airfield into compliance with FAA requirements; FAA MOS would continue</li> </ul>	Minor cost	YES This alternative is reasonable and feasible and was carried forward for detailed environmental impact analysis.
Taxiway B Separation Alternative 3-C2: (Full Separation Option)	<ul style="list-style-type: none"> <li>Substantial impacts to existing Airport due to permanent and temporary aircraft gate closures</li> <li>Brings entire taxiway into compliance with FAA requirements</li> </ul>	Construction costs would be substantially higher than the Proposed Action	NO This alternative is not reasonable and was not carried forward for detailed environmental impact analysis.

Note: Table 2.5-6 was Table 2-7 of the NEPA Final EA.

Source: Analysis completed by Landrum & Brown, 2020.

**2.5.4 Need #4: Inefficient / Inadequate Taxiway Layout**

Alternatives to address Need #4 focused on two areas of the airfield (the south end of Runway 16L/34R and west of Runway 16C/34C). These areas were examined because operational efficiency could be improved, and improvements can be provided without affecting other airfield or Airport functions. The preliminary alternatives, and their ability to meet the screening criteria, are summarized in **Table 2.5-7**.

**TABLE 2.5-7: NEED #4 – FIRST LEVEL SCREENING (DOES ALTERNATIVE MEET SEA’S NEEDS?)**

Alternative Description	South End of Runway 16L/34R	West of Runway 16C/34C
South End of Runway 16L/34R Alternative 4-A (Proposed Action) for South End of Runway 16L/34R): Taxiway A/B Extension at south end of Runway 16L/34R	YES	N/A
West of Runway 16C/34C Alternative 4-B (Proposed Action) for West of Runway 16C/34C): Construct new high-speed taxiway exits from Runway 16R/34L, and a new crossing of Runway 16C/34C	N/A	YES

Note: Table 2.5-7 was Table 2-8 of the NEPA Final EA. Neither alternative meets all needs. The alternatives only meet a specific taxiway layout need.

Source: Analysis completed by Landrum & Brown, 2020.

Both Alternatives 4-A (Proposed Action for South End of Runway 16L/34R) and 4-B (Proposed Action for West of Runway 16C/34C) were found to satisfy the first level screening criteria related to their specific area of need, and there were no additional alternatives identified (aside from the No Action Alternative). Therefore, second level screening was not required and both alternatives are carried forward for detailed evaluation.

**2.5.5 Need #5: Lack of Fuel Storage to Meet Projected Demand and the Port’s SAF Initiative**

Alternatives were developed that would provide the necessary facilities to meet the projected fuel storage demand at SEA and meet the Port’s SAF initiative (Need #5). The key factors that influenced the development of fuel storage alternatives are location and security, given the potential risks associated with the storage of large quantities of fuel. Airport related fuel facilities are typically located in areas with substantial security, lighting, fencing, and access control, and away from aircraft activity. The Port studied potential options related to integrating SAF into SEA’s fuel distribution system. That study concluded a small SAF receiving and blending facility at the SEA fuel farm would be the most cost-effective solution in the short-term and would also fulfill an existing critical need for additional local fuel receipt and storage capacity that is not dependent on the Olympic Pipeline.<sup>18</sup> Given the results of that study and the general requirements for fuel storage, the areas available to meet the need within the existing land envelope of SEA were explored. The preliminary alternatives and their ability to meet the screening criteria are summarized in **Table 2.5-8**.

<sup>18</sup> Aviation Biofuels Infrastructure Feasibility Study, prepared for Port, Boeing, and Alaska Airlines, November 2016. Available for review at: [https://www.portseattle.org/sites/default/files/2018-03/Aviation\\_Biofuel\\_Infrastructure\\_Report\\_Condensed.pdf](https://www.portseattle.org/sites/default/files/2018-03/Aviation_Biofuel_Infrastructure_Report_Condensed.pdf)

**TABLE 2.5-8: NEED #5 – FIRST LEVEL SCREENING (DOES ALTERNATIVE MEET SEA’S NEEDS?)**

Alternative Description	Size of Site	Access to Existing Fuel Delivery System	Vehicular Access
Alternative 5-A (Proposed Action) Expand existing fuel farm	YES	YES	YES
Alternative 5-B (New Facility Option): Construct new facilities to supplement or replace the current facilities at the S. 156 <sup>th</sup> Way staging area	YES	NO	YES

Note: Table 2.5-8 was Table 2-9 of the NEPA Final EA.

Source: Analysis completed by Landrum & Brown, 2020.

Because only Alternative 5-A satisfied the first level screening criteria (aside from the No Action Alternative), no second level screening was necessary.

## 2.6 Alternatives Being Carried Forward

Based on the analysis of the alternatives for the individual needs, the following alternatives were carried forward for detailed environmental impact analysis:

### 2.6.1 Alternative 1: No Action

The No Action Alternative, described above in Section 2.4, provides a baseline for comparison to the Action Alternatives. Similar to NEPA, SEPA requires consideration of the alternative of taking no action even though it does not meet the Purpose and Need. Under the No Action Alternative, SEA would not operate as efficiently as it would with the proposed SAMP NTPs. The No Action Alternative would result in greater delays and congestion on the airfield, in the terminal, and on the roadways, reducing the passenger LOS.

### 2.6.2 Alternative 2: Proposed Action

The Proposed Action, described in detail in Chapter 1, represents a composite of the following elements:

- Alternative 1-A: Construct a new Second Terminal and gates (T01, T02) to the north of the existing terminal to provide the necessary facilities to serve 56 MAP at an optimal LOS<sup>19</sup>.
- Alternative 2-A: Construct new cargo facilities in the North Cargo area (A08, C01, S08, S09) and on the Port’s L-shaped parcel of land (C02, C03) to meet the projected cargo demand, and construct the Westside Maintenance Facility (S07) west of the airfield.
- Alternative 3-A1: Extend/expand the blast pads for Runway 16R/34L from 200 feet by 200 feet to 220 feet by 400 feet to meet FAA standards (A02).
- Alternative 3-B: Reconfigure non-standard taxiway geometry to meet FAA standards (A03, A10).
- Alternative 3-C1: Reconfigure Taxiway B in the areas where other project elements are being constructed to provide 500-foot separation to partially meet FAA standards (A04).
- Alternative 4-A: Extend Taxiway A/B at south end of Runway 16L/34R, creating a new parallel taxiway system to improve efficiency in the south airfield (A01).

<sup>19</sup> Also includes projects A05, A09, L01, L02, L03, L04, L05, L07, S02, S03, S04, S05, S06, and S10.

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- Alternative 4-B: Construct a new high-speed taxiway exit from Runway 16R/34L (A06), and a new crossing of Runway 16C/34C (A07) to provide a more efficient connection to the terminal area and create additional holding areas for taxiing aircraft.
- Alternative 5-A: Expand existing fuel farm to meet projected demand, including additional storage tanks, a blending tank, a SAF receipt tank, and associated support areas, utilizing the existing fuel distribution system connection (S01).

### 2.6.3 Alternative 3: Hybrid Terminal Option:

The Hybrid Terminal Option includes the same elements as Alternative 2: Proposed Action except for terminal and gate location (Alternative 1-E replaces Alternative 1-A). For consistency, the complete description is as follows:

- Alternative 1-E: Construct a new concourse and gates (T01a) to the north of the Main Terminal connected to Concourse D and a new Second Terminal across the NAE (T02) to provide facilities necessary to accommodate 56 MAP at an optimal LOS<sup>20</sup>.
- Alternative 2-A: Construct new cargo facilities in the North Cargo area (A08, C01, S08, S09) and on the Port's L-shaped parcel of land (C02, C03) to meet the projected cargo demand, and construct the Westside Maintenance Facility (S07) west of the airfield.
- Alternative 3-A1: Extend/expand the blast pads for Runway 16R/34L from 200 feet by 200 feet to 220 feet by 400 feet to meet FAA standards.
- Alternative 3-B: Reconfigure non-standard taxiway geometry to meet FAA standards (A03, A10).
- Alternative 3-C1: Reconfigure Taxiway B in the areas where other project elements are being constructed to provide 500-foot separation to partially meet FAA standards (A04).
- Alternative 4-A: Extend Taxiway A/B at south end of Runway 16L/34R, creating a new parallel taxiway system to improve efficiency in the south airfield (A01).
- Alternative 4-B: Construct a new high-speed taxiway exit from Runway 16R/34L (A06), and a new crossing of Runway 16C/34C (A07) to provide a more efficient connection to the terminal area and create additional holding areas for taxiing aircraft.
- Alternative 5-A: Expand existing fuel farm to meet projected demand, including additional storage tanks, a blending tank, a SAF receipt tank, and associated support areas, utilizing the existing fuel distribution system connection (S01).

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<sup>20</sup> Also includes projects A05, A09, L01, L02, L03, L04, L05, L07, S02, S03, S04, S05, S06, S10, and an extension of the Main Terminal.

SEATTLE-TACOMA INTERNATIONAL AIRPORT  
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