



Chapter 4 (Part 1)

DEVELOPMENT ALTERNATIVES

A new terminal building, with improvements to accommodate passenger facilities, airport management operations, and pilot services would be located closer to Mt. Baker Road for better access from the land side and the air side of the building. Parking conveniently near the terminal would be provided. As previously mentioned, utility services such as water, waste water, gas, electric power, and telecommunications will need to be extended to this area.

The Southeast Development Area would also include a deicing facility/sunshade structure, a helipad, and tie-downs for transient aircraft. Taxilanes would allow for simultaneous operations of passenger aircraft at the terminal building and cargo aircraft moving through the area. A long-term parking area, sufficient to address the inadequacy of current parking facilities, would be located on the east side of the Southeast Development Area with a large landscaping buffer between it and North Beach Road. These facilities will be connected to the existing trail system providing easy access to the community of Eastsound.

After review by the public and the Port it is understood that the SE Development Alternative 2 would be significantly opposed and is currently not accommodated on the eastern portion by the current zoning standards for the intended proposed development.

4.3.6 West Development Area

New lease lots, hangar space, turf tiedowns, and ground access would be provided on existing airport property west of the runway. The deicing facility/sunshade structure could possibly be located in this area, but the Southeast Development Area is the preferred location for it. Utility service would need to be extended to this area. Coordination with San Juan County would be required to improve Seaview Street for improved vehicle and pedestrian access. In addition, the functional classification of Seaview Street may need to be upgraded in accordance with the WSDOT Guidelines for Amending Functional Classification in Washington State. **Figure 4.7** shows a possible configuration for this area.

4.3.7 Brandt's Landing Lane and Nina Lane

The purpose of a Runway Protection Zone (RPZ) is to protect people and property on the ground. The presence of Brandt's Landing Lane and Nina Lane in the RPZ for Runway 16 is considered an incompatible land use as it presents a conflict

between vehicles on the ground and arriving and departing aircraft. As shown in **Figure 4.8** land on the north end of the runway would be acquired and these two roads would be closed to eliminate the safety hazard presented by the conflict. **Figure 4.8** also shows a B-II runway pad.

4.3.8 Mt. Baker Road

As with Brandt's Landing Lane and Nina Lane in the Runway 16 RPZ, the presence of Mt. Baker Road in the RPZ for Runway 34 is considered an incompatible land use as it presents a conflict between aircraft and ground vehicles that compromises safety standards. FAA guidance requires a continual effort to remove or mitigate the risk of existing incompatible land uses in an RPZ to the extent practical.

Mt. Baker Road is part of a major roadway that connects the east and west sides of Orcas Island and is a designated truck route around the community of Eastsound. The segment of Mt. Baker Road adjacent to the airport is one of the most heavily traveled sections of road on the island. In evaluating options to remove or mitigate the conflict between Mt. Baker Road and the RPZ, considerable thought was given to maintaining or increasing the traffic volume capacity and safety of the road while minimizing impacts to connections with existing streets, adjacent landowners, wetlands in the area, and other competing interests. Ideas briefly considered and discarded were: shortening the runway or moving it farther north to shift all of the RPZ to the north side of Mt. Baker Road, putting Mt. Baker Road in a tunnel under the RPZ, implementing Declared Distances to establish approach and departure RPZs, installation of an Engineered Materials Arresting System (EMAS) to shorten the required Runway Safety Area (RSA), and other methods of mitigating the conflict. Some options for relocating Mt. Baker Road are shown in **Figure 4.9**. Although multiple alignments for the road are shown as options, only one alignment will be constructed.

4.3.9 Environmental Review of Alternatives

Environmental impacts of each alternative were considered and reviewed prior to determining the preferred alternative. Consideration was given to the baseline condition, potential impacts on the environment, environmental studies likely needed before the project could proceed, and permit requirements. See **Table 4.2** for full analysis and review.

Figure 4.7. Westside Development

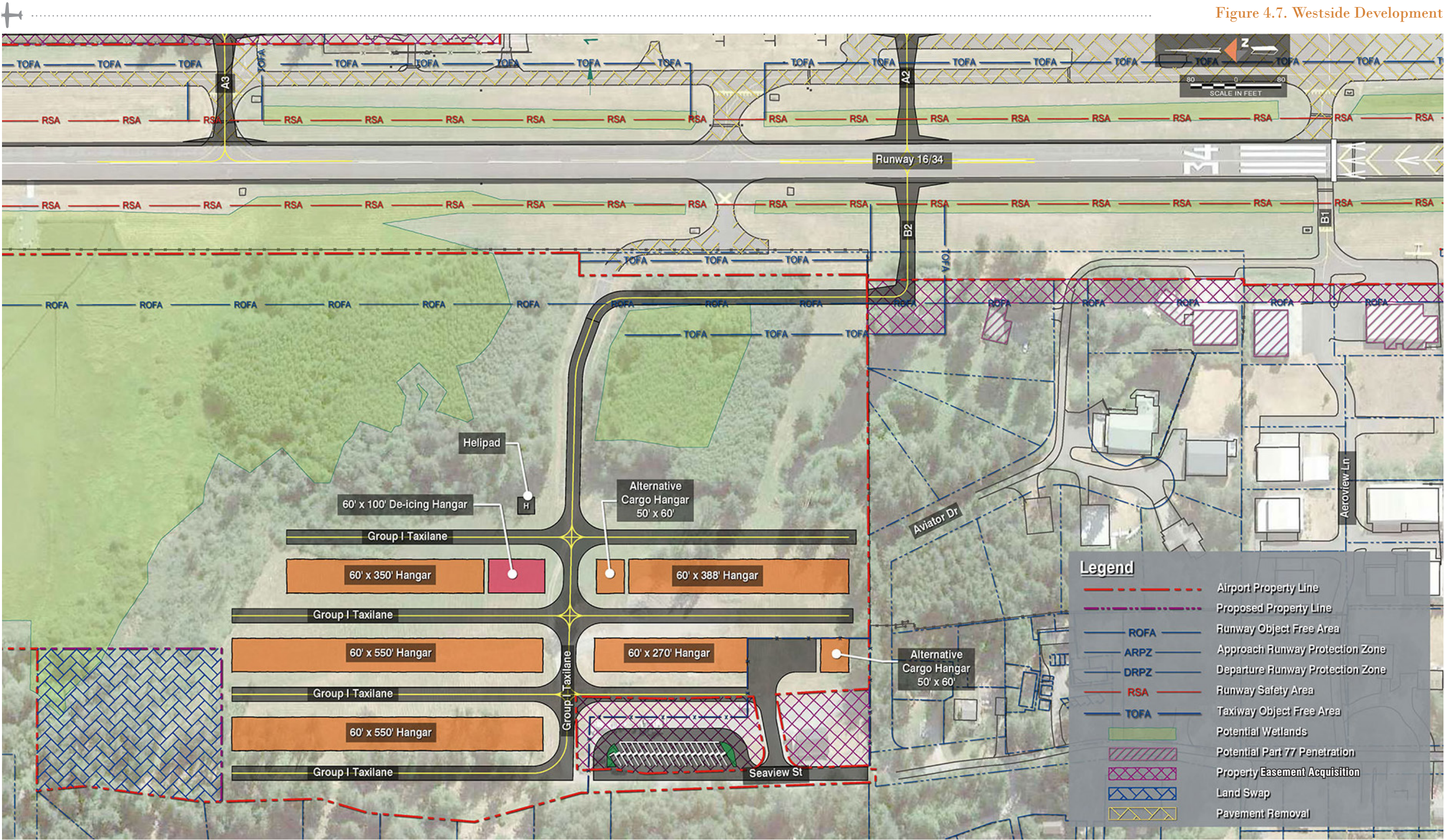


Figure 4.8. Runway 16 RPZ

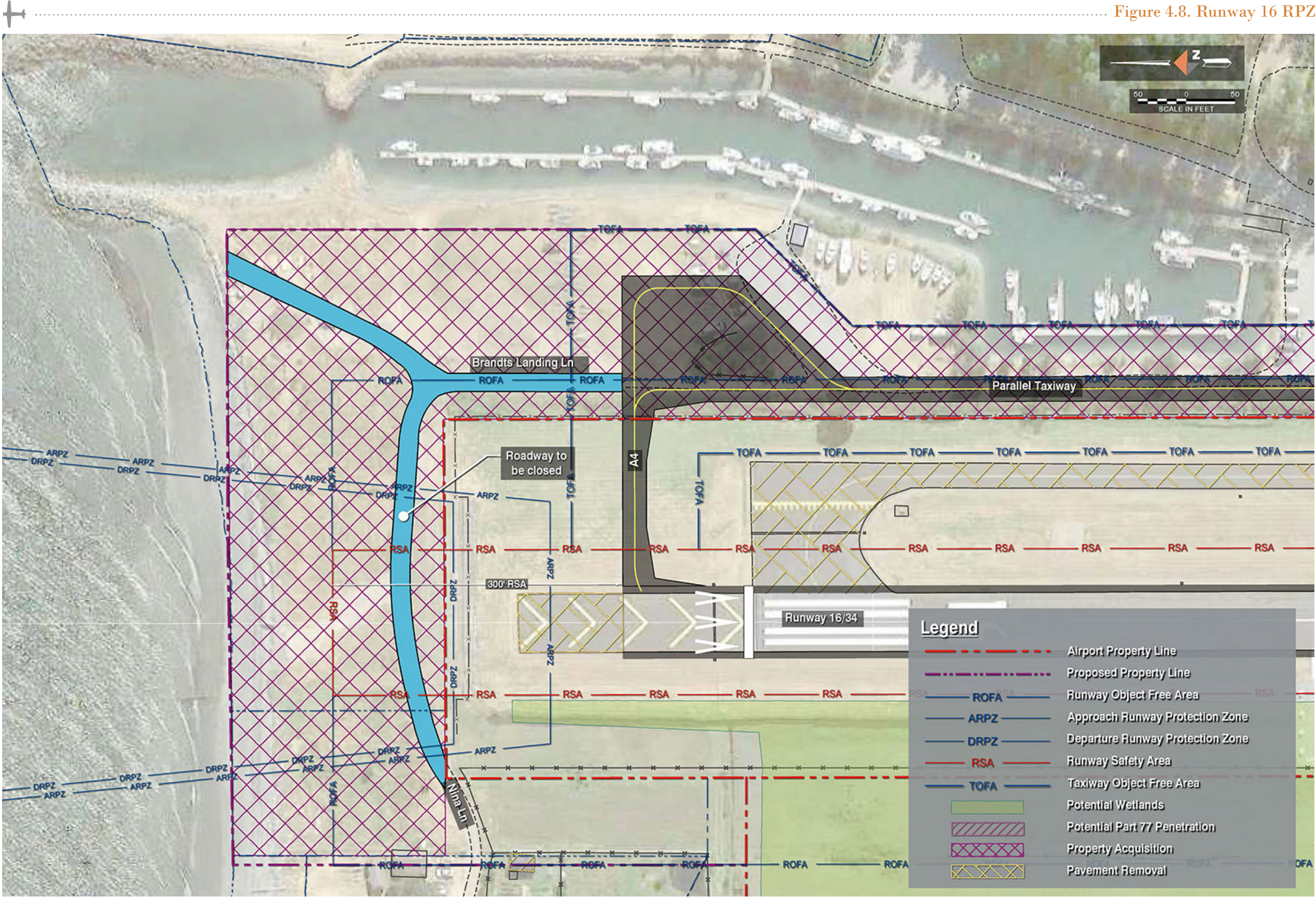
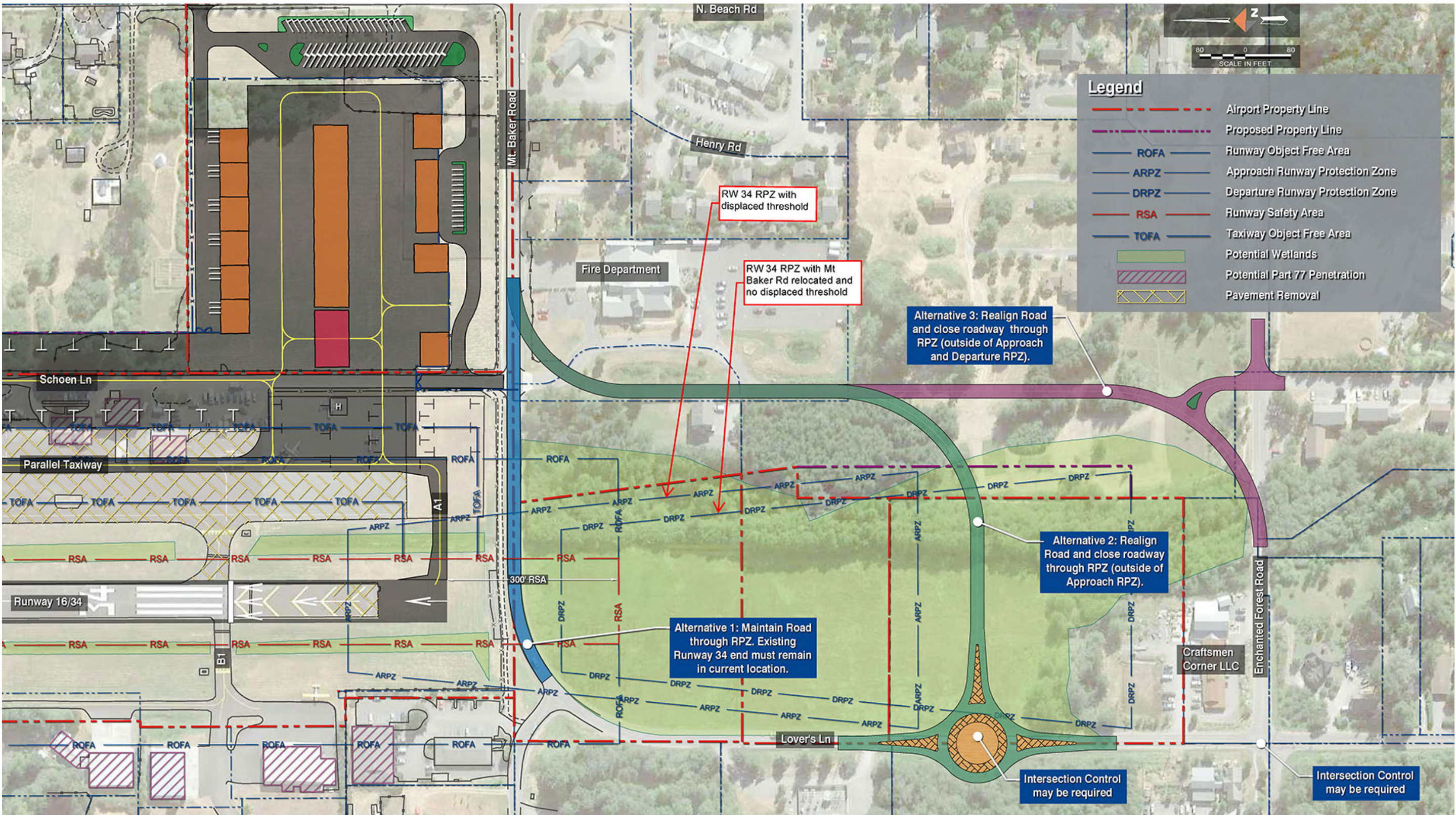


Figure 4.9. Runway 34 RPZ Alternatives



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Table 4.2: Potential Environmental Impacts of Proposed Projects

Proposed Project / Environmental Conditions	Baseline Condition	Potential Impacts	Likely Environmental Studies	Permit Requirements
Runway Alternative 1: No Action	WRI 2015 identified two linear wetlands between runway and parallel taxiway, and two linear wetlands immediately west of runway in southern half of airport.	None	None	None
Runway Alternative 2: Widen runway to 75'	Same as described under Runway Alternative 1: No Action	Possible fill or potential construction-related impacts to wetlands during runway widening; increased impervious surface leading to increased run-off and potential water quality impacts	Wetland boundary verification; wetland impact mitigation plan: stormwater analysis	HPA; Clean Water Act Sections 401 and 404; San Juan County Critical Areas
Runway Alternative 3: Widen runway to 75'; displace thresholds for more useable runway length	Same as described under Runway Alternative 1: No Action	Possible fill or potential construction-related impacts to wetlands during runway widening; increased impervious surface leading to increased run-off and potential water quality impacts	Wetland boundary verification; wetland impact mitigation plan: stormwater analysis	HPA; Clean Water Act Sections 401 and 404; San Juan County Critical Areas
Runway Alternative 4: Widen runway to 75'; displace thresholds for more useable runway length; rotate runway 0.82 degrees to the west	Same as described under Runway Alternative 1: No Action	Possible fill or potential construction-related impacts to wetlands during runway widening; increased impervious surface leading to increased run-off and potential water quality impacts	Wetland boundary verification; wetland impact mitigation plan: stormwater analysis	HPA; Clean Water Act Sections 401 and 404; San Juan County Critical Areas
Taxiway Alternative 1: No Change	WRI identified a Type Np stream east of taxiway at north end of airport; San Juan County CAO mapping identified potential non-tidal wetlands; Brandt's Landing Marina's excavated boat slip channel is located off-site and east of the taxiway; the excavated channel is identified as a deep water habitat, a water of the US, a water of the State, a Shoreline of the State, and likely a critical area under San Juan County Critical Areas Ordinance.	None	None	None
Taxiway Alternative 2: relocate taxiway east 156' from runway centerline	Same as described under axiway Alternative 1: No Change			
Taxiway Alternative 3: Relocate taxiway east 240' from runway centerline	Same as described under axiway Alternative 1: No Change	Likely relocation or piping of stream; filling of excavated boat slip channel; increased impervious surface leading to increased run-off and potential water quality impacts.	OHWM determination; mitigation plan; stormwater analysis	HPA; Clean Water Act Sections 401 and 404; San Juan County Critical Areas; Shoreline Permit; likely a BA due to federally-listed species (bulltrout, dolly varden, and orca in Puget Sound)
Taxiway Alternative 4: Relocate taxiway east 240' from runway centerline (based on realigned runway)	Same as described under Taxiway Alternative 1: No Change			
SE Development Alt 1: Hangars/Terminal Tie-Downs with auto parking along N. Beach Road	West portion of this area is paved. San Juan County CAO identifies potential non-tidal wetlands; field studies have not identified wetlands in this area.	Large area of new impervious surface leading to increased run-off and potential water quality impacts	Wetland investigation to verify no wetland impacts; stormwater analysis	
SE Development Alternative 2: Hangars/Terminal Tie-Downs with auto parking along Mt Baker Road	Same as described under SE Development Alternative 1: No Change	Large area of new impervious surface leading to increased run-off and potential water quality impacts	Wetland investigation to verify no wetland impacts; stormwater analysis	
Westside Development Alternative 1: No Action	Extensive areas of wetland mapped by NWI and San Juan County CAO; WRI 2015 identified wetlands north and east of the area.	None	None	None
Westside Development Alt 2: New hangars	Same as described under Westside Development Alt 1: No Change	Large area of new impervious surface--water quality; potential impact to wetlands delineated over 5 years ago; increased impervious surface (more run-off = water quality consideration); mitigation site located here.	Updated wetland delineation; mitigation plan if impacts are anticipated; stormwater analysis	HPA; Clean Water Act Sections 401 and 404; San Juan County Critical Areas
16 RPZ Alt 1: No Action	This is currently a paved surface.	None	None	None
16 RPZ Alt 2: Displace threshold	This is currently a paved surface.	No anticipated impacts to aquatic resources	No environmental studies anticipated	No environmental permits anticipated
34 RPZ Alt 1: No Action	WRI 2015 identified extensive wetlands and a type Np stream south of Mt Baker Road; tree removal and conversion of forested wetland to shrub-dominated wetland has been implemented.	None	None	None
Property Acquisition SW of current airport property north of Mt. Baker Road	Extensive areas of wetland mapped by NWI and San Juan County CAO.	Tree removal from Part 77 surface	None anticipated	San Juan County clearing permit

LEGEND: Preferred Alternative



Chapter 4 (Part 2)

DEVELOPMENT ALTERNATIVES

4.4 Preferred Development Alternative

The preferred alternative for ORS is the result of a combination of formal comments received from the Orcas Island Airport Master Plan Advisory Committee, Port of Orcas Commission, Airport staff, other interested stakeholders, the public, and the FAA regarding the alternatives previously described. The preferred alternative has many elements that are the same or very similar to elements in those alternatives, as well as a few that are obviously different. **Figure 4.11** depicts the short-term development needed for the preferred alternative and **Figure 4.12** depicts the mid-term development. The implementation of the preferred alternative will be further described in Chapter 6. The ultimate development for the airport in the preferred alternative is shown in **Figure 4.10**. It includes the acquisition of land on the north end of the runway and closure of Brandt's Landing Lane to eliminate the incompatible land use within the RPZ.

4.4.1 Runway

In the preferred alternative the runway would be widened from its current 60 feet, the standard for B-I airports, to 75 feet, the B-II standard. To achieve this increase, the runway pavement would be reconstructed with an additional 7.5 feet on each side, while the runway centerline remains in its present position. New medium-intensity runway lights (MIRL) and Runway End Identifier Lights (REILs) will be installed to replace the existing lighting.

As stated previously, the runway length required to serve 100 percent of the fleet of aircraft currently operating at Orcas Island Airport is 3,400 feet. This length is justified by the remote location of the island and that options for access to it are limited. A 3,400-foot runway, however, would require that Mt. Baker Road be relocated south to merge with Enchanted Forest Road to remain out of the Runway 34 RPZ (see **Figure 4.9**). This alignment of Mt. Baker Road would greatly increase costs by requiring the acquisition of additional private property. Also, it would probably need a traffic signal at the intersection of Enchanted Forest Road with Lovers Lane, which would adversely affect the flow of traffic.

The runway length shown in the preferred alternative is 3,255 feet. The end of Runway 34 will remain in its existing location. Due to significant community feedback and the complications of relocating Mt. Baker Road (land acquisition, environmental impacts, and disrupting the flow of traffic), Mt. Baker Road will not be relocated in this plan. Mt. Baker Road is an incompatible land use within the Runway 34 RPZ and will need to be addressed in a future planning study. Runway 34 will not have a displaced threshold, but the threshold of Runway 16 will be displaced by approximately 191 feet to provide clearance over potential obstacles offshore and to maintain current instrument approach minimums. The runway length available for takeoff will be 3,255 feet, and for landing it will be 3,064 feet. The north end of the runway will be raised approximately three feet to resolve longitudinal and transverse slope issues and to meet design standards for the runway, the taxiways, and the safety areas.

4.4.2 Taxiways

The parallel taxiway will be reconstructed east of its present location to achieve a runway-taxiway separation distance of 240 feet. This construction will require acquisition of a portion of the Brandt's Landing Marina parcel, a portion of the Parnell parcel, and a portion of the Larson parcel along the east side of the north end of the runway. This project could be coordinated with improvements to the marina for ease of permitting and construction phasing.

Connecting taxiways A1 and A4 will be relocated to the new runway ends, and the remaining pavement outside of those limits will be removed. An aircraft holding apron will be constructed at the north end of the parallel taxiway at A4. To minimize the impact to the adjacent marina property, the holding apron is sized for aircraft not larger than Runway Design Code B-I, and property acquisition has been reduced to include only that which is necessary for airfield safety areas.

Connecting taxiways A2, B2, and A3 will be reconstructed outside of the "high energy" middle third of the runway in accordance with current FAA design standards. Taxiway B2 will be opposite A2 and will be on existing airport property. Taxiway B2 will connect to a short section of



Figure 4.10. Ultimate Development (20+ Years)

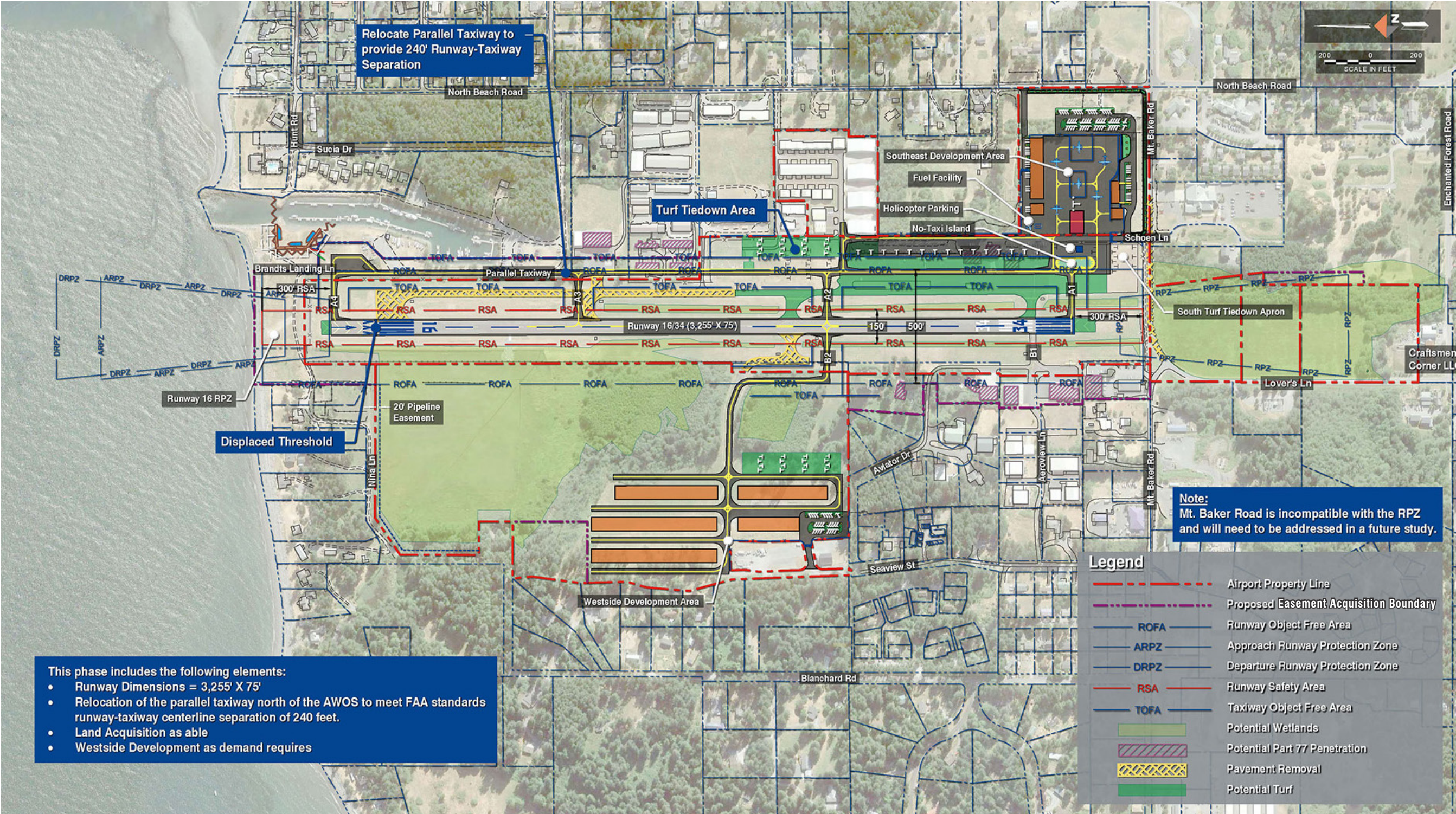




Figure 4.11. Short-Term Development (<8 Years)

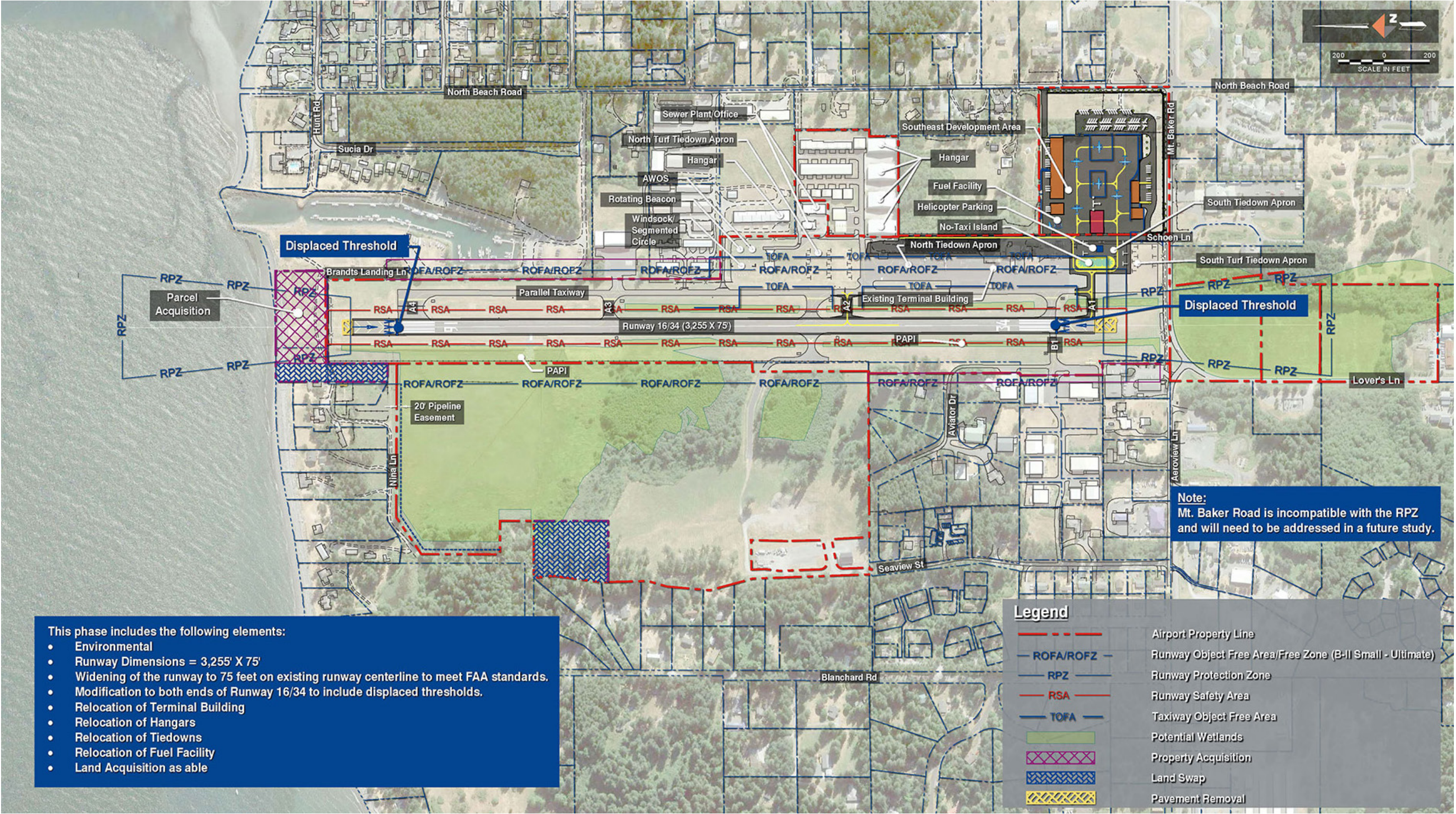




Figure 4.12. Mid-Term Development (8-19 Years)

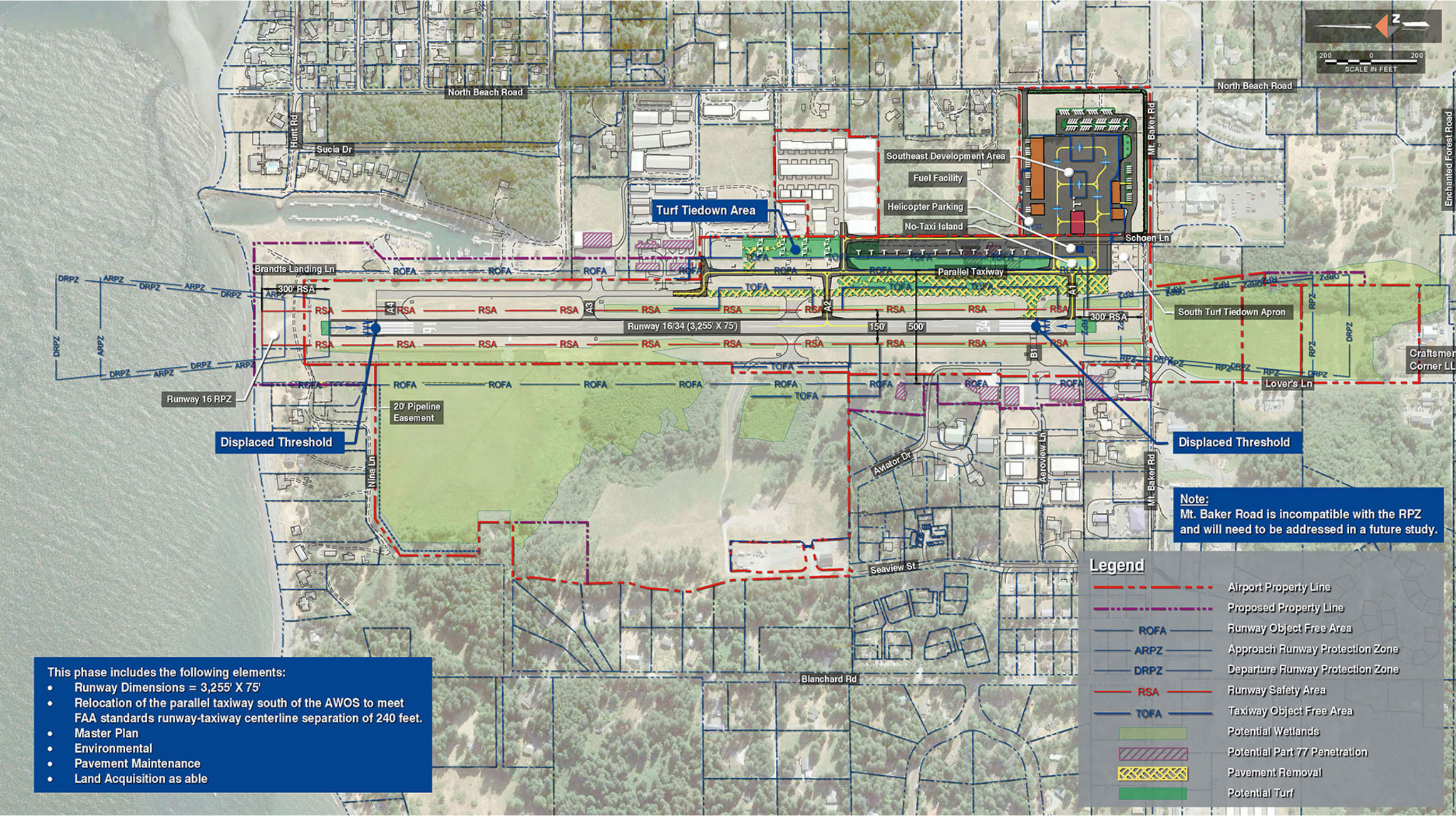


Figure 4.13. SE Development

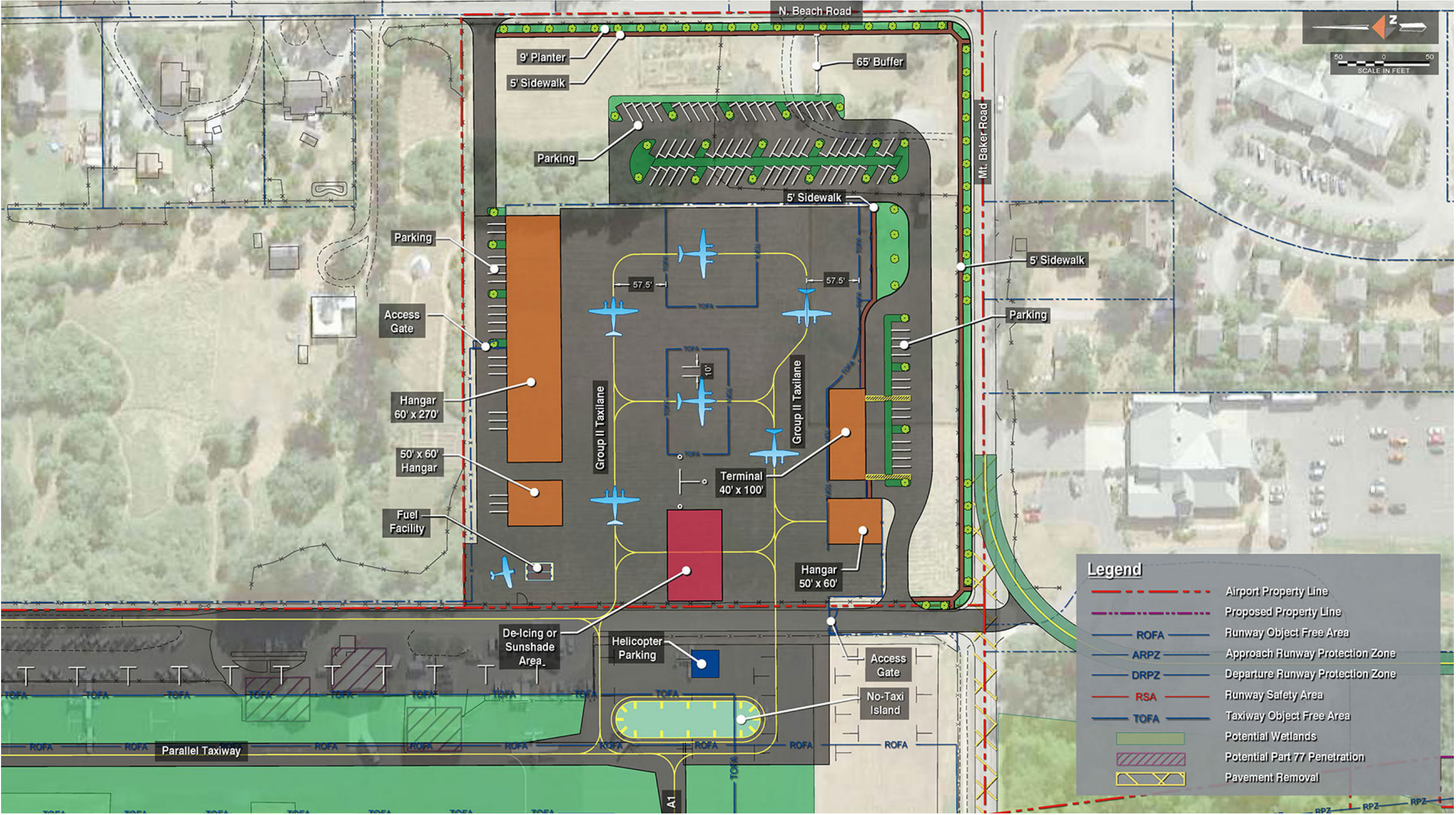




Figure 4.14. Westside Development

