

NE Lake Road and NE Everett Street (SR-500)

INTERSECTION IMPROVEMENTS



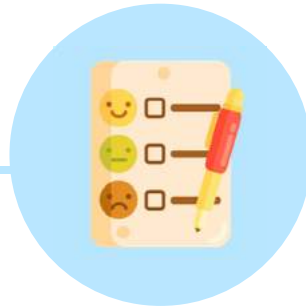
Public Involvement Update



Stakeholder
Interviews



PAC
Meeting #1



Community
Survey



Community
Open
House



PAC
Meeting #2

Key Themes from Open House #1



Reducing congestion, improving safety, and maintaining traffic flow during construction are top priorities.



Incorporate improved bicycle and pedestrian access and crossings.



Consider impacts to existing parking and the need for additional parking.

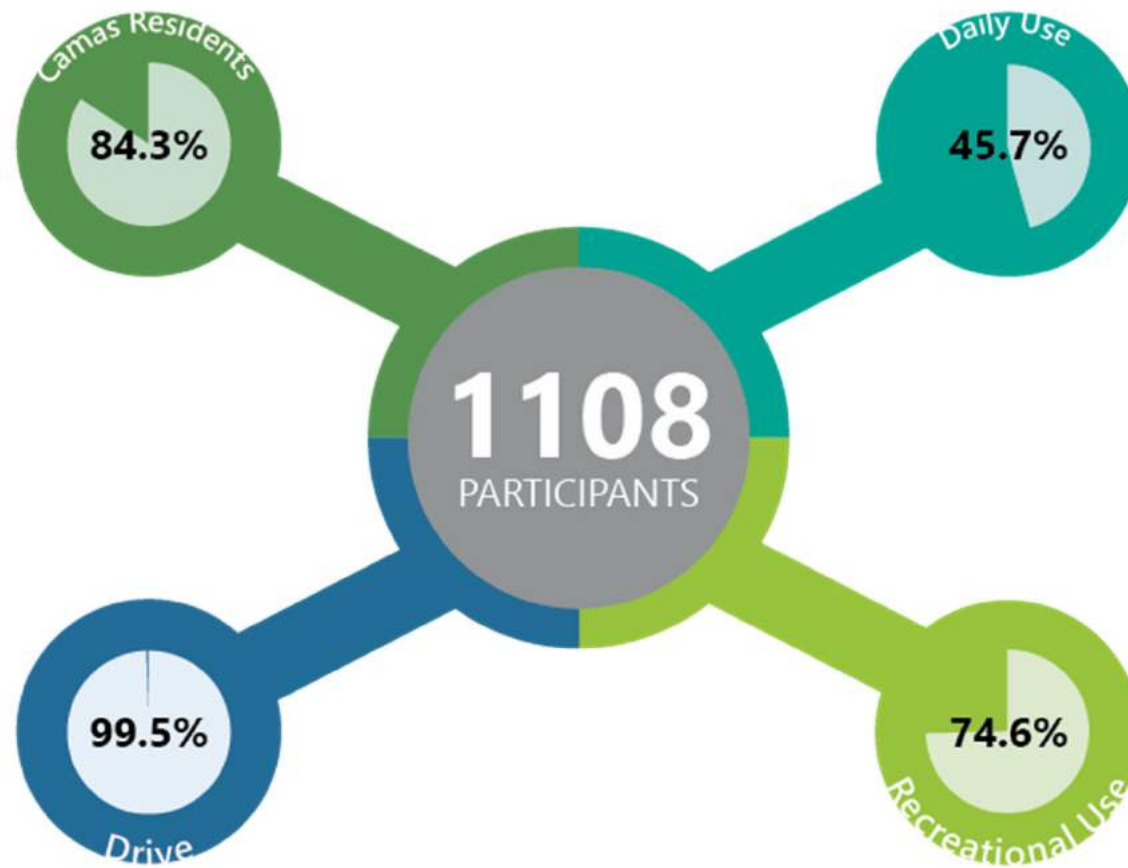


Consider environmental impacts.



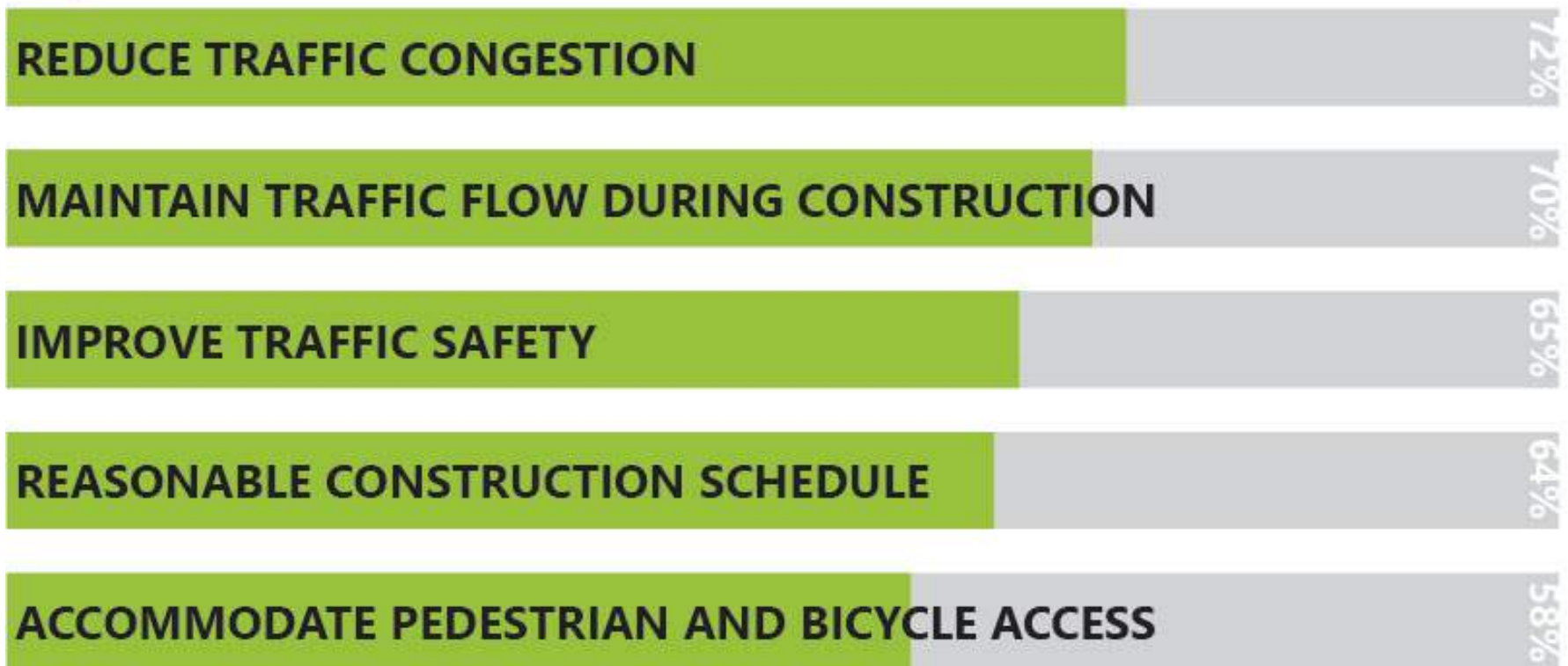
Consider bridge improvement/replacement now instead of later.

On-Line Survey Results



On-Line Survey Results

Top Five Criteria for the New Intersection



Alternatives Analysis

Alternatives Analysis - Evaluation Criteria

Public Impacts & Benefits

- Overall project schedule
- Parking impacts
- Accessibility to lake
- Private property impacts
- Aesthetics

Traffic Impacts & Benefits

- Short term traffic impacts: construction
- Long term traffic impacts: resiliency
- Pedestrian safety
- Vehicular safety
- Access management

Environmental Impacts & Benefits

- Tree impacts
- Lake and wetland impacts
- Habitat impacts
- Water and air quality

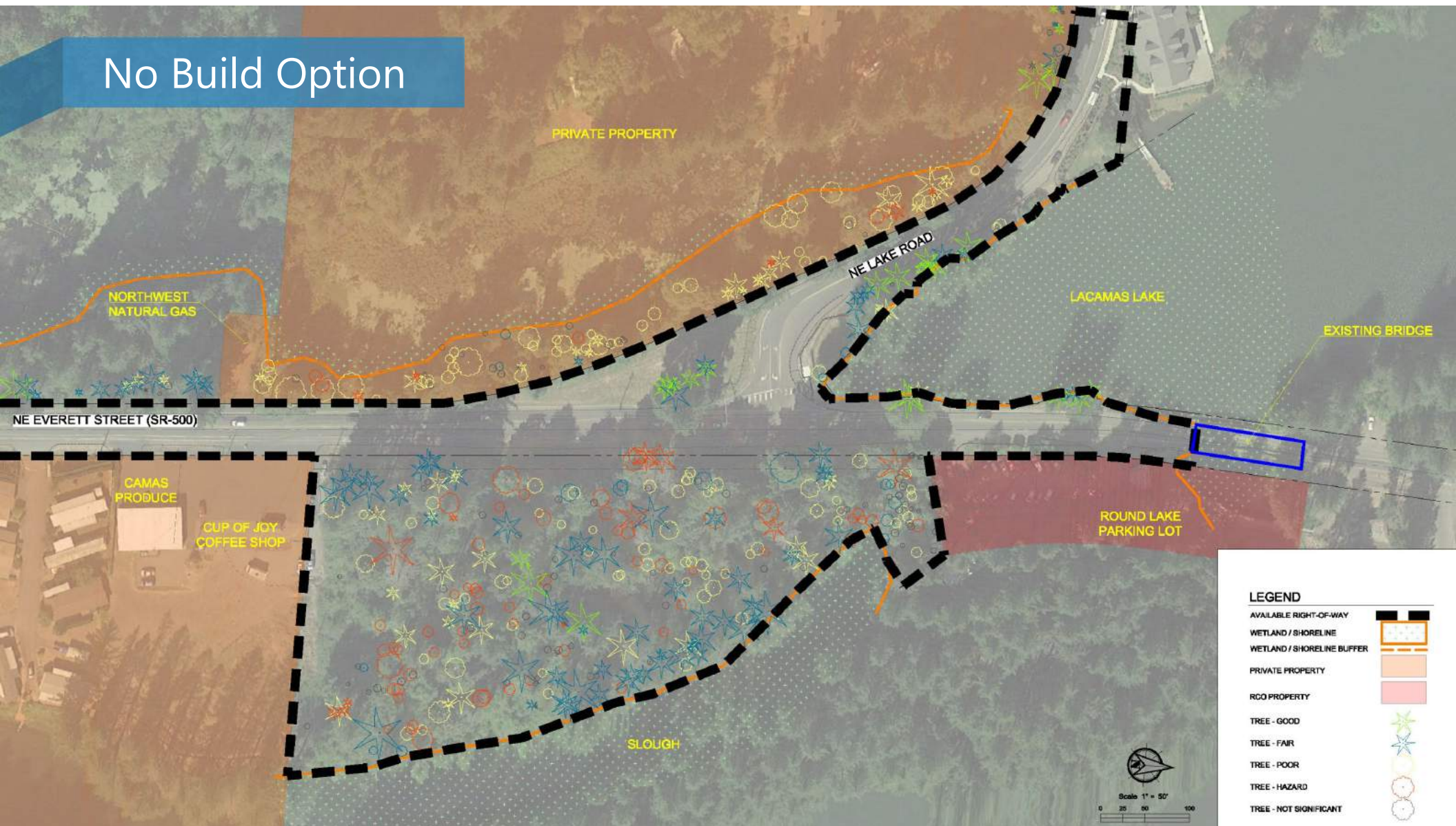
Infrastructure Impacts & Benefits

- Impact to existing bridge
- Short term cost (construction)
- Utility impacts

Updated Alternatives

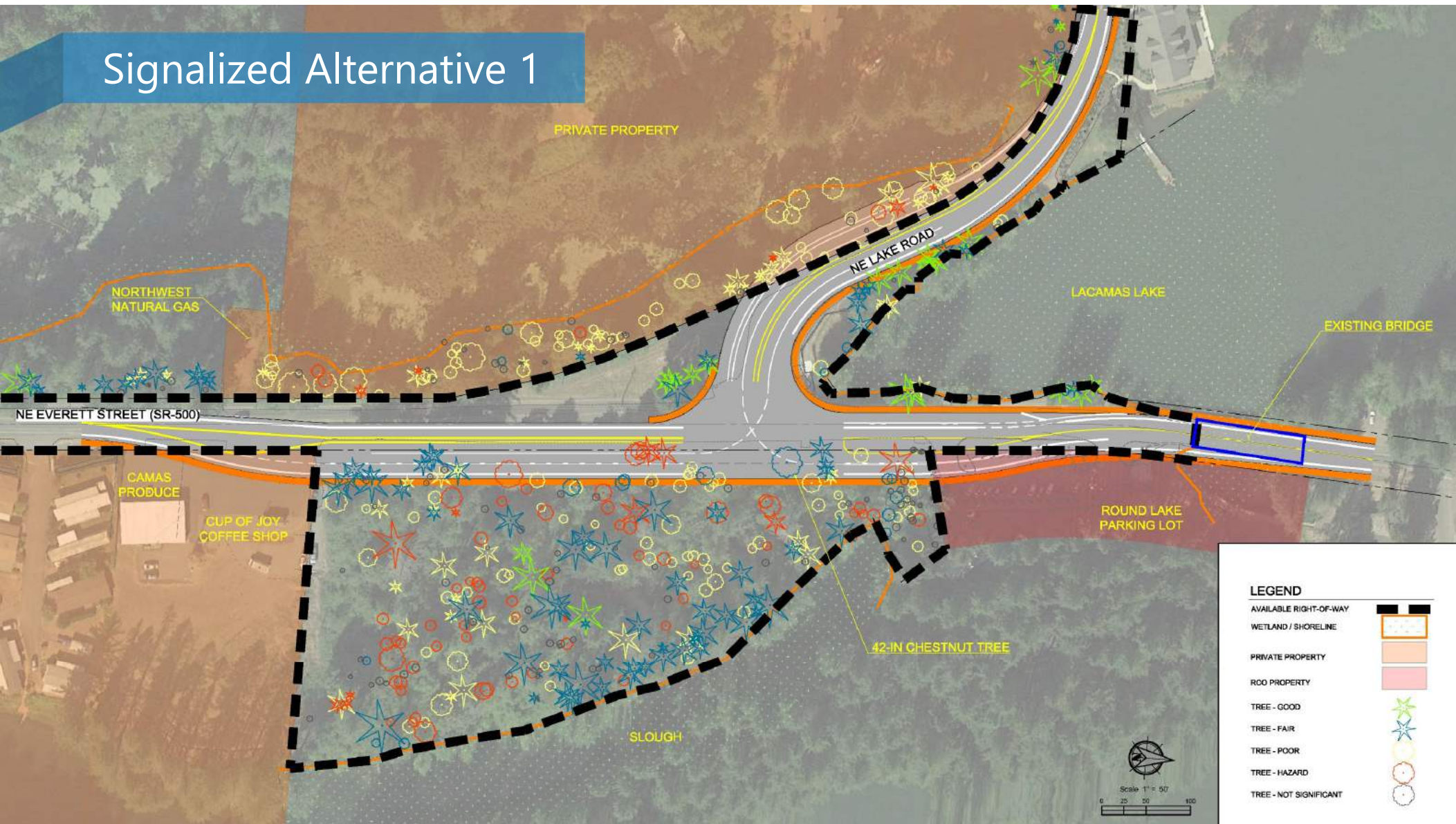
No Build Option

No Build Option

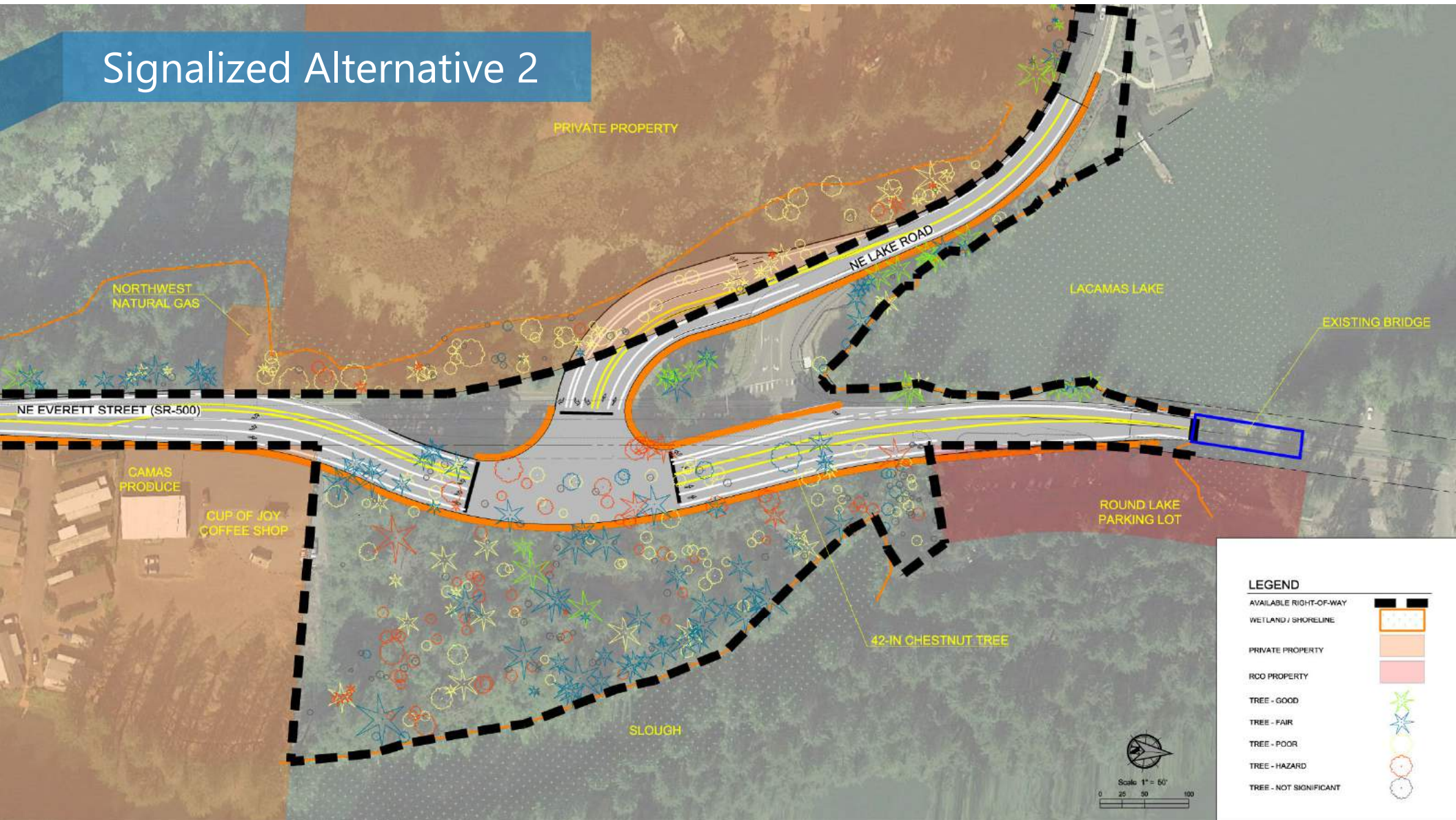


SIGNALIZED OPTIONS

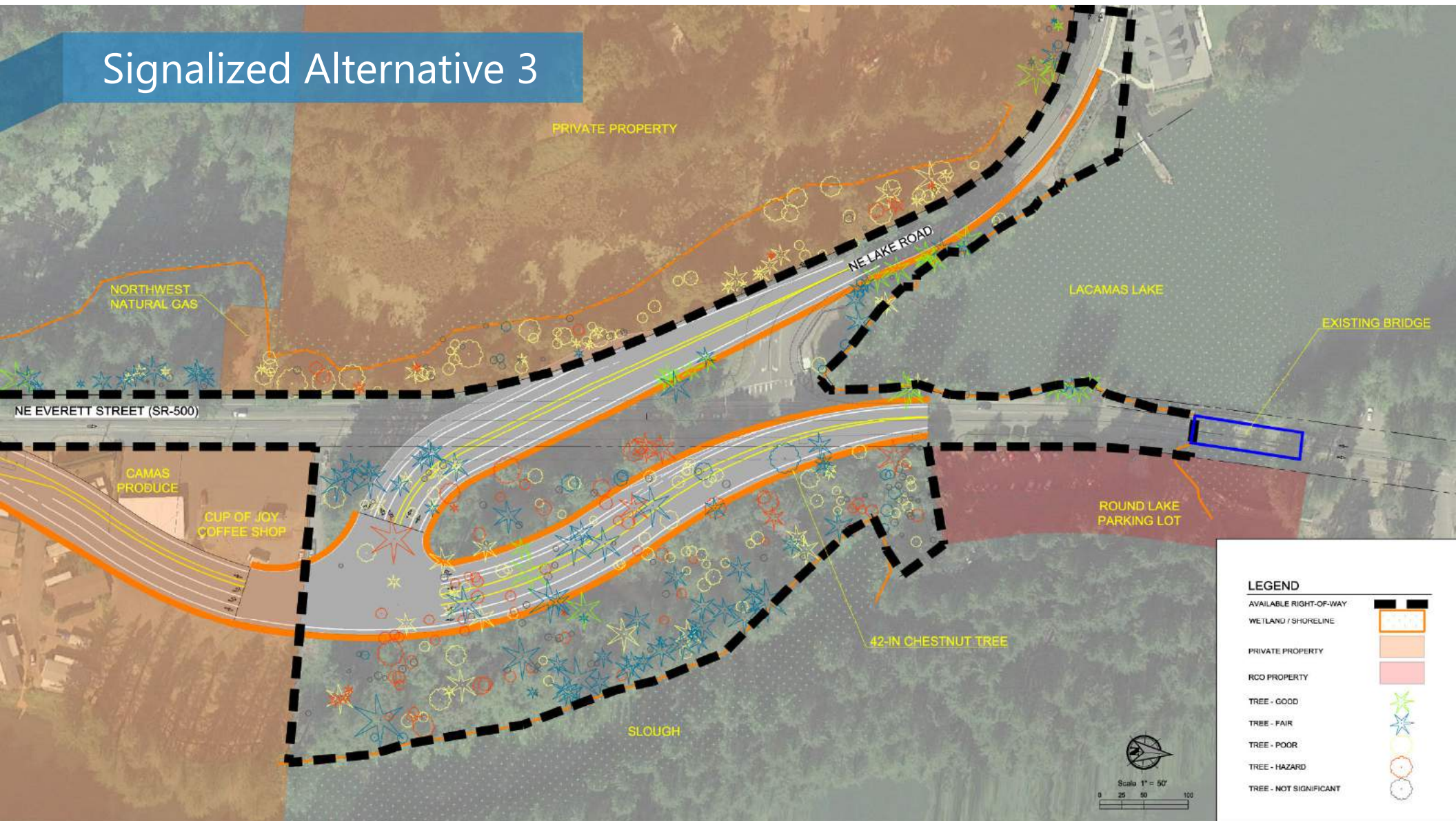
Signalized Alternative 1



Signalized Alternative 2

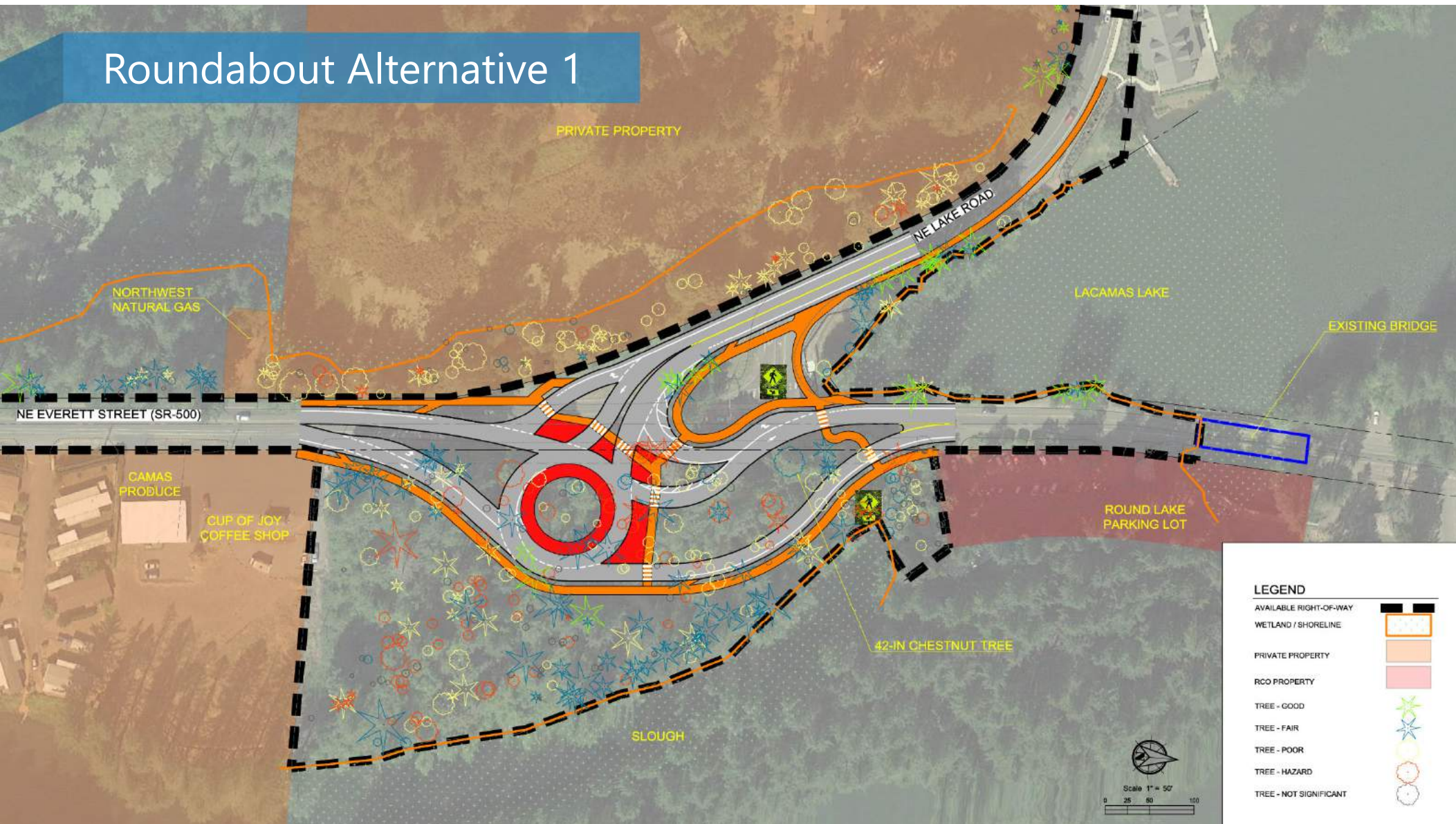


Signalized Alternative 3

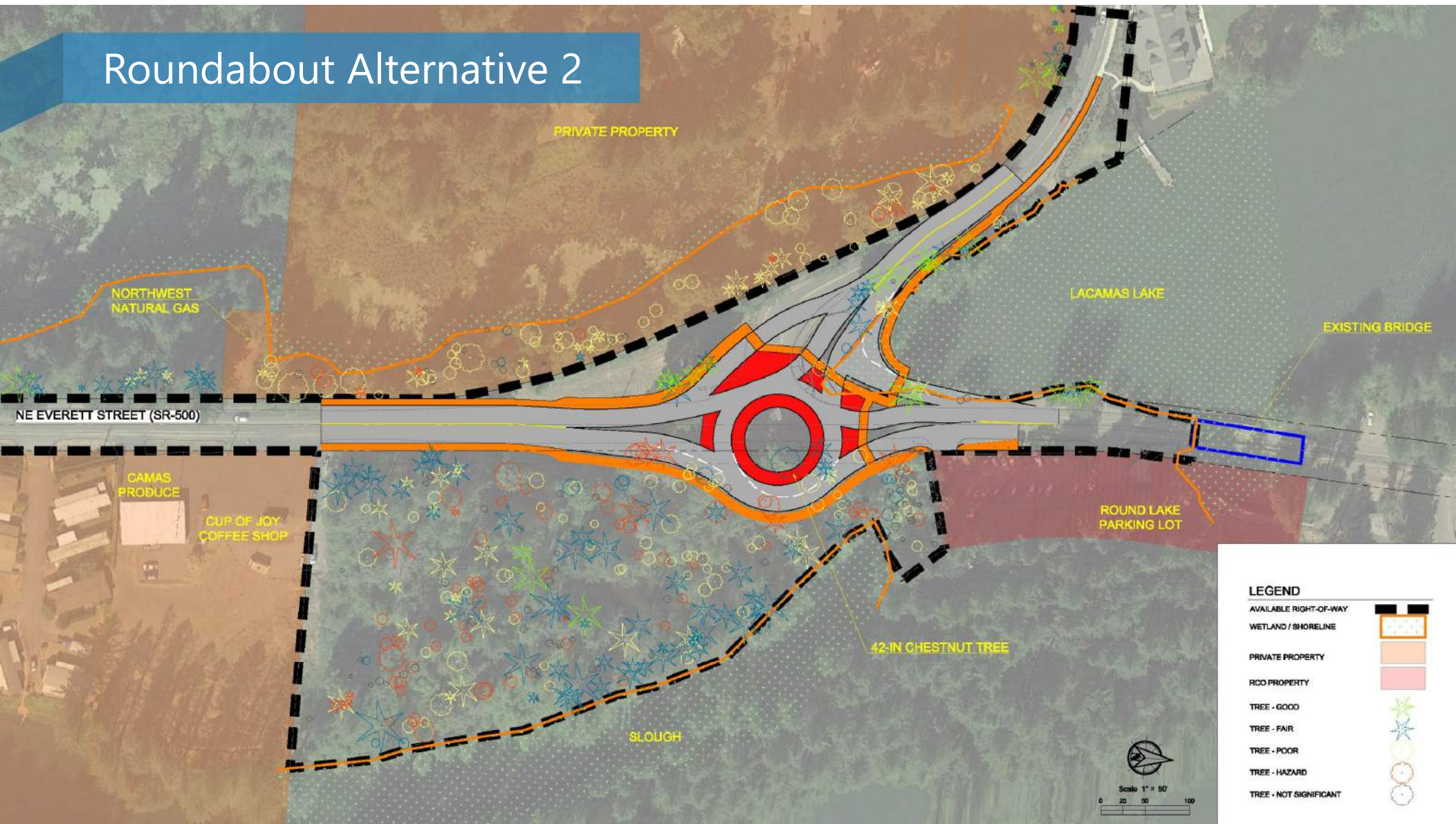


ROUNDABOUT OPTIONS

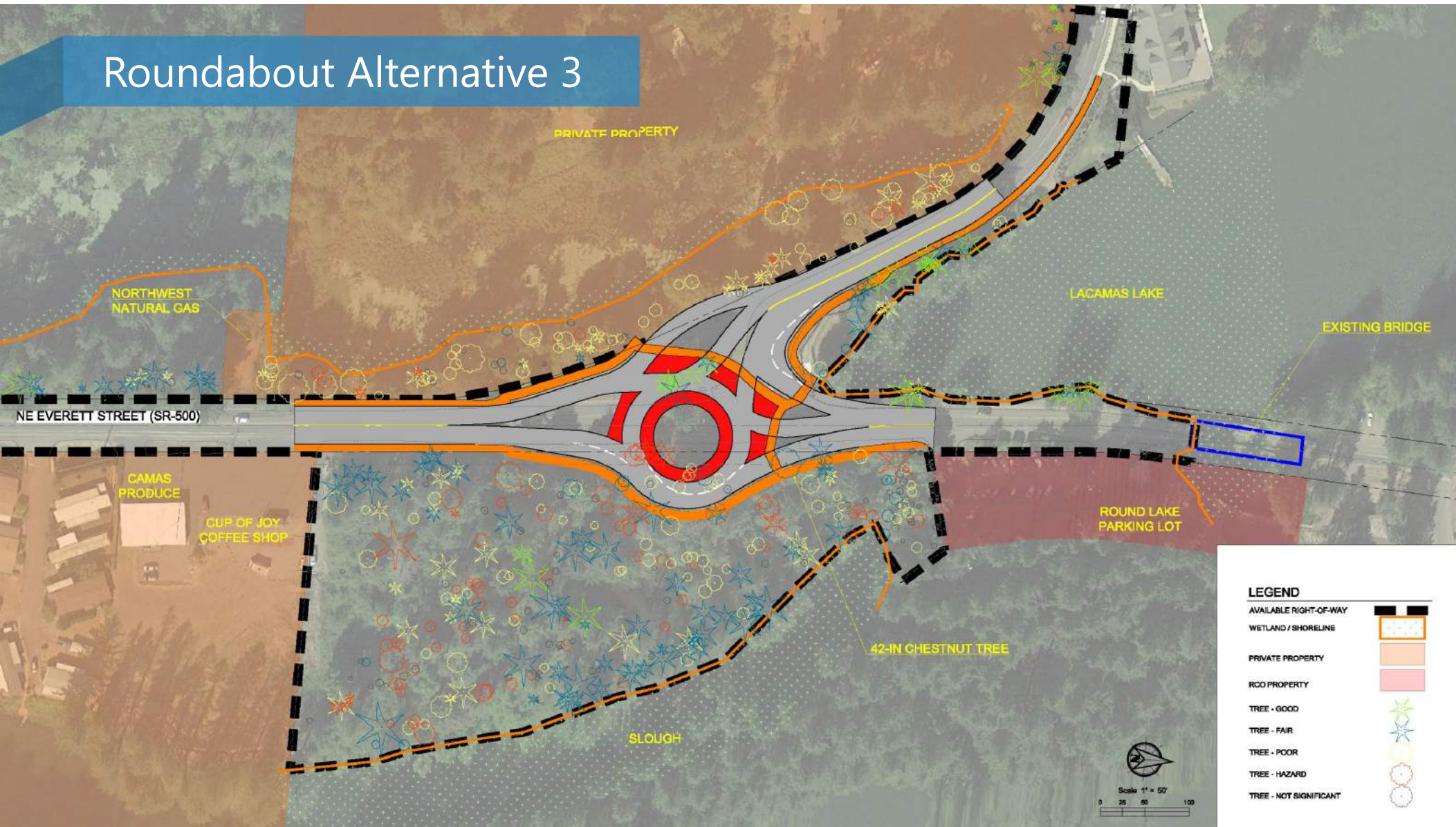
Roundabout Alternative 1



Roundabout Alternative 2



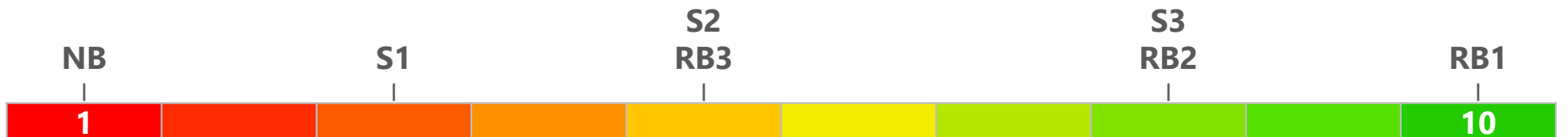
Roundabout Alternative 3



Alternative Ratings with the Evaluation Criteria

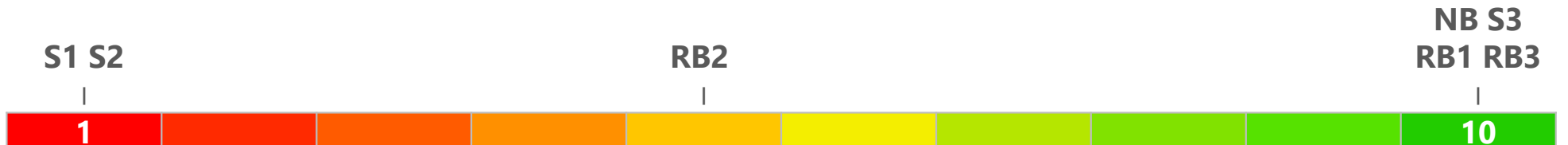
Project Schedule

Alt #	Score	Justification
NB	1	This project has an indefinite schedule as it will never resolve the issues with the intersection.
S 1	3	This alternative will have a major impact to the County Parks and will impact the bridge. Permitting and construction for this alternative would likely take 7 years.
S 2	5	This alternative will have a major impact to the County Parks. Permitting and construction for this alternative would likely take 6 years.
S 3	8	This alternative will have a major property and business impacts. Permitting and construction for this alternative would likely take 3 years.
RB 1	10	This alternative does not require any right of way, federal permits, and does not impact the County Park property. Permitting and construction for this alternative would likely take 1.5 years.
RB 2	8	This alternative will have minor private property and county park impacts. Permitting and construction for this alternative would likely take 3 years.
RB 3	5	This alternative will have a major impact to the county parks property (RCO funded). Permitting and construction for this alternative would likely take 6 years.



Public Parking

Alt #	Score	Justification
NB	10	The no build alternative will not have any impacts.
S 1	1	This alternative will require the parking lot to be reconstructed.
S 2	1	This alternative will require the parking lot to be reconstructed.
S 3	10	This alternative will not impact the parking lot.
RB 1	10	This alternative will not impact the parking lot.
RB 2	5	This alternative will likely require the access to be converted to right in/right out access
RB 3	10	This alternative will not impact the parking lot.



Accessibility to Lake

Alt #	Score	Justification
NB	1	The no build alternative will not have any impacts.
S 1	10	This alternative will provide an accessible route from overflow parking to the Round Lake Park amenities.
S 2	10	This alternative will provide an accessible route from overflow parking to the Round Lake Park amenities.
S 3	10	This alternative will provide an accessible route from overflow parking to the Round Lake Park amenities.
RB 1	10	This alternative will provide an accessible route from overflow parking to the Round Lake Park amenities.
RB 2	10	This alternative will provide an accessible route from overflow parking to the Round Lake Park amenities.
RB 3	10	This alternative will provide an accessible route from overflow parking to the Round Lake Park amenities.



Private Property Impacts

Alt #	Score	Justification
NB	10	The no build alternative will not have any impacts.
S 1	5	This Alternative would likely require right of way acquisition from 3 parcels, but is not anticipated to have substantial impacts to property use.
S 2	3	This Alternative would likely require right of way acquisition from 4 parcels, and is anticipated to have substantial impacts to property use.
S 3	1	This alternative will require multiple residences and businesses to be relocated.
RB 1	9	This alternative is not likely to have any private property right of way acquisition, but may require temporary construction easements on one property.
RB 2	7	This Alternative would likely require right of way acquisition from 1 parcel, but is not anticipated to have substantial impacts to property use.
RB 3	9	This alternative is not likely to have any private property right of way acquisition, but may require temporary construction easements on one property.

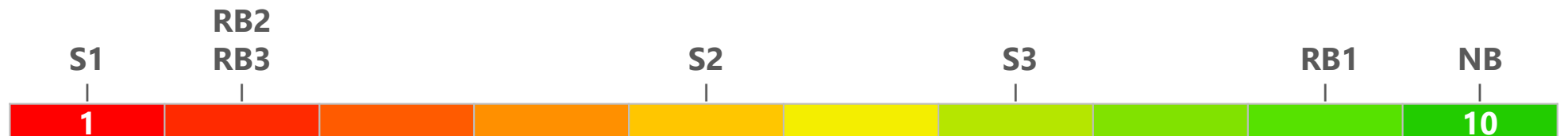


Alt #	Score	Justification
NB	1	No aesthetic improvements
S 1	5	Signalized intersection, with little area for landscaping
S 2	6	Signalized intersection, with moderate area for landscaping
S 3	7	Signalized intersection, with moderate area for landscaping
RB 1	10	Roundabout intersection, with substantial area for landscaping
RB 2	8	Roundabout intersection, with moderate area for landscaping
RB 3	8	Roundabout intersection, with moderate area for landscaping



Short Term Traffic Impacts (Construction)

Alt #	Score	Justification
NB	10	The no build alternative will not have any impacts.
S 1	1	This alternative will require a bridge replacement and additional staging impacts.
S 2	5	This alternative is anticipated to be generally constructed off line, but will likely require a temporary signal.
S 3	7	This alternative is anticipated to be almost completely constructed off line, but will likely require a temporary signal.
RB 1	9	This alternative is anticipated to be almost completely constructed off line.
RB 2	2	This alternative is anticipated to have substantial delay as several stages of construction will be needed to build the project.
RB 3	2	This alternative is anticipated to have substantial delay as several stages of construction will be needed to build the project.



Long-Term Traffic Impacts (Performance)

Alt #	Score	Justification
NB	1	Intersection Failure (delay greater than 80 seconds).
S 1	4	(delay of 34 seconds). Intersection geometry may limit vehicle queue storage.
S 2	5	(delay of 34 seconds). This signal alternative would provide adequate queue storage for optimal performance of the signal.
S 3	6	(delay of 34 seconds). This signal alternative would provide greatest queue storage for signal alternatives.
RB 1	10	(delay of 17 seconds). This roundabout alternative would provide adequate queue storage.
RB 2	8	(delay of 17 seconds). This roundabout alternative would provide adequate queue length storage. Geometry may limit southbound vehicle queue storage.
RB 3	9	LOS C (delay of 17 seconds). This roundabout alternative would provide adequate queue storage. Geometry may limit southbound vehicle queue storage.



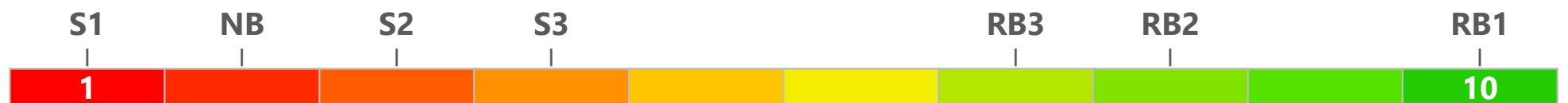
Pedestrian and Bicycle Safety

Alt #	Score	Justification
NB	1	Has no pedestrian facilities and minor bicycle facilities.
S 1	5	Provides larger crossing distances for pedestrians due to road widening.
S 2	4	Provides larger crossing distances for pedestrians due to road widening. The pedestrian crossings at the intersection are farther away from crossing locations preferred by community members.
S 3	3	Provides larger crossing distances for pedestrians due to road widening. Pedestrian crossings at the intersection are the farthest for signal alternatives away from crossing locations preferred by community members.
RB 1	7	Provides shorter crossing distances for pedestrians than traditional signal. Pedestrian crossings at the intersection are farther away from crossing locations preferred by community members. Relies on vehicle yielding for pedestrian/bicycle crossings.
RB 2	9	Provides shorter crossing distances for pedestrians than a traditional signal while also providing the longest sight distance of pedestrians. This alternative relies on vehicle yielding for pedestrian/bicycle crossings.
RB 3	8	Provides shorter crossing distances for pedestrians than a traditional signal. This alternative relies on vehicle yielding for pedestrian/bicycle crossings.



Vehicular Safety

Alt #	Score	Justification
NB	2	This alternative maintains a higher probability of fatal and overall crashes at the intersection. Due to anticipated congestion, rear-end crashes are a higher probability.
S 1	1	This signal alternative has a higher probability of fatal crashes and overall crashes at the intersection compared to roundabouts. This roadway alignment promotes higher speeds.
S 2	3	This signal alternative has a higher probability of fatal crashes and overall crashes at the intersection compared to roundabouts.
S 3	4	This signal alternative has a higher probability of fatal crashes and overall crashes at the intersection compared to roundabouts.
RB 1	10	This roundabout alternative has a lower probability of fatal crashes and overall crashes at the intersection compared to signals. Roundabout location and approach alignments promote slower speeds.
RB 2	8	This roundabout alternative has a lower probability of fatal crashes and overall crashes at the intersection compared to signals. Approach alignments promote slower speeds.
RB 3	7	This roundabout alternative has a lower probability of fatal crashes and overall crashes at the intersection compared to signals. Approach alignments promote slower speeds.



Access Management

Alt #	Score	Justification
NB	1	This alternative has the longest queues and would continue to impact access in the vicinity of the intersection.
S 1	5	This alternative has longer queues while slightly impacting access to the Round Lake parking lot and Camas Produce.
S 2	4	This alternative has longer queues while impacting access to Camas Produce by shifting the intersection south.
S 3	3	This alternative has longer queues; however, the south leg impacts business significantly (Camas Produce), as well as their access.
RB 1	10	This alternative has shorter queues and does not close or impact access surrounding the intersection.
RB 2	7	This alternative has shorter queues; however, placement may impact access at the Round Lake parking lot.
RB 3	6	This alternative has shorter queues; however, placement may impact access at the Round Lake parking lot.



ENVIRONMENTAL IMPACTS & BENEFITS | Tree Impacts

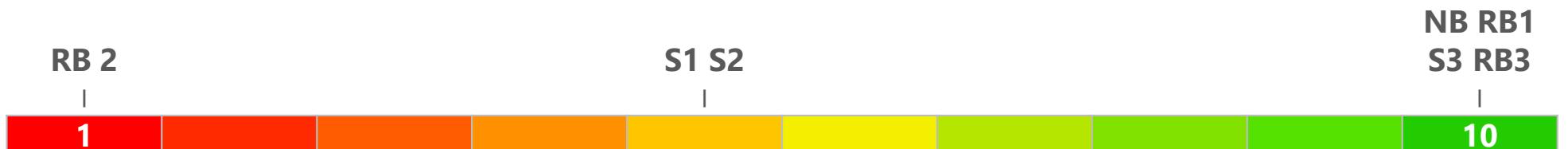
Tree Rating	Impact /							
	Tree	NB	S1	S2	S3	RB1	RB2	RB3
GOOD (>36-in DBH)	6	0	3	2	3	3	2	2
GOOD (<36-in DBH)	4	0	11	15	10	13	14	12
FAIR (>36-in DBH)	3	0	3	7	8	10	1	1
FAIR (<36-in DBH)	2	0	26	28	24	27	24	21
POOR (>36-in DBH)	2	0	1	1	1	2	0	1
POOR (<36-in DBH)	1	0	50	81	70	59	32	43
HAZARD	0	0	16	30	44	27	12	15
American Chestnut	8	0	1	1	1	0	1	1
Total Trees Impacted		0	111	165	161	141	86	96
Tree Impact score		0	183	240	210	217	159	158

Criteria Scoring	10	5	1	3	2	7	7
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Lake and Wetland Impacts

Alt #	Score	Justification
NB	10	This alternative does not require construction and has no impact on the lakes or wetlands.
S 1	5	For areas outside of the bridge, this will have no direct impacts to the wetlands and the lake located adjacent to the study area. Bridge impacts are unknown, but could trigger US Corps of Engineer permitting.
S 2	5	This alternative may have some temporary impacts to the lake located adjacent to the study area, but no direct impacts to wetlands.
S 3	10	This alternative does not appear to have direct impacts to the lake or wetlands located adjacent to the study area.
RB 1	10	This alternative does not appear to have direct impacts to the wetlands or the lake located adjacent to the study area.
RB 2	1	This alternative will directly impact approximately 0.15 acre of the southeast shoreline of Lacamas Lake between the northern and western leg of the roundabout, and will have no direct wetland impacts.
RB 3	10	This alternative does not appear to have direct impacts to the lake or wetlands located adjacent to the study area.



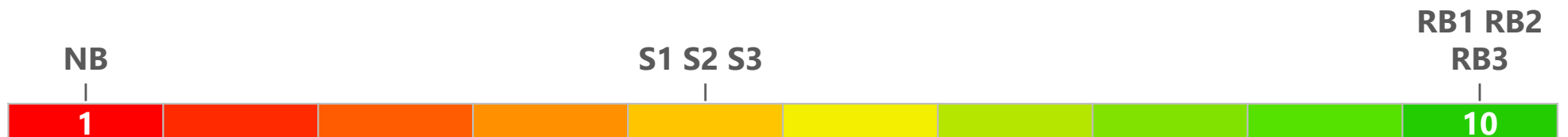
Habitat Impacts

Alt #	Score	Justification
NB	10	This alternative does not require construction and has no impact to habitat areas.
S 1	10	This alternative will have less than 10% tree canopy reduction in habitat area. The American Chestnut tree would be impacted.
S 2	5	This alternative will have between 15 and 30% tree canopy reduction in habitat area. The American Chestnut tree would be impacted.
S 3	5	This alternative will have between 15 and 30% tree canopy reduction in habitat area. The American Chestnut tree would be impacted.
RB 1	1	This alternative will have more than 30% tree canopy reduction in habitat area. Maybe possible to retain American Chestnut tree.
RB 2	8	This alternative will have less than 15% tree canopy reduction in habitat area. The American Chestnut tree would be impacted.
RB 3	8	This alternative will have less than 15% tree canopy reduction in habitat area. The American Chestnut tree would be impacted.



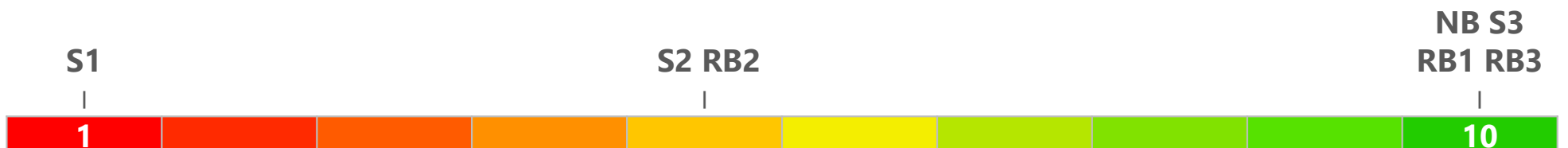
Water and Air Quality

Alt #	Score	Justification
NB	1	This alternative does not treat all project stormwater runoff to current Ecology standards, and is subject to longer vehicular idling times.
S 1	5	This alternative will treat stormwater runoff to current Ecology standards, but is subject to longer vehicular idling times.
S 2	5	This alternative will treat stormwater runoff to current Ecology standards, but is subject to longer vehicular idling times.
S 3	5	This alternative will treat stormwater runoff to current Ecology standards, but is subject to longer vehicular idling times.
RB 1	10	This alternative will treat stormwater to current Ecology standards and will result in less vehicular idling time.
RB 2	10	This alternative will treat stormwater to current Ecology standards and will result in less vehicular idling time.
RB 3	10	This alternative will treat stormwater to current Ecology standards and will result in less vehicular idling time.



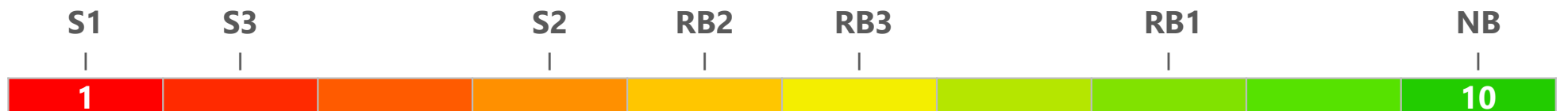
Impact to the Existing Bridge

Alt #	Score	Justification
NB	10	Does not impact the bridge.
S 1	1	Impacts the bridge.
S 2	5	A larger portion of this alternative will need to be reconstructed when the bridge is replaced in the future.
S 3	10	Does not impact the bridge.
RB 1	10	Does not impact the bridge.
RB 2	5	A larger portion of this alternative will need to be reconstructed when the bridge is replaced in the future.
RB 3	10	Does not impact the bridge.



Construction Cost

Alt #	Score	Justification
NB	10	\$0
S 1	1	\$19.9 M
S 2	4	\$9.8 M
S 3	2	\$11.5 M
RB 1	8	\$6.8 M
RB 2	4	\$10.0 M
RB 3	6	\$8.8 M



Impacts to Existing Utilities

Alt #	Score	Justification
NB	10	This alternative does not require relocations.
S 1	1	This alternative will require substantial rerouting of aerial utilities.
S 2	4	This alternative will require some rerouting of aerial facilities
S 3	6	Poles should be able to be relocated in line with the existing aerial facilities.
RB 1	7	Poles should be able to be relocated in line with the existing aerial facilities.
RB 2	4	This alternative will require some rerouting of aerial facilities
RB 3	4	This alternative will require some rerouting of aerial facilities

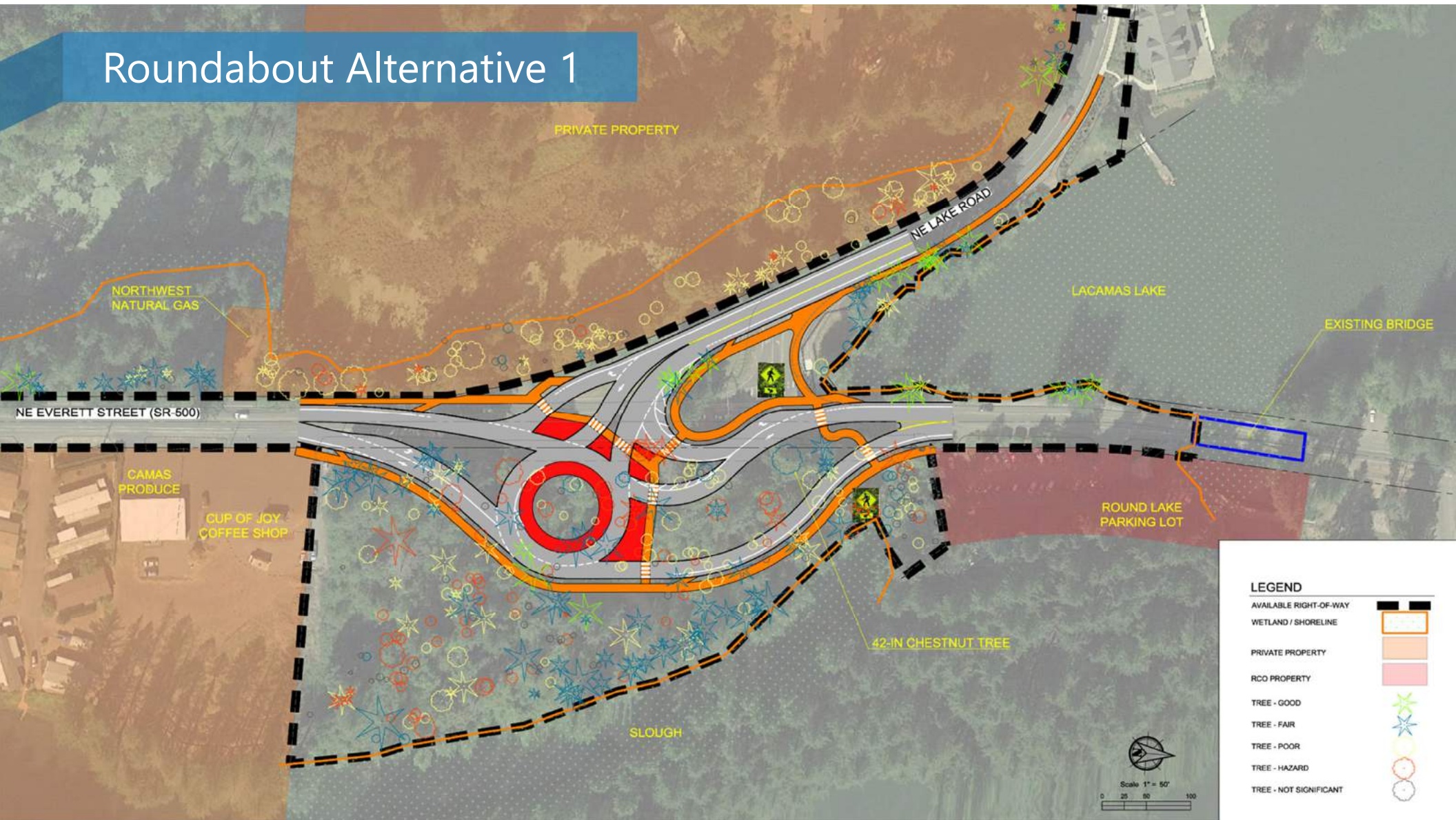


Results Summary

	NB	S1	S2	S3	RB1	RB2	RB3
Total Score (No Priority)	99	68	75	100	143	111	129
Total Score (Web Survey Priority)	4,585	3,379	3,832	5,173	7,307	5,697	6,403

Draft Preferred Alternative Recommendation

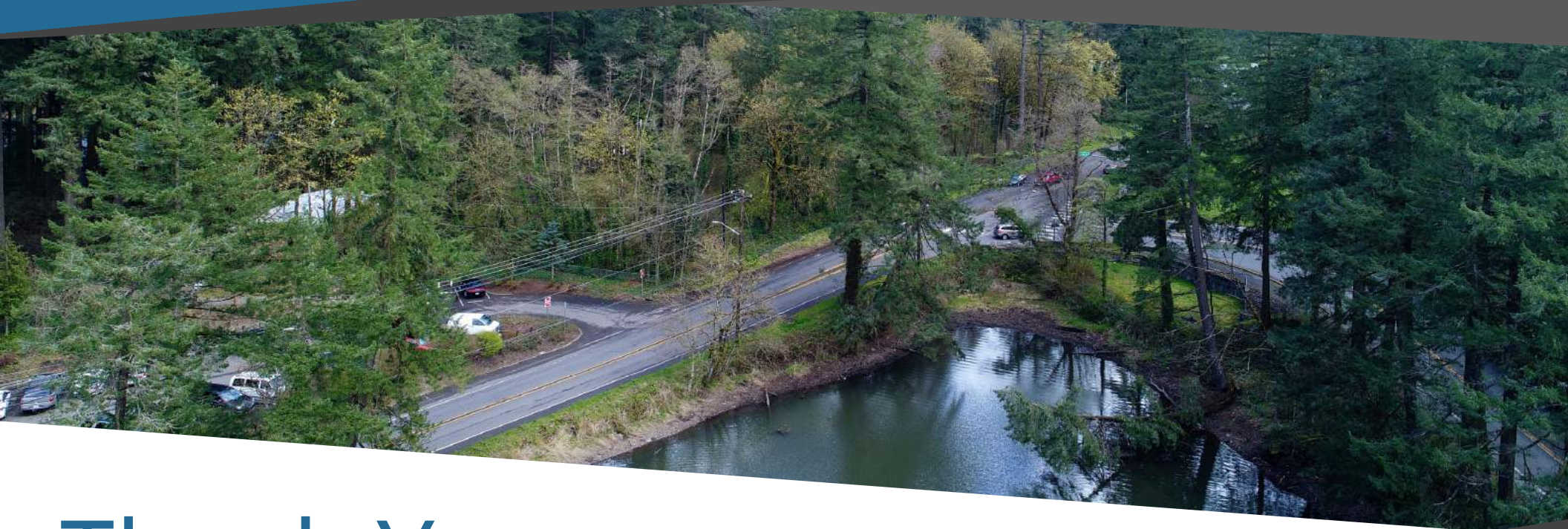
Roundabout Alternative 1



Q & A

NEXT STEPS

Next Open House is Planned for April 9, 2019



Thank You

