# COQUILLE INDIAN TRIBE

## KILKICH TRANSPORTATION SAFETY PROJECT
## Response to New Intersection Questions & Concerns
## September 20, 2023

**What was the purpose of redoing the intersection?**

The project objectives were listed as follows in the Project Charter adopted by Tribal Council resolution on May 13, 2022**:**

- "Reduced pedestrian and auto conflicts near the learning center
- Reduced auto on auto conflict by eliminating parked cars in the travel way.
- Reduce points of conflict between pedestrians and autos by more than 1/3 by creating a 3-way stop with clear lines of sights and visible crosswalks.
- Reduce pedestrian exposure walking from the Learning Center to CELS by adding a sidewalk.
- Reduce pedestrian and auto conflicts by extending the sidewalk along Miluk Dr. to Cape Arago Hwy.
- Increase the number of parking spaces at the Learning Center

**What is the history of how this project came about?**

- The issues with the original intersection, including concerns about pedestrian safety and auto conflicts were first formally identified in the Empire Comprehensive Plan, adopted by Tribal Council resolution in July 2018.
- Traffic Safety, including how to safely manage the anticipated increase in traffic due to the as-yet-not-built Ko-Kwel Wellness Center, was a key discussion point at the community outreach meeting in March 2019.
- "Community Center/Daycare congestion due to unloading/loading on street, pedestrians unsafe, through traffic speeding and not yielding" was the number one community safety concern in the Strategic Transportation Safety Plan adopted by Tribal Council resolution in September 2019.
- Design work for a new intersection began in September of 2019.
- The project was added to the Priority Transportation Project List by Tribal Council Resolution in September 2020 and formally submitted to the BIA by Tribal Council Resolution in November 2020
- The final design was in the Project Charter approved by Tribal Council resolution in May 2022.

**Who was/is responsible for the design, construction, and management of the project?**

- SHN Engineering was selected in 2019 through a formal bid process to develop the design and support the construction process.
- CIT staff, including Mark Johnston, Fauna Hill, Bridget Wheeler, Matt Jensen, and CIT contractor, Eric Scott, have been the primary project team since October 2019. Coquille Indian Housing Authority, Learning Center, and Natural Resources staff have also provided on-going feedback regarding design and construction elements.

- The Coquille Indian Housing Authority (CIHA) Board provided input:
  - June 19, 2020.
  - June 7, 2021
  - May 22, 2023
- Tribal Council held workshops about the project on the following dates:
  - December 11, 2019
  - January 8, 2020
  - June 11, 2020
  - June 25, 2020
  - July 8, 2020
  - September 10, 2020
  - April 19, 2022
  - September 14, 2022
  - May 1, 2023

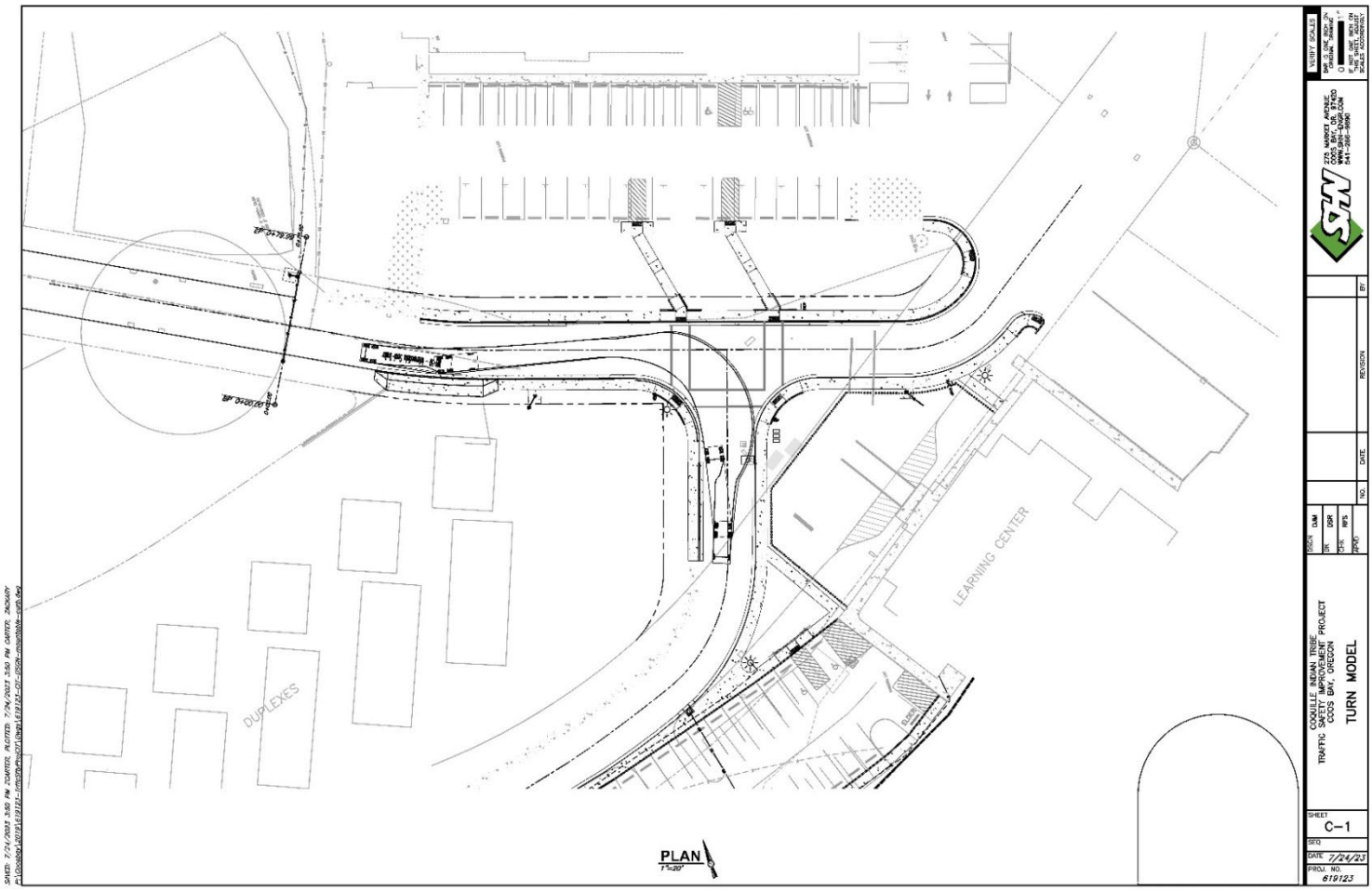
**Why is the new intersection so narrow? It seems narrower than standard residential streets, narrower than it was before, and narrower than other spots on Kilkich.**

- It does feel narrow with the construction cones and laborers still working in the road.
- Also, the final asphalt for the top of the road hasn't been laid yet, and there are 12 inches on each side of Miluk Drive, at the new intersection, that are raised (the curb/gutter lip), that will be flush and part of the drivable road surface once the project is complete.
- When finished Miluk Drive will be 26 ft wide (see diagram below).

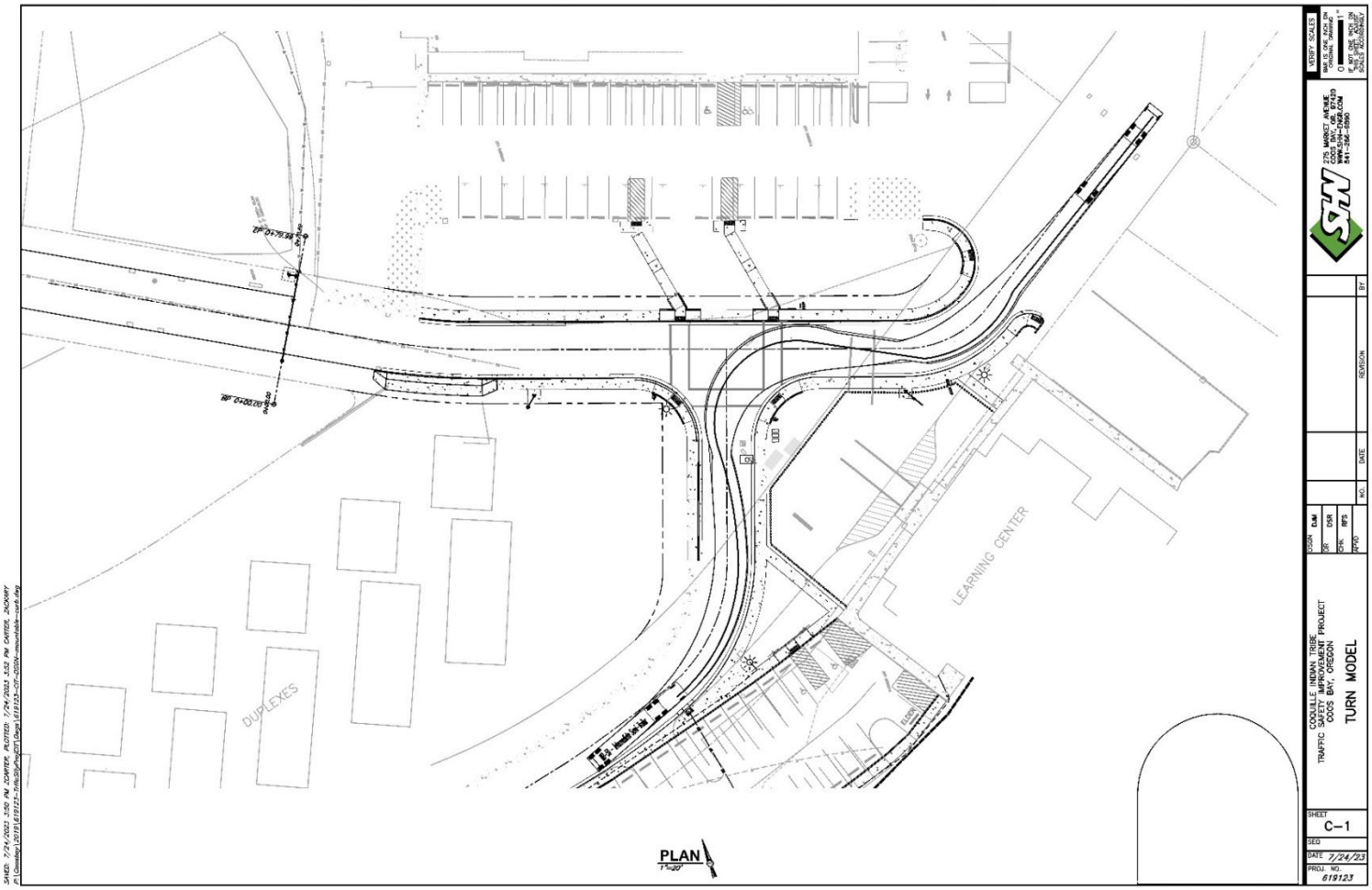

- This is slightly wider than the original width of Miluk Drive (25.5 ft) at the intersection.

**The radius of the north curb when turning north (left) from Miluk Drive onto Mexeye or turning west (right) from Mexeye Loop onto Miluk Drive is too tight. Large vehicles must turn into the oncoming traffic lane and/or go up on the curb.**

- CIT staff have physically measured the radii of both the north and south curbs at the new t-intersection and confirmed that they were correct at 30' and that overall, the construction was happening per the approved design and construction documents (see timeline above).
- SHN Engineering completed a turn model confirming that trucks up to DW-50 (defined as having two units with a width of 8.5 feet and with the wheelbases of the two units (to the rear axle) 20 and 30 feet, for a total of 50 feet from the front wheels to the rear wheels, with a front overhang of 3 feet) could make the turn, although some may have to turn into the oncoming traffic lane to do so. (See Miluk Right and Mexeye Right diagrams below).

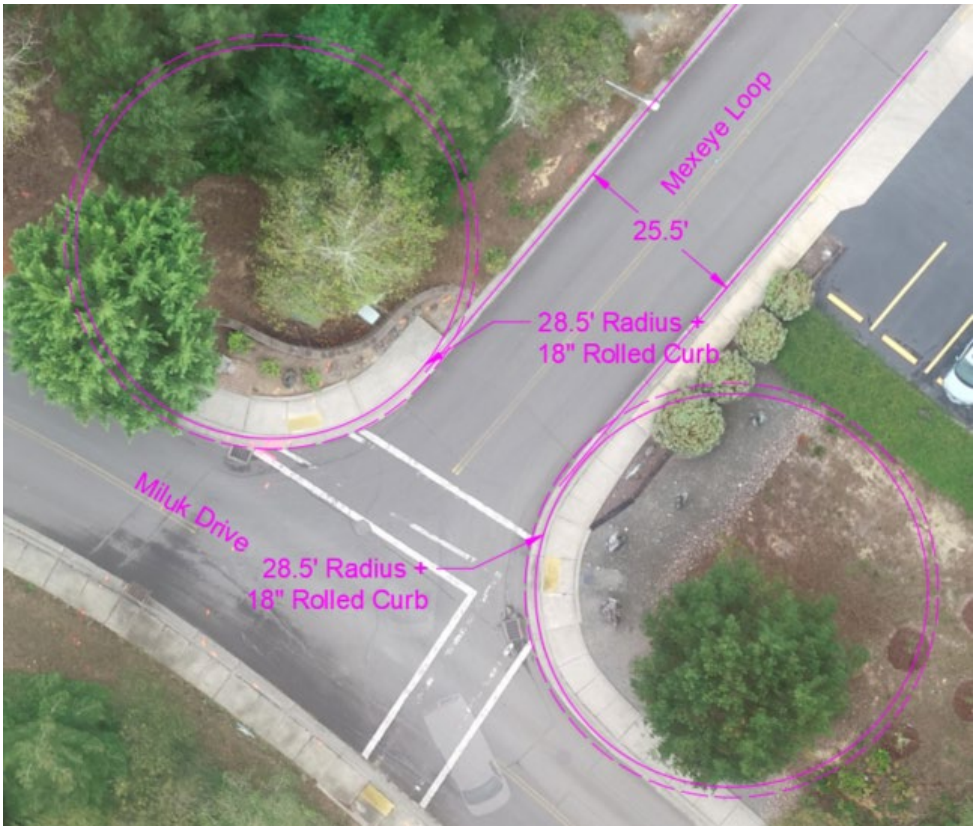



*Mexeye Right Diagram.*




*Miluk Right Diagram.*

- Knife River had their dispatcher come out to the site to assess the radii for large truck access. He made a visual assessment that a lowboy (a trailer that is a specialized hauling rig that transports tall and heavy equipment and machinery and differs from standard flatbeds because they sit very close to the ground to accommodate the extra height) would not be able to make the turn without going over the curbs.
- The sidewalks throughout this project are reinforced with rebar with a concrete strength of 5000 psi, making the typical sidewalk able to carry a heavy load. A mountable curb was installed on the south corner near the Learning Center for the limited circumstances that a large very heavy vehicle, like lowboy trucks, would need to enter Kilkich for construction. In the rare instances that those very large heavy vehicles need access to Kilkich, the intent is to coordinate routing and delivery of trucks of this size through the intersection utilizing the mountable curb route.
- The radii at the new intersection are wider (both are 30') than the curbs at the other t-intersection locations around the loop. (See Mexeye Loop and Miluk intersection adjacent to CIHA building and Jistajaya Court and Mexeye Loop intersection diagrams below.)




*Mexeye Loop is 25.5’ wide and both curbs have a 28.5’ radius.)*


*Jistajaya Court is 25.5’ wide. The west curb is 18.5’ radius and the east curb is 22.5’ radius.*

**Isn't it illegal or at the very least unsafe to have large vehicles, like the school buses turn into the oncoming lane?**

- "Double solid yellow line - Indicates passing is not allowed for both directions of traffic. You may turn left, to enter or exit a roadway, across double solid yellow lines after waiting for oncoming traffic to clear."[1]
- **"**Large vehicles often cannot see vehicles directly behind or beside them when they are attempting to negotiate a turn. Observe their turn signals. Do not cut in between a large vehicle and the curb or shoulder. Large vehicles may need to swing wide and use more than one lane to start or finish a turn. Be aware of long loads that may extend into adjacent lanes during a turn. When you see a large vehicle making a turn, do not crowd the intersection; allow it to complete the turn." [2]
- Large vehicle operators are trained to drive their vehicles through these intersections and over the double yellow lines safely as part of their Oregon CDL licensure process.[3]

**Why not just have a bigger turning radius like we had there before?**

- Staff did bring Tribal Council an option with a 44ft radii (the widest that would work without moving the vaults or encroaching on some of the CIHA lease near the duplexes). This option was not selected for the following reasons:
    - The wider corner would have decrease visibility and increase the amount of time pedestrians are in the road and exposed to traffic, thus reducing pedestrian safety.
    - The Kilkich community has long been concerned with slowing down traffic and the wider corner promotes a higher speed for vehicles.
    - "In general, large vehicles are a very small percentage of the vehicle types and users of an intersection. Designing intersections for large vehicle maneuverability may be of benefit for the large vehicle, but it tends to make the intersection less safe for the majority of the users of the intersection. Therefore, in consideration of the overall safety of the intersection, the design should only accommodate large vehicle operation in most cases. Intersection radii should be kept as small as possible to minimize the size of the intersection and the pedestrian crossing distance." [4]

**How did we think this new design was safer than what was there before? Did we do a study to make sure this was better before we built it?**

- Intersection design began with identifying the users of the intersection first. Multiple travel methods are used at this intersection including pedestrian, bicycle, motorcycle, standard auto, buses, delivery vehicles, semi with trailer(s), travel trailers, tow-vehicles, etc. The design then identified the "design vehicle" and the "control vehicle".
- "The design vehicle is a frequent user of a given street and dictates the minimum required turning radius; a control vehicle is an infrequent large user. The design vehicle can turn using one incoming and one receiving lane; the control vehicle can turn using multiple lane spaces. …"[5]

[1] https://www.oregon.gov/odot/DMV/Pages/Online_Manual/Study-Section_2.aspx#Towing
[2] https://www.oregon.gov/odot/DMV/Pages/Online_Manual/Study-Section_4.aspx#Large
[3] https://www.oregon.gov/odot/forms/dmv/36.pdf, pg. 2-15, Section 2.7.6 Space for Turns
[4] https://www.oregon.gov/odot/Engineering/Documents_RoadwayEng/HDM-0500.pdf, pg. 42
[5] https://www.oregon.gov/odot/Engineering/Documents_RoadwayEng/HDM-0500.pdf, pg. 42

- While it is advantageous to design for the largest vehicle, often real-world constraints make it difficult or impossible to achieve. The most common vehicle utilizing the Kilkich intersection is a standard auto. This became the design vehicle. The largest vehicle is the semi with trailer(s), which became the control vehicle. The intersection was designed for the design vehicle with some widening to accommodate the control vehicle with multiple lane impact.
- We analyzed the opportunity to reduce risks for autos and pedestrians.
- Other factors considered in the turning radii were the effects on pedestrians and bicycles. "Large radii create long crossing distances with increased exposure times. These conditions negatively impact pedestrian and bicyclist safety…"[6]

**What if I still don't like the design once it is complete? Is it "fixable?" Better yet, why don't we change it now before the construction work is done?**

- Given all the information above, the Tribal Council has elected to wait and see what the intersection feels like once it is done, and drivers have gotten used to it. Then if there are still issues next spring the Council may decide to authorize modifications to the intersection.
- This is also the most cost-effective option as the construction season is near its end and the weather will not be optimal for pouring new concrete.

**We need more than one way in and out of Kilkich.**

- Previous conversations about fire resiliency and tsunami preparedness identified the need for two additional ingress/egress options in and out of Kilkich.
- Staff will include roadway design for those two additional access routes in the 2024 budget proposal.

[6] https://www.oregon.gov/odot/Engineering/Documents_RoadwayEng/HDM-0500.pdf, pg. 42