

As I understand it from your email of 2015-09-02, you're looking for a traffic calming solution for Leaburg Dam that meets four conditions:

1. Must be removable
2. Must cause drivers to slow to around 5 mph near the pier houses
3. Greatly improve relations with the neighbors
4. Be cost effective

My suggestions follow. However, I'd be uncomfortable if I didn't first point out that though I may think I'm proposing what a traffic engineer might, I do not possess that expertise or have the information from the data collection that I'm certain a traffic engineer would first do. Also, what I'm proposing is intended for the normal everyday usage of the roadway, not for construction periods such as we're going through now. So, that said, here we go.

Think of the roadway as having two usage modes. Let's call them Mode A and Mode B. Put two speed limit signs arranged vertically on both ends of Leaburg Dam, one sign for Mode A, the other for Mode B.

Mode A Usage

The purpose of Mode A is to provide a margin of safety for foot traffic on the Dam. The mode A sign would be 5 mph, have a Warning Beacon on it, and a WHEN FLASHING legend. The MUTCD provides guidance in the sections and paragraphs below:

Section 2C.48 Traffic Signal Signs

14 A supplemental WHEN FLASHING (W16-13P) plaque (see Figure 2C-12) may be used with any Vehicular Traffic Warning sign that is supplemented with a Warning Beacon to indicate specific periods when the condition or activity is present or is likely to be present.

Section 4L.03 Warning Beacon

02 A Warning Beacon shall consist of one or more signal sections of a standard traffic signal face with a flashing CIRCULAR YELLOW signal indication in each signal section.

03 A Warning Beacon shall be used only to supplement an appropriate warning or regulatory sign or marker.

09 Warning Beacons that are actuated by pedestrians, bicyclist, or other road users may be used as appropriate to provide additional warning to vehicles approaching a crossing or other location.

Put pedestrian switches to activate mode A, signed with appropriate text, at each end of the roadway of the same type and operation as people are accustomed to for traffic lights. In each pier house put a switch to activate mode A for workers to use prior to exiting a pier house.

Optionally, I would consider putting a reminder midway along the Dam, or on each side of pier houses 2 and 3. Maybe a flashing 5 mph LED light, or perhaps the same beacon used on the speed limit signs.

The simplest way to deactivate mode A would be a timer. The MUTCD has direction on timing for pedestrians:

Section 4.E06 Pedestrian Intervals and Signal Phases

14 The total of the walk interval and pedestrian clearance time should be sufficient to allow a pedestrian crossing in the crosswalk who left the pedestrian detector (or, if no pedestrian detector is present, a location 6 feet from the face of the curb or from the edge of the pavement) at the beginning of the WALKING PERSON (symbolizing WALK) signal indication to travel at a walking speed of 3 feet per second to the far side of the traveled way being crossed or to the median if a two-stage pedestrian crossing sequence is used. Any additional time that is required to satisfy the conditions of this paragraph should be added to the walk interval.

Google Earth shows the distance from pier house 1 to pier house 4 to be about 480'. At the 3 feet per second walking speed from the MUTCD, that would take 2.7 minutes. Thus 3.0 minutes would be a reasonable whole-minute interval for mode A to be active.

Some pedestrians will fail to push the button, some will be slow-crossers, some will be going onto the Dam to stand and look, and there will be EWEB personnel who occasionally exit a pier house without activating mode A. I don't consider those cases a problem, and I'll speak to why later. However, if you do feel that's a problem, you can automate the whole process by using CCTV technology, which can now discern stationary as well as moving people while ignoring vehicles. CCTV monitoring and control would also solve the problem of driver frustration when they come on the Dam, see the flashing 5 mph speed, but there is no one there on foot. I imagine a CCTV setup is a bit expensive, but you do have precedent for spending money for traffic control on the Dam. When I first started crossing it in 1963, you had traffic signals at each end that you turned on during heavy traffic. I don't remember when you removed them.

Mode B Usage

The purpose of Mode B is to move vehicles across the Dam as expeditiously as possible. Pedestrians and workers exiting a pier house are a Mode A consideration, not Mode B. The only safety concern is whatever one might have for the vehicles.

State statutes give Oregon motorists the following speed zone standards (http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/pages/speed_zone_program.aspx#Speed_Zone_Standards):

- 15 mph-alleys, narrow residential roadways
- 20 mph-business districts, school zones
- 25 mph-residential districts, public parks, ocean shores
- 55 mph-open and rural highways (all vehicles); trucks, school buses, worker transport buses on interstate highways

- 65 mph-autos on interstate highways

The 15 mph category is for narrow places where you might have people popping into the roadway. This is in my opinion what the existing speed limit sign on the Dam should say. However, if you provide for foot traffic in Mode A, it would be reasonable to go one notch up to 20 mph as the speed limit for Mode B.

I honestly do not believe there is a need for any obstructions in the roadway for mode B. I first started crossing Leaburg Dam in 1963, bringing my children to the park. We often stopped there on our way up the McKenzie. It was in Water Board Park that I first took my children fishing. There were no obstructions in the roadway then. In 1975 I came to my present residence on Fish Hatchery Road. There were still no obstructions in the road. Sometime in the 1980s, as best I remember, two hardly noticeable small asphalt speed bumps were put in, one at each end of the Dam. They were removed in February 2013 for construction. During all that time there was never, to the best of my knowledge, a vehicular accident on the Dam's roadway.

In 1975 I was a runner (well, at least a jogger), and I continued running until I retired in 1999, at which time I bought a bike, which took me through about to 2005. My running route often took me over Leaburg Dam, and my cycling route always did. Occasionally, in the winter, I would return across the Dam in the dark, or nearly so. I never felt a vehicle had passed me too close; a few, very few, a little fast, but no close calls. All that experience was why, in 2013 when you put in four speed bumps with but a one-foot travel length, I was incredulous. Then I wondered if driver behavior had changed so much so as to require such aggressive measures. I did some ad hoc data collection, and found drivers were still behaving as they had when I had previously used the roadway on foot. That is why I put up leaburgdamspeedbumps.info, and you can see the data collection I did there.

Consequently, given all my time and trips crossing the Dam on foot, I do not believe that pedestrians or EWEB personnel outliers who do not activate Mode A are a problem.

To my knowledge, there is no documented instance of a pedestrian ever having been struck on the Leaburg Dam roadway, even in the years when the roadway had not even the little asphalt speed bumps at each end. However, if EWEB adopts a mode A and mode B approach, but still thinks there should be obstructions in the roadway, I suggest an experiment. Put up the mode A hardware, leave the roadway clear, and do some data collection during mode B usage, which is the way the road is in use most of the time. Put the observed speeds in a spreadsheet and sort them ascending order. Then move down from the top until you've covered 85% of all entries. What you will now be on is the speed that traffic engineers work with as I understand it (the 85th percentile is in the MUTCD 55 times). If you signed mode B as 20 mph, and that 85th percentile speed is at or below 20 mph, you shouldn't put obstructions in the roadway. There will always be outliers, but if you design to control more than the 85th percentile, you penalize the 85% more than you should.

If you feel you must have obstructions, use speed humps or speed tables, not speed bumps. Speed bumps are for parking lots. Removable rubber speed humps that come in sections are readily available online. The humps sold by Traffic Logix at <http://trafficlogix.com/productservices/speedhumps> come in interlocking sections 1.5 feet

wide and 3.5 feet long. As you can see on that page, they're designed to be used in 7 or 14 feet travel lengths. However, note that the 7 foot length would be a true speed bump only for a vehicle with a wheel base of less than 7 feet.

Concluding

Not having any idea what EWEB considers cost effective, I won't try to address that.

I can only speculate whether implementing part or all of what I've suggested would greatly improve relations with the neighbors. Certainly it would if the roadway were clear, but as long as obstructions remain, there will be the history of having had none to contend with for all those years prior to 2013. People wonder, as indeed I do, why EWEB management apparently believed through all that time that aggressive speed bumps were unnecessary, but then all of a sudden they became necessary. There was true anger when those four speed bumps went in, especially since there had been no warning, no explanation.

You'd get some measure of goodwill probably if, even though you didn't clear the road, you used speed humps or speed tables. When you're in pain for an extended period of time, if that pain lessens, you sort of feel good, at least for a while. People were happy for a time about your replacing the one-foot travel length with the three-foot travel length bumps, and they can still say that at least they no longer have to go over the one-foot bumps.

I have lapsed into things subjective in a piece that should be objective, so I need to stop. However, I'll be happy to chat at length with anyone about things objective or subjective relating to traffic calming on the Leaburg Dam roadway.

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