

IN THE BOARD OF COMMISSIONERS OF THE STATE OF OREGON

FOR THE COUNTY OF YAMHILL

SITTING FOR THE TRANSACTION OF COUNTY BUSINESS

In the Matter of an Order Restricting Access )  
to NE Mountain Home Road for Vehicles Over ) BOARD ORDER 20-79  
Thirty Feet in Length, to Protect the Interests )  
of the General Public, Under ORS 810.030 )

THE BOARD OF COMMISSIONERS OF YAMHILL COUNTY, OREGON (“the Board”) sat for the transaction of county business in formal session on March 5, 2020, Commissioners Casey Kulla, Mary Starrett, and Richard L. “Rick” Olson being present.

IT APPEARING TO THE BOARD as follows:

A. NE Mountain Home Road is a County Road (#51). Under ORS 810.010(2), the county governing body is the road authority “for all county roads outside the boundaries of an incorporated city,” including NE Mountain Home Road.

B. ORS 810.030 states:

**“810.030 Imposition of restrictions on highway use; grounds; procedure; penalties.** (1) A road authority may impose restrictions described under this section on its own highways as the road authority determines necessary to do any of the following:

(a) Protect any highway or section of highway from being unduly damaged.

(b) Protect the interest and safety of the general public.

(2) Restrictions that may be imposed under this section include any of the following:

(a) Prohibition of the operation of any or all vehicles or any class or kind of vehicle.

(b) Imposing limits on any weight or dimension of any vehicle or combination of vehicles.

(c) Imposing any other restrictions that the road authority determines necessary to achieve the purposes of this section. This paragraph does not grant authority to impose speed restrictions. [Note: speed regulations are governed by ORS 810.180]

(3) Any restrictions or limitations imposed under this section must be imposed by

proper order. The restrictions or limitations are effective when appropriate signs giving notice of the restrictions or limitations are erected. A sign giving notice of a restriction or limitation in an order shall be maintained in a conspicuous manner and shall be placed at each end of the highway or section of highway affected by the order and at such other places as necessary to inform the public.

(4) Penalties are provided under ORS 818.130 for violation of restrictions imposed under this section.

C. The Public Works Director has indicated that internet map services are directing trucks from Washington County to Yamhill County by way of Mountain Home Road. Believing that a hairpin curve located along the road in Yamhill County could not safely accommodate certain truck lengths, the Director commissioned a curve/truck turning analysis from transportation engineers at Kittelson & Associates. The report, dated February 18, 2020, confirms that trucks longer than thirty feet cannot negotiate the curve in question without either tracking off of the road or using the oncoming traffic lane.

D. The Public Works Director has requested that the Board, as the Road Authority, adopt length restrictions for the segment of Mountain Home Road within Yamhill County. Signs will be posted in at least two locations prior to the curve in Yamhill County, one at NE Mountain Home Road and NE Bell Road, and the other at Bell Road and NE Mountain Top Road. Three signs will be posted in Washington County, installed and maintained by the Public Works Department. Washington County has indicated that it will allow installation of the signs in Washington County once this Order is adopted.

E. The Board finds that the restrictions imposed through this Order are necessary to “[p]rotect the interest and safety of the general public.” (ORS 810.030(1)(b)) NOW THEREFORE,

**IT IS HEREBY ORDERED BY THE BOARD AS FOLLOWS:**

1. Effective upon execution of this Order and installation of appropriate signs in accordance with ORS 810.030(3), use of the segment of Mountain Home Road in Yamhill County is limited, and shall be appropriately posted, to prohibit its use by vehicles greater than 30 feet in length.

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2. This limitation shall remain in full force and effect until this Order is rescinded and the signs notify the public of the limitation are removed by the Public Works Department at the direction of the Board.

DONE this 5<sup>th</sup> day of March, 2020 at McMinnville, Oregon.

ATTEST



YAMHILL COUNTY BOARD OF COMMISSIONERS

BRIAN VAN BERGEN  
County Clerk

Chair

Casey Kulla  
CASEY KULLA

By: Carolina Rook  
Deputy Carolina Rook

Commissioner

Mary Starrett  
MARY STARRETT

FORM APPROVED BY:

Timothy S. Sadlo  
Timothy S. Sadlo  
Senior Assistant County Counsel

Commissioner

Richard L. Olson  
RICHARD L. "RICK" OLSON

Accepted by Yamhill County  
Board of Commissioners on  
3/5/2020 by Board Order  
# 20-79

**LENGTH  
LIMIT**



**30 ft**

**4 MILES AHEAD**

**LENGTH  
LIMIT**



**30 ft**

**1/2 MILE AHEAD**

## MEMORANDUM

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Date: February 18, 2020

Project #: 24941

To: Mr. Mark Lago  
Yamhill County Public Works  
2060 NE Lafayette Avenue  
McMinnville, OR 97128

From: Tony Roos, PE, Caleb Cox, and Amy Griffiths

Project: Yamhill Truck Turning Analysis

Subject: Mtn Home Road Curve Analysis

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## INTRODUCTION

Mountain Home Road near the Washington County border has an existing horizontal curve as it crosses Baker Creek that has experienced multiple off-tracking events by large trucks. Yamhill County desires to implement a vehicle length restriction on Mt. Home Road. The proposed restrictions will help to minimize off-tracking and roadside damage and should enhance safety along the road.

This memorandum documents the AutoTurn design vehicle analysis conducted by Kittelson & Associates, Inc. (Kittelson) to identify the recommended vehicle length restrictions along Mountain Home Road.

## METHODOLOGY

Scaled Google Earth imagery was used to conduct an AutoTURN design vehicle analysis using the following standard AASHTO 2018 design vehicles at the curved roadway:

- WB-67 (53' Trailer)
- WB-62 (48' Trailer)
- WB-40 (28' Trailer)
- SU-40 (40' box truck)
- SU-30 (30' box truck)
- School Bus (40' bus)
- Bus-40 (40' bus)

- P (19' passenger vehicle)

## FINDINGS AND RECOMMENDATIONS

The curve at Mountain Home Road as it crosses Baker Creek has an approximate centerline radius of 40 feet at its apex. This dimension is smaller than the minimum turning radius of many of the larger trucks that were tested, and several others are shown to track over the lane lines and into the ditch as they navigate the curve. Table 1 below summarizes the analysis findings.

The results are organized into the following four categories:

1. **Good:** Vehicle can navigate curve while staying completely within its designated lane.
2. **Fair:** Vehicle can navigate the curve without tracking into the ditch but may encroach moderately into the opposing lane.
3. **Poor:** Vehicle cannot navigate the curve without tracking into the ditch or severely into the opposing lane.
4. **Unable:** Curve radius exceeds the vehicle's minimum turning radius.

**Table 1. AutoTurn Design Vehicle Analysis Results**

Vehicle	Traveling Southbound	Traveling Northbound
WB-67 (53' Trailer)	Poor	Unable
WB-62 (48' Trailer)	Poor	Unable
WB-40 (28' Trailer)	Poor	Unable
SU-40 (40' Box Truck)	Unable	Unable
SU-30 (30' Box Truck)	Fair	Fair
School Bus (40' Bus)	Fair	Fair
Bus-40 (40' Bus)	Poor	Poor
P (Passenger Vehicle)	Good	Good

Based on these results, it is recommended that Yamhill County restrict access to Mountain Home Road for all vehicles over 30 feet in length, with the exception of School Buses which have shorter wheelbases allowing them to make tighter turns.

*AutoTURN design vehicle exhibits are included in Appendix A.*

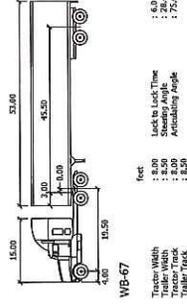
## Appendix A AutoTURN Design Vehicle Exhibits

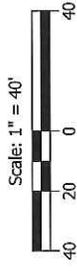
# Mountain Home Road: WB-67 Northbound

Preliminary Design Subject to Change  
Date: 02/05/2020

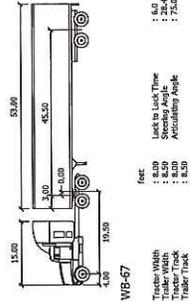


Vehicle Turning Settings	
Design Vehicle:	WB-67
Vehicle Speed:	10 mph
Min. Turning Radius:	41 ft
Turn from stop:	Off
Vehicle Envelope:	—
Front Tire Track:	—
Rear Tire Track:	—





Vehicle Turning Settings	
Design Vehicle:	WB-67
Vehicle Speed:	10 mph
Min. Turning Radius:	41 ft
Turn from stop:	Off
Vehicle Envelope:	
Front Tire Track	—
Rear Tire Track	—

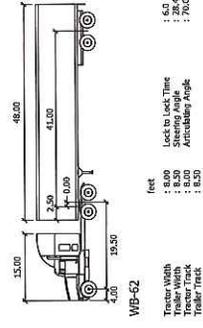


# Mountain Home Road: WB-62 Northbound

Preliminary Design Subject to Change  
Date: 02/06/2020



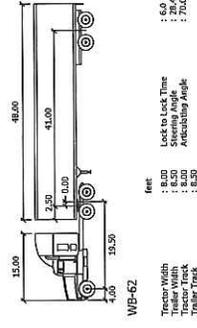
Vehicle Turning Settings	
Design Vehicle:	WB-62
Vehicle Speed:	10 mph
Min. Turning Radius:	41 ft
Turn from stop:	Off
Vehicle Envelope:	—
Front Tire Track:	—
Rear Tire Track:	—





**Vehicle Turning Settings**

Design Vehicle:	WB-62
Vehicle Speed:	10 mph
Min. Turning Radius:	41 ft
Turn from stop:	Off
Vehicle Envelope:	
Front Tire Track:	—
Rear Tire Track:	—



# Mountain Home Road: WB-40 Northbound

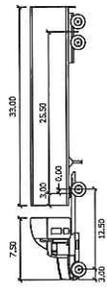
Preliminary Design Subject to Change  
Date: 02/04/2010



Scale: 1" = 40'



Vehicle Turning Settings	
Design Vehicle:	WB-40
Vehicle Speed:	10 mph
Min. Turning Radius:	36 ft
Turn from stop:	Off
Vehicle Envelope:	—
Front Tire Track:	—
Rear Tire Track:	—

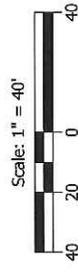


WB-40	
feet	
Trailer Width	: 6.0
Trailer Height	: 20.3
Trailer Track	: 8.00
Trailer Pace	: 8.00
Trailer Pace	: 7.50

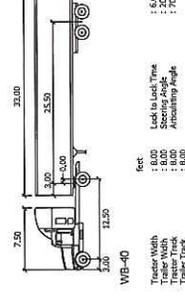
# Yamhill County Curve Analysis Yamhill County

# Mountain Home Road: WB-40 Southbound

Preliminary Design Subject to Change  
Date: 02/06/2019

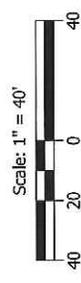


Vehicle Turning Settings	
Design Vehicle:	WB-40
Vehicle Speed:	10 mph
Min. Turning Radius:	36 ft
Turn from stop:	Off
Vehicle Envelope:	<span style="color: green;">—</span>
Front Tire Track:	<span style="color: red;">—</span>
Rear Tire Track:	<span style="color: blue;">—</span>

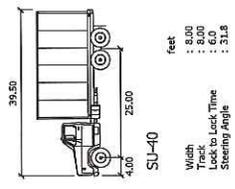


# Mountain Home Road: SU-40 Northbound

Preliminary Design Subject to Change  
Date: 02/06/2020



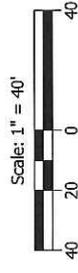
Vehicle Turning Settings	
Design Vehicle:	SU-40
Vehicle Speed:	10 mph
Min. Turning Radius:	47 ft
Turn from stop:	Off
Vehicle Envelope:	<span style="color: green;">—</span> <span style="color: red;">—</span> <span style="color: blue;">—</span>
Front Tire Track:	<span style="color: green;">—</span>
Rear Tire Track:	<span style="color: red;">—</span> <span style="color: blue;">—</span>



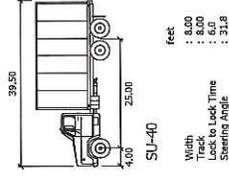
# Yamhill County Curve Analysis Yamhill County

# Mountain Home Road: SU-40 Southbound

Preliminary Design Subject to Change  
Date: 02/05/2020



Vehicle Turning Settings	
Design Vehicle:	SU-40
Vehicle Speed:	10 mph
Min. Turning Radius:	47 ft
Turn from stop:	Off
Vehicle Envelope:	<span style="color: green;">—</span> <span style="color: red;">—</span> <span style="color: blue;">—</span>
Front Tire Track:	<span style="color: green;">—</span>
Rear Tire Track:	<span style="color: red;">—</span>

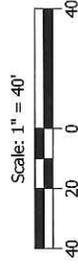


# Mountain Home Road: SU-30 Northbound

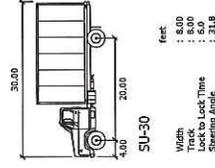
Preliminary Design Subject to Change  
Date: 02/05/2020



Scale: 1" = 40'



Vehicle Turning Settings	
Design Vehicle:	SU-30
Vehicle Speed:	10 mph
Min. Turning Radius:	38 ft
Turn from stop:	Off
Vehicle Envelope:	—
Front Tire Track:	—
Rear Tire Track:	—

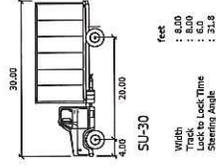


# Mountain Home Road: SU-30 Southbound

Preliminary Design Subject to Change  
Date: 11/26/2020



Vehicle Turning Settings	
Design Vehicle:	SU-30
Vehicle Speed:	10 mph
Min. Turning Radius:	38 ft
Turn from stop:	Off
Vehicle Envelope:	—
Front Tire Track:	—
Rear Tire Track:	—



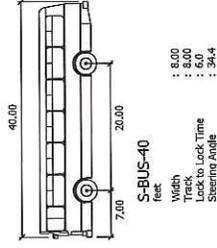
Yamhill County Curve Analysis  
Yamhill County

# Mountain Home Road: S-BUS-40 Northbound

Preliminary Design Subject to Change  
Date: 02/05/2020



Vehicle Turning Settings	
Design Vehicle:	S-BUS-40
Vehicle Speed:	10 mph
Min. Turning Radius:	35 ft
Turn from stop:	Off
Vehicle Envelope:	
Front Tire Track:	
Rear Tire Track:	

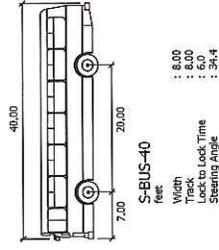


# Mountain Home Road: S-BUS-40 Southbound

Preliminary Design Subject to Change  
Date: 02/05/2020



Vehicle Turning Settings	
Design Vehicle:	S-BUS-40
Vehicle Speed:	10 mph
Min. Turning Radius:	35 ft
Turn from stop:	Off
Vehicle Envelope:	—
Front Tire Track:	—
Rear Tire Track:	—



# Mountain Home Road: BUS-40 Northbound

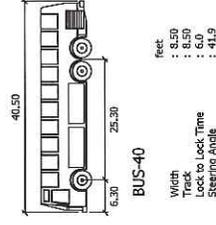
Preliminary Design Subject to Change  
Date: 03/05/2016



Scale: 1" = 40'



Vehicle Turning Settings	
Design Vehicle:	BUS-40
Vehicle Speed:	10 mph
Min. Turning Radius:	38 ft
Turn from stop:	Off
Vehicle Envelope:	—
Front Tire Track:	—
Rear Tire Track:	—



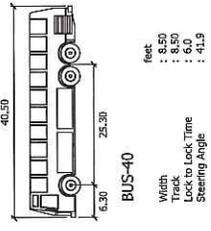
Yamhill County Curve Analysis  
Yamhill County

# Mountain Home Road: BUS-40 Southbound

Preliminary Design Subject to Change  
Date: 02/07/2010



Vehicle Turning Settings	
Design Vehicle:	BUS-40
Vehicle Speed:	10 mph
Min. Turning Radius:	38 ft
Turn from stop:	Off
Vehicle Envelope:	—
Front Tire Track:	—
Rear Tire Track:	—



# Yamhill County Curve Analysis Yamhill County

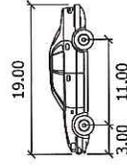
# Mountain Home Road: P Northbound

Preliminary Design Subject to Change  
 Date: 03/05/2019



**Vehicle Turning Settings**

Design Vehicle:	P
Vehicle Speed:	10 mph
Min. Turning Radius:	21 ft
Turn from stop:	Off
Vehicle Envelope:	—
Front Tire Track:	—
Rear Tire Track:	—



**P**

Width	: 7.00
Track	: 6.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.6

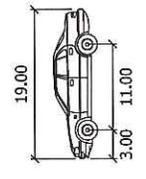
Mountain Home Road: P Southbound

Preliminary Design Subject to Change  
Date: 02/06/2020



**Vehicle Turning Settings**

Design Vehicle:	P
Vehicle Speed:	10 mph
Min. Turning Radius:	21 ft
Turn from stop:	Off
Vehicle Envelope:	
Front Tire Track:	
Rear Tire Track:	



P

Width	: 7.00
Track	: 6.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.6