

Visualization of Highway Commodity Flows For the Bend Region

Using Information from the Oregon
Statewide Integrated Model (SWIM) and
the federal Freight Analysis Framework

Commodity Group Descriptions

Clay, Minerals & Stone: monument or building stone; natural sands; gravel and crushed stone; nonmetallic minerals; metallic ores and concentrates; and nonmetallic mineral products;

Food & Kindred Products: live animals and fish; cereal grains; animal feed; meat, seafood; milled grain products; alcoholic beverages; and tobacco products;

Forest & Wood Products: logs and other wood in the rough and wood products;

Machinery, Instruments, & Transportation Equipment: base metal in primary or semi-finished form; articles of base metal; machinery; electronic and other electrical equipment; motorized and other vehicles (including parts); transportation equipment; precision instruments and apparatus;

Other Miscellaneous: textiles, leather, furniture, mattresses, and miscellaneous manufactured products;

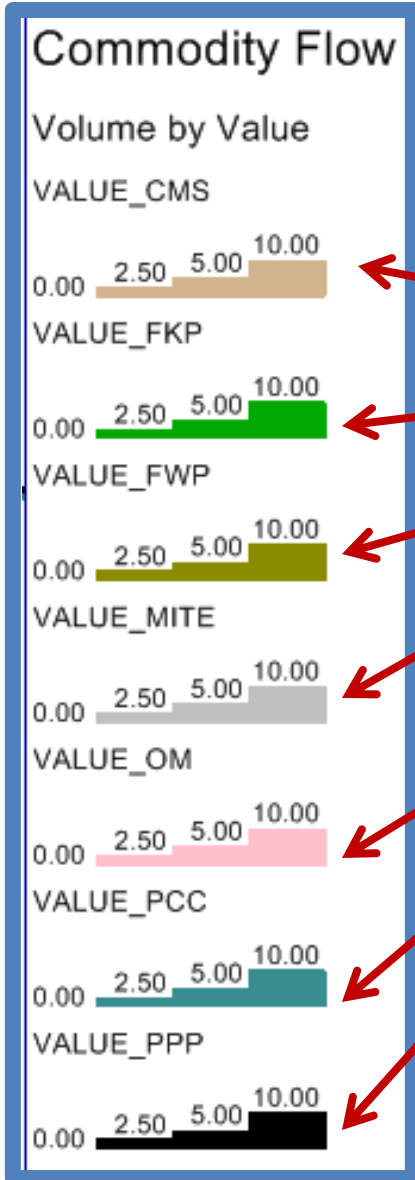
Petroleum, Coal & Chemicals: crude petroleum, gasoline and aviation fuel; fuel oils, pharmaceutical products, fertilizers, plastics and rubber;

Pulp & Paper Products: newsprint, paperboard, paper or paperboard products, and printed products.

- For more detailed descriptions of commodities, refer to the Standard Classification of Transported Goods booklet published by the U.S. Census Bureau: https://www.census.gov/econ/cfs/2017/CFS-1200_17.pdf
- Highway commodity flows provided by the Oregon Statewide Integrated Model based on the federal Freight Analysis Framework 4 data for Oregon.

Legend

Industry Groups – flows in billions of dollars, 2016



CMS = Clay, Minerals & Stone

FKP = Food & Kindred Products

FWP= Forest & Wood Products

MITE = Machinery, Instruments,
Transportation Equipment

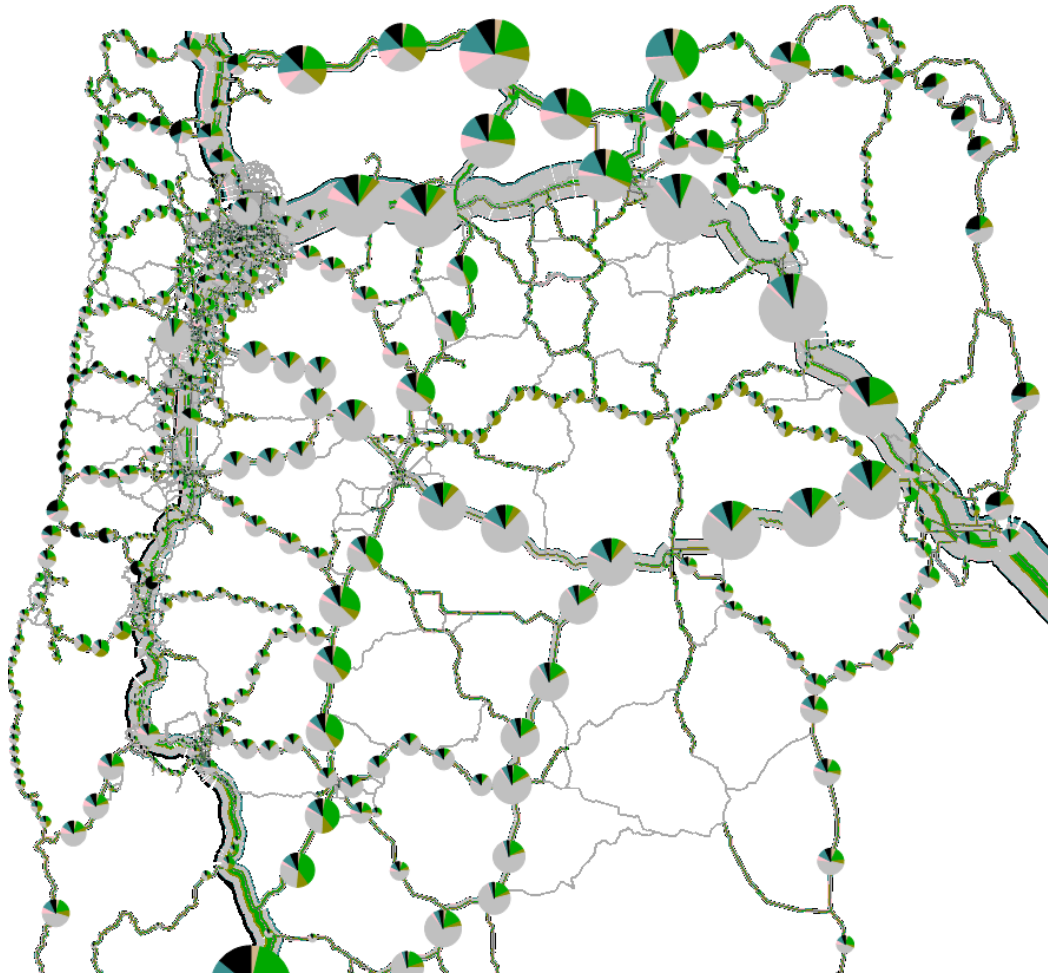
OM= Other Manufacturing

PCC = Petroleum, Coal, Chemicals

PPP= Pulp Paper Products

How to Read this map

The pie chart overall size illustrates flows for relative comparison across the state, while the pie pieces illustrate location shares by commodity group. For example, I-84 has the largest flows by value, dominated by the category of Machinery, Instruments & Transport Equipment.



Commodity Flow

Volume by Value

VALUE_CMS

0.00 2.50 5.00 10.00

VALUE_FKP

0.00 2.50 5.00 10.00

VALUE_FWP

0.00 2.50 5.00 10.00

VALUE_MITE

0.00 2.50 5.00 10.00

VALUE_OM

0.00 2.50 5.00 10.00

VALUE_PCC

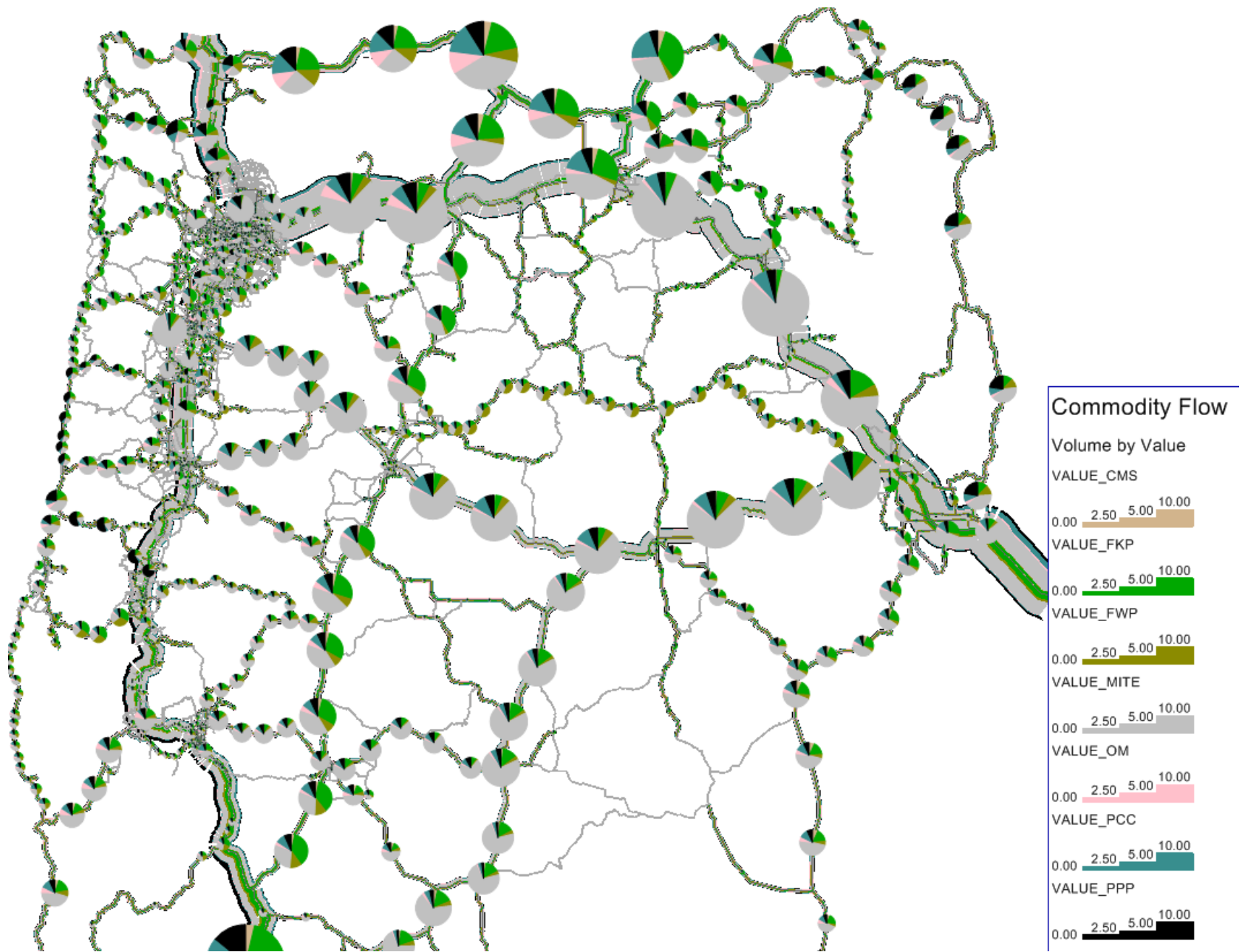
0.00 2.50 5.00 10.00

VALUE_PPP

0.00 2.50 5.00 10.00

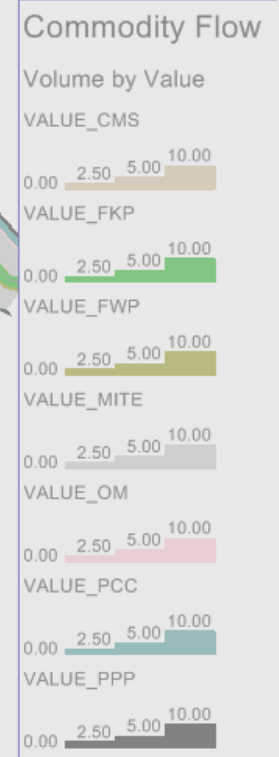
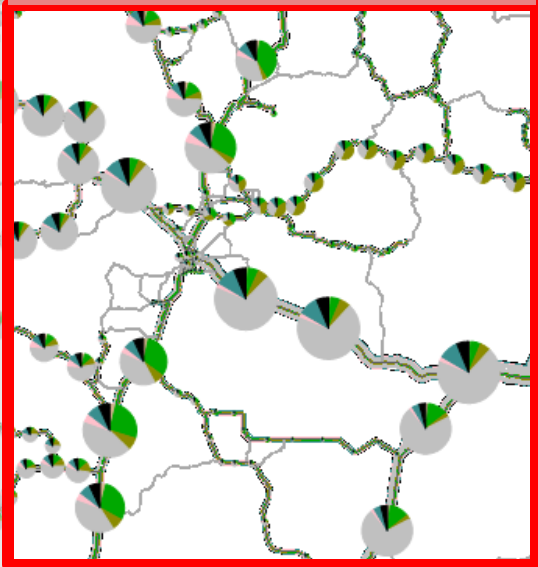
The color and width of the highways indicate the relative flows of commodity groups, to compare flows at mile points.

SWIM Highway Network – flows in billions of dollars



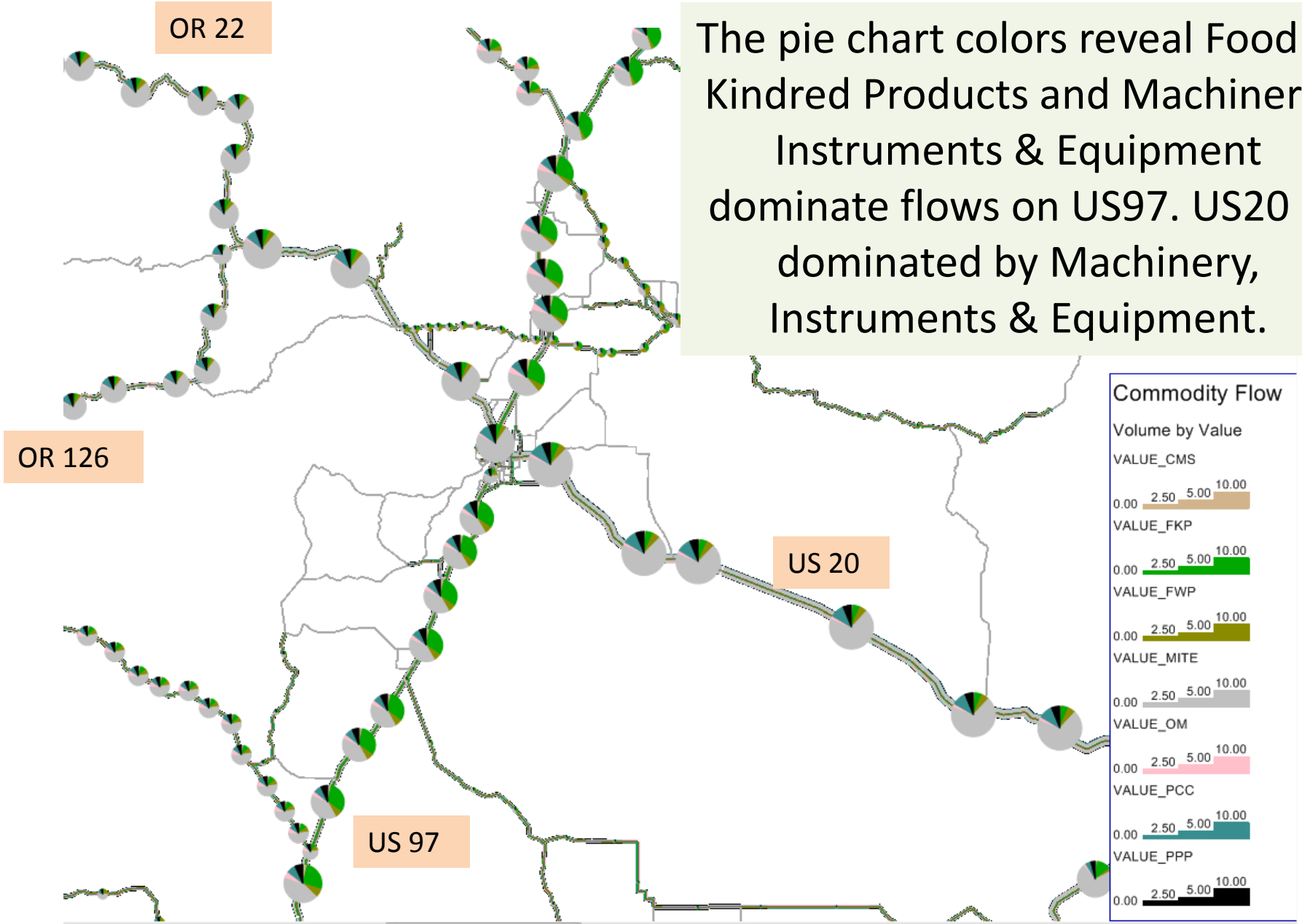
Statewide Integrated Model Highway Network – commodity flows in billions of dollars

US20 and US97 support commodity flows across the state, second in volume to the interstate highways.

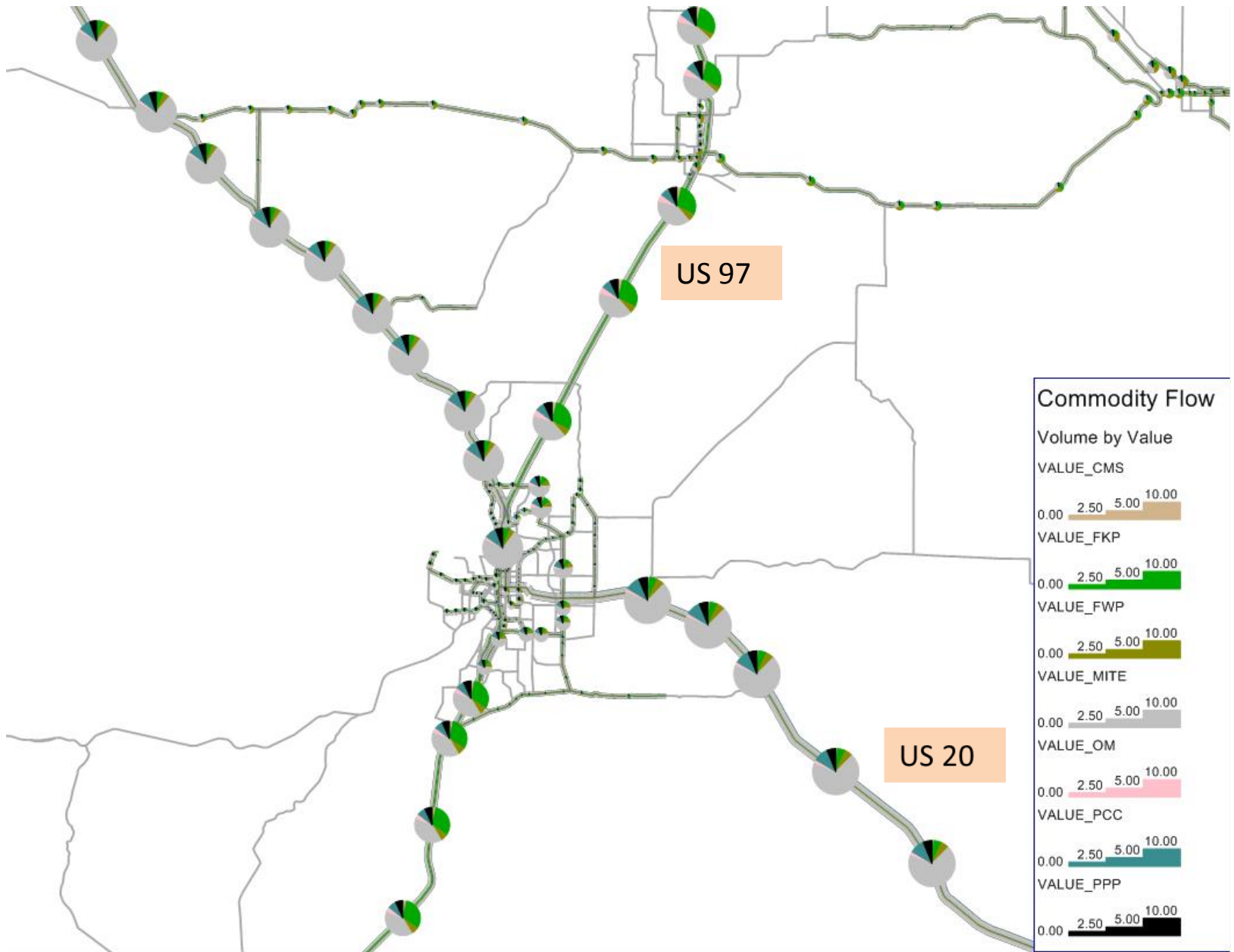


Statewide Integrated Model Highway Network – commodity flows in billions of dollars

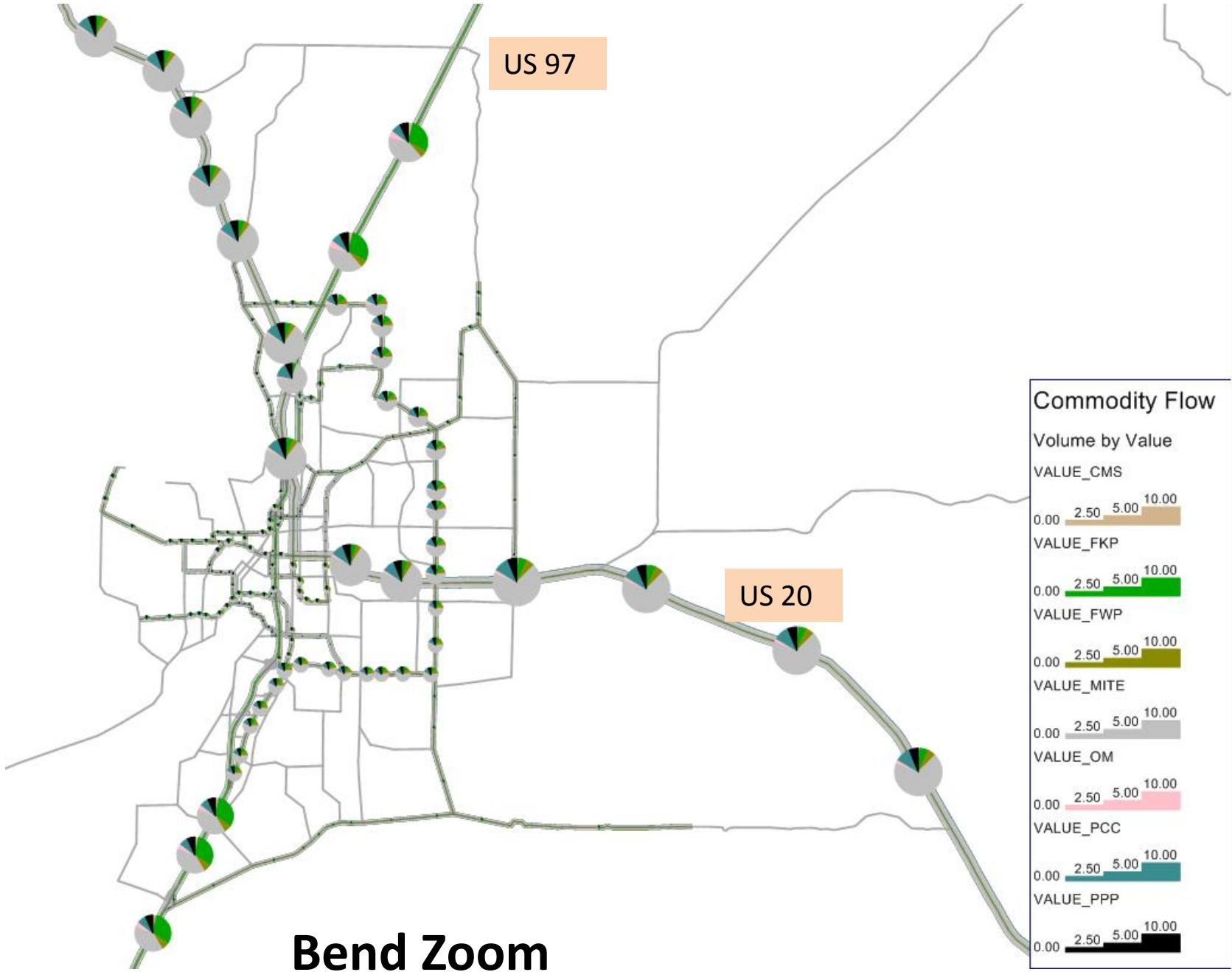
The pie chart colors reveal Food & Kindred Products and Machinery, Instruments & Equipment dominate flows on US97. US20 is dominated by Machinery, Instruments & Equipment.



Greater Bend Region



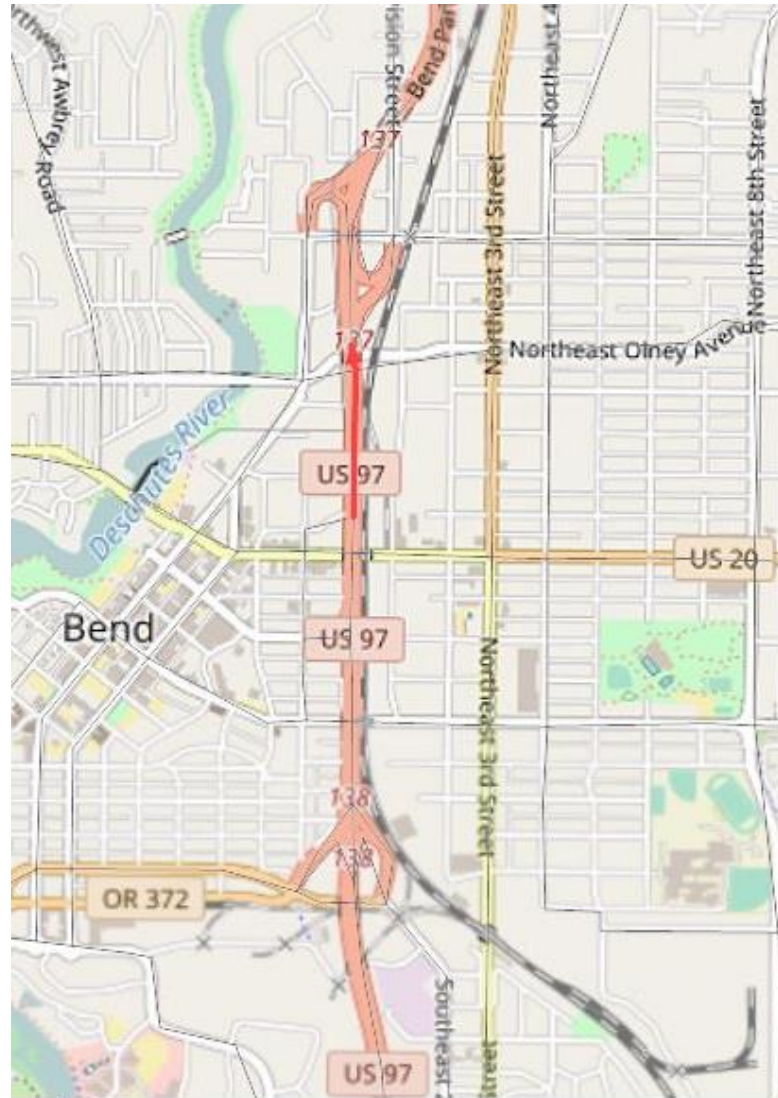
Bend





COMMODITY FLOWS AT SELECT LOCATIONS ON US 97 AND US20

US 97 Bend Parkway



Estimated Commodity Flows by Value and Tonnage, 2016	Share of Total Average Weekday Flows	
	Value	Tons
Clay, Minerals & Stone	2%	15%
Food & Kindred Products	31%	33%
Forest & Wood Products	5%	28%
Machinery, Instruments, Trans Equip	34%	5%
Other Misc.	14%	7%
Petroleum, Coal & Chemicals	11%	8%
Pulp & Paper Products	4%	4%
Total Daily Average	\$ 45.5 Million	35,000

US 97 South of Bend

Estimated Commodity Flows by Value and Tonnage, 2016	Share of Total Average Weekday Flows	
	Value	Tons
Clay, Minerals & Stone	2%	15%
Food & Kindred Products	28%	32%
Forest & Wood Products	6%	28%
Machinery, Instruments, Trans Equip	33%	5%
Other Misc.	16%	7%
Petroleum, Coal & Chemicals	12%	9%
Pulp & Paper Products	4%	5%
Total Daily Average	\$ 51.1 Million	36,000





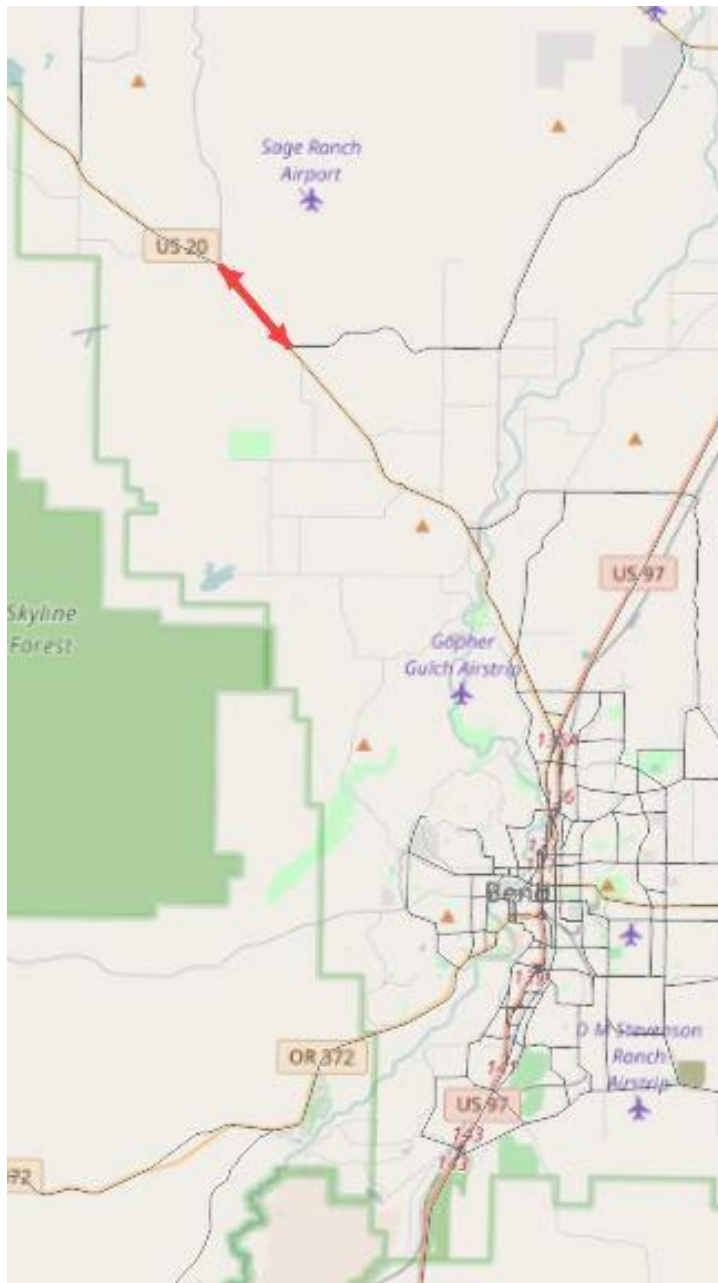
US 20 East of Bend

Estimated Commodity Flows by Value and Tonnage, 2016	Share of Total Average Weekday Flows	
	Value	Tons
Clay, Minerals & Stone	1%	13%
Food & Kindred Products	13%	21%
Forest & Wood Products	9%	32%
Machinery, Instruments, Trans Equip	33%	7%
Other Misc.	23%	11%
Petroleum, Coal & Chemicals	15%	13%
Pulp & Paper Products	6%	3%
Total Daily Average	\$ 25.8 Million	14,000



US 97 between Bend & Redmond

Estimated Commodity Flows by Value and Tonnage, 2016	Share of Total Average Weekday Flows	
	Value	Tons
Clay, Minerals & Stone	2%	14%
Food & Kindred Products	29%	34%
Forest & Wood Products	5%	25%
Machinery, Instruments, Trans Equip	32%	5%
Other Misc.	17%	9%
Petroleum, Coal & Chemicals	12%	8%
Pulp & Paper Products	4%	5%
Total Daily Average	\$ 47.5 Million	33,000



US 20 West of Bend

Estimated Commodity Flows by Value and Tonnage, 2016	Share of Total Average Weekday Flows	
	Value	Tons
Clay, Minerals & Stone	1%	20%
Food & Kindred Products	14%	17%
Forest & Wood Products	11%	42%
Machinery, Instruments, Trans Equip	34%	4%
Other Misc.	20%	6%
Petroleum, Coal & Chemicals	14%	8%
Pulp & Paper Products	7%	2%
Total Daily Average	\$ 19.8 Million	19,000