

TECHNICAL MEMORANDUM #10 - DRAFT

DATE: September 23, 2015

TO: Columbia County TSP Project Management Team

FROM: John Bosket, DKS Associates
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SUBJECT: Columbia County Transportation System Plan Update
Technical Memorandum #10: Funding Assumptions

P11086-022

This memorandum details the transportation funding that can reasonably be expected to be available through 2035. The funding assumptions will help prioritize the investments the county can make in the transportation system, and will be utilized to develop reasonable budgeting assumptions when selecting a set of transportation improvements to meet identified needs over the next 20 years.

Current Funding Sources

The county uses four general funding sources for transportation, including funds from:

- **The Surface Transportation Program (STP)**

The STP includes Federal Highway Trust Funds that are received from federal motor vehicle fuel tax and truck-related weight-mile charges. The six-year Federal Transportation Authorization Act allocates funds through various programs. Federal Highway Trust Funds from the STP flow to the states that use them primarily for safety, highway, and bridge projects. Columbia County receives a portion of these funds based upon actual population.

- **The State Highway Trust Fund**

The State Highway Trust Fund makes distributions from the state motor vehicle fuel tax, vehicle registration fees, and truck weight-mile fees on a per capita basis. Cities and counties receive a share of State Highway Trust Fund monies, and by statute may use the money for any road-related purpose, including walking, biking, bridge, street, signal, and safety improvements.

The state gas tax funds previously have failed to keep up with cost increases and inflation. With increased fuel efficiency of vehicles and the State's emphasis on reducing vehicle miles traveled, the real revenue collected gradually has eroded over time. In an effort to offset the relative decline in contribution of state funds, the 2009 legislature passed the Oregon Jobs and Transportation Act (Oregon House Bill 2001). It increases transportation-related fees including the state gas tax and vehicle registration fees as a fixed amount at the time a vehicle is registered with the Department of Motor Vehicles. Vehicle registration fees in Oregon

increased from \$27 to \$43 per vehicle per year for passenger cars, with similar increases for other vehicle types. The gas tax in Oregon increased on January 1, 2011 by six cents, to 30 cents per gallon, the first increase in the state gas tax since 1993.

- **A Natural Resource Depletion Fee**

Columbia County has collected a natural resource depletion fee since 1997. The fee is levied monthly at a rate of 15 cents per ton for depleting natural resources from the soils and waters of the county, or transporting natural resources into the county for commercial, construction or industrial uses.

- **A System Development Charge (SDC)**

The county also collects SDC's from new development, which are a funding source for all capacity adding projects for the transportation system. The funds collected can pay for constructing or improving portions of roadways impacted by applicable development. The SDC is a one-time fee. The transportation facilities SDC rate within the unincorporated areas of the county is currently \$2,272.50 for rural residential uses, and \$2,250 per peak hour trip for other uses.

Revenues and Expenditures

Revenues

Current annual revenues include \$420,000 from the Surface Transportation Program, \$3.6 million from the State gas tax and vehicle registration fees, \$370,000 from the natural resource depletion fee, and \$55,000 from SDC's (see Table 1). State law requires that the county must set aside a minimum of one percent of the State gas tax and vehicle registration funds received for construction and maintenance of walking and bicycling facilities. In Columbia County, this represents approximately \$35,000 per year. The county also currently receives approximately \$35,000 in other revenues annually (e.g., miscellaneous permit fees).

Assuming, as a conservative estimate,¹ the same levels of funding occur in the future, Columbia County can expect to receive \$90.6 million in revenue through 2035.

ODOT has also indicated that between \$8 to \$12 million in discretionary state and/or federal funds may be available to invest in Columbia County over the next 20 years² for system modernization and enhancement.

¹ This assumes the population growth rate in Columbia County will be roughly the same as the cost inflation rate, therefore, maintaining existing revenues through 2035.

² The State has not committed any future funding for projects in Columbia County. This assumption is for long-range planning purposes only. This estimate is based on assuming that Columbia County will receive a reasonable

Expenditures

Expenditures include more than just patching roadways. It also includes personnel services, roadway striping, traffic control, vegetation trimming, storm preparation and damage clearing (e.g., snow plowing, landslide clearing), sign maintenance, and roadway engineering.

The county estimates that it needs approximately \$10 million per year (or \$200 million through 2035) to maintain and operate the 553 miles of roadways at status quo, more than double that of the current revenue (\$90.6 million through 2035). This means that over \$5 million per year in needed roadway maintenance and repair work will be deferred.

Deferring necessary repair and preservation means spending much more to fix the same roadways later, and repair costs rise exponentially as roadways are left unmaintained. Every \$1 spent to keep a roadway in good condition avoids \$6 to \$14 needed later to rebuild the same roadway once it has deteriorated significantly³.

Heavy truck traffic and wet weather comprise two of the most critical factors in pavement deterioration⁴. Heavy trucks (particularly those hauling gravel, logs, construction materials, overseas containers, agricultural products, garbage) flex the pavement and create spaces underneath. Wet weather, with cracked pavement or poor drainage, can lead to water undermining pavement.

share of the state/federal funding projected to be available over the 20-year planning horizon in Region 2 and based on ODOT sustaining their current revenue structure. It is used to illustrate the degree of financial constraints faced by ODOT as of the writing of this document. Actual funding through state and federal sources may be higher or lower than the range of this estimate. This estimate does not include projects that might be funded through the federal Highway Safety Improvement Program (HSIP).

³ Smart Growth America, Repair Priorities 2014, American Association of State Highway Officials (AASHTO)

⁴ Long-Term Pavement Performance, U.S. Department of Transportation, Federal Highway Administration

Table I: Columbia County Revenue and Expenditures (2015 Dollars)

County Revenue Source*	Average Annual Amount	Estimated Amount Through 2035
Surface Transportation Program (STP)	\$420,000	\$8,400,000
State Gas Tax and License Fees	\$3,615,000	\$72,300,000
Bikeway/Walkway (1% of State Gas Tax and License Fees)	\$35,000	\$700,000
Natural Resource Depletion Fee	\$370,000	\$7,400,000
System Development Charges	\$55,000	\$1,100,000
Permits	\$35,000	\$700,000
Total Revenue	\$4,530,000	\$90,600,000

County Expenditures*	Average Annual Amount	Estimated Amount Through 2035
Personnel Services	\$2,360,000	\$47,200,000
Materials and Services	\$1,610,000	\$32,200,000
Capital Outlay	\$560,000	\$11,200,000
Deferred Maintenance and Repair	\$5,470,000	\$109,400,000
Total Expenditures	\$10,000,000	\$200,000,000

Funding Summary	Average Annual Amount	Estimated Amount Through 2035
Funding Summary for County Roadways (County Revenue – County Expenditures)	-\$5,470,000	-\$109,400,000

*Source: Memorandum from David Hill, Public Works Director, Columbia County Public Works Department, dated May 8, 2015

Funding Summary

Maintaining and operating the roadways requires more revenue than the county is able to generate for transportation uses. Due to funding constraints, the county is deferring over \$5 million per year in needed roadway maintenance and repair work (over \$100 million over the next 20 years). These costs will continue to increase over time, leaving no funding for county street improvement needs (e.g., construction of new facilities) over the next 20 years. The county will only have up to \$12 million from state and/or federal funding sources to cover investments along state highways over the next 20 years.

The county may wish to consider expanding its funding options in order to fund more of the needed roadway maintenance and repair work, or desired transportation improvements in a timely manner.



Potential Additional Funding Sources

New transportation funding options include local taxes, assessments and charges, and state and federal appropriations, grants, and loans. Factors that constrain these resources, include the willingness of local leadership and the electorate to burden citizens and businesses with taxes and fees; the portion of available local funds dedicated or diverted to transportation issues from other competing county programs; and the availability of state and federal funds. The county should consider all opportunities for providing or enhancing funding for the transportation improvements included in the TSP.

Counties and cities have used the following sources to fund the capital and maintenance aspects of their transportation programs. As described below and summarized in Table 2, they may help to address existing or new needs identified in Columbia County’s TSP.

Table 2: Columbia County Potential Funding Options

Funding Option	Allowed Use of Funds	Existing or New Funding Source	Action Required to Implement	Example Charge	Potential Additional Annual Revenue
County Natural Resource Depletion Fee	Capital improvements or maintenance	Existing	Board of County Commissioners (BCC) action	+10 cents per ton for natural resource depletion	\$250,000
County System Development Charges	Capital improvements	Existing	BCC action	+\$1,000 per peak hour trip for new development	\$25,000
County Transportation Utility Fee	Capital improvements or maintenance	New	BCC action	\$5 per month for residential and commercial users	\$975,000
County Fuel Tax	Capital improvements or maintenance	New	Voter Approval	One cent per gallon	\$192,000
County Vehicle Registration Fee	Capital improvements or maintenance	New	Voter Approval	\$20 for passenger cars, and \$11 for motorcycles per year	\$600,000
County Service District for Roads	Capital improvements or maintenance	New	Voter Approval	\$0.50 per \$1,000 in assessed value	\$1,280,000
County Property Tax Levy	Capital improvements or maintenance	New	Voter Approval	\$0.2456 per \$1,000 in assessed value (per year, for 5 years)	\$630,000 (per year, for 5 years)
Local Improvement Districts	Capital improvements	New	Affected Property Owners	n/a	n/a
Debt Financing	Capital improvements	New	Varies	n/a	n/a
County Truck Impact/ Utility Fee	Capital improvements or maintenance	New	Varies	\$1 for passenger car and trucks, \$370 for small trucks, and \$1,671 for large trucks per year	\$10,000,000

County Natural Resource Depletion Fee

Columbia County has collected a natural resource depletion fee since 1997. The fee is levied monthly at a rate of 15 cents per ton for depleting natural resources from the soils and waters of the county, or transporting natural resources into the county for commercial, construction or industrial uses. Revenue from the fee can be utilized for the construction, reconstruction, improvement, repair and maintenance of roadways in the county. The county currently receives approximately \$370,000 annually from the fee. A recent ballot measure to increase the depletion fee by 35 cents per ton was defeated by voters. A portion of the increase (10 cents per ton) could provide an additional \$250,000 annually for road improvements and maintenance.

County System Development Charges

System development charges (SDC) are fees collected from new development and used as a funding source for all capacity adding projects for the transportation system. The fee is based on the proposed land use and size, and is proportional to each land use's potential PM peak hour vehicle trip generation.

The county currently collects an SDC of \$2,250 per peak hour trip for transportation facilities. The county may wish to update the current SDC rate for transportation facilities and/or pursue a pedestrian and bicycle SDC based on the transportation needs established in the TSP. As an example, an SDC rate of \$3,250 per peak hour trip (and assuming similar growth as the previous years) would provide the county with an additional \$25,000 annually. If an SDC update is desired, a rate study would be required to determine appropriate fees based on capacity projects costs, growth potential, and local preferences.

County Transportation Utility Fee

A transportation utility fee is a recurring monthly charge that could be paid by all residences and businesses within the county. The county can base the fee on the estimated number of trips a particular land use generates or as a flat fee per residence or business. This fee is typically collected through regular utility billing, however, it could be collected as a separate stand-alone bill. Existing law places no express restrictions on the use of transportation utility fee funds, other than the restrictions that normally apply to the use of government funds.⁵ Some local agencies utilize the revenue for any transportation related project, including construction, improvements and repairs; however, many choose self-imposed restrictions or parameters on the use of the funds.

⁵ Implementing Transportation Utility Fees, League of Oregon Cities.

For every \$1.00 per month in charged rates for residential and commercial uses in unincorporated areas of the county, the county could expect to collect nearly \$200,000 annually⁶. Clatskanie, for example, charges a flat fee of \$5 per month for commercial uses, and \$2.50 per month for residential uses.

County Fuel Tax

Twenty-two cities and two counties (including Multnomah and Washington Counties) in Oregon have adopted local fuel taxes ranging from one to five cents per gallon. The fuel distributors pay collected taxes to the jurisdictions monthly. The process for presenting such a tax to voters will need to be consistent with Oregon State law as well as the laws of the county. Nearby locations with a fuel tax include Astoria (three cents per gallon), Warrenton (three cents per gallon), Multnomah County (three cents per gallon), and Washington County (one cent per gallon).

To estimate the potential revenue generated from a local fuel tax in Columbia County, the monthly gallons of fuel utilized per resident was assessed in Oregon, and each of the sixteen jurisdictions where ODOT administers the local fuel taxes⁷. Based on this analysis, Oregon residents utilized on average around 32.06 gallons, Washington County residents around 31.52 gallons, and Multnomah County residents around 25.45 gallons of fuel per month. Assuming the Washington County rate (31.52 gallons per resident, per month), Columbia County residents were estimated to utilize around 1.6 million gallons of fuel per month. A local fuel tax of one cent per gallon could bring an additional, \$16,000 monthly, \$192,000 annually or \$3.8 million through 2035.

County Vehicle Registration Fee

The State of Oregon currently requires vehicle owners to register their vehicles and then renew their registration on a biennial basis. The State's biennial registration fee is \$86 for passenger cars and light trucks and \$48 for motorcycles. In addition to the State fee, Multnomah County is the only county that also has a vehicle registration fee. It adopted a \$38 biennial vehicle registration fee to help fund the Sellwood Bridge replacement. Washington County also recently proposed an annual vehicle registration fee of \$30 for most vehicles and \$17 for motorcycles and mopeds. Vehicle registration fees for counties in Oregon can be enacted by ordinance, but if a county has a population less than 350,000 residents (like Columbia County), then the ordinance requires voter approval. Under State law, 40 percent of the collected fee must go to the cities within a county, unless they agree to a different percentage.

⁶ Based on total tax accounts in unincorporated areas of Columbia County for FY 2014-15 (16,241); Summary of Assessment and Tax Roll 2014-15, Columbia County.

⁷ Based on 2013 population reports compiled by the Population Research Center, Portland State University, and Taxable Fuel Distribution Reports published by ODOT, March 2015.

Columbia County has 50,237 registered passenger cars, and 2,304 registered motorcycles⁸. As an example, with a registration fee of \$20 for passenger cars, and \$11 for motorcycles, the county could expect to collect over \$1 million annually, with \$600,000 going to the county, and \$400,000 distributed to cities.

County Service District for Roads

Counties can also form service districts, which are areas within a county where it provides special services that can be financed by service or user charges, connection charges, district ad valorem taxes, bonds, local option tax levies, or any combination thereof. Voter approval would be required to form such a district, and the district would include a permanent tax rate. Incorporated cities must consent to be included within a service district, or the district boundary could be drawn to include unincorporated areas of the county only.

Clatsop County has six road districts, with separate districts for the incorporated areas (Astoria, Cannon Beach, Gerhart, Seaside, and Warrenton), and unincorporated county. Property owners in unincorporated areas of the county are charged \$1.0175 per \$1,000 in assessed value, which brings in approximately \$2 million per year. Washington County also has an Urban Road Maintenance District that charges property owners in unincorporated areas of the county \$0.2456 per \$1,000 in assessed value, which brings in approximately \$4.1 million per year. Other counties around Oregon charge up to \$4 per \$1,000 in assessed value. The funds are utilized to provide preventive maintenance and safety improvements along public roads within the maintenance district boundaries.

Assuming the Clatsop County rate for unincorporated areas of the county (\$1.0175 per \$1,000 in assessed value), the county could expect to collect around \$2.6 million annually⁹. Assuming the Washington County rate (\$0.2456 per \$1,000 in assessed value) for unincorporated areas of the county, the county could expect to collect around \$630,000 annually.

County Property Tax Levy

Countywide property tax levies are another funding option available to Oregon counties. Voter approval is required to enact a local option tax, and the tax may be imposed for up to five years at a time, at which time a county will need voter approval if it desires to renew the levy. The only exception is that a levy for a specific capital project may be imposed for the expected useful life of the capital project up to a maximum of 10 years. Cities have a legal right to 50 percent of any county road property tax levied within their boundaries, unless they agree to a different percentage. Cities also have the option to adopt charter amendments that exempt property within their boundaries from county road levies altogether. Assuming the Washington County rate (\$0.2456 per \$1,000 in assessed value) as

⁸ Oregon Motor Vehicle Registrations by County, as of December 31, 2014.

⁹ Based on total assessed value of property in unincorporated areas of Columbia County for FY 2014-15 (\$2,561,415,095); Summary of Assessment and Tax Roll 2014-15, Columbia County.

a five year levy for unincorporated areas of the county, the county could expect to collect around \$3.1 million over five years.

Local Improvement Districts

Local Improvement Districts (LIDs) can fund capital transportation projects that benefit a specific group of property owners. LIDs require owner/voter approval and a specific project definition. Assessments against benefiting properties pay for improvements. LIDs can supply match for other funds where a project has system wide benefit beyond benefiting the adjacent properties. LIDs are often used for sidewalks and pedestrian amenities that provide local benefit to residents along the subject street. Property owners pay fees through property tax bills over a specified number of years.

Debt Financing

While not a direct funding source, debt financing is another funding method. Through debt financing, available funds can be leveraged and the cost can be spread over the projects useful life. Though interest costs are incurred, the use of debt financing can serve not only as a practical means of funding major improvements, but it is also viewed as an equitable funding source for larger projects because it spreads the burden of repayment over existing and future customers who will benefit from the projects. One caution in relying on debt service is that a funding source must still be identified to fulfill annual repayment obligations. Three methods of debt financing are listed below:

- General Obligation (GO) Bonds – Subject to voter approval, a county can issue GO bonds to debt finance capital improvement projects. GO bonds are backed by the increased taxing authority of the county, and the annual principal and interest repayment is funded through a new, voter-approved assessment on property throughout the county (i.e., a property tax increase). Depending on the critical nature of projects identified in the Transportation Plan and the willingness of the electorate to accept increased taxation for transportation improvements, voter-approved GO bonds may be a feasible funding option for specific projects. Proceeds may not be used for ongoing maintenance.
- Limited Tax General Obligation (LTGO) Bonds – Limited Tax General Obligation (LTGO) Bonds are similar to General Obligation (GO) bonds; however, they do not have to be voted on by constituents. A county pledges its general revenues to bondholders along with the utility revenues. The advantages to this option are that it does not require reserves or coverage (such as Revenue bonds) and does not require a vote.
- Revenue Bonds – Revenue bonds are debt instruments secured by rate revenue. For a county to issue revenue bonds for transportation projects, it would need to identify a stable source of ongoing rate funding. Interest costs for revenue bonds are slightly higher than for general obligation bonds due to the perceived stability offered by the “full faith and credit” of a jurisdiction.

County Truck Impact/ Utility Fee

Studies have shown that truck traffic causes considerably more damage to roadways than passenger vehicles, and that truck traffic accounts for up to 60 percent of the damage to roadways¹⁰. One study found that the average annual roadway maintenance cost per truck amounts to \$7.60 per mile, while passenger cars cost approximately eight cents per mile¹¹.

This damage to roadways is not accounted for in the traditional system development charge methodology. A review of current practices at peer agencies revealed that only a few are currently assessing truck users for their impact to local roadways. Some agencies collect a fee from new development for generating truck trips (similar to SDC's), while some assess a user fee for the impact of trucks on the roadway network (similar to a transportation utility fee).

The city of Auburn, Washington has adopted truck impact fees that are collected from new development¹² and based on the truck trip generation rates in the ITE Trip Generation Handbook. These impact fees are assessed in addition to the regular transportation impact fees.

The city of Sumner, Washington applies a truck trip factor that increases the ITE trip generation rate associated with their transportation impact fees¹³ that are collected from new development. The factor is applied to account for a passenger car-to-truck equivalent factor and is based on truck percentages by land use obtained from the city's travel demand model.

Other agencies base their fees on a cost per unit of measure for the additional maintenance required due to the influence of the heavy truck traffic.

The town of Los Altos Hills, California charges impact fees for trucks associated with new construction and refuse collection. The impact fees were developed based on the annual cost of maintaining the collector and local streets in the town (arterial roadways were excluded), and the weighted impact of various vehicle types. The weighted impact by vehicle type was determined by multiplying the number of trips by an average equivalent single axle loads (ESAL)¹⁴ factor, which converts a single truck trip to car trips. The resulting percentages were then multiplied by the total cost to maintain the collector and local streets, resulting in annual maintenance costs attributed to various vehicle types. To determine the construction vehicle impact fee, the annual maintenance costs attributed to construction vehicles were divided by the total value of building permits issued during the year, resulting in the impact fee that would be assessed (as a percent of each building permit valuation).

¹⁰ UC Berkeley Institute of Transportation Studies, Pavement Research Center; The University of California Transportation Center; University of California, Davis; Institute of Transportation Studies, Pavement Research Center; Kansas Department of Transportation, K-TRANS Research Program; Urban Renaissance Institute, Toronto, Canada; Illinois Department of Transportation

¹¹ Evaluation of Truck Impacts on Pavement Maintenance Costs, University of California, Davis.

¹² Truck Impact Fees, City of Auburn, Washington, January 2007.

¹³ Transportation Impact Fees, City of Sumner, Washington, 2003.

¹⁴ Based on factors developed by AASHTO, State of Washington, and the State of Montana.

To determine the refuse vehicle impact fee, the annual maintenance costs attributed to refuse vehicles were divided by the total number of refuse accounts, resulting in the impact fee that would be assessed (as a monthly cost for each account).

Boulder County, Colorado charges an oil and gas road deterioration and roadway safety fee that is designed to recoup the incremental costs to the county transportation system resulting from significant heavy truck traffic generated by oil and gas development. The fee is based on the proportional expected road usage, and associated costs to the county, from oil and gas development. The road deterioration fee recoups the costs associated with roadways wearing out quicker, and requiring reconstruction sooner. The roadway safety fee accounts for the widening that is needed in locations with substandard shoulders, as a result of increased truck traffic.

If the county wishes to consider such a fee, a rate study would be required to determine an appropriate methodology, administrative structure, and fees based on maintenance needs and/or capacity project costs, and local preferences. An example methodology is summarized below.

1. Determine the minimum level of quality (i.e., pavement condition index rating) at which county roadways must be maintained.
 - For this example, assume the county would maintain roadways to a “good” pavement rating, based on pavement condition indexing.
2. Determine the annual roadway maintenance costs to maintain the minimum level of quality of county roadways.
 - For this example, assume the county would spend \$10 million annually to maintain roadways to a “good” pavement rating.
3. Determine the existing trips by vehicle type to be applied countywide.
 - For this example, the 59,645 registered vehicles¹⁵ in Columbia County were assumed to each make one trip (i.e., 52,710 passenger car and truck trips, 1,264 small truck trips, and 5,671 large truck trips).
4. Convert trips for all vehicle types to equivalent single axle loads (i.e., ESALs). This is accomplished by multiplying the number of trips per vehicle type (from step 3) by an ESAL factor for the vehicle type.
 - Using the Washington Department of Transportation ESAL factors (i.e., 0.0007 for passenger car and truck trips, 0.25 for small truck trips, and 1.13 for large truck trips), the county would have 6,761 ESALs (i.e., 37 passenger car and truck ESALs, 316 small truck ESALs, and 6,408 large truck ESALs).
5. Determine the annual cost per ESAL by dividing the annual roadway maintenance costs (from step 2) by the total ESAL for the county (via step 4).

¹⁵ Oregon Motor Vehicle Registrations by County, as of December 31, 2014.

- For this example, the annual cost per ESAL would be \$1,479.
6. Determine the annual maintenance fee per trip type. This is done by multiplying the ESAL factors (via step 4) by the annual cost per ESAL (from step 5).
 - For this example, the annual maintenance fee would be \$1 for passenger car and trucks, \$370 for small trucks, and \$1,671 for large trucks.

ODOT Statewide Transportation Improvement Program (STIP) Enhance Funding

ODOT has modified the process for selecting projects that receive STIP funding to allow local agencies to receive funding for projects off the state system. Projects that enhance system connectivity and improve multi-modal travel options are the focus. The updated TSP prepares the county to apply for STIP funding.

ODOT Highway Safety Improvement Program (HSIP) Funding

With significantly more funding under the HSIP and direction from the Federal Highway Administration to address safety challenges on all public roads, ODOT will increase the amount of funding available for safety projects on local roads. ODOT will distribute safety funding to each ODOT region, which will collaborate with local governments to select projects that can reduce fatalities and serious injuries, regardless of whether they lie on a local road or a state highway.

ODOT expects to start its jurisdictionally blind safety approach in 2017 for the 2019-2021 STIP. Meanwhile, ODOT intends to implement a transition plan for 2013-2016 to bridge the gap by allocating funding for local roads primarily focused on a few systemic low cost fixes implemented in the shorter timeframe¹⁶.

¹⁶ ODOT Jurisdictionally Blind Safety Program