Joseph Branch Rail-with-Trail Economic Impact Assessment

April 15th, 2015

*Revised November 18th, 2015

Dana Kurtz, EOU MBA Candidate

Tarita Keohokalole-Look, EOU Student

Sarah Palmer, EOU Student

Advised By: EOU College of Business Professors: Scott McConnell, Stephen Clements, Peter Maille

Reviewed By: Sara Miller, NEOEDD; Rocky Houston, OPRD; Stephen Clements, EOU; Scott McConnell, EOU; Terry Edvalson, EOU, Stephen Adams, WURA.

Contents

Tables

Executive Summary

This report was commissioned to examine the possibility of building a multi-use trail from the city of Elgin to the city of Joseph, in Northeast Oregon. The 63-mile trail would serve as corridor for outdoor enthusiasts in the local region and surrounding areas. Data on the benefits and costs of the trail were gathered and then analyzed to provide a detailed report on the trail. The sections of the report describe each segment of the potential trail and the estimated costs associated with building and upkeep. The potential economic and quality of life benefits that the trail could provide to each of the local communities were calculated. In addition to the data for the Joseph Branch Trail, similar trails in the area were reviewed to compare the costs, amount of use, and success.

For the region, the Joseph Branch Rail-with-Trail could provide between $85,495 and $427,611 per year in additional tourism dollars (excluding local use dollars). This equates to between one and five new permanent full-time equivalent jobs. The expenditures of local people using the trail would likely be very small, but the trail would contribute to a higher quality of life and could be beneficial in intangible ways. Conservative estimates of local spending increases ($15 a month per person) range from $5,074 to $25,371 per year. Depending on how communities respond by utilizing or perhaps increasing their existing capacity, increased tourism could supplement regional economies in a moderate way.

The costs of building the trail would require a capital investment on the order of hundreds of thousands to millions of dollars. Roughly estimated costs range from $13,197,100 to $19,728,600. Building the trail could generate approximately 224 and 334 temporary construction jobs. Roughly estimated costs to maintain the trail range from $40,200 to $71,400 per year.

Introduction

Rails-with-trails, which are located adjacent to existing and active rail lines, are valuable assets for local communities due to the protection they provide for pedestrians and bicyclists. There are currently more than 1,800 existing rails-with-trails in all 50 states which total more than 21,000 miles of trails, with twenty-one in the state of Oregon. Each year more communities across the United States are experiencing the economic, health, environmental and historical benefits that each path provides (Pack & Tomes, 2013).

As more paths are constructed, the demand for rail-trails, as well as other paths, continues to increase. Even though the demand for these paths is increasing, finding uninterrupted and available corridors for developing a trail is becoming more difficult. This report analyzes the potential economic impact of building a 63-mile rail-with-trail path alongside the existing railroad from the city of Elgin to the city of Joseph in Eastern Oregon. The path would run through or close by five cities along the way and would positively impact all of the local economies. Rough estimates of the costs to construct such a trail are also provided to enable a weighing of costs and benefits associated with the trail.

Constructing a trail alongside the existing railroad will provide value to each of the five communities along the current rail corridor and will provide safe improved transportation and recreation options. This assessment of the rails-with-trails in Eastern Oregon will provide a general

overview of the economic impact each of the five cities could potentially experience. The methodology, economic baseline, potential demand, seasonal and direct effects, cost analysis, and results of the 63 mile trail will be explained in detail during this assessment.

Annual household income levels and total employment in some parts of Union and Wallowa County have been declining in recent years, which indicate that there is a need for economic development initiatives, such as the rail-with-trail project (U.S. Department of Commerce). Additionally, Union County suffered a decline in tourism in 2013 according to Travel Oregon estimates (Runyan, 2013). This analysis will estimate the economic impacts of such a trail to determine whether building a trail is feasible.

Methodology and Assumptions

Much of the data sought for this analysis was not available at the city or sometimes even county level. County level data was used and portioned out to cities based on reasonable assumptions about tourism and spending. When possible, local sources (chamber of commerce, regional economic development groups, etc) were consulted to obtain quantitative information about tourism, trail use, spending, and issues specific to each community.

Data was collected, analyzed by EOU and then vetted through the Student Internship Advisory Committee. This final economic impact assessment will be reviewed by the Citizens Trail Advisory Committee and will be made available to the community.

Excel files used for calculations are not included in this report, but may be downloaded from https://www.eou.edu/rails-with-trails/category/reports/ or requested from dkurtz@eou.edu.

Values and assumptions used throughout this document are noted as follows:

Non-Local

- Longwoods Travel USA listed 2 million overnight visitors to the 8 counties that make up Eastern Oregon in 2013, it is assumed that this accounts for all visitors (Longwoods Travel USA, 2013)
- It is assumed that historical increases in visitor spending from 1991-2013 are accurate baseline estimates for Union (1% a year) and Wallowa County (5% a year) (Runyan, 2014)
- All construction and maintenance costs are rough estimates provided by Oregon Parks and Recreation Department. Actual costs will vary based on site specific details.
- Hotel tax by county was used to portion out visitors to each county; it is assumed that hotel tax is correlated to tourism. A large share of the Union County hotel tax is likely related to travelers on I-84 who only stay overnight in transit.
- Number of restaurants in a city compared to the county was used to portion out visitors to each city; it is assumed that number of restaurants are correlated to tourism

- Forty-six percent (46%) of marketable trips to Eastern Oregon listed outdoor recreation as the primary reason for visiting; it is assumed that 46% of visitors would be users of the trail (Longwoods Travel USA, 2013)
- It was assumed that overnight visitors would spend $89 per night, and that they would stay for one night (Longwood Travel USA, 2013)
- For both local and visitor use, estimated increased visitation if a trail is built was conservatively estimated from a low to high range of 1%, 3%, %5. This was determined to be a reasonable range of growth based on Union and Wallowa County increases in visitor spending of 1% and 5% annually, respectively.

Local

- The Oregon Statewide Comprehensive Outdoor Recreation Plan listed 49% of local people in Union and Wallowa county use local walking paths. It was assumed these people would be users of the trail (Rosenberger & Lindberg, 2012).
- It was conservatively assumed that local trail users would spend $5 a month, and use the trail three times a month, this value was based on regional knowledge (no studies found on this topic).
- Specific calculation methods are discussed in each of the results sections.

Economic Baseline

Data was collected for the five communities the rail-trail would pass through by searching the internet and calling local businesses. The numbers of lodging, food services, and entertainment establishments were recorded for each city and used in informing an economic baseline. This data is useful for understanding impact that may take place compared to the current tourism offerings of each city.

The city of Elgin, with a population of 1,711, is the one of the larger cities located along the trail. Within the city there are two hotels which have 64 rooms, and one RV park with 45 sites available. In total, there are eight restaurants in the city and two grocery stores. There are also an Opera House, Excursion Train, and four parks or trailheads located within the city boundaries. According to the 2010 Census, the people of Elgin have an average of $42,857 yearly household income (United States Census, 2010).

Next along the rail line is the city of Wallowa. With a population of 808, Wallowa has one hotel. The Mingo Hotel has 12 units available and contains 48 beds. There are also two RV parks. The Minam Motel is not within the city limits but is a good source of tourism to the area through the the rafting rental business that is run in conjunction with these accommodations. Within the city there are three restaurants to choose from and one grocery store. There is also the Wallowa Band Nez Perce Trail Interpretive Center office and displays, a city park, the Lions Park, and, adjacent to town, the Wallowa Band Nez Perce Trail Interpretive Center property with a trail system and minimal event facilities . The average household income for the city of Wallowa was $35,795 per year (United States Census, 2010).

The third city along the rail line is Lostine. With a population of 213, Lostine is the smallest city along the corridor. There is no lodging currently available in Lostine, however several farm stay rentals are nearby and a large historic house one mile from downtown being renovated as a bed and breakfast. The well-known farm-to-fork Lostine Tavern, one coffee shop and the historic M Crow & Co. general store are located in the city. There is a small city park and the town is the gateway to popular Eagle Cap Wilderness trailheads located up the Lostine River . In 2010, the average yearly household income was $46,429 (United States Census, 2010).

Enterprise, the largest city along the trail, has a current population of 1,940. There are currently five hotels or motels in the city that have approximately 140 beds available, the historic Enterprise House bed and breakfast, and one RV park that has 29 sites available. Vacation rentals in also play a role in accommodating tourism in this town. The city has 11 restaurants to choose from and four grocery stores. There is also a theatre, three parks and the County Fairgrounds within Enterprise. The 2010 Census reported that the average household income was $39,549 yearly (United States Census, 2010).

The last city along the trail, Joseph, has a current population of 1,081. Due to it's proximity to Wallowa Lake, the city of Joseph is an established tourist destination. It has one hotel, Indian Lodge, and East Street Cottages that have approximately 16 beds available, and one campground that has five sites available for RV's. Vacation rentals in also play a role in accommodating tourism in this town.Joseph currently has 13 restaurants and two grocery stores to choose from, along with many interesting retail shops and a bike shop. There are also two museums and at least four art galleries, the Joseph Center for Arts and Culture, the Maxville Heritage Interpretive Center, and the Chief Joseph Days Rodeo grounds. According the US Census, the average income for a household in Joseph was $38,616 in 2010 (United States Census, 2010).

Community Capacity and Potential Estimates

The capacity for each city was estimated in the baseline evaluation. Total number of accommodations, gas stations, food stores, restaurants, and retail shops were evaluated to determine how prepared each community along the trail is for tourism. After collecting this data each city was rated low, medium, or high. A low rating indicates a community is under-prepared due to the lack of businesses, accommodations for visitors, and a high rating indicates a community is well-prepared for the inflow of visitors.

Elgin - Elgin has eight restaurants and two hotels, and as the likely jumping off point for the trail, it would see the benefits of being a trailhead. Elgin has a **medium** current capacity, but could increase it with more stores and tourist related services and events.

Wallowa - Due to its small size, and few amenities, Wallowa is **low** in capacity and could be expanded by additional accommodations and visitor services.

Lostine - With no accommodations and few other amenities, Lostine has **low** current capacity, but is showing lots of momentum in terms of bringing tourists to the area. A hotel and the bed and breakfast currently undergoing renovation would increase capacity.

Enterprise - Due to the large number of accommodations and restaurants Enterprise has a **high** current capacity for serving additional visitors. It is likely that proximity to Wallowa Lake and other regional attractions would increase the likelihood that a rail-with-trail would draw increased tourism and local outdoor recreation use.

Joseph - Due to moderate accommodations, high number of restaurants, and proximity to many regional attractions, especially Wallowa Lake with the State Park and developed visitor services, Joseph has a **medium** current capacity for visitors and would likely benefit from a rail-with-trail in the area. Increased hotel accommodations would add to the capacity and could potentially result from building a trail. There is also a large amount of lodging available at WAllowa Lake. Seasonality plays a large role into the availability of lodging as during the peak summer months, much of the lodging is full.

Region - Overall, these five communities have **medium** capacity to accept new tourists if a trail were built. Increasing accommodations is the largest need, as well as retail and restaurant amenities.

Potential Demand Analysis

Eastern Oregon region includes the eight counties of Baker, Grant, Harney, Malheur, Morrow, Umatilla, Union, and Wallowa Counties. Estimates of the total travel expenditure for Eastern Oregon were calculated in the Potential Biking Demand study, performed by Dean Runyan (2013). Total bicycle travel to Eastern Oregon accounted for 4.6% of total bicycle travel spending for the state, which in turn equates to $15 million annually (Runyan, 2013). In addition to this spending, bicycle travel created an estimated 230 jobs in the Eastern Oregon Region . In total, Oregon's biking related travels brought in an accumulated $400 million in total expenditures (Runyan, 2013).

Potential Rafting Related Demand - Another potential demand analysis to consider is that the Minam Raft Rental and Shuttle Service, operated out of the Minam Hotel, Winding Waters River Expeditions which offers rafting and fishing on the Grande Ronde, Wild waters in Joseph and joining Waters Rafting and Shuttle Service in Elgin. There is the potential that building a trail could provide business development opportunities. Biking, horseback riding, and trail walking is complementary to rafting due to its availability during the drier months.

With Wallowa Lake State Park six miles from Joseph, the last town along the trail, there should be plenty of Park visitors interested in utilizing a trail. There are currently over 470,000 day use visitors each year to the park, and the likelihood of a large portion of them using the trail is high. Not only will these visitors make use of the trail, they will be more likely to make purchases in the local communities.

Table 1. Regional State Park Use

Day Use

Location	Sum of Attendance
Wallowa Lake Management Unit	**466,088**
Iwetemlaykin State Heritage Site	3,732
Minam State Recreation Area	30,924
Wallowa Lake Highway Forest State Scenic Corridor	49,772
Wallowa Lake State Park	381,660
Grand Total	**466,088**

Overnight (Camper nights)

Location	Sum of attendance
Wallowa Lake Management Unit	**82,903**
MINAM STATE RECREATION AREA	5,023
WALLOWA LAKE STATE PARK	77,880
Grand Total	**82,903**

(OPRD, 2014)

Seasonal Effects

Seasonal economic effects can be described as the variation in use that would impact the revenue a rail-with-trail could bring to communities. The seasonal effects are analyzed below:

Biking, hiking, horseback riding and other trail activities are generally not winter activities. High elevation trails with snow cover in winter may support cross country skiing, snowshoeing, and other winter activities (Pack & Tomes, 2013). It is unlikely that the Joseph Branch rail-with-trail, if built, will be used heavily in the winter. Winter tourist attractions in the region include Ferguson Ridge Ski Resort, dog sled racing, snowmobiling, and backcountry skiing, as well as low elevation hiking and fishing in nearby Hells Canyon National Recreation Area. The trail would potentially provide employment for seasonal employees in the non-winter months.

Spring and fall are considered shoulder seasons since they do not draw the highest amount of tourism. Visitors to the region during these seasons enjoy hunting, fishing, cycling, motorcycling, rafting, birding, and wildlife viewing. Many of these activities pair well and it is likely these shoulder seasons would see the largest uptake in visitors choosing to extend trips to add a rail-with-trail experience to their trip.

Several important events occur in the spring and fall in Union and Wallowa Counties. For example, in the fall, Juniper Jam and Mule Days are held in Wallowa County. Steelhead fishing brings visitors during the winter and fall. These events and activities could be combining with other possible activities on the trail including races, festivals, hunting and fishing derbies to increase the overall visitor experience.

Summer is the peak tourist season in Union and Wallowa Counties. There are numerous festivals throughout the region including the Elgin Stampede, Chief Joseph Days Rodeo, Mountain High Broncs and Bulls, ranch rodeos, music festivals, farmers markets and more. Visits occurring during this peak season could be extended with a rail-with-trail opportunity. Currently, Wallowa Lake visitors are at capacity during peak season. The trail could potentially draw visitors down to the valley to use the accommodations of other towns during peak season

Overall, the major finding of the seasonal effects analysis is that a rail-with-trail could work as a point of entry for year-round experiences, as well as an additional component for other marketable trips. Currently, capacity in the local communities appears to be sufficient for current levels of tourism, however, in the smaller communities, food and lodging establishments would need to expand to accommodate any increase in demand beyond the High Use estimate. This need for expansion if a trail was built is especially relevant for overnight accommodations such as hotels and B&Bs considering that there are four times (20,000) as many overnight bicycle trips as day trips (5,000) a year to Eastern Oregon (Runyan, 2013). This indicates that much of the biking market that could be drawn by the trail would require hotel rooms.

Direct Effects

In economic terms, direct effects refer to new money that is being put into the economy. These effects will include any direct financial transactions that take place (although some financial transactions will also be from induced/indirect impacts). This could include purchases, payments of employee wages, and hotel taxes. When applying this to the Joseph Branch trail, many key components come into play. First there must be a distinction between the direct effects from the construction of the trail and from trail users in the future. The trail may also create induced and indirect effects, which are when spending occurs as a result of a regional multiplier. If this project reaches the design level, a thorough Input-Output modeling of the effects would provide a better understanding of the true economic impacts that the Joseph Branch Trail will provide. It is not appropriate at this level of analysis because of the lack of details of construction and sequencing.

While the trail is constructed, the local communities will experience a variety of direct effects. Workers building the trail may be housed near the area, so hotels and B&Bs will benefit financially. Some construction might be done by local companies as subcontractors, and they would live near the site, but companies might also hire additional workers or purchase additional goods and services. Local restaurants, grocery stores, suppliers will also experience an increase in sales due to the inflow of workers during the trail's construction. Workers may be in the area over a period of months and years as the trail would likely have phased construction. They will have a direct effect on the surrounding communities.

Once trail construction is finished, trail users will positively affect local communities. As with the construction workers, visitors will need places to stay and eat. Businesses will experience an increase in customers and resulting sales. As time goes on and the trail becomes more popular, businesses across the region should see an increase in sales and profits.

Indirect Effects

The effects on the quality of life for local people in the region are the most important outcome of building the trail due to the fact that local residents are the primary stakeholders. Indirect and induced effects of the trail are described below. This section also describes how the trail may influence the quality of life in the region.

Indirect and induced effects from visitors using the trail include purchases of goods and services by businesses patronized by visitors and wages spent by employees of those businesses and further circulation of those dollars in the local economy. Another example is an increase in real estate values near the trail as the popularity of the trail grows. Multiple studies confirm the effect that rails-with-trails have on adjacent property values; property values nearly always go up, with the exception of properties located adjacent to a trailhead/parking lot. No studies could be found indicating a property value decrease. For example, a study in Delaware found that home values increase by $8,800 when located within 50 meters of a regional trail, and that in other areas home values increase by 2-14% when located near a regional trail (Racca & Dhanju, 2006). A major factor likely to be affected is the quality of life for local residents. The trail could provide locals with convenient places to safely bicycle, walk or ride horses

separated from streets and highways, connect them to other trail and recreation resources, as well as to outdoor areas currently without public access. The trail would provide connectivity between the communities, both for recreation and commuting. Over time, it is believed the overall health of locals could improve due to their proximity to the trail.

Compounded Effects Over Time

When estimating the long term effects of the Joseph Branch Trail, similar trails were reviewed. As with these other trails, it is expected that the economic impacts will grow over time. Each year after the trail is built the surrounding communities should expect to see an increase in their economic growth. This growth is due to the idea that in the early stages of the trail development, the majority of non-community users will use the trail while visiting the area for other reasons. As the trail's popularity increases, it is expected that more visitors will travel to Eastern Oregon specifically for the trail itself.

The trail is likely to be constructed in segments. This phased construction is due to how large the project is, and breaking it down will make raising funds for construction easier. It is projected that when built in segments, it could take between five and ten years to construct and connect all segments. If phased construction is done, it would cause the first segments data to be useful in estimating the costs of subsequent segments.

Case Studies

While conducting this project it became evident that there is a major lack of data on existing trails. No other trail has collected data on the amount of users or how it has had an impact on the economy. This is likely due to the low amount of funding there is in the small towns which the trails run through. Although there have not been an studies done to gather quantitative data, there have been numerous qualitative studies done after trails were built to show spending patterns of visitors in those areas.

Generally, it can be said that demand for trails has been increasing and that more people are valuing the opportunities of outdoor recreation afforded by trails in their communities (Runyan 2013).

To assist with analyzing the economic impacts that a Joseph Branch rail-with-trail could provide, the impacts of a similar trail, located in a similarly rural area are analyzed below:

The Weiser Trail

The Weiser River National Recreation Trail, located in Weiser, Idaho is the longest trail in the state of Idaho. Built in August 1997, this trail is operated by the nonprofit Friends of Weiser River Trail, Inc (FWRT) and is surfaced with native material or ballast packed with crushed stone. Beginning at the southern end of the trail, the path continues for 84 miles through desert canyons, evergreen forests and alpine meadows (*Community Built*). Visitors may encounter coyotes, bears, or even a mountain lion. While on the trail, riders will pass by historic sites, such as the Galloway dam and ancient Indian council

meeting grounds. The Weiser trail also runs alongside North America's deepest gorge; Hells Canyon. After traveling north through many small cities, the trail ends in the unincorporated area of Rubicon. In August 2006 the Weiser River trail was named Trail of the Month by the Rails-to-Trails Conservancy, which is a huge success for the local communities (*Community Built*).

There are four communities nestled along the trail which all provide services to riders. The first city, Weiser, is the largest with a population of 4,600. There are currently three hotels located in the city with 10 restaurants. Next is the city of Midvale, with a population of 160 people. There is only one hotel and one coffee shop in Midvale due to its small size. Cambridge is the next city along the trail, with a population of 315. The city of Cambridge has two motels, one RV park, and six restaurants. Council, the last town along the trail, has a population of 805. The town has one motel and nine restaurants which walkers, cyclists, and horseback riders can enjoy after completing all or part of the 84 mile journey through the Idaho country side.

According to the official Weiser Trail report, the overall cost for the project was $575,000. Within the Weiser city limits, paving and trailhead costs were $275,000, and $150,000 for Cambridge and Council. The FWRT receives an annual net profit of $7,500 from sponsoring running, equestrian, cycling and wagon train ride events. During the first running event, all motels and restaurants were fully booked. Each of the three chambers of commerce supports the trail due to the economic benefits the trail provides, and the few sponsored events during the year manage to provide significant local investment. The trail development and maintenance budget is approximately $125,000 a year, most of which is spent on local vendors, businesses and contractors in the area (*Community Built*).

It is important to note how FWRT gathered funding for funding the trail. According to a public meeting in Weiser, Idaho, the trail receives donations, which are known as endowments. Last year the trail earned $15,000 from these endowments and an additional $230,000 from various other donations. Overall, the Weiser River Trail gathers its funding from strong membership, support from multiple growing events, and an endowment. All of these will assist with keeping FWRT strong in its pursuit of improvements on the Weiser River Trail (Trainor, P).

Although there is no recorded data on exactly how much the Weiser trail increased spending in each town, FWRT hold events year round that sponsor the trail which brings in a net profit of $7,500. These various events include running, equestrian, cycling and a wagon train ride, which is something that could be implemented here in Eastern Oregon as well. FWRT holds an annual relay run usually in April between the towns Council and Midvale, which counted approximately 220 participants in 2012. These events are used to raise awareness of the trail and to recruit new members for FWRT. As stated

above, all three of the chambers of commerce support the Weiser trail due to the economic benefit it brings as well as local investments. Trail development and maintenance is roughly about $125,000 which is spent on local vendors, businesses and contractors further benefitting the surrounding towns of the trail (*Community Built*).

The Springwater Corridor

An example of a rail-to-trail that includes a rail-with-trail in Oregon is the Springwater Corridor in Portland. Although this trail is in an urban area, unlike the potential Joseph Branch Trail, it shows how this is a compatible use for a trail.

The Springwater Corridor is starts in downtown Portland and links Milwaukie, Gresham and Boring on a path separated from main roads and passing by wetlands, buttes, and agricultural fields (Springwater Corridor). The Springwater rail line was railbanked in the early 1990s. However, a portion of the line remained as an active rail line. This did not allow the trail to connect with downtown Portland. The community worked with the rail operator to develop this portion, referred to as the Springwater on the Willamette, as a rail-with-trail. The trail now links bike lanes, transit, light rail, buses and other regional trails together (Oregon's Springwater Corridor). The rail-with-trail has been so successful that the rail operator has worked with the community to extend the rail-with-trail portion and provide a safer link for users.

According to the Rails-to-Trails Conservancy, the Springwater Corridor is the longest in the Willamette Valley and second-most used trail in the state of Oregon (Oregon's Springwater Corridor). The conservancy believes that the trail is important for both recreational purposes and as an active transportation commuter corridor. Due to the trail's success, in 2007 it was added to the Rail-Trail Hall of Fame, which has an elite membership of 24 trails throughout the country. The proposed Joseph Branch Trail would be modeled after the numerous successful examples of rails-to-trails and rails-with-trails in the US.

Results

Of the hundreds of studies assessing the economic impacts of recreational activities, most measure net economic value only. Trail policy decisions require looking at both net economic value and economic impacts to a community (Bowker et al., 2007). The results below examine both sides of that equation.

Park-Based, High Level Calculations

A 2013 Travel Oregon Study of the Economic Benefits of Cycling in Oregon identified that 20,000 overnight and 5,000 day bicycle-related party-trips are made to the eastern region of the state each year. These trips result in $15 million in annual bicycle related expenditures (Runyan, 2013). An earlier Travel Oregon Study performed in 2006 showed that 66% of bicyclists requested a separate pathway, which this rails-with-trail would provide (Runyan, 2006).

Oregon Parks and Recreation Department (OPRD) provides an equation they use to calculate the potential economic impacts at other recreation sites in the region. Wallowa Lake State Park, located outside of Joseph, has an annual overnight attendance of 77,880 visitors each year. In addition, the park has 381,660 day use visitors annually who make use of the park facilities. Taking both these numbers into consideration equates to an estimated 459, 540 total visitors to the state park each year (Wallowa Lake State Park History).

The 2013 State Park System Plan identified that every dollar ($1) spent at state parks equates to $17 spent in local economies. If 0.5% of total visitors (day and overnight) to Wallowa Lake State Park (OPRD conservative trail use estimate) or 22,977 visitors used the trail near Joseph and Enterprise, and each person spent $5 a day it would equate to $1,963,450 added into the local communities, assuming the $17 multiplier (Houston, 2014a). It is assumed that most of these economic impacts would be isolated to the Joseph and Enterprise communities because of their proximity to Wallowa Lake State Park. Due to the difficulty in estimating benefits to more distant communities, approximate estimates are used below.

Detailed costs and benefits

The following sections estimate costs and benefits by city.

Estimated Local User Benefits

The trail is likely to be primarily used by locals. The number of annual local users benefiting from the trail was estimated by finding the population of each city, and multiplying that by 49% (49% of the population of each county partakes in walking / day hiking on non-local trails / paths according to Oregon Statewide Comprehensive Outdoor Recreation Plan (Rosenberger & Lindberg, 2012). To calculate economic impact of local users, it was conservatively assumed that these 49% of citizens spend $5 per day on recreation activities, and engage in outdoor recreation 3 times a month. It was assumed that these people engage in outdoor recreation three days a month, including winter months, each year to produce a conservative estimate of current baseline spending on recreation. This assumption does not include actions like purchasing running shoes or bikes because it is uncertain whether these

purchases would be made in local communities. The $5 per use includes buying a snack, coffee, or other small purchase to enjoy while or after recreating. Three cases were modeled, a trail bringing a 1% increase in use, 3% increase in use, and 5% increase in use among local people. Results are shown in the table below:

Table 2. Annual Local User Benefits

Local User Benefits	Population	% Population Using Outdoor Recreation	Avg amount spent (1 day)	Number of days of use per year	Current $ generated from recreation	trail brings 1% increase	trail brings 3% increase	trail brings 5% increase
Elgin	1711	0.49	$5	36	$150,910	$1,509	$4,527	$7,546
Wallowa	808	0.49	$5	36	$71,266	$713	$2,138	$3,563
Lostine	213	0.49	$5	36	$18,787	$188	$564	$939
Enterprise	1940	0.49	$5	36	$171,108	$1,711	$5,133	$8,555
Joseph	1081	0.49	$5	36	$95,344	$953	$2,860	$4,767
Region	**5753**	**0.49**	**$5**	**36**	**$507,415**	**$5,074**	**$15,222**	**$25,371**

As can be seen in table 4, small financial benefits may accompany the larger quality of life benefits of having trail in these communities.

Estimated Visitor Benefits

Due to the fact that tourism data is not available for each city, finding the estimated visitor benefits required a more detailed/extrapolated calculation. The estimated visitor benefits were calculated as follows: The percentage of total Eastern Region 2013 lodging tax for each of the Eastern Region counties was used to allocate the projected 2 million Eastern Region visitors by county (Longwood, 2012).

Table 3. Visitors per County per year based on Lodging Tax

County	Lodging Tax 2013	% of Eastern Region	Estimated Visitors Annually
Baker	$57,452	0.11	218,130
Gillam, Sherman & Wheeler	$18,189	0.03	69,059

Grant	$13,284	0.03	50,436
Harney	$32,765	0.06	124,400
Malheur	$77,786	0.15	295,333
Morrow	$29,133	0.06	110,610
Umatilla	$203,234	0.39	771,626
Union	$47,256	0.09	179,419
Wallowa	$47,669	0.09	180,987
total	$ 526,768	1.00	2,000,000

To get visitors by city, the ratio of restaurants in each city was compared to the total number of restaurants in the corresponding counties in order to estimate baseline visitors. Restaurants are assumed to be filling a demand that is at least partly tourist based, and hotel data could not be portioned out at a city level because of a lack of data and because Lostine does not have a hotel. For example if there are 10 restaurants in the county and 5 in a city, that city would be given a ratio of 50% (0.5), and therefore it is assumed that that city gets 50% of the county's tourism dollars. A 1% increase of visitor spending per year was assumed to be a baseline increase for Union County and a 5% increase of visitor spending per year was assumed to be the baseline increase for Wallowa County because this was the case from 1991-2013 (Runyan, 2013). Longwood Travel USA found that 46% of trips to Eastern Oregon listed outdoor recreation as the main purpose of the trip (Longwood Travel USA, 2013). It was assumed that 46% of visitors would engage in outdoor recreation and that each visitor would spend $89 a day (Runyan, 2013). Three cases were modeled, a trail bringing a 1% increase in use, 3% increase in use, and 5% increase in use among local people. This range of analysis is generally accepted by economists as a method to show a low, medium, high range of impacts. Results are shown in the table below:

Table 4. Annual Visitor Benefits

	Union County	Wallowa County				Region
	Elgin	Wallowa	Lostine	Enterprise	Joseph	
County Visitors (#)	179,419	180,987	180,987	180,987	180,987	360,406
City Restaurants (#)	7	5	2	14	18	46
County Restaurants (#)	45	39	39	39	39	84
Ratio City/County Restaurants	0.16	0.13	0.05	0.36	0.46	--
Existing Visitors to City (County Visitors x Restaurant Ratio)	27,910	23,203	9,281	64,970	83,532	--
Recreation Visitors Ratio	0.46	0.46	0.46	0.46	0.46	0.46
Average Amount Spent (Per Visitor Per Day)	89	89	89	89	89	89
Total Spent by Visitors	$1,142,620	$949,950	$379,980	$2,659,859	$3,419,819	$8,552,228
Trail Brings 1 Percent Increase	$11,426	$9,499	$3,800	$26,599	$34,198	$85,522
Trail Brings 3 Percent Increase	$34,279	$28,498	$11,399	$79,796	$102,595	$256,567
Trail Brings 5 Percent Increase	$57,131	$47,497	$18,999	$132,993	$170,991	$427,611

As can be seen in Table 6, recreation and tourism spending on outdoor activities such as a potential trail can impact regional economies.

Visitor impacts were also estimated at a County level by assuming a trail would have a small impact on overall historical annual visitor impacts based on Dean Runyan for Wallowa and Union County. Table 7 shows county wide estimates with actual data from 2013 as a baseline, showing the historical average 5% and 1% increases in tourism spending for Wallowa and Union Counties respectively (Runyan, 2013). The table also shows projected impacts for impacts assuming the trail increased tourism by an additional 5% or 1%.

Table 5. Dean Runyan Visitor Impacts - Changes with Trail

Wallowa County	Spending (millions)	Earnings (Millions)	Employment # jobs	Local Tax Receipts (thousands)	State Tax Receipts (thousands)	Total Room Tax Receipts
2013p	26	9.3	530	275	707	982
5% annual increase - historic	1.3	0.465	26.5	13.75	35.35	49.1
With Trail-	**($ thousands)**	**($ thousands)**	**# jobs**	**(hundreds)**	**(hundreds)**	**(hundreds)**
additional annual increase 1%	13	4.65	0.265	137.5	353.5	491

additional annual increase 5%	65	23.25	1.325	687.5	1767.5	2455
Union County	**Spending (millions)**	**Earnings (Millions)**	**Employment # jobs**	**Local Tax Receipts (thousands)**	**State Tax Receipts (thousands)**	**Total Room Tax Receipts**
2013p	31.4	10	570	436	1,025	1461
1% annual increase - historic	0.314	0.1	5.7	4.36	10.25	14.61
With Trail-	($ thousands)	($ thousands)	# jobs	(hundreds)	(hundreds)	(hundreds)
additional annual increase 1%	3.14	1	0.057	43.6	102.5	146.1
additional annual increase 5%	15.7	5	0.285	218	512.5	730.5

This estimate shows a lower impact that the method in table 6, however it still indicates that visitor spending could increase annually by $13,000 to $65,000 for Wallowa County and $3,140 to $15,700 for Union County.

Conceptual Construction Costs

Assumptions

Outlined below are estimated costs for the construction of each of the six segments based on the concepts proposed in the next section of this document. These are conceptual, best judgment estimates for the cost of building the trail only, using prototypical unit costs. Due to the scale of the 63-mile rail corridor and scope of the Concept Plan, no precise cost estimate has been completed. The estimates are for design, permitting, direct construction costs, and contingency costs for the trail. The 40 percent contingency is high and reflects the conceptual design level of this concept study. Trail amenities, road crossings, culvert work, fencing, etc., are not included in these estimates. These

estimates will generally rise 4 percent annually. There is the potential for costs to be reduced in places where a train can be used to bring in materials.
There are two options for segments from Minam to Enterprise. One option is re-routing the trail to county roads when possible. When on the county road, the trail would represent a shared use of a road, rather than a separate trail. This option is designated by (County Road), but does use the rail corridor when re-routing is not possible. The second option is constructing the trail entirely in the rail corridor. This option is designated by (Rail). The county road option has additional safety concerns due to users sharing roads with motorized vehicle traffic.

The total cost to build the trail ranges from approximately $20 million if the trail is built entirely within the rail corridor and approximately $13 million if it is built using county roads when available.

General design standards are summarized below and detailed in the Design Concepts section of the Concept Plan.

- Primitive (dirt) sections (A-1 through A-6 design standards)
- Improved (gravel) sections (B-1 through B-3 design standards)
- Sections developed on county roads (C-1 design standard)
- Developed (paved) sections (D-1 design standard)
- Bridges (Br-A and Br-B design standards)

Typical Costs

The unit costs below were used to calculate segment estimates and can be used as a broad guide for future trail planning in order to estimate funding requirements. These costs are a summary of typical costs found for similar projects and actual costs from recent bids in the region.

Table 6. Conceptual Cost Components

Item	Unit	Cost	Notes
Primitive 3-foot Wide Trail	LF	$5.30 - $45.30	A-1 through A-6
Improved Trail	LF	$10.53 - $40.53	B-1 through B-3
Shared Use Road	LF	$2.00	C-1
Developed Trail	LF	$56.38	D-1
Bridge Crossing	LF	$175.72	Br-A and Br-B
Road Crossing	EACH	$1,220.00	
Culvert Crossing	EACH	$880.00	
Road Sign	EACH	$200.00	
Trailhead	EACH	$75,000.00	
High Retaining Wall (B-3)	SF	$40.00	
Low Retaining Wall (A-4)	SF	$30.00	
Restoration	LF	$15.00	

Note: Cut, fill, clearing and grubbing, and material costs are included in linear foot (LF) trail costs.

The following ranges of cost for each community are estimated:

- The first segment includes areas along the trail from Elgin to Lookingglass which is 13.02 miles long. This segment includes are six bridges, 71 culverts, and seven road crossings which are

considered as constrained parts of the potential trail, and tend to be more expensive due to the degree of difficulty it takes to build.

- The second segment includes areas along the trail from Looking glass to Wallowa which is 26.07 miles long. This segment includes are eight bridges, 93 culverts, and 19 road crossings.
- The third segment includes areas along the trail from Wallowa to Lostine which is 8.14 miles long. This segment includes are 12 bridges, 26 culverts, and 16 road crossings.
- The fourth segment includes areas along the trail from Lostine to Enterprise which is 10.05 miles long. This segment includes are eight bridges, nine culverts, and 23 road crossings.
- The last segment includes areas along the trail from Enterprise to Joseph which is 5.75 miles long. This segment includes are ten bridges, 13 culverts, and 14 road crossings.

Table 7. Conceptual Cost Estimates

Segment	Cost	40% Contingency	20% Design Engineering	Total Cost
Elgin to Lookingglass (Rail)	$1,599,300	$639,700	$319,900	$2,558,800
Lookingglass to Minam (Rail)	$3,168,600	$1,267,400	$633,700	$5,069,700
Minam to Wallowa (Rail)	$2,486,300	$994,500	$497,300	$3,978,000
Minam to Wallowa (County Road)	$2,113,000	$845,200	$422,600	$3,380,800
Wallowa to Lostine (Rail)	$840,500	$336,200	$168,100	$1,344,800
Wallowa to Lostine (County Road)	$98,800	$39,500	$19,800	$158,100
Lostine to Enterprise (Rail)	$3,088,500	$1,235,400	$617,700	$4,941,600
Lostine to Enterprise (County Road)	$121,300	$48,500	$24,300	$194,000
Enterprise to Joseph (Rail)	$1,147,200	$458,900	$229,400	$1,835,500
Total (Rail)	**$12,330,400**	**$4,932,100**	**$2,466,100**	**$19,728,600**
Total (County Road)	**$8,248,200**	**$3,299,300**	**$1,649,600**	**$13,197,100**

Note: Trail amenities, road crossings, culvert work, fencing, etc., are not included in this estimate.

Additional amenities can be added to each section, and costs would vary based on natural resources, cultural resources, cut/fill permitting issues, existing conditions and site-specific conditions. A Single use Vault, pre-cast restroom, gravel parking lot, with less than less than ten cars, gate to control access, and miscellaneous site amenities, contracted out for construction would cost approximately $75,000 (Houston, 2014b).

It is anticipated that the majority of funding for trail construction would be provided by a variety of sources including state, federal, and nonprofit grants. It is possible that other sources of revenue generation would be needed.

Range of Maintenance Costs

OPRD provided a general approximation of annual maintenance costs per mile of $500-$5280. The cost is largely dependent on the trail standard, meaning primitive or paved. It is also dependent on how the work is accomplished, either by paid staff or volunteers, which will have a large effect on the price. There are additional long-term maintenance costs if the trail is paved. It would have to be repaved on an average of every 15 years, depending on the usage (Houston, 2014b).

Below are general cost assumptions by design standard:

- Primitive (dirt) sections (A-1 through A-6 design standards) and sections developed on county roads (C-1 design standard) would be the least expensive to maintain ($500 per mile per year).
- Improved (gravel) sections (B-1 through B-4 design standards) would have moderately higher maintenance costs than primitive sections ($1,000 per mile per year).
- Developed (paved) sections (D-1 design standard) and Bridges (Br A and Br-B design standards) would have the highest cost to maintain ($5,250 per mile per year).

There are two options for segments from Minam to Enterprise. One option is re-routing the trail to county roads when possible. This option is designated by (County Road) below, but does use the rail corridor when re-routing is not possible. The second option is constructing the trail in the rail corridor. This option is designated by (Rail).

Table 8. Conceptual Annual Maintenance Costs

Segment	Cost per year
Elgin to Lookingglass (Rail)	$6,778
Lookingglass to Minam (Rail)	$9,987
Minam to Wallowa (Rail)	$13,976
Minam to Wallowa (County Road)	$6,784
Wallowa to Lostine (Rail)	$9,722
Wallowa to Lostine (County Road)	$936
Lostine to Enterprise (Rail)	$16,366
Lostine to Enterprise (County Road)	$1,148
Enterprise to Joseph (Rail)	$14,535
Total (Rail)	**$71,365**
Total (County Road)	**$40,169**

Maintenance costs can be paid for in a variety of ways from grants, to parking fees, to foundations. A member organization of “friends to the trail” could also potentially collect fees to support trail operations.

Discussion

The Trail Concept Review Committee listed a few of their criteria for evaluation of trail impacts at their January 20th, 2015 meeting including: public health, trails for commuting, attractiveness to visitors, economic impacts. As described in the quality of life section, a trail would mostly improve the livability of communities for residents, while also attracting visitors and potentially yielding moderate economic benefits from local use and tourism.

The costs of building the trail would require a capital investment on the order of hundreds of thousands to millions of dollars. Roughly estimated costs for the region range from approximately 13 million to 20 million dollars. These costs however, would also provide some direct economic benefits as

local construction firms would likely be contracted to do at least part of the work and would spend money in the communities. For construction, ODOT estimates 1 job for every $59,000 spent. Using this assumption, the range of costs to build the trail could generate approximately 224 and 334 temporary construction jobs (Houston, 2015c). Roughly estimated costs to maintain the trail range from $40,200 to $71,400 per year. The expenditures of local people would likely be very small on the trail, but the trail would contribute to a higher quality of life and could be beneficial in intangible ways. Conservative estimates of local spending increases ($15 a month per person) range from $5,074 to $25,371. Depending on how communities respond by utilizing or perhaps increasing their existing capacity, increased tourism could supplement regional economies in a moderate way.

The Joseph Branch Rail-with-Trail could provide between $85,495 and $427,611 per year in additional tourism dollars. Job generation related to trail-related tourism ranges from $56K/job to $85K+ (Runyon, 2013). Using the more conservative of these numbers ($85,000), this equates to between one and five new jobs (Houston, 2014c). If this project proceeds to design level analysis, it is recommended that an input-output model be constructed to more accurately estimate the economic impacts of a trail.

Conclusion

A Strengths Weaknesses Opportunities and Threats (SWOT) Analysis on the economic impacts study of the Joseph Branch Rail-with-Trail was conducted. The SWOT analysis identified study strengths as good quality regional level data, analysis based on input from OPRD and regional economic experts, as well as the local nature of the research team. Visitor impacts were estimated in two different ways to provide a range potential impacts. Although there were many strengths, there were also many weaknesses when conducting research. Due to the lack of city data, quantitative information about how trails increase tourism, and for rails-with-trails in general, trying to make data driven estimates were difficult. Although there was data for the eastern region of the state, dividing it up for the two counties and each of the five cities involved a method devised by the team with input from regional experts. This analysis would have been strengthened if another trail's economic impact study methodology could have been duplicated. However, this lack of information shows why it is necessary to encourage more quantitative analyses of trail impacts. Another weakness is that this study did not consider inflation impacts or consequences of building different segments of the trail at different phases, because that information was not available in this preliminary analysis. Threats to the accuracy of this analysis include uncertainty about funding mechanisms, maintenance and sequencing.

The SWOT analysis identified that the Joseph Branch Trail would potentially require a very large investment to develop. It would likely have an overall positive impact on local communities and residents. The trail itself would serve as an outlet for residents in the area to safely exercise, commute and enjoy the outdoors in new areas and as a vacation destination for travelers wanting to experience the beauty of Eastern Oregon. Businesses in the five towns surrounding the trail could see an increase in sales and profits in the long run due to the trail activity. New businesses may be established. Also, real estate values and health benefits would be expected to grow as the trail popularity increases.

Table 9. SWOT Summary of the Economic Feasibility Study

Strengths ● Local Knowledge ● High quality state and regional data, good trail data ● High likelihood to have a positive impact on communities if built	**Weaknesses** ● Lack of Local Data ● Cost to build trail is large ● Lack of studies quantifying tourism increases ● Potential inflation
Opportunities ● Value of trail to attract people to the region ● Opportunities for new and existing businesses ● Quality of life for residents	**Threats** ● Uncertain funding for trail development and construction ● Uncertain maintenance mechanism and funding ● Uncertain sequencing as trail is built

The Joseph Branch Rail-with-Trail could provide $85,495 and $427,611 per year in additional tourism dollars (excluding local use dollars). This equates to between one and five new jobs total (assuming that every $85,000 in annual tourism spending equates to one job) (Houston, 2014c). These economic benefits will be realized primarily in the Joseph and Enterprise, since the current tourism infrastructure is primarily based there. Although there are opportunities that the trail would provide, there are also threats which are holding it back from being constructed. Those threats include having delays in the construction of the trail. It is normal for weather or lack of materials to hold back construction, which could have a negative effect on the trail. Also, since it is the first of its kind here in Eastern Oregon, locals may not be as welcoming to the idea of it.

Although Joseph and Enterprise will experience the most benefit from the trail, other rail-trails have developed economic development programs, called the "Trail Towns Program". The program works as an economic development and community revitalization initiative working with the communities to ensure that the communities and businesses maximize the economic potential of the trail. A program like this would be recommended for the area so all five of the local communities could receive the maximum benefits. The program also works to address trail-wide issues and opportunities through regional cooperation and to build the connection "between trail and town," so that there are safe and well-marked routes into the towns.

The Trail Towns Program works extensively along five trail corridors including 21 towns (Discover Trail Towns). They have produced a Trail Town Manual that is designed to help develop an economic development strategy for towns along a trail (Capturing Trail-Based Tourism). Their strategy includes:

a. Enticing trail users to get off the trail and into your town

b. Welcoming trail users to your town by making information about the community readily available at the trail

c. Making a strong and safe connection between your town and the trail

d. Educating local businesses on the economic benefits of meeting trail tourists' needs

e. Recruiting new businesses or expanding existing ones to fill gaps in the goods or services that trail users need

f. Promoting the "trail-friendly" character of the town

g. Working with neighboring communities to promote the entire trail corridor as a tourist destination.

This analysis also highlights the potential for many opportunities for the local communities.

Building the Joseph Branch Trail could offer the residents of Eastern Oregon with a safe outlet for outdoor activity for generations to come. Not only would families be able to enjoy using portions of the trail, but outdoor enthusiasts desiring a 63-mile journey will as well. Also, over time more travelers would be likely to make their way to the trail and make an impact on the local economies. Although there are many opportunities presented by the trail, there are still a few threats holding construction back. Due to the trail being the first of its kind in the area, many local community members are hesitant to support a large capital investment, for an uncertain economic outcome. This analysis was designed to inform readers about the estimated costs and benefits the Joseph Branch Trail provides to our local communities Eastern Oregon.

References

America's Rails-with-Trails. (n.d.). Washington, D.C.

Bowker, J.M, Bergerstrom, J.C., Gill, J. (2007).Estimating the economic value and impacts of recreational trails: a case study of the Virginia Creeper Rail Trail *Tourism Economics.* 13(2), 214-260

Capturing Trail-Based Tourism. (n.d.). Retrieved March 8, 2015, from http://www.atatrail.org/pv/docs/1TTManual.pdf

Community Built. (n.d.). San Francisco, California.

Dean Runyan and Associates (April 2013). *The Economic Significance of Bicycle-Related Travel in Oregon Detailed State and Travel Region Estimates, 2012.* Travel Oregon.

Dean Runyan and Associates (April 2014). *Oregon Travel Impacts 1991-2013p.* Oregon Tourism Commission.

Department of Commerce, Bureau of Economic Analysis (2015). Retrieved March 2, 2015 from http://www.bea.gov/iTable/iTable.cfm?reqid=99&step=1#reqid=99&step=1&isuri=1

Discover Trail Towns. (n.d.). Retrieved March 8, 2015, from http://www.trailtowns.org/

Houston, R. (2014a, January 6). Personal Communication from OPRD trails coordinator Rocky Houston to Dana Kurtz.

Houston, R. (2014b, January 28). Personal Communication from OPRD trails coordinator Rocky Houston to Dana Kurtz.

Houston, R. (2014c, March 7). Personal Communication from OPRD trails coordinator Rocky Houston to Dana Kurtz.

Longwoods Travel USA. (2013). Oregon 2013 Regional Visitor Report. The Eastern Region.

Oregon's Springwater Corridor. (n.d.). Retrieved March 2, 2015, from http://www.railstotrails.org/trailblog/2011/september/01/oregons-springwater-corridor/

Pack, K. & Tomes, P. (2013). America's Rails-with-Trails: A Resource for Planners, Agencies and Advocates on Trails Along Active Railroad Corridors. *Rails-to-Trails Conservancy*.

Racca, D. & Dhanju, A. (2006). Project Report for Property Value/Desirability Effects of Bike Paths Adjacent to Residential Areas. *Delaware Center For Transportation*. November 2006. Retrieved from <http://128.175.63.72/projects/DOCUMENTS/bikepathfinal.pdf>

Rosenberger, R & Lindberg, K. (12, November 2012). Oregon Resident Outdoor Recreation Demand Analysis. 2013-2017 Oregon Statewide Comprehensive Outdoor Recreation Plan Supporting Documentation. OSU College of Forestry.

Springwater Corridor. (n.d.). Retrieved March 2, 2015, from https://www.portlandoregon.gov/parks/finder/index.cfm?action=ViewPark&PropertyID=679

Trainor, P. (2015, February 10). Student Meeting [Telephone interview].

United States Census (2010). American Fact Finder. Retrieved from http://factfinder.census.gov/

U.S. Department of Commerce. (n.d.). Retrieved February 18, 2015, from http://www.commerce.gov/

Wallowa Lake State Park History. (n.d.).