Summary of Comments Submitted 2/14/23-3/13/23		191400-200 Moon Pit	201500-300 201500-301 Roth-Millican	191400-2400 Golden Basin	211900 212000 DSL
Total Parties Submitting Comments		2	7	1	1
General Dissent			6		
Zoning	Wildlife Zoning	1			
	Landfill Overlay				
	Zoning General				
Property	Residence Impacts		2		
	Property Value				
	Health		1		
Transportation	Truck Access Route				
	Self Haul Distance				
	Traffic		1		
	Haul Distance				
Wildlife	Wildlife (general)				
	Raven Impact				
	Sage Grouse	1	2	1	1
	Eagles, other raptors	1	3	1	1
	Antelope		2		
	Bats				
	Deer				
	Elk	1	2	1	1
	Cougar	1		1	1
	Rodent Problems				
Recreation	Recreation (general)	1	4	1	1
	Paragliders		4		
	OHV				
	Shooting				
	Hiking		1		
	Horses				
	Biking		1		
Environmental Impacts	Litter		1		
	Air				
	Groundwater	1			
	Noise	1	1	1	1
	Light		2		
	Odor		1		
	Visual		3		
	Snow/Ice				
	Dust		1		
	Wind				
Engineering	Floodplain				
	Topography				
	Soils				
Other	Badlands Impact	2			
	Pine Mtn Observatory		3		
	Cultural Resources		1		
	Growth				
	Vectors (Birds, Rats)				
	Airports		1		
	Wildfire Concerns				
	Selection Process				
	Communications Concerns				
	School				

Note: 1 Commenter is not included in tally. Supports out-of-county rail haul.

Robert Scott Fisher
Director of Undergraduate Studies
University of Oregon
Department of Physics

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Eugene, OR 97403-1274
tel: 541-346-4799
rsf@uoregon.edu

Letter of Opposition for Proposed Landfill Sites near Millican, Oregon

February 7, 2023

This is Dr. Scott Fisher writing; I am a faculty member in the University of Oregon Department of Physics where I hold the position of Director of Undergraduate Studies. Additionally, I am the Director of Pine Mountain Observatory (PMO), an active research and educational observatory which is located near the summit of Pine Mountain in Millican, OR.

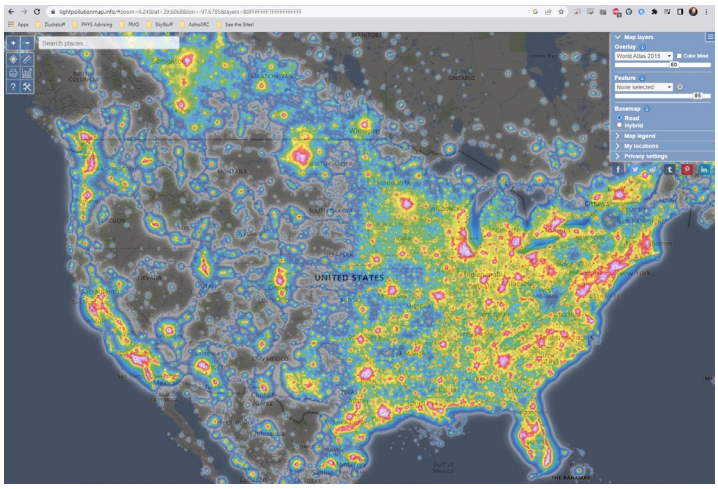
I am writing this letter to state our strong opposition to locating a new landfill site in the vicinity of Pine Mountain. The site located at the base of Pine Mountain would be absolutely devastating to the observatory, and the two sites to the east are especially worrisome as any development in those areas will have a direct line of site to the observatory. However, the observatory would be irreparably harmed if the new landfill were located at *any* of the six proposed sites in the Millican valley for reasons I detail below.

PMO has been a part of central Oregon since 1968 when the first telescope was installed. For over 50 years the observatory has been accessible to the community through our long running "Public Nights" program where we have the facility open to public visitors on Friday and Saturday nights in the summer months. Over the last several years PMO averaged 1500 – 2000 public visitors each summer to the facility. On top of those visitors, PMO hosts private tours for educational groups from around the state and country. Each summer we have scout troops, school classes, environmental groups, and folks who advocate for the preservation of dark skies as visitors to the observatory.

PMO also hosts several active and robust research programs for high-school and undergraduate students at schools throughout the state. These programs range from scientific research like looking for planets around other stars to technical programming that teaches students how to work on complex scientific equipment and how to take care of a scientific facility. In 2022 roughly 50 students took part in meaningful research/support projects at PMO. In recent years PMO has become an educational resource for all of Oregon. With the advent of "remote observing" we now routinely observe with the PMO telescopes from remote locations in Eugene and Portland. Indeed, the observatory is now a state-wide resource that can be accessed remotely.

However – it is the special location of the observatory that truly enables these unique educational programs. PMO is located under some of the darkest and most pristine skies in Oregon and the entire continental US. In fact, PMO is located on the northwest corner of what astronomers call "the Great Dark Patch". The graphic below shows the current state of light pollution in the USA. If you look

closely you can see the ‘light domes’ of Bend, Redmond, and Prineville in central Oregon, the “great dark patch” is the dark area that spans southeastern Oregon and northern Nevada. PMO is located to the east of the Bend light dome.



This map is relevant to this letter, as the biggest concern we have with respect to the proposed landfill sites is the light pollution that will be caused by the facility. There is simply no way to preserve the dark skies near PMO if there is development of the areas near the base of the mountain. And once the light pollution is in place, it is impossible to mitigate or rectify. The observatory and its educational and research programs will be severely harmed – and potentially made inoperable – if the new facility is located at the sites near Pine Mountain or Millican.

Other issues related to locating the landfill near PMO would be the detrimental effect of much more traffic near the mountain which would inevitably inject more dust and small particles into the atmosphere and the potential burning off and outgassing from the facility which would add to local turbulence in the atmosphere.

Given the reputation of Deschutes County as a place that prides itself on its natural beauty and unspoiled environment, I ask the commission (and all Oregonians) to consider the dark and pristine skies of central Oregon as part of that environment. Since we have an established and popular observatory already in place in our community, I am asking us to preserve the dark skies that make PMO a unique community asset by not locating the new facility at any of the sites near Millican. With this sort of preservation, PMO will remain an active, popular, and well-loved part of the community for many years to come.

Sincerely,

Robert Scott Fisher, Ph.D.
Director of Pine Mountain Observatory

Tim Brownell

From: Scott Michalek <michalek_scott@yahoo.com>
Sent: Wednesday, February 15, 2023 9:56 PM
To: managethefuture
Subject: Proposed Milican Valley landfill sites - opposed

Dear Deschutes County,

I understand the need for future landfill sites as population rapidly grows in and around the Central Oregon area.

I want to express my opinion about sites being considered in the Milican Valley. This area is a very special place for more folks and wildlife than might be apparent.

I have been involved with hang gliding off Pine Mountain for the last 24 years. Many of my fellow pilots have been recreating in this area since the late 1970's. When the weather is appropriate there are pilots flying almost every day. Pilots from all over the country and international locations visit on a regular basis.

In addition to hang gliding a number of my friends have homes and cabins in the valley and we all regularly pursue recreation including hang gliding, hiking, camping, paragliding, wildlife viewing, night sky observation, biking, hunting and more.

While out in the valley we often observe pronghorn, deer, elk, coyote, eagles, hawks, rabbits, etc.

It does not make sense to me to disrupt these activities in such a widely used area. These activities have increased immensely over my 24 years of observation.

There has to be new landfill sites that would have less of an impact on the folks that call this area home and/or their favorite recreation location.

Thank you for the opportunity to express my thoughts.

Scott Michalek
Sisters, OR.
541-410-5203

Tim Brownell

From: Rick Christen <rickc1953@gmail.com>
Sent: Friday, February 17, 2023 4:46 PM
To: Tim Brownell; Chad Centola
Subject: Moon pit

[EXTERNAL EMAIL]

Download full resolution images
Available until Mar 19, 2023

Hi Tim and Chad,
Here's a video and some other photos looking at the moon pit from the north east looking south west. This definitely looks like your best bet and I believe that SWAC should be pursuing this. Close in, can't see it from the ground, nobody out there to complain.
Thanks
Rick

Click to Download
Video.MOV
0 bytes

Tim Brownell

From: larrynlynn@lhanlons.net
Sent: Friday, February 17, 2023 2:13 PM
To: citizeninput; managethefuture
Cc: dwlee333@gmail.com; Lisa Machnik; amanda.gylling@gmail.com; toddkane68@gmail.com; Preserve East Bend
Subject: Deschutes County Waste Disposal
Attachments: Shipping Deschutes Waste by rail.docx

Hello Deschutes Commissioners and SWAC members,

First, a thank you for the decisions to drop the proposed landfill sites that are impacted by proximity to the airports.

Next, I've attached a document that digs deeper into the possibility of shipping our trash out by rail. While there are many things still to be learned, it continues to look as though it could be a viable option. The document also explains several concerns I had when reading over the Triton survey, and why I'm not convinced we should lean heavily on its result.

I made the note an attachment here because the email app was trashing the formatting.

Thanks for your efforts in looking for a solution for the waste problem.

Larry Hanlon.
Bend

L. Hanlon
2/16/23

Hello SWAC members and Deschutes Commissioners,

During the recent discussions about the landfill site search I became aware of a survey that showed 93% of County residents in favor of developing a new local site. That is an uncommonly high level of agreement for most any topic, so I became curious about the survey.

At the January SWAC meeting I asked to see the survey that had been done and any cost estimates that might have been worked up. Chad promptly sent me the survey info as part of the July 2019 DSW Solid Waste Management Plan and also indicated that there haven't been any cost estimates re the candidate landfill sites. I have read that Plan, found it to be for the most part very comprehensive, and find that I agree with most of the conclusions.

Except for two issues which are glaringly inconsistent with the thorough nature of the rest of the plan. Those are the subject of this note. I apologize for the length of the note but this is a multifaceted subject and the devil is in the details.

I. Rail-hauled Municipal Waste:
On page 7-9 of the SWMP in the discussion of Columbia Gorge landfills is the statement

"For distances under 300 miles, transportation of waste by truck tends to be the most cost effective. Since the distances to all five landfills are around or below 200 miles from the Knott Transfer Station, this analysis will focus on the costs of transporting waste via truck from Deschutes County to the proximate landfills."

Thus in two sentences a potential solution with far lower GHG emissions, none of the local landfill siting and environmental problems and associated costs, which operates on its own private right-of-way, and which has fundamental physical advantages over truck transportation which will endure, has summarily been dismissed from consideration.

That 300 mile distance is not a hard limit. Logistics firms can be seen advertising pricing examples based on single- or few-car shipments from an arbitrary point A to another arbitrary point B, a scenario in which they have to find an empty freight car, pay for its use, and get it to the shipper's origination point. The shipper needs to load it within a couple of days or face per diem charges; it is then delivered to point B. In this scenario short trips are indeed costly.

By contrast we're looking at containerized freight rather than break-bulk loading as in a boxcar, and a same-thing-every-day kind of operational pattern, which is something that railroads do well. It is essentially a captive service; using cars that are preassigned to a pool in order to be available, which repeatedly travel the same route in a unit train, and which are unloaded quickly and sent back with empty containers. This leads to significant economies. Furthermore, we would be looking to leverage existing trash trains rather than starting a new one, which should also help with costs. Whether it would be enough is what needs to be determined.

However, given the potential cost and environmental benefits achievable in other parts of the overall waste disposal solution, it is the system level costs that need to be evaluated, not just the raw rail transportation cost. The rail transport option needs to be seriously evaluated, and it apparently was not. This is especially disappointing given that we in Deschutes are fortunate in having a major north-south rail line from a well-run Class I railroad, BNSF. A direct and

heavily-constructed route is therefore available from Deschutes to the huge Roosevelt regional landfill, a distance of 194 rail miles from Bend. A similarly robust route is also available direct to the Columbia Ridge regional landfill, but that would involve a second rail carrier, Union Pacific, and therefore likely more expense. Both railroads have been in the waste-hauling business for over two decades, successfully operating through environmentally sensitive areas with minimal impact.

Example Seattle to Roosevelt trash trains:

H Munson photo
Edmonds WA, Puget Sound on the left and multi-million $ houses out of sight on the right

R Scott photo
N. Dalles, WA, along the Columbia River

Costs:
I became curious, have been researching the issue, and have found that a reasonable estimate for rail transport from Deschutes to Roosevelt falls in the range of $9 - $10 / ton, depending upon size of container used, compaction of the waste, and whether the origin is near Bend or near Redmond. I used the published AAR (Association of American Railroads) average 2020 rates, the latest I could find, rounded up to $.05 per ton-mile. This result compares favorably with the $25 / ton estimate used in Table 7-5 of the 2019 SWMP for trucking to that location, and may even be competitive with in-county trucking now that the potential sites closest to Knott have been found to be impacted by airport restrictions. All of these numbers need to be revisited as they predate the large inflation that has occurred since 2020. For the rail option, there will also be switching charges for picking up and setting out "our" cars (negotiable), and the trucking estimates would also need to include the "external" societal costs of trucking that the CBO has been working to quantify. Both modes need to have equipment costs evaluated; I would guess that either would be handled through long-term leases to minimize the unit cost. Containers can be used with either mode, and railcars are less expensive than truck tractors and have long service lives, typically 50 years with a recent extension to 65 years granted for some types.

Transfer operations:
To use rail, a transfer facility would need to be built. I envision this as an enclosed facility much like the plans already in place for upgrading Negus and the Southwest transfer station. The additional elements would involve rail sidings in a paved area for placing the filled containers onto railcars, retrieving the empty ones that have been returned, and perhaps repositioning railcars to facilitate the process. The equipment operators that presently drive bulldozers and graders could operate the container handlers that would be

needed, and perhaps a Trackmobile. And given the volume and longevity of the new business, the railroad might be willing to help finance the construction of the sidings.

example of laden container handler


small Trackmobile


emptying enclosed container at Roosevelt

Locations:
Because this transfer facility keeps the waste enclosed and is not a new landfill it should be much easier to find a location. However, it needs rail access which is an issue in the built-up parts of the 97 corridor. There are underutilized rail sidings in the Bend area but all are too close to other commercial uses. I especially looked for ways to get rail into or near Knott and Negus and the Southwest transfer station but the options appear to be costly. I did find a location north of Bend where an existing road is conveniently close to the railroad and a reasonable traffic flow for the trucks is presently available. Part of the land required for such a facility is already owned by the County, part by the CO Irrigation District, and part is "USA", presumably BLM. The pieces we would be interested in from the other owners are bisected by the railroad and thereby made less useful so those parties may be more willing to reach an agreement. Other possible locations exist but they are increasingly distant from Knott.

Rail operations:
Supporting the transfer station should fit in nicely with existing railroad operations as there are two locals per day that run from Bend to Madras and back. Our traffic could be smoothly added in to one of the Seattle trash trains at Wishram WA, taken there by one of the daily northbound freights that change crews near Bend and in Wishram. The reverse movement of empties works as well, but we of course need to check all this with the railroad. BNSF has a waste hauling specialist, and Republic has rail logistics people to help jurisdictions coordinate these movements.

The rail option is also scalable. Since we would most likely be leveraging existing trains, it could be started small with leased equipment to test the operation and then expanded to meet current and future needs. Starting earlier would preserve more capacity at Knott landfill to be a reserve in the event of some major regional transportation disruption. Speaking of regional considerations, if we were to put this capability in place it could enable a tri-County solution as Crook and Jefferson could leverage the rail solution as well.

Suggestions:
So it appears that rail transport of waste out of the County is certainly worth considering seriously and should be evaluated in addition to the search for new landfill sites. It fits the

focus laid out in the SWMP of privatizing as much of the operations as possible. A first step would be to establish whether we really do have a practical location for a rail transfer facility.

I would especially recommend that SWAC talk with the solid waste people from Thurston County WA (Olympia) as they have in the past year renewed their contract for rail-hauled waste and were expecting a savings compared to the previous one. Their 2020 population is about 290,000 vs our 198,000, but they are similar in the sense that they don't generate enough waste to justify an entire train and thus piggyback on the Seattle trains. We would likely be doing the same, and they can provide valuable insights on real-world operational and contractual issues. And, the length of their rail haul is 225 miles, close to what ours would be.

All of the claims I have made here are supported by industry and government references which I can provide. All of the costs are estimates; we now need firsthand input from BNSF, Republic, and perhaps UP and Waste Management. I can furnish more details to the SWAC if desired and, although I sure don't need more on my to-do list, I would be willing to help in evaluating a rail solution.

II. Triton survey

The other anomaly is the Triton survey. At the outset the survey presents itself as testing "what will happen once the landfill is full," meaning Knott, but then the questions take a more narrow focus. Looking at the survey questions quickly set off alarm bells and waving red flags, and I don't think the outcome should be given the weight that it seems to have. My concerns fall in 3 categories: the survey sample set, the methodology, and the survey's construction.

Sample set:

From Triton's web site, under the heading "Demographics and Sampling", is the statement "The most important factor in the quality of a survey is the survey sample." I agree. This survey is comprised of 505 registered voters, and at the time of the survey (Jun-Jul 2019) Deschutes's population was approximately 193,000 of which 138,014 were registered voters, with a split of 32.1% Non-Affiliated, 29.8% Republican, 29.7% Democratic, and 7.9% other parties per the Deschutes County Clerk's Election Records website. **IF** the distribution of survey participants matches that of the County population, then this can be a statistically significant sampling. Triton is aware of this and it's fundamental to getting a valid survey, so I'm willing to believe they attempted to achieve it in their sample set. However, there is no statement to that effect, which is troubling; it's just reported as "505 registered voters".

The age distribution that was sampled looks good, as all but one age band is within 2% of the population age distribution reported by Portland State University for 7/1/2019.

Let's think about the surveyed locations for a moment … the Commissioners have all been through elections and well know that on average people in eg. precincts 1 or 35 have different views on many topics than those in, say, precincts 21 or 43 do. Yet all have Bend

mailing addresses. So if the members of the sample set were not randomized at the precinct level there is a question about its validity. Hopefully Triton will have done that, but there is no statement regarding that on the report whereas they do mention House and Senate districts, so it must be questioned.

There is an additional consideration: 66% of the people surveyed are from Bend or Redmond. While that presumably reflects the population distribution in the county, it also reflects where people know the new landfill will NOT be located. It is easy for people to hold idealistic views when they know they aren't likely to be directly impacted by the consequences. Kinda like the pig and the chicken in a ham & eggs breakfast. I don't know how to weight the responses to deal with that, but left unweighted it definitely seems unfair.

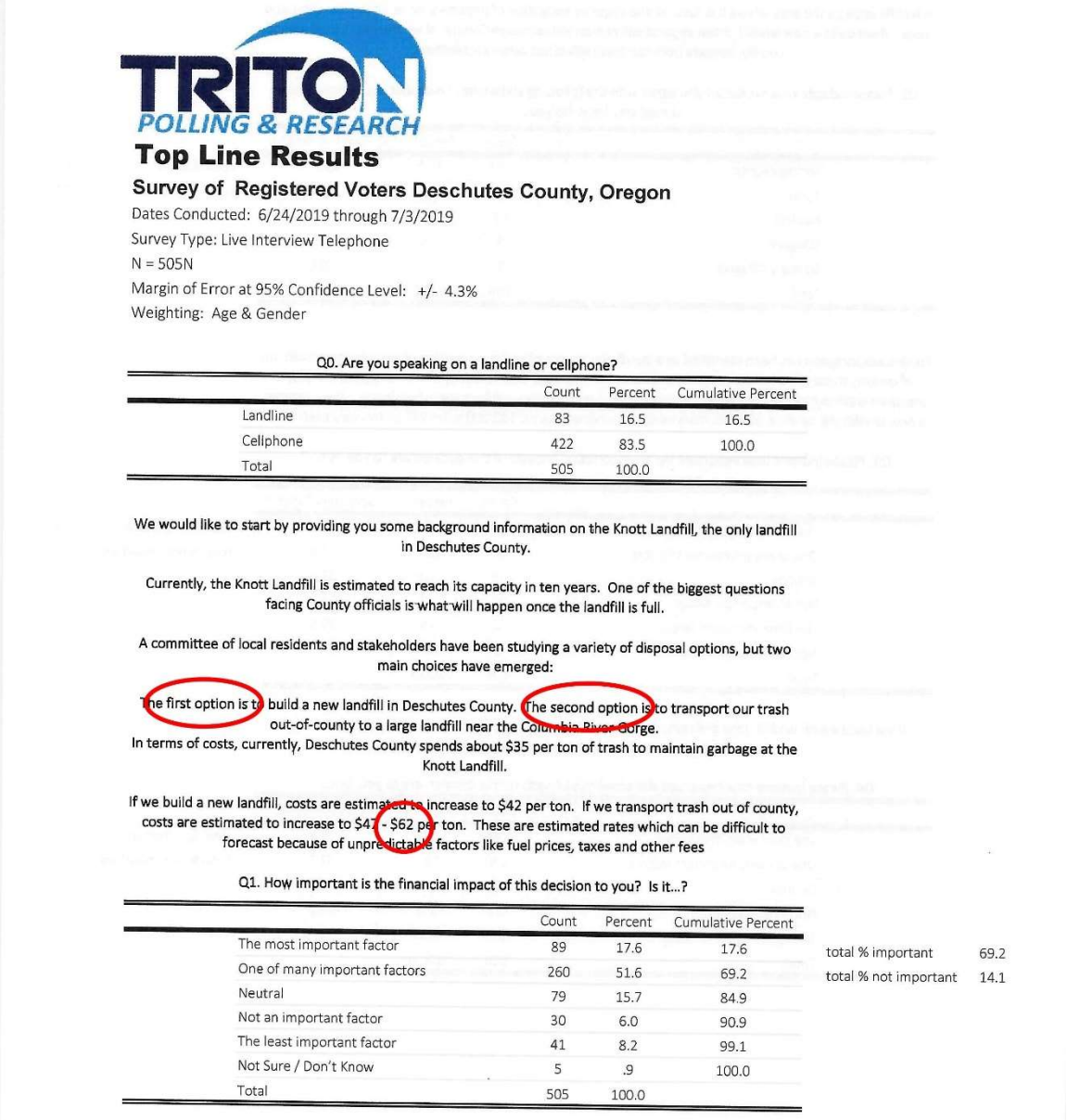
Survey Methodology:
Triton describes its baseline live telephone survey as a 3 minute exercise, which can be extended at higher cost. On this survey there are 16 questions plus an introduction; it takes 7 ½ minutes just to read them out loud. Without backing up and repeating anything. Several are multiple choice kind of responses, which take longer than a "yes" or "no" response. So I expect that these calls lasted 10 minutes or more, which is getting to be a long time to interrupt someone's day. It's easy to imagine increasingly arbitrary responses just to make the questioner go away. I have terminated phone surveys with leading questions in less time than that.

Further, these are questions on concepts which taken together are new to most people, which take some time to process and give a thoughtful answer. That time isn't available with someone there waiting for a reply, so the result is more likely an emotional reaction rather than a thoughtful one. And the information provided presents only a limited view of the issues. It is a completely different situation compared to reading pro and con arguments in a voter information booklet and then deciding. In surveying candidate or brand preferences by phone, the respondent has some previous level of familiarity with the topic and has likely already formed an opinion. That is just being sampled by the survey. In contrast, in this survey the respondent is presented with a number of technical considerations, in an unfamiliar combination, and asked to process them all and respond under time pressure. It is hard to see how that can result in anything other than snap judgements as opposed to optimal responses on a complex multivariable topic.

Which leads to the next point, on what are those quick judgements based?

Survey Construction:
Let's look at the questions presented. My main issues are (1) open-ended, unbounded questions about various non-specific "impacts", in which the respondent is left to imagine most any situation and then give a response accordingly, and (2) leading questions in which one particular outcome is given preference by the wording of the question.

Right from the outset, there is an issue before question #1.



TRITON POLLING & RESEARCH

Top Line Results

Survey of Registered Voters Deschutes County, Oregon

Dates Conducted: 6/24/2019 through 7/3/2019
Survey Type: Live Interview Telephone
N = 505N
Margin of Error at 95% Confidence Level: +/- 4.3%
Weighting: Age & Gender

Q0. Are you speaking on a landline or cellphone?

	Count	Percent	Cumulative Percent
Landline	83	16.5	16.5
Cellphone	422	83.5	100.0
Total	505	100.0	

We would like to start by providing you some background information on the Knott Landfill, the only landfill in Deschutes County.

Currently, the Knott Landfill is estimated to reach its capacity in ten years. One of the biggest questions facing County officials is what will happen once the landfill is full.

A committee of local residents and stakeholders have been studying a variety of disposal options, but two main choices have emerged:

The first option is to build a new landfill in Deschutes County. The second option is to transport our trash out-of-county to a large landfill near the Columbia River Gorge.

In terms of costs, currently, Deschutes County spends about $35 per ton of trash to maintain garbage at the Knott Landfill.

If we build a new landfill, costs are estimated to increase to $42 per ton. If we transport trash out of county, costs are estimated to increase to $42 - $62 per ton. These are estimated rates which can be difficult to forecast because of unpredictable factors like fuel prices, taxes and other fees

Q1. How important is the financial impact of this decision to you? Is it...?

	Count	Percent	Cumulative Percent
The most important factor	89	17.6	17.6
One of many important factors	260	51.6	69.2
Neutral	79	15.7	84.9
Not an important factor	30	6.0	90.9
The least important factor	41	8.2	99.1
Not Sure / Don't Know	5	.9	100.0
Total	505	100.0	

total % important 69.2
total % not important 14.1

Naming the choices as the "first" and "second" options and conveying that they are the Committee's preferences biases the response in favor of the "first" option. It should have been called "an option" and "another option" or other neutral language. Next, including the $62 estimate vs $42 anchors the idea that <out-of-county=very expensive>, with no mention that there might be a less expensive option. There is no hint of how these costs might translate to an individual's taxes or trash collection rates, yet they are then asked for an assessment of importance of the financial impact. It doesn't flow smoothly.

Question #2 is worse. It describes only a few issues related to having a landfill and then states that if we ship out waste "impacts from our trash will affect other jurisdictions." The word "affect" usually carries a negative connotation, and it is not mentioned that some rural jurisdictions want the trash and are better suited to handling its impacts than Deschutes. Specifically, the Columbia Ridge and Roosevelt landfills sit upon much

thicker layers of basalt and impermeable clay than we do, they typically experience less precipitation, the population there is lower, and, they have already been approved by the various regulating bodies. A further benefit is that, at Roosevelt at least, the methane collected from the landfill is converted into a non-trivial amount of electricity. That would take a while to develop here.

In addition, one of the possible paths forward supposedly being tested (disposing of the trash in-county) is actually contained in the question as a forceful assertion that seems to come out of the blue, thereby anchoring that idea, and the participants are left to agree or disagree with that. Not at all neutral.

A landfill impacts the area where it is located and requires mitigation of impacts such as emissions, litter and odor. If we build a new landfill, these impacts will remain in Deschutes County. If we transport trash out of county, impacts from our trash will affect other jurisdictions.

Q2. Please indicate to what extent you agree with the following statement: Trash that is generated here should stay here. Do you...?

	Count	Percent	Cumulative Percent		
Strongly Agree	233	46.2	46.2	total % agree	84.5
Agree	193	38.2	84.5	total % disagree	2.3
Neutral	67	13.2	97.7		
Disagree	9	1.8	99.5		
Strongly Disagree	3	.5	100.0		
Total	505	100.0			

Question #3 is also “interesting”:

Truck transportation has been identified as a significant source of carbon emissions. If we transport trash out of county, there will be more emissions because of the miles trash will travel to be disposed of. If we transport trash out of the county, we estimate over 2 million miles will be traveled each year. If we assume a new landfill will be sited 30 miles from Bend, we estimate about 350,000 miles will be traveled each year.

Q3. Please indicate how important the transportation impacts of this decision are to you, Is it...?

	Count	Percent	Cumulative Percent		
The most important factor	94	18.6	18.6	total % important	77.4
One of many important factors	297	58.7	77.4	total % not important	11.2
Neutral	55	10.9	88.3		
Not an important factor	27	5.3	93.6		
The least important factor	30	5.9	99.5		
Not Sure / Don't Know	2	.5	100.0		
Total	505	100.0			

It basically says <trucks = bad emissions> and <out-of-county = millions> vs <in-county = thousands> of miles. People tend to key on quantities, so the mileage units should be the same, ie. 2 million vs .35 million, which reflects a 6x difference rather than one that sounds like 1000x.

Not to belabor the point, but questions 4 and 6 deal with possible job losses, unnamed environmental and development impacts and so on, without presenting any context for the respondent to work with. They can imagine hundreds of jobs being lost, or a doubling of their trash bill, and there is no mention that some of the proposed local sites were adjacent to existing residential areas. Question 5 reinforces the <build locally> concept by stating

"I would be comfortable displacing other uses so that a landfill could be built locally." Why was it worded that way?

Question 7 is the closer:

Q7. Overall, which option would you support? Building a new landfill in Deschutes County OR transporting our trash out-of-county?

	Count	Percent	Cumulative Percent
Building a new landfill in Deschutes County	469	93.0	93.0
Transporting our trash out-of-county	15	2.9	95.9
Not Sure / Don't Know	21	4.1	100.0
Total	505	100.0	

Given such a heavy thumb on the scale previously, it is no surprise that such a result was obtained. An unforced 93% agreement on most anything, even the color of blue sky, is rare. At the beginning the survey presents itself as testing "what will happen once the landfill is full," meaning Knott, but what it really ends up testing is long-haul vs short-haul trucking of trash.

So we have seen some aspects of this survey that call its usefulness into question; ranging from the definition of the sample set, through the suitability of a phone survey for the complexity of the issues, to the way it was constructed and presented. When I was working at HP Labs, I lived not just in the technology development space but also interacted with marketing people in developing focus groups and surveys regarding new product concepts in digital photography. I have observed and participated in focus groups, and helped analyze the results obtained from them and from product concept surveys. We had to get the clearest reading possible of people's opinions and a great deal of effort went into creating the most neutral wording possible for the questions.

I do not see a similar level of care in this landfill survey and can't take its outcome seriously.

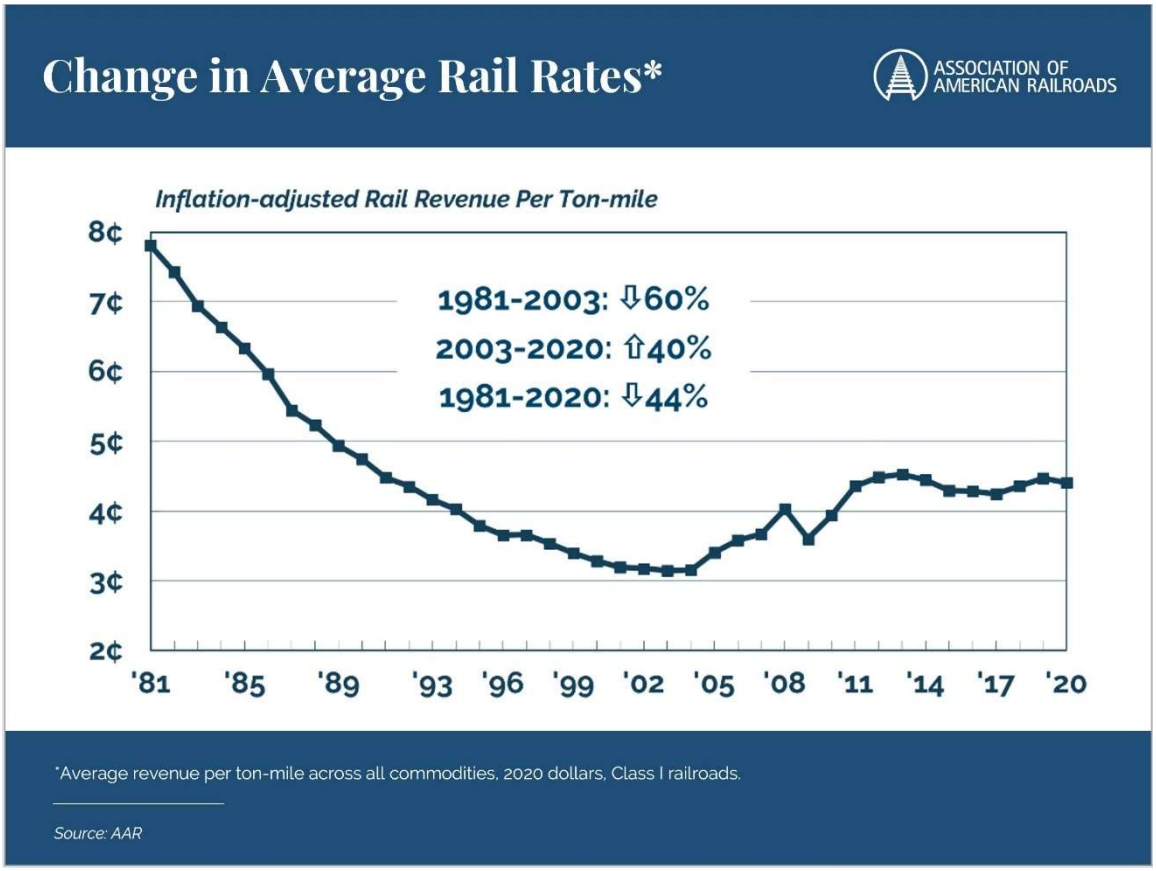
Finally, thanks for reading this far. I would also point out that I have no financial interest in any of this other than as a taxpayer. My motivation is that the County decision makers have a full array of options available in order to reach an optimal decision. My thanks to you all for wrestling with this difficult multidimensional problem for which the clock is ticking.

Sincerely,

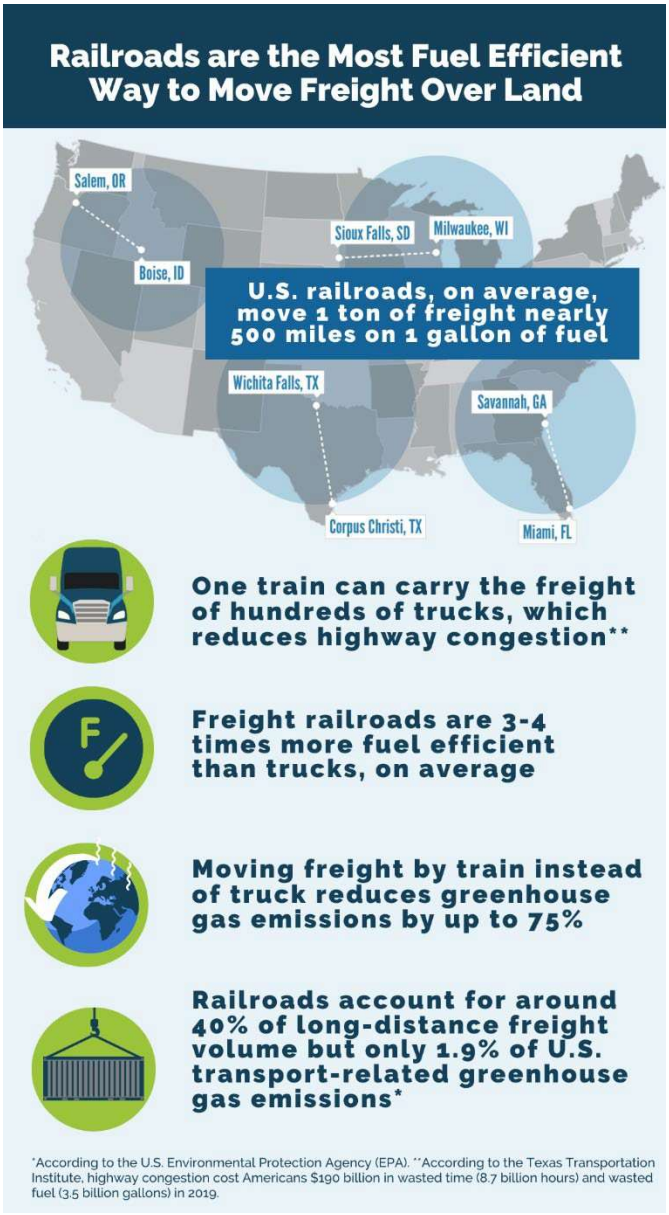
Larry Hanlon.
Bend

Lawrence R Hanlon holds a PhD in Electrical Engineering and Solid State Physics, and for 24 years was an R&D manager at Hewlett Packard Labs in Palo Alto. Many of the technologies his teams developed are still in use worldwide. Larry and Lynn moved to Bend in 2003.

Some AAR Info:



Freight Rail & Preserving the Environment
(AAR Fact Sheet)



Preserving the environment and addressing climate change is a responsibility railroads take seriously. As a backbone of the U.S. economy for the last two centuries, freight railroads have evolved to provide efficient and advanced transportation solutions to American businesses and consumers.

Today's railroads continue to modernize their operations to meet tomorrow's challenges, including improvements that increase efficiency and benefit the environment.

- **Less Greenhouse Gas Emissions**: Greenhouse gas emissions are directly related to fuel consumption. According to EPA data, freight railroads account for just 0.5% of total U.S. greenhouse gas emissions and just 1.9% of transportation-related greenhouse gas emissions.

- **More Fuel Efficient:** Freight rail is ahead of other land modes of surface transportation when it comes to limiting its carbon footprint. U.S. freight railroads, on average, move one ton of freight nearly 500 miles per gallon of fuel.

- **Sustainable Choice:** AAR analysis of federal data finds: If 25% of the truck traffic moving at least 750 miles went by rail instead, annual greenhouse gas emissions would fall by approximately 13.1 million tons; If 50% of the truck traffic moving at least 750 miles went by rail instead, greenhouse gas emissions would fall by approximately 26.2 million tons.

- **Holistic Approach:** From advanced locomotive technology to zero-emission cranes, freight railroads leverage technology across their operations to limit their environmental impact. In 2021 alone, U.S. freight railroads consumed 790 million fewer gallons of fuel. They emitted nine million fewer tons of carbon dioxide than they would have if their fuel efficiency had remained constant since 2000.

- **Reducing Highway Congestion & Pollution:** Railroads help reduce the huge economic costs of highway congestion. According to the Texas Transportation Institute's 2019 Urban Mobility Report, highway congestion cost Americans $166 billion in wasted time (8.8 billion hours) and fuel (3.3 billion gallons) in 2017. Lost productivity, cargo delays and other costs add tens of billions of dollars to this tab. A single freight train, though, can replace several hundred trucks, freeing up space on the highway for other motorists. Shifting freight from trucks to rail also reduces highway wear and tear and the pressure to build costly new highways. On average, railroads are three to four times more fuel efficient than trucks. That means moving freight by rail instead of truck lowers greenhouse gas emissions by up to 75%, on average.

L. Hanlon
2/16/23

Thurston County Public Works

Solid Waste Services Contract FAQs

The Thurston Board of County Commissioners (BoCC) has scheduled a public hearing at 3 p.m. on March 22, 2022 to receive comments on a proposed new contract for solid waste operations, maintenance, transportand disposal services.

Why is a new contract needed?

The current service agreements are outdated and expire in 2023. A more comprehensive contract is also needed to fully address garbage and recycling, account for population growth, and provide for necessary facilityimprovements.

What does the new contract cover?

The new contract includes operation and maintenanceof the county's three solid waste facilities including the Waste and Recovery Center (WARC) and drop-boxlocations in Rainier and Rochester.

It also covers the transport and disposal of garbage, processing of recycling, and handling of compostableorganics collected at county solid waste facilities.

Will the new contract cost more?

No. In fact, the new contract is expected to save theCounty about $1 million per year.

Will disposal fees at county facilities increase?

Cost savings from the new contract will help limit future disposal fee increases.

Will the cost of curbside garbage and recycling services increase?

The county does not provide curbside service. In most areas, it is provided by an independent waste hauler. For Olympia residents, the service is provided bythe city.

The fees charged to these curbside waste haulers whenthey bring their garbage trucks to county facilities for unloading is not expected to increase.

When will the new contract begin?

If approved, the new contract will begin May 1, 2023.

Where will our garbage go?

Garbage from Thurston County will continue to go to the Roosevelt Regional Landfill in Southeast Washington. The landfill is a state-of-the-art facility with an on-site power plant that turns methane produced by garbageinto electricity, generating enough power for 30,000 homes each year.

Where will our recycling go?

Recyclables will be transported to a regional MaterialsRecovery Facility (MRF) where they are sorted and prepared for recycling. Organics will also continue to beprocessed and transported for composting to reduce carbon emissions and improve soil quality.

How was the new contractor chosen?

The contractor was chosen through a competitive proposal process designed to:

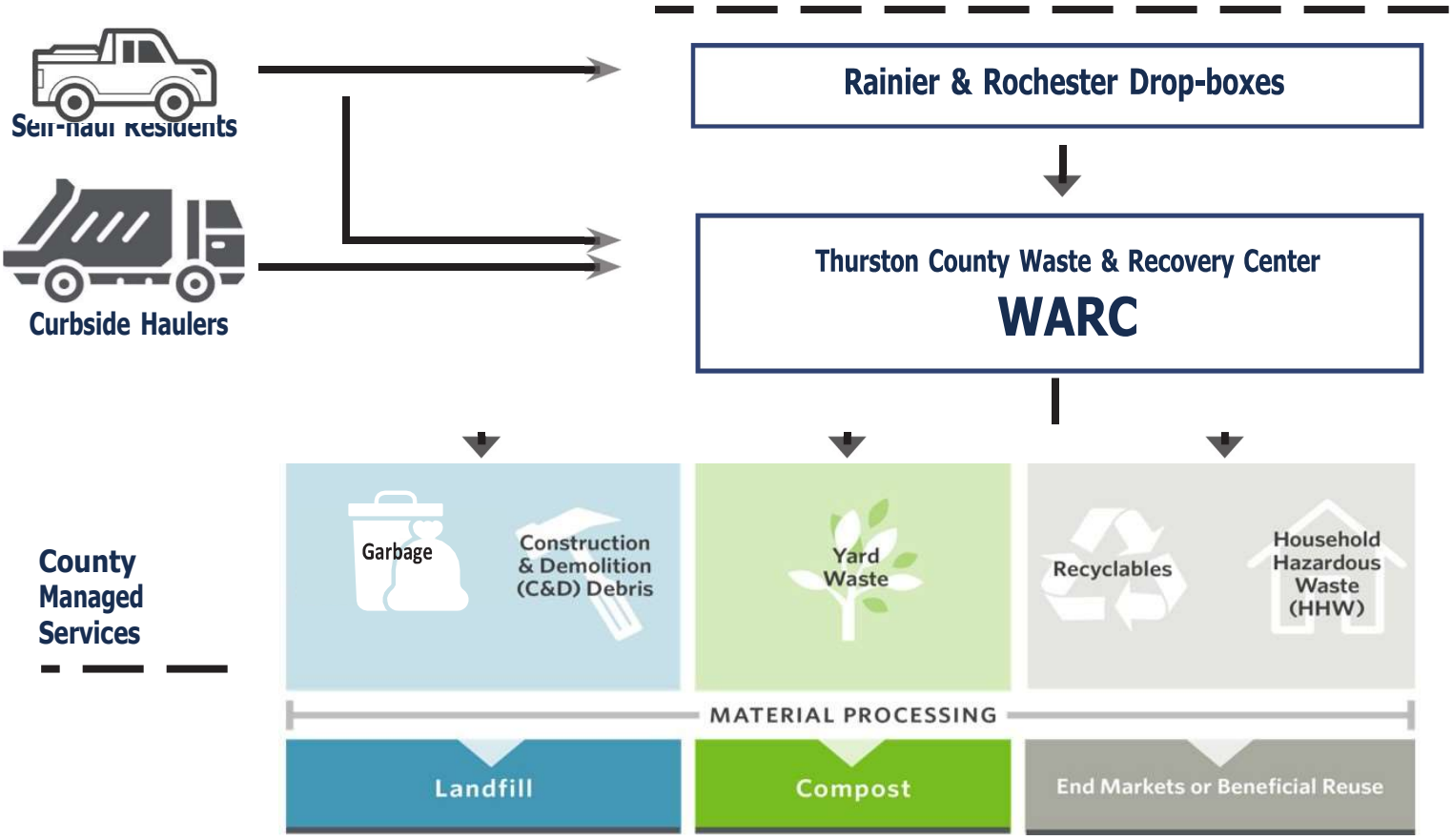
- Meet the county's needs and provide the best valueto residents
- Allow for future growth and change
- Promote competition
- Provide transparency
- Be environmentally sound
- Meet county sustainability initiatives
- Align with the Thurston County Solid WasteManagement Plan

Is there anything different in the new contract?

The new contract provides for additional capacity at county facilities, increases staffing levels for contractedoperations, and includes $50,000 in equipment maintenance/replacement costs each year. The contractor will also pay all utilities necessary for WARC operations and provide new equipment with improved fuel standards.

L. Hanlon
2/16/23

Garbage & Recycling in Thurston County



Garbage

Step 1 A garbage hauler picks up garbage from the curb, loads it into a garbage truck, and takes it to a countyfacility. Some people also haul their own garbage.

Step 2 Haulers pay a tipping fee to unload their garbage for processing by the county.

Step 3 County facilities at the WARC are used to compact and load the garbage into shipping containers.

Step 4 The containers are trucked to Centralia, WA where they are put on a train and carried by rail 200 miles to Roosevelt, WA located in Southwest Washington.

Step 5 The garbage-filled containers are removed from the train, loaded onto trucks and taken to the nearby Roosevelt Regional Landfill for disposal.

Recycling & Organics

Step 1 Recyclables from county facilities are transported to a regional Materials Recovery Facility (MRF)where they are sorted and prepared for recycling.

Step 2 Organics are processed and transported for composting to reduce carbon emissions and improve soil quality.

L. Hanlon
2/16/23

Some References:

https://www.aar.org/wp-content/uploads/2020/06/AAR-Sustainability-Fact-Sheet.pdf

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https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/workingpaper/50049-Freight_Transport_Working_Paper-2.pdf

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https://www.pdx.edu/population-research/search/psu?keys=2019%205-year%20age%20groups%20by%20county

https://www.pdx.edu/population-research/sites/g/files/znldhr3261/files/2020-08/2019%20Annual%20Population%20Report%20Tables.pdf

TRITON POLLING & RESEARCH

Top Line Results

Survey of Registered Voters Deschutes County, Oregon

Dates Conducted: 6/24/2019 through 7/3/2019
Survey Type: Live Interview Telephone
N = 505N
Margin of Error at 95% Confidence Level: +/- 4.3%
Weighting: Age & Gender

Q0. Are you speaking on a landline or cellphone?

	Count	Percent	Cumulative Percent
Landline	83	16.5	16.5
Cellphone	422	83.5	100.0
Total	505	100.0	

We would like to start by providing you some background information on the Knott Landfill, the only landfill in Deschutes County.

Currently, the Knott Landfill is estimated to reach its capacity in ten years. One of the biggest questions facing County officials is what will happen once the landfill is full.

A committee of local residents and stakeholders have been studying a variety of disposal options, but two main choices have emerged:

The first option is to build a new landfill in Deschutes County. The second option is to transport our trash out-of-county to a large landfill near the Columbia River Gorge.
In terms of costs, currently, Deschutes County spends about $35 per ton of trash to maintain garbage at the Knott Landfill.

If we build a new landfill, costs are estimated to increase to $42 per ton. If we transport trash out of county, costs are estimated to increase to $47 - $62 per ton. These are estimated rates which can be difficult to forecast because of unpredictable factors like fuel prices, taxes and other fees

Q1. How important is the financial impact of this decision to you? Is it...?

	Count	Percent	Cumulative Percent
The most important factor	89	17.6	17.6
One of many important factors	260	51.6	69.2
Neutral	79	15.7	84.9
Not an important factor	30	6.0	90.9
The least important factor	41	8.2	99.1
Not Sure / Don't Know	5	.9	100.0
Total	505	100.0	

total % important	69.2
total % not important	14.1

A landfill impacts the area where it is located and requires mitigation of impacts such as emissions, litter and odor. If we build a new landfill, these impacts will remain in Deschutes County. If we transport trash out of county, impacts from our trash will affect other jurisdictions.

Q2. Please indicate to what extent you agree with the following statement: Trash that is generated here should stay here. Do you...?

	Count	Percent	Cumulative Percent
Strongly Agree	233	46.2	46.2
Agree	193	38.2	84.5
Neutral	67	13.2	97.7
Disagree	9	1.8	99.5
Strongly Disagree	3	.5	100.0
Total	505	100.0	

total % agree	84.5
total % disagree	2.3

Truck transportation has been identified as a significant source of carbon emissions. If we transport trash out of county; there will be more emissions because of the miles trash will travel to be disposed of. If we transport trash out of the county, we estimate over 2 million miles will be traveled each year. If we assume a new landfill will be sited 30 miles from Bend, we estimate about 350,000 miles will be traveled each year.

Q3. Please indicate how important the transportation impacts of this decision are to you, Is it...?

	Count	Percent	Cumulative Percent
The most important factor	94	18.6	18.6
One of many important factors	297	58.7	77.4
Neutral	55	10.9	88.3
Not an important factor	27	5.3	93.6
The least important factor	30	5.9	99.5
Not Sure / Don't Know	2	.5	100.0
Total	505	100.0	

total % important	77.4
total % not important	11.2

If we build a new landfill, jobs and revenue from trash disposal stay here. If we transport trash out of county, revenue and jobs are created in other places.

Q4. Please indicate how important the economic impacts of this decision are to you. Is it...?

	Count	Percent	Cumulative Percent
The most important factor	146	28.8	28.8
One of many important factors	270	53.4	82.3
Neutral	55	11.0	93.3
Not an important factor	17	3.4	96.7
The least important factor	17	3.3	100.0
Total	505	100.0	

total % important	82.3
total % not important	6.7

If we build a new landfill, 400-500 acres of land will need to be developed. This development could displace other uses and may impact neighboring parcels of land even in remote areas of the County. If we transport trash out of county, there won't be an impact to local land within the county.

Q5. Please indicate to what extent you agree with the following statement: I would be comfortable displacing other uses so that a landfill could be built locally. Do you...?

	Count	Percent	Cumulative Percent		
Strongly Agree	172	34.1	34.1	total % agree	77.1
Agree	217	43.0	77.1	total % disagree	7.4
Neutral	74	14.6	91.7		
Disagree	29	5.8	97.5		
Strongly Disagree	8	1.6	99.1		
Not Sure / Don't Know	4	.9	100.0		
Total	505	100.0			

Please rank the following impacts from most important to least important based on your values on a 1 to 10 scale, where 1 is least important and 10 is most important:

Q6A. Impacts on my monthly trash bill / disposal rates

	Count	Percent	Cumulative Percent		
1-Least important	51	10.0	10.0	total % ranked 1-5	50.8
2	18	3.6	13.7	total % ranked 6-10	49.1
3	37	7.4	21.0		
4	23	4.6	25.7		
5	127	25.1	50.8		
6	42	8.3	59.1		
7	55	10.9	70.0		
8	52	10.3	80.3		
9	21	4.2	84.5		
10-Most important	78	15.4	99.9		
Not Sure / Don't Know	1	.1	100.0		
Total	505	100.0			

Q6B. Environmental impacts

	Count	Percent	Cumulative Percent		
1-Least important	18	3.5	3.5	total % ranked 1-5	23.1
2	8	1.6	5.2	total % ranked 6-10	75.4
3	14	2.8	8.0		
4	9	1.9	9.9		
5	67	13.2	23.1		
6	24	4.8	27.9		
7	44	8.8	36.7		
8	100	19.8	56.5		
9	55	11.0	67.4		
10-Most important	157	31.1	98.5		
Not Sure / Don't Know	7	1.5	100.0		
Total	505	100.0			

Q6C. Impacts to local jobs and the economy

	Count	Percent	Cumulative Percent
1-Least important	9	1.8	1.8
2	6	1.2	3.0
3	8	1.5	4.5
4	17	3.3	7.9
5	57	11.3	19.1
6	29	5.8	24.9
7	66	13.1	38.0
8	107	21.3	59.3
9	61	12.2	71.4
10-Most important	141	28.0	99.4
Not Sure / Don't Know	3	.6	100.0
Total	505	100.0	

total % ranked 1-5	19.1
total % ranked 6-10	80.3

Q6D. Impacts to land and local development

	Count	Percent	Cumulative Percent
1-Least important	13	2.5	2.5
2	14	2.7	5.2
3	25	5.0	10.3
4	31	6.2	16.5
5	121	24.0	40.4
6	39	7.8	48.3
7	84	16.7	64.9
8	84	16.5	81.5
9	25	5.0	86.5
10-Most important	63	12.5	99.1
Not Sure / Don't Know	5	.9	100.0
Total	505	100.0	

total % ranked 1-5	40.4
total % ranked 6-10	58.6

Q7. Overall, which option would you support? Building a new landfill in Deschutes County OR transporting our trash out-of-county?

	Count	Percent	Cumulative Percent
Building a new landfill in Deschutes County	469	93.0	93.0
Transporting our trash out-of-county	15	2.9	95.9
Not Sure / Don't Know	21	4.1	100.0
Total	505	100.0	

Lastly, we have a few questions about you that are needed for statistical purposes. Your responses will remain anonymous and strictly confidential. Q8. Are you....?

	Count	Percent	Cumulative Percent
A residential customer	390	77.3	77.3
A business customer	2	.4	77.7
Both a residential and business customer	80	15.9	93.6
A self-hauler	24	4.7	98.3
I never use a recycling or transfer station or the landfill	8	1.7	100.0
Total	505	100.0	

Q9. What is your age?

	Count	Percent	Cumulative Percent
18-34	102	20.2	20.2
35-44	95	18.8	39.0
45-54	85	16.9	55.9
55-64	90	17.8	73.7
65-74	87	17.2	90.9
75-84	41	8.1	98.9
85+	5	1.1	100.0
Total	505	100.0	

Q10. What is your gender?

	Count	Percent	Cumulative Percent
Female	249	49.4	49.4
Male	255	50.6	100.0
Total	505	100.0	

Q11. What is the highest level of education you have completed?

	Count	Percent	Cumulative Percent
Bachelors Degree	192	38.0	38.0
Some College	166	32.8	70.8
Post Graduate	70	13.8	84.7
High School Graduate	71	14.0	98.7
Some High School	1	.2	98.9
Prefer not to answer	5	1.1	100.0
Total	505	100.0	

Q12. What is your approximate annual household income?

	Count	Percent	Cumulative Percent
Less than $30,000	45	8.9	8.9
$30,000 to $39,999	31	6.1	14.9
$40,000 to $49,999	32	6.3	21.2
$50,000 to $59,999	40	7.9	29.1
$60,000 to $69,999	34	6.7	35.8
$70,000 to $79,999	35	7.0	42.8
More than $80,000	228	45.2	88.0
Prefer not to answer	61	12.0	100.0
Total	505	100.0	

Municipality

	Count	Percent	Cumulative Percent
Bend	260	51.5	51.5
La Pine	2	.5	51.9
Redmond	72	14.3	66.3
Sisters	5	1.0	67.3
Unincorporated	165	32.7	100.0
Total	505	100.0	

City - Mailing Address

	Count	Percent	Cumulative Percent
Bend	362	71.7	71.7
La Pine	26	5.2	76.9
Redmond	94	18.6	95.5
Sisters	12	2.3	97.8
Sunriver	2	.4	98.2
Terrebonne	9	1.8	100.0
Total	505	100.0	

State House District

	Count	Percent	Cumulative Percent
53	207	40.9	40.9
54	217	43.0	84.0
55	38	7.5	91.5
59	43	8.5	100.0
Total	505	100.0	

State Senate District

	Count	Percent	Cumulative Percent
27	424	84.0	84.0
28	38	7.5	91.5
30	43	8.5	100.0
Total	505	100.0	

Then there's the KTVZ exercise:

https://www.ktvz.com/news/deschutes-county-sets-public-meeting-on-trash-disposal-options/989286403

As of 3/12/19 (per Katie at KTVZ):

424 votes

89% - To a new local site

11% - Out of the County

online surveys are widely understood to be feel-good exercises and not statistically significant for a number of reasons, including the basic fact that there is no control over the sample set. People in the Ch 21 audience who were sufficiently motivated are the ones who responded, and that is not a statistically random sample. It takes a lot of effort to construct a valid survey, which is why polling firms charge for their services.

The link is broken so I can't see their questions directly. However, the associated news stories merely parrot the biased language in the Triton survey, so this result can't be taken seriously.

Chad Centola

From: Charlie Baughman <circle.with.eagles@gmail.com>
Sent: Monday, February 20, 2023 3:59 PM
To: managethefuture
Subject: County Waste Website

Deschutes County,

Please do not put a landfill in the Millican area. I along with many friends and homeowners use the area for recreation and I enjoy the natural beauty of the area. A landfill would destroy the area.

Charles Baughman

Tim Brownell

From: E Aspinwall <goneflying.e@gmail.com>
Sent: Tuesday, February 21, 2023 7:26 AM
To: managethefuture
Subject: Millican Valley, landfill

There are a lot of good reasons not to put a landfill in the Millican Valley. I think you have been informed of them all.

I will address the aquifer in the Millican Valley and drought. Our governor has declared Crook and Jefferson county in a drought emergency through executive order 23-05

Quote from the governor " Central Oregon has been facing persistent drought for years due to climate change, which is brings higher risk of wildfires and WATER SHORTAGE. Our state needs to get SERIOUS about WATER RESILIENCE moving forward " unquote.

Deschutes county commissioners take up a resolution tomorrow to declare a state of emergency and request a state declaration of DROUGHT EMERGENCY!

It's not just Oregon, 41% of the U.S. is in drought.

The meaning of Drought is, A SHORTAGE OF WATER!

Do any of you know what goes into the landfill on a daily basis?

Can any of you say 100 percent that the Millican Valley Aquifer will not be contaminated by a landfill??

My point is made. Please do the right thing for the the future of central Oregon, I beg of you SAVE THE WATER! And MANAGE the FUTURE WISELY!!

Thank you

Frankie Watson
Bend, Oregon
goneflying.e@gmail.com

Chad Centola

From: "Lisa Watkins-Scott" <cellularasea@gmail.com>
Sent: Sunday, February 26, 2023 12:15 PM
To: managethefuture
Subject: Find less impactful sites for the Deschutes County Landfill

---

Dear Deschutes County Solid Waste Advisory Committee,

As an advocate for high desert ecosystems, I'm concerned that the current list of potential landfill sites would threaten the very qualities that make Deschutes County such a wonderful place for visitors and locals alike.

With the county's recent decision to eliminate three more sites from consideration, I would like to raise the following concerns:

1) Putting a landfill next to the Oregon Badlands Wilderness would ruin the quiet, natural experience of visiting this local treasure.

2) Many of the potential sites would negatively affect important mule deer and elk winter habitat, and the health of these herds depends on access to intact seasonal range.

3) Sage-grouse populations in Oregon continue to decline, and all of the potential sites would adversely impact sage-grouse habitat and breeding grounds.

4) Golden eagles nest within two miles of a couple of the potential sites, and a nearby landfill would likely lead to nest failure.

5) Constructing a landfill within Cougar Wells Wilderness Study Area (WSA) would seriously degrade the wilderness qualities of the site.

Please consider new site alternatives that will not threaten the wildlife and wild places of Deschutes County.

Sincerely,
Lisa Watkins-Scott
cellularasea@gmail.com

Tim Brownell

From: larrynlynn@lhanlons.net
Sent: Thursday, March 2, 2023 6:09 PM
To: Tim Brownell
Cc: managethefuture; dwlee333@gmail.com; Lisa Machnik; amanda.gylling@gmail.com; toddkane68@gmail.com; Preserve East Bend
Subject: RE: Deschutes County Waste Disposal

[EXTERNAL EMAIL]

Hello Tim,

Thanks for your message.

Yes, I was aware of the 2019 SWMP and have read through it, what I saw in there is what prompted my previous note. In particular, the rail option was dismissed in a couple of sentences as opposed to the comprehensive nature of the rest of the plan. That seemed out of place, which is what got me looking into the question. I was unaware of the 2021 study, and would like to, in the words of my high school math teachers, "see the work" that led to those conclusions in both studies. What railroad people were contacted, and did they reach the same conclusion ?

I understand that having an in-county landfill is a more familiar operation and gives the sense of having things more under control, and I share the concern about service interruptions when depending upon a carrier. (I worked for a company that was so vertically integrated that they once even made their own special-purpose machine screws, and UPS has just fumbled delivery of some electronic parts I need.) Rail typically recovers quickly from weather events, as keeping the line open is a long-standing top priority second only to doing things safely. Massive amounts of material can be moved into or out of an affected site in fairly short order; one example is the major rockfall in the Deschutes canyon that occurred along with the Snowmeggadon storm a few years ago. It was cleaned up and the line re-opened in less than a week.

The situation in Everett is a warning of course, but the article doesn't provide insight into how it developed. Waste from British Columbia and Alaska as well as the Seattle area is aggregated there; has there been an unexpected surge in demand, some malfunction affecting availability of the containers, or has the railroad been failing in its raw transportation function? If it is a shortage of workers, that has been affecting trucking as well and it will likely continue as long as governments pay people to not work. One key question is how service has been for smaller customers such as Thurston County during this period, another reason to talk with those folks about their rail experience.

Rail strikes have a long history and are a concern. The last major one was in 1992 and lasted for only a few days before Congress intervened. One reason is that rail transport underpins so much economic activity that the economy can't tolerate a nationwide disruption of deliveries. The recent supply chain disruptions from China and Covid are an illustration of the kind of impact. The concept of "just in time" delivery for inventory management has become endemic over the past few decades, to the point that no disruption can willingly be tolerated. So the Congress has repeatedly intervened to prevent a strike, usually at the last minute. That is a likely path forward, as well. My sense is that natural disasters and malevolent human actions are a larger potential problem than rail strikes.

The question of service interruptions got me to thinking about disasters and recovery, and that caused this reply to take a few days longer. I'll skip the details so that this isn't another long note. Perhaps the key vulnerability for land transportation is bridges. Being dispersed over a wide geographic area, the rail companies and their subcontractors can bring massive resources to bear on a problem; for example it is amazing how quickly a bridge can now be replaced. Using pre-cast concrete components, shorter ones can be replaced in less than a week. Larger ones are a bigger problem of course, but amazing things are possible. One example is the large Dry Canyon bridge near Mt Shasta that was extensively damaged by a forest fire in 2021 and was rebuilt in a month; its relevance to us is as an example of how quickly repairs can be made when needed. But it still was out of service for a month.
https://www.up.com/aboutup/community/inside_track/dry-canyon-bridge-repens-early.htm

For us in Central Oregon, there are 6 major rail bridges between here and the north bank of the Columbia, plus another dozen or so in the Feather River canyon north of Oroville CA, on the way to K Falls. All of these are engineering achievements, have withstood the test of time, and are well maintained, nevertheless some of them are susceptible to damage from fire or earthquake. All are on the route of trains that would haul our waste up to the Gorge landfills. Also, the flip side of the geographic extent of the rail network is that distant events such as a serious earthquake in Tehachapi or along the Cascadian fault would likely have an effect on rail service here. So in addition to cost structures, provisions for maintaining continuity of service would want to be a focus of any discussions with the railroad.

So there definitely are rail infrastructure risks, of the difficult-to-assess low-probability but high-consequence kind, just as with other infrastructure such as electric power. Backups and workarounds can be planned for perhaps a month of no service, but ultimately it all turns into additional costs to be evaluated.

Similarly, an in-county landfill will by definition be in an undeveloped area and will be the nucleation of a new industrial site, so power and other utilities must be supplied as part of its development. Since waste accumulates so quickly, in order to ensure maintaining uninterrupted service backup capabilities should also be created and included in the costing. For example, St. Charles has a building full of diesel generators and enough fuel to be self-sufficient for a month in case of a failure of the electricity supply. The County would presumably want to have similar backup capability for its trucks and other waste operations, whether they be based on diesel, CNG/LNG, electricity, or hydrogen. All of these considerations contribute to costs for putting a robust system in place.

A multidimensional issue, indeed.

Sincerely,
Larry Hanlon.
Bend

-----Original Message-----
From: "Tim Brownell" <Tim.Brownell@deschutes.org>
Sent: Thursday, February 23, 2023 9:33am
To: "'larrynlynn@lhanlons.net'" <larrynlynn@lhanlons.net>, "citizeninput" <citizeninput@deschutes.org>, "managethefuture" <managethefuture@deschutescounty.gov>
Cc: "dwlee333@gmail.com" <dwlee333@gmail.com>, "Lisa Machnik" <lisa.machnik@gmail.com>, "amanda.gylling@gmail.com" <amanda.gylling@gmail.com>, "toddkane68@gmail.com"

<toddkane68@gmail.com>, "Preserve East Bend" <preserveeastbend@gmail.com>
Subject: RE: Deschutes County Waste Disposal

Good morning Mr. Hanlon,

Thank you for your email and for the submittal of information that you have provided in regards to the potential option of rail-transfer of Deschutes County's waste to landfills located on the Oregon and Washington borders. We want to acknowledge the amount of time and research that you have put into this effort. It is appreciated. We will pass this information on to the Solid Waste Advisory Committee (SWAC) members and Board of County Commissioners (BOCC) as well.

As you may be aware, in 2018 and 2019 the Solid Waste Department went through an extensive process that resulting in the approval of the Solid Waste Management Plan (SWMP) that is currently guiding the approach to seek the siting of a Municipal Solid Waste (MSW) sanitary landfill in Deschutes County. If you haven't already seen a copy of the SWMP, I have attached a copy of full document. Within the SWMP a comprehensive study of alternate technologies and approaches, including waste transfer to other landfills, were considered and evaluated. The study did include looking at transfer-by-rail and at the time it was determined that transfer within a 300 mile radius was not economically viable.

Part of recommendations that came out of the SWMP is to continue to evaluate alternate technologies and approached to waste handling and disposal every few years. We contracted for a study in 2021 and will do so again early in 2024. There was nothing in the technology review from the 2021 study that was determined to be commercially viable to be presented as an alternate approach to the landfill siting process at the time.

During this SWAC process, we have heard from several members of the community that the SWMP did not account for changes in transportation fuels and methods that might have resulted in a different recommendation. It is the intention of the Solid Waste Department during the Alternate Technologies review in early 2024 to include an update to the waste transfer options in regards to fuels and other options, including rail. We feel it will be important to have those options available for review concurrent with the presentation to SWAC, and ultimately to the BOCC, of a final option for an in County MSW landfill site.

I did want to note that within the SWMP that there were a couple of concerns in regards to the out of County transfer of wastes. Besides the issues of cost, which are one of the primary concerns in the difference of an in-county landfill versus out-of-county transfer options, there are other issues that will be considered. One being the green-house gas impacts, and the other being reliability of transfer routes being interrupted, primarily due to weather concerns when thinking about truck transfer. With the issue of rail, those concerns may not be as relevant. However, railcar availability and labor unrest are both significant concerns. System disruptions are an issue that would need to be included in that evaluation. Here is a link to a recent example of the impacts of those issues in Snohomish County in Washington State over the past year.
https://myeverettnews.com/2022/09/13/rail-issues-may-again-cause-closure-of-solid-waste-stations-in-everett-and-snohomish-county/

I hope you find this information helpful.

Regards,

Tim

Tim Brownell | Incoming Director
DESCHUTES COUNTY DEPARTMENT OF SOLID WASTE
61050 SE 27th Street | Bend, Oregon 97702
Tel: (541) 317-3177 | Cell: (831)324-2652

tim.brownell@deschutes.org | www.deschutes.org/sw

Enhancing the lives of citizens by delivering quality services in a cost-effective manner.

From: larrynlynn@lhanlons.net <larrynlynn@lhanlons.net>
Sent: Friday, February 17, 2023 2:13 PM
To: citizeninput <citizeninput@deschutes.org>; managethefuture <managethefuture@deschutescounty.gov>
Cc: dwlee333@gmail.com; Lisa Machnik <lisa.machnik@gmail.com>; amanda.gylling@gmail.com; toddkane68@gmail.com; Preserve East Bend <preserveeastbend@gmail.com>
Subject: Deschutes County Waste Disposal

Hello Deschutes Commissioners and SWAC members,

First, a thank you for the decisions to drop the proposed landfill sites that are impacted by proximity to the airports.

Next, I've attached a document that digs deeper into the possibility of shipping our trash out by rail. While there are many things still to be learned, it continues to look as though it could be a viable option. The document also explains several concerns I had when reading over the Triton survey, and why I'm not convinced we should lean heavily on its result.

I made the note an attachment here because the email app was trashing the formatting.

Thanks for your efforts in looking for a solution for the waste problem.

Larry Hanlon.
Bend

Chad Centola

From: Martin Palmaz <Martin@ushpa.aero>
Sent: Thursday, March 2, 2023 10:30 AM
To: managethefuture
Cc: rickc1953@gmail.com
Subject: Deschutes County Landfill Proposal Feedback
Attachments: Deschutes County Solid Waste Advisory Committee .pdf

Dear Solid Waste Advisory Committee, Deschutes County,

Attached is our letter regarding the proposed landfill.

Regards,
Martin Palmaz, Executive Director
#40148 (H-1, P-4)
United States Hang Gliding & Paragliding Association, Inc.
This is flying. This is freedom.

Tel : 719-632-8300 / 800-616-6888 (8 a.m. - 5 p.m. MST) -7 GMT

USHPA
UNITED STATES HANG GLIDING & PARAGLIDING ASSOCIATION

A 501 (C) (3) Corporation

March 2, 2023

Dear Solid Waste Advisory Committee, Deschutes County,

This letter concerns both proposed landfill sites in the Millican Valley. This is one of the largest outdoor recreation sites in Deschutes County. A partial list of the activities that occur in the Millican Valley are as follows: OHV trails, mountain biking, camping, hiking, hunting, and for the last 40 years, hang gliding and paragliding from Pine Mountain.

Over the years, hang glider and paraglider flights from Pine Mountain have exceeded 200 miles into Idaho and Northern California over the vast Eastern Oregon desert. There are over 40 pilots in our flying clubs who regularly fly Pine Mountain year-round.

Also, the Deschutes County owned Millican Valley Public Airport is used by many back country airplane pilots for practice and as an emergency airport serving Eastern and Central Oregon pilots. The placement of a landfill next to the Millican Valley Airport is problematic because of the likelihood for increased “land fill” caused bird strike hazards during the approach and departure to and from the airport.

Additionally, the methane fires that are present at landfills will create very dangerous and violent thermal activity. Hang Glider and Paraglider pilots can’t simply just remain clear of these violent destructive thermals because they can’t be seen, and because they snake upward in very unpredictable ways. If a pilot accidentally flies into this fast-rising violet thermal, it can cause possible structural failure and death for the pilot. The Millican Valley Airport is our primary landing zone from Pine Mountain on days when we are not flying cross country. To access the Millican Valley Airport, glider pilots would have to fly directly over the landfill at a low altitude, which is the worst place to be from a safety perspective. At that low altitude, a pilot would not have time to deploy their reserve parachute after structural failure.

We are advising the Deschutes County Solid Waste Advisory Committee to look at other sites for a landfill, as utilizing this site will unnecessarily create extreme hazards to the Central Oregon Flying communities and visiting pilots.

If you have any questions, please feel free to contact me.
executivedirector@ushpa.org

Sincerely,

Martin Palmaz
Executive Director

PO Box 1330
Colorado Springs, CO 80901-1330

Tel: 800-616-6888 / 719-632-8300
Fax: 719-632-6417
www.ushpa.aero

Chad Centola

From: SW <wright@bendcable.com>
Sent: Thursday, March 2, 2023 11:58 PM
To: managethefuture
Subject: Proposed Landfill Sites - comments
Attachments: Millican community & proposed landfill sites.pdf

[EXTERNAL EMAIL]

Chad, Tim, and SWAC members,

My name is Steve Wright. I have attended and participated in the monthly meetings since December of 2022. I own 15 acres of land and a small cabin in Millican. Attached to this comment letter is a map, depicting the Millican community and the approximate locations of the Roth properties and proposed landfill sites.

Comments on all the proposed landfill sites remaining on the SWAC list:

Moon Pit Site: Favor. This site is a going concern, gravel surface mining operation, known as Hooker Creek. It may be possible for the current operator to work alongside Deschutes County Solid Waste Department to operate a landfill site. It is well shielded from Highway 20, being surrounded on 3 sides by natural terrain ridges. There is a paved road from the site to Highway 20, providing good road access. The northwest corner of this site is adjacent to the Badlands Wilderness Area and Trailhead. However, being that the perimeter border of the Badlands is approximately 30 miles, the 0.7 mile of adjacent Moon Pit Site border is relatively small. Also, there is a another trailhead access to the Badlands, located approximately 2.5 miles away from the Moon Pit Site, along Highway 20 towards Bend, called the Flatiron Rock Trailhead. The Flatiron Rock Trailhead is actually more popular versus the Badlands Trailhead, likely due to it's closer location to Bend. There are even more trailhead access points to the northwest and northeast. The Dry River Canyon access and parking areas are located near Highway 20, separated from the Moon Pit Site due to a large ridge.

Golden Basin Site: Neutral. This site is located in between two of the Horse Ridges in a high elevation bowl. I do have some concerns about landfill debris containment in this area. When the strong northwest winds kick in, dust devils included, it's possible the garbage and odors could spread into the nearby Millican Valley. Another concern would be the extensive cost to construct a road from Horse Ridge Frontage Road up to the Golden Basin Site. Looks like a minimum of 5 miles to construct a paved road with 700 feet of elevation gain. There was mention of the nearby RNA (Research Natural Area) and the mountain biking trails. The biking trailhead/parking area is located on Horse Ridge Frontage Road. I used to ride this trail system on a regular basis quite a few years age, mainly 2005 – 2015, and still currently ride it on occasion. South of Highway 20

and Horse Ridge Frontage Road, there are 3 main ridges. The RNA and majority of the bike trails are on the first ridge, closest to Horse Ridge Frontage Road. Supposedly, there is a primitive bike trail that goes from the top of the first ridge over to the Golden Basin Site, but I believe this trail is used infrequently. The vast majority of the bikers utilize the many trails located on the first ridge. There is a narrow valley and second ridge that separates the main biking area and RNA from the Golden Basin Site. The Golden Basin Site is located between the second and third ridge.

Millican/Roth Sites: Opposed. There are numerous landowners that have private properties adjacent to the Roth properties. I personally know about 30 landowners in this area. None of these people want the landfill. The health, life, and safety of the Millican people are most important here. The Millican community landowners purchased their private lands before the proposed landfills came to this area. The proposed landfills will have an adverse affect upon the landowners in the Millican Valley. I have attached a map, depicting the Millican community location (which has approximately 130 tax lots) and estimates the distances to the proposed landfill sites. As the SWAC maps show the approximate locations of the proposed landfills, the Roth West Site is only 1/2 mile east of the Millican community. The Roth East Site is just 1 1/2 miles east of the Millican community. The Millican Valley experiences extreme winds at times, consistent winds most of the time, and frigid cold nighttime and wintertime temperatures. The wind and temperatures are much different in Millican versus Bend. The winds and dust devils will scatter the landfill garbage all over the Millican Valley and Highway 20. The trash, odors, and negative health issues will be forced upon the Millican community. This is not right. New landfills need to be sited far away from people. There is an ODOT weather station located 3.5 miles west of the Millican Store, in the Millican Valley, along Highway 20. The temperature on the 25th of February, 2023, went down to minus 12 degrees F. One of the landowners told me the temperature was minus 27 degrees F one morning in January. Temperatures below zero are not uncommon in the winter season. The proposed landfills are also close to the Historic Millican Store, Millican Valley Airport, Pine Mountain Hang gliding / Paragliding area, and the Pine Mountain Observatory (operated by the University of Oregon). Landfills do not mix with aircraft and pilots. The skies in this area are currently very clear and dark at night, benefitting the Observatory and the community in general. A landfill will disrupt these clean, clear skies. These landfill sites are also visible from Highway 20 due to very few trees in the Millican Valley. There is wildlife in these areas as well, sage grouse, bald eagles, antelope, deer, rabbits, to name just a few. **Please, No Landfills in Millican.**

DSL Sites, Hampton: Favor. The positive may be these sites are located away from people and residential living areas. The negative on these sites may be their location, being a long distance from Bend. Also, locating a landfill next to Highway 20 brings a negative visual impact. The Department of State Lands (DSL) assumed to be owner does need to sell land from time to time to fund the schools in Oregon. The DSL recently agreed to sell a large parcel of land on the eastern edge of the City of Bend, for new residential and commercial development. I would suggest trying and trying again to make a connection with the DSL to see if they are interested in selling the Hampton DSL Sites.

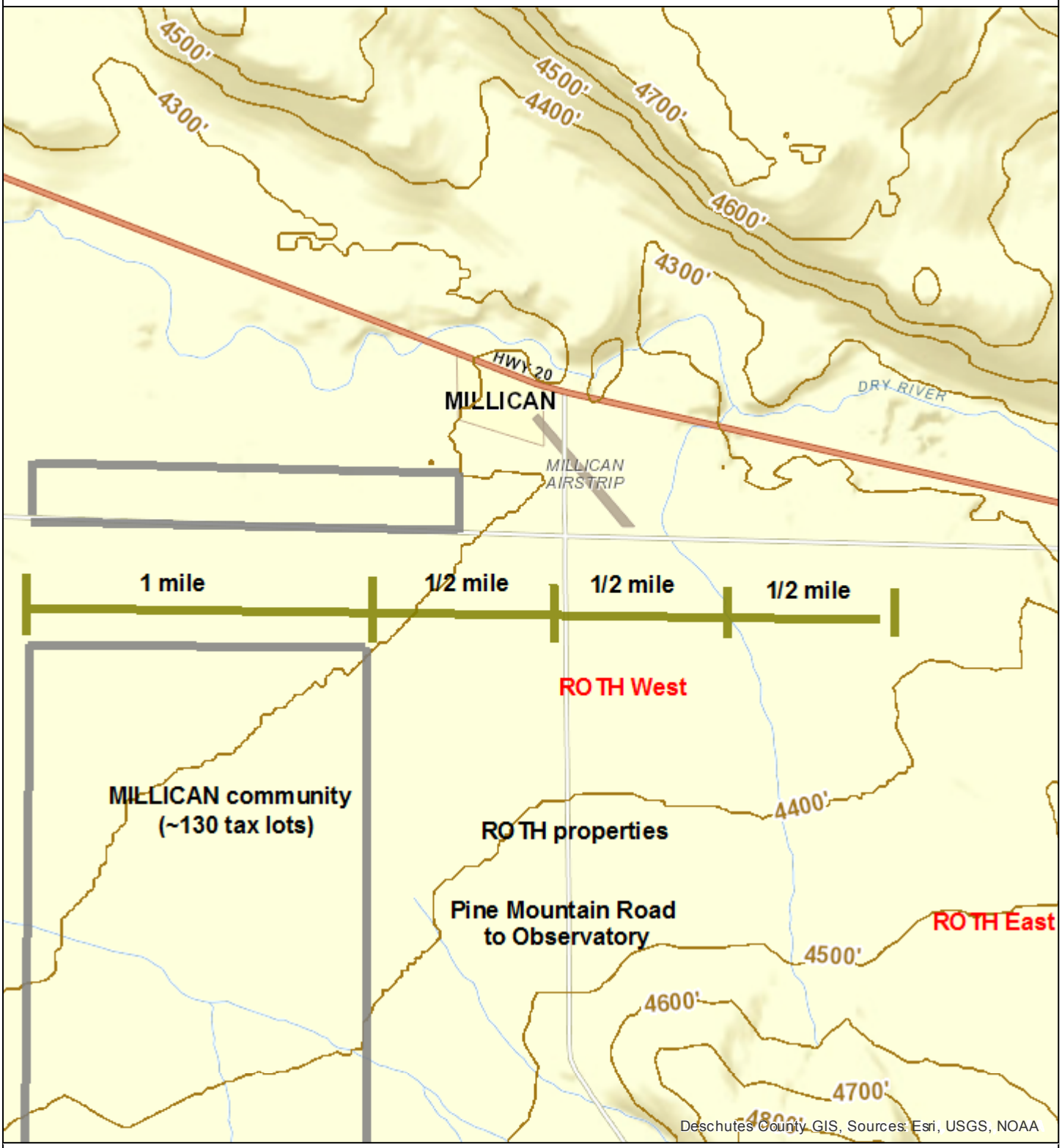
BLM Areas of Interest: Favor. The committee should double check with the Redmond Airport, Bend Airport, and FAA, to see if the specific areas near Highway 97 and/or Powell Butte Highway are acceptable landfill locations, considering the airport locations. The BLM lands located near the Horse Ridge Frontage Road off Highway 20 may work if there is enough suitable land. There is a residential home (25025 Horse Ridge Frontage Road) that looks to be approx. 1/2 to 1 mile northwest of the Hap Taylor and Horse Ridge Pit LLC properties. The positive of this area looks to be an operational surface gravel mining area. I would hope the SWAC could get more potential BLM sites in different locations away from people to add beyond these three sites.

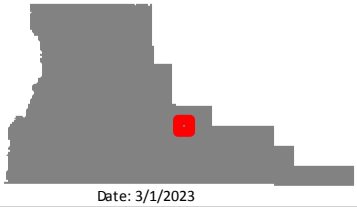
The BLM should be contacted regarding all the potential landfill sites, both private and public sites. They might favor some sites over others. I would encourage the committee to find additional sites to add to the current list, to include private sites, public sites, and Crook County sites. The number of sites at this point is too small. There is much more due diligence needed on the current proposed sites and many of them could get bumped off the list due to many factors not seen at this stage of the siting process. Take more time if you need to. Think about extending the life of Knott Landfill.

Thank you for listening to my comments and for all your hard work.

Steve Wright
Millican Landowner
Hang Glider, Private Pilot
Deschutes County resident since 1998

Millican community & proposed landfill sites





Date: 3/1/2023

N

0 1,250 2,500 5,000 ft

1 inch = 3,009 feet

DESCHUTES COUNTY

Chad Centola

From: heather amaryllis <ha.mnco@gmail.com>
Sent: Wednesday, March 8, 2023 7:56 AM
To: managethefuture
Subject: Landfill

Dear Deschutes County officers,

I am a landowner and Paraglider out at Pine Mountain. I am writing to express my dismay at the possibility of a landfill so close to and upwind of my property and flying site. I have attended the public meetings when possible. For the record please take my comment that I believe the best location for this future landfill would be well away from residents and recreational activities as the landfill would adversely affect us.

Please select a location far away from residents and recreational areas. Thank you for considering my request, and involving the public in this complicated decision.

Best regards,
Heather Amaryllis

Chad Centola

From: Steve Wright <steveoutdoors22@gmail.com>
Sent: Sunday, March 12, 2023 5:02 PM
To: managethefuture
Subject: Proposed Landfill Sites in Millican (Roth west and Roth east sites)
Attachments: IMG_20230312_132723687_HDR.jpg

Chad, Tim, and SWAC members,

Millican has some very passionate Land Owners, as indicated by the attached picture. This large sign is along Highway 20, near one of the access roads leading to the Millican private lands. These private land holdings, roughly 130 tax lots, are located next to and west of the Roth properties.

Please, No Landfills in Millican.

Thank You,

Steve Wright
Millican Land Owner
Millican/Pine Mountain Enthusiast
Deschutes County Resident since 1998


SAVE
MILLICAN
NO LANDFILL