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Multnomah County Board of Commissioners
501 SE Hawthorne Blvd
Portland, OR 97214

Re: Testimony on the Metro North Tualatin Mountains applications

Case No. T3-2017-9165 / T4-2017-9166

Dear Chair Vega Pederson and Commissioners:

Thank you for the opportunity to provide testimony today.

I also want to thank ODFW for their ongoing efforts to push Metro to do a decent job of taking care of a state and federally listed species, Northern Red-legged frogs. Large numbers of these frogs migrate through Burlington Creek Forest, and their safe passage is critical to survival of this population.

The Planning Commission created an unfairness at their March hearing. We were told at their February hearing that only written testimony would be accepted at the March hearing. But when the March hearing opened, several people were allowed to provide verbal testimony without informing the public of that option in advance.

I believe that the Planning Commission applied the wrong standard in determining whether the proposed trails in Burlington Creek Forest (BCF) **"Will not adversely affect natural resources"**¹

¹ § 33.6010 APPROVAL CRITERIA

In approving a Community Service use, the approval authority shall find that the proposal meets the following approval criteria, except for radio and television transmission towers, which shall meet the approval criteria of MCC 33.6100 through 33.6125, wireless communications facilities which shall meet the approval criteria of MCC 33.6175 through 33.6188; and except for regional sanitary landfills which shall comply with MCC 33.6200 through 33.6230.

(B) Will not adversely affect natural resources;

Multnomah County's Comprehensive Plan provides us with a standard that the Planning Commission did not discuss:

5.27 Protect significant native fish and wildlife habitat and wildlife corridors and specifically limit conflicting uses within these habitats and sensitive big game winter habitat areas.

Metro's trails plan for Burlington Creek Forest would introduce a significant conflicting use in a critical wildlife corridor for Northern Red-legged frogs.

There is already a lovely shared use road through BCF that provides safe opportunities for hikers, cyclists, and horseback riders to use the area. More trails are not needed. I have described several easy ways for Metro to comply with ODFW's requests and reduce harms to Red-legged frogs in BCF.

- Metro claims that 24" and 30" wide "shared use" trails on very steep hills can be safely used by hikers and mountain bikers.
- Metro brags about the acres they protect with no trails, but their plans show a large regional trail through two of those areas, and there is no evidence that these frogs use the Ennis Creek Forest property.
- Metro failed to follow their own policy by not completing a wildlife assessment, which could have identified the importance of the area to Red-legged frogs through a single call to ODFW, before designing trails for these properties.
- Metro ignored urgent concerns from ODFW about their proposed trails for 7 years -- from 2016 until last week, and has still not modified their trail plans.
- Metro claims they do Adapting Management (AM), but they have failed to do baseline wildlife monitoring that would make AM possible². They have made no effort to identify the parts of BCF most important to migrating frogs, claiming it would be prohibitively expensive. They propose frequent counts of dead frogs (which they admit are unlikely to be found) but are unwilling to note live migrating frogs during these surveys. They tell us that frogs can be easily counted in the coming new culvert for frog migration under Hwy 30, but it would be prohibitively expensive to count them in the existing culverts on their property. Wildlife cameras are available for under \$100 each, and AI software can probably identify and count frogs. But Metro is too set in their ways to try new, less expensive monitoring methods.

² Columbia Land Trust "Fieldbook" Fall 2023, Volume 30 Issue 02, page 8:

"'At its hard, adaptive management is learning by doing,' said Stewardship Director Ian Sinks. 'You create a plan with a clear definition of success, you implement the plan, you measure and analyze the results, and you make any needed changes or adaptations to your plan.' ... We remove levees, excavate new channels, and revegetate, but it would be a mistake to automatically assume that fish will return to the restored area. We need to track and measure the presence of key species to know if our efforts have been successful, or if there are unexpected hurdles to address."

- Metro admits “Frog mortality from trail users is highly unlikely” (p.7 of H.19) but counting dead frogs on trails is the ONLY monitoring that Metro plans. Frogs typically migrate at night, in cool and wet weather, when the trails are supposed to be closed.
 - Metro, as expected, has counted no dead frogs in their surveys since 2018.
 - Biologists have noted many other threats to Red-legged frogs from the proposed trails.³
 - Metro is willing to count dead frogs on their walking surveys, but won’t look for live migrating ones.
 - The ultimate demonstration of the uselessness of Metro’s proposed monitoring is that every frog that uses or crosses the Burlington Creek Forest property could die, and they would report only positive results – no dead frogs trampled on the trails!

Metro’s proposed new BCF trails sits at a pinch-point that Red-legged frogs from a large area must cross twice during their migration, and would create a gauntlet of new hazards for frogs migrating from the uplands to Burlington Bottoms. Frog migration is the most critical use of BCF.

Additional harm to frogs during migration through BCF will have a multiplier effect on populations across a wide area of high quality habitat in the North Tualatin Mountains.

Increasing the stress on these frogs as they migrate can reduce their fitness, making an already difficult journey more difficult and hazardous, and leaving them more vulnerable to disease. New trails will reduce cover, alter microhabitats, increase opportunities for visitors to introduce invasive species like bull frogs, and increase opportunities for people to illegally collect frogs. Coyotes and other scavengers will use new trails to easily access areas (and migrating frogs)

³ Letters to Metro from amphibian experts including ODFW, Char Corkran, and Sue Beilke (included in my testimony to the Planning Commission D.108) make it clear that direct mortality is only one of many possible harms resulting from trail construction and use. Here are the risks to red-legged frogs and other amphibians from trails mentioned in their letters:

- Habitat loss, degradation, and fragmentation
- Invasive species
- Degradation of water quality
- Barriers to movement
- Anthropogenic caused disturbances and hazards, such as increased noise
- Increasing stress/reducing fitness
- Disrupting breeding and foraging
- Direct mortality from trail use
- Illegal collection
- Changes in micro-habitat conditions
- Getting trapped in ruts created by off-road bike tire tracks (making them more vulnerable to direct mortality, predation, and illegal collection)
- Direct mortality due to project construction
- Increased predator access
- Increased vulnerability to the effects of climate change and emerging infectious diseases.

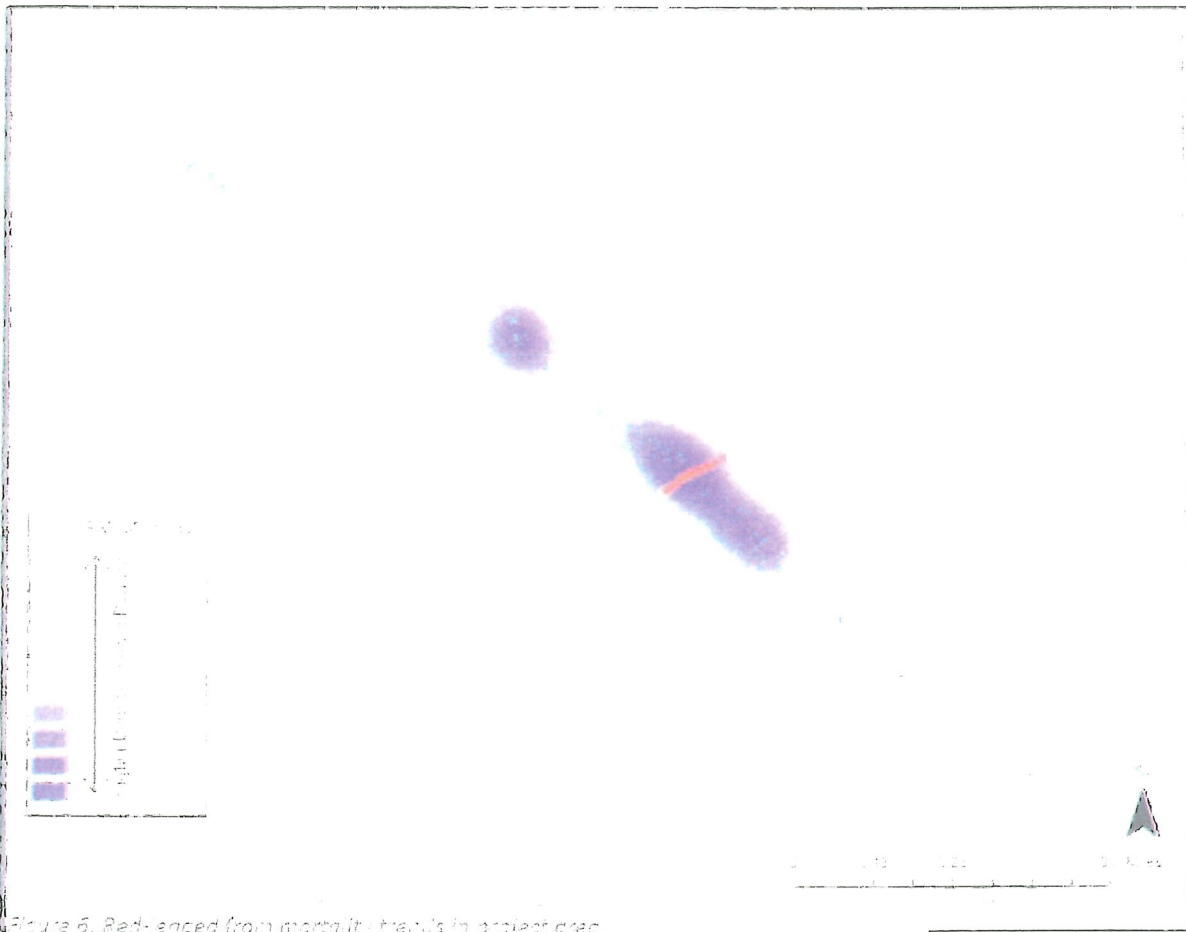
that were difficult for them to access before. Frogs are easy to see (and catch) when they must cross a trail.

Metro tells us that assessing Red-legged frog use of Burlington Creek Forest would be horribly time consuming and expensive. But they plan numerous walking surveys to look for frogs killed by trail use. They can count dead frogs but not live ones during migration?

If Metro had mapped the areas used during the twice-a-year migration of these frogs, we would have more certainty about the areas that need protection and where trails could safely be built. Simply walking the existing gravel road on a few nights when many frogs are migrating to look for concentration points with many moving frogs (or no migrating frogs, or evenly distributed frogs) would have been informative – are the frogs mostly using culverts to cross under the road, or are they concentrating in riparian zones?

Red-legged frogs migrating to Burlington Bottoms virtually all travel through Burlington Creek Forest, illustrated in the graphic of ODFW frog mortality data in the Burlington Creek Stream Conservation Plan (Ex H.20, page 36). This report was part of the CREST application to build the Hwy 30 amphibian undercrossing). This graphic, which is copied in just below this bullet list, also shows that while most frogs cross the highway near creeks, a great many cross in other areas – Red-legged frog migration is not limited to riparian corridors.

The total width of the disturbed area where vegetation would be removed for Metro's "narrow" soft surface trails. Trail construction diagrams for the "bench construction" method used by Metro appear to show disturbance areas can be more than 10' wide (42" trail plus surface clearing above and below).



The Red-legged frog mortality data in CREST's Burlington Creek Stream Conservation Plan (see Fig. 6 above from Ex H.20, page 36) and the James Holley Harborton Wetland Amphibian Assessment (Ex. H.20, page 16) show heavy concentrations of Red-legged frogs migrating across Hwy 30 between Burlington Creek Forest and Burlington Bottoms. It seems highly unlikely that frogs are migrating between Burlington Bottoms and the uplands west of Hwy 30 (and being killed on the highway) without crossing BCF. Metro has not presented any data showing that Red-legged frogs use Ennis Creek Forest, but they claim that restoring habitat there will benefit these frogs.

Red-legged frog monitoring

Metro tells us that installing the Hwy 30 undercrossing will provide an opportunity to efficiently measure the frog population moving between BCF and Burlington Bottoms, but that it would be "extremely cost prohibitive, inefficient, and ineffective" to monitor frog use of BCF now. Really? We can monitor frogs in that large new culvert, but not in smaller existing ones?

There are two baseline questions that should be answered about Red-legged frog use of BCF during migration before we build new trails in Burlington Creek Forest (BCF):

1. What parts of the BCF property are they using during migration? This seems to be the most important to determine whether trails have been designed to minimize harm to the frogs.
2. Some indication of how many frogs migrate across the property.

There appear to currently be at least 8 culverts under the existing gravel road in BCF. To determine which parts of the property are used by migrating Red-legged frogs, night-vision cameras could be mounted at one end of these culverts. AI software can probably count frogs filmed and counts could be made year-round.

- Are the frogs concentrated near creeks?
- Are many using the culverts to cross under the road (few or no frogs on the road)?
- Are they evenly distributed?

James Holley, working for \$50 an hour, accomplished a lot of work for only \$9000 over two years – pond assessments, egg mass surveys, frog mortality, and wrote a report. That's a tiny fraction of the cost of the proposed development in Burlington Creek Forest.

British Columbia's Management Plan for Northern Red-legged frogs⁴ (Ex D.108.8, page 10 of the document, 29 of the PDF) explains why microhabitats are important and that pollutants in air, soil, and waterbodies particularly harmful. It goes on to point out that these frogs have high fidelity to their breeding ponds and traverse migration routes many times in their life (if they survive).

As ectotherms with no protective cover to prevent them from drying out on land, their ability to survive extreme temperatures and drought depends on being able to find cool, moist habitats. Air temperature and precipitation have a strong influence on activity levels and timing of migration movements, foraging, predator avoidance, digestion, growth, sexual maturity and breeding. Their biphasic life requires both aquatic and terrestrial habitats, which exposes them to a wide diversity of predators and parasites. Northern Red-legged Frogs breathe and take up moisture through their skin, a trait that exposes them to pollutants in air, soil and waterbodies.

Some members of Northern Red-legged Frog populations move distances up to 4.8 km from breeding sites (Hayes *et al.* 2007) presumably as a result of competition and the distribution of resources (food, water, cover). As suitable habitats become spread far apart, migration distances increase and so does mortality associated with encountering

⁴ Environment Canada. 2016. Management Plan for the Northern Red-legged Frog (*Rana aurora*) in Canada [Proposed]. *Species at Risk Act* Management Plan Series. Environment Canada, Ottawa. 4 pp.+ Annex.

unsuitable habitats, such as non-forested areas and roads (Hayes *et al.* 2008). High fidelity to breeding sites causes the Northern Red-legged Frog to cross the same risky landscape features repeatedly. Urban and agricultural development and roads that destroy or alter migration routes may negatively affect a population even though the overall landscape appears suitable (Hayes *et al.* 2008). Thus, the species' propensity to migrate and its high fidelity to breeding sites are limiting factors that make it vulnerable to threats.

ODFW recommended (Ex. D.108.2, page 2) (among several other recommendations, including that there be no new trails at BCF) that Metro

Site new trails and other infrastructure away from streams, including headwater streams (perennial or intermittent). Recommended buffer widths are to be developed on a site specific basis and depend on site characteristics (e.g., soil, topography), but generally ODFW recommends trails be sited at least 100 M from the 100-year OHW mark of streams, including intermittent and non-fish bearing streams.

Only one of the many creeks in BCF was given a buffer this wide – the one that was also protected by a county SEC overlay.

Metro's monitoring plan only counts frogs that die on the gravel road and new trails. It still ignores other more likely adverse effects from trails.

1. Construction of any new trails in BCF should be forbidden until Metro develops and implements a new plan approved by outside experts, as was requested by ODFW, and has some monitoring data showing which parts of BCF are most frequently used by migrating Red-legged frogs.
2. If trails must be added in BCF, make these changes to better comply with ODFW's recommendations (these comments use the trail and crossing numbering scheme on the map of the Proposed Trail System at Burlington Creek Forest on page 5 of the staff report):
 - a. Eliminate the .1 mile long Trail C, which in its .1 miles requires a creek crossing (#4) and then dead ends at the edge of the Ancient Forest Preserve. Dead end trails invite people to create informal trails, and a .1 mile dead end trail with a creek crossing is of little value relative to the harm it will cause. This trail segment does not have a viewpoint.
 - b. Eliminate Trail AA, which places many close switchbacks in an important frog migration area, as documented in ODFW comments from 2017.
 - c. Increase the creek buffers to ODFW standards (100m) for all creeks in BCF.
 - d. Eliminate creek crossings by moving short mountain bike trail sections onto the gravel road – Crossing 7 and possibly 5, 6, and 8 could be eliminated this way. To visualize how this would work, look at the trail map and visualize the box with

the crossing number being dragged upstream along that creek to the gravel road, so the gravel road's existing creek crossing is used instead of adding a new crossing. Crossings 7 and 8 appear to be within 200' or less of the gravel road. This change would add small additional trail segments but reduce creek crossing impacts.

- e. Shift the new trails into the powerline corridor wherever possible (see Trails D and F) – that corridor will always be lower quality habitat.

Conclusion

It is Metro's responsibility to demonstrate that their proposed new trails "Will not adversely affect natural resources" for their application to be approved. Without data, they are asking us to cross our fingers and hope it works out OK.

Metro's proposed new BCF trails would sit at the pinch-point that Red-legged frogs must cross twice during their annual migrations, and would create a gauntlet of new hazards for these state and federally listed frogs migrating from the uplands to critically important Burlington Bottoms breeding habitat and back again. Frog migration is the most critical amphibian use of BCF, and this is a special population of Red-legged frogs with access to both Burlington Bottoms and broad areas of healthy forested upland habitat. Adding hazards in this particular frog migration corridor habitat would result in significant harm, more than can be offset by general habitat improvements.

Metro has not shown that their proposal satisfies this Approval Criteria for Community Service Use with their application:

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(B) Will not adversely affect natural resources;

You can approve the Type IV application designating the Metro properties as Parks and not approve the Type III application for Metro's proposed trails, and ask them to do a better job of protecting humans and frogs in BCF in a revised application.

Thank you for your consideration,

Carol Chesarek

Amphibians world's most vulnerable fauna

Christina Larson Associated Press

The world's frogs, salamanders, newts and other amphibians remain in serious trouble.

A new global assessment has found that 41% of amphibian species that scientists have studied are threatened with extinction, meaning they are either vulnerable, endangered or critically endangered. That's up from 39% reported in the last assessment, in 2004.

"Amphibians are the world's most threatened animals," said Duke University's Junjie Yao, a frog researcher who was not involved in the study. "Their unique biology and permeable skin make them very sensitive to environmental changes."

The study, published Wednesday in the journal *Nature*, found that the loss of habitat from the expansion of farming and ranching is the single biggest threat to amphibians worldwide. But a growing percentage of amphibian species are now also pushed to the brink by novel diseases and climate change, the study found.

Amphibians are especially vulnerable animals. They have distinct life stages that each often require separate habitats, so they can be disrupted by changes in either aquatic or land environments, said University of Texas biologist Michael Ryan, who was not involved in the study.

They also are at risk because of their delicate skin. Most amphibians absorb oxygen to breathe through their skin,

and so they do not have scales, feathers or fur to protect them. Chemical pollution, bacteria and fungal infections impact them quickly, as do heightened swings in temperature and moisture levels due to climate change.

For example, frogs are usually nocturnal. If it's too hot, they won't come out even at night because they would lose too much water through their skin, said Patricia Burrowes, a study co-author and researcher at the National Museum of Natural Sciences in Madrid. But remaining in sheltered resting places limits frogs' ability to eat and to breed.

This summer was the hottest on record for the Northern Hemisphere, and 2023 is on track to be the second hottest globally, after 2016.

Juan Manuel Guayasamin, a frog biologist at the University San Francisco of Quito, Ecuador, said that advances in technology to track animals and climate variations allowed the new study to use much more precise data than the 2004 assessment.

"We have a much better understanding of some risks," said Guayasamin, who was not involved in the report.

The study identified the greatest concentrations of threatened amphibian species in several biodiversity hotspots, including the Caribbean islands, the tropical Andes, Madagascar and Sri Lanka. Other locations with large numbers of threatened amphibians include Brazil's Atlantic Forest, southern China and the southeastern United States.

