Aron Faegre, AIA, PE 13200 Fielding Road Lake Oswego Oregon 97034 503-880-1469 faegre@earthlink.net

December 23, 2024

Alex Thomas, Planning and Programs Manager
Tony Beach, State Airports Manager
Oregon Department of Aviation
Brandy Steffen, JLA
Oregon Department of Aviation
3040 25th Ste SE
Salem, OR 97602
Alex.R.Thomas@odav.oregon.gov

Re: Aurora State Airport Master Plan Proposed Preferred Alternative
Septic Drainfield Geotech Report Review: Additional Information

Mr. Thomas, Mr. Beach, and Ms. Steffen:

Please share this letter with the ODAV and FAA design team, and enter it into the record for the Oregon Department of Aviation's (ODAV) proposed "Preferred Alternative" for the Aurora State Airport Master Plan.

Century West Engineering in the last few days has added some email history from December 2022 through February 2023 concerning the use of existing drainfields. HDSE had proposed modifying the drainfields by using a top layer of modern geofabrics through which grass can grow up through. These materials are specifically designed to allow support loads like fire trucks in grass areas. The FAA standard for soil compaction required in the Runway Safety Area requires that it be capable, in dry conditions, of supporting fire trucks as well as aircraft. At Aurora Airport aircraft maximum weights will all be similar or less than a fire truck. In fact, NV5 designed the fabric in this case, to be capable of supporting the largest Gulfstream aircraft. These modern geofabrics provide an innovative and inexpensive way to comply with the FAA soil strength standards.

Per the attached additional email history, we had specifically requested that our geotech (NV5) be allowed to talk directly to ODAV's geotech (GRI), in order to resolve the final detailed questions. It is noted that NV5 and GRI are Oregon's two most prestigious and experienced geotech firms. It is reasonable to have them talk together and resolve final review issues, since they are the experts on the subject. We are still requesting ODAV to allow this joint meeting to occur.

It also was our understanding, that before completing the review of use of geofabrics at the septic fields, ODAV first wanted to examine another possibility, that the HDSE sewer system might use the Columbia Helicopters drainfields at the north end of the airport. ODAV was thinking this might be in lieu of using the geofabric at the existing drainfield site. It was our understanding that ODAV was creating a report to determine if that would be a viable alternative. Has that report been completed?

Another issue raised, was that with ODAV denying the geotech engineers an opportunity to talk to each other, it seemed that the review process was not proceeding in good faith. Tony Helbling was discussing this problem with ODAV upper management as will be seen in one of the attached emails. It was requested that the review be accomplished in a more collaborative approach.

We request that the two geotech companies simply be allowed to talk together about the proposed use of geofabric at the existing drainfields, and see if there is common ground to show that a solution is possible. This is not rocket science, as these geofabrics are now in regular use in many civil engineering applications that require allowing vehicular loads on soft ground. It is reasonable to have this proposed use at the drainfields continue to be vetted by geotechnical experts.

Respectfully submitted,

Aron Faegre, AIA, PE
Aron Faegre Airport Planning and Design

Attachments:

Copies of emails dated 2022-2-20 from Martha Meeker, 2022-1-18 from Tony Beach, 2021-12-22 from Tony Beach

faegre@earthlink.net

From: Martha Meeker <meekerma92@msn.com>
Sent: Sunday, February 20, 2022 12:29 PM
To: Helbling, Tony
Cc: Ted Millar; Aron Faegre
Subject: Re: HDSE Drain Field Issue

Hi Tony,

Copy all on coming up with something a little more creative and let me chat with Betty a bit this week. I won't be around until the latter part of next week so if we could postpone the zoom chat until then I would appreciate it.

Best,
Martha

From: Helbling, Tony <helbling@wilsonconst.com>
Sent: Friday, February 18, 2022 10:55 AM
To: MeekerMA92@msn.com <meekerma92@msn.com>
Cc: Ted Millar <tmillar@tlmholdingsllc.com>; Aron Faegre <faegre@earthlink.net>
Subject: HDSE Drain Field Issue

Martha,

Bottom Line Up Front – we're asking for a "sea change" in the way we are working with ODA – a change to where we can work collaboratively in real time rather than barrier/administrative methodology. We're hoping your leadership could help with this philosophical change in how we could work together.

1st off – we are appreciative of the meeting Betty and Tony Beach held the other day with the engineers to discuss the drain field issues.

2nd – we're hoping to shift to a different, collaborative methodology in which we can work together instead of vertical, authoritative, administrative approach spelled out by Tony Beach following that meeting. (see attached – specifically second to the last paragraph).

ODA and multiple other users at Aurora stand to benefit as we seek to both continue to use the existing drain field and explore the expansion in the RSA, specifically on the west side toward HWY 551. We understand and respect James Kirby's position that a design would include, say a vault lid, that would need to withstand the point load of a G650 nose gear. (We got excited that he's going to allow G650s at KUAO!)

With that said, we'd like to work collaboratively and develop solutions that meet requirements as opposed to our side of the team expending a lot of time and expense to develop something that may not get approved. (For example - how we got to today's meeting, submittals leading to questions, leading to engineering, leading to delayed meetings with weeks in between as ODA decision makers decide who is allowed to talk to who. We asked on the call for Brett (our engineer) to be able to communicate ideas directly with Lindsey (ODA consultant) – this was met with trepidation by Tony Beach on behalf of ODA and the resulting email.)

One of the underlying foundations of ODA's charter and as called out in the Oregon Aviation Plan is to further and promote General Aviation in Oregon – especially at State airports. Additionally, KUAO as called out by SB680 a while back which is not codified in state law. That said, thinking here, on this drain field issue is that we come to an agreement on a vision for providing a usable drain field that benefits ODA's properties (tower and land holdings) as well as other entities on the airport HDSE, the CAA and at least the Condo Association in between if not more.

Once we share that vision, we (to include ODA's contracted engineers) shift from a proposal/review methodology to a joint effort, collaboratively working to design a system that will serve the airport, long into the future. The thing is, as a public/private partnership approach, private enterprise would be carrying the bulk of the load with respect to design and construction and the ODA would be reaping the benefit (for a substantial savings over going it alone) to get services for ODA properties. This becomes especially important as we look to the State's resiliency efforts, we're both jointly working toward at the Governor's Office level.

The clock is ticking on the existing drain field. Because the August, 2024 end date is looming on the horizon, we have a few choices; HDSE could expend time and money on the alternative to disposing of the effluent outside the RSA, or we could spend that same money and time on coming up with a long term solution that benefits more than just the HDSE. We'd like to pursue the latter!

We'd like to brainstorm with ODA and explore the potential of extending the existing lease to a time later than 2024 - to coincide with the runway extension. Ideas would include the collaborative planning of a new drain field where we've already done the exploration on that west side of where the runway extension would be. The actual construction of the pipe runs and drain field could be done concurrently with the runway extension construction.

Bottom Line – we're asking for a "sea change" in the way we are working with ODA – a change to where we can work collaboratively in real time rather than a vertical barrier/administrative methodology. We're hoping your leadership could help with this philosophical change in how we could work together.

Again – we're appreciative of the meeting and we'd really like to move forward. This project could be a shining example of furthering GA in Oregon for everyone involved.

Are you available to get on a zoom call, early next week to discuss? Tuesday is open for us.

Tony Helbling
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From: BEACH Anthony <Anthony.BEACH@odav.oregon.gov>
Sent: Tuesday, January 18, 2022 2:05 PM
To: Aron Faegre; 'Michelle DaRosa'; 'Tony Helbling'
Cc: STANSBURY Betty; 'Ted Millar'; 'Martha Meeker'
Subject: RE: HDSE drainfield expansion area at UAO

Hi Aron, Happy New Year.

Our consultants are still reviewing the information you provided. I will get an update and see if your geotech consultants can provide any assistance.

I'll keep you updated as soon as I get more information, thanks for your patience!

Tony Beach
OREGON DEPARTMENT OF AVIATION
STATE AIRPORTS MANAGER
OFFICE 503-378-2523 **CELL** 503-302-5455
M-F 7:30am – 4pm

From: Aron Faegre <faegre@earthlink.net>
Sent: Monday, January 17, 2022 12:23 PM
To: BEACH Anthony <Anthony.BEACH@odav.oregon.gov>; 'Michelle DaRosa' <mdarosa@landandcondolaw.com>; 'Tony Helbling' <helbling@wilsonconst.com>
Cc: STANSBURY Betty <Betty.STANSBURY@odav.oregon.gov>; 'Ted Millar' <tmillar@tlmholdingsllc.com>; 'Martha Meeker' <meekerma92@msn.com>
Subject: RE: HDSE drainfield expansion area at UAO

Hi Tony,

Hope your holidays went well.

Would it help to have our geotech consultant meet with your geotech consultant to get this resolved? We have provided detailed information for each of your questions, showing that the runway safety area complies with FAA standards. The standards acknowledge that utility systems can be in runway safety areas, and this is an important utility system for the airport.

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www.faegre.org

From: Aron Faegre <faegre@earthlink.net>
Sent: Tuesday, December 21, 2021 4:14 PM
To: 'BEACH Anthony' <Anthony.BEACH@aviation.state.or.us>; 'Michelle DaRosa' <mdarosa@landandcondolaw.com>; 'Tony Helbling' <helbling@wilsonconst.com>
Cc: 'STANSBURY Betty' <Betty.STANSBURY@aviation.state.or.us>; 'Ted Millar' <tmillar@tlmholdingsllc.com>; 'Martha Meeker (MeekerMA92@msn.com)' <meekerma92@msn.com>
Subject: RE: HDSE drainfield expansion area at UAO

Hi Tony

One last thing. I should have added a note to your question about whether infiltration testing was done. The testing for a drainfield is quite different than for normal stormwater infiltration testing. In fact, too rapid of an infiltration requires a more complicated septic drainfield piping design. Our septic processing system and drainfield designs are approved directly through State of Oregon DEQ.

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From: Aron Faegre <faegre@earthlink.net>
Sent: Tuesday, December 21, 2021 3:07 PM
To: 'BEACH Anthony' <Anthony.BEACH@aviation.state.or.us>; 'Michelle DaRosa' <mdarosa@landandcondolaw.com>; 'Tony Helbling' <helbling@wilsonconst.com>
Cc: 'STANSBURY Betty' <Betty.STANSBURY@aviation.state.or.us>; 'Ted Millar' <tmillar@tlmholdingsllc.com>; 'Martha Meeker (MeekerMA92@msn.com)' <meekerma92@msn.com>
Subject: RE: HDSE drainfield expansion area at UAO

Hi Tony,

Attached are the answers to your detailed questions. Does this provide the information you need to approve our proposal?

Aron

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503-880-1469
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From: BEACH Anthony <Anthony.BEACH@aviation.state.or.us>
Sent: Thursday, December 9, 2021 4:20 PM
To: Michelle DaRosa <mdarosa@landandcondolaw.com>; Tony Helbling <helbling@wilsonconst.com>
Cc: STANSBURY Betty <Betty.STANSBURY@aviation.state.or.us>; Ted Millar <tmillar@tlmholdingsllc.com>; Aron Faegre - Aron Faegre & Associates (faegre@earthlink.net) <faegre@earthlink.net>; Martha Meeker (MeekerMA92@msn.com) <meekerma92@msn.com>
Subject: RE: HDSE drainfield expansion area at UAO

Hi Michelle, thank you for your patience as we look into the information you have provided.

Our consultants have taken a first pass through the report along with their Geotech GRI, and they came up with the following list of questions/clarifications/additional information needed:

GRI requests the additional data listed below based on reviewing the November 8, 2021 report "Report of Geotechnical Engineering Services: Aurora State Airport Septic Drain Field Improvements for HDSE Sewer System." [*HDSE drainfield expansion Geotech Study AronFA-2-01-110821-geor.pdf*]

- Field Data Collection
    - Date of soil sampling
    - Were any logs prepared to describe the bulk sampling results?
    - Was a sieve analysis and/or Atterberg Limits test performed to validate the Silt visual classification?
    - Was infiltration testing performed? If not, why?

- As-builts or other construction documents pertaining to the existing drain field

- Report references
    - Geoweb design procedure
    - Provide addition discussion on how the 6-inch geoweb, with 2/3 aggregate and 1/3 topsoil, replaces 12 inches of compacted soil.
    - Equivalent Single Wheel Load source
    - Source identifying the critical aircraft type

- Report figures
    - Figure A-1: graphic does not show up in the provided pdf
    - Figure A-2: graphic does not show up in the provided pdf

- "Such stringent compaction is not permitted in the soil cover of drain fields"
    - Where does this statement come from?

In addition to the list above, we will also need specifics on the proposed Geoweb reinforced drain field construction.

- Materials/Construction Proposed
    - What materials specification is to be used (ODOT, proprietary, etc.) for the aggregate?
    - What compaction specifications and test methods are proposed to achieve the proposed Geoweb strengths?
    - What compaction specifications and test methods are proposed for soil layers to be placed along with the Geoweb?
    - What subgrade compaction specifications and test methods are proposed for the expanded drain field areas?
    - What materials are proposed for use in the rest of the elements of the drain field system (pipes, manifolds, perf spec., etc.)?

Could you please provide this information so I may forward it to our consultants for review?

Thank you,

Tony Beach
OREGON DEPARTMENT OF AVIATION
STATE AIRPORTS MANAGER
OFFICE 503-378-2523 **CELL** 503-302-5455
M-F 7:30am – 4pm

From: Michelle DaRosa <mdarosa@landandcondolaw.com>
Sent: Monday, November 15, 2021 3:51 PM
To: BEACH Anthony <Anthony.BEACH@aviation.state.or.us>; Tony Helbling <helbling@wilsonconst.com>
Cc: STANSBURY Betty <Betty.STANSBURY@aviation.state.or.us>; Ted Millar <tmillar@tlmholdingsllc.com>; Aron Faegre - Aron Faegre & Associates (faegre@earthlink.net) <faegre@earthlink.net>; Martha Meeker (MeekerMA92@msn.com) <meekerma92@msn.com>
Subject: RE: HDSE drainfield expansion area at UAO

Re-sending to include Ms. Martha Meeker.

Michelle D. Da Rosa
Attorney at Law
205 SE Spokane Street, Suite 300
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Office: (503) 220-2891
Direct: (971) 600-6307
www.landandcondolaw.com

From: Michelle DaRosa
Sent: Monday, November 15, 2021 3:25 PM
To: Tony Beach (anthony.beach@aviation.state.or.us) <Anthony.BEACH@aviation.state.or.us>; Tony Helbling <helbling@wilsonconst.com>
Cc: Betty Stansbury (betty.stansbury@aviation.state.or.us) <Betty.STANSBURY@aviation.state.or.us>; Ted Millar <tmillar@tlmholdingsllc.com>; Aron Faegre - Aron Faegre & Associates (faegre@earthlink.net) <faegre@earthlink.net>
Subject: FW: HDSE drainfield expansion area at UAO

Dear Betty and Anthony,

This missive from me, in my capacity as the attorney for TLM Holdings LLC and from Tony Helbling, as a director of HDSE Sewer System Owners Association and Chairperson of the Southend Corporate Airpark Condominium Owners Association, requests that you (i) rescind your denial of HDSE's plans to expand the HDSE drainfield on UAO property, (ii) retract ODA's stated intention to not renew HDSE's drainfield lease in

2024, and (iii) issue an approval of the expansion plans as previously submitted earlier this year. The attached study and our explanations below respond to the concerns ODA cited as the reason for its decisions.

The denial of the proposed expansion was sent to me in the email from Anthony dated July 30, 2021 in the email string below. ODA's expansion denial and threat to terminate the drainfield located on the Aurora State Airport that serves HDSE users (all buildings at Southend) sent concerned shock-waves through the Southend Airpark community because of the vital importance of the drainfield to the HDSE Sewer System, and the HDSE Sewer System to the continued operation of all of the property at Southend. The threat to "not renew" was made notwithstanding that the Non-Commercial Site Lease provides HDSE with two 5-year options and that the Utility Easement recorded as Instrument No. 2020-00001957 on January 13, 2020 is perpetual.

The attached geotechnical study by NV5 (formerly known as GeoDesign), dated November 8, 2021 demonstrates through detailed soil analysis that the drainfield areas already are likely capable "under dry conditions, of supporting snow removal equipment, aircraft rescue and fire-fighting equipment, and the occasional passage of aircraft without causing damage to the aircraft" [AC 150/5300-13A, p. 61]. The area is also free of objects, is drained by grading and a perimeter drain system to avoid accumulation of water, and has no ruts, humps, depressions or other surface variations, as required by the FAA's design standards for RSA's.

We propose resolution of this issue by:

a. Making no changes to the existing drainfields as they have been in the RSA for around 20 years now, with no problems occurring, and the gravel filled drainfield trenches already demonstrating regular supporting of tractors for mowing and thus physically demonstrating meeting the RSA vehicle support requirements.

b. For the new expansion drainfields use the addition of the 6 inch geo-fabric in the top layer, which then results in gaining of 95% compaction (in fact with a 1.5 safety factor bearing capacity over that).

In addition, we note as mitigating factors that:

- To promote the functionality of Aurora Airport as a resiliency resource following a major earthquake, the septic system will allow the airport to seamlessly continue operation following an earthquake, whereas those airports relying on urban sanitary systems will generally require from one month to a year to become functional after the earthquake – thus the HDSE's septic system is an advantage to promote at Aurora Airport.

- The existing and proposed drainfields are approximately 150 feet or more to the side of the runway centerline, and thus they are areas that are least likely to be needed for emergency use.

- Many existing areas of the RSA do not currently meet the 95% compaction requirement (as shown in the geotech study).

Sincerely yours,

Tony Helbling

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Office: (503) 220-2891
Direct: (971) 600-6307
www.landandcondolaw.com

From: BEACH Anthony <Anthony.BEACH@aviation.state.or.us>
Sent: Friday, July 30, 2021 10:20 AM
To: Michelle DaRosa <mdarosa@landandcondolaw.com>
Subject: RE: HDSE drainfield expansion area at UAO

Good morning Ms. DaRosa,

I am writing to follow up on your request for 103,104 square feet of additional drain field and reserve area lease space at the Aurora State Airport. We understand your client, HDSE Sewer System Owners Association, already has 61,375 square feet of premises leased for a drain field, reserve area, and piping. We are also aware that the existing lease was entered into with a general understanding that additional space would be needed, and that additional space would be made available by the Oregon Department of Aviation. Though both drain field use and leasing within Runway Safety Areas are unusual in my experience, I have been working to honor that arrangement with the intent of accommodating the expansion.

In initiating the Pen and Ink change to our Airport Layout Plan for this expansion, some concerns were raised by the FAA regarding compatibility of drain fields and Runway Safety Areas (RSA). The RSA enhances the safety of aircraft which undershoot, overrun, or veer off the runway, and it provides greater accessibility for firefighting and rescue equipment during such incidents. There are four requirements that our RSAs must meet, those include being:

1. cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations;
2. drained by grading or storm sewers to prevent water accumulation;
3. capable, under dry conditions, of supporting snow removal equipment, Aircraft Rescue and Fire Fighting (ARFF) equipment, and the occasional passage of aircraft without causing damage to the aircraft; and
4. free of objects, except for objects that need to be located in the RSA because of their function…

To address these concerns we closely evaluated the information you provided, and we analyzed what impacts, if any, a drain field would have on meeting the RSA's design standards. What we have found is that generally leach field soils are

not compacted to the densities needed to support vehicle loads. The effluent from the waste stream has to be able to move into the pores of the soil around the drain tiles for the leach field to function. This increases the moisture content of the soils and further reduces their ability to support loads. At best, we are concerned that vehicle loading (including mowers) will reduce the porosity of the leach field soil (resulting in slower infiltration over time) or, at worst, cause damage to the shallow drain tiles and manifolds resulting in surface failures. It is our conclusion that drain fields in the RSA present a potential hazard to aircraft forced to roll out in the RSA. They are especially hazardous for heavier aircraft or those with higher tire pressures.

Due to the decreased soil strength and increased water accumulation caused by a drain field's function, we are unable to expand your client's drain field and reserve areas. Further, because the existing drain field and reserve area are not compatible within the RSA, we will not be able to renew the lease once the current term expires August 30th, 2024. At that time, all pipes and associated equipment will need to be removed by the Lessee, and the site will need to be returned to its original condition.

I am sorry I don't have a better answer for you, please let me know if you have any questions,

Anthony Beach, C.M., ACE
OREGON DEPARTMENT OF AVIATION
STATE AIRPORTS MANAGER
M-F 7:30am – 4pm

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WWW.OREGON.GOV/AVIATION

faegre@earthlink.net

From: BEACH Anthony <Anthony.BEACH@odav.oregon.gov>
Sent: Wednesday, December 22, 2021 8:08 AM
To: Aron Faegre; 'Michelle DaRosa'; 'Tony Helbling'
Cc: STANSBURY Betty; 'Ted Millar'; 'Martha Meeker'
Subject: RE: HDSE drainfield expansion area at UAO

Thanks Aron, I've forwarded this note over to our consultants as well.

Tony Beach
OREGON DEPARTMENT OF AVIATION
STATE AIRPORTS MANAGER
OFFICE 503-378-2523 **CELL** 503-302-5455
M-F 7:30am – 4pm

From: Aron Faegre <faegre@earthlink.net>
Sent: Tuesday, December 21, 2021 4:14 PM
To: BEACH Anthony <Anthony.BEACH@odav.oregon.gov>; 'Michelle DaRosa' <mdarosa@landandcondolaw.com>; 'Tony Helbling' <helbling@wilsonconst.com>
Cc: STANSBURY Betty <Betty.STANSBURY@odav.oregon.gov>; 'Ted Millar' <tmillar@tlmholdingsllc.com>; 'Martha Meeker' <meekerma92@msn.com>
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    - Source identifying the critical aircraft type

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Tony Beach
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Direct: (971) 600-6307
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MICHELLE D. DA ROSA 2021 RECOGNIZED BY Best Lawyers

From: Michelle DaRosa
Sent: Monday, November 15, 2021 3:25 PM
To: Tony Beach (anthony.beach@aviation.state.or.us) <Anthony.BEACH@aviation.state.or.us>; Tony Helbling <helbling@wilsonconst.com>
Cc: Betty Stansbury (betty.stansbury@aviation.state.or.us) <Betty.STANSBURY@aviation.state.or.us>; Ted Millar <tmillar@tlmholdingsllc.com>; Aron Faegre - Aron Faegre & Associates (faegre@earthlink.net) <faegre@earthlink.net>
Subject: FW: HDSE drainfield expansion area at UAO

Dear Betty and Anthony,

This missive from me, in my capacity as the attorney for TLM Holdings LLC and from Tony Helbling, as a director of HDSE Sewer System Owners Association and Chairperson of the Southend Corporate Airpark Condominium Owners Association, requests that you (i) rescind your denial of HDSE's plans to expand the HDSE drainfield on UAO property, (ii) retract ODA's stated intention to not renew HDSE's drainfield lease in 2024, and (iii) issue an approval of the expansion plans as previously submitted earlier this year. The attached study and our explanations below respond to the concerns ODA cited as the reason for its decisions.

The denial of the proposed expansion was sent to me in the email from Anthony dated July 30, 2021 in the email string below. ODA's expansion denial and threat to terminate the drainfield located on the Aurora State Airport that serves HDSE users (all buildings at Southend) sent concerned shock-waves through the Southend Airpark community because of the vital importance of the drainfield to the HDSE Sewer System, and the HDSE Sewer System to the continued operation of all of the property at Southend. The threat to "not renew" was made notwithstanding that the Non-Commercial Site Lease provides HDSE with two 5-year options and that the Utility Easement recorded as Instrument No. 2020-00001957 on January 13, 2020 is perpetual.

The attached geotechnical study by NV5 (formerly known as GeoDesign), dated November 8, 2021 demonstrates through detailed soil analysis that the drainfield areas already are likely capable "under dry conditions, of supporting snow removal equipment, aircraft rescue and fire-fighting equipment, and the occasional passage of aircraft without causing damage to the aircraft" [AC 150/5300-13A, p. 61]. The area is also free of objects, is drained by grading and a perimeter drain system to avoid accumulation of water, and has no ruts, humps, depressions or other surface variations, as required by the FAA's design standards for RSA's.

We propose resolution of this issue by:

a. Making no changes to the existing drainfields as they have been in the RSA for around 20 years now, with no problems occurring, and the gravel filled drainfield trenches already demonstrating regular supporting of tractors for mowing and thus physically demonstrating meeting the RSA vehicle support requirements.

b. For the new expansion drainfields use the addition of the 6 inch geo-fabric in the top layer, which then results in gaining of 95% compaction (in fact with a 1.5 safety factor bearing capacity over that).

In addition, we note as mitigating factors that:

- To promote the functionality of Aurora Airport as a resiliency resource following a major earthquake, the septic system will allow the airport to seamlessly continue operation following an earthquake, whereas those airports relying on urban sanitary systems will generally require from one month to a year to become functional after the earthquake – thus the HDSE's septic system is an advantage to promote at Aurora Airport.

- The existing and proposed drainfields are approximately 150 feet or more to the side of the runway centerline, and thus they are areas that are least likely to be needed for emergency use.

- Many existing areas of the RSA do not currently meet the 95% compaction requirement (as shown in the geotech study).

Sincerely yours,

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From: BEACH Anthony <Anthony.BEACH@aviation.state.or.us>
Sent: Friday, July 30, 2021 10:20 AM
To: Michelle DaRosa <mdarosa@landandcondolaw.com>
Subject: RE: HDSE drainfield expansion area at UAO

Good morning Ms. DaRosa,

I am writing to follow up on your request for 103,104 square feet of additional drain field and reserve area lease space at the Aurora State Airport. We understand your client, HDSE Sewer System Owners Association, already has 61,375 square feet of premises leased for a drain field, reserve area, and piping. We are also aware that the existing lease was entered into with a general understanding that additional space would be needed, and that additional space would be made available by the Oregon Department of Aviation. Though both drain field use and leasing within Runway Safety Areas are unusual in my experience, I have been working to honor that arrangement with the intent of accommodating the expansion.

In initiating the Pen and Ink change to our Airport Layout Plan for this expansion, some concerns were raised by the FAA regarding compatibility of drain fields and Runway Safety Areas (RSA). The RSA enhances the safety of aircraft which undershoot, overrun, or veer off the runway, and it provides greater accessibility for firefighting and rescue equipment during such incidents. There are four requirements that our RSAs must meet, those include being:

1. cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations;
2. drained by grading or storm sewers to prevent water accumulation;
3. capable, under dry conditions, of supporting snow removal equipment, Aircraft Rescue and Fire Fighting (ARFF) equipment, and the occasional passage of aircraft without causing damage to the aircraft; and
4. free of objects, except for objects that need to be located in the RSA because of their function…

To address these concerns we closely evaluated the information you provided, and we analyzed what impacts, if any, a drain field would have on meeting the RSA's design standards. What we have found is that generally leach field soils are not compacted to the densities needed to support vehicle loads. The effluent from the waste stream has to be able to move into the pores of the soil around the drain tiles for the leach field to function. This increases the moisture content of the soils and further reduces their ability to support loads. At best, we are concerned that vehicle loading (including mowers) will reduce the porosity of the leach field soil (resulting in slower infiltration over time) or, at worst, cause damage to the shallow drain tiles and manifolds resulting in surface failures. It is our conclusion that drain fields in the RSA present a potential hazard to aircraft forced to roll out in the RSA. They are especially hazardous for heavier aircraft or those with higher tire pressures.

Due to the decreased soil strength and increased water accumulation caused by a drain field's function, we are unable to expand your client's drain field and reserve areas. Further, because the existing drain field and reserve area are not compatible within the RSA, we will not be able to renew the lease once the current term expires August 30th, 2024. At that time, all pipes and associated equipment will need to be removed by the Lessee, and the site will need to be returned to its original condition.

I am sorry I don't have a better answer for you, please let me know if you have any questions,

Anthony Beach, C.M., ACE
OREGON DEPARTMENT OF AVIATION
STATE AIRPORTS MANAGER
M-F 7:30am – 4pm

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