# **AURORA STATE AIRPORT**



# AIRPORT MASTER PLAN PLANNING ADVISORY COMMITTEE (PAC) MEETING #2 SUMMARY

**Date:** Tuesday, March 1, 2022

**Time:** 3:00-5:00 pm **Location:** Zoom Webinar

#### In Attendance

#### **PAC Members Present**

Aron Faegre (for Ted Millar¹), AABC/TLM Holdings Bob Hala, Atlantic Aviation Bruce Bennett, Aurora Airport Improvement Association

Ken Ivey, Aurora Butteville Barlow Community Planning Organization

Bill Graupp, Aurora CTE, Inc

Steve Switzer, Charbonneau Country Club

Brian Asher, City of Aurora

Councilor Charlotte Lehan, City of Wilsonville

Chris Neamtzu, Alternate, City of Wilsonville

Rob Roedts, Columbia Helicopters

Bob Buchanan, Alternate, Columbia Helicopters

Matt Williams, Deer Creek Estates HOA

Ben Williams, Friends of French Prairie

Wayne Richards, Alternate, Friends of the French

Prairie

Commissioner Danielle Bethel, *Marion County*Austin Barnes, *Marion County Planning Dept.*Tony Beach, Oregon Dept of Aviation (ODAV)
Cathryn Stephens, *ODAV Board*Naomi Zwerdling, *Oregon Dept of Transportation* 

Matt Crall, Oregon Dept of Land Conservation and Development (DLCD)

Nicole Mardell, Alternate, DLCD

Bill Martin, Oregon Office of Emergency Management
Tony Helbling, Positive Aurora Airport Management
Jody Christensen, Regional Solutions
Rian Johnson, Vans Aircraft
David Waggoner, Willamette Aviation
Patrick Donaldson, Wilsonville Chamber of Commerce

#### **PAC Members Absent**

Roger Kaye, 1000 Friends of Oregon
Raul Suarez, Aurora Air Traffic Control
Scott Archer, City of Canby
Commissioner Tootie Smith, Clackamas County
Cheryl Pouley, Confederated Tribes of the Grand
Ronde Community of Oregon
Robert Kentta, Confederated Tribes of Siletz Indians

Christian Nauer, Confederated Tribes of Warm Springs
Reservation of Oregon

Robert Fournier, *Helicopter Transport Service*Ben Clayton, *Life Flight Network*Brandon Reich, Alternate, *Marion County Planning* 

Dept.

Mary Anne Cooper, *Oregon Farm Bureau*Sarah Puls, Alternate, *Oregon Office of Emergency Management* 

Greg Hughes, Alternate, Vans Aircraft

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<sup>&</sup>lt;sup>1</sup> Substitutions are not generally allowed; however, this one time substitution was granted by Oregon Department of Aviation Director.

Kevin Ferrasci O'Malley, Alternate, Wilsonville Greg Leo Chamber of Commerce James Kirby

> Jillian Capistrano Joann Linville

Agency Representatives Betty Stansbury, *ODAV* 

Joe Mollahan John Rankin Heather Peck. ODAV Julie Fitzgerald Sarah Lucas. ODAV

Seth Thompson, ODAV Benjamin Mello, Federal Aviation Administration (FAA)

Rayna Jenks Kate Key, FAA

Sara Kim

Sarah Anderson

Steven Benson

Tom Herzog

Traci Hensley

Nancy CS

**Neal White** 

**Staff and Consultants** 

Matt Rogers, Century West David Miller, Century West Mike Dane, Century West

Samantha Peterson, Century West

Mark Steele, Century West

Brandy Steffen, JLA Public Involvement Ariella Frishberg, JLA Public Involvement

**Audience / Members of the Public** 

Chad Hanson Andria Abrahamson Bruce Bergman Corey Buchanan

Cornelia Gibson

Dan Fricke

Kriss Wright Peter Shikli Peter Murphy Lee Barckmann Don Richcreek

Denis Pilon

Jan Fritz Carolyn Lee John Hick

Lori Loen

George Van Hoomissen

Matt Lawyer

### Overview

The meeting goals were to review Working Paper No. 1 and present information, then allow the members of the PAC to ask questions or provide comment.

## Welcome and Introductions

Brandy Steffen, JLA Public Involvement, welcomed everyone to the meeting and reviewed the agenda and basic Zoom meeting tips. She reminded attendees that there would be a public open house immediately following the PAC meeting. There would be time for public comment at the end of the current meeting. There are also opportunities for comment through the online survey or during the public open house. Sarah Lucas, Oregon Department of Aviation (ODAV), introduced ODAV staff and the consultant teams. She briefly explained the recent change to the ODAV acronym. She thanked everyone for their attendance and participation. Brandy and Matt Rogers, Century West, introduced the subconsultants that are involved with the project. Brandy introduced the PAC members. Matt said that several members were displeased with the PAC #2 Meeting Summary Page 2

short amount of time given to review the working paper before the meeting. He explained that the review process took longer than anticipated and staff wanted to ensure everything was presented correctly before making the document public. Future deliverables will be posted sooner for review, and everyone would be able to comment on the document. There could also be another PAC work session in a month to discuss the document after everyone has a chance to review and discuss with constituents.

## **Existing Conditions and Preliminary Forecast**

**David Miller, Century West,** gave a brief overview of Working Paper No. 1 focusing on Chapter 2 and 3, which cover the existing conditions (including land use and zoning of the airport) and preliminary aviation activity forecasts. The presentation is posted to the project website. Brandy asked the PAC if they had any clarifying questions or comments.

- Charlotte Lehan, City of Wilsonville: Where does the issue of constrained size of aircraft come into the discussion?
  - David: That comes in at the facility requirements step. One of the technical evaluations is the constrained operations evaluation. Aircraft have different runway requirements based on different conditions and we'll be evaluating that. Larger aircraft that fall in the design group of C-II and C-III currently operate at the airport. Whether they are constrained will be dependent on various factors, and we will be evaluating that, which will tie into facility requirements and runway requirements.
- Steven Switzer, Charbonneau Country Club: In your 2018 study, you listed 328 based aircraft. Can you explain the number drop? Did we lose those 49 airplanes?
  - David: Yes and no. There were 20+ helicopters that were previously counted and some have moved and others are located off airport property at Columbia Helicopters and Helicopter Transport Services (HTS)² that do not have through-the-fence agreements³ and are not attributed to the airport. The level of scrutiny in this update made it necessary to be more precise in the aircraft counts and we had access to more information than before.
  - Tony Beach, ODAV: The biggest change was the helicopters. This 2021-22 based aircraft
    update was the most comprehensive and thorough one we have done. There was a high level
    of scrutiny because of the Master Plan project.
  - o Steven Switzer: Thank you, that makes sense based on the number of helicopters.
- Rian Johnson, Vans Aircraft: I'm based at Troutdale with my personal airplane and I fly into Aurora for work. Does your study include the possibility for reduction of capacity of other airports? The Troutdale runway will be shortened due to Amazon. When flying into an airport for business, you have Hillsboro, Troutdale, and Aurora by major freeways. Did you account for that increase?
  - David: Yes, when we forecasted the various growth scenarios, we did. Each of these airports
    are competing for business and movement of aircraft between airports is not uncommon. We
    look at the general health of aviation in the Portland metro area, and that gets factored in both

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<sup>&</sup>lt;sup>2</sup> Columbia Helicopters Heliport (FAA Identifier: OR68) and HTS Aurora Heliport (FAA Identifier: OR24) operate independently of the Aurora State Airport under Marion County Conditional Use Permits.

<sup>&</sup>lt;sup>3</sup> Through-the-Fence (TTF) is a term used to describe how off-airport aviation users access an airport, rather than having facilities located on airport property.

based aircraft and aircraft operations projections. I suspect that as Troutdale changes, some of those aircraft will disperse around the region and some will end up at Aurora.

Brandy reminded the PAC that the AMP schedule will periodically change. She asked members if they would like an additional work session.

- Ben Williams, Friends of French Prairie: The paper was delivered Friday at almost end of day and I don't think I've had enough time to read it. I don't know that I can answer this question without time to digest what was said to us.
  - Brandy: If we have another work session then we can talk through it and you'll have time to read through the materials.

Seventeen PAC members said they wanted to have an additional work session and Brandy said staff will move forward with scheduling the work session.

#### **PAC Questions and Comments**

Brandy opened the PAC question and comment session, in which committee members could ask questions about the master plan, give general comments about the information presented, list some goals they would like the plan to accomplish, and share their local expertise and airport knowledge. Full comments, along with responses are provided in the table at the end of the document.

#### **Public Comments**

Brandy reminded the group that they could submit comment through the survey, website, or at the public meeting after the PAC meeting. She encouraged PAC members to distribute the survey among their constituents. The next portion of the meeting was for public comment, and full responses are provided at the end of the document.

## **Next Steps**

Brandy thanked everyone for attending and encouraged those who wanted to attend the public open house to move to the next Zoom meeting. The next working meeting will occur in about a month, and PAC members were advised to watch for an email related to that. Brandy then closed the meeting.

## Questions/Comments and Responses from the PAC<sup>4</sup>

| ID  | Name                               | Affiliation          | Question/Comment                             | Response   |
|-----|------------------------------------|----------------------|--|--|
| 2.1 | Aron Faegre<br>(for Ted<br>Millar) | AABC/TLM<br>Holdings | Will the noise contours include helicopters? | The noise contours to be generated will reflect the existing and forecasted activity once approved by the FAA. Columbia and HTS helicopter traffic is separate from the Airport's traffic, as they are private facilities. Unless the FAA says |

<sup>&</sup>lt;sup>4</sup> Live responses are included, along with additional information/clarification, as needed. PAC #2 Meeting Summary

| Aurora | a State Airport Mast | er Plan – Planning       | Advisory Committee (PAC)   | otherwise, expect the noise contours<br>to only reflect Aurora State Airport-  |
|--------|----------------------|--------------------------|--|--|
| 2.2    | Bob Hala             |                          | I'm new to the PAC and happy to<br>answer any questions. We are on the<br>south end of the field, so come talk to<br>us.   |  |
| 2.3    | Bruce<br>Bennett     | Improvement              | I want to highlight the people who aren't represented – the hundreds, thousands, or possibly millions who benefit from the fires that are put out using the Aurora Airport, but who don't have any official association with the Aurora Airport. | No response needed   |
| 2.4    | Ken Ivey             | Planning<br>Organization | How many planes are in the category of size required to get special permissions to land at Aurora Airport due to their larger size or weight?  | ODAV requires an overweight waiver for aircraft that exceed the runway's weight-bearing capacity. There are aircraft that meet our current critical design category that do exceed weight bearing capacity. When we receive those requests, we review the information and may issue those. We have one based aircraft that requires that waiver from ODAV.   |
| 2.5    | Bill Graupp          | Aurora CTE,<br>Inc       | I enjoyed reading the paper over the weekend and thought it was a great high-level initial set of review data.   | No response needed   |
| 2.6    | Steve Switzer        | Country Club             | I need more time to review this and talk it over with some of the folks here at Charbonneau. I represent the board, who represent 3,000+ people, so I'm just the voice for them. I look forward to another meeting where we can discuss this.    |  |
| 2.7    | Mayor Brian<br>Asher | ·                        | I also have issue with the helicopter noise not being included or controlled in the master plan. I'd like to figure out a way to get the FAA involved and include it in the master plan, to get the noise level under control.                   | We understand the concern and will be coordinating with FAA to see if it is possible to include the off-airport helicopter activity in the airport's noise contours. It is also important to note that airport master plan evaluations of airport noise reflect an assessment of noise exposure, consistent with FAA methodologies. There are no "control" elements associated with master plan noise analyses.  The scope of work includes an FAA noise analysis that utilizes the FAA noise model for existing and forecast activity levels, fleet mix and flight tracks. This analysis will not include any evaluation of impacts |

| Aurora | State Airport Mast | er Plan – Planning      | Advisory Committee (PAC)  |   |
|--------|--------------------|-------------------------|---|---|
| 2.8    | Charlotte<br>Lehan |                         | I would like to do a deeper dive into constrained operations and waivers,   | outside the 65DNL <sup>5</sup> noise contour and no evaluation of "changes" in aircraft flight tracks to mitigate overflights in adjacent communities. There will be a detailed discussion of how the noise model is developed and the resulting noise contours later in the planning process.  No response needed; discussion will continue at the work session. |
|        |                    |                         | and what their definitions and criteria   |   |
| 2.9    | Rob Roedts         | Columbia<br>Helicopters | are at the next meeting I'm happy to support this. Columbia has been a part of the airport since 1976. We try to be as mindful of the public as possible. We are noticing that some other operators are not being that way, even when flying over communities outside the airport. We need to figure out a way to fix this. We also own some airport property and have noticed times getting in and out of the airport are getting extended, sometimes by up to 20 minutes. We want to figure out a way to make things as efficient as possible, and help the airport grow successfully |   |
| 2.10   | Matt Williams      |                         | i   | No response needed  |
| 2.10   | matt williams      | Estates HOA             | and are always concerned about noise, but we appreciate the opportunity to be heard.  | No response needed.   |
| 2.11   | Ben Williams       | French Prairie          | environmental and land use requirements that may impact development." Since most PAC members and staff weren't here for the last master plan, I'd like to remind everyone that WH Pacific presented the alternatives of the 2011 master   | Comments received. We are not yet to the point in the planning process where these issues will be evaluated. These issues will be considered in the Development Alternatives later in the process. Please note this is a new Master Plan and it will arrive to decision points using new data and information.  |

<sup>&</sup>lt;sup>5</sup> DNL represents day-night sounds levels, a mathematical method of measuring noise exposure based on cumulative, rather than single event impacts. PAC #2 Meeting Summary

approach surface, had an avigation

easement or airport development

overlay zone in place?

enroute, and some aircraft complete

their flights operating under visual

flight rules (VFR). However, the Traffic Flow Management System

| Aurora | rora State Airport Master Plan – Planning Advisory Committee (PAC) |                        |  |  |  |
|--------|--|------------------------|--|--|--|
|        |  |                        | extension require a property purchase or rezoning?   | (TFMSC <sup>6</sup> ) data are recognized by FAA as the most accurate measure of critical or design aircraft activity for general aviation airports with significant business aviation use. In this case, the TFMSC data supplements the Aurora State Airport air traffic control tower data to identify critical aircraft use and to evaluate common off-hours activity trends. |  |
|        |  |                        |  | We haven't reached the point in the Plan to provide informed comments on runway lengths and if a runway extension is needed. The runway length requirements will be evaluated in the Facility Requirements and if a runway extension is justified, options for accommodating a runway extension will be evaluated in the Development Alternatives.                               |  |
| 2.14   | Naomi  | Oregon Dept            | It was my understanding that TSP's   | Transportation System Plans are not  |  |
|        | Zwerdling  | of                     | , .  | included in the scope of work for the  |  |
|        | J  | ·                      | questions).  | Airport Master Plan. Individual transportation planning studies may be required to support individual development projects that are an outcome of the planning process.  |  |
| 2.15   | Tony   | Positive               |  | A noise study will be included as  |  |
|        | Helbling   | Management             | Charbonneau area, as well as<br>Councilwoman Joann Linville from<br>Wilsonville. We would like for a noise<br>study to come out of this master plan  | part of this plan that includes noise<br>exposure maps generated for<br>current and future forecast aircraft   |  |
| 2.16   | Rian<br>Johnson  |                        | There are other types of airplanes that will be coming along in the future with the expansion of Mosaic. They would have different noise signatures, such as quad copter type aircraft. This will be approved by Congress in 2023 but should be considered. We at Vans try to avoid Charbonneau and Aurora, but the flight paths that the tower puts us on, put us over where we are. We still try | The needs of aircraft that are anticipated to be based at Aurora over the 20-year planning horizon will be considered in the Development Alternatives. We are aware that many new types of electric aircraft will be entering the market in the next 10 years. The planning team will consider options to accommodate electric aircraft  |  |
| 2.17   | Patrick  |                        | -  | No response needed.  |  |
|        | Donaldson  | Chamber of<br>Commerce | driving, I offer this comment when<br>you come to 'Wilsonville Area<br>Chamber of Commerce' - Draft<br>Airport Master Plan Working Paper   |  |  |

 $<sup>^{6}</sup>$  TFMS is a data exchange system for supporting the management and monitoring of national air traffic flow. PAC #2 Meeting Summary

| Aurora | State Airport Mast | er Plan – Planning     | Advisory Committee (PAC)  |   |
|--------|--------------------|------------------------|---|---|
|        | ·                  |                        | No. 1 appears to be a rich and deep source of helpful materials that the Wilsonville Chamber of Commerce will review and bring forward our comments at the anticipated work session. Thank you.   |   |
| 2.18   | David<br>Waggoner  | Willamette<br>Aviation | How is the noise contour being developed?   | Once the FAA approves the aviation activity forecasts, the noise analysis for the master plan will be driven by those numbers. There is a series of exercises done using computer modeling software, which would be inputted with the existing and forecasted future aircraft operations. Any recommendations would also be reflected in those contours. That exercise will be driven by the air traffic represented in the forecast. We agree that having an appreciation of the helicopter activity within the overall area would be valuable to the broader discussion of noise that may extend beyond the scope of an individual airport master plan. |
| 2.19   | Wayne<br>Richards  |                        | I wanted to empathize with Rob (Columbia Helicopters). We have been counting the flights over Charbonneau that are on flight aware. There have been 4,500 in the last 12 months. We are concerned about noise, and we are also concerned about leaded fuel raining down on our communities. There is no safe level of lead with that many flights. Small traces of it can affect children's neurological makeup and the health and safety of our citizens. I would like to see what the plan is for the reduction of the forever chemicals such as lead and polyfluoroalkyl in the next meeting. They are in flame retardants, and they don't break down. Jet exhaust burns sulfur, and the FAA's chief scientist has a report out that notes that jet fuel creates 11 toxic chemicals and jets that fly over Charbonneau are raining some of those sulfur compounds down on us. The overflight isn't just noise, and I'd love to address that at the next meeting. | There are ongoing nationwide efforts that the FAA, in coordination with the Environmental Protection Agency (EPA), is undertaking to address leaded fuel use in aviation and also emissions from jet exhaust. The purpose of these efforts is to investigate fuel alternatives to reduce emissions and the presence of lead in aviation fuel. More information is available at:  https://www.faa.gov/airports/environ mental/air_quality  |
| 2.20   | Aron Faegre        | AABC/TLM<br>Holdings   | Ted asked that I add to the record that the development at the airport  | No response needed.   |

| Aurora | State Airport Mast | er Plan – Planning         | Advisory Committee (PAC)  |                     |
|--------|--------------------|----------------------------|---|---------------------|
|        |                    |                            | puts taxes into the public sector. According to the Marion County tax record, that is almost 2 million a year. Almost \$800,000 of that goes to North Marion County School District, and \$300,000 goes to Aurora Fire. There is strong support of community from the airport, so it's good to keep that in mind. |                     |
| 2.21   | Bruce<br>Bennett   | Improvement<br>Association | The helicopters burn fuel that has no lead in it. The trace amounts mentioned earlier are piston engines, not helicopters.  | No response needed. |

# **Public Comment**

| ID   | Name             | Affiliation         | Question/Comment  | Response   |
|------|------------------|---------------------|---|--|
| 2.22 | Nancy Davis      | Community<br>member | I live in Charbonneau, and I'm concerned about the noise. I'm also concerned there will be increased traffic on our roadways with the flight increase. It also seems like the flight paths go directly over our homes. Could the planes and helicopters fly over open space or fields instead of coming over our houses? Can rules or time limits be imposed? There are busier airports that have restricted hours. | Noise will be evaluated in the master plan based on the current and forecast activity from the FAA-approved forecasts.  Flight paths, once the aircraft have left the ground, are the responsibility of the pilot in command of the aircraft and directions from Air |
| 2.23 | Steven<br>Benson | Community<br>member | I live in Daydream Ranch and didn't get a copy of the working paper. It seems the forecast shows an increase of air traffic and jets are projected to increase. I'm concerned   | The forecasts of aviation activity are not constrained and not dependent on airport expansion. The current activity is within the capabilities of the airport. We will be evaluating any future activity or facility needs   |

| Aurora | State Airport Mast        |                                       | the same size, or more airport builds  |  |
|--------|---------------------------|---------------------------------------|--|--|
|        |                           |                                       | and development?   |  |
| 2.24   | Traci<br>Hensley          | •                                     | I also think a noise study should be a part of this process.   | A noise study is included as part of this Airport Master Plan.   |
| 2.25   | Mayor Julie<br>Fitzgerald |                                       | airport helping schools. That is very important to me and everyone in Wilsonville. I'm concerned about transportation around the airport, and I want to recognize that jobs are so important in keeping our freight moving. We have 21,000 jobs and combined payroll of \$1.3 billion. We are developing some industrial land and managing the facilities on that land. We want to make sure freight keeps moving for Oregon's economy. I'm concerned about the expansion of facilities at the airport which would increase traffic. We have unimproved roads approaching the airport. We want to keep supporting the economy and schools, but I want to know how this will be addressed for safety. | proposed development is shown to have a significant impact on local transportation facilities, mitigation projects may be a condition of approval for the project.   |
| 2.26   | Nancy CS                  | member                                | In late February, one of the HTS helicopters passed over my field and dumped fluid on it. This has happened before, and it's wrong. I also have it on film, and others have seen it. I also have read decibels going from 90-105 for an extended period of time. This can impact hearing, and no one should be exposed to that at home. I can't have   | State Airport. ODAV has no authority to control how they operate their aircraft. If you have noise or concerns with impacts to your property contact HTS directly or Marion County code enforcement.  If you have safety concerns you can also contact the Portland FAA Flight Standards District Office (FSDO) at (503) 615-3200. |
| 2.27   | John Rankin               | Attorney for<br>the City of<br>Aurora | properties of about 108 acres. All but one are rural inside the growth boundary of the City of Aurora. They are south and east of Keil Road, and they will be impacted by expansion and development of the airport. We have had several interested parties   | Requirements and Development<br>Alternatives. If land adjacent to the  |

| Aurora | State Airport Mast | er Plan – Planning | Advisory Committee (PAC)              |  |
|--------|--------------------|--------------------|---------------------------------------|--|
|        |                    |                    | businesses and contractors. My        |  |
|        |                    |                    | clients have property that could be   |  |
|        |                    |                    | dedicated or sold for taxiways and    |  |
|        |                    |                    | that sort of thing. I have done work  |  |
|        |                    |                    | with different agencies regarding the |  |
|        |                    |                    | future vacation of Keil Road.         |  |
| 2.28   | Kriss Wright       | Planning           | My father lives next door to the      | On-site utilities will be evaluated in |
|        |                    | Commissioner,      | airport and our water line was        | the Development Alternatives task in   |
|        |                    | City of            | breached by a fire truck. I have not  | the master plan.                       |
|        |                    |                    | seen any fire hydrants around the     |  |
|        |                    |                    | airport. Infrastructure is needed for |  |
|        |                    |                    | that, especially since airplanes are  |  |
|        |                    |                    | flying over residential areas.        |  |

# Written Public Comment<sup>7</sup>

| ID   | Name              | Affiliation         | Question/Comment  | Response  |
|------|-------------------|---------------------|---|---|
| 2.29 | Wayne<br>Richards | Community<br>member | First, sending an 83 page detailed document to us the night before this meeting is not a good start for you.  | Thank you for your comment; we've shared your concerns with the technical team. |
|      |                   |                     | Second, allowing ten minutes for public comment with two minutes each allowed will only let five people speak! I understand that there are rules about everyone wishing to speak be allowed to.   |   |
|      |                   |                     | Health and wellbeing are an important part of livability.   |   |
|      |                   |                     | According to the a report by the US Department of Health and Human Services Agency for Toxic Substance and Disease Registry, The toxicity of lead in humans has been known for 2000 years, and is not disputed.   |   |
|      |                   |                     | On the Aurora State Airports voluntary agreement with our community regarding overflights, they said they would make the effort. Over the last 12 months, just on Flight Aware, there were over 4,500 flights directly over Wilsonville spewing lead from their reciprocating engines. There is a reason we don't use lead paint, lead water pipes and leaded gasoline. |   |
|      |                   |                     | Jets. Jet exhaust is even more toxic. Sulfur in jet fuel is a major killer. The FAAs own Lourdes Maurice (the administration's chief scientist) notes that jet fuel creates 11 toxic chemicals in their exhaust.  |   |

 $<sup>^{\</sup>rm 7}$  Letter was sent before the meeting. PAC #2 Meeting Summary

| Aurora State Airport Master Plar | n – Planning Advisory Committee (PAC)   |  |
|----------------------------------|---|--|
|                                  | The noise is clearly a form of pollution from the Aurora State Airport and is documented as a health hazard   |  |
|                                  | They're known as "Forever Chemicals". Whenever fire suppressant foams (as one example) are used (for instance) it stays in the environment forever. These PFAS (polyfluoroalkyl) are in our environment now. Like lead, they do not disintegrate. PFAS are known to cause serious health problems in humans (heightened cholesterol as well as thyroid and immune system disorders) |  |
|                                  | Safe is their goal? What's safe about this.   |  |