Electric Aircraft Feasibility Study

Next Steps

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Planning for the Next Aviation Revolution

- Electric aircraft are flying today and new companies are entering the market every day
  - Approximately 215 models under development

- WSDOT completed a one year consultant led study on the potential impacts of electric aircraft for Washington State in November 2020

- This technology has the potential to open up new markets for air travel while reducing greenhouse gas emissions

- Planning for implementation of electric aviation is key to successful adoption
Electric Aviation in Washington

Washington State could become the epicenter for electric aircraft

- **Development**
  - magniX, headquartered in Redmond, is developing the next generation of aircraft propulsion with its electric engines

- **Testing**
  - AeroTEC is currently flight testing a Cessna Caravan converted to electric propulsion with a magniX engine at Grant County International Airport in Moses Lake

- **Manufacturing**
  - Recently announced that Eviation plans to assemble the Alice at Arlington Municipal Airport
    - Alice utilizes the magniX engines
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- **Study Areas of Emphasis**
  - Identification of current and projected airport infrastructure improvement needs to accommodate electric aircraft
  - Evaluation of projected economic impact resulting from increased access to air transportation
  - Demand forecasting for electric propulsion regional passenger air service in Washington State
  - Appraisal of potential environmental impact and emission reductions
  - Identification of six airports to support beta test of electric aircraft
    - Grant County International
    - Olympia Regional
    - Boeing Field/King County International
    - Spokane Felts Field
    - Yakima Air Terminal
    - Chehalis Centralia Municipal
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- eA has potential to increase flight activity
  - Leading to economic growth supporting jobs and creating business revenues
- Anticipate air taxi & commuter operations ~ 2025, with dramatic growth after 2032
  - Until larger passenger aircraft are viable, airline operations will not see as much growth
- Aviation represents 0.46% of emissions in Washington State and 2.4% of global CO2 emissions which is projected to increase
  - Electric aircraft could help reduce both aviation emissions and noise
- Electric propulsion is key for Advanced Air Mobility prototypes (think Jetsons)
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• Batteries will initially limit the size of all-electric aircraft
  – Small regional aircraft
  – Air taxis
  – Advanced Air Mobility
• Larger aircraft will most likely be powered with combustible fuels for quite some time
  – Aircraft produced today will be flying through 2040
• A more sustainable path forward could include powering aviation with:
  – Sustainable Aviation Fuel
  – Electric Propulsion
  – Hydrogen Fuel Cells
Moving Forward

What is next for electric aircraft in Washington?

• Continue the work of the Electric Aircraft Working Group (EAWG) to maintain dialog with industry stakeholders
• Include electric aircraft in WSDOT Aviation Planning efforts
• Work with airports to include electric aircraft in Master Plan Updates
• Work with the National Association of State Aviation Officials (NASAO) and other federal partners to advance and fund electric aviation on a national level
• At the right time fund infrastructure projects at the selected Beta Test Airports
What is next for electric aircraft in Washington?

- Encouraging airports to electrify other functions
  - Electric ground support equipment
- Local governments need to consider Advanced Air Mobility (AAM) in their planning processes
  - Review current land use ordinances to facilitate new aviation technology
  - Early planning will help communities be ready for AAM
- On airport power generation
  - Solar, wind, etc.
- Considerations for industry incentives
- As demand for air service increases, sustainable practices will help public acceptance of airports
Questions?

For more information on the Electric Aircraft Feasibility Study, please contact:

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