NASA Air Mobility Pathfinders (*AMP*) Project

2023 AUVSI AAM Exposition

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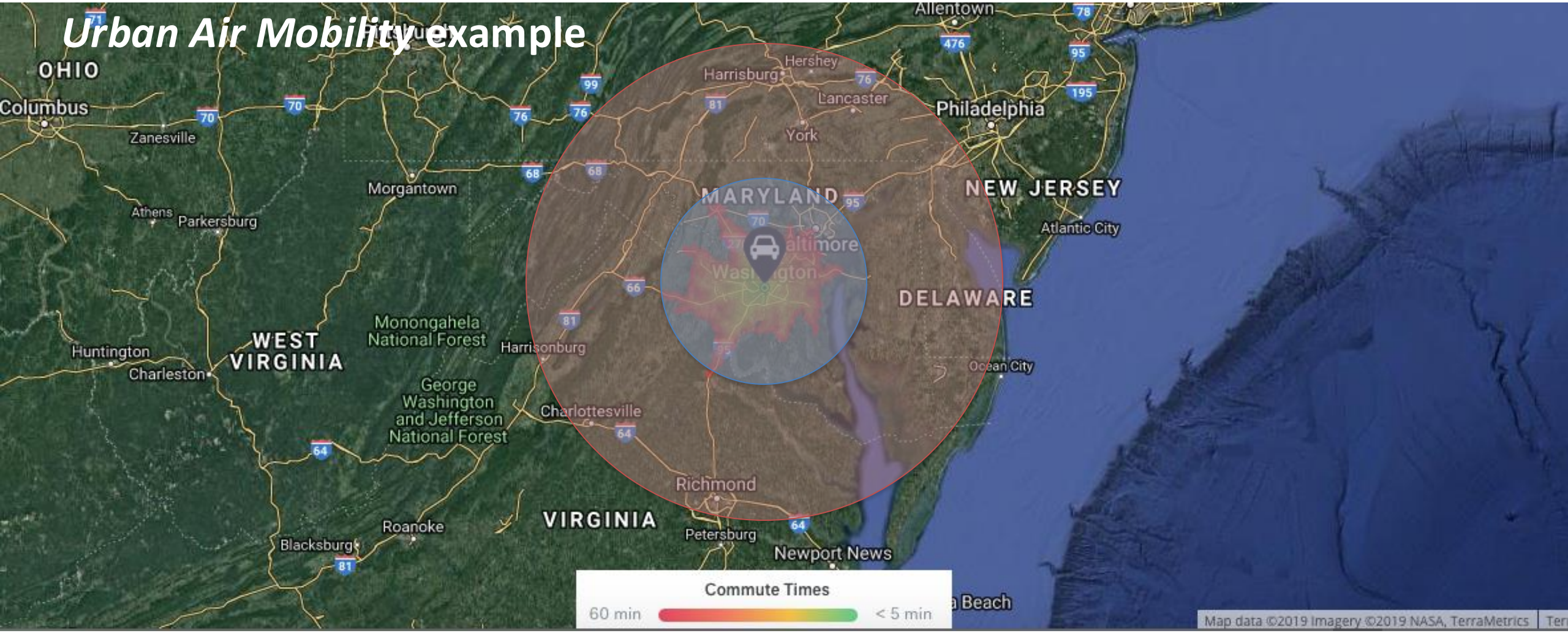
Why? Mobility Increases Quality of Life



24 hr weighted average
60 minute driving commute

Any time of day
~30 minute total commute
(~40 mi radius)

Any time of day
~60 minute total commute
(~100 mi radius)

Call to National Action on Advanced Air Mobility

Grow new transportation options

New modes of transportation available to the public which integrate with existing modalities and saves significant time

Advance environmental sustainability

Focus on electric powered thrust reduces carbon emissions for air travel and reduces dependency on fossil fuels

Amplify economic activity & jobs

Numerous estimates indicate potential for greater than $100 billion U.S. annual revenue with large new job creation

Support emergency preparedness

Novel air vehicle alternatives allow for increased intelligence for emergency prepared, response and robustness

Advance new technologies

Significant investments across industry and government require innovation and maturation of latest technological solutions

Support U.S. competitiveness

New vehicle development, communications, Cybersecurity, autonomy & economic growth increase global competitiveness

The U.S. AAM Leadership & Coordination Act Provides Six Motivations for National Action

AMP, Pathway From Initial Ops to Scalable, Reliable Mobility

- Initial Scalable Urban Air Mobility Operations
  - >100 aircraft aloft, >10 vertiports, capacity for continued growth
  - Any city, not just ones with favorable weather
    - Low/no-visibility operations
    - Other types of weather tolerance
  - Flexible routing between vertiports
  - High tempo vertiport ops.
  - Human bottlenecks eased (pilot, ATM)
  - Compatible CNSI infrastructure
- Significant technical & regulatory challenges
  - Practical, certifiable, community compatible aircraft
  - Vertiports and other infrastructure
  - Flight procedures, including low-visibility ops
  - Traffic management & integration into airspace system
  - Pilot responsibility, qualifications
  - Interoperability of piloted and remotely pilot aircraft

AMP's Contributions

Challenge	Approach	
Challenge to gain stakeholder consensus on a common vision, roadmap & plan for NAS evolution	Work with a broad range of stakeholders toward common reference architectures for UAM at scale	**UAM Concept and Requirements** 
Solutions toward mature operations must progressively build out scalable architectures from existing NAS capabilities	Evaluate midterm thru mature UAM concepts that scale from current day NAS capabilities through simulation	**UAM Prototypes & Simulation** 
Lack of performance data and capabilities complicates integration of new entrant vehicles into the airspace system	Develop methods to evaluate emerging eVTOL aircraft configurations & airspace integration	**UAM Vehicle Modeling, Test & Evaluation**