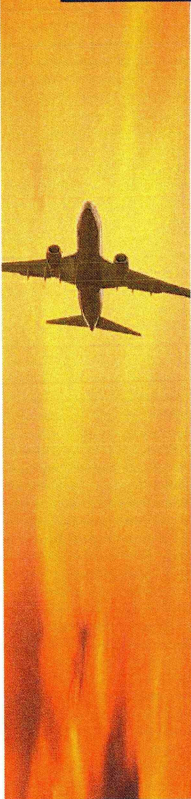
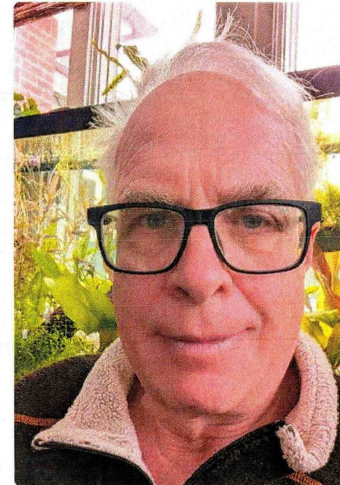


A Collaborative Approach to Procedure Design: A Case Study from Baltimore-Washington International Airport

Session Chairs: Bert Ganoung, Cindy Gibbs, and Gregory Maxwell



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Compliance and Sustainability*



Drew Roth
BWI Roundtable



Session Slido Code:
1225077



Ongoing work

- Analysis of community impacts from extended runway closures. Closures cause runaway usage which is not the typical east or west flow.
- Moving management of independent modeling from county funding to state funding.
- Identifying an appropriate state agency to be a long-term home, and formalizing the technical oversight role of the Roundtable.

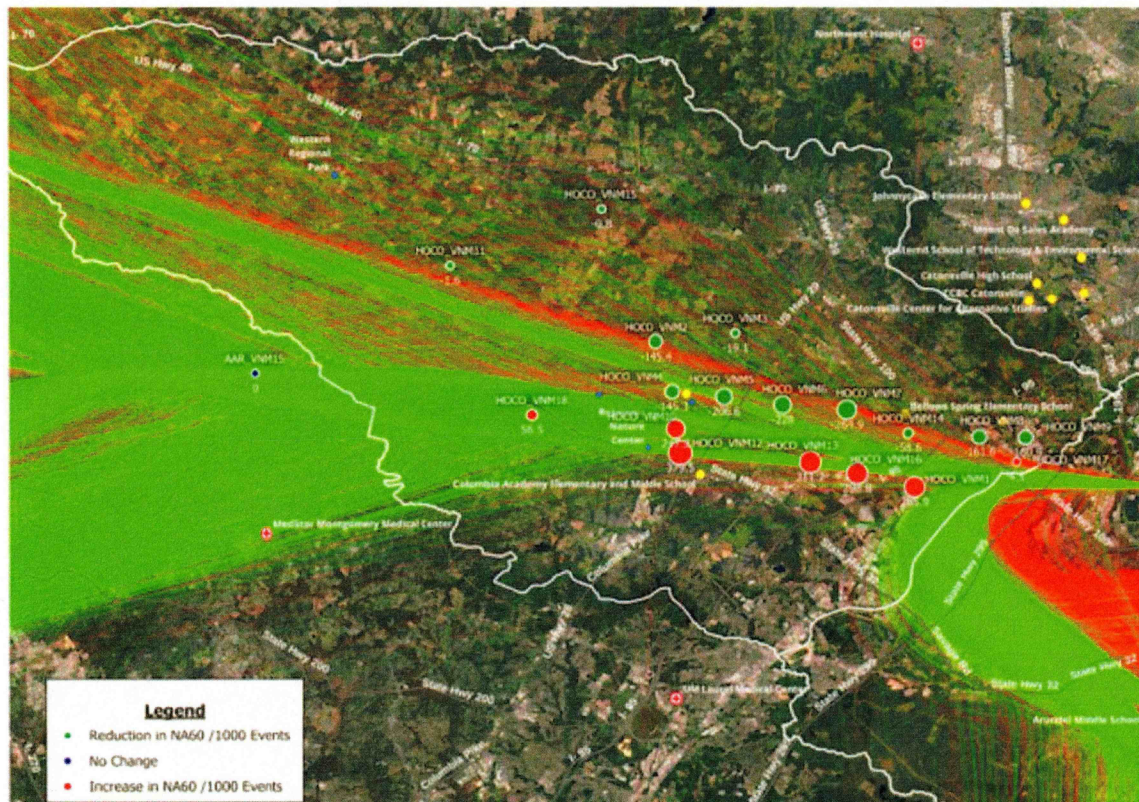
Results

- Independent modeling confirmed that the new procedures match was was predicted by the MAA's modeling
- Breaking out East and West flows by arrival and departure offered new insights.
 - Departures create more community annoyance than arrivals.
 - Impacts on communities under East or West flow operations are significantly higher than DNL shows, due to the averaging of quiet periods when the other flow is used.
 - Community annoyance for outlying areas (5-10+ miles out) correlates with NA data.
- It is easier to address community concerns with this modeling data.
- This modeling data enhances our credibility with government stakeholders.
- We did miss a significant new community impact created by the new procedures. In retrospect, we didn't put a landmark virtual noise monitor where we should have.

Number Above 60 Db Events (NA60) Normalized *Howard County – Landmark Locations Only*

West Flow
Departures
Runway 28

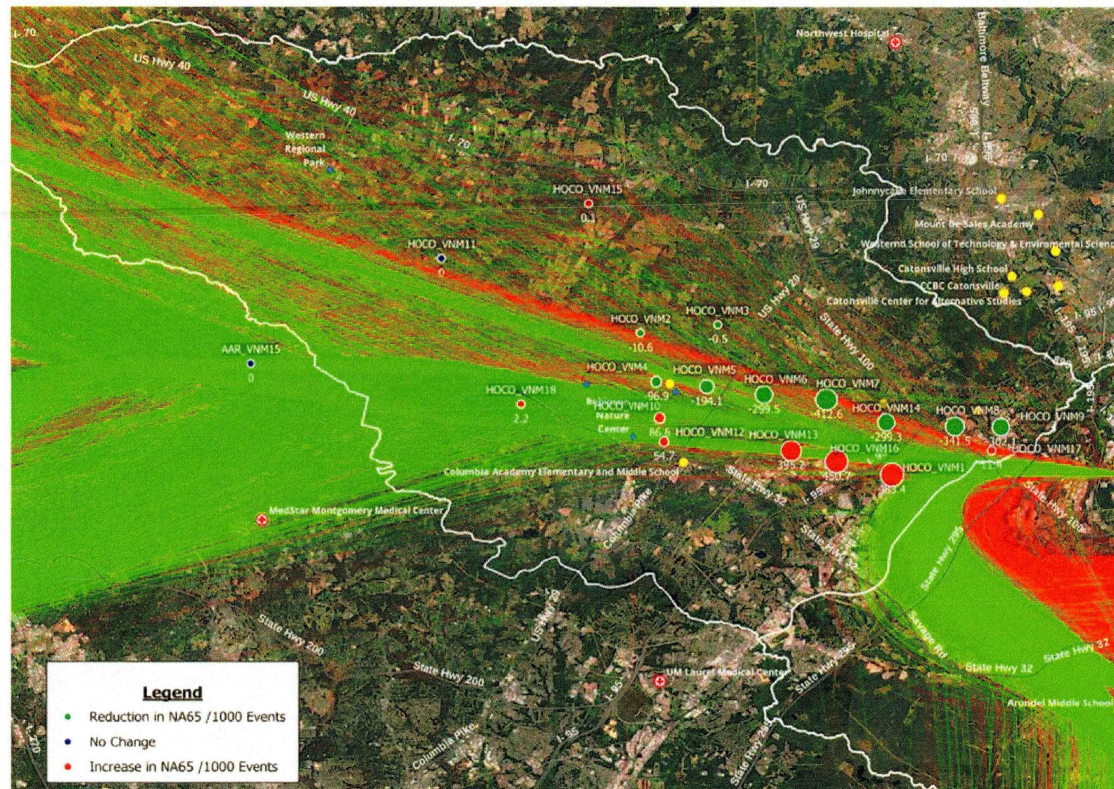
23-24



Number Above 65 Db Events (NA65) Normalized Howard County – Landmark Locations Only

West Flow
Departures
Runway 28

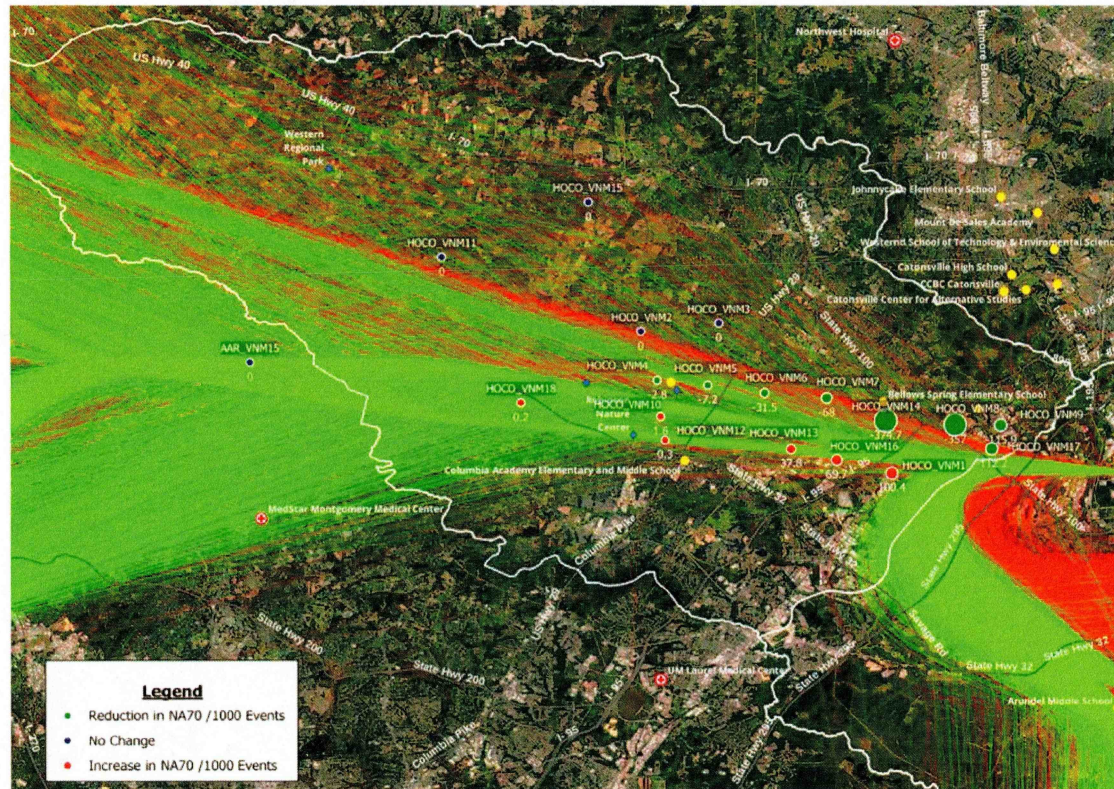
23-24



Number Above 70 Db Events (NA70) Normalized Howard County – Landmark Locations Only

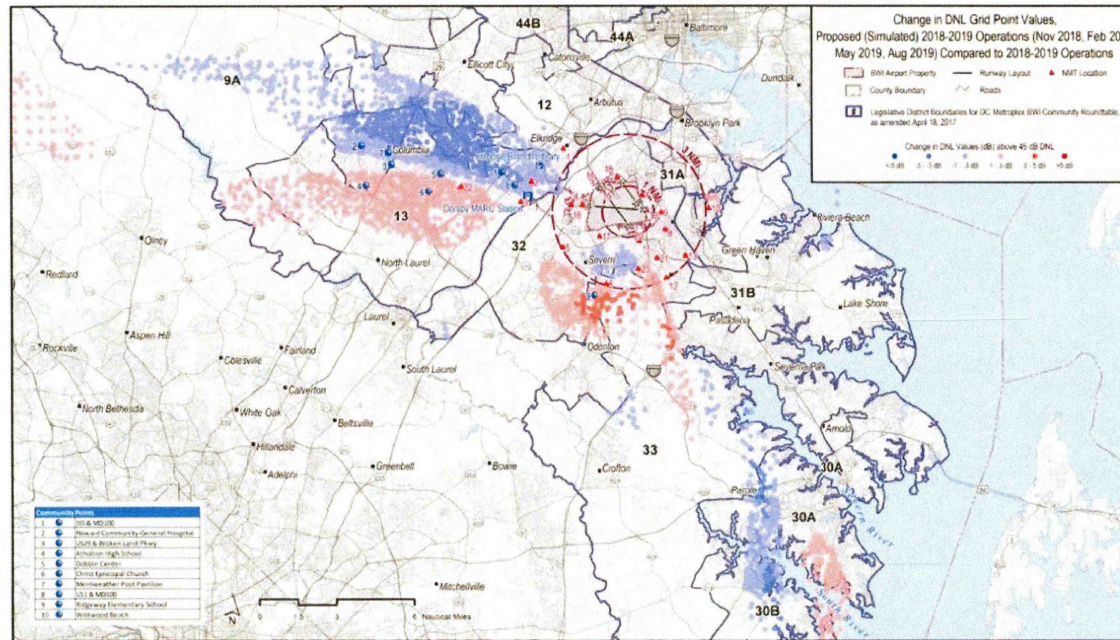
West Flow
Departures
Runway 28

23-24



Predicted Outcome from the 2019 Proposal

Modeled DNL Grid Points – 2018-2019 Proposed **(Simulated)**
Compared to 2018-2019



Pre-Decisional: For informational purposes only



Questions asked by the Roundtable

- The Main question was the difference before and after implementation of the flight procedure changes in 2024.
- A Secondary question was to identify opportunities for further reduction of community impact.
- Data was quarterly periods, before and after procedure changes.
- Metrics were DNL (for comparability with MAA modeling) and NA45 to 75.
- Data was analyzed separately for all combinations of East Flow, West Flow, Arrivals and Departures.
- Data was generated for “Virtual Noise Monitors”, at both grid points and community landmarks chosen by the Roundtable.
- There was some iterative learning here, e.g. discovering NA data needs to be normalized by the number of flights.

Interactions with Vianair, the consultant.

- The Roundtable got local county governments (Howard and Anne Arundel) to fund the Vianair modeling effort, circa 2023. Howard County manages the contract.
- The MAA agreed to share data with Vianair.
- The Roundtable acts as technical advisors under the contract. The Roundtable proposed contract requirements, and which modeling and analysis questions are asked of Vianair.
- The BWI Roundtable, having several members with federal government acquisition experience (and pilots!), is well suited for this role.

The value of independent modeling and analysis

- Early on, the MAA would decide what questions would be answered by modeling - Roundtable felt questions were chosen to justify a predetermined outcome. The MAA is *much* more collaborative now.
- MAA modeling had always been focused on regulatory compliance. Only modeling metric was DNL, because that's what regulations called for.
- BWI has two operating modes - East Flow and West Flow, determined by weather. Roughly $\frac{1}{3}$ East Flow, $\frac{2}{3}$ West Flow. DNL averages the flows together, which obscures the community impact of a particular flow.
- The Roundtable wanted analysis of community impacts, with each operational flow measured separately, using the Number Above metric.
- The Roundtable had Vianair, our independent consultant, do NA metric separately for departures and arrivals for both flows.

The BWI Roundtable

- The FAA requested that the MAA create a Community Roundtable in 2017
- Community Members are chosen by State Senators from legislative districts near the airport.
- The Roundtable, at the very start, adopted the overarching goal of reverting to the situation prior to Nextgen implementation, while acknowledging that technology changes have made full reversion impossible.
- A corollary to that goal is the Roundtable will not move noise from one community to another, unless it is reversion to the pre-Nextgen state.
- The Roundtable went through a maturation process.
 - Initial focus was on raising awareness of the issue.
 - Focus shifted to achieving realizable improvement.
 - Current focus is on assessment of results, review of potential future issues.

BWI Roundtable

Aviation Noise and Emissions Symposium

March 9-11
Las Vegas, NV