

*FAA NEXTGEN AND THE 2012  
TO 2015 “OPTIMIZATION OF  
METROPLEX AIRSPACE”*

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## I. Introduction

In March 2015, Palo Alto experienced a dramatic increase in aircraft noise. The flights were more frequent, lower and louder. Like many communities around the country, we were part of a fast-track FAA program, the redesign the San Francisco Bay Area airspace.

According to the FAA, this “Optimization of Airspace and Procedures in the Metroplex” (OAPM) was part of “NextGen,” the FAA’s effort to modernize management of the U.S. air transportation system. The purported goals for metroplex airspace redesign were to improve efficiency and safety, reduce fuel consumption and decrease environmental impacts, including noise. In the end, however, this program was mostly about increasing airport capacity by reducing separation between planes for arrivals and departures and by creating “simpler” (i.e., straighter) arrivals and departure paths. This has increased noise on the ground dramatically, well beyond what volumes alone would suggest. Some of the goals, like concern for the environment, appear to be mostly program packaging for public consumption, and have not been born out in NextGen performance metrics nor do they comport with general airline industry environmental policy.<sup>1</sup>

Many have experienced NextGen in their skies and know its effect on their well being. The intention of this document is to provide a factual history of how all this happened, from the perspective of those individuals on the ground<sup>2</sup> and from the perspective of taxpayers who are paying over one billion per year,<sup>3</sup> or \$49 billion in total, for NextGen (via airline ticket fees and federal income taxes.<sup>4</sup>)

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<sup>1</sup> U.S. airlines, led by its primary lobbying organization, Airlines for America (A4A) successfully excluded air travel from the Paris Climate agreement, and used their influence to pass the European Union Emission Trading Scheme Prohibition Act of 2011, forbidding U.S. airlines from participating in the EU’s Emissions Trading System. Nancy Young, A4A’s vice president for environmental affairs, and a participant in defining NextGen’s noise standards, has led a multi-year effort against any and all carbon regimes, with the one exception of reducing carbon emissions by making arrivals and departures from crowded metroplex airports as direct, straight and low as possible. See “Your Biggest Carbon Sin May be Air Travel,” New York Times, Elizabeth Rosenthal, Jan. 26, 2013; and “Emissions in the EU: US Vilifies Carbon-Trading Scheme for Airlines,” Spiegel Online International, July 28, 2011.

<sup>2</sup> The FAA includes airlines, airports, aviation equipment and service providers, the general aviation industry, pilots (private and commercial), air traffic controllers, aviation related unions, and other government agencies (such as DOD, NASA and DHS) as official “stakeholders” in the NextGen program and in its NextGen planning meetings and considerations, but does not include individuals, in spite of the dramatic effect this program has had on tens of thousands across the country.

<sup>3</sup> Testimony of Michael Huerta, (then) Acting Administrator, FAA, Hearing on “A Review of and Update on the Management of FAA,” Hearing before the Subcommittee on Aviation, September 2, 2012, p. 27.

<sup>4</sup> NextGen: A Review of the RTCA Mid-Term Implementation Task Force Report, Hearing before the Subcommittee on Aviation, Oct. 28, 2009, p. 19.

## II. Metroplex Redesign – NextGen’s “Plan B” or “NowGen”

The FAA and others have expended considerable resources to communicate and market their grand vision for NextGen as “a comprehensive program to modernize U.S. airspace.” However, what we and many others are experiencing is not this NextGen. Instead, what we are experiencing is a Plan B, the “Mid-term”<sup>5</sup> re-start of NextGen. This **Plan B restart, or “NowGen,”** as one Government Accountability Office (GAO) report<sup>6</sup> described it, **was created by the airline industry for the FAA and focused almost entirely on a fast-track program to open metroplex airspace.**

The original NextGen program – the comprehensive modernization of airspace management – was initiated by executive order in 2000, and funded in 2003 as part of Vision 100 – Century of Aviation Reauthorization Act.<sup>7</sup> Over the next decade, the program missed one deadline after another<sup>8</sup> and continuously exceeded budgets by a wide margin.<sup>9</sup>

By 2009, the airlines and their lobbies, including Airlines for America (A4A) and the RTCA,<sup>10</sup> had had enough. They complained to Congress and the administration that NextGen had reached the “Mid Term” of its life, had cost them money, but had not benefited them or met their business needs. (The Air Transport industry spends about \$72m per year in reportable

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<sup>5</sup> The NextGen “Mid-Term” period is generally 2013 to 2018, with the Initial Term being 2003 to 2013 and Maturity Term being 2019 to 2025, or later.

<sup>6</sup> “NextGen Air Transportation System, Issues Associated with MidTerm Implementation”, Dr. Gerald Dillingham, General Accountability Office, March 25, 2009, p. 10; and “NextGen: A Review of the RTCA Mid-Term Task Force Report,” Hearing before the Subcommittee on Aviation, Oct. 28, 2009, pp. 11-12.

<sup>7</sup> Public Law 108-176, Dec. 12, 2003 “Authorized FAA to create the performance-based Air Traffic Organization to administer and improve FAA’s management of air traffic control. This included the creation of the Joint Planning and Development Office (JPDO) housed within the FAA, to plan for and to transition to NextGen – envisioned as a move from largely ground-based radars to precision satellite-based navigation and including digital, networked communications, an integrated weather system; layered, adaptive security, and more.”

<sup>8</sup> The NextGen Tech Center in Atlantic City NJ has repeatedly failed to deliver field-ready NextGen systems, but it is defended preemptively in hearings as a “force multiplier” by Congressman Frank LoBiondo, chair of the House Subcommittee on Aviation, who also represents Atlantic City. See “NextGen: A Review of the RTCA Mid-Term Implementation Task Force, Subcommittee on Aviation”, House Committee on Transportation and Infrastructure, Nov. 28, 2009, p. 23.

<sup>9</sup> The FAA’s original budget estimate for NextGen from 2002 to 2025 was about \$40 billions; updated estimates for this program are up to \$150 billion. See Addressing Underlying Causes for NextGen Delays Will Require Sustained FAA Leadership and Action, Office of Inspector General, Audit Report, AV-2014-031 February 25, 2014, p. 9

<sup>10</sup> RTCA is the Radio Technical Commission for Aeronautics, and was established in 1935 to coordinate airline technical and operating standards. In Task Force 5, the RTCA moved beyond coordinating technical standards to coordinating the economic benefits they expected to receive from NextGen, including incentives, under that auspices of “policy coordination.”

money on lobbying.<sup>11)</sup> With Congressional backing<sup>12)</sup>, the airlines, simultaneously campaigning on the side to have air traffic control (ATC) privatized,<sup>13 & 14)</sup> played hardball, and won a charter from the FAA in January 2009 to develop their own Mid-Term plan for NextGen. They quickly assembled a team - Task Force 5 (TF5) – under the auspices of the RTCA, and produced a plan in 9 months.

### III. RTCA Task Force 5 and the NextGen Mid-Term Implementation Report

This RTCA Task Force 5 plan dispensed with the FAA’s grand vision of air space modernization.<sup>15)</sup> Instead, it focused on initiatives that could be implemented quickly, would provide immediate benefits to the airlines, and used existing technologies.<sup>16)</sup> The RTCA exists to enable the airlines to collaborate on joint technical studies and to set technical standards, but Task Force 5 went beyond this and included “for the first time, financial expertise,”<sup>17)</sup> and the

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<sup>11)</sup> Source: Air Transport, Industry Profile: Summary: 2015, OpenSecrets.Org at <https://www.opensecrets.org/lobby/indusclient.php?id=M01>

<sup>12)</sup> In a 2009 Congressional hearing, Mr. Costello, the chair of the House Subcommittee on Aviation complimented Hank Krakowski, FAA COO, and Peggy Gilligan, FAA Associate Administrator, for commissioning the RTCA, stating “they did exactly the right thing, what all the stakeholders [airlines] and what we wanted them to do.” NextGen: A Review of the RTCA Mid-Term Implementation Task Force, Sub Committee on Aviation, House Committee on Transportation and Infrastructure, Nov. 29, 2009, p. 1. (of actual hearing)

<sup>13)</sup> While asserting that they were not calling for FAA Administrator Huerta’s or Chief NextGen Officer Bolton’s resignation (as they had for previous FAA leaders), the AFA Congressional testimony continues to focus on privatization: “**Our work to date leads us to believe that a commercialized, non-profit type governance structure would deliver the greatest benefits for a reformed ATC entity**”. Air Traffic Reform (ATC) Solutions, Statement of Douglas Parker, U.S. House of Representatives Committee on Transportation and Infrastructure, Subcommittee on Aviation, March 24, 2015. This is not an idle threat, Canada privatized its air traffic control service successfully in 1996.

<sup>14)</sup> “FAA Reauthorization: Issues in Modernizing and Operating the Nation’s Airspace”, Testimony of John Engler, President, Business Roundtable, Transportation and Infrastructure Committee, Nov. 18, 2014.

<sup>15)</sup> In an important exchange between Congressman Corbel in a 2009 Aviation Sub Committee hearing on the RTCA Task Force NextGen recommendations, the Department of Transportation’s Inspector General, Scoval, testified that, “**the Task force recommendation don’t speak to the longer NextGen vision**”. This is followed by a question by Congressman Corbel to RTCA president Jenny in which he asks, “**Since [the TF5 report] focuses on maximizing capabilities from existing equipage, the recommendations are not really about NextGen**”? Ms Jenny replies that it isn’t new infrastructure that matters, “what you need to go do to get the benefit is implement new procedures, train pilots and controllers, **possibly change the way airspace is designed**’. NextGen: A Review of the RTCA Mid-Term Implementation Task Force, Subcommittee on Aviation, Committee on Transportation and Infrastructure, Nov. 28, 2009, p. 22.

<sup>16)</sup> See e.g., “Summary of Subject Matter”, Hearing on “NextGen: Review of the RTCA Mid-Term Implementation Task Force Report,” Subcommittee on Aviation Staff, Subcommittee on Aviation, House Committee on Transportation and Infrastructure, Oct. 29, 2000, p. 7.

<sup>17)</sup> Testimony of Margaret Jenny, RTCA president and co-chair of Task Force 5, NextGen: A Review...Nov. 2009, p. 6; Testimony of Dr. Agam. Shiha, MITRE Corporation, NextGen: A Review of the RTCA Mid-

direct participation of airline CFOs as gatekeepers to determine what programs would provide the most immediate financial benefits to the airlines.<sup>18</sup>

With Congress blessing this new hard-nosed business approach – one effusive Congressman on the Aviation Subcommittee calling it “BestGen”<sup>19</sup> – the airlines were very specific in demanding what they wanted, a program they initially called the “metroplex initiative.”<sup>20</sup>

Their primary demands were: 1) to land more planes per hour at metroplex airports by reducing in-tail, runway, wake and other separation standards, 2) to gain simpler and more direct ingress and egress routes via metroplex airspace redesign<sup>21</sup>, and 3) to be given incentives, in the form of subsidies to buy the navigation “equipment” to enable reduced separation in crowded metroplex airspace.<sup>22</sup>

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Term Implementation Task Force, Hearing before the Subcommittee on Aviation, Committee on Transportation and Infrastructure, Oct. 28, 2009, p. 12.

<sup>18</sup> Summary of Subject Matter, NextGen: A Review of the RTCA Mid-Term Implementation Task Force Report, Hearing before the Subcommittee on Aviation, Committee on Transportation and Infrastructure, Oct. 28, 2009, p. ix.

<sup>19</sup> NextGen: A Review of the RTCA Mid-Term Implementation Task Force Report, Hearing before the Subcommittee on Aviation of the Committee on Transportation and Infrastructure, House of Representatives, Oct. 28, 2009. P. 28.

<sup>20</sup> Memorandum from Thomas E. Petri, Chairman, Hearing on “A Review of and Update on the Management of FAA,” Subcommittee on Aviation, Sept. 2, 2012, p. 4.

<sup>21</sup> During a Nov. 2009 hearing on NextGen, former Congressman Jim Oberstar asked James May, president of the Air Transport Association, “What parts of NextGen are going to be the most valuable to commercial aviation? Continuous glide paths, for example, climb out procedures, not having to do the step down?” Mr. May responded, “[I]f we are going to have positive benefits...its going to have to start with New York airspace redesign.” He then added parenthetically, the “best way to way to jumpstart this process is to fund the equipment for all aircraft”. Source: NextGen: A Review of the RTCA Mid-Term Implementation Task Force Report”, Subcommittee on Aviation Staff, Subcommittee on Aviation, House Committee on Transportation and Infrastructure, Oct. 27, 2009, p. 49.

<sup>22</sup> While the airlines requested and received financial incentives, almost all of the commercial fleet already included ADS-B, about the only new equipment required to implement the TF5 initiatives. “ITT Awarded FAA Contract for Air-Traffic Control System”, Del Quentin Wilber, Washington Post, Aug. 31, 2007.

In subsequent Congressional testimony, Margaret Jenny, the president of the RTCA and co-chair of TF5, listed the Task Force’s “four critical overarching recommendations:”<sup>23</sup>

- “Eliminate current separation buffers,
- Streamline operations approval processes [i.e., expedite environmental and other approvals,]
- Incentivize equipage, and
- Use the RTCA mechanism to plan and implement NextGen going forward.”<sup>24</sup>

It is important to note that the TF5 recommendations did not include acceleration of NextGen’s “foundational” systems, ones that would actually modernize U.S. airspace management, but focused on “mature” technologies at specific “high-benefit locations” (metroplexes) that could be implemented quickly via “tiger teams.”<sup>25</sup> In other words, the industry wanted to fast-track new metroplex access procedures, without deploying the advanced systems the FAA had envisioned to enable noise dampening capabilities like continuous descent at idle to the runway. (The FAA continues to sell NextGen as including “quiet descents at flight idle” to touchdown, but these capabilities were not delivered in the rushed metroplex redesigns.)

TF5’s plan to increase airport throughput mostly involved the recategorization (or “ReCats”) of FAA safety “minima” such as wake turbulence separation; bad weather separation; low visibility/ceiling separation; closely spaced, parallel, independent and dependent runway separation; in-tail, vertical and horizontal separation; etc. – not new technologies.<sup>26</sup> **The**

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<sup>23</sup> Testimony of Jenny Margaret, President, RTCA Inc., NextGen: A Review of the RTCA Mid-Term Implementation Task Force Report, Hearing before the Subcommittee on Aviation of the Committee on Transportation and Infrastructure, House of Representatives, Oct. 28, 2009, p. 7.

<sup>24</sup> Ibid.

<sup>25</sup> Testimony of Dr. Agam. Shiha, MITRE Corporation, NextGen: A Review of the RTCA Mid-Term Implementation Task Force, Subcommittee on Aviation, Committee on Transportation and Infrastructure, Nov. 28, 2009, pp. 12 - 14.

<sup>26</sup> “NextGen Integration Working Group Final Report, Approved by the NextGen Advisory Committee October 2014,” RTCA, Oct 2014. p. 14 and p. 18. Benefits from these “ReCats” are described in the RTCA’s NextGen Integration Working Group Final Report in 2104 at p. 15: “**The Multiple Runway Operations and Separation Management** capabilities recommended in this report will provide benefits **via increased arrival and/or departure capacity** and throughput, particularly during less than visual approach weather conditions, and will establish new standards for future parallel runway construction. This will lead to reduced delays, more flight opportunities and better reliability and predictability for the traveling public. These procedures will also reduce cancellations by allowing the airport to maintain visual approach capacity in marginal and poor weather conditions. //Additionally, **the increased capacity available with Wake Recategorization**, which is usable regardless of weather conditions, may enable air carriers to provide additional service to the traveling and shipping public without a degradation of service quality and will provide air traffic controllers with an additional separation tool. //This potential capacity is unrealized today due to legacy separation standards that do not consider advancements in navigation and surveillance, or the improved understanding of wake turbulence transport and decay. These more conservative standards have been used to maintain the target levels of safety and to mitigate collision and wake encounter risk. **The MRO and Separation**

**metroplex changes did not introduce new safety, it compensated for the reductions in separation margins – the purported efficiency gains – by making the procedures straighter, lower and simpler.**

Increasing aircraft density in metro airspace around the country was going to be painful no matter what. The FAA's planned (but did not deliver) a suit of systems and procedures equivalent to painless dentistry. With TF5, the airlines took over and pared the systems necessary to the absolute minimum needed to increase metroplex density, or in the dentistry analogy, they proceeded with just the drill.

Senior members of the Aviation Subcommittee went out of their way to endorse these no-nonsense CEO and CFO<sup>27</sup> recommendations, and told FAA senior management, in no uncertain terms, to get behind this new reality<sup>28</sup>.

#### IV. FAA Modernization and Reform Act of 2012 – Congress micromanages the FAA

The RTCA TF5 recommendations were then incorporated almost verbatim into the the **FAA Modernization and Reform Act (FMRA) of 2012**, under Title II – NextGen Air Transportation system and Air Traffic Control Modernization<sup>29</sup>. The Act was strikingly detailed in its instructions to the FAA. Below are some of the main points of the act:

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**Management capabilities discussed in this report will provide operational benefits to the NAS without requiring additional aircraft equipage and with minimal cost to FAA when compared to other large NextGen programs.**//Additionally, several of the **recommendations will support simultaneous parallel operations at runway spacing's that do not require High Update Rate surveillance.** This will allow FAA to decommission or relocate these facilities to airports where there will be incremental benefits. **These reductions in separation**, in combination with other future Air Traffic Control (ATC) equipment upgrades (TAMR), which include high resolution monitors with alert algorithms such as FMA[Final Monitor Aid – See OIG Jan. 25, 2008 report on integration and cost problems with FMA], will make new airports eligible for higher capacity configurations with existing runway layouts, or in the future with reduced land acquisition requirements. **Note, however, that advanced equipage or decision support tools are not a requirement to realize operational efficiencies associated with these operational improvements.** Lastly, as noted above, reduced separation standards for parallel operations will minimize the cost of future runway and taxiway infrastructure improvements at airports around the country.

<sup>27</sup> Summary of Subject Matter, Hearing on "NextGen: A Review of the RTCA Mid-Term Implementation Task Force Report", Subcommittee on Aviation Staff, Subcommittee on Aviation, House Committee on Transportation and Infrastructure, Oct. 27, 2009, p. ix.

<sup>28</sup> Statements by Mr. Costello, chairman of the House Subcommittee on Aviation to senior FAA administrators, NextGen: A Review of the RTCA Mid-Term Implementation Task Force Report, Hearing before the Subcommittee on Aviation of the Committee on Transportation and Infrastructure, House of Representatives, Oct. 28, 2009, pp. 29 and 63.

<sup>29</sup> Title II – NextGen Air Transportation System and Air Traffic Control Modernization, Public Law 112-95, H.R. 658, FAA Modernization and Reform Act of 2012, Jan. 3, 2012.



§203 and §208 –Named and detailed two new FAA leadership positions to run NextGen, down to their GSA levels and compensation (the Assistant Administrator for NextGen at the time soon resigned,<sup>30</sup> and was replaced by Michael Whitaker, an airline executive, who was given the more senior position of FAA Deputy Director and Chief NextGen Officer<sup>31</sup>),

§209 – Set out detailed meeting and reporting requirements for the “NextGen Air Transportation Senior Policy Committee,”

§211 – Required aircraft to be equipped with ADS-B capability in “capacity constrained airspace” and “capacity constrained airports” by 2020<sup>32</sup> (while directing the metro redesigns to proceed immediately),

§213 – **Mandated the implementation of new airspace procedures** (essentially arrivals and departure routes requested by industry) **at 35 metro airports**, including the following specifics:

(a)(1) Instructed the FAA to publish a report, within 6 months, in consultation with industry (but not citizen groups) defining “procedures to be developed, certified, and published and the air traffic control operational changes to maximize the fuel efficiency **and airspace capacity at each of the 35 metroplex airport**,

(a)(1)(A) Instructed the FAA to “**avoid overlays of existing procedures**” in developing the new procedures. (In many cases, these “overlay” procedures were existing noise abatement routes developed to reduce aircraft noise and emissions on the ground.) And, required that “the Administrator shall clearly identify ... **the reason why such an overlay was used**, “if the FAA believed that an existing “overlay route” should be used, (thus initiating a massive program of noise shifting in communities across the US.)

(a)(1)(C)(II) Required the FAA to create a plan for “**expedited environmental review procedures and processes for timely environmental**

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<sup>30</sup> Meeting Summary of “FAA Report” by Administrator Michael Huerta, NextGen Advisory Committee Meeting, Feb. 27, 2013, p. 3.

<sup>31</sup> Victoria Cox was (a career government official) replaced her deputy, Pam Whitney, who became Acting Assistant Administrator for NextGen. Administrator Huerta then recruited and hired the two new senior leaders as specified in the legislation, first Michael Whitaker, a 20-year airline industry executive (United Airlines and TWA), as Deputy Administrator of the FAA, in June 2013 and, Major General Edward Bolton, a career air force officer with a background in managing large air force missile and space programs, as Assistant Administrator for NextGen, in September 2013.

<sup>32</sup> As discussed later in this paper, the industry has since worked to slow roll and water down this equipage requirement.

approval of area navigation [RNAV] and required performance [RNP] that offer significant improvements as determined by baseline and performance metrics” for each metroplex, to meet the following schedule:

(a)(2) Required the FAA shall certify, publish and **implement [rush] the new procedures” at 30% of the 35 metroplex airports in 18 months, 60% in 36 months and 100% by June 30, 2015,**

(c)(1) and (c)(2) The new procedures were “presumed to be covered by a **category exclusion,**<sup>33</sup> ”but the procedures must specifically “ **result in measurable reductions in fuel consumption, carbon dioxide emissions and noise, on a per flight basis, as compared to aircraft operations that follow existing flight rule procedures in the same airspace”...**”in the determination of the Administrator”,

(d) The FAA shall submit a plan for its DataComm system within one year, (a critical system that is still not in place, and whose absence requires simple, straight and noise routings to compensate),

(e)((1)(B) The FAA shall investigate “**the feasibility of reducing aircraft separation standards**” and if these are feasible, “**shall include in the NextGen Implementation Plan a timetable for implementation of such reduced standards**”,

(f) The FAA shall “authorize the use of “qualified third parties” to develop, test and maintain flight procedures, (as the FAA relies heavily on airlines to test – and approve – procedures.)

§ 214 Required the FAA to implement specific key performance metrics and to implement a “process for holding the Administration accountable for meeting or exceeding the metrics baselines” for:

(a)(1) Arrival and departure rates per hour (e.g., getting more planes in and out of airports via reduced separation),

(a)(2) Average gate-to-gate times (i.e., does NextGen reduced overall flight times)],

(a)(3) Fuel burned between key city pairs, (an efficiency and fuel metric that does not seem to be improving),

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<sup>33</sup> A Categorical Exclusion is defined by § 1508.1 of Title 10, CFR, under chapter 3 of FAA Order 1050.1E.

- (a)(5) Average distance between city pairs,
- (a)(7) Continuous climb and descent),
- (a)(9) Flown vs filed flight times,<sup>34</sup>
- (a)(10) Plans to reduce fuel and emissions (but not noise),
- (a)(11) The FAA's unit cost for providing air traffic control (which relates to the airlines lobbying group's (AFA's) push to privatize air traffic control), and
- (a)(12) Runway safety related to risks from reduced separation.

§ 281 Congress found, as a matter of law, that airspace redesign, “will play a critical near-term role in enhancing capacity, reducing delays, transitioning to more flexible routing, and ultimately save money in fuel costs for airlines”. (These have yet to be born out, according to the metrics Congress required the FAA to track and publish.)

§ 221 Congress authorized the FAA to **establish an “avionics equipage incentive program” to provide subsidies and federal loan guarantees to airlines** for any equipment the Secretary deems “in the interest of achieving NextGen capabilities”.

§ 225 Congress ordered the FAA “to submit to Congress [within 180 days] a report on the strategy of the Administrator for implementing, on an accelerated basis, the NextGen operational capabilities produced by the Greener Skies [Over Seattle] project, as recommended in the final report of the RTCA NextGen Mid-Term Implementation Task Force that was issued on September 9, 2009.”

As a result of the legislation, the FAA formally chartered the RTCA NextGen Advisory Group (NAC), the successor to Task Force 5, to provide direction and leadership for the 35 metroplex redesigns.<sup>35</sup> The NAC, chaired by a different airline CEO every two years,<sup>36</sup> moved

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<sup>34</sup> This is an important metric, but these are airline requested metrics, and this one is a way to for the airlines to force the FAA to give them the procedures they want. This relates to noise because on of the airline's criticisms of the FAA is that it assigns them longer procedures simply to appease local communities who are complaining about noise.

<sup>35</sup> According to David Barger, CEO of Jet Blue and Chairman of the NextGen Advisory Committee in 2011 and 2012 the FAA “tasking” consisted of the seeking industry direction on: “equipage incentives, Metroplex further definition and roll out are prioritization, performance metrics.”. Source: Testimony of David Barger, “A Review of and Update on the Management of FAA,” Hearing before the Subcommittee on Aviation, September 2, 2012, p. 40.

<sup>36</sup> The current NAC chairman is the CEO of Delta Airlines, with the two previous NAC chair positions held by the CEO's of Alaska Airlines and JetBlue Airlines.

quickly to de-emphasize NextGen’s long-term efforts to modernize and upgrade technology, and focused squarely on opening metro airspace. These efforts are well documented in the RTCA NextGen Advisory Committee minutes starting in Oct. of 2012.

As an FAA chartered group, the NextGen Advisory Committee and TF5 were required to be open to the public and to publish minutes<sup>37</sup>, however, the first six meetings NAC and all TF5 meetings do not seem to be available on the RTCA or FAA web sites or via Internet search (including caching services.) The RTCA’s Mid-Term Final Report, which is the basis for the 2012 law, also is not readily available to the public, except from RTCA for a substantial fee or, according to WorldCat, at Embry-Riddle Aeronautical University in Daytona Beach Florida. The first public minutes from RTCA NextGen Advisory Committee meetings available online appear to be from its Oct. 12<sup>th</sup>, 2012 Orlando Florida meeting – meeting number seven. Subsequent meetings include a reading of the federal requirement that such meetings are required be open to the public<sup>38</sup>. (They are announced to the public several weeks in advance in the Federal Register and up to a year in advance to RTCA members.)

#### IV. Nextgen Advisory Committee (NAC) sets NextGen mid-term priorities – reduced separation, metroplex airspace redesign and incentives

The NextGen Advisory Committee was made up of a “cross section of aviation industry execs” (pictured below in 2012) and was co-chaired that year by Dave Barger, CEO of JetBlue, and Michael Huerta, Acting FAA Administrator. The Committee included an “environmental representative,” but the disparity between the industry representatives being extremely senior C-level executives,<sup>39</sup> and the lone environmental representative being a mayor of the Village of Arlington Heights, IL, is striking.<sup>40</sup> She was later replaced by a Aurora Colorado airport noise

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<sup>37</sup> The Federal Advisory Committee Act (FACA) of 1972, Public Law 92–463, 6 October 1972, governs the conduct of federal advisory committees, and provides for open meetings, chartering, public involvement, and reporting.

<sup>38</sup> The Feb. 7<sup>th</sup> 2013 NextGen Advisory Committee Meeting included a slide (slide 4) that noted that “In Accordance with the Federal Advisory Committee Act, this Advisory Committee is OPEN TO THE PUBLIC”, and that notice of the meetings are published in the Federal Register.

<sup>39</sup> The full committee was made up of six airline CEOs, one airline VP, the presidents of key divisions of Lockheed and Raytheon, a VP from Boeing, the president of Airbus Pro Sky, senior officials from the Port Authority of New York and DFW, the presidents of the three major air traffic controller unions, the president of the RTCA, the five most senior FAA officials, a major general and Arlene Mulder, the mayor of the Village of Arlington Heights Illinois, a physical education teacher during the day,

<sup>40</sup> Mayor Mulder resigned in 2015, amid complaints from other communities near O’Hare Airport that she was too “chummy” with the FAA and that the new airport flight patterns had shifted away from Arlington Heights to other communities as a result of NextGen redesigns. She defended her relationship to the airport as justified given the high number of people in her community that work at O’Hare. “Sometimes Beleaguered Noise Commission Chair Won’t Seek Re-election”, Chicago Sun Times, January 9, 2015, also at <http://chicago.suntimes.com/politics/7/71/278103/ohare-noise-commission-chairman-resigns-amid-complaints>

officer, and his associates<sup>41</sup> (under the auspices of N.O.I.S.E.<sup>42</sup>) These environmental representatives appear to have voted with industry on all matters,<sup>43</sup> and there is no record of any presentations, discussions or objections by them related to noise or the environment



RTCA NextGen Advisory Committee (NAC)

The “aviation industry executives” that made up the NAC made clear from that start that they wanted one thing, increased metro access – specifically reduced separation and simple direct routes. Moreover, they did not want to wait for or invest in what they viewed as FAA blue sky systems, including those designed to make increased metro access more tolerable on the

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<sup>41</sup> The two other N.O.I.S.E. participants were members of the NextGen CatEx Task Group. They are officers of N.O.I.S.E., as well as lobbyists on FAA matters. N.O.I.S.E. represents cities with airports. TF5 and the NextGen Advisory Council has not included any representatives that do not have direct economic interests in aircraft noise.

<sup>42</sup> The first member update on NOISE’s involvement with the NextGen Advisory Committee appears to be summary slides from the Feb. 26, 2015 meeting, followed by a six slide presentation on Nov. 4<sup>th</sup> 2015 with a slide entitled “N.O.I.S.E. NAC Involvement”. The four points on the slide were:  
//December, 2012: N.O.I.S.E. staff joined the **NAC CATEX 2 Task Group** asked to provide recommendations to the full NAC to provide to the FAA on how to interpret ambiguous environmental review language in the 2012 FAA Reauthorization Bill.// January, 2014: N.O.I.S.E staff joined the **PBN Blueprint task group** asked to provide recommendations to the full NAC to provide to the FAA on best practices for technical and non-technical implementation of Performance Based Navigation (PBN?RNAV).//November, 2014: N.O.I.S.E. President becomes environmental (community) representative on NAC.//2015-2016: NAC meets twice a year and NAC subcommittees meets monthly in Washington, which N.O.I.S.E. staff attends. Beyond these, and an excellent March 8<sup>th</sup> 2015 presentation to N.O.I.S.E. about NextGen, entitled “NEXT GENERATION Noise Metrics Considerations,” by Ambrose Clay, a Councilman from College Park, GA, there are no detailed minutes, summaries or presentations by N.O.I.S.E. to its members or to the public on its web site, in spite of its self-described significant involvement.

<sup>43</sup> Recommendations for Implementing Categorical Exclusion Contained in FAA Modernization Act of 2012, Slide 53, Attachment 2 – Presentations for Committee, Meeting Summary, RTCA NextGen Advisory Committee Meeting, June 12, 2013

ground.<sup>44</sup> As commercial entities, some of this “benefits now” focus is understandable, like wanting to increase airport capacity by reducing separation. But, having knocked the FAA back on its heels via the 2012 legislation, the airlines grabbed not only what they needed – reduced separation – but also what they didn’t really need, and what has caused so much harm to communities around the county – absolute direct routes, with significant noise consequences.

In preparation for this expected increase in noise, the **RTCA NextGen Advisory Committee prepared a sixty-page game plan on how to deal with the public’s reaction, with one of its first recommendations being, “[I]n addition to engaging communities who will be impacted, residents or communities who will benefit should also be engaged.”**<sup>45</sup> In other words, set one community against its neighbor. (The chair of this Task Group was later awarded a White House metal for this work by the FAA.<sup>46</sup> )

The airline-CEO-chaired NextGen Advisory Committee (NAC) remade the NextGen program, taking a troubled and idealistic airspace modernization program, and replacing it with a steely-eyed, no-holds-barred metroplex airspace land grab. Although the FAA officials were members of the NextGen Advisory Committee, they were no match for the political cloud wielded by the increasingly consolidated airline industry. It is clear from NAC records that industry drove this next (“Mid-Term”) phase of NextGen and its laser focus on a brute-force, low-tech,<sup>47</sup> redesign of metro airspace.

Chairman Barger’s opening remarks in the first recorded NextGen Advisory Committee meeting post the 2012 legislation described his view of the value of this new approach to the governance of NextGen.<sup>48</sup>

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<sup>44</sup> Slide presented to RTCA NextGen Advisory Committee by Bill Ayer, CEO of Alaska Air Group and NAC Chair at their June 4, 2013 meeting.

<sup>45</sup> “Blueprint for Success to Implementing Performance Based Navigation”, Report of the NextGen Advisory Committee in Response to a Tasking from The Federal Aviation Administration, Oct. 2014, p.9.

<sup>46</sup> The co-chair of the “Blueprint for Success” task group, Jim Critch, EVP of Operations at DFW Airport, was awarded the “White House Champion of Change Award in Transportation Technology Solutions”, by the FAA in 2013 for his support of NextGen. See Administrator Michael Huerta’s “FAA Report”, NextGen Advisory Committee, June 4, 2013.

<sup>47</sup> The redesign was as low-tech as possible, with dramatically fewer systems and capabilities than the FAA had envisioned, and was done in ways that were as cheap as possible for the airlines.

<sup>48</sup> Slide from RTCA NextGen Advisory Committee Meeting, Orlando Florida, Oct. 11, 2012.

## The Value of the NAC (cont.)

### Results In

- Delivering near-term benefits using existing equipage
- Continuous improvement in planning and execution of each new procedure and capability
- Increased confidence by stakeholders in FAA's processes
- Solid business cases for future investments to gain new benefits

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NAC Chair Opening Remarks

This first (recorded) NextGen Advisory Committee (NAC) meeting (October 2012), focused primarily on structuring the government incentives Congress had just legislated for them, and on the NextGen operational metrics they wanted to see to ensure their demands for reduced separation and metro access were being acted on by the FAA.<sup>49</sup>

The airline insisted on “financial” and other incentives to in order to “agree” to the “beneficial” metroplex redesigns they insisted be the new focus of Nextgen in the 2012 legislation. Congress responded by authorizing these “incentives” including government backed loans, in spite of GAO reports that showed that 67% of the domestic commercial fleet already had RNAV capability by 2011.<sup>50</sup> (FAA congressional testimony in 2008 put this number at 87% of commercial aircraft.)<sup>51</sup> The airlines got the new straight in metroplex approaches they wanted, then double dipped for incentives to fly them as well.

Not ones to leave the well, in 2014, Airlines for America (A4A) further demanded, on behalf of certain air operators, that they be allowed to fly the “incentive” routes without investing in any RPN equipage using a technique called “Track-to-Fix,”<sup>52</sup> and then in 2015,

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<sup>49</sup> Ibid.

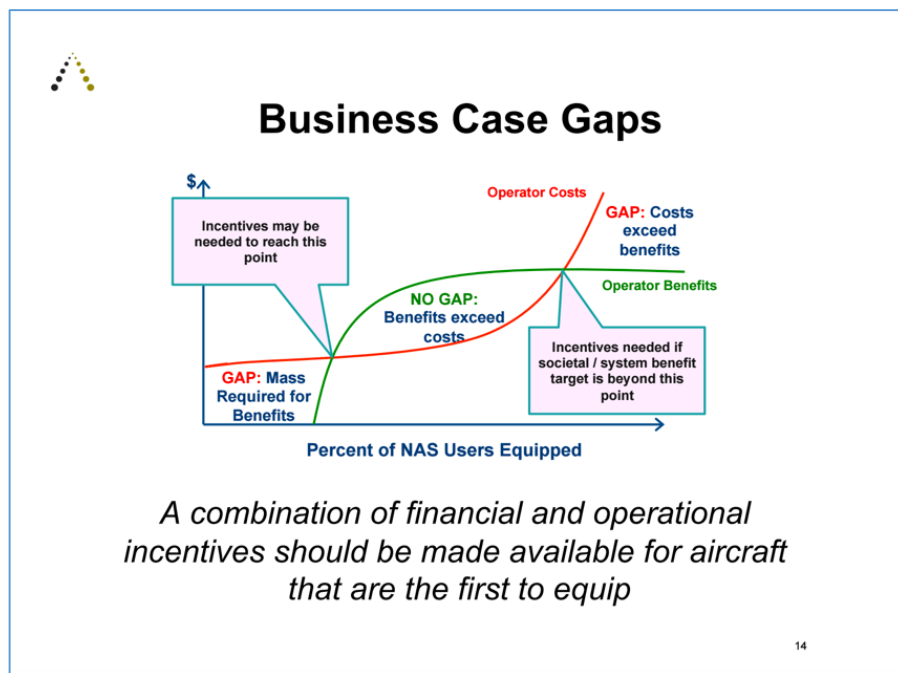
<sup>50</sup> Testimony of Calvin Scovel, Inspector General, US DOT, NextGen: A Review of the RTCA Mid-Term Implementation Task Force, Subcommittee on Aviation, Committee on Transportation and Infrastructure, Nov. 28, 2009 p. 24.

<sup>51</sup> Statement of Victoria Cox, Vice President for NextGen and Operations Planning, FAA, House Committee on Science and Technology, Sept. 9, 2008, p. 2.

<sup>52</sup> NextGen Priorities Joint Implementation Plan, Executive Report to Congress, Federal Aviation Administration, Nov. 2014, p. 13.

petitioned the FAA successfully<sup>53</sup> for an extension to the 2020 deadline to install ADS-B equipage in transport aircraft, arguing that 8 years was not enough lead time.

The airline industry's insistence on a dramatic and immediate increases in metroplex aircraft density and throughput, with existing equipage and training, required simple straight in routes to maintain safety. These procedure designs accepted any amount of noise for even the smallest efficiency,<sup>54</sup> with people on the ground paying the cost as a direct subsidy to the airlines. These efficiencies only designs exploded noise in city after city across the U.S. As Chairman Barger's introductory slides below make clear, noise and environmental impact were not even considerations, much less priorities.



NAC Chair Opening Remarks  
NextGen Mid-term Priorities

<sup>53</sup> Fact Sheet: Exemption No. 12555, FAA Flight Technologies and Procedures Division, AFS-400, Regulatory Docket Number FAA-2015-0971.

<sup>54</sup> The airlines argue the straight in routes save the environment, but the environmental savings are minimal and do not count the larger offsetting environmental cost of noise and emissions close to the ground. Environmental groups have a long list of potential environmental improvements airlines can make. Straightening final procedures over populated areas is not one of them.





## NAC High Level Metrics Suite

Performance Area	NextGen High-Level Outcome Metric	Where Measured
Flight Safety	Change in Airborne/Ground Separation Alert Rate	NAS-Wide
Operational Efficiency	Mean Aircraft Operation Time	Key City Pairs
Fuel Efficiency	Fuel Efficiency Normalized by Weight and Distance	Key City Pairs
ATC Cost Efficiency	ATC Cost per IFR hour	NAS-Wide
Metroplex Capacity	Metroplex Peak Allowable Throughput	OAPM Metroplexes
Metroplex Access	Metroplex Achieved Utilization	OAPM Metroplexes

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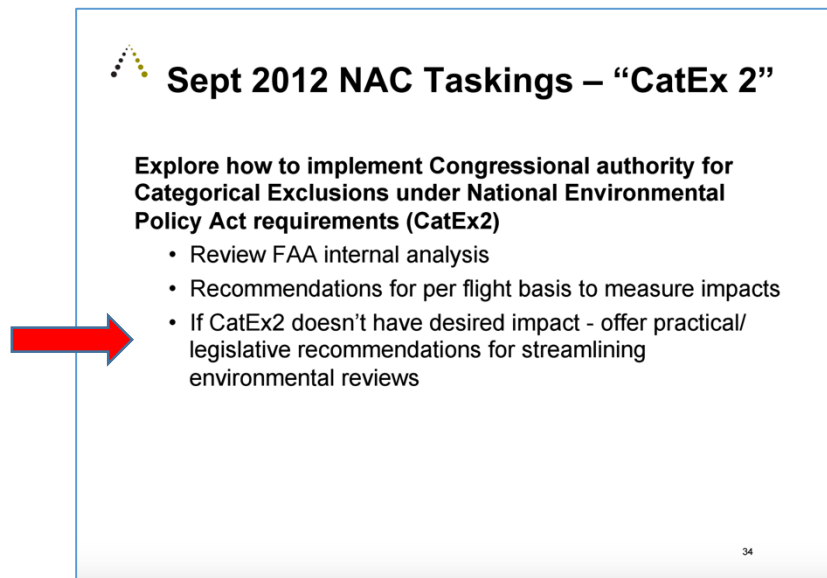
NAC Chair Opening Remarks  
NextGen Mid-Term Priorities

## V. The RTCA CatEx2 Task Force is Created

The October 2012 meeting of the NextGen Advisory Committee also kicked off the industry's recommendations on **how to push through a Categorical Exclusion to open metro airspace without, or with minimal, environmental reviews**. This RTCA CatEx Task Group's initial slide calls out three issues that will dominate this exercise:

- First, the FAA's initial analysis indicated that the new routes would not qualify for a CatEx per a plain reading of the 2012 law,
- Second, this was due to the "per flight" noise reduction requirement in the legislation (and more accurately to the known fact<sup>55</sup> that then new procedures would produce more noise), and
- Third, the RTCA and industry were prepared to use their considerable lobbying power to modify the legislation if necessary.

The lengths the CatEx2 Task Group was prepared to go is clear in their first presentation to the NextGen Advisory Committee.



**Sept 2012 NAC Taskings – “CatEx 2”**

**Explore how to implement Congressional authority for Categorical Exclusions under National Environmental Policy Act requirements (CatEx2)**


- Review FAA internal analysis
- Recommendations for per flight basis to measure impacts
- If CatEx2 doesn't have desired impact - offer practical/legislative recommendations for streamlining environmental reviews

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<sup>55</sup> See “Recommendations for Enhancing Operations in Specific Regional Airspace”, A Report of the NextGen Advisory Committee in Response to Tasking from the Federal Aviation Administration, Sept. 2011, p. 3.

This “RTCA CatEx2 Task Group” was chaired by executives from two of the airline industry’s leading lobbying groups, one representing U.S. airlines and the other representing major airports. The FAA justifies its reliance on the RTCA by describing it as a neutral organization focusing on coordinating key technology, operations and safety issues with the airline industry as a whole. **Its use of the RTCA for “policy” tasking “to provide recommendations to ... the FAA on how to interpret and implement ambiguous environmental review language,” as one Task Group participant described it, strays from the normal FAA justifications for using the RTCA to enable airlines to collaborate, like technology harmonization and safety.** And, requests for this type of sensitive “policy” assistance would seem to be the type of tasking the FAA would assign only with clear guidelines and restrictions. In this case, the FAA sent the tasking to the RTCA, which in turn tasked it to two executives from two of the airline industry’s foremost airline lobbying groups.



**CatEx Task Group - Steve Brown, NBAA  
NACSC Co-Chair**



**Co-Chair CatEx 2 Task Group:  
Nancy Young, Airlines for America  
Katherine Preston, Airport Council  
International, North America**

It is also not clear what the exact tasking was. When the FAA needs industry consensus on a technical or safety matter, it charters the RTCA to work on the specific matter. This work is then broken up into task letters. The CatEx 2 Task Group cites its tasking from the FAA as being contained in a September 21<sup>st</sup> letter from FAA Administrator Huerta to RTCA President Margaret

Jenny. However, it does not provide a copy of this tasking letter, as is common at the end of RTCA Task Force and Task Group draft and final reports.<sup>56</sup>

The NextGen Advisory Committee minutes record the CatEx Task Group’s “tasking” and the group’s initial observations as follows:<sup>57</sup>

*Mr. Dickson, along with the Co-Chairs of the CatEx 2 Task Group, Katherine Preston from Airports Council International North America and Nancy Young [vice president for environmental affairs] from Airlines for America, provided a review of the recommendation for implementing Congressional authority for Categorical Exclusions under the National Environmental Policy Act requirements (CatEx2).*

*The FAA requested<sup>58</sup> that the NAC explore how to implement Section 213(c)(2) of Public Law 112-95 for CatEx2 that requires measuring environmental impacts on a per flight basis. Ms. Preston and Ms. Young explained that the legislative authority is designed to foster the implementation of RNP **but presents challenges in the requirements for identifying measurable reductions in fuel consumption, carbon dioxide emissions and most significantly, noise on a per-flight basis presents a challenge.***

The purported reason the FAA decided to turn to the RTCA to determine how to interpret and implement its own legislation is described two years later in a 2014 FAA notice in the Federal Register,<sup>59</sup> well after the fact and about the same time the FAA was issuing formulaic Environmental Assessment Findings of No Significant Impact – “FONSI” – in metro after metro across the U.S.:

*While measurable reductions in fuel consumption and carbon dioxide emissions can be determined on a per flight basis using current methodologies, aircraft noise poses unique challenges for such a determination. Noise depends not only on the varying noise levels of*

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<sup>56</sup> There is an untitled letter from Administrator Huerta to Ms Jenny dated September 21, 2012, with three taskings. See This letter is attached to the final report for Tasks 2 and 3 of this letter, but Internet searches on the title of Task 1 do not return a result. While this tasking focuses on “technical and non-technical obstacles (e.g., training, culture, and varying operational and business models)” and request “technical and non-technical ... remedies and action steps,” it would not seem to cover tasking to do legislative interpretation. However, based on extensive searching, this tasking does not seem to have an obvious resulting report, and the CatEx 2 report does not seem to have a findable FAA tasking letter.

<sup>57</sup> Published Record of NextGen Advisory Committee Meeting, Orlando, Florida, Oct 11, 2012, Attachment 10 - Outcome of the Committee’s discussion “Recommendation for 2013-2014 Proposed Taskings”, pp. 5-6, available on the RTCA website.

<sup>58</sup> Letter from Michael P. Huerta (FAA, then Acting Administrator) to Ms. Margaret Jenny (President, RTCA), Sept. 21, 2012.

<sup>59</sup> Implementation of Legislative Categorical Exclusion for Environmental Review of Performance Based Navigation Procedures, Department of Transportation, Federal Aviation Administration, [Docket No. FAA-2014-0510], Federal Register, Vol. 79, No. 160, Aug. 19, 2014, p. 4941.

*an aircraft as it flies, but also on the position of the aircraft in relation to noise sensitive receivers on the ground. Noise tends to increase at some locations and decrease at other locations as PBN procedures shift **and concentrate** flight tracks.<sup>60</sup> Total noise in an area of airspace cannot be calculated by adding up the noise levels at various locations on the ground, and noise levels cannot be divided by the number of aircraft to produce noise per flight. The FAA could not find a technically sound way<sup>61</sup> to make the noise determination required by the statute based on an analysis of noise methodologies. In September 2012, the FAA tasked the NextGen Advisory Committee (NAC) for assistance in further exploring how to make use of this legislative CATEX.*

This explanation is FAA dissembling, if not false and purposely misleading. **As RTCA records show, the FAA did have ways to measure noise on a per-flight basis.** The RTCA's objective was not to resolve a "technical" problem, or to find the best test to comply with the law, but rather to find a CatEx test that would pre-ordain a "Finding of No Significant Impact" (FONSI) without regard to how much new noise would be created. The FAA and the RTCA simply presumed the CatEx, and then modified the law, the noise measurement formulas, the tools they would use, and ultimately the public record, to align with this intended outcome.

The FAA's problem was never how to measure noise, it was the amount of noise<sup>62</sup> the new routes, (procedures), were going to create. Optimizing arrivals and departure paths, by allowing them to fly directly over populated areas, concentrating flights over the same narrow tracks, increasing the number of planes per hour by reducing separation, flying lower and shallower, eliminating higher altitude sequencing (at level offs) and introducing low level vectoring and the low level merging of routes were all physical changes that simply increased noise. The reasons for the significant increase in noise related to these new procedures is complex, but the reaction on the ground was universal – they are much louder.

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<sup>60</sup> Noise measurement techniques like Single Event Level (SEL) are designed to measure noise that exhibits itself as a curve – growing louder, loud, then quieter. The "shifting" of noise here is probably not this technical problem, but probably simply means that the new procedures would increase noise for some and reduce noise for others because they both move and concentrate noise into sacrificial noise corridors.

<sup>61</sup> It is odd that the FAA turned to industry lobbyists (A4A and Airport Councils International), rather than technologists, to assist it in "technical" questions as to how to measure jet noise.

<sup>62</sup> The FAA also prevaricates about noise being impacts on people, not sound energy. But these arguments are less about science, than a standard preamble to the FAA's announcing that it will use its antiquated average Day Night Level (DNL) noise metric.

## VI. FAA Selects the NIRS Noise Model, ignoring its March 2012 Order to Use AEDT

Moreover, the FAA did have tools to measure noise on a per flight basis. The FAA's Aviation Environmental Design Tool (AEDT)<sup>63</sup> was built specifically to enable better measurements of noise and emissions, including on a per flight basis. It was developed in response to a 2004 report to Congress that criticized the FAA's for not having "technological or operational solution[s] to resolve the conflict between goals for aviation and the environment."<sup>64</sup> The FAA's website describes AEDT as, "a software system that dynamically models aircraft performance in space and time to produce fuel burn, emissions and noise. Full flight gate-to-gate analyses are possible for study sizes **ranging from a single flight** at an airport to scenarios at the regional, national, and global levels."<sup>65</sup>

The screenshot shows the FAA website's page for the Aviation Environmental Design Tool (AEDT). At the top, there is the FAA logo and navigation links: FAA Home, Jobs, News, About FAA, A-Z Index, and FAA for You... A search bar is also present. Below the navigation is a blue header with categories: Aircraft, Airports, Air Traffic, Data & Research, Licenses & Certificates, Regulations & Policies, and Training & Testing. The main content area has a sidebar on the left with links for Policy, International Affairs and Environment, Aviation Insurance, Environment and Energy Research & Development (highlighted), Environmental Policy & Guidance, International Affairs, Noise & Emissions, Key Officials, and Contact Us. The main content area features the title 'Aviation Environmental Design Tool (AEDT)' and a brief description: 'AEDT is a software system that dynamically models aircraft performance in space and time to produce fuel burn, emissions and noise. Full flight gate-to-gate analyses are possible for study sizes ranging from a single flight at an airport to scenarios at the regional, national, and global levels. AEDT is currently used by the U.S. government to consider the interdependencies between aircraft-related fuel burn, noise and emissions.' Below this is a link to the official website: 'You can find information on obtaining AEDT as well as links to AEDT documentation and FAA guidance, on the official website for AEDT at <https://aedt.faa.gov/>.' There are also 'Print' and 'Share' buttons. At the bottom right, it says 'Page last modified: September 05, 2014 5:30:16 PM EDT'.

The FAA's 2011 National Environmental Policy Act (NEPA) Plan (the FAA's annual NEPA compliance plan) described the Agency's commitment to use AEDT, the FAA's, "state of the art

<sup>63</sup> The FAA's Aviation Environmental Design Tool (AEDT) was developed at the Department of Transportation's highly-regarded Volpe Transportation Systems Center in Cambridge MA, across from the campus of MIT.

<sup>64</sup> Report to the United States Congress, Aviation and the Environment, A National Vision Statement, Framework for Goals and Recommended Actions, Professor Ian Waitz, et. al., Massachusetts Institute of Technology, Dec. 2004, p. 6.

<sup>65</sup> See [https://www.faa.gov/about/office\\_org/headquarters\\_offices/apl/research/models/aedt/](https://www.faa.gov/about/office_org/headquarters_offices/apl/research/models/aedt/)

noise an emissions calculation and data [tool] to evaluate noise and emissions...**to support NextGen air traffic NEPA (National Environmental Policy Act) compliance” going forward.**<sup>66</sup> It stated that AEDT would “replace ATO’s (Air Traffic Operations, the group that executes EAs) Noise Integrated Routing System (NIRS)” in 2012.<sup>67</sup> According to the FAA’s current website, “in March 2012, NIRS<sup>68</sup> was replaced by AEDT version 2a for analysis of air traffic airspace and procedure actions.”<sup>69</sup>

Yet, the 2014 NorCal Environmental Assessment (EA), and other metroplex OPAM Environmental Assessments (EAs), did not to use AEDT. Instead, the NorCal EA states that the, “noise modeling was conducted using Noise Routing System (NIRS) ver. 6.1, **the FAA’s required model** for noise projects over 3,000 feet.”<sup>70</sup> This may have been important to the outcome of the NorCal EA because the more advanced **AEDT model takes into consideration terrain, and other important factors, that have caused major problems in the Bay Area, particularly in the Santa Cruz mountains.**

The FAA’s EA document itself does not explain how or why AEDT was not used, and in fact does not even mention the existence of AEDT (which had replaced NIRS three years earlier.) The explanation for this, such as it is, is buried in the EA’s Technology Section, one of 27 documents<sup>71</sup>, in a 313 page Aircraft Noise Technical Report, written by a third-party, ATAC Corporation. (The public comment period to understand and object to these documents was one month, with a ten-day extension.)

In the methodology section of its technical report, ATAC discloses<sup>72</sup> that it was directed (by the FAA) to use the “NIRS” model because it was “grandfathered,”<sup>73</sup> even though the first draft of the EA was released in fully 2 years after official FAA policy required use of the AEDT model for “air traffic airspace and procedure actions under the National Environmental Policy Act

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<sup>66</sup> NextGen National Environmental Policy Act (“NEPA”) Plan, Department of Transportation, Federal Aviation Administration, Dec. 2011, p. 12.

<sup>67</sup> Ibid, p. 12.

<sup>68</sup> NIRS was created in 1998, and though it has some upgrades, it is a very primitive model. AEDT has issues, but it does incorporate key improvements over NIRS, such as taking into account terrain, weather, tighter track geometries, change over time and the detailed noise characteristics of aircraft. In general, it reflects the reality of aircraft noise more sensitively and realistically.

<sup>69</sup> Noise Integrated Routing Systems (NIRS) Version 6.1, at

[https://www.faa.gov/about/office\\_org/headquarters\\_offices/apl/research/models/nirs\\_nst/](https://www.faa.gov/about/office_org/headquarters_offices/apl/research/models/nirs_nst/)

<sup>70</sup> Environmental Assessment (EA) for NorCal Optimization of Airspace and Procedures (OPAM), Environmental Consequences – Final, 2014, p. 5-3.

<sup>71</sup> Available at the time of writing at

[http://www.metroplexenvironmental.com/norcal\\_metroplex/norcal\\_docs.html](http://www.metroplexenvironmental.com/norcal_metroplex/norcal_docs.html)

<sup>72</sup> Possibly as a legal protection.

<sup>73</sup> Northern California Optimization of Airspace and Procedures in the Metroplex, Aircraft Noise Technical Report, ATAC Corporation, August 7, 2014, pp. 3-1 & 3-2.

of 1969 (NEPA).<sup>74</sup> ATAC cites an FAA guidance memorandum entitled “Guidance on Using AEDT 2a to Conduct Environmental Modeling for FAA Air Traffic and Procedure Actions, FAA Order 1050.1E, Change 1,”<sup>75</sup> as authorizing the “grandfathering” of NIRS for the NorCal EA. This document is actually the FAA “Guidance Memo” that requires the change from NIRS to AEDT, stating that, “AEDT 2a replaces NIRS, and is now the required FAA NEPA compliance tool for modeling aircraft noise.”<sup>76</sup>

The ATAC technical analysis then includes a footnote that states, “[t]here is an exemption for projects whose environmental analysis began before March 1, 2012 hence the NorCal OAPM EA used the latest version of NIRS.”<sup>77 & 78</sup> However, according to the Guidance Memorandum, there are date specific and documentation requirements for an exception. AEDT is required:

“Except where **advanced written approval** has been granted to use an equivalent methodology and computer model by the FAA Office of Environment and Engineering, all aircraft noise, fuel burn, and emissions modeling for the FAA air traffic and procedure actions described above must be performed using the most current version of AEDT 2a available at the start of the analysis. Consistent with FAA policy and practice, the use of AEDT 2a is not required for projects **whose environmental analysis began before March 1<sup>st</sup> 2012**. In such circumstances, however, the responsible FAA official, in coordination with the appropriate FAA service center or headquarters contacts, should carefully consider using AEDT 2a when there is a major revision or addition to the analysis or project (e.g., if baseline and forecast years are updated)<sup>79</sup>

While the ATAC document claims (in its 2014 report) that the NorCal EA is exempted because the “environmental analysis began before March 1, 2012” (or more than two years earlier), the FAA’s July 30<sup>th</sup> 2012 OPAM “Milestone Summary and Dashboard Status” presentation<sup>80</sup> shows that the “Evaluation Phase” for the Environmental Assessment was scheduled to start on April 17<sup>th</sup>, 2012 and complete on Dec. 23<sup>rd</sup> 2013, with just the “EA Kickoff” on April 17<sup>th</sup> and the “Phase Start.” (the start of actual work) on Jan. 6<sup>th</sup> 2013, a full eight months

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<sup>74</sup> Quoted from, U.S. Department of Transportation, Federal Aviation Administration, Order 1050.1E, Change 1, Guidance Memo #4: Date - March 21, 2012; Subject-Guidance on Using AEDT 2a to Conduct Environmental Modeling for FAA Air Traffic and Procedure Actions. (Emphasis is original.)

<sup>75</sup> U.S. Department of Transportation, Federal Aviation Administration, Order 1050.1E, Change 1, Guidance Memo #4: Date - March 21, 2012; Subject-Guidance on Using AEDT 2a to Conduct Environmental Modeling for FAA Air Traffic and Procedure Actions,

<sup>76</sup> Ibid (Guidance on Using AEDT).

<sup>77</sup> Footnote 7 found in ATAC Aircraft Noise Technical Report, p. 3-2.

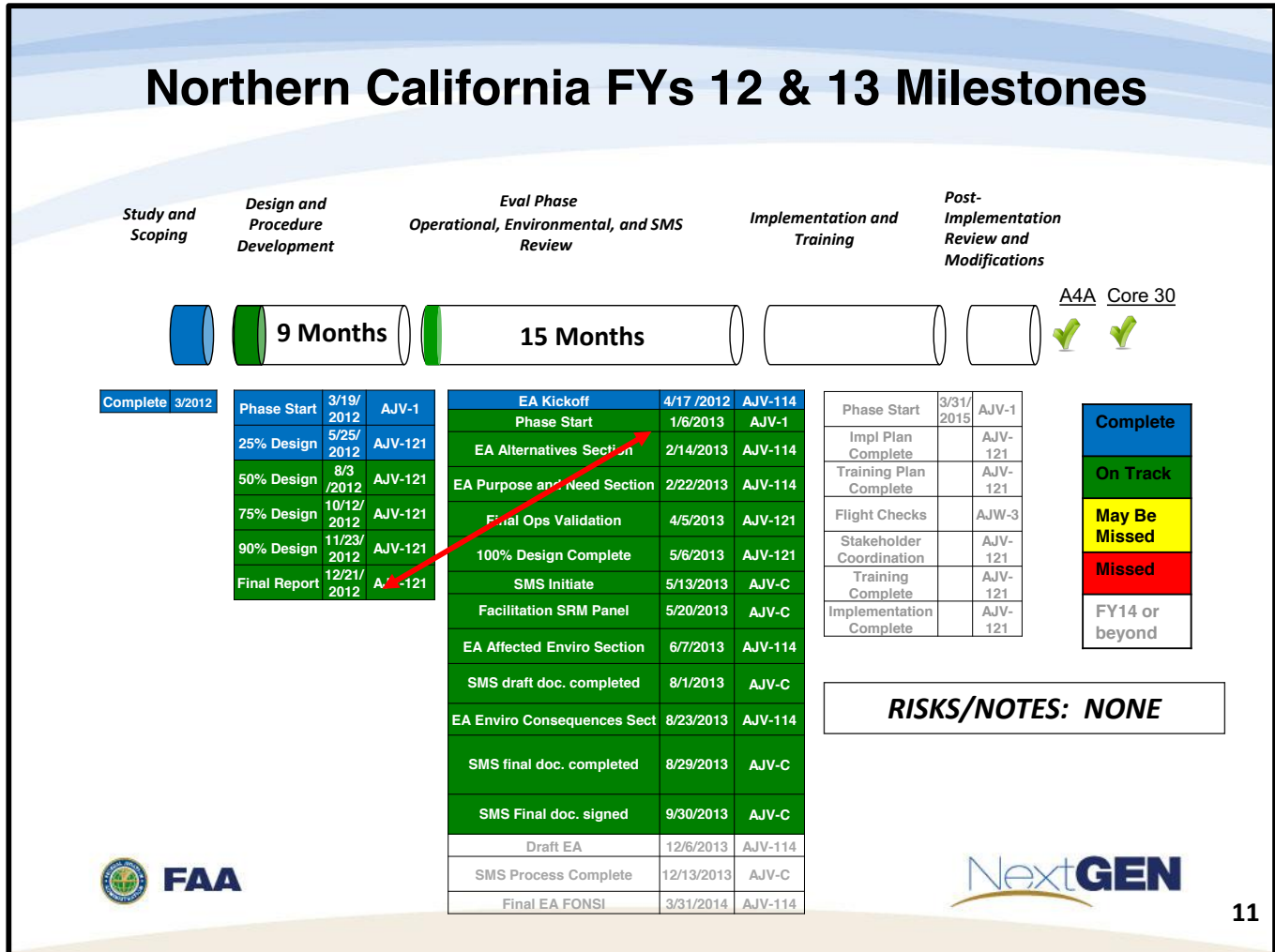
<sup>78</sup> The footnote further provides a link to the relevant FAA order, but the link<sup>78</sup> returned a 404 “document not found” at the time of this writing. The document was however cached at Internet “way back” sites.

<sup>79</sup> FAA Order entitled “Guidance in using AEDT...”

<sup>80</sup> PBN, Optimization of Airspace & Procedures in the Metroplex (OPAM), FAA Slide Presentation, July 30, 2012 found at <https://www.faa.gov/nextgen/media/ata-procedure-tracking-sheet.pdf>



later. In other words, the EA Kickoff occurred after, and not before March 1<sup>st</sup> 2012, and should not have qualified for the exception.



FAA Slide: Milestone Summary and Dashboard Status, July 2012

As of June 30<sup>th</sup> 2012 Design Phase the project was a mere 25% complete. Basically, there wasn't a design available on March 1<sup>st</sup> 2012 to analyze, which comports with the fact that in the schedule, the "Phase Start" (the actual EA analysis) starts on January 6<sup>th</sup> 2013, right after the final design report (from the Design and Develop Phase) was to be completed on Dec. 21, 2012.

Moreover, the Guidance Memorandum makes clear that AEDT should be used even for "additions" and "revisions". This was way more than an iteration, it was a completely new greenfield design, not an iteration! And, as the FAA website on EA Analysis Project Management standards makes clear that, "the proper scheduling of Environmental Impact Statement analyses

is very important [as] some analyses have to wait on other work to be accomplished and data to be made available.”<sup>81</sup>

That the FAA did not use AEDT in spite of the Part 1050.1E Order (an order it cites to the public regularly) to use it, and made no clear disclosures about this decision, which would seem to have been a significant and high-level decision, raises serious questions. It is hard to believe that the FAA EA teams were not aware that AEDT was coming (as documented in the Agency’s 2011 NEPA Compliance Plan.) Moreover, the ATAC document, which purports to include its authority for not using AEDT, merely points to an FAA policy memorandum, for which it does not qualify by date or by written exception. If a written exception to use NIRS, rather than AEDT exists, the EA does not disclose its existence, or who signed it, or on what grounds.

It is also interesting to note, that there an eight-month hole between the April 17<sup>th</sup> 2012 EA “Kickoff” and its next step, the “Phase Start” on January 3, 2013. There is no tasking listed **during this eight-month period in the FAA’s EA project.** Coincidentally, it is during this period that **Administrator Huerta formally asked the RTCA NextGen Advisory Committee to convene the CatEx Task Force to provide “policy” guidance on how to interpret the law and structure the EA tests on Sept. 21<sup>st</sup>, 2012.**<sup>82</sup> The CatEx Task Group completed their work, devising the “average per flight” legal interpretation, and “net noise reduction” methods (described below) by June 2013. (These “recommendations” ended up being the ones the FAA, and ATAC, used for the NorCal OPAM EA assessment and FONSI.)

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<sup>81</sup> See: [http://www.faa.gov/airports/environmental/eis\\_best\\_practices/?sect=analyses](http://www.faa.gov/airports/environmental/eis_best_practices/?sect=analyses)

<sup>82</sup> Letter from Michael P. Huerta (FAA, then Acting Administrator) to Ms. Margaret Jenny (President, RTCA), Sept. 21, 2012, found at Report of the NextGen Advisory Committee in Response to a Tasking from The Federal Aviation Administration, RTCA NextGen Advisory Group, October 2014, footnote 1, p. 8.

## VII. The RTCA Catex2 Task Force Constructs the Correct Regulatory Interpretation of the 2012 Legislation for the FAA

Putting aside whether AEDT should be used or not, it appears that mid-level FAA technical teams originally did construct “per flight” models (using long-standing FAA noise tools), based on a plain reading of the law. However, the noise measurements anticipated by these models did not qualifying for a Categorical Exclusion, as prescribed by the 2012 legislation. Faced with the law’s alternative, a full environmental review, Administrator Huerta turned to the RTCA and (by extension to A4A) for a solution.

In his Feb. 2013 update to the NextGen Advisory Committee, Administrator Huerta stressed the “the importance of having a tool that enabled the CatEx 2 provision to be implemented in Metroplex Areas.”<sup>83</sup> To Huerta, the CatEx was a given, so if the new routes were noisier, and the FAA’s existing interpretations and tools would not produce a CatEx, new interpretations and tools were needed, (which industry lobbyists were pleased to provide.)



### NextGen Advisory Committee

**Dave Barger,**  
**President & CEO,**  
**JetBlue *Chairman***

**Michael Huerta,**  
**Acting FAA Administrator**  
***Designated Federal Official***



FAA Administrator Huerta, Jet Blue CEO Barger, RTCA President Jenny  
Oct. 11<sup>th</sup> 2012, Orlando FL Meeting

When pressed by other NAC committee members at the meeting, that the Congressional language says that the measurement should be on a per flight basis, Nancy Young, the co-chair (and lobbyist for Airlines for America) stepped in answer the question, stating that, the CatEx process “must not be too complex” and that the industry required “simple procedures.”<sup>84</sup> As

<sup>83</sup> FAA Report from The Honorable Michael Huerta, FAA Administrator, Attachment 6, RTCA Paper No. 121-13/NAC-22, NextGen Advisory Committee Meeting, June 12, 2013, p.

<sup>84</sup> Meeting Summary, NextGen Advisory Committee Meeting, RTCA Paper No. 044-13/NAC-20, Feb. 30, 2013, p. 6.

RTCA meeting slides and records show, if the airline industry’s plans for metroplex access could not meet the law’s requirements for less noise, the law needed to bend. That the law was also written as a compromise, between the airlines demands to increase metroplex traffic and the public’s right to some measure of quietude, was simply ignored.

The following slides<sup>85</sup> from the NextGen Advisory Council CatEx Task Group chronicle this effort to make the language in the 2012 law bend to their ends. They primarily addressed the issue that the legislatively required “per flight” noise measurement measurements would not deliver a CatEx, and the FAA did not have a solution.

**Refresher on NAC Tasking on “CatEx 2” - Background**

- Explore means of implementing a particular provision in the FAA Reauthorization Legislation (Public Law 112-95)
- Section 213 seeks to accelerate NextGen elements
- Section 213(c)(1) and (2) add legislatively mandated “Categorical Exclusions” under National Environmental Policy Act (NEPA) review requirements
  - FAA has now issued guidance for implementing 213(c)(1)
    - Covers FAA-identified RNAV & RNP procedures at core airports and others in vicinity
  - FAA is unsure how to implement 213(c)(2) (“CatEx2”)
- Tasking for 213(c)(2) spelled out in September 21 letter to the NAC and RTCA

The law says “technologies”, not “elements”

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<sup>85</sup> Slides from the Feb. and June 2013 RTCA NextGen Advisory Committee meetings.



## Key Issue – How to Assess “Measurable Reductions” in Noise on a “Per-Flight” Basis

The Categorical Exclusion in Section 213 (c)(2), Acceleration of NextGen Technologies:

“Any **navigation performance or other performance based navigation procedure** developed, certified, published, or implemented **that**, in the determination of the Administrator **would result in measurable reductions** in fuel consumption, carbon dioxide emissions, and **noise, on a per flight basis**, as compared to aircraft operations that follow existing instrument flight rules procedures in the same airspace, shall be presumed to have no significant affect on the quality of the human environment and the Administrator shall issue and file a categorical exclusion for the new procedure.”

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(Red emphasis is original.)



## Methodology & Structure of Analysis

- Three meetings: Nov/Dec/Jan
- Consensus agreement on the scope of the task.
- Reach shared understanding on the intent, goal and application of the CatEx2 provision.
- Develop baseline, high level understanding of NEPA and FAA Noise modeling and assessment.
- Review analysis work conducted by the FAA on implementation CatEx2 language.
- Evaluate other possible approaches to implementing “per flight” noise measurement techniques to implement CatEx2 provision.
  - If yes, develop recommendation
  - If no, develop suggested revisions to statutory language or other way forward

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The RTCA CatEx Task Group’s strategy to “revise” the statutory language was not to go to Congress and amend the law. That would have been cumbersome and might have been a red flag that the new procedures were in fact not less noisy. Rather, they leveraged the FAA’s executive branch authority and responsibility to translate laws into regulations, by finding new meanings in the law, that the FAA had not found by itself.

Their legal interpretations of the 2012 FAA law asserted two main things: first that Congress required the new Metroplex procedures, without conditions, and second, that the FAA technical team’s “literal” interpretation of reduced noise on a “per flight” basis was wrong, and that “per flight” actually meant “average per flight”.

In order to reach their first conclusion, that Congress absolutely required the CatEx without conditions, they referenced themselves as experts on what Congress meant. They described their first justification for this as follows in a footnote:<sup>86</sup>

*The Chairs of the CatEx 2 Task Group and RTCA staff met with staff [no names provided] of the Senate Committee on Commerce, Science & Transportation, House Transportation & Infrastructure Committee and with staff that had been on the House transportation & Infrastructure Committee at the time the relevant statutory language was adopted.*

Their second justification was that even if the law says “per flight”, the House version of the Conference Committee record (but not the law) included a last minute addition of “average per flight”. Given their personal knowledge (as lobbyists) of what Congress intended, and the House Conference Report, they conclude that “per flight” in the law meant “average per flight” and not “per flight.”<sup>87</sup> The authors also assert that they, “confirmed with relevant (but not named) Congressional staff, that this language allows for averaging the noise impact on a representative basis over flights undertaking a particular procedure”<sup>88</sup>. This “observation and finding fundamentally informed the Task Group’s work on a method to implement Section 213(c)(2).”<sup>89</sup>


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<sup>86</sup> Footnote 5, “CatEx 2: Recommendation for Implementing the Categorical Exclusion in Section 213(c)(2) of the FAA Modernization and Reform Act of 2012”, RTCA, June 2013, p. 6.

<sup>87</sup> Ibid.

<sup>88</sup> Ibid.

<sup>89</sup> Ibid.



## Congressional Language and Input from Hill Staff

- **Overall Purpose – Facilitate implementing RNAV/RNP approaches**
- **Per Flight Basis further defined in *Conference Report* accompanying the bill.**

House bill modified to change language to separate OEP and non-OEP airports to establish separate timelines and milestones, to require the FAA to provide a categorical exclusion for RNP/RNAV procedures that would lead to a reduction in aircraft fuel consumption, emissions and noise **on an average per flight basis ...**

The problem with this argument is that after all the purported pre-passage focus and discussion with the drafters of the law about the word “average,” the actual law did not include it. The law reads<sup>90</sup>:

*Any navigation performance or other performance based navigation procedure developed, certified, published, or implemented that, in the determination of the Administrator, would result in measurable reductions in fuel consumption, carbon dioxide emissions, and noise, on a per flight basis, as compared to aircraft operations that follow existing instrument flight rules procedures in the same airspace, shall be presumed to have no significant affect on the quality of the human environment and the Administrator shall issue and file a categorical exclusion for the new procedure.*

The Task Group, in effect, asserted that the law contained an ambiguity, and declared disingenuously that without resolving it, the law was unworkable. They then applied highly selective, one-sided and unsubstantiated background “facts” (vouchsafed by themselves) to resolve the invented ambiguity, in a way that, not surprisingly, comported with what they wished

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<sup>90</sup> Acceleration of NextGen Technologies, Title II, §213 (2)(c), FAA Modernization and Reform Act of 2012, Public Law 112-95.

it had said.<sup>91&92</sup> When a lone legal post challenged this “legalish” analysis, and how it was done, Nancy Young, A4A lobbyist and co-chair of the Task Group shot back that it was a, “legally sound way forward in implementing the direction of Congress.”<sup>93</sup> It does not appear to have been challenged in court, perhaps because at this phase the program, few knew what was coming.

The Task Group also observed that because CatEx 1 (a previous CatEx) required consideration of “extraordinary circumstances” that might prevent its application, while CatEx 2 did not, Congress therefore must have intended that CatEx 2 not be subject to any additional environmental analysis standards.<sup>94</sup> (In other words, no enhanced environmental thresholds.) The group again asserts, but does not document, congressional concurrence in this presumption. Besides the obvious observation that Congress actually included three enumerated “circumstances” that would prevent the use of the CatEx and thereby require a full environmental review, this “proof by omission” argument is a slippery slope. Its equally valid to argue that, since the RTCA chairs personally spoke to members of Congress about the “average” method at the time the legislation was being written (as they asserted) and it appeared in the Conference Report, but was absent in the final law, this must mean that Congress did not intend for “per flight” to be subject to averaging.

Whatever the case, there is also a simpler explanation, which is that Congress believed the FAA’s endless assertions that NextGen would reduce noise. The FAA and industry<sup>95</sup> has sold the “NextGen will reduce noise” message to Congress and the public for years. For example, in his 2014 statement to the House Subcommittee on Aviation, FAA Administrator Huerta testified to Congress that NextGen enables aircraft to, “reduce engine power and virtually glide down to

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<sup>91</sup> It is very possible that the Task Force chairs, as key airline and airport industry lobbyists, did discuss including “average” in the legislation. But, it is also equally possible that they did not because it would have been a red flag. Stating that there would be a measurable “per flight” noise reduction would have helped move the legislation forward and in passing it. “Average per flight” would have raised questions, starting with, “what does it mean?”

<sup>92</sup> “RTCA’s Paper on “CatEx 2” for NextGen Implementations is Legally Indefensible,” Aviation and Airport News, Steven Taber, Jan. 23, 2016.

<sup>93</sup> “NAC Refutes Assertion that CatEx 2 is Legally Indefensible”, Airport Noise Report, LAX Community Noise Roundtable, Number 31, Sept. 20, 2013.

<sup>94</sup> “CatEx 2: Recommendation for Implementing the Categorical Exclusion in Section 213(c)(2) of the FAA Modernization and Reform Act of 2012”, RTCA, June 2013, p. 6.

<sup>95</sup> See for example testimony to the Aviation Subcommittee by the **President of GE Aviation who compares NextGen to “Earthday,” and a superb example of “eco-imagination,”** and tells Congress that “within our grasp are new technologies – many of them developed by supremely talented and committed Americans [and perhaps some foreigners] – that can significantly reduce the impact of aviation on our environment.” The road block, she asserts, are the existence of environmental reviews. Statement of Lorraine Bolsinger, President and CEO, GE Aviation Systems, Hearing on NextGen: Long-Term Planning and Interagency Cooperation, House Aviation Subcommittee, April 21, 2010, p. 42-48.



the runway” leading to “reduced noise”.<sup>96</sup> The 2010 NextGen Plan (its annual summary to Congress) states flatly that “Optimized Profile Descent...enables them [aircraft] to operate their engines at or near idle, reducing fuel consumption, emissions and noise.”<sup>97</sup> Even Aviation Subcommittee members regularly state (mistakenly) that planes are quieter, and assume that they create less noise.<sup>98</sup> Variations of this theme – “quiet continuous descents at “idle,”<sup>99</sup> “precise flight paths limit noise,”<sup>100</sup> quiet as “sliding down a banister,”<sup>101</sup> “reduced noise envelope around airports”<sup>102</sup> “enabling avoidance of populated areas,”<sup>103</sup> “reduced noise in surrounding communities,”<sup>104</sup> “absolute reduction in significant community noise,”<sup>105</sup> “significantly reduce the impact of aircraft noise on communities,”<sup>106</sup> “can ease impact

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<sup>96</sup> Statement of Michael P. Huerta, Administrator, FAA, Before the Committee on Transportation and Infrastructure, Subcommittee on Aviation, on “The FAA Modernization and Reform Act of 2012: Two Years Later”, Feb. 5<sup>th</sup> 2014, p. 3 & p. 5.

<sup>97</sup> “Why NextGen Matters”, p. 33 – 34.

<sup>98</sup> See statement by Rep. Thomas Petri during the critical third 2009 hearing on the RTCA NextGen Mid-Term recommendations (which became the basis for the 2012 legislation): “We know the political side of environmental approvals particularly, and it is a no-win situation, but we need to move forward and airplanes are quieter than they were. And, so the real-world consequences of doing this are probably a little less than they might have been some time ago” from “NextGen, a Review of the RTCA Mid-Term Implementation Task Force Report, Hearing Before the Subcommittee on Aviation, (111-73), Oct. 28, 2009, p. 16, and statement by Rep. Eleanor Holmes Norton from hearing video included in, “Norton Demands Answers at FAA Hearing Regarding Airplane Noise Complaints from D.C. Residents”, Press Release, January 23<sup>rd</sup>, 2015 at: <https://norton.house.gov/media-center/press-releases/norton-demands-answers-at-faa-hearing-regarding-airplane-noise>

<sup>99</sup> Optimization of Airspace and Procedures in the Metroplex (OAPM), Quantification of PBN Enabled Benefits, Presented to: NextGen Advisory Committee – SC, Elizabeth Ray, Feb. 7, 2013

<sup>100</sup> “Why NextGen Matters”, See unnumbered preamble to Executive Summary.

<sup>101</sup> See quotes by FAA Assistant Administrator for NextGen, Retired Air Force Major General Edward L. Bolton Jr, in “Turning Around NextGen”, Aerospace America, Oct 2014, p. 11, and text of panel discussion entitled “Progress Reported on NextGen Air Traffic Control” at Aviation 2016, a conference sponsored by The American Institute of Aeronautics and Aviation in Washington DC from June 13 to 17, 2016, and quote from SFO spokesman

<sup>102</sup> Graphic from “Improved Budgeting Could Help FAA Better Determine Future Operations and Maintenance Priorities”, National Airspace System, Report to Congressional Requesters, U.S. Government Accountability Office, Aug. 2013, (GAO-13-693), p. 5.

<sup>103</sup> Statement of Gerald L. Dillingham, Ph.D., Director of Physical Infrastructure Issues, U.S. Government Accountability Office, to the House Subcommittee on Aviation, printed in “Aviation and the Environment, NextGen and Research and Development are Keys to Reducing Emissions and Their Impact on Health and Climate, Government Accountability Office, May 6, 2008, p. 13.

<sup>104</sup> “FAA Has Made Some Progress in Midterm Implementation, but Ongoing Challenges Limit Expected Benefits”, Government Accountability Office, GAO-13-264, April 2013, p. 17.

<sup>105</sup> “NextGen Environmental Management System”, FAA PowerPoint presentation, undated, p. 2.

<sup>106</sup> Statement of Lorraine Bolsinger, President and CEO GE Aviation Systems, Hearing on NextGen: Long-term Planning and Interagency Cooperation, Aviation Subcommittee, U.S. House of Representatives, April 21, 2010, p 44.

of aircraft noise,”<sup>107</sup> “reduced fuel burn and noise,”<sup>108</sup> “Greener Skies,”<sup>109</sup> “moving flight tracks over water”<sup>110</sup> and “quieter aircraft” are a constant in FAA Congressional testimony, press and PR materials.

Moreover, the legislation also specifically called for “reduced separation”, which means that Congress understood that there would be more planes overhead. More planes create more noise in total, but in order to allow more planes, it is reasonable to assume that Congress accepted this increase in total noise, so long as the “per plane” noise did not increase. Instead of considering these logical explanations, the CatEx Task Group immediately found the “per plane” language inconsistent with the intent of the legislation, and stepped in to add the word “average”, which is of questionable provenance and serves more to fuzz the legislation’s meaning than to clarify it – perhaps their goal.

It is the executive branch’s role to interpret Congressional meaning when implementing a law. But, in this case, the FAA abrogated this traditional executive branch role, and turned the law’s interpretation over to the creativity and penumbral revelations of the airline industry lobby to ask them what the law should mean.

To add injury to insult, mid-level FAA technical teams never thought the “per flight” requirement was ambiguous or technically unworkable in the first place.

## VIII. Sacrificial Noise Corridors Enable the “Net Noise Reduction” Measurement Technique

Unlike the RTCA industry task group, the FAA technical team that first interpreted the law, read measurable noise reductions “per flight” to mean “per flight”. But once Administrator Huerta turned interpreting the law over to the RTCA Task Group, it immediately reversed the FAA’s literal reading of the statute (because it would not deliver a CatEx). They then began an end (a CatEx) justifies the means effort to find an interpretation of the law and measurement tool that would meet their goals.

A June 2013 RTCA Task Group report describes this reinterpretation of the law in somewhat patronizing terms:<sup>111</sup>

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<sup>107</sup> Ibid (GE) p. 45

<sup>108</sup> Testimony of David Barger, CEO JetBlue and Co-Chair of the NextGen Advisory Committee, Hearing on “A Review of and Update on the Management of FAA,” Subcommittee on Aviation, September 2, 2012, p. 33.

<sup>109</sup> SeaTac Airport Noise / FAA Public Meeting, Nov. 19, 2015, at <https://www.youtube.com/watch?v=K-G899euMKY>

<sup>110</sup> Testimony of David Barger, pp. 32-33.

<sup>111</sup> Ibid. p. 8.

*Understandably, FAA's [initial] analysis of implementation options appeared to focus on a fairly literal interpretation of the "per flight" element of the requirement in Section 213(c)(2). The Task Group found that further focus on the averaging concept suggested by the language in the legislative history was important to finding means to implement CatEx 2.*

After asserting that noise should be measured on an "average per flight" basis, the RTCA Task Group then reviewed (and overrode) the FAA's list of possible ways to measure noise as required by the legislation. Again, the logic for dismissing the FAA's methods was that they would not support a CatEx. These approaches included the Day/Night Level (DNL) method, Time above Threshold, and Sound Exposure Level (SEL).

In working through, and rejecting all approaches developed by the FAA technical team, the Task Force's view of SEL is telling:<sup>112</sup>

*The CatEx 2 Task Group concurs with FAA that this [Sound Exposure Level] is the best of the options FAA studied if noise is to be captured on a literal per-flight basis, as it captures both duration and noise level and, as a building block for DNL, is a recognized metric.*

In other words, there really wasn't any technical problem, as the Task Group alleged, with capturing noise on a per-flight basis, as the legislation required. The problem was rather that the RTCA and industry did not want to do this because they needed an interpretation to make the new noise disappear in order to qualify for the CatEx.

Changing its tone, the Task Force then commended the FAA team for proposing their heavily criticized 1970's era Day/Night Level (DNL) Average noise analysis method. But they rejected its standard application, and made it even worse. The Task Force report states:


*While finding that FAA had reasonably concluded that none of the metrics the Agency had considered could reasonably be used to implement CatEx 2 under FAA's [literal] interpretation of the requirement to capture noise exposure on a per-flight basis, the FAA analysis formed a solid foundation for the discussions by the Task Group that subsequently resulted in the creation of a different method named by the Task Group as **the Net Noise Reduction Method.***

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<sup>112</sup> Ibid., p. 10.



## Outcomes (cont. 2)

- Review of FAA's analysis on specific options:
    - DNL Metric Option
      - Concur with FAA finding that DNL is a cumulative measure and that logarithmic DNL calculations cannot be divided by the number of aircraft to produce noise "per flight" values
      - Note that while it is technically feasible to construct DNL for a particular flight (i.e., a "partial DNL"), it would not necessarily reflect the noise exposure of the broader population on the ground.
      - If FAA were to take this approach, it would have to define a point at which it would measure and compare this for PBN versus non-PBN procedures. Recognize that this likely would not be accepted by the community.
- 

Note: Per the last bullet, the "community" (i.e., airlines) affirmed that they would not accept any model where the FAA actually measured and compared pre and post PBN

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## Outcomes (cont. 6)

- Review of FAA's analysis on specific options (continued):
  - Sound Exposure Level (SEL)
    - Concur with FAA that this is the best of the options FAA studied, as it captures both duration and noise level and, as a building block for DNL, is a recognized metric.
    - While it is technically feasible to use SEL on a per flight basis, the measurement would not be the same for each point on the receptor grid. Selection of points on the ground presents a problem for this metric. While FAA could make a judgment call regarding the points on the ground to assess, there could be seen as arbitrary and likely would not be accepted by the community.

Note: The Task Force asserted that it was not technically feasible to measure noise on a "per plane" basis; Here they admit it is, but the airlines

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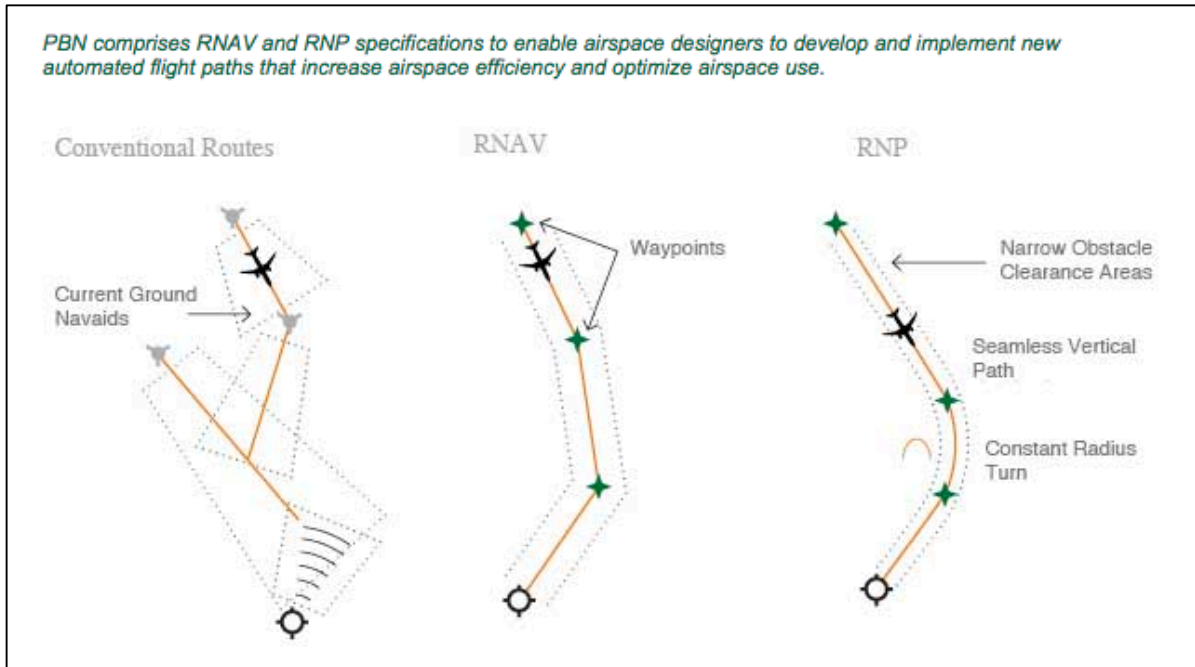
## Outcomes (cont. 7)

- At December Task Group meeting: Identified another potential approach to noise assessment on a per-flight basis:
  - “Modified Contour Overlay” (Term made up by the Task Group)
    - Agreed that a sub-task-group would work to better define the approach and would report back. If analysis were necessary beyond what the sub-task-group could perform, query FAA as to whether it would be willing to do analysis.
    - That work was matured by a sub-group and various elements and sub-options were presented to the full Task Group on January 11
- At January 11 Task Group meeting: Observed that the approach (one particular suboption for implementing it) was promising, pending further review and understanding of relative benefits of this approach as compared to other potential approaches

Taking an ends justify the means approach, the Task Group developed a new approach, partially leveraging the Seattle Greener Skies Environmental Assessment

The “Net Noise Reduction Method,” was a Greener Skies Over Seattle innovation. The method is incredibly cynical. It uses the technological advancements that precision GPS navigation enables to cause harm to people on the ground, rather than to make their lives better.

Traditional RADAR and NAVAID based arrivals paths were quite wide because these technologies are relatively imprecise.<sup>113</sup> This results in airplanes flying dispersed paths, naturally balancing noise across a wider area. RNAV and RNP (two types of Performance Based Navigation or PBN) enable planes to fly in narrow, repeatable, tracks as shown below.<sup>114</sup>



PBN concentrates noise into Sacrificial Noise Corridors

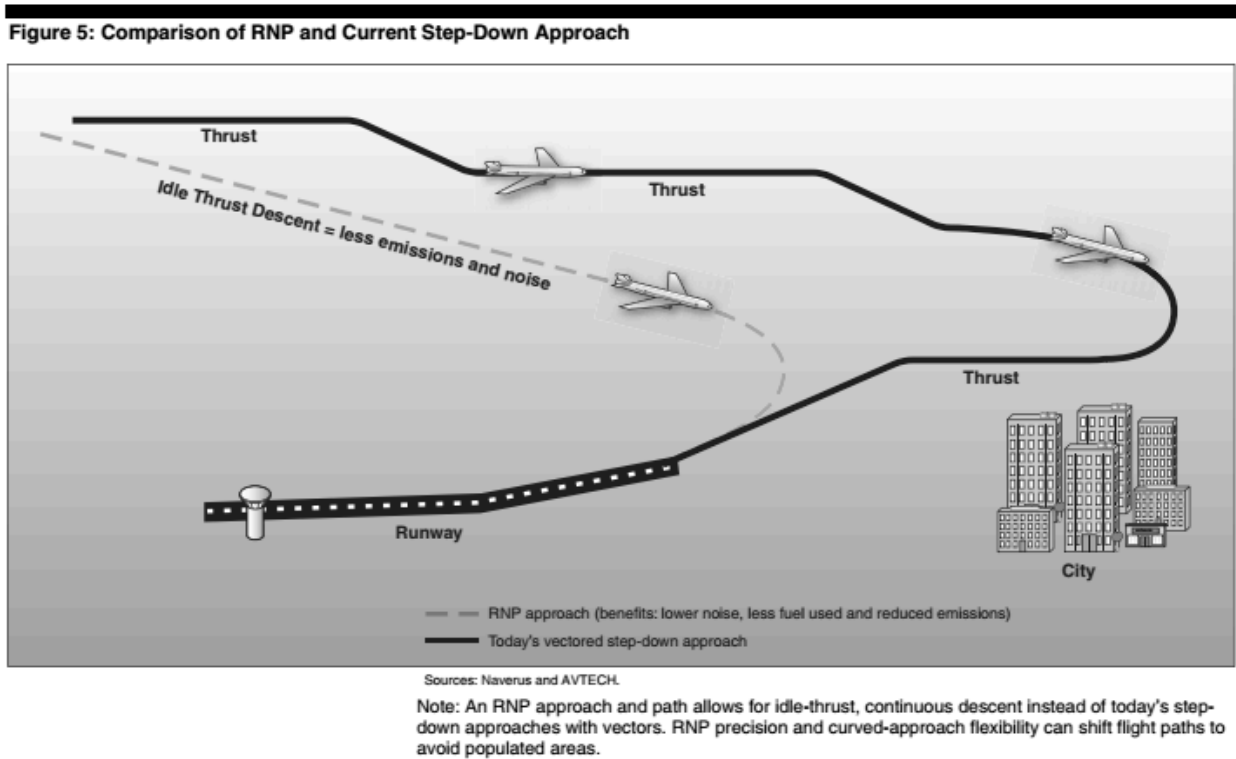
As a byproduct of these compressed paths, RNAV and RNP technologies concentrate most of the noise into narrow **Sacrificial Noise Corridors**.<sup>115</sup> (This concentrated noise is then magnified by the affects of more planes per hour because of reduced separation, lower direct approaches and the strict vertical, horizontal, location and speed constraints an airplane flying PBM procedures must maintain.)

<sup>113</sup> "As Skies Grow Crowded, FAA Preps Air Traffic Control 2.0", Science Section, Wired Magazine, Dave Demerjian, Oct. 25, 2007.

<sup>114</sup> Final Environmental Assessment for Northern California Optimization of Airspace and Procedures in the Metroplex, FAA, July 2014, p. 21.

<sup>115</sup> Final Environmental Assessment for Greener Skies Over Seattle; Proposed Arrival Procedures to Seattle-Tacoma International Airport, Finding of No Significant Impact (FOIA) and Record of Decision (ROD), Federal Aviation Administration, Oct. 31, 2012, p. 5.

PBN's concentrating noise into narrow corridors could have been used for good.<sup>116</sup> The FAA's promotional materials show them being used to avoid populated areas.<sup>117</sup>



The RTCA and airline industry rejected using these capabilities for noise abatement routes, which they view as inefficient “overlay” routes (designed for environmental purposes only.) Instead, they used the fact that PBN focuses noise into Sacrificial Noise Corridors to construct their Net Noise Reduction theory.

The theory is that if the routes become narrower and the noise more concentrated, then there is a “net” reduction in noise. The logic is along the following lines: if 100 people suffer from airplane noise, and a new procedure greatly increases the noise for 45, but provides slight relief for 55 there, is a net reduction in noise. (It then supplements this logic with a tyranny of

<sup>116</sup> There are two approaches in environmental policy to deal with concentrations of pollutants: 1) reduce the pollutants, or 2) declaring a geography a pollution zone a sacrificial use zone, such as a Heavy Industrial zone. The FAA intended the former, the airline industry and the RTCA created the latter, with residents out of luck from the diminished uses of their homes.

<sup>117</sup> Aviation and the Environment: NextGen and Research and Development are Key to Reducing Emissions and Their Impact on Health and Climate, Testimony Before the Subcommittee on Aviation, Committee on Transportation and Infrastructure, House of Representatives, Statement of Gerald L Dillingham, Ph.D., Director, Physical Infrastructure Issues, General Accountability Office (GAO), May 6, 2008, p. 13.

the majority implementation strategy that encourages those who benefitted to support the idea that concentrating harm on the smaller minority is good for everyone.)

The Net Noise Reduction model starts with of the FAA long-standing Day Night Level noise contours around airports, which start at 65+ dB and extend from the airport at 5 dB increments to a final 45 dB contour. The model then creates a second “modified contour overlay” which depicts these same contours after the PBN procedures have concentrated the noise more. (This has no relationship to whether or not there has been a reduction in noise on a “per plane” or “average per plane” basis.) It then counts up winners and losers due the movement and focusing of noise caused by the new procedures.

The FAA asserts that if more people experience even marginally less noise, than experience more noise, no matter how great the increase or how small the decrease, there is a “net noise reduction.” (Given the physics of the new procedures and the increase in traffic, there is no question that the less noise changes are minimal, and the more noise changes are significant. And, the population groupings are trivially easy to gerrymander.) There is no scientific basis for the Net Noise Reduction test, it is simply designed to produce a desired result.

These designs, were presented by the CatEx Task Force in a slide presentation at the June 4<sup>th</sup> 2013 NAC meeting, attended by FAA Administrator Huerta.<sup>118</sup>

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<sup>118</sup> “CatEx Task Group”, Steve Brown, NBAA NACSC Co-Chair, Attachment 2, Presentations, RTCA NextGen Advisory Committee Meeting, Feb. 27, 2013 and “Recommendation for Implementing Categorical Exclusion Contained in FAA Modernization Act of 2012”, Attachment 2, Presentations for the Committee, NextGen Advisory Committee Meeting, June 4, 2013






## Recommendation

- The CatEx 2 Task Group recommends that the FAA implement a system for noise analysis described in this document, referred to as the “Net Noise Reduction Method,” as the means to meet the requirements of Section 213(c)(2) of Public Law 112-95.

**NOTE: Unanimous recommendation from diverse Task Group membership!**

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## Summary of Approach

Step 1. Determine noise-sensitive “area of concern”, Day/Night Average Sound Level (DNL) 45 decibels (dB) and above:

- FAA Order 1050.1E calls for noise screening to evaluate changes in DNL down to DNL 45 dB
- FAA also suggests DNL 45 dB is lower limit of FAA noise models/tools computational reliability

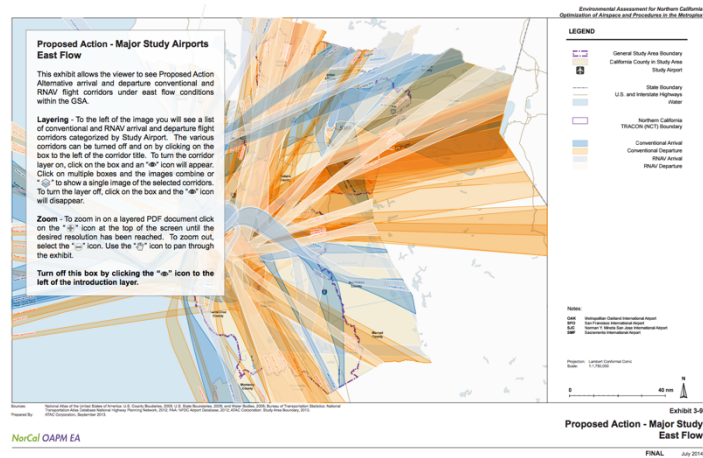
Step 2. Determine change in number of people exposed to noise in DNL bands on an average per-flight basis, by Detailed Grid Computations, comparing existing procedure to proposed procedure at noise-exposed locations

- 
- Uses DNL as metric (i.e., consistent with FAA policy), to construct a “procedure-specific DNL” (reflecting noise from particular procedures)

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The approach measures one procedure at a time, per the slide above. This is necessary, because if all procedures were measured as a whole, the “Net Noise Reduction” model would probably fail (or implode computationally.) Each metroplex airspace design includes many procedures, as depicted by “SFO Eastflow” the diagram for the NorCal OAPM EA, which are used

at different times. Because of this, almost everybody experiences both an increase and a decrease in noise depending on which procedures are being used at the time.



## Summary of Approach (continued)

Step 3. If **net number of people** exposed to noise overall **decreases** and **number of people in the DNL 65 dB contour band decreases (or does not increase)**, the PBN procedure **qualifies for CatEx 2**

- If the **net number of people** exposed to noise overall **decreases**, but the **number of people in the DNL 65 dB contour increases**, FAA should consider also whether the increase in noise exposure in the DNL 65 dB contour has a “significant impact”
- “Significant impact” is considered to be a 1.5 dB noise increase or greater in the DNL 65 dB contour

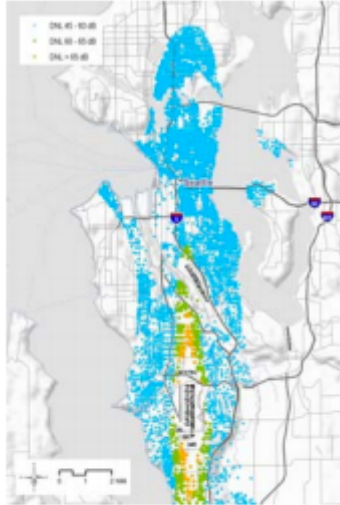
**Key Findings for Implementation: (1) FAA Noise Screening Tools Can Be Used to Implement This Method; (2) Can Be Applied to a Single Procedure or Multiple Procedures**

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The law called for “measurable reductions” in noise. A 1.5 dB increase over the 65 dB maximum is a 40% increase over the maximum, not a reduction.

**Initial Analysis Provided by HMMH (Mary Ellen Eagan) on a Voluntary Basis – MANY THANKS!**

**Example: Seattle Greener Skies**



Step 1: DNL estimates of exposed population in "area of concern"

Affected Population	
DNL	Population
>65	8,493
60-65	45,084
45-60	611,203

Step 2: Use Grid Analysis to show population exposure with and without new procedure

**Illustration – Overall Net Decrease & Decrease/No Increase in DNL 65 dB**

DNL Level	Number of people exposed to DNL Level with the new PBN procedure versus existing procedure		
	Number of people exposed INCREASES	Number of people exposed DECREASES	Number of people exposed UNCHANGED
45-50	16,823	38,384	264,717
50-55	7,251	56,061	129,290
55-60	91	11,293	94,649
60-65	0	0	46,660
65-70	0	0	8,672
70-75	0	0	4
75-80	0	0	0
<b>Total</b>	<b>24,418</b>	<b>105,738</b>	<b>543,992</b>

In this case, the terms of the CatEx 2 would clearly be satisfied

## Illustration – Overall Net Decrease but INCREASE in DNL 65 dB

Number of people exposed to DNL Level with the new PBN procedure versus existing procedure			
DNL Level	Number of people exposed INCREASES	Number of people exposed DECREASES	Number of people exposed UNCHANGED
45-60	114,678	305,653	488,047
60-65	16,436	5,469	48,536
> 65	1,370	0	14,806
<b>Total</b>	<b>132,484</b>	<b>311,122</b>	<b>551,389</b>

In this case, to ensure that noise in the DNL 65 dB contour would not increase to a degree that would call the use of CatEx 2 into question, FAA could confirm that the noise increase experienced in the 65 DNL dB contour is not 1.5 dB or higher (NOTE: in this case, the analysis showed the noise increase in DNL 65 dB was below 1.5 dB – thus, CatEx 2 would be satisfied)

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## Issues Flagged Up

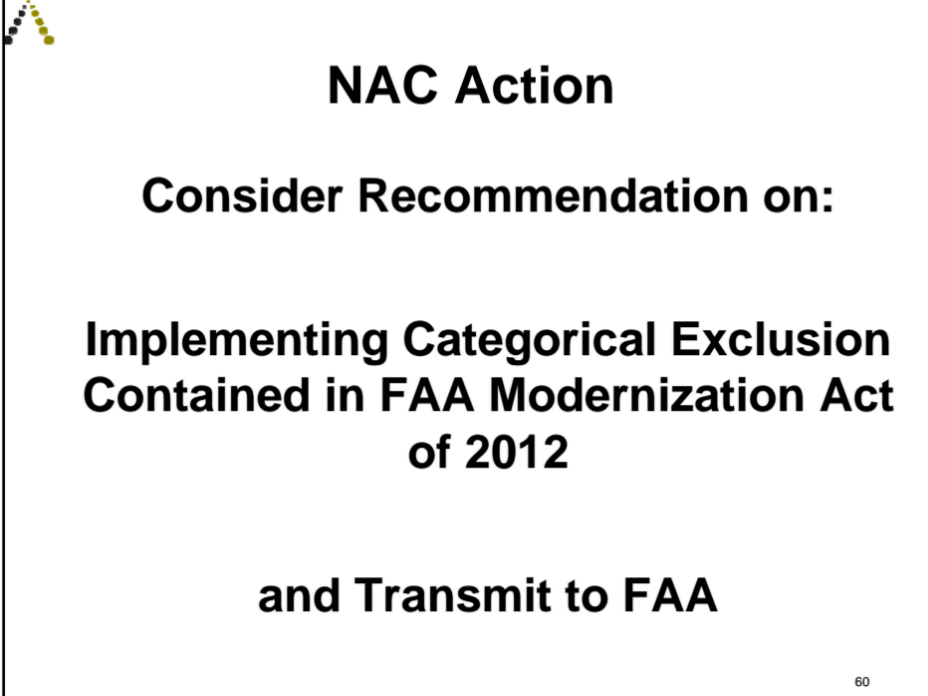
**Key Issue 1:** The CatEx itself requires noise analysis to show noise benefit of procedure

- That necessarily will take time and resources to determine
- If approval under a pre-existing FAA CatEx (not CatEx2) takes an average of 8 weeks (approximate), is it “acceptable” if process for CatEx2 takes somewhat longer than that?
- If not having a CatEx, and having to do an “Environmental Assessment” (EA), takes approximately 18 months and requires analysis of all environmental effects (not just noise), if this approach can save significant time (e.g., a year or more) and resources, is that reasonable?

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In the end, the FAA decided to do Environmental Assessments (EAs) for the 35 Optimization of Airspace and Procedures in the Metroplex (OAPMs), and not assert a pre-emptive CatEx. However, this was form over substance. The FAA did adopt the sure-fire RTCA CatEx Task Force recommended “net noise reduction” test. But, rather than risk the potential

blowback of issuing a CatEx decree based on this test, the FAA instead ran the test through the Kabuki theater of their slightly longer, but no less deterministic, EA approval process.



**NAC Action**

**Consider Recommendation on:**

**Implementing Categorical Exclusion  
Contained in FAA Modernization Act  
of 2012**

**and Transmit to FAA**

60

The RTCA “net noise reduction” construction was married with the NIRS noise model’s simplistic and easily manipulate, “population centroids [which] are evaluated as improved or worsened”<sup>119</sup> and achieved the desired result – a FONSI – in all metroplexes where it was used.

Paradoxically, in 2015, after the severe public outcry from citizens affected by the FAA “optimization” of airspace at major airports, FAA Administrator Huerta announced that the “FAA was undertaking an ‘ambitious project’ to revamp its approach to measuring noise.”<sup>120</sup> On May 15<sup>th</sup> 2015, the FAA issued a Policy Statement that stated, “**Effective May 29, 2015, AEDT 2b replaces AEDT 2a, INM and EDMS, as the required tool for noise fuel burn and emissions modeling for FAA Actions.** Just like its Marche 21<sup>st</sup> 2012, AEDT 2a order, AEDT 2b “is not required for analysis that began before the effective date of this announcement.” Whether the FAA will actually use AEDT 2b or stick with 1970’s and 1980’s science and a 25-year-old model, that always retrurns desired results, is yet to be known. Given that the complaints that Administrator Huerta claimed he was addressing were based on the NIRS models, that the new

<sup>119</sup> EA for NorCal OPAM, p. 5-3.

<sup>120</sup> FAA Requires New Integrated Model for Noise and Air Quality Impact Analysis, Post by Barbara Lichman, Ph.D., J.D., Aviation and Airport News, June 2, 2015

guidelines do not specifically say that NIRS is being replaced leaves one with the sinking feeling that this may be another document where we cannot trust the plain meaning of the language.

## IX. The Greener Skies Pilot and the NorCal 'Optimization of Airspace for the Metroplex' (OAPM) Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) Processes

The prototype for the 35 metroplex airspace redesigns was a program initiated by Alaska Airlines, called Greener Skies Over Seattle. Its purpose was to increase the number of landings possible at Seattle SeaTac airport, by making approaches simpler and more direct, thereby enabling reduced separation requirements, including during bad weather. Its Environmental Assessment (EA) included a early version of the "net noise reduction method,"<sup>121</sup> and followed the FAA's constrained "action" vs "no action" approach, to quickly reach a "Finding of No Significant Impact and Record of Decision (FONSI/ROD)".<sup>122</sup> This FONSI was signed by Elizabeth Ray, Vice President, FAA Mission Support Services in 2012, and was held up by the RTCA and industry as the type of "simple" and "efficient" environment assessment wanted for all metroplex redesigns.

Greener Skies began in 2009 when Alaska Air, Boeing and the FAA, "initiated a plan to investigate new Performance Based Navigation (PBN) procedures for SEA that would...allow aircraft operators to fly optimal descent paths."<sup>123</sup> These were supposed to enable certified aircrews to, "fly shorter routes to the runways than they are able to do at present, and to do so with less pilot-controller interaction and at lower throttle settings".<sup>124</sup>

The latter – lower throttle settings - was supposed to reduce "environmental impact during approaches to land".<sup>125</sup> This is one of the FAA's biggest Pinocchio's. For an optimized descent to be quiet from the ground, the descent needs to be at flight idle all the way to the runway. Optimized Profile Descents at idle stop at the beginning of the Standard Terminal Arrival (STAR) procedure. So the quiet part of the descent is at altitude, and the noisy part is near the group. But, to the FAA, its quiet, at least on average. (Tailored Arrivals do descend at idle to final, but they are highly custom – Pacific Arrivals only – and rare.)

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<sup>121</sup> 2007, p. 5.

<sup>122</sup> Final Environmental Assessment for Greener Skies Over Seattle; Proposed Arrival Procedures to Seattle-Tacoma International Airport, Department of Transportation, Federal Aviation Administration, Oct. 31, 2012

<sup>123</sup> Ibid, p. 3.

<sup>124</sup> Ibid, p. 3.

<sup>125</sup> Ibid. p. 3.

The Greener Skies EA demonstrated one of the FAA's most powerful and easy to abuse regulatory tools, its Action/No Action analysis. The FAA first proposes an Action without considering any alternatives, no matter how obvious or advantageous they might be.<sup>126</sup> Then, it compares this Action to a No Action alternative. The most powerful part of this tool is that the FAA is free to define the impacts of both the Action and No Action any way it wants.

The manipulative power of this Action/No Action approach can be seen in how the FAA reached a finding of "no significant impact" in its Environmental Assessment for the "Northern California Optimization of Airspace and Procedures."<sup>127</sup> It analyzed "the potential environmental impacts from the proposed "Action" – the creation of new routes that would be more direct, lower and support an increased number of planes – and the "No Action" alternative (do nothing) for 2014 and 2019 forecast conditions. The EA concluded that "the Proposed Action would not result in a significant noise impact" over doing nothing.<sup>128</sup> This is how they got there.

First, the FAA defined the Proposed Action in a way that, "no additional growth in operations is anticipated".<sup>129 & 130</sup> According to the NorCal EA and FONSI, "the proposed action does not include development or construction of facilities, such as runways or terminal expansions, that would be necessary to accommodate an increase in aviation activity, therefore, no additional growth in operations is anticipated."<sup>131</sup> In other words, the "Action," by FAA's definition, would require physical on-the-ground construction to be treated as causing traffic growth. New procedures, designed specifically to increase the number of flights by reducing separation cause "no additional growth".

While asserting that the "Action" does not include the "construction of facilities", the FAA boasted on its web site about completing "ADS-B ground stations" on Nov. 10<sup>th</sup>, 2011<sup>132</sup>, to enable the new NextGen RNAV approach routes (which require ADS-B) went live in March of 2012.

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<sup>126</sup> This is justified by FAA Order 1050, 1E, Chapter 4, §405(d) which states that there "is no requirement for a specific number or range of alternatives to be included in an EA" found in Final Environmental Assessment for Greener Skies Over Seattle, p. 5.

<sup>127</sup> Finding of No Significant Impact (FONSI) and Record of Decision (ROD) For the Northern California Optimization of Airspace and Procedures in the Metroplex (NorCal OAPM), July 2015, p. 5.

<sup>128</sup> EA for NorCal OAPM and FONSI, p. 5-3

<sup>129</sup> EA for NorCal OAPM and FONSI, p. 5-3.

<sup>130</sup> Apparently, if the FAA does not build a physical facility, they can assert that they have not enabled growth for the purposes of environmental reviews. That a significant number of ground ADS-X facilities were installed to enable the PBN procedures did not count as new facilities on the ground. This is similar to the Greener Skies finding that the new approaches did not affect protected natural habitat because they did not involve a physical change on the ground – assuming one ignores related runway improvement projects.

<sup>131</sup> EA for NorCal OAPM and FONSI, p. 5-3.

<sup>132</sup> See "ADS-B General" at,

<http://www.faa.gov/nextgen/programs/adsb/coveragemap/media/Advisory-Terminal.pdf> and "ADS-B Coverage Map, Operational" at <http://www.faa.gov/nextgen/programs/adsb/general/>

Having zeroed out the growth effect of the proposed “Action,” the FAA then assumed that the “No Action” alternative would include a large scale growth in traffic. By all accounts, SFO is completely capacity-constrained, and should have had zero or near zero growth capacity under the “No Action” alternative. As far back as 2000, the the Bay Area Metropolitan Transportation Commission determined that, “SFO operates at ‘full runway system capacity’,”<sup>133</sup> In 2001, SFO commissioned a study (that looks like the NorCal metroplex redesign) “to evaluate the prospects for air traffic management technology, airspace allocation, and aircraft navigation, control or communications technology that could increase the capacity of SFO,”<sup>134</sup> because the airport had maxed out its physical capacity. However, the FAA ignored SFO’s well documented physical traffic growth constraints, and used a non-physical calculation to support the fiction traffic would grow significantly if nothing were done.

The source of this fictional growth capacity number under the “No Action” alternative was an FAA document called the Terminal Area Forecast (TAF)<sup>135</sup>. The TAF forecasts potential demand for an airport based on economic growth, airline requests, an unmanaged public input portal and the FAA’s own internal analysis. It has no relationship to the physical capacity of the airport to increase traffic.

The “Forecast Method” section of the TAF makes this clear, that it does not represent an airport’s actual capacity to grow as is. It states:<sup>136</sup>

*The TAF assumes a demand driven forecast for aviation services based upon local and national economic conditions as well as conditions within the aviation industry. In other words, an airport’s forecast is developed independent of the ability of the airport or the air traffic control system to furnish the capacity to meet the demand”.*

Moreover, “The TAF model allows users to create their own forecast scenarios.”<sup>137</sup> **The TAF is a made up number.**

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<sup>133</sup> Regional Airport System Plan, Update 2000 Final Report (Revised to Include Final Airport Capacity and Delay Results 2001), Metropolitan Transportation Commission, 2001, p. 8.

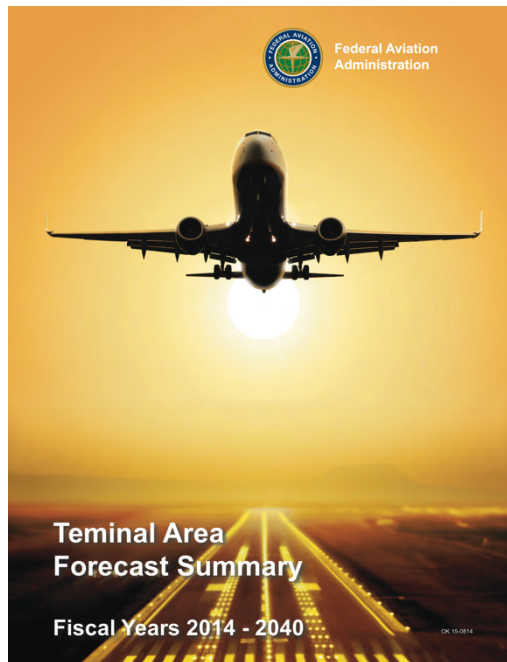
<sup>134</sup> “Potential Future Contribution of Air Traffic Management Technology to the Capacity of San Francisco International Airport, Report of the Independent Technology Panel, Prepared for San Francisco International Airport and San Francisco Bay Conservation and Development Commission, Cotton and Foggia, Cotton Aviation Enterprises, Inc., April 2001, p. 44.

<sup>135</sup> NorCal OAPM, EA p5-4.

<sup>136</sup> Terminal Area Forecast Summary, Fiscal Years 2013 – 2040, Federal Aviation Administration publication OK 14-0723, p. 3.

<sup>137</sup> Ibid.





The FAA assumed that SFO traffic would double<sup>138</sup> if they did nothing, not because the airport has any capacity to grow, but simply by projecting that “demand” for air travel would double.

In the same vein, the NorCal EA made short work of the Environmental Justice considerations required by law.<sup>139</sup> These enhanced protections require the FAA EAs to consider the *environmental justice* impacts on minority and low income communities to determine whether they would be subject to a disproportionately high and adverse impact. Environmental Justice communities are based on census tracts, and certain communities such as East Palo Alto or the Bell Haven neighborhood of Menlo Park would likely qualify. Under the proposed “Action”, East Palo Alto and Bell Haven were at ground zero, directly under the convergence of three approaches at a maximum altitude of 4,000 feet (the Menlo Waypoint), that would account for 65% or more of all traffic landing at SFO.

The NorCal EA skirted the requirement to give East Palo Alto and Bell Haven special consideration by simply rolling up the East Palo Alto and Bell Haven census blocks with all other

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<sup>138</sup> The TAF for SFO estimates that demand for air travel will grow by a factor of 1.93 between 2012 and 2040. Terminal Area Forecast Summary, p. 9.

<sup>139</sup> FAA Executive Order 12898 and DOT Order 5610.2 (cited in FAA Order 1050.1.E) require the FAA to provide meaningful public involvement and consideration for minority and low income populations.

census blocks in their respective counties, Santa Clara and San Mateo, to determine that, in fact, no low income or minority environmental justice communities exist in the study area.<sup>140</sup>

The EA also requires special consideration for specific “impact categories” such as Coastal Resources, Wetlands and Wild and Scenic Rivers. In the Greener Skies EA, the FAA determined that these special impact categories do not apply because the new arrivals procedures “does not entail any ground based development”<sup>141</sup>. However, the overall project also included expanding runways and installing ADS-B towers – “physical developments” –but by treating these as separate unrelated projects for EA purposes, the FAA was able to claim they didn’t need to consider Coastal Resource impacts because their project involved “in the air” changes only.

Finally, the FAA also cites its 1970’s era Day/Night Level to assert that the new procedures “would not result in a significant noise impact, i.e., an increase of 1.5 dB or more at Day-Night Average Sound Level (DNL) of 65 dB or more, at any noise sensitive receptor”. That the FAA still uses this 1974 much-criticized standard is a travesty that was enabled by the Reagan Administration’s defunding of the EPA Noise Office in 1980. The EPA has had no staff, funding or ability to update aircraft noise standards since this defunding. Because Congress doesn’t fund the EPA to regulate aircraft noise, but has not repealed the law designating the EPA to regulate it, the 1974 DNL noise model, fossilized as it is, continues to be the FAA’s “Twilight Zone” standard for noise.<sup>142</sup>

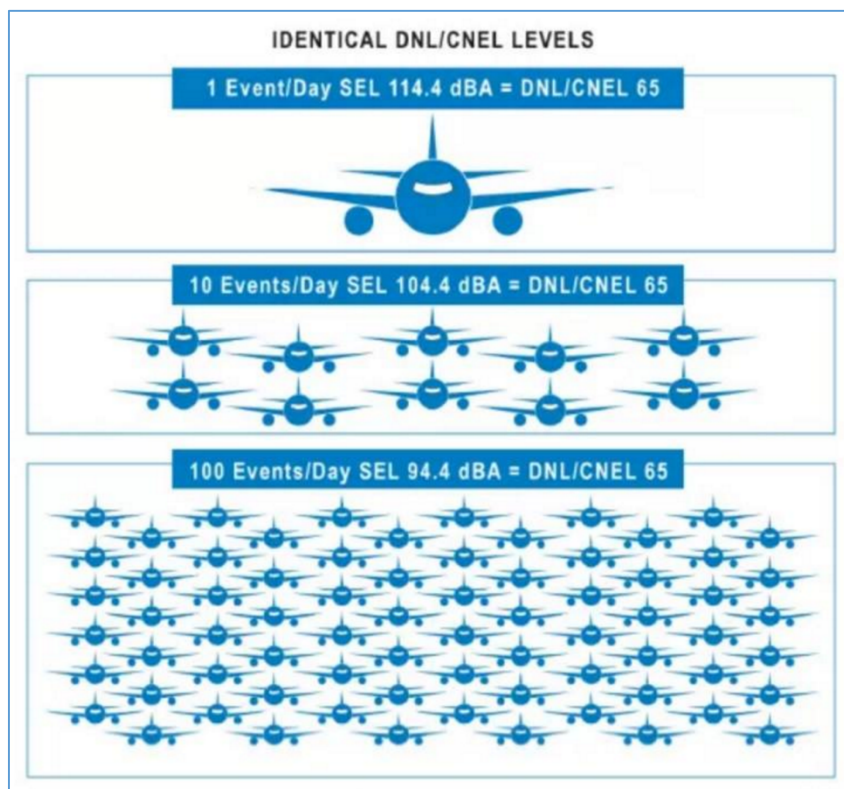
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<sup>140</sup> NorCal OAPM EA, p. 4-24.

<sup>141</sup> Final Environmental Assessment for Greener Skies Over Seattle: Proposed Arrival Procedures to Seattle-Tacoma International Airport, Volume 1 – Main Document, United States Department of Transportation, Federal Aviation Administration, Renton Washington, Oct. 31, 2012, p. 8.

<sup>142</sup> To make matters work, the FAA also applies original DNL model in a watered down fashion, such that major noise events – that are well know to be both physically and psychologically harmful – are averaged out over a 24-hour period into nothingness. But, just in case, it further refines its rules to require a 1.5 dB increase over the maximum 65 dB, a 40% power gain.

The graphic below depicts how meaningless the FAA's DNL noise model is. All three panels represent the exact same noise levels by FAA standards.<sup>143</sup>



#### X. OAPM Public Comment Process – Sudden, Quick and Done

In preparing for the NextGen environmental reviews, the FAA requested White House approval in late 2011 to deviate from the FAA's past NEPA environmental review processes for Instrument Landing Systems, and to implement a "re-engineered" process to conduct PBN environmental reviews for NextGen operations such as RNAV (Area Navigation), STARs (Standard Terminal Arrivals), SIDs (Standard Instrument Departures) and RNP (Required Navigation Performance.)<sup>144</sup> **One of the Agency's primary justifications for these changes to NEPA review processes was increased public transparency:**

<sup>143</sup> <https://www.facebook.com/QuieterSkiesTaskForce/>

<sup>144</sup> Nomination Received by Council on Environmental Quality, Executive Office of the President for: CEQ NEPA Pilot Project Program, Project Title: Environmental Process Re-engineering for Instrument

*The transparency of agency decision making will be improved for this re-engineered environmental process because the proposed online system will allow persons with access to the system to follow their requests through the system to the final environmental decisions and documentation. Also, because the internal FAA and external customers will be involved in the design and testing of the system, they will have direct access to the decision making logic that will be programmed into the system. **Additionally, the online system could be linked to other FAA systems that would allow the public access to environmental projects and documents.***

It is not clear exactly what the proposed re-engineered procedures were or if they were approved by White House staff. In the end, the 35 Environmental Assessments were done in near secrecy, quickly and in a cookie-cutter fashion. They were sprung on communities with minimal notice, and only one or two months to realize they existed, understand them and file objections. In almost all cases, the objections were overruled and the FAA quickly issued prompt Findings of No Significant Impact (FONSI).

In the case of the NorCal OAPM EA, **the FAA sent “Early Notification” letters to 41 “Federal Organizations,” 55 “State Organizations,” 6 “Regional Organizations,” 29 “County Organizations,” 18 “Tribal Organizations”, and no cities.**<sup>145</sup> The public was notified later via a notice in the Federal Register, and two obscure newspaper notices in the San Francisco Chronicle and San Jose Mercury News.

For those “organizations” lucky enough to receive notice, the FAA’s form letter discounted the potential impact of the NorCal OPAM as follows:<sup>146</sup> **“The project may involve changes in aircraft flight paths and/or altitudes in certain areas, but would not require any ground disturbance or increase the number of air operations within the Northern California Metroplex airspace area.”**

Almost half way into the one-month period allowed for public comment, the City of Palo Alto found out about the proposed changes, and took what action it could. Based on the FAA’s letter, the city manager notified the city council that, “the proposed action does not require an increase in the number of aircraft operations or involve additional aircraft landings”.<sup>147</sup> However, in an “abundance of caution,” the city drafted an EA Comment letter to the FAA asking

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Flight Procedures, Submitted by: Donna Warren, Environmental Programs, Mission Support Services, Air Traffic Organization, FAA, June 9th, 2011

<sup>145</sup> “Mailing List for Early Notification Letters on 12-4-2012”, Appendix A: Agency Coordination, Public Involvement and List of Receiving Parties, NorCal OAPM EA, Final, July 2014.

<sup>146</sup> Environmental Assessment Northern California Optimization of Airspace and Procedures in the Metroplex Early Notification Letter, Air Traffic Organization, Western Service Center, Dec. 4, 2012 found in Appendix A: Agency, Public Involvement, and List of Receiving Parties, NorCal OAPM EA, Final, July 2014.

<sup>147</sup> Discussion and Direction to City Manager Regarding City of Palo Alto Response to the FAA Draft Environmental Assessment (EA) Regarding the Northern California Optimization of Airspace and Procedures in the Metroplex (NorCal OAPM), City Council Staff Report, April 29, 2014.

for clarifying details, such as the altitudes of flights, confirm that it is not moving noise from one community to another, and pointing out that the city learned of the changes, not in a letter from the FAA, but third-hand.<sup>148</sup> The mayor reiterated this request for “critically-needed information” in a letter to Anthony Foxx, the then Secretary of Transportation, and pointed out that the “purpose of the EA is not well served” if this information is “last-minute”, and the “written comment period” is only 30 days, only a few weeks from when the city actually received notification.<sup>149</sup>

The FAA’s answers to the city’s questions were as follows:

- **What altitudes** will be flown over the city? – The response provided no data, but directed the city to “Topical Response 3,” entitled “Altitudes Accounted for in the Noise Analysis”.<sup>150</sup> This ‘Response’ simply listed all of the sections in a separate “Aircraft Noise Technical Report,”<sup>151</sup> prepared by ATAC Corporation for the EA, with an asterisk next to three sections, but no data. These three sections in the ATAC report, sections 4.2, 3.2.7 and 3.1, simply explained FAA noise measurement policy, but again provided no data. (The ATAC report did list an “Exhibit 3,” in its Table of Contents entitled “NorCal Population Centroids,”<sup>152</sup> which presumably includes noise data for communities affected, but this exhibit was not attached.<sup>153</sup>)
- Does this **move noise**? – The response was that it does not move noise because the changes involve “no significant noise impacts”.<sup>154</sup> (Its not clear how the “Net Noise Reduction” model works if this is true, as there would not be an increase and a reduction in noise to compare.)
- Why was the **city not notified**? – The response was that notice was provided in the Federal Register, and in notices published in the San Francisco Chronicle and San Jose Mercury News, newspapers 50 miles from Palo Alto.<sup>155</sup> (Focused Internet searches,

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<sup>148</sup> Letter entitled “EA Comment Letter from the City of Palo Alto” (to the FAA), April 24, 2014.

<sup>149</sup> Letter entitled “Northern California Optimization of Airspace and Procedures in the Metroplex Environmental Assessment” from Nancy Shepard, Mayor, City of Palo Alto, to Anthony Foxx, Secretary of Transportation, April 10, 2014.

<sup>150</sup> Response 77-01, Responses to Comments on the Draft EA, Appendix F, NorCal OAPM EA, Final, July 2014, p. 116.

<sup>151</sup> Aircraft Noise Technical Report, prepared by ATAC Corporation, Technical Reports, Aug. 7, 2014 (revised), from NorCal OAPM EA, Final, July 2014.

<sup>152</sup> Aircraft Noise Technical Report, prepared by ATAC Corporation, Technical Reports, Aug. 7, 2014 (revised), Exhibit 3, “NorCal Population Centroids”, p. 3-37.

<sup>153</sup> See NorCal OAPM EA web page at

[http://www.metroplexenvironmental.com/norcal\\_metroplex/norcal\\_docs.html](http://www.metroplexenvironmental.com/norcal_metroplex/norcal_docs.html)

<sup>154</sup> Response 77-03, Responses to Comments on the Draft EA, Appendix F, NorCal OAPM EA, Final, July 2014, p. 116.

<sup>155</sup> Response 77-04, Responses to Comments on the Draft EA, Appendix F, NorCal OAPM EA, Final, July 2014, p. 116.

including those using the two newspaper search tools did not produce copies of these newspaper “notices” to the public or affected cities.)

**The FAA notice process was designed to minimize turnout.** It provided the minimum of notice provided by law, an extremely short review process and the notices themselves were deceptive. The FAA letter’s reassuring assertions that, “the propose action does not require any ground disturbance or increase in the number of aircraft operations”<sup>156</sup> were a false flag, hiding one of the FAA’s most powerful deceptions. That is, in the FAA’s world, so long as it can claim it is not doing construction on the ground, it can double, triple or quadruple flights and still claim that there is no increase in aircraft operations.

In reviewing the NextGen Mid-Term Metroplex implementation, it appears that the FAA simply asserts whatever data, tests and reality achieves its goals, with no consistency, rigor, independent oversight, audit, review or concern for the public. Far from its claims to the White House that its expedited EA process would increase transparency, the FAA proceeded with extreme secrecy and misdirection. Its thirty-five metroplex redesigns have been community and FAA public relations disasters. The FAA has achieved little, and made many enemies.

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<sup>156</sup> Public Notice: FAA Northern California Optimization of Airspace and Procedures in the Metroplex (NorCal OAPM) Draft Environmental Assessment (EA) Document Release, available at [http://www.metroplexenvironmental.com/docs/norcal\\_metroplex/NorCal%20OAPM%20Public%20EA%20Notification%20Announcement%20for%20mailing.pdf](http://www.metroplexenvironmental.com/docs/norcal_metroplex/NorCal%20OAPM%20Public%20EA%20Notification%20Announcement%20for%20mailing.pdf) .

Its flagship Greener Skies Over Seattle is a mess. The program has generated significant community opposition and activism, the airlines are flying dense but simple, and thereby noisy, RNAV procedures, and none on the nine advanced (and expensive) RNP procedures (which, if used correctly, could help reduce noise) are in use.<sup>157</sup>

**RNP AR with RF Leg Usage**

**June 2015 RNP AR USAGE**

Procedure Name	Days Published In Database	Total Candidates	Total Executed	Percent Executed
R34LZ	30	1047	2	0.2%
R16RZ	30	1651	10	0.6%
R16CR	30	29	0	0.0%
R34CZ	30	9	0	0.0%
R16CZ	30	9	0	0.0%
R16CL	30	11	0	0.0%

Airline Utilization of Available RNP Routes at SeaTac

## XI. Summary – We are Worse Off and Actual Modernization Will be Even Harder Going Forward

NextGen started out as the FAA’s program to modernize the management of U.S. airspace, and to maintain (recover) U.S. leadership in air traffic management. The program attempted everything and accomplished almost nothing.

Foreign programs such as the SESAR system in the EU have been much more successful. The reason was knowable, SESAR focused on integrating diverse partners first (much like the Internet model) and allowed for local differences, while NextGen “tend[ed] to be closely tied to government in a hierarchical framework,”<sup>158</sup> enforced one size fits all designs and was massively more ambitious.

Its 2004, the initial Next Generation Air Traffic Management System Integrated Plan listed six expansive goals, starting with “Retain U.S. Leadership in Global Aviation” and ending with

<sup>157</sup> See PBN utilization dashboard at: <http://www.faa.gov/nextgen/pbn/dashboard/#>

<sup>158</sup> Ibid., p. 5.

“Safety, National Defense, Capacity, Environment and Secure the Nation.”<sup>159</sup> In May of 2015, the National Academies’ National Research Council (NRC) published scathing report that essentially declared the FAA’s \$40 billion dollar program, unrecognizable. A Washington Post summary of the report listed the six key NRC findings starting with, “The original vision for NextGen is not what is being implemented today” and ending with “NextGen has become a misnomer”.<sup>160</sup>

The industry driven “Mid-Term” corrections have not make NextGen better. **The airlines and A4A continue to criticize NextGen, but the Mid-Term Plan – NowGen – is their plan.** The FAA bent over backwards to do exactly as the airlines wished. And, what the airlines pushed for was short-term, benefits-now CFO type thinking. They wanted every bit of the high density metroplex access that NextGen originally promised, but they wanted it on the cheap – cheap to them, expensive to citizens living the the metroplex.

The airlines won everything they wanted – reduced separation to increase flights per hour, straight-in arrival paths, early-turn departure paths, no time curfews, and 1970s era factory-floor noise standards – all on bargain basement terms. They gained the right to increase aircraft densities within metroplexes, while investing in only the most minimal level of navigation, training and safety systems necessary to operate at densities without a high risk of crashing. Because of these shortcuts, noise (and low level emissions) exploded, dramatically and predictably.

In September 2011, the NAC’s Airspace and Procedures Group reported on findings from early NextGen implementations at airports like Houston and Denver, prior to the major redesign program authorized by the 2012 legislation. It cautioned that:<sup>161</sup>

*[A]t the various locations in NAS [National Air Space] where it [new RNAV procedures] ha[ve] been implemented, there have been mixed results...A repeatable departure track may be both a benefit and a drawback: the benefit lies in the capacity and efficiency gains the procedure may produce; and the drawback is the fact that in some locations the repeatable flight track has resulted in noise complaints.*

The airlines and the FAA knew early on that the (crudeness of the) redesigns would create significant noise problems. They did not care.

In speaking to the House Committee on Transportation and Infrastructure in November 2014, John Engler, President of the Business Roundtable roundly criticized the FAA’s

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<sup>159</sup> Comparison of the SESAR and NextGen Concepts of Operation, NCOIC Aviation IPT, May, 2008

<sup>160</sup> “Scathing report: FAA isn’t delivering what was promised in \$40 billion project”, The Washington Post, Transportation Section, Ashley Halsey III, May 1, 2015.

<sup>161</sup> Recommendations for Enhancing Operations in Specific Regional Airspace, A Report of the NextGen Advisory Committee in Response to Tasking from the Federal Aviation Administration, Approved by the NAC, Sept. 29, 2011, p. 3.



backwardness and inability to deliver the future. He contrasted the FAA lethargy with private industry's ability to get things done, citing airline led projects like the (Alaska Airlines initiated) Seattle Greener Skies to create "shorter and more precise landing paths". He argued that more programs like this, "will reduce noise exposure around airports, which makes it easier to add runway capacity."

To the Business Roundtable and Airlines for America (A4A), the fast-track NextGen metroplex redesigns are an example of how quickly and well private industry can move, and why Air Traffic Control should be privatized. **As inefficient as the FAA may be, if the Mid-Term Metroplex redesigns were private industry's audition to operate part of the national airspace infrastructure, they failed miserably. Yet, that is now exactly what the airlines have proposed and have been able to include in the current FAA reauthorization process before Congress.**<sup>162</sup>

The metroplex redesigns have greatly harmed communities around the country, and poisoned any chance that industry or the FAA will be given the opportunity to actually modernize the US air transport management infrastructure, which is now sorely behind others in the world.

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<sup>162</sup> See H.R. 4441, the Aviation, Innovation, Reform and Reauthorization of 2016, A bill to transfer operation of air traffic services currently provided by the Federal Aviation Administration to a separate not-for-profit corporate entity, to reauthorize and streamline programs of the Federal Aviation Administration, and for other purposes.