Written Testimony of
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Committee on Commerce, Science, and Transportation
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"Aviation Infrastructure for the 21st Century"

Thank you for the opportunity to testify on behalf of the National Air Traffic Controllers Association, AFL-CIO (NATCA) at today's hearing titled "Aviation Infrastructure for the 21st Century." NATCA is the exclusive representative for nearly 20,000 employees, including the Federal Aviation Administration's (FAA) air traffic controllers, traffic management coordinators and specialists, flight service station air traffic controllers, staff support specialists, engineers and architects, and other aviation safety professionals, as well as Department of Defense (DOD) and Federal Contract Tower (FCT) air traffic controllers.

I. Executive Summary

As NATCA has been highlighting for years, a stop-and-go funding stream negatively affects all aspects of our National Airspace System (NAS). It undermines air traffic control services, staffing, long-term modernization projects, preventative maintenance, and ongoing modernization to the physical infrastructure. It also slows the hiring and training process while preventing the timely implementation of modernization programs and the integration of new users into the system.

Without a stable, predictable funding stream, the FAA will be hard-pressed to maintain pre-pandemic capacity, let alone modernize the physical and technological infrastructure of the system while expanding it for new users including unmanned aircraft systems, commercial space launches, and supersonic aircraft. NATCA's testimony will focus on NATCA's greatest priorities in the areas of physical infrastructure as well as the modernization and technological needs of the system.

The FAA's physical infrastructure needs immediate attention and upgrading our aging air traffic control (ATC) facility infrastructure is a top priority for NATCA. The FAA's Air Route Traffic Control Centers (ARTCC) are almost 60 years old, and many of the towers and Terminal Radar Approach Control facilities (TRACONS) are in desperate need of repair or replacement. Many of these facilities have exceeded their life expectancy, while others need replacement of critical physical infrastructure systems including roofs, windows, HVAC systems, elevators, and plumbing.

In addition, NATCA and our front-line controller members have been collaborating with the FAA to implement NextGen modernization programs for the past 12 years. We have had many successes and we anticipate many more. Our top priorities are to maintain and upgrade our foundational air traffic automation platforms in our en route and terminal facilities that deliver flight plan and surveillance information to controllers on a real-time basis. Our other top priorities include replacing the antiquated automation platform that supports Alaska, Hawaii, Puerto Rico, and Guam as well as the continued operability and future enhancement of long-range radar surveillance.

Our other technological modernization priorities are in the areas of communications, notices to airmen, which disseminate critical safety information to airspace users, support tools in automation, and traffic management tools for existing users and new entrants including UAS and commercial space.

We now have an historic opportunity to invest in our nation's aviation system, both its physical infrastructure and technology, to ensure the NAS remains the gold standard around the world.

II. NATCA Urges Support for a Robust Funding Authorization for Air Traffic Control Facility Infrastrucure

The FAA operates more than 300 air traffic control facilities of varying ages and conditions all across the United States. The FAA's 20 Air Route Traffic Control Centers (ARTCCs) located in the continental United States were built in the 1960s and are almost 60 years old. The FAA's large, stand-alone Terminal Radar Approach Control facilities (TRACONs) are, on average, more than 25 years old. In addition, the FAA has 132 combined TRACON/Towers, which average about 35 years are old. Finally, the FAA has another 131 stand-alone towers, which average more than 30 years old. Many of these facilities have exceeded their life expectancy. Please see the Appendix for a breakdown of the ages of the FAA's air traffic facilities.

Many of these facilities have identifiable defects that require immediate attention. These issues range from workplace safety issues to airspace safety concerns. Some of these issues have led to periodic airspace shutdowns and many others lead to health and safety concerns for the workforce. When major systems fail or facilities have integrity problems, it can lead to a less efficient airspace. Although the FAA has begun the process of addressing its aging infrastructure through a combination of realignments, sustaining and maintaining some facilities, and replacing a handful of others, that process has been slow and hampered by the stop-and-go funding stream.

NATCA believes that over one-third of FAA's facilities have only minor concerns or no concerns. For the most part, these facilities need only maintenance of their current physical infrastructure in order to continue to provide a safe environment for the workforce and a functional building to perform the FAA's mission.

However, on the other end of the spectrum, there are roughly 10% of facilities that are of our highest concern and another approximately 20% of facilities that have major concerns regarding overall facility condition. To this end, NATCA has identified seven general areas of facility infrastructure needs across the FAA: building integrity, HVAC conditions, restrooms, elevator/stairs, building security, lighting, and OSHA issues.

1. Building Integrity

NATCA defines building integrity as the condition of the building's roof, windows, doors, and ceiling. NATCA believes that over 25% of all facilities have an immediate need regarding building integrity.

For example, at David Wayne Hooks Air Traffic Control Tower (ATCT, DWH) near Houston, the tower cab roof has continued to leak water into the inside of the tower cab windows for days after every significant rainstorm. It is unknown where this water drains, but it goes into the area under the consoles where the wiring is located. Since 2011, at least five of the 12 tower cab windows have rivulets of water going down them after moderate to heavy rainstorms. Further, the tower cab infrastructure cannot support double shades for the windows. The building is not

secure against small pests and rodents. Multiple times each year employees will encounter snakes, large spiders, and mice inside the building. The tower cab roof access ladder is dangerous as well.

At Falcon Field ATCT (FFZ), in Mesa, Ariz., the roof lifts off the building when the wind is at or above 15 knots. The building shakes, the floor vibrates, and controllers can hear the room moving.

At Peoria ATCT (PIA) in Illinois, when it rains, water leaks through the ceilings and down the walls. Rainwater splashes over and around the windows to the point that controllers use towels to absorb it. Although the FAA has patched the roof, the water finds its way inside. Almost every room and hallway in the basement shows signs of water damage, including standing water in many locations. In the basement, there is asbestos-laden piping insulation that has degraded and crumbles from the ceiling. Electrical boxes and extension cords in the basement needed for operation of the lights are exposed to standing water and water leaks. Bird carcasses are not uncommon in a room regularly used by employees. The roof of the mechanical room is settling, creating gaps for water to find its way inside. Even after roof patching and asbestos containment measures, more leaks have developed on a floor with many sensitive electronics that are essential for providing air traffic control services.

These types of building integrity issues are not limited to the smaller air traffic facilities. For instance, at Newark Liberty International Airport (EWR), there are leaks in the roof of the tower and the main building. There are buckets in the hallways to catch the water falling, which constitutes hazards for walking, the break room windows leak, and sheetrock is crumbling.

2. HVAC Systems

NATCA defines HVAC systems as air conditioner, heater, and exhaust vents. Approximately one-third of all facilities have significant HVAC system issues. NATCA has identified roughly 30 facilities of the highest concern for HVAC system condition and an additional 75 with HVAC systems as a major concern.

For example, at Wilmington International Airport ATCT (ILM) in Delaware, the HVAC unit breaks several times a year causing the temperature inside the tower to rise to almost 90 degrees during the summer and drop to the mid-50s in the winter. Even when operational, the system fails to hold a consistent temperature, requiring controllers to alternate between employing fans or multiple space heaters, which pose their own hazards in the operational area.

At McClellan-Palomar ATCT (CRQ) in Carlsbad, Calif., the air conditioner unit was recently replaced. However, jet fuel exhaust from the fixed base operator at the base of the tower and the terminal ramp enters the tower stairwell through the unprotected fire suppression exhaust system. This fills the tower cab, offices in the tower, and tower break rooms with the smell of jet fuel. Floating particulates inside the tower cab often gather on the tower shades, creating visibility issues. When employees or contractors attempt to clean the shades, the particulates leave permanent scratches on the shades. The air intake in the center of the tower cab is caked with dirt and debris.

At Seattle-Tacoma International Airport ATCT (SEA), controllers in the tower cab and on the 12th floor periodically experience headaches and dizziness as a result of the strong smell of jet fuel.

3. Restroom Conditions

Restroom conditions include fixtures, stalls, door locks, and plumbing. NATCA has the highest concern about restroom conditions at more than 20 facilities. We consider about 50 facilities' restroom conditions a major concern. Based on our observations, over 20% of all facilities have serious issues regarding their restroom conditions.

For example, at Buchanan Field ATCT (CCR) in Concord, Calif., there is only one toilet. When testers arrive at the facility to perform random drug and alcohol screenings of employees, the restroom is unavailable for any other purposes for periods of approximately three hours.

At Washington ARTCC (ZDC) in Leesburg, Va., there are consistent plumbing issues. As a result of issues with the main plumbing stack identified by a plumbing contractor, the men's restroom in one wing of the building has the constant smell of sewage. The main women's restroom in the facility has been closed several times because of the similar sewage smell. Since at least 2006, the basement men's restroom sinks clog regularly. Additionally, when the town of Leesburg had a water main break in 2020, ZDC lost the use of all water and restrooms for multiple days and restroom trailers were brought on site. Although that issue was corrected, since then, ZDC's water pressure has significantly decreased, causing additional plumbing issues.

At Jacksonville International Airport ATCT (JAX), there is sewage smell in the main men's restroom at least once a month. The s-trap dries up and allows the gas to back up into the restroom. The women's primary restroom had a sewer backup earlier this year and flooded the women's restroom with sewage. The tower cab restroom and tech ops restroom have similar sewage smells.

4. Elevators/Stairs

NATCA defines elevator and stairs problems as those affecting elevator panels, emergency phones, stair lighting, stair steps, and head clearance. NATCA has identified nearly 20 facilities where either elevators or stairs are of the highest concern. NATCA has identified more than 40 additional facilities with elevators/stairs as a major concern. Approximately 20% of facilities have significant issues regarding their elevators or stairs.

For example, at Fayetteville Regional Airport ATCT (FAY) in North Carolina, the elevator has never been operational.

At Memphis International Airport ATCT (MEM), like many towers, there is a single elevator that accesses the tower cab. The elevator breaks down frequently. Multiple employees have been trapped in the elevator on different occasions. When the elevator is non-operational, the only

option is a long, 330-foot vertical climb up the stairs, which is a particular problem in the summer because the stairs are not climate controlled.

5. Building Security

NATCA has identified over 20 facilities for which we have the highest concern for the building's security. We identified more than 40 additional facilities where building security is a major concern. Just under approximately 20% of all facilities have significant building security concerns.

For example, at Juneau International Airport ATCT (JNU) in Alaska, the cipher lock system is provided by the city and it automatically unlocks all of the doors in the event of a power outage. Additionally, tower access is located in the main airport lobby area, outside of TSA security, meaning anyone could come into the control tower. When employees relayed their concern to the airport, they said that is by design so they could use the control tower stairwell as a fire exit. Additionally, the tower security camera fails often and the door intercoms do not work well.

At General Mitchell International Airport (MKE), in Milwaukee, the front gate to the employee parking lot malfunctions frequently. On many occasions, the gate is left open and there have been several instances of unauthorized vehicles driving into the lot, posing security concerns.

6. Lighting

NATCA is aware of internal and external lighting condition issues at several facilities. NATCA has identified three facilities where lighting is at the highest concern level. We also have identified more than 20 additional facilities in which lighting is a major concern. Approximately 8% of facilities have significant lighting concerns.

For example, at Dallas-Fort Worth International Airport ATCT (DFW), NATCA identified lighting issues in the tower cab. DFW has focused cannister lights for overhead lighting with shielding panels that should be able to control both the intensity and coverage area for each individual light. The placement of these cannister lights occurred when the towers were built more than 25 years ago. Their placement was based on the equipment and operational practices in use at that time.

A great deal has changed since then, but the lighting system and associated issues have not. There are several areas where controllers must supplement the lighting system with hand-held flashlights due to the deficiencies in lighting coverage. The under-counter lighting has similar issues, and is also prone to breaking due to the many space heaters that get stored beneath the countertops as well as deficiencies in the quality of installation. In the emergency stairwells, there are frequent lighting outages due to inattention to required maintenance, often resulting in a trip hazard due to the reduced visibility.

7. OSHA Concerns

NATCA defines OSHA concerns as including noise, water quality, indoor air quality, and appropriate number of emergency exits. There are approximately 25 facilities that NATCA has identified as having the highest concern for OSHA issues. We identified more than 60 additional facilities at which OSHA issues are a major concern. Approximately 30% of all facilities have significant OSHA concerns.

For example, at the Great Lakes Regional Office in Des Plaines, Ill. the water has had high lead readings for three years requiring employees to use bottled water for drinking.

At San Diego International Airport (SAN), approximately 10 years ago, it was discovered that the drinking water was not potable. The FAA has attempted various fixes over the years, but has been unsuccessful. Today, the FAA is forced to provide hand sanitizer stations because the water is not safe enough for hand washing, but the dishwasher and showers are somehow considered acceptable. Drinking water is provided via a bottled water contract, however the water dispensers are not cleaned or tested regularly. And, these water bottles must be carried up the tower steps by the controllers, leading to risk of injury.

At Pittsburgh International Airport ATCT (PIT), when there is heavy precipitation, water leaks into the facility near electrical fixtures. Ultimately, it pools on the floor creating multiple safety hazards. Portions of the break room ceiling as well as restroom ceiling are crumbling and falling near employees.

At El Paso International Airport ATCT (ELP) in Texas, there are several occupational safety and health concerns. Several times in recent years water lines to the tower cab have failed leaving controllers without access to fresh, clean drinking water. The latest occurrence was earlier this year and lasted for about two weeks. The elevator is of equal concern. It has been failing at an alarming rate over the past few years and has left multiple controllers stranded inside of it for several hours. ELP has had to call the local fire department and the contractor responsible for the maintenance and repair of the elevator to help free stuck employees. The building itself contains both friable and non-friable asbestos and there have been several occurrences where work projects have been suspended upon its discovery. A simple carpet installation was delayed for over 18 months due to finding non-friable asbestos in the mastic of the floor tiles underneath the existing carpeting.

In summary, aviation is a critical part of our nation's infrastructure, and the repair or replacement of aging air traffic control facilities will be essential to allow the United States to maintain the safest, most efficient airspace system in the world. NATCA strongly supports legislative efforts to bring air traffic control facilities up to standard. President Biden has also called on Congress to invest in upgrades to FAA assets to ensure safe and efficient air travel and as part of his American Jobs Plan. Most recently, he indicated his support for modernizing the air traffic control system in his FY 2022 budget proposal. Providing additional funding for the repair or replacement of aging air traffic control facilities will result in more jobs for the American people and deliver benefits to our struggling economy and the flying public alike.

III. Modernization and Maintenance of Key Programs and Platforms

Modernization to air traffic control technology also has been hampered as a result of an unstable, unpredictable funding stream, which has jeopardized the safety and efficiency of the NAS. To that end, NATCA believes that the following platforms and programs are the most critical to maintaining and upgrading the system. We have sorted these platforms and programs into five tiers based on their relationship and necessity to the continued safe and efficient operation of the NAS.

1. Tier 1 Funding Priority – Automation Platforms and Surveillance

En Route Automation Modernization (ERAM), Terminal Automation Modernization Replacement (TAMR), and Advanced Technologies & Oceanic Procedures (ATOP) are all automation platforms that deliver flight plan and surveillance information to air traffic controllers on a real-time basis. These platforms are the foundational systems that keep our NAS operating safely day and night. The FAA must be able to sustain and upgrade each of these automation platforms. For instance, the base equipment (hardware, monitors, and servers) used to operate ERAM will reach its end of lifecycle (i.e., the manufacturer-determined date upon which the equipment will need to be replaced based on its anticipated use) by 2025 and NATCA is concerned with funding constraints that could jeopardize the program. These systems operate 24 hours a day, 7 days a week and, therefore, the hardware must be monitored and replaced at scheduled intervals.

Microprocessor En-Route Automated Radar Tracking System (Micro-EARTS) is the automation platform that supports Guam, Puerto Rico, Hawaii, and Alaska. The FAA has identified the need to replace Micro-EARTS with ERAM and/or TAMR. These replacement programs will improve NAS interoperability and reduce cost by standardizing the training, maintenance, and development efforts by bringing these facilities under the NextGen automation umbrella.

Long-Range Radar services for both en route and terminal environments remain critical to the safe and efficient operation of the NAS. Even with the wide deployment of ADS-B Out, there is still a need for non-cooperative surveillance tools such as Long-Range Radar services, which allow controllers to see aircraft that are not ADS-B Out equipped. These services are critical to controllers fulfilling their safety functions.

2. Tier 2 Funding Priority – Communications

Voice over Internet Protocol Communications Enterprise (VoICE) is the program and new equipment that will replace the aging (physical) communications technology that controllers use to communicate with pilots and other air traffic facilities. The current equipment is outdated, is approaching end of lifecycle on multiple systems, and replacement parts are getting harder to acquire because the existing systems are no longer supported by their manufacturers.

Time Division Multiplexing (TDM) – to – Internet Protocol (IP) (TDM-to-IP) is the program that will upgrade all copper wiring infrastructure with fiber optic cable wiring. This program is critical because major U.S. telecommunications carriers have communicated their intention to discontinue current TDM-based services (supported by the current copper wiring) as early as this

year. The FAA is highly dependent on these services to receive and transmit information at approximately 6,000 sites. Any discontinuation or disruption of TDM services without first transitioning to IP communication services would lead to potential safety risks and/or delays in air traffic services.

Operational and Supportability Implementation System (OASIS II) is a critical piece of the communications system that is used at all 17 Flight Service Stations (FSS) throughout Alaska. OASIS II must be maintained until a replacement system can be implemented. OASIS II is used by Flight Service Air Traffic Control Specialists in Alaska to provide weather briefing and flight planning services to general aviation pilots. However, OASIS II is beyond its end of lifecycle and is beginning to experience system failures.

3. Tier 3 Funding Priority – NOTAMS

The **Federal Notice to Airmen (NOTAM) System (FNS)** provides critical information to controllers and pilots about issues in the NAS, for which timely knowledge of the issue is essential for personnel concerned with flight operations. NOTAM modernization is an FAA Top 5 safety priority and requires appropriate funding levels to sustain and upgrade the system.

4. Tier 4 Funding Priority – Support Tools in Automation

The **legacy weather systems** must be maintained until NextGen Weather Processor (NWP) can be implemented. NWP is a program that will consolidate multiple weather systems into one, while also incorporating new weather products. The consolidated program will allow air traffic managers to evaluate weather effects and plan initiatives.

Funding for legacy Information Display Systems must be maintained until the **Enterprise Information Display Systems (E-IDS)** can be deployed in approximately 2025-27. E-IDS will provide a wide variety of information to air traffic controllers such as current weather, airspace delegation, access to approach plates, NOTAMS, SIGMETS, flight route verification and aircraft information. However, FAA facilities currently utilize several different systems that are beyond the "end of lifecycle" stage and replacement parts are becoming harder to acquire.

5. Tier 5 Funding Priority – Decision Support Tools and Commercial Space Operations

Traffic Flow Management System (TFMS), which is a strategic planning tool for identifying and managing air traffic flow constraints in NAS related to congestion in certain geographical areas, must be maintained until a replacement system can be implemented. TFMS processes all available data sources such as flight plan messages, flight plan amendment messages, and departure and arrival messages. TFMS identifies constraints such as a weather event or major sporting event and helps the FAA plan for and execute that plan to minimize its negative effects on the NAS. However, due to contractual issues related to a recent court ruling that will limit new enhancements to the system, TFMS will need to be replaced with a new system to ensure minimal disruption to the NAS. Maintaining and upgrading TFMS will be necessary to Commercial Space operations. By providing the FAA with these critical decision support tools,

the agency can minimize the disruption to the NAS during the launch and scheduled re-entry of Commercial Space vehicles, rather than segregating approximately 1,000 square miles of airspace with temporary flight restrictions for each launch and recovery.

Funding must be maintained for the development, testing, and deployment of **Terminal Flight Data Manager (TFDM),** which will provide improvements to flight data coordination and management for air traffic users, as well as enhanced surface traffic flow management capabilities. Among other things, TFDM will replace ATCT paper flight strips with electronic flight strips, provide automation for electronic flight and airport data management, and interface with other NAS systems to share electronic flight data. In order for TFDM to deliver its proposed benefits for air traffic controllers and the industry, the FAA must maintain the original list of facilities scheduled to get electronic flight strips. NATCA is concerned that any decreased functionality or reduction to that list of facilities may affect the improvements that will be relied upon by other NAS systems.

IV. FAA Would Benefit from Reformed Procurement System

NATCA continues to urge Congress and the FAA to take a close look at the FAA's procurement rules, which are fundamentally flawed in regard to planning and funding for technology and modernization programs, and to consider further procurement reform for the FAA. Twenty-five years ago, the FAA Reauthorization Act of 1996 (Pub. L. 104-264) included procurement reform, which granted the FAA the authority to create its own acquisition management system and adopt its own procurement rules to allow the FAA to be more nimble in this area. However, in practice, the FAA merely created a set of procurement rules that mirror the rest of the federal government, which defeated the purpose of the reform.

V. Conclusion

NATCA believes that we must take this opportunity to secure the critical funding necessary to maintain, repair, and replace the FAA's ailing physical infrastructure, as well as to modernize the NAS to meet both today's needs and those of the future. Without these investments, the FAA will be hard-pressed to maintain pre-pandemic air traffic capacity, let alone modernize the system or expand it for new users such as UAS and commercial space operators.

NATCA thanks Chair Sinema and Ranking Member Cruz, as well as Chair Cantwell and Ranking Member Wicker, for the opportunity to offer testimony on these critical issues.

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Appendix
Air Traffic Control Facility Age

FAA's Air Route Traffic Control Centers (ARTCCs)

Code	Facility Name	Age
ZAB	Albuquerque Air Route Traffic Control Center	58
ZAN	Anchorage Air Route Traffic Control Center	52
ZTL	Atlanta Air Route Traffic Control Center	61
ZBW	Boston Air Route Traffic Control Center	58
ZAU	Chicago Air Route Traffic Control Center	59
ZOB	Cleveland Air Route Traffic Control Center	60
ZDV	Denver Air Route Traffic Control Center	59
ZFW	Fort Worth Air Route Traffic Control Center	59
ZHU	Houston Air Route Traffic Control Center	56
ZID	Indianapolis Air Route Traffic Control Center	59
ZJX	Jacksonville Air Route Traffic Control Center	60
ZKC	Kansas City Air Route Traffic Control Center	59
ZME	Memphis Air Route Traffic Control Center	59
ZMA	Miami Air Route Traffic Control Center	65
ZMP	Minneapolis Air Route Traffic Control Center	59
ZNY	New York Air Route Traffic Control Center	58
ZLA	Los Angeles Air Route Traffic Control Center	58
ZOA	Oakland Air Route Traffic Control Center	61
ZLC	Salt Lake Air Route Traffic Control Center	59
ZSE	Seattle Air Route Traffic Control Center	59
ZDC	Washington Air Route Traffic Control Center	58
	Average Age:	**58.9**

FAA's Large TRACONs

Code	Facility Name	Age
A80	Atlanta TRACON	20
A90	Boston TRACON	17
C90	Chicago TRACON	25
D10	Dallas - Ft Worth TRACON	25
D01	Denver TRACON	29
JCF	High Desert TRACON	60
I90	Houston TRACON	8
N90	New York TRACON	43

NCT	Northern California TRACON	19
P31	Pensacola TRACON	12
PCT	Potomac TRACON	19
S46	Seattle TRACON	17
SCT	Southern California TRACON	28
T75	St Louis TRACON	19
	Average Age:	**24.4**

Core 30 Airport Towers and Tower/TRACONs

ATL	Atlanta Tower	15
BWI	Baltimore Tower	71
BOS	Boston Tower	48
CLT	Charlotte Tower	43
ORD	Chicago O'Hare Tower	25
ORDA	O'Hare North Tower	12
ORDB	O'Hare South Tower	6
DFW	Dallas Fort Worth Tower Center	47
DFWA	Dallas Fort Worth Tower MA2	27
DFWB	Dallas Fort Worth Tower MB2	27
DEN	Denver Tower	26
DTW/D21	Detroit Tower & TRACON	29
IAD	Dulles Tower	14
FLL	Fort Lauderdale Tower	30
HNL	Honolulu Tower	20
IAH	Houston Intercontinental ATC Tower	24
JFK	Kennedy Tower	27
LGA	La Guardia Tower	11
LAS/L30	Las Vegas Tower & TRACON	5
LAX	Los Angeles Tower	25
MEM/M03	Memphis Tower & TRACON	10
MIA	Miami Tower	19
MDW	Midway Tower	24
MSP/M98	Minneapolis Tower & TRACON	26
EWR	Newark Tower	18
MCO	Orlando Tower	19
PHL	Philadelphia Tower	40
PHX/P50	Phoenix Tower & TRACON	14
SLC/S56	Salt Lake City Tower & TRACON	22
SAN	San Diego Tower	25
SFO	San Francisco Tower	5
SEA	Seattle Tower	17

TPA	Tampa Tower	49
DCA	Washington National Tower	24
	Average Age:	**24.8**

Remaining ATC Towers/TRACONs

ABI	Abilene Tower	9
ADS	Addison Tower	16
CAK	Akron-Canton Tower	59
ALB	Albany Tower	22
ABQ	Albuquerque Tower	27
AGC	Allegheny Tower	79
ABE	Allentown Tower	26
AFW	Alliance Tower	29
AMA	Amarillo Tower	62
ANC/A11	Anchorage Tower & TRACON	46
ADW	Andrews Tower	55
ARB	Ann Arbor Tower	48
AVL	Asheville Tower	40
ASE	Aspen Tower	48
ACY	Atlantic City Tower	34
AGS	Augusta Tower	46
ARR	Aurora Tower	45
AUS	Austin Tower	23
BFL	Bakersfield Tower	46
BGR	Bangor Tower	25
BAD	Barksdale RAPCON	53
BTR	Baton Rouge Tower	39
BPT	Beaumont Tower	17
BIL	Billings Tower	15
BGM	Binghamton Tower	70
BHM	Birmingham Tower	20
BIS	Bismarck Tower	48
BFI	Boeing Tower	60
BOI	Boise Tower	8
LOU	Bowman Tower	58
POC	Brackett Tower	56
BDL/Y90	Bradley Tower & TRACON	22
BJC	Broomfield Tower	9
BUF	Buffalo Tower	27
BUR	Burbank Tower	30
BTV	Burlington Tower	32

CDW	Caldwell Tower	43
CMA	Camarillo Tower	30
CPR	Casper Tower	67
CID	Cedar Rapids Tower	40
APA	Centennial Tower	36
F11	Central Florida TRACON	38
CMI	Champaign Tower	61
CHS	Charleston Tower (N.C.)	42
CRW	Charleston Tower (WVa.)	74
CHA	Chattanooga Tower	39
PWK	Chicago Executive Tower	24
CNO	Chino Tower	28
CVG	Cincinnati Tower	25
CKB	Clarksburg Tower	35
CLE	Cleveland Tower	6
COS	Colorado Springs Tower	42
CAE	Columbia Tower	53
CMH	Columbus Tower (Ohio)	17
CSG	Columbus Tower (Georgia)	30
CCR	Concord Tower	60
CRP	Corpus Christi Tower	19
MIC	Crystal Tower	58
DAL	Dallas Love Tower	29
DAY	Dayton Tower	10
DAB	Daytona Beach Tower	35
DVT	Deer Valley Tower	14
PDK	DeKalb - Peachtree Tower	33
DSM	Des Moines Tower	46
MKC	Downtown Tower (Kansas City)	34
CPS	Downtown Tower (St. Louis)	13
DLH	Duluth Tower	70
DPA	Dupage Tower	24
EMT	El Monte Tower	48
ELP	El Paso Tower	54
ELM	Elmira Tower	61
OMA	Eppley Tower	46
ERI	Erie Tower	64
EUG	Eugene Tower	34
EVV	Evansville Tower	45
FAI	Fairbanks Tower	44
FFZ	Falcon Tower	37

FAR	Fargo Tower	42
FRG	Farmingdale Tower	38
FAY	Fayetteville Tower	48
FNTA	Flint Tower	46
FLO	Florence Tower	47
FCM	Flying Cloud Tower	58
FXE	Fort Lauderdale Executive Tower	7
RSW	Fort Myers Tower	39
FSM	Fort Smith Tower	22
FWA	Fort Wayne Tower	14
FAT	Fresno Tower	59
SEE	Gillespie Tower	59
GCN	Grand Canyon Tower	18
GFK	Grand Forks Tower	34
GRR	Grand Rapids Tower	57
MWH	Grant County Tower	22
GTF	Great Falls Tower	57
GRB	Green Bay Tower	48
GSO	Greensboro Tower	47
GSP	Greer Tower	59
GPT	Gulfport Tower	9
BED	Hanscom Tower	18
MDT	Harrisburg Intl Tower	32
HWD	Hayward Tower	60
HLN	Helena Tower	25
HIO	Hillsboro Tower	55
ITO	Hilo Tower	42
HOU	Hobby Tower	21
HCF	Honolulu CERAP	21
DWH	Hooks Tower	42
HTS	Huntington Tower	60
HSV	Huntsville Tower	13
IND	Indianapolis Tower	15
ISP	Islip Tower	10
JAN	Jackson Tower	58
JAX	Jacksonville Tower	53
SNA	John Wayne Tower	39
JNU	Juneau Tower	35
AZO	Kalamazoo Tower	7
MCI	Kansas City Tower	25
TYS	Knoxville Tower	35

LFT	Lafayette Tower (Louisiana)	46
LAF	Lafayette Tower (Indiana)	35
LCH	Lake Charles Tower	60
NEW	Lakefront Tower	34
LAN	Lansing Tower	63
LEX	Lexington Tower	52
LNK	Lincoln Tower	48
LIT	Little Rock Tower	20
LVK	Livermore Tower	47
LGB	Long Beach Tower	53
GGG	Longview Tower	44
LBB	Lubbock Tower	45
MSN	Madison Tower	53
HEF	Manassas Tower	29
MHT	Manchester Tower	15
MFD	Mansfield Tower	47
OGG	Maui Tower	33
FTW	Meacham Tower	56
NMM	Meridian TRACON	60
MRI	Merrill Tower	22
MAF	Midland Tower	38
MKE	Milwaukee Tower	35
MOB	Mobile Tower	32
MSY	Moiusantt Tower (New Orleans)	26
MLU	Monroe Tower	26
MRY	Monterey Tower	59
MYF	Montgomery Tower (San Diego)	56
MGM	Montgomery Tower (Alabama)	25
MMU	Morristown Tower	61
MKG	Muskegon Tower	54
MYR	Myrtle Beach Tower	40
ACK	Nantucket Tower	61
APC	Napa Tower	57
BNA	Nashville Tower	40
ORF	Norfolk Tower	28
VGT	North Las Vegas Tower	19
PNE	Northeast Philadelphia Tower	48
OAK	Oakland Tower	8
OKCA	Oklahoma City Tower	54
R90	Omaha TRACON	56
ONT	Ontario Tower	35

ORL	Orlando Executive, FL ATCT Tower	27
PAE	Paine Tower	18
PBI	Palm Beach Tower	7
PSP	Palm Springs Tower	8
PAO	Palo Alto Tower	53
CRQ	Palomar Tower	48
PSC	Pasco Tower	48
PHF	Patrick Henry Tower	14
PNS	Pensacola Tower	26
PIA	Peoria Tower	62
PIT	Pittsburgh Tower	36
PTK	Pontiac Tower	24
PDX	Portland Tower (Ore.)	23
PWM	Portland Tower (Maine)	47
P80	Portland TRACON (Ore.)	63
POU	Poughkeepsie Tower	48
PRC	Prescott Tower	33
PVD	Providence Tower	31
PUB	Pueblo Tower	56
MLI	Quad City Tower	47
RDU	Raleigh-Durham Tower	34
RDG	Reading Tower	55
RHV	Reid-Hillview Tower	54
RNO	Reno Tower	11
RIC	Richmond Tower	17
RVS	Riverside Tower	56
ROA	Roanoke Tower	17
ROC	Rochester Tower (N.Y.)	38
RST	Rochester Tower (Minn.)	61
RFD	Rockford Tower	63
ROWA	Roswell Tower	23
SMF	Sacramento Tower	54
MBS	Saginaw Tower	56
SATA	San Antonio Tower	35
SJC	San Jose Tower	27
SJU	San Juan Tower	26
SFB	Sanford Tower	24
SBA	Santa Barbara Tower	23
SMO	Santa Monica Tower	55
SRQ	Sarasota Tower	3
SAV	Savannah Tower	16

SDL	Scottsdale Tower	32
SHV	Shreveport Tower	45
FSD	Sioux Falls Tower	55
SUX	Sioux Gateway Tower	29
STS	Sonoma Tower	59
SBN	South Bend Tower	41
SUS	Spirit Tower	35
GEG	Spokane Tower	14
SGF	Springfield Tower	43
SPI	Springfield Tower	41
STL	St Louis Tower	22
FPR	St Lucie Tower	30
STP	St Paul Tower	22
PIE	St Petersburg Tower	27
STT	St Thomas Tower	37
SDF	Standiford Tower	23
SCK	Stockton Tower	64
SYR	Syracuse Tower	22
TLH	Tallahassee Tower	25
TMB	Tamiami Tower	53
HUF	Terre Haute /Hulman ATCT/TRACON	64
TEB	Teterboro Tower	47
TOL	Toledo Tower	66
TOA	Torrance Tower	60
TVC	Traverse City Tower	8
TRI	Tri-Cities Tower	35
TUS	Tucson Tower	4
U90	Tucson TRACON	41
TUL	Tulsa Tower	63
TWF	Twin Falls Tower	46
VNY	Van Nuys Tower	54
VRB	Vero Beach Tower	18
ACT	Waco Tower	39
ALO	Waterloo Tower	34
HPN	Westchester Tower	52
ICT	Wichita Tower	40
AVP	Wilkes-Barre Tower	9
YIPA	Willow Run Tower	34
ILM	Wilmington Tower	34
ILG	Wilmington Tower	20
YNG	Youngstown Tower	51
	Average Age:	**38.1**