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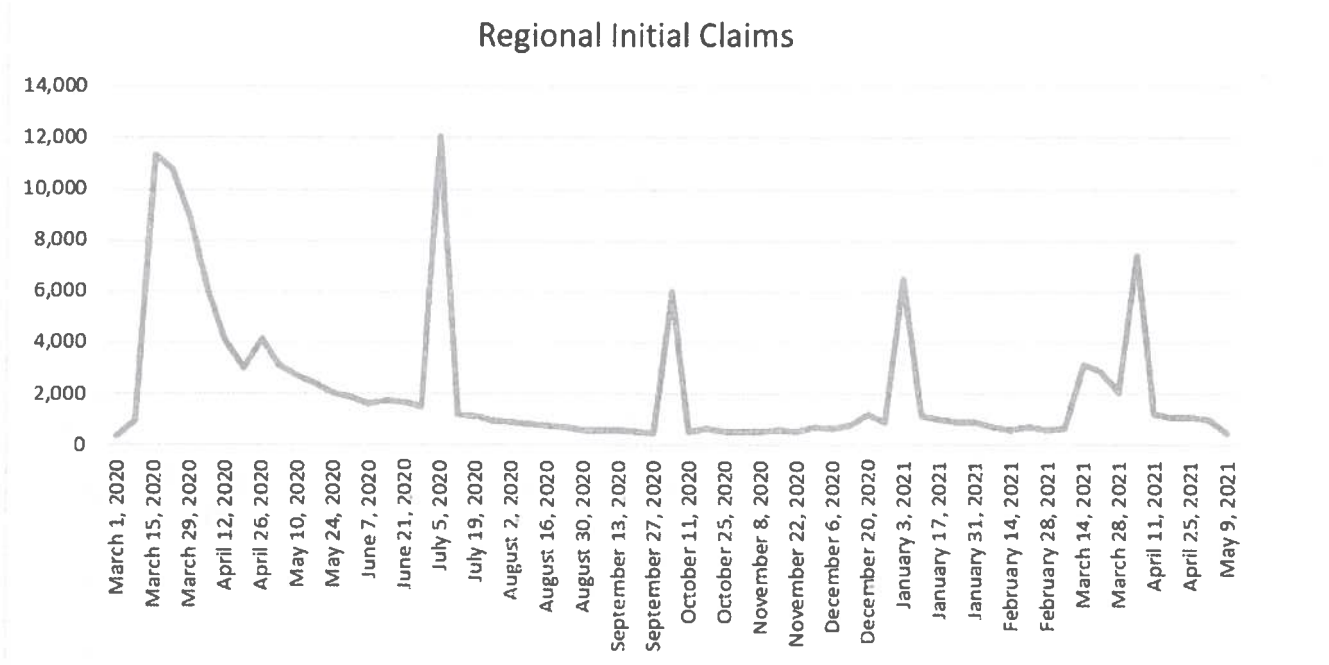
Regional Initial Claims – Updated May 17, 2021
Dept. of Labor Office of Research



PO Box 1576, New Haven, CT 06506
T 203 821 3682 www.rexdevelopment.com

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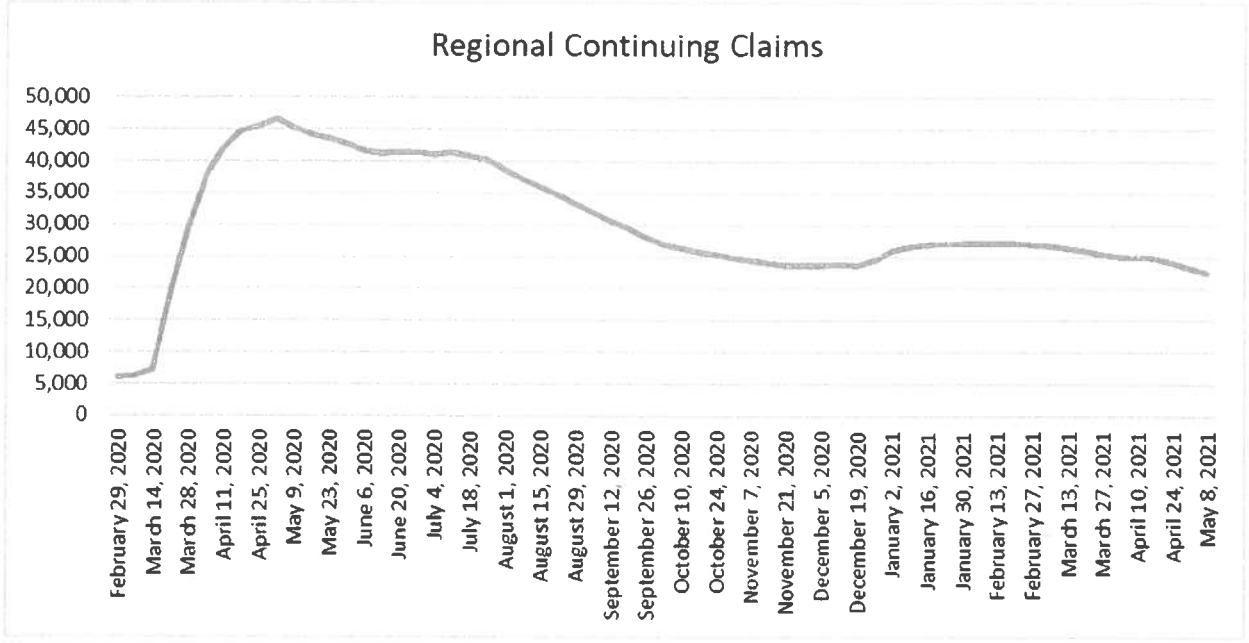
Regional Continuing Claims – Updated May 17, 2021
Dept. of Labor Office of Research
Claims after April 21 incomplete



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May 2021 Action Table

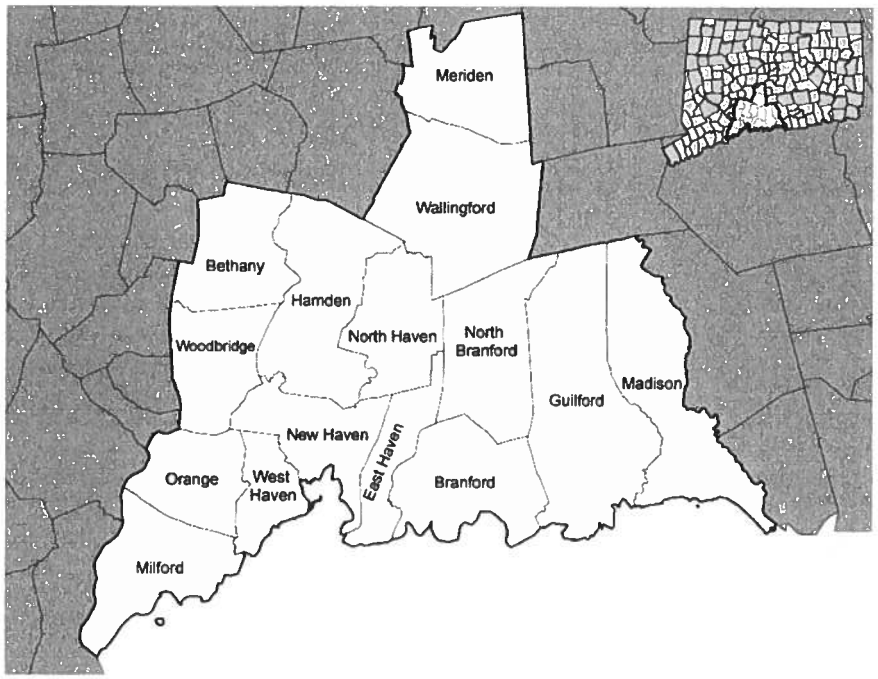
Ref. #	Received	Description	Adjacent RPC Towns	Abridged RPC Action
2.1	04/15/2021	**City of Milford:** Proposed Zoning Regulation Amendments to Article III, Section 3.10 Limited Industrial District: LI; Article XI – Definitions	Orange, West Haven	By resolution, the RPC has determined that the proposed zoning regulation amendments do not appear to cause any negative inter-municipal impacts to the towns in the South Central Region nor do there appear to be any impacts to the habitat or ecosystem of the Long Island Sound.
2.2	04/19/2021	**Town of Wallingford:** Proposed Zoning Regulation Amendments pertaining to Winery Food Truck Regulations	Hamden, Meriden, North Branford, North Haven	By resolution, the RPC has determined that the proposed zoning regulation amendments do not appear to cause any negative inter-municipal impacts to the towns in the South Central Region nor do there appear to be any impacts to the habitat or ecosystem of the Long Island Sound.

Transportation Planning Work Program

Unified Planning Work Program

Fiscal Year 2022 and Fiscal Year 2023
July 2021 - June 2022
July 2022 - June 2023

Draft 5-12-21



South Central Regional Council of Governments
127 Washington Avenue, 4th Floor West
North Haven, Connecticut 06473
Tel. (203) 234-7555
Fax (203) 234-9850
Website: www.scrcog.org

Contents

Introduction

The South Central Connecticut Region includes the entire corporate limits of the fifteen municipalities in the Greater New Haven area - Bethany, Branford, East Haven Guilford, Hamden, Madison, Meriden, Milford, New Haven, North Branford, North Haven, Orange, Wallingford, West Haven, and Woodbridge. The Region is a Council of Governments, as permitted by the Connecticut General Statutes, with each municipality represented by its chief elected official. The Council meets monthly to act on regional business and oversee the transportation activities of the Region. Recommendations concerning transportation actions are forwarded to the Council from the Transportation Committee, consisting of six members of the Council, and the Transportation Technical Committee, which includes an appointed staff person from each municipality. These two committees meet jointly each month to recommend actions for consideration by the Council on transportation matters.

The Unified Planning Work Program (UPWP) is adopted in accord with federal code (23CFR Part 450.308) and governs the transportation planning activities of the Region. These planning activities include planning partners at the federal level of the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) and, at the state level, the Connecticut Department of Transportation (CTDOT).

This UPWP utilizes, builds upon, and continues the required transportation planning activities from previous UPWPs. Specific consultant-supported projects that are continued from previous UPWPs are noted hereafter.

It is noted that the FY 23 activities shown herein are subject to SCRCOG approval of the SCRCOG FY 23 budget and may be adjusted after funding levels are confirmed.

Key Issues for the 2022 and 2023 Program Years

Responding to the Goals of FAST Act

The Federal transportation act, Fixing America's Surface Transportation (FAST), identifies ten (10) planning factors that Metropolitan Planning Organizations (MPOs), such as the South Central Regional Council of Governments (SCRCOG), must consider in their Unified Planning Work Programs (UPWP). These general planning goals are:

1. **Economic Vitality** – Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency;
2. **Safety** – Increase the safety of the transportation system for motorized and non-motorized users;
3. **Security** – Increase the security of the transportation system for motorized and non-motorized users;

4. **Environment** – Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns;
5. **System Integration** – Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
6. **System Accessibility and Mobility** – Increase the accessibility and mobility for people and freight;
7. **System Management** – Promote efficient system management and operation;
8. **System Preservation** – Emphasize preservation of the existing transportation system;
9. **System Resiliency and Reliability** – Improve the resiliency and reliability while reducing or mitigating the stormwater impacts of surface transportation, and;
10. **Travel and Tourism** – Promote and enhance travel and tourism.

Responding to State and Federal guidelines, SCRCOG completed, in May 2019, an update of the Metropolitan Transportation Plan (MTP). The MTP incorporates all responses to outreach and establishes regional goals. The update of the Regional Plan of Conservation and Development (POCD) was completed in the spring of 2018. The SCRCOG POCD suggests strategies for future actions in the Region.

Safety of our transportation network is an important concern and a key consideration in the selection and prioritization of future projects. The Connecticut Strategic Highway Safety Plan provides a framework for increasing highway safety.

Mobility of the region's population is another key goal of any transportation solution. The proposed work program elements respond to the planning goals noted above.

Travel and tourism as a planning goal allows SCRCOG to work with REX Development. REX currently provides travel and tourism promotion for the region. Working with REX, SCRCOG can meet this planning goal.

SCRCOG's FY 2022 and FY 2023 UPWP addresses major regional transportation issues and opportunities through a combination of regional staff effort, consultant support and coordination with CTDOT and the related staff work at our member cities and towns.

This UPWP summarizes ongoing staff work, such as inter-agency coordination, analysis and utilization of the latest available census and demographic data, data monitoring, modeling and outreach, as well as special projects to be conducted during the coming fiscal year. The FY 2022 and FY 2023 UPWP utilizes and builds upon previous year activities.

For each of these tasks, the following sections of the UPWP identify objectives, and major activities for the FY 2022 and FY 2023 work program. Products, such as technical memoranda, final reports or other documentation are also noted, and the anticipated schedule for major work tasks is identified. Maintaining a balanced, multi-modal transportation program is a critical element in meeting State and Federal planning guidelines.

The FY 2022 and FY 2023 Unified Planning Work Program consists of five work tasks:

Task 1: Management of the Planning Process - Program Administration

Task 2: Data Collection/Analysis - Monitoring and Projections

Task 3: Planning Activities

Task 4: Other Technical Assistance

Task 5: Public Participation

Work Program Highlights - FY 2022

Program Element/Study	Description	Consultant Support
Region-wide Pavement Management System Refresher Training	Provide refresher training in utilization of pavement management programs previously provided to member municipalities needed due to numerous staff changes	$10,000
Town of Woodbridge Business Connectivity Study	Review current conditions and limitations and provide recommendations, concept plans and cost estimates for improved connectivity and circulation, with a particular focus on cyclists and pedestrians, in the Village area, including Selden Plaza and the Commercial Park.	***$50,000
Congestion Management Process	Additional data collection and implementation of CMP recommendations from previous study. Continued input to tie our CMP efforts with the Lower Connecticut River Valley COG as the two main areas of the New Haven TMA	***$62,500
City of West Haven Bicycle-Pedestrian Plan	Creation of a City-wide Bicycle Pedestrian Plan coordinated with other City Plans and with emphasis on intermodal connections and addressing all areas of the City.	$50,000
City of New Haven Two-way Transit Study	Completion of study started in FY 20 building on previous traffic two-way studies, study transit routing options made viable by changes to traffic flow directions on city streets	$90,000
GIS Viewer Maintenance and Hosting	Provide annual services to maintain GIS system	***$25,000

Town of Wallingford Northrup Road Study	Prepare alternatives assessment for roadway improvements between Barnes Road and North Farms Road/Murdock Ave, including horizontal and vertical geometry, roadway widths Provide conceptual plans and a probable construction cost estimate for the preferred alternative	$80,000
Town of Hamden Canal Trail Crossings Evaluations	Evaluation, concept design safety improvements and recommendations with cost estimates for 21 at grade crossings on the Farmington Canal Heritage Trail between Goodrich Street and Mt. Sanford Road.	$70,000
*Travel and Tourism Enhancement	Utilize REX Development to further advance and promote travel and tourism in the region.	***$50,000
City of Milford Feasibility Study	Feasibility Study for the connection of Plains Road to Oronoque Road including at-grade railroad crossing, identification of permits required and cost/benefit analysis	$65,000
City of Meriden	CT Loop Trail Connection study from Broad Street to the Middletown line in the vicinity of Westfield Road	$108,000
Total		$660,500

* Expected to continue into FY23
*** Utilizes FY 19 Carryover federal funds

****_Work Program Highlights - FY 2023_

Program Element/Study	Description	Consultant Support
City of New Haven One Way Two Way Conversion Study	Building upon 2014 Study, evaluate Elm Street between York Street and State Street and Grove Street/Tower Parkway between Broadway and State Street and evaluate other additional roadway sections.	$125,000
City of New Haven Conditional Evaluation of Existing Structures	Inventory, documentation and evaluation of Traffic structures including span poles overhead sign poles and other similar structures	$87,000
Town of Hamden Complete Streets Route 10 Study	Existing conditions evaluation and recommendations for implementation of complete streets improvements on Route 10	$55,000
Town of Hamden Dixwell Avenue and Whitney Avenue Intersection Roundabout Feasibility Study	Build upon previous discussions to determine feasibility of creation of a roundabout at this intersection to improve current level of service "F" with concept plans and preliminary cost estimates.	***$50,000
**Travel and Tourism Enhancement	Utilize REX Development to further advance and promote travel and tourism in the region	***$50,000

GIS Viewer Maintenance and Hosting	Provide annual services to maintain GIS system	$25,000
Town of Branford Walkability/Sidewalk Study	Study to improve and expand the sidewalk transportation system within the Town to improve pedestrian safety and walkability, complete connections to key areas of Town and address ADA noncompliance areas including identifying or addressing the following within the Town: Missing connections between sidewalk sections, Areas of sidewalk deterioration requiring repairs or replacement, Enhance mobility within and connection to the Town Center Area and Train Station, Connections to Route 1, Connection to transit stops, Areas of ADA compliance deficiency as compared to PROWAG criteria.	***$75,000
Town of Madison Bicycle-Pedestrian Safety Improvements Study	Prepare concept plan and preliminary cost estimate for sidewalks, shared use paths and other bicycle-pedestrian safety improvements along Route 1, West Wharf Road and Surf Club Road between downtown and Surf Club. Evaluate existing conditions and identify issues affecting the design related to traffic, utilities, topography, soils, wetlands, right-of-way and permitting.	$40,000
City of West Haven Traffic Signal Study Phase 1	Traffic Signal Study to review current conditions and provide recommendations and estimated costs for upgrades of existing city owned signals to conform to current requirements	$50,000
New Haven Port Transportation and Freight Security Study	Study to review transportation and freight security and possible transition for the area south of I-95 into a secure port zone. Review options for possible abandonment of city streets, secure entry points and freight laydown areas for more efficient and secure goods and commodities movement. Include pedestrian/bike connection as part of regional pedestrian/bike network. This study will build upon the freight study in the FY 2018-FY2019 UPWP.	$50,000
Total		$607,000

** Continued from FY 22

*** Utilizes FY 19 Carryover federal funds

**** All FY 23 consultant-supported work subject to the confirmation of funding and the approval of the SCRCOG FY 23 budget.

Task 1: Management of the Planning Process – Program Administration

Objectives

1. Schedule planning activities and allocate staff resources appropriately to conduct all identified UPWP work tasks in a timely and efficient manner.

2. Prepare and adopt a planning work program for the next fiscal period.

3. Ensure that expenditures are well documented and cost-effective.

Major 2022 and 2023 Activities

Mid-Year FY 2022 Work Program Review
Review and adjust the work program relative to emerging issues, opportunities and progress through the first six months.

Review of FY 2023 Work Program
Review and amend FY 2022 program in response to final funding levels and emerging requests from member municipalities. (February-May 2022)

Prepare FY24 and FY 25 UPWP
Preparation of FY24 and FY25 UPWP for adoption prior to start of FY 24. (February-May 2023)

Certification
Re-certification process was accomplished in FY 2021. Work with CTDOT, FHWA and FTA to document compliance with applicable federal standards and recertification requirements. For FY 2022 and FY 2023, annual self-certification will be approved by Council members (Mayors and First Selectmen) stating that the planning process is consistent with applicable federal regulations.

Products/Reports

- *Financial Control.* Maintain financial records and develop reports in accordance with USDOT and CTDOT regulations and guidance.
- *Quarterly Reports.* Develop quarterly narrative and financial status reports for funding agencies.
- *Annual Affirmative Action Plan.* Review and revise Affirmative Action Plan (February 2022 and February 2023).
- *Annual Audit.* Comprehensive audit of Council FY 2021 and FY 2022 revenue, expenditures and internal management practices (November 2021 and November 2022).

This task requires continuing activity throughout the years. Reporting milestones are noted above.

Task 2: Data Collection/Analysis – Monitoring and Projections

Objectives

1. Provide a database for regional transportation planning in close coordination with Connecticut Department of Transportation (CTDOT) data developed for statewide needs.

2. Maintain, as appropriate, regional highway and transit databases as components of SCRCOG's regional travel demand model.

3. Coordinate data acquisition with CTDOT and member municipalities to ensure the utility and compatibility of data.

Major 2022 and 2023 Activities

Demand Modeling Database
Maintain the region's travel demand model. Integrate new CTDOT traffic counts obtained through consultant supported work. Continue network maintenance for additions and changes to the roadway and transit systems.

Traffic Data Collection Program
Continue major intersections counting program within the consultant supported project work to collect data at those intersections that are identified at the municipal level for evaluation of congestion and safety-related issues. As in the past, share the proposed counting program with municipalities and CTDOT's Office of Traffic Engineering and coordinate with other data collection programs at the state and local level.

Rail and Commuter Parking Lot Occupancy Survey
Monitor late-morning occupancy (maximum occupancy) at New Haven's Union Station, at the West Haven and Milford Railroad Stations and at the Branford, Guilford and Madison Shore Line East stations as well as lots adjacent to I-95 and I-91 on a quarterly basis and publish data on the SCRCOG website.

Congestion Management and Monitoring
SCRCOG staff will work with municipal staff to identify target areas for operations and management strategies (O&M) including development and implementation of Intelligent Transportation System (ITS) strategies and technologies in the region, as well as Travel Demand Management (TDM). Consultant-supported work will include preparation of required reports. Staff will continue to cooperate with CTDOT on the six elements of the congestion management process (CMP): (1) Determining the CMP network in the Region, (2) defining congestion, identifying congested links, (3) developing strategies to address congested links, (4) implementing strategies: (5) short and (6) long term, and monitoring the network. Activities will focus on the recommendations from previous consultant supported studies and as per CTDOT guidance.

Geographic Information Systems (GIS)
SCRCOG staff will continue to maintain and utilize our robust GIS system. The system is shared with our member municipalities. Recent data additions (FY18) have provided greater depth to the system data library.

Safety Monitoring
Review safety data, goals, objectives and strategies to promote safety and solicit projects for participation in the CTDOT Local Accident Reduction Program. Work with CTDOT to further implementation of the Connecticut Strategic Highway Safety Plan.

Capital Expenditures Report
Assist CTDOT with the Local Highway Finance Report (form FHWA-536) on capital expenditures on local roads.

Products

- *Model Database Updates.*
- *Traffic Data Collection within consultant-supported work.*
- *Commuter Parking Lot Occupancy Data.*
- *Congestion Management Process review with CTDOT and recommendations.*

Schedule

Traffic Data Collection
Any counting will occur with FY 2022 and FY 2023 consultant-supported projects.

Rail and Commuter Parking Lot Occupancy Survey
Quarterly rail and commuter parking lot occupancy data collection. (September and December 2021; March and June 2022, September and December 2022; March and June 2023).

Congestion Monitoring
Activities will occur over the fiscal years as recommended by previous studies and as per CTDOT and FHWA guidance.

This task requires continuing activity throughout the years. Reporting milestones are noted above.

Task 3: Transportation Planning Activities

Objectives

1. Maintain a four-year Transportation Improvement Program reflecting current regional priorities, long-range regional objectives, and FAST Act transportation planning requirements. Adopt new TIP in accord with CTDOT timeframe. Accompany TIP actions with an air quality conformity statement, as appropriate, establishing relationships to the State Implementation Plan for Air Quality.

2. Facilitate public awareness of the adoption process for the TIP and STIP, and provide the opportunity for public comment on TIP-related actions at the SCRCOG level.

3. Develop transportation planning proposals and studies that are consistent with the goals identified in the Metropolitan Transportation Plan, and FY2021-FY2024 TIPs and the Regional Plan of Conservation and Development (prepared during FY 18), Connecticut's *Conservation and Development Policies Plan, 2018-2023* and any updates, state and local municipal economic development objectives and the region's economic development program. Adopt any new TIP as per CTDOT guidance

4. Develop recommended capital and operational improvements to enhance the existing transportation system, including consideration for the development and implementation of Transportation Systems Management and Operations (TSMO) improvements, advancing the use of Intelligent Transportation Systems (ITS) strategies and technologies in the region, as well as Travel Demand Management measures.

5. Coordinate the Regional Plan of Conservation and Development with member municipalities.

6. Identify general direction for future SCRCOG work and offer member municipalities a range of options and experience gained from basic planning research.

7. Continue to work with the State of Connecticut Governor's Transit Oriented Development initiatives, the Connecticut Department of Transportation (CTDOT) and other state agencies to plan transit improvements and provide support for transit oriented development (TOD) and affordable housing in the vicinity of existing and proposed transit corridors.

8. Continue coordinated planning to promote safety, livable communities and environmental sustainability.

9. Continue to advance programs for the preservation of the existing transportation system, including actions which maintain the transportation system in a "state of good repair".

10. Continue to meet FAST Act requirements, with the inclusion of performance measures as they are finalized.

11. Assist the Department with any Planning and Environmental Linkages (PEL) efforts to consider environmental, community, and economic goals early in the transportation planning process, and support the uses of information, analyses, and products developed during planning to inform the environmental review process.

12. Assist our member municipalities in developing projects and utilizing funds available under LOTCIP, TAP, CMAQ and other grant programs as available.

13. Work with CTDOT regarding electric vehicle charging infrastructure projects and programs.

14. Promote transportation system connectivity to include access to town/city/neighborhood centers and first/last mile connections.

Major 2022 and 2023 Activities

Review of Land Use and Transportation Models
SCRCOG staff will work with municipal staff to assess impacts of projected land uses on transportation in the Region. Land use decisions will be analyzed to assess and promote consistency with Long Range Transportation Plan and the State, Regional, and local Plans of Conservation and Development. Identification of major growth corridors and review of major transportation improvements will help frame preferred growth patterns including transit-oriented development (TOD) and smart growth initiatives. Help advance initiatives that reduce dependence on single occupancy vehicles and improve the region's air quality. Technical assistance will be provided to the Region's municipalities as requested. Staff will work to support State efforts to fund transit improvements and TOD through CTDOT projects. These include the West Haven train station related TOD, Union Station proposed TOD, pilot program TOD in Meriden as authorized by statute and other potential TOD proposals throughout the Region. These efforts, in coordination with other tasks outlined herein, will move the region towards the goal of safe, livable communities, and work towards environmental sustainability.

Maintain FY2021-FY2024 TIP adopt TIP FY2024-FY2027
Update as required the adopted four-year Transportation Improvement Program (TIP). The TIP is consistent with the region's Metropolitan Transportation Plan 2019-2045 and state-defined financial constraints. Adopt and maintain FY2024-FY2027 TIP in accord with CTDOT timeline. Adopt TIP amendments as appropriate.

Review Census 2020 Data and update UZA/TMA Boundaries as Necessary.
As new Census data is released, SCRCOG staff will work with CTDOT to review and incorporate any changes to UZA or TMA boundaries as needed.

Adopt new Metropolitan Transportation Plan 2023-2049
Develop and adopt the Region's Metropolitan Transportation Plan in FY23 that ensures consistency with regional and state goals. Coordinate with CTDOT and various other entities in accord with guidance from state and federal requirements.

Environmental Justice and Title VI
Utilize 2020 Census data and latest available American Community Survey data to identify changes to EJ areas and evaluate impacts of plans and programs on these areas. Continue outreach and activities to meet the requirements of Title VI. Work with the Department to ensure Transportation Equity is observed throughout all phases of project development.

Surface Transportation Program
Establish regional priorities with CTDOT to facilitate the annual statewide program development process. Maintain a multi-year program that balances priorities, costs, available funds and the progress of individual projects. Sustain a continuous interchange with municipalities advancing Surface Transportation Program and Local Transportation Capital Improvement Program (LOTCIP) projects on municipal roads per CTDOT guidelines. Continue Council monitoring of programmed work through monthly review. Continue programming consultation with regional planning organizations comprising the Bridgeport-Stamford and New Haven-Meriden urbanized areas.

Air Quality/ Environmental Planning
Work with CTDOT to give consideration to the impacts of climate change and air quality on the transportation decision making process. Work with CTDOT to make the necessary air conformity determinations based upon CTDOT modeling.

FTA Section 5310 Outreach to Private Non-Profit Organizations and Local Public Bodies
Share notice of an annual Section 5310 grant funding and help potential applicants advance proposals consistent with FTA and CTDOT guidelines (January 2022 and January 2023).

Local Transit Districts
Continue cooperation with Greater New Haven Transit District and, periodically, the Meriden Transit District and the Milford Transit District. Cooperation provides feedback for the areawide planning and programming process.

Local Accident Reduction Program as applicable
Prepare municipal local accident reduction program applications per annual state/regional outreach, emphasizing a state/federal pedestrian safety focus. Develop proposals with municipal staff, frame material for municipal review and advance proposals for Council review per longstanding practice (April 2022 and April 2023).

Congestion Mitigation/ Air Quality
As per CTDOT guidance, solicit proposals from the Region for ranking and forwarding to CTDOT for new congestion mitigation/air quality funding under the FAST Act.

Traffic Diversion Routes
Continue review of previous individual municipal plans completed by CTDOT and implemented by the Region as they are impacted by new construction and roadway modifications.

Performance-based Planning
Continue to transition to performance-based planning as required under the FAST Act. Review and adopt CTDOT goals and utilize these goals to guide planning and funding decisions.

FY 2022 Consultant Supported Activity

Eleven studies and activities will be conducted by consultants engaged by the Region. All consultant work will be undertaken in a manner consistent with the National Environmental Policy Act (NEPA). Any studies undertaken by the Region that impact state transportation systems or highways will identify the role and/or assistance expected from CTDOT, including resources and outcome. It is the goal of the Region to accomplish these studies within FY22 unless noted otherwise.

Pavement Management System Training - Provide refresher training in utilization of pavement management programs previously provided to member municipalities needed due to numerous staff changes.

Town of Woodbridge Business Connectivity Study – Study to review current conditions and limitations and provide recommendations, concept plans and cost estimates for improved connectivity and circulation, with a particular focus on cyclists and pedestrians, in the Village area, including Selden Plaza and the Commercial Park.

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City of Meriden Loop Trail Connection Study – Study of potential connection of Connecticut Loop Trail from Broad Street to Middletown line in the vicinity of Westfield Road

*This project to be continued into FY23.

FY 2023 Consultant Supported Activity

Ten studies and activities will be conducted by consultants engaged by the Region. All consultant work will be undertaken in a manner consistent with the National Environmental Policy Act (NEPA). Any studies undertaken by the Region that impact state transportation systems or highways will identify the role and/or assistance expected from CTDOT, including resources and outcome.

City of New Haven One Way Two Way Conversion – Building upon 2014 Study, evaluate Elm Street between York Street and State Street and Grove Street/Tower Parkway between Broadway and State Street and evaluate other additional roadway sections.

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Town of Madison Bicycle-Pedestrian Safety Improvements Study - Prepare concept plan and preliminary cost estimate for sidewalks, shared use paths and other bicycle-pedestrian safety improvements along Route 1, West Wharf Road and Surf Club Road between downtown and Surf Club. Evaluate existing conditions and identify issues affecting the design related to traffic, utilities, topography, soils, wetlands, rights-of-way and permitting.

City of West Haven Traffic Signal Study Phase 1- Traffic Signal Study to review current conditions and provide recommendations and estimated costs for upgrades of existing city owned signals to conform to current requirements

New Haven Port Transportation and Freight Security Study - Study to review transportation and freight security and possible transition for the area south of I-95 into a secure port zone. Review options for possible abandonment of city streets, secure entry points and freight laydown areas for more efficient and secure goods and commodities movement. Include pedestrian/bike connection as part of regional pedestrian/bike network. This study will be an extension of the freight study in the FY 2018-FY2019 UPWP.

** This project continued from FY22.

Other Planning Activities

Locally Coordinated Public Transit Human Services Transportation Plan (LOCHSTP)
This requirement is the planning element under which SCRCOG will continue to coordinate transit services to provide for the basic mobility needs of the Region's elderly and disabled under the Section 5310 program, Enhanced Mobility for Seniors and Persons with Disabilities. In 2014, the Region established a Mobility Management Program and engaged a Mobility Ombudsman to facilitate outreach to potential users, service providers and municipalities to identify service gaps and needs. CTDOT has assumed responsibility for the Mobility Manager. During FY 2022 and FY 2023, staff will continue outreach to service providers and CTDOT and work with them to implement service priorities.

During FY22 and FY23, the Region will work with the Mobility Manager in coordination with CTDOT and regional stakeholders to develop an updated LOCHSTP plan. When completed SCRCOG staff will continue outreach to service providers and CTDOT and work with them to implement service priorities.

Municipal Assistance
SCRCOG will assist its member municipalities in ongoing programs such as STP-Urban, CMAQ, TAP, LOTCIP, and other appropriate programs.
SCRCOG meets with CTDOT annually to review the STP-Urban program and SCRCOG solicits input from the municipalities. When there is a solicitation for applications to the CMAQ and TAP programs, SCRCOG provides assistance in application preparation screening and the prioritization of projects. With LOTCIP, SCRCOG assists the municipalities throughout the application process. Besides project screening and application reviews, SCRCOG monitors available funding and program expenditures.

ADA Transition Plans
The American with Disabilities Act of 1990 (ADA) requires public agencies with more than 50 employees have an ADA Transition Plan. SCRCOG will assist CTDOT to educate municipalities on their responsibilities under ADA and Section 504 to ensure all programs, activities, and services under the municipality's jurisdiction are examined to identify barriers to access.

Transit Planning
Most day-to-day operational planning for the transit systems in the South Central region is done at the individual agency level (i.e. by Greater New Haven Transit District, CTTransit, Milford Transit District and Meriden Transit District). SCRCOG staff play a role in coordinating programs among these operators, assessing demographic and land use policies that will impact the viability of transit services, and identifying new opportunities for transit service outside the existing route network and service areas. Staff cooperates with transit providers in the region. Initiatives that increase transit usage and reduce the usage of single occupancy vehicles and contribute to improving air quality in the region will be prioritized. It is anticipated that the recommendations of the completed *Move New Haven Study* will be utilized to form additional future initiatives.

Environmental Planning
As necessary, SCRCOG's studies and planning efforts will coordinate and participate in any requirements under the National Environmental Policy Act.

Freight Planning
Planning for more efficient truck freight movement and reducing the impacts of existing truck trips on adjacent residential areas has been a key element of previous UPWP studies. SCRCOG staff will continue to monitor freight movement trends in the region and identify opportunities for improved movements and efficiencies which will also reduce the impacts of all modes of goods movement on the air quality in the region.

Staff will continue to work with NYMTC and the MAP Forum to coordinate planning efforts as they relate to Freight. Staff participates in the Multi-State Freight Working Group and assists with Multi-state studies/planning activities including truck parking workshop, Regional Freight Land Use Study TAC, and Clean Freight Corridors Planning Study.

Staff will work with CTDOT on the state freight plan and assist the Department identifying bottlenecks, needed improvements and estimated costs to improve freight movement into and through the region, the state, and surrounding states.

Staff will work with CTDOT to maintain the list of freight stakeholders and operators in the region, as well as GIS data on freight-related land uses and stakeholders and major generators. As known, staff will maintain a multi-modal list of freight movement constraints. Staff will also work with CTDOT on the difficult issue of providing sufficient truck parking opportunities. As appropriate, outreach to freight stakeholders will be made under the Public Participation Guidelines.

Other freight-related staff activities will focus on evaluation of intermodal issues relating to the Port of New Haven and potential expanded utilization, assisting, as appropriate, the City of New Haven and the Port Authority of New Haven with their evaluation of site and development alternatives for the proposed intermodal terminals at the Port. Staff will continue to work with municipalities and the State to maximize future intermodal opportunities as they develop throughout the Region.

Improvements to track connections in the vicinity of the Port of New Haven completed with the cooperation of the property owners allow direct connection between the port area and the mainline rail network. This connection substantially enhances the economics of intermodal freight shipment and will provide strong economic development benefits to the region.

The runway safety improvements at Tweed New Haven Airport allow for improved freight utilization at the Airport. SCRCOG staff will work with the Airport Authority, Town of East Haven and City of New Haven to evaluate potential increased freight operations to reduce congestion on the region's interstates and provide timely delivery of goods and food products to the region.

Staff, in accord with CTDOT, will:

- Maintain a list of freight stakeholders within the COG boundaries.
- Maintain a list of the major freight generators.
- Maintain a GIS file of the above.
- Provide GIS data, as requested, for freight supportive land uses.
- Maintain a list of system constraints for freight movement.
- Seek to identify opportunities for truck parking locations.

Operations and Management Strategies

SCRCOG staff will continue to review State ITS Architecture refinements, and will ensure coordination with regional and local plans. Many of the study efforts outlined above are focused on alleviating traffic congestion and thereby improving air quality through enhanced operation and utilization of existing transportation highway and transit system assets.

Safety Activities

SCRCOG staff will continue to work with CTDOT, member municipalities and other regional entities to advance safety programs and activities in the region. SCRCOG will participate in the

implementation of CTDOT's Strategic Highway Safety Plan and incorporate its recommendations into regional plans and activities. SCRCOG has partnered with CTDOT as an urban model in the development of a regional transportation safety plan. Difficulties with the emphasis of the plan have resulted in the plan remaining a draft. SCRCOG looks to CTDOT for input to address the concerns. After potential adoption, SCRCOG will consult with CTDOT on updates.

Complete Streets
Consider the needs of all users of all abilities or mode to provide a comprehensive, integrated and connected multi-modal network of transportation options.

Climate Change and Resiliency
Work in cooperation with CTDOT and other state and local agencies to improve transportation system resiliency in the face of climate change, sea level rise and severe storms. Support CTDOT's climate change and resiliency planning efforts. SCRCOG's other climate change, coastal resilience, and hazard mitigation efforts in conjunction with additional partners will further regional planning efforts and identify potential opportunities for improving transportation resiliency.

Transition to Performance Based Planning and Programming
As federal and state standards required under FAST Act are finalized and adopted, SCRCOG staff will work to develop and implement a performance management approach to transportation planning and programming that supports the achievement of transportation system performance outcomes. To date, SCRCOG has adopted all CTDOT proposed goals and expects to continue those endorsements during the term of this UPWP.

Models of Regional Planning
SCRCOG coordinates with Lower Connecticut River Valley Council of Governments, the other major planning region sharing our urban area. In addition, our participation in the Connecticut Association of Councils of Governments (CTCOG), as well as numerous staff contacts, keeps us in contact and cooperation with not only the other neighboring Councils, but the entire state regional planning community. We will continue to build upon this strong base of cooperation and collaboration.

Ladders of Opportunity
SCRCOG staff continue to look for means to identify and address transportation connectivity issues. Our previous Transit Study, our commencement of a Mobility Manager Service for elderly and persons with disabilities, and our Jobs Access Study, produced in cooperation with the local NAACP chapter and the Workforce Alliance, among other partners, are examples of the region's commitment to identifying and working to address transportation connectivity issues. These efforts will continue during FY2022 and FY2023.

Products

- *FY2021-2024 TIP.* Maintain the four-year Transportation Improvement Program and adopt amendments as appropriate throughout the fiscal year.

- *Adopt FY2024-FY2027 TIP*. Coordinate with CTDOT to adopt and, after adopted, maintain and adopt amendments as appropriate.
- *Local Accident Reduction Program or as amended.* Prepare applications, as appropriate, for CTDOT review in association with interested municipalities (April 2022 and April 2023).
- *FTA Section 5310 Program Priorities.* Review and approval of grants, in conjunction with CTDOT (April 2022 and April 2023).
- *Potential regional transportation safety plan* (Awaiting CTDOT answers to SCRCOG concerns).

This task requires continuing activity throughout the years. Reporting milestones are noted above.

Task 4: Other Technical Assistance

Objective

1. Coordination with Division of Emergency Management and Homeland Security (DEMHS) on emergency response planning and transportation security.
2. Provide technical assistance and coordination with Safe Routes to School (SRTS) program participants and CTDOT concerning applications for funding.
3. Provide assistance to new transit station development in the Region, including transit oriented development (TOD) for New Haven, West Haven, North Haven, Branford, Madison, Guilford, Orange, Wallingford, Meriden, and Milford.
4. Work with REX Development to ensure continued regional economic vitality.

Major 2022 and 2023 Activities

Coordination with DEMHS
Continue attendance by staff at DEMHS regional meetings to work with DEHMS and municipal staff on emergency response planning and implementation. Review of DEMHS communications and plans to insure integration with other regional initiatives.

Security of the Transportation System
Work with DEMHS Region 2 Regional Emergency Preparedness Team Steering Committee to review and offer recommendations on security. The Transportation Regional Emergency Support Function provides an annual SWOT (**S**trengths, **W**eaknesses, **O**pportunities, **T**hreats) analysis to help improve regional transportation function and security.

Transit Stations and TOD
Work with interested municipalities, CTDOT, local legislators and residents to help promote transit and TOD opportunities to increase mobility, improve transportation options, promote economic vitality, and encourage the linking of transportation and land use decisions.

REX Development
Promote regional economic vitality through representation on the REX Board. Chief Elected Officials serve on the REX Board, which identifies regional economic opportunities. Continued Board membership and participation, with periodic reports to the Council, will help promote economic vitality and opportunities. REX serves as the regional coordinator of brownfields funds, utilizing these opportunities to encourage adaptive reuse of brownfields sites to contribute to the improved economic environment of the region.

This task requires continuing activity throughout the years.

Task 5: Public Participation

Objectives

1. Facilitate a timely flow of information to interested individuals and organizations through media outreach and our agency website.

2. Provide a focus for public input relative to the region's Transportation Plan, Transportation Improvement Program and other key products by elected officials, any interested citizens, and specifically by minority, low-income and non-English speaking communities.

3. Solicit public interest for each of our regional planning and transportation studies and for the SCRCOG decision-making process in general. Ensure that outreach, review and project definition respond to USDOT/CTDOT Environmental Justice requirements contained in the FAST federal transportation act and federal planning regulations, utilizing latest available census and demographic data.

4. Share technical material with professionals, elected officials and the public at appropriate times as major study efforts progress.

Major 2022 and 2023 Activities

The Council of Governments will continue its commitment to public outreach through a wide range of outlets:

Annual Report
SCRCOG's annual report will be made available at the conclusion of each fiscal year.

Media Coverage
The Transportation Committee agenda notification process includes over thirty area media organizations. Meeting notices for Transportation Committee/Council actions and SCRCOG publications will be regularly shared with a wide range of print and broadcast media including the *New Haven Register*, the *Connecticut Post*, the *Meriden Record-Journal, La Voz Hispana* and other local (non-daily) newspapers in the region, and radio and television news departments.

Transportation Committee and Technical Transportation Committee
The Region's Transportation Committee (chief elected officials) and Transportation Technical Committee (municipal staff), meeting together monthly, will continue to interact with CTDOT personnel, federal staff and other interested parties. The committees advance programming and planning proposals to the Council as a whole. Over 100 organizations and individuals, including advocacy organizations, environmental groups, social services organizations, and transit operators, will be notified of committee meetings by email. Notice of meetings is also provided on the SCRCOG website. Council-adopted *Public Participation Guidelines* clearly identify the Council's commitment to broad, ongoing participation, and highlight the avenues for public input in the transportation planning process.

Public Meetings

- Quarterly Greater New Haven Transit District meetings and periodic attendance at meetings of the Milford and Meriden transit districts to facilitate planning and programming activities.

- REX Development, the region's non-profit economic development organization, was established jointly by SCRCOG and the private sector. Chief Elected Officials serve on the REX Board.

- Regional Alliance work sessions. The fourteen-year-old Alliance brings a broad array of regionally oriented organizations together to share experience, initiatives and ideas in the educational, social service, economic development, land use and transportation fields.

- Regional Chambers of Commerce – Municipal Economic Development Directors from the region meet with SCRCOG staff periodically to address business-related transportation issues.

Council of Governments Meetings
Monthly Council meetings (chief elected officials) provide opportunities to review the status of major planning and programming efforts, gain further guidance from chief elected officials and take formal Council TIP actions.

SCRCOG Web Site
The agency website provides ready access to Council meeting agendas, reports and memos including *Public Participation Guidelines*, the UPWP, the TIP and proposed TIP amendments, and *South Central Regional Metropolitan Transportation Plan 2019-2045*. Links to CTDOT, municipalities, data sources and transit/transportation sites are also included on the website.

Public Participation Guidelines
SCRCOG *Public Participation Guidelines* outline broad public involvement. Ongoing public participation confirms their effectiveness.

Evaluation of Effectiveness
Evaluation of the effectiveness of the Region's public outreach is an ongoing process. Staff continually reviews the attendance at SCRCOG and Transportation Committee meetings, as well as at public meetings held as part of consultant supported work. This review indicates that the outreach is working and involving the community and interested parties. Hits on the SCRCOG website indicate a high level of interest in our activities. Staff attendance at public meetings of regional and state organizations and civic groups, and reports back to our members, provide involvement in the region and important communication both within and beyond the Region. This high level of involvement and communication is indicative of the Region's ongoing commitment to effective public outreach.

Efforts will focus on enhanced public awareness and understanding the region's transportation needs. In FY 2022 and FY 2023, public outreach will continue to emphasize the implementation of the Regional Metropolitan Transportation Plan and the Regional Plan of Conservation and Development, working toward solutions involving policies such as smart growth, non-vehicular transportation, and context-sensitive design solutions. Chief elected officials and SCRCOG staff will continue to participate in the organizations as noted above.

Public outreach will include opportunities for public input on the FY2022 and FY 2023 Consultant supported activity and CTDOT transit improvements.

This task requires continuing activity throughout the years. Reporting milestones are noted above.

Appendix A

Unified Planning Work Program
Financial Tables – Fiscal Years 22 and 23*
****All FY 23 activities subject to the confirmation of funding and the approval of the SCRCOG FY 23 budget.***

Table 1
Fiscal Year 2022 - Anticipated Revenues

	Federal	*State*	*Local*	*Total*
FHWA & FTA	1,022,354	127,794	127,794	1,277,942
FY 2019 Carryover	150,000	18,750	18,750	187,500
Total	**1,172,354**	**127,794**	**165,294**	**1,465,442**

Table 2
Fiscal Year 2022 - Planning Costs by Task

	Federal	*State*	*Local*	*Total*
Management of the Planning Process	61,191	6,670	8,628	76,489
Transportation Planning Activities	306,623	33,424	43,232	383,279
Data Collection / Analysis	13,479	1,469	1,900	16,848
Planning Projects	678,258	73,935	95,630	847,823
Public Participation	112,805	12,297	15,905	141,007
Total	**1,172,354**	**127,794**	**165,294**	**1,465,442**

Table 3

Fiscal Year 2022 - Direct Salaries by Task - Hours & Cost (Hourly Rate) [1]

	Personnel Costs by Task									
	Ex. Dir.		*Trans. Dir.*		*Planners*		*Field*		*Total*	
	Hrs	*Cost*	*Hrs*	*Cost*	*Hrs*	*Cost*	*Hrs*	*Cost*	*Hrs*	*Cost*
Management of the Planning Process	300	21,538	100	5,754	100	4,869	0	0	500	32,161
Transportation Planning Activities	345	24,768	250	14,388	3,600	120,134	0	0	4,195	159,290
Data Collection / Analysis	0	0	0	0	150	6,132	50	900	200	7,032
Planning Projects	100	7,179	1,050	60,431	300	10,628	0	0	1,450	78,239
Public Participation	55	3,949	100	5,755	1,100	48,844	0	0	1,255	58,548
Total	**800**	**57,434**	**1,500**	**86,329**	**5,250**	**190,608**	**50**	**900**	**7,600**	**335,271**

1 See Table 15 for FY 2022 maximum hourly rates

General Classification duties – Executive Director - Oversees agency operations, administers planning program, financial oversight, oversees status of UPWP, reports to SCRCOG Board on agency operations and progress. Transportation Director - administers transportation planning, works with municipalities, FHWA and CTDOT staff to facilitate transportation planning, oversees consultants, prepares necessary planning documents. Planners - duties include financial administration, budget oversight, transportation document preparation, coordination of transportation planning and land use, sustainability, economic vitality, environmental concerns, management and utilization of GIS database for transportation planning, coordination of transportation system integration, management and preservation, data acquisition and utilization. Field - Acquisition of parking occupancy data and other data acquisition.

Table 4

Fiscal Year 2022 - Total Labor by Task - Salaries & Overhead Applied [1]

	Labor Costs by Task				
	Ex. Dir.	*Trans. Dir.*	*Planners*	*Field*	*Total*
Management of the Planning Process	50,989	13,623	11,528	0	76,139
Transportation Planning Activities	58,637	34,063	284,404	0	377,104
Data Collection / Analysis	0	0	14,518	2,131	16,648
Planning Projects	16,996	143,064	25,161	0	185,222
Public Participation	9,348	13,625	115,633	0	138,607
Total	**135,969**	**204,375**	**451,244**	**2,131**	**793,720**

1. Estimated overhead rate @ 1.3674

Table 5
Fiscal Year 2022 - Direct Expenditures by Task

	Direct Expenditures by Task					
	Print & Repro	*Travel*	*Data Proc*	*Consult*	*Misc* [1]	*Total*
Management of the Planning Process	0	100	0	0	250	350
Transportation Planning Activities	775	2,300	1,500	0	1,600	6,175
Data Collection / Analysis	0	200	0	0	0	200
Planning Projects	0	200	0	660,500	1,900	662,600
Public Participation	500	100	0	0	1,800	2,400
Total	**1,275**	**2,900**	**1,500**	**660,500**	**5,550**	**671,725**

1. Miscellaneous expenses include technical training & support, technical publications, and advertising expenses.

Table 6
Fiscal Year 2022 - Planning Projects with Consultant Assistance

FY 22 Funds	Cost
Region-wide Pavement Management System Trainir	10,000
West Haven Bicycle-Pedestrian Plan	50,000
New Haven Two-Way Transit Study	90,000
Wallingford Northrup Road Study	80,000
Hamden Canal Trail Crossings Evaluations	70,000
Milford Feasibility Study	65,000
Meriden CT Loop Trail Connection Study	108,000
Total	**473,000**

FY 19 Carryover Funds	Cost
Woodbridge Business Connectivity Study	50,000
Congestion Management Process	62,500
Travel and Tourism Enhancement	50,000
GIS Viewer Maintenance and Hosting	25,000
Total	**187,500**

Table 7
Fiscal Year 2022 - Total UPWP Program Cost

	Cost
SCRCOG Salaries	335,271
Overhead - Indirect Applied (1.3674)	458,449
Print & Reproductions	1,275
Travel	2,900
Data Processing	1,500
Consultants - FY 22 Funds	473,000
Consultants - FY 19 Carryover Funds	187,500
Miscellaneous	5,550
Total	**1,465,442**

Table 8
Fiscal Year 2023 - Anticipated Revenues

	Federal	*State*	*Local*	*Total*
FHWA & FTA	1,022,354	127,794	127,794	1,277,943
FY 2019 Carryover	140,000	17,500	17,500	175,000
Total	**1,162,354**	**127,794**	**162,794**	**1,452,942**

Table 9
Fiscal Year 2023 - Planning Costs by Task

	Federal	*State*	*Local*	*Total*
Management of the Planning Process	64,196	7,058	8,991	80,245
Transportation Planning Activities	322,508	35,458	45,169	403,135
Data Collection / Analysis	14,093	1,549	1,974	17,616
Planning Projects	643,062	70,701	90,064	803,827
Public Participation	118,493	13,028	16,596	148,117
Total	**1,162,354**	**127,794**	**162,794**	**1,452,942**

Table 10

Fiscal Year 2023 - Direct Salaries by Task - Hours & Cost (Hourly Rate) [1]

	Personnel Costs by Task									
	Ex. Dir.		*Trans. Dir.*		*Planners*		*Field*		*Total*	
	Hrs	*Cost*	*Hrs*	*Cost*	*Hrs*	*Cost*	*Hrs*	*Cost*	*Hrs*	*Cost*
Management of the Planning Process	307	22,591	102	6,017	102	5,090	0	0	511	33,698
Transportation Planning Activities	353	25,976	256	15,102	3,689	126,193	0	0	4,298	167,271
Data Collection / Analysis	0	0	0	0	153	6,411	51	941	204	7,352
Planning Projects	102	7,506	1,076	63,476	307	11,143	0	0	1,485	82,125
Public Participation	56	4,121	102	6,017	1,127	51,296	0	0	1,285	61,435
Total	**818**	**60,194**	**1,536**	**90,612**	**5,378**	**200,134**	**51**	**941**	**7,783**	**351,881**

1 See Table 16 for FY 2023 maximum hourly rates

General Classification duties – Executive Director - Oversees agency operations, administers planning program, financial oversight, oversees status of UPWP, reports to SCRCOG Board on agency operations and progress. Transportation Director - administers transportation planning, works with municipalities, FHWA and CTDOT staff to facilitate transportation planning, oversees consultants, prepares necessary planning documents. Planners - duties include financial administration, budget oversight, transportation document preparation, coordination of transportation planning and land use, sustainability, economic vitality, environmental concerns, management and utilization of GIS database for transportation planning, coordination of transportation system integration, management and preservation, data acquisition and utilization. Field - Acquisition of parking occupancy data and other data acquisition.

Table 11

Fiscal Year 2023 - Total Labor by Task - Salaries & Overhead Applied [1]

	Labor Costs by Task				
	Ex. Dir.	*Trans. Dir.*	*Planners*	*Field*	*Total*
Management of the Planning Process	53,483	14,245	12,050	0	79,777
Transportation Planning Activities	61,496	35,752	298,749	0	395,997
Data Collection / Analysis	0	0	15,178	2,228	17,406
Planning Projects	17,769	150,272	26,381	0	194,422
Public Participation	9,756	14,245	121,439	0	145,440
Total	**142,504**	**214,515**	**473,796**	**2,228**	**833,043**

1. Estimated overhead rate @ 1.3674

Table 12
Fiscal Year 2023 - Direct Expenditures by Task

	Direct Expenditures by Task					
	Print & Repro	Travel	Data Proc	Consult	Misc [1]	Total
Management of the Planning Process	0	105	0	0	363	468
Transportation Planning Activities	831	2,415	1,700	0	2,192	7,138
Data Collection / Analysis	0	210	0	0	0	210
Planning Projects	0	210	0	607,000	2,195	609,405
Public Participation	525	105	0	0	2,046	2,676
Total	**1,356**	**3,045**	**1,700**	**607,000**	**6,796**	**619,896**

1. Miscellaneous expenses include technical training & support, technical publications, and advertising expenses.

Table 13
Fiscal Year 2023 - Planning Projects with Consultant Assistance

FY 23 Funds	Cost
New Haven 1-Way 2-Way Conversion Study	125,000
New Haven Conditional Eval. of Existing Structure	87,000
Hamden Complete Streets Route 10 Study	55,000
GIS Viewer Maintenance and Hosting	25,000
Madison Bicycle-Ped. Safety Improvements Study	40,000
New Haven Port Transp. and Freight Security Stud	50,000
West Haven Traffic Signal Study - Phase One	50,000
Total	**432,000**

FY 19 Carryover Funds	Cost
Travel and Tourism Enhancement	50,000
Hamden Dixwell Ave. and Whitney Ave. Inters	50,000
Branford Walkability/Sidewalk Study	75,000
Total	**175,000**

Table 14
Fiscal Year 2023 - Total UPWP Program Cost

	Cost
SCRCOG Salaries	351,881
Overhead - Indirect Applied (1.3674)	481,165
Print & Reproductions	1,356
Travel	3,045
Data Processing	1,700
Consultants - FY 23 Funds	432,000
Consultants - FY 19 Carryover Funds	175,000
Miscellaneous	6,796
Total	**1,452,942**

Table 15
Fiscal Year 2022 - Job Titles and Maximum Hourly Rates

Job Title	*Maximum Hourly Rate*
Executive Director	$ 75.00
Transportation Director	$ 60.00
Planner	$ 50.00
Field Personnel	$ 18.00

Table 16
Fiscal Year 2023 - Job Titles and Maximum Hourly Rates

Job Title	*Maximum Hourly Rate*
Executive Director	$ 75.00
Transportation Director	$ 60.00
Planner	$ 55.00
Field Personnel	$ 18.00

Appendix B

Statement of Cooperative MPO/State/Transit Operators Planning Roles & Responsibilities

Purpose

The purpose of this statement is to outline the roles and responsibilities of the State, the South Central Regional Council of Governments (SCRCOG) and appropriate providers of public transportation as required by 23 CFR Sec. 450.314(a), (h)"Metropolitan Planning Agreements".

General Roles & Responsibilities

SCRCOG will perform the transportation planning process for their region and develop procedures to coordinate transportation planning activities in accordance with applicable federal regulations and guidance. The transportation process will, at a minimum, consist of:

1. Preparation of a two-year Unified Planning Work Program that lists and describes all transportation planning studies and tasks to be completed during this two-year period.

2. Preparation and update of a long range, multi-modal metropolitan transportation plan.

3. Preparation and maintenance of a short-range transportation improvement program (TIP).

4. Financial planning to ensure plan and program are financially constrained and within anticipated funding levels.

5. Conduct planning studies and system performance monitoring, including highway corridor and intersection studies, transit system studies, application of advanced computer techniques, and transportation data collection and archiving.

6. Public outreach, including survey of affected populations, electronic dissemination of reports and information (website), and consideration of public comments.

7. Ensuring the transportation planning process evaluates the benefits and burdens of transportation projects and/or investments to ensure significant or disproportionate impacts on low income and minority populations are avoided and/or mitigated. This will be accomplished using traditional and non-traditional outreach to Title VI populations, including outreach to LEP populations.

8. Development and implementation of a Congestion Management Process as appropriate.

9. Ensuring plans, projects and programs are consistent with and conform to air quality goals of reducing transportation-related emissions and attaining National Ambient Air Quality Standards.

Metropolitan Transportation Plan

1. SCRCOG will be responsible for preparing and developing the (20-25 years) metropolitan transportation plans for their respective region.

2. SCRCOG may develop a consolidated transportation plan summary report for the planning region that includes the key issues facing the area and priority programs and projects.

3. CTDOT will provide the following information and data in support of developing the transportation plan:
   a. Financial information - estimate of anticipated federal funds over the 20-25 year time frame of the plan for the highway and transit programs.
   b. Trip tables - for each analysis year, including base year and the horizon year of the plan by trip purpose and mode. *(CTDOT will provide this only if requested since* SCRCOG may *maintain their own travel forecast model.)*
   c. Traffic count data for state roads in the SCRCOG region, and transit statistics as available.
   d. List of projects of statewide significance by mode, with descriptions, so that they can be incorporated into the long range metropolitan transportation plans.
   e. Assess air quality impacts and conduct the regional emissions assessment of the plan. Will provide the results of the assessment in a timely manner to allow inclusion in the plan and to be made available to the public at public information meetings. (Refer to air quality tasks.)

4. SCRCOG may conduct transportation modeling for the area.

5. SCRCOG will consult with the appropriate providers of public transportation on local bus capital projects to include in the transportation plan, and will work together to develop local bus improvements for the plan from the 10-year capital program. Through consultation, they will identify future local bus needs and services, including new routes, service expansion, rolling stock needs beyond replacement, and operating financial needs.

Transportation Improvement Program (TIP)

1. The selection of projects in the TIP and the development of the TIP will occur through a consultative process between CTDOT, SCRCOG, and the appropriate provider(s) of public transportation.

2. CTDOT will send a draft proposed 5-year Capital Plan to SCRCOG for review and comment. The draft list will reflect input that CTDOT received from SCRCOG during the consultation process on the previous year's plan.

3. CTDOT will prepare an initial list of projects to include in the new TIP. This list will be based on the current TIP that is about to expire and the 5- year Capital Plan.
4. CTDOT will consult with and solicit comments from SCRCOG and transit providers on the TIP and incorporate where practicable.

5. CTDOT will provide detailed project descriptions, cost estimates and program schedules. The project descriptions will provide sufficient detail to allow SCRCOG to explain the projects to the policy board and the general public.

6. CTDOT will provide a list of projects obligated during each of the federal fiscal years covered by the expiring TIP/STIP. The annual listing of obligated projects should include both highway and transit projects.

7. SCRCOG will compile the TIP for the Region, including preparing a narrative. Projects will be categorized by federal aid program and listed in summary tables. The TIP will be converted into a format that will allow it to be downloaded to the Region's website. SCRCOG will maintain the TIP by tracking amendments and changes to projects (schedule, scope and cost) made through the TIP/STIP Administrative Action/Amendment/Notification process.

8. CTDOT will develop the STIP based on the MPOs' TIPs and projects located in the rural regions of the State.

9. CTDOT will include one STIP entry each for the Bridge program and the Highway Safety Improvement program. This entry will list the total funds needed for these programs for each fiscal year. All Regions will receive back up lists in the form of the Bridge Report and the Safety Report monthly. The one-line entry will reduce the number of entries needed in the STIP. Any projects listed in the Bridge and or Safety Report that are over $5m and on the NHS, will be transferred directly into the STIP as its own entry per the TIP/STIP Administrative Action/Amendment/Notification process.

10. CTDOT will provide proposed amendments to SCRCOG for consideration. The amendment will include a project description that provides sufficient detail to allow SCRCOG to explain the proposed changes to the SCRCOG board and project management contact information. It will also provide a clear reason and justification for the amendment. If it involves a new project, CTDOT will provide a clear explanation of the reasons and rationale for adding it to the TIP/STIP.

11. When an amendment to the TIP/STIP is being proposed by SCRCOG, the project sponsor will consult with CTDOT to obtain concurrence with the proposed amendment, to obtain Air Quality review and consistency with Air Quality Conformity regulations and ensure financial consistency.

12. CTDOT will provide a financial assessment of the STIP with each update. SCRCOG should prepare a TIP summary table listing all projects by funding program sorted by year based on CTDOT's financial assessment.

Air Quality Planning

1. CTDOT and SCRCOG should meet at least once per year to discuss the air quality conformity process, the regional emissions analysis and air quality modeling.

2. CTDOT will conduct the regional emissions analysis, which includes the SCRCOG area and provide the results to SCRCOG. The regional emissions analyses for the build or future years will include the proposed transportation improvements included in the regional long-range metropolitan transportation plans and TIP.

3. SCRCOG will prepare a summary report of the conformity process and regional emissions analysis for the Region. It will contain a table showing the estimated emissions from the transportation system for each criteria pollutant and analysis year.

4. The summary report on the regional emissions analyses will be inserted into the long-range transportation plan and TIP.

5. SCRCOG will make the regional emissions analysis available to the public.

Public Participation Program

1. SCRCOG will annually review and evaluate their public participation program.

2. SCRCOG will update and prepare a list of neighborhood and local organizations and groups that will receive notices of MPO plans, programs and projects.

3. SCRCOG will work to ensure that low-income, minority and transit dependent individuals are afforded an adequate opportunity to participate in the transportation planning process, receive a fair share of the transportation improvement benefits and do not endure a disproportionate transportation burden, SCRCOG will comply with federal legislation on these issues.

4. SCRCOG's process for developing plans, projects, and programs will include consultation with state and local agencies responsible for land use and growth management, natural resources, environmental protection, conservation and historic preservation.

5. SCRCOG will maintain their website to provide clear and concise information on the transportation planning process and provide an opportunity to download reports and documents. This will include developing project and study summaries, converting reports into a pdf or text format, and maintaining a list of available documents. The website will provide links to other associated organizations and agencies.

Public Transportation Planning

1. SCRCOG will allow for, to the extent feasible, the participation of transit providers at all transportation committee and policy board meetings to provide advice, information and consultation on transportation programs within the planning region.

2. SCRCOG will provide the opportunity for the transit provider(s) to review and comment on planning products relating to transit issues within the region.

3. SCRCOG will allow for transit provider(s) to participate in UPWP, long-range plan, and TIP development to ensure the consideration of any appropriate comments.

4. SCRCOG and CTDOT will assist the transit provider(s), to the extent feasible, with planning for transit-related activities.

Fiscal/Financial Planning

1. CTDOT will provide SCRCOG with up-to-date fiscal and financial information on the statewide and regional transportation improvement programs to the extent practicable. This will include:
   a. Anticipated federal funding resources by federal aid category and state funding resources for the upcoming federal fiscal year, as shown in the TIP financial chart.
   b. Will hold annual meetings to discuss authorized funds for the STP-Urban and LOTCIP accounts.
   c. Annual authorized/programmed funds for the FTA Section 5307 Program as contained in the STIP and the annual UZA split agreements.
   d. Monthly updates of STP-Urban Program showing current estimated cost & scheduled obligation dates.

2. CTDOT will notify SCRCOG when the anticipated cost of a project, regardless of funding category, has changed in accordance with the agreed upon TIP/STIP Administrative Action/Amendment/Notification process.

3. SCRCOG will prepare summary tables and charts that display financial information for presentation to the policy board.

Congestion Management Process (CMP) Program

1. SCRCOG, as part of a TMA, will conduct a highway performance monitoring program that includes the gathering of available traffic counts and travel time information and determination of travel speeds and delay.

2. SCRCOG will conduct congestion strategies studies for critical corridors and identify possible improvements to reduce congestion and delay.

3. SCRCOG will work with CTDOT on programming possible congestion-reducing projects.

4. SCRCOG will, upon implementation of a congestion reduction improvement, assess post-improvement operations and determine level of congestion relief.

Intelligent Transportation Systems (ITS) Program

1. CTDOT will maintain the statewide ITS architecture and ensure consistency with the Regional ITS Architecture for SCRCOG.

2. SCRCOG will maintain and update the Regional ITS Architecture for SCRCOG, where appropriate.

Performance Based Planning and Programming

(I) Collection of Performance Data

1. All data collected for performance measure goals will be collected by CTDOT and will meet the MAP21/FAST ACT provisions and requirements.

2. All data collected for goals for Federal Transit Administration's (FTA's) State of Good Repair performance measures will include data provided by the Transit Districts through CTDOT, in accordance with the Transit Asset Management Rule.

3. CTDOT will make the compiled data collected for each performance measure available on the CTDOT MAP21 website.

4. CTDOT will develop a Measures and Deliverables tracking spreadsheet outlining each Performance Measure, the deliverables required, the submittal dates and CTDOT contact and provide to SCRCOG.

(II) Selection of Performance Targets

CTDOT will draft statewide performance targets for each of the FAST Act performance measures and coordinate with the MPOs and Transit Representatives, as required by 23 CFR Parts 450 and 771, as well as 49 CFR Part 613 as outlined below:

1. CTDOT will discuss performance measures at each of the regularly scheduled monthly meetings (via teleconference or in person meeting).

2. CTDOT will present data collected for each performance measure and collaborate with SCRCOG and Transit Representatives on assumptions.

3. CTDOT will provide SCRCOG and Transit Representative with 30 days to provide feedback on the data received and the assumptions provided.

4. The feedback received will be discussed at the next scheduled monthly meeting.

5. CTDOT will set targets for each performance measure based on feedback received.

(II) Reporting of Performance Targets

1. CTDOT will notify SCRCOG and Transit Representatives by email when final statewide targets are established.

2. CTDOT will send the targets that have been set, the backup information and a PowerPoint presentation to SCRCOG for their use in educating the MPO Policy Board. CTDOT will provide region level data summaries, if available.

3. SCRCOG has 180 days after CTDOT establishes their targets to establish their own targets or endorse the State's targets and agree to plan and program projects so that they contribute toward the accomplishment of the performance targets.

4. If SCRCOG is establishing their own targets, SCRCOG will report those targets to CTDOT by email no later than the 180 day timeframe.

5. SCRCOG will share this information with the Policy Board and will require Policy Board resolution to support the targets set by CTDOT or endorse their own targets.

6. SCRCOG will forward the Policy Board resolution to the Performance Measures Unit at CTDOT before the 180 day limitation for FHWA performance measures.

7. For FTA performance measures, it is noted that SCRCOG provided a resolution of support for the initial transit State of Good Repair (SGR) performance targets on July 1, 2017. Thereafter, in accordance with FTA, transit providers will continue to share their targets annually with SCRCOG. However, SCRCOG targets are not required to be updated annually, only revisited whenever SCRCOG updates their MTP and/or TIP on or after October 1, 2018.

8. SCRCOG set initial SGR targets as required by FTA on 7/1/17. Thereafter, SCRCOG needs to set SGR targets for the first time when the TIP or MTP is amended or updated on or after October 1, 2018. Following this date, targets should be updated upon the development of future TIPs and MTPs.

(IV) Reporting of progress toward achieving goal

1. CTDOT will document progress towards achieving statewide performance targets and report that information to SCRCOG and transit representatives in the Long Range Transportation Plan, the Statewide Transportation Improvement Program, the CTDOT TAM Plans and the FTA Annual report by email after the required reports are issued to Federal Agencies.

2. CTDOT will share the TAM Plans with SCRCOG in a timely manner, and the MPOs will incorporate them into their planning process.

3. SCRCOG will document progress towards achieving performance targets and report that information to CTDOT in the Metropolitan Transportation Plan and the Transportation

Improvement Plan as outlined in the Measures and Deliverables tracking spreadsheet vial email. CTDOT will collect this information and file until requested from FHWA.

(V) The collection of data for the State asset management plan for the NHS

1. CTDOT will collect all asset management data required for all NHS routes, regardless of ownership.

23 Performance Measures

Highway Safety	Number of Fatalities - 5-Year Rolling Average
Highway Safety	Rate of Fatalities per 100 million VMT - 5-Year Rolling Average
Highway Safety	Number of Serious Injuries - 5-Year Rolling Average
Highway Safety	Rate of Serious Injuries per 100 million VMT - 5-Year Rolling Average
Highway Safety	Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries - 5-Year Rolling Average
Bridges & Pavements	Percentage of Pavements of the Interstate System in Good Condition
Bridges & Pavements	Percentage of Pavements of the Interstate System in in Poor Condition
Bridges & Pavements	Percentage of Pavements of the Non-Interstate NHS in Good Condition
Bridges & Pavements	Percentage of Pavements of the Non-Interstate NHS in Poor Condition
Bridges & Pavements	Percentage of NHS Bridges classified in Good Condition (by deck area)
Bridges & Pavements	Percentage of NHS Bridges classified in Poor Condition (by deck area)
System Performance	Percent of the Person-Miles Traveled on the Interstate That Are Reliable
System Performance	Percent of the Person-Miles Traveled on the Non-Interstate NHS That Are Reliable
Freight	Percent of the Interstate System mileage providing for reliable truck travel times
Congestion and Air Quality	Annual Hours of Peak-Hour Excessive Delay (PHED)
Congestion and Air Quality	Percent of Non-SOV Travel
Congestion and Air Quality	Total Emissions Reduction
Transit Asset Management	Percentage of Service (non-revenue) Vehicles that have met or exceeded their Useful Life Benchmark (ULB)
Transit Asset Management	Percentage of Facilities with an asset class rated below condition 3 on the TERM scale.

Transit Asset Management	Infrastructure (rail, fixed guideway, track, signals, and systems) - Percentage of track segments with performance restrictions
Transit Asset Management	Percentage of Revenue Vehicles within a particular asset class that have met or exceeded their ULB
FTA C 5010.1E	Number of fatalities per ''vehicle revenue miles.'' by mode.
FTA C 5010.1E	Number of serious injuries per ''vehicle revenue miles.'' by mode.

Amendment
This Statement on Transportation Planning may be amended from time to time or to coincide with annual UPWP approval as jointly deemed necessary or in the best interests of all parties, including Federal transportation agencies.

Effective Date
This Statement will be effective after it has been endorsed by SCRCOG as part of the UPWP, and as soon as the UPWP has been approved by the relevant Federal transportation agencies.

No Limitation on Statutory Authority
Nothing contained in this Statement is intended to or shall limit the authority or responsibilities assigned to signatory organizations under Connecticut law, federal law, local ordinance, or charter.

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Quarterly Report

January —March 2021

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info@CT*rides*.com

CT*rides*: Quarter 1 Activity Summary

January—March 2021

Transportation Leaders

In January, development of the recognition event continued. The run-of-show and talking points were created. The moderator and speakers were confirmed: Micheal Vigeant (CEO of GreatBlue Research), Mark Soycher (former Council to Connecticut Business and Industry Association), and Joseph Giulietti (Commissioner of CTDOT). Invitations were completed and sent to Employer Transportation Coordinators (ETCs) at partner sites followed by an email one week later. The February 9th event was moderated by Dennis House, Chief Political Anchor at WTNH-TV. The event speakers discussed the impact on employees and employers from the COVID-19 pandemic. A Transportation Leaders recognition ad was designed and ran in the Hartford Business Journal. Promotions also included a post-event press release, associated social media posts, and an updated CT*rides* website homepage banner with a congratulatory message. Packages containing a letter from the CTDOT Commissioner, Transportation Leader recognition certificate, and thank you notes were created, assembled, and mailed to Transportation Leaders members.

"Along the Lines" Podcast

During this quarter, episode 6, "Economic Development", was reviewed and edited. Episodes 8-10 were recorded, and episodes 4 - 8 were released. Ongoing promotion of episodes 1-8 continued throughout the quarter on social media (Facebook, Twitter, Instagram, LinkedIn), including paid posts on Facebook and Instagram. In February, thank you promotional items were sent to all previous and current podcast guests, and a subscription to Soundcloud Pro Unlimited was purchased in order to host an unlimited number of episodes on the platform.

Mask-ot Campaign

In January, participants (including the Lieutenant Governor Susan Bysiewicz), crew and team mascots were confirmed. Filming was confirmed, and took place on January 21st at New Haven Union Station. A total of five public service announcements were edited and completed in February. A press release was issued and the videos were uploaded to the CT*rides* YouTube page. Throughout February and March, a paid social media campaign and distribution strategy continued, and a digital media and TV buy was executed.

CT*rides* News Roundup

In the first quarter, content was developed, sourced, and delivered to subscribers for the January, February and March editions. Content was developed and sourced for the April edition in March.

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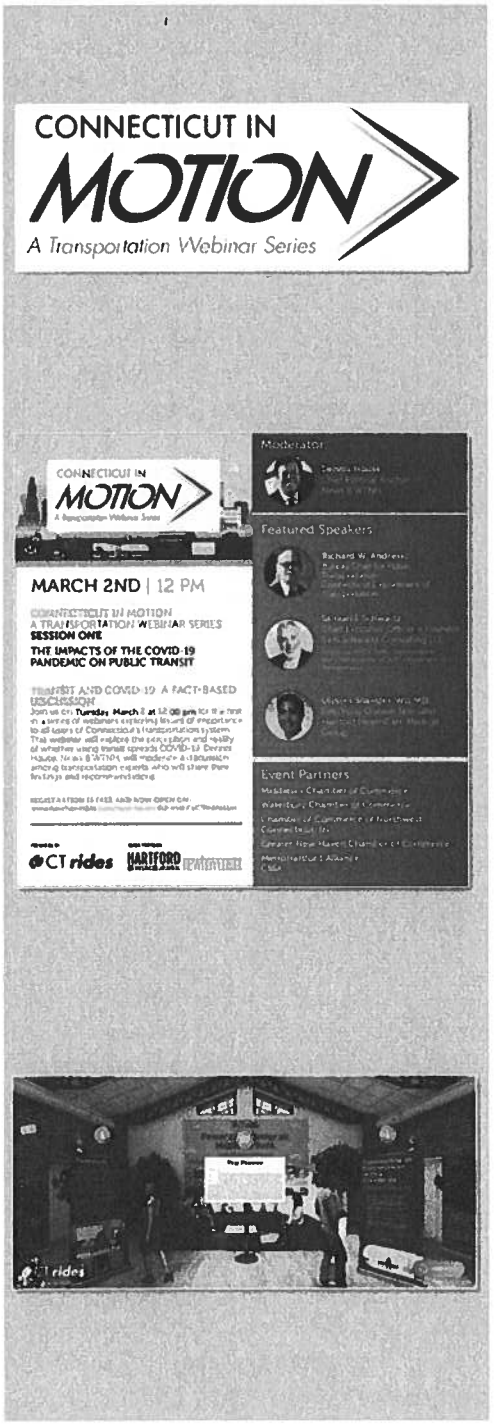
CT*rides*: Quarter 1 Activity Summary (Continued)

January—March 2021

"Connecticut in Motion" Webinar Series

In January, CT*rides* formed a partnership with the Hartford Business Journal to produce the webinar series "Connecticut in Motion." Logos were created, and the first topic, "Transit and COVID-19: A Face Based Discussion," was confirmed. Dennis House was also confirmed as the moderator. In February, the first episode in the series was recorded. Guests Dr. Ulysses Shawdee Wu, MD (Infectious Disease Specialist, Hartford Healthcare Medical), Richard Andreski (Bureau Chief for Public Transportation, CTDOT), and Samuel Schwartz (CEO and Founder of Sam Schwartz Consulting LLC) were confirmed. Webinar promotion occurred through social media, email blasts, Hartford Business Journal and New Haven Business Journals ads, and cross-promotion with the following chambers of commerce and councils of government: Middlesex Chamber of Commerce, Waterbury Chamber of Commerce, Chamber of Commerce of Northwest Connecticut, Inc., Greater New Haven Chamber of Commerce, MetroHartford Alliance, Connecticut Business and Industry Association, and Connecticut Chapter of the Society for Human Resource Management. In March, development of the second webinar episode continued. The description and title were created, speakers were confirmed from CTDOT, AECOM, and Mercer, and assets were developed for social media and digital ad promotion.



Virtual Event Room

In the first quarter, development of additional content to enhance the user experience continued. A "Where to Start" screen was added, gamification was developed through a "Golden Ticket" scavenger hunt, and a new pop-up screen was created for an event survey, CT*rides* News Sign Up, and CT*rides* App Download. A revised sign-in screen also allowed users to voluntarily submit email and organization information. The second version of the virtual room added a Trip Planner screen and rearranged the information boards to prioritize the Trip Planner, COVID-19 resources, and telework content. Virtual event posters were also created for schools, remote and essential workers. The email template was also translated into Spanish. Planning for future updates to the room also began during the first quarter.

CT*rides* Overarching Campaign

In March, media assets were developed and placed for the CT*rides* overarching campaign. The media buy began on March 22nd.

CT*rides*: Quarter 1 Activity Summary (Continued)

January—March 2021

CT*rides* Website

The ideation phase began for new website features and updated pages including a News & Resources and Marketing Materials page. Other minor updates were made to the website, including updating the U-Pass CT image on the U-Pass CT page, updating parking wait times on the parking permit page, updating Emergency Ride Home language, and including a link to the first recording of the "Connecticut in Motion" webinar series on the homepage's alert banner.

CT*rides* Marketing Collateral

During the first quarter, several pieces of marketing collateral were updated and created, such as a review of the Road Scholar materials, updating ERH language to clarify eligible green modes, and developing a Safe Travel on Transit one-pager. Collateral was also created for Earth Day to be used by the Commuter Program Managers, and the redesign process began for digital marketing materials to be placed on CT*rides*.com.

Social Media

During the quarter, several social media campaigns occurred. In January, the New Year's schedule was outlined on the CT*rail* Hartford Line and CT*rail* Shore Line East accounts. In February, posts on CT*fastrak* accounts celebrated Transit Equity Day. In March, the "Connecticut in Motion" webinar was posted on CT*rides* channels and reposted on CT*fastrak*, CT*rail* Hartford Line, and CT*rail* Shore Line East. The posts were boosted on Facebook and Instagram. In addition to this, the CT*rail* Hartford Line and CT*rail* Shore Line East accounts also posted about the CT*rail* P40 locomotives receiving facelifts and CT*fastrak* posted about free bus service in the summer. "Along the Lines" continued to be promoted on LinkedIn, Facebook, Twitter, and Instagram. Ridematching and Rewards through the CT*rides* App, Teleworking, and Social Distancing posts occurred throughout the quarter. Posts occurred on holidays, such as Valentine's Day, St. Patrick's Day, and President's Day. Furthermore, throughout the quarter, several winter storm messages were posted on CT*rail* Hartford Line and CT*rail* Shore Line East accounts. The CT*rides* Mask-ot campaign was also posted on all CT*rides* social media, and was boosted on Facebook and Instagram. Management of all social media posts continued through a comprehensive social media calendar for all 15 profiles managed. New assets were also created for use on St. Patrick's Day, Earth Day, and for Along the Lines.

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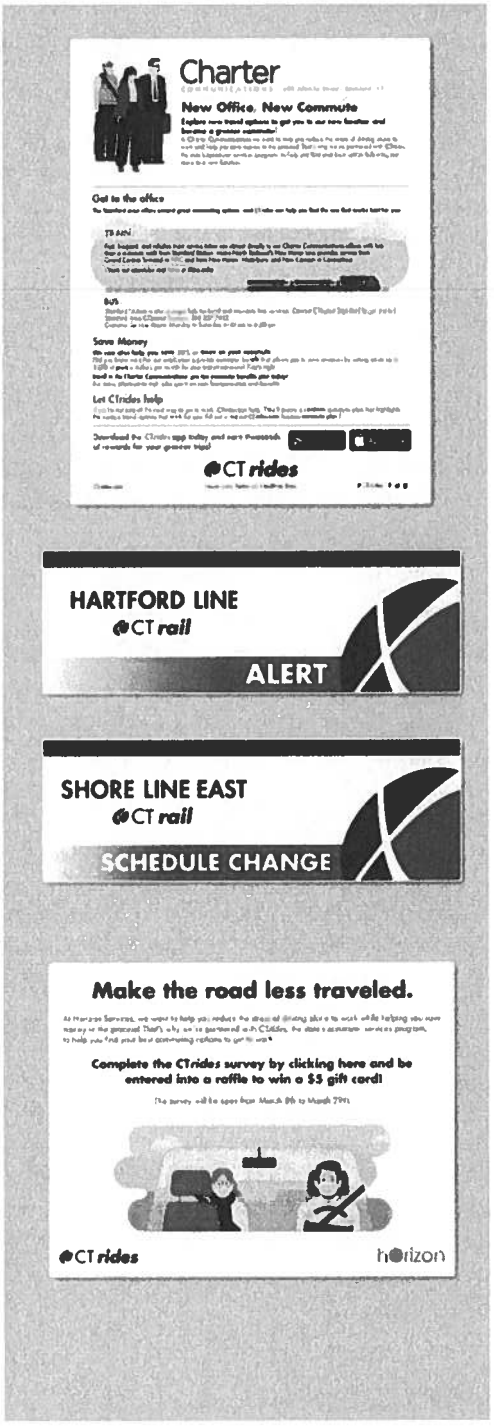
CTrides: Quarter 1 Activity Summary (Continued)

January—March 2021

Miscellaneous

- A one-page orientation brochure was created with available transit options for Charter Communications employees.
- A Ridematching and Rewards poster in English and Spanish was created.
- New email headers were created to use in email blasts for both CT*rail* Hartford Line and CT*rail* Shore Line East accounts.
- A sell sheet for Horizon Services Company in English and Spanish was created to invite employees to take the commuter survey.
- Three projects were submitted for ACT Award nominations: Mask-ots Campaign, Virtual Event Room, and 2020 Connecticut Return to Work Survey.
- A kick-off meeting was held with GreatBlue Research to discuss survey objectives, new issues, and timeline for the 2021 Return to Work Survey. Survey questions were also in the beginning stages of development.
- An RFP draft was developed to hire a firm to execute a branding program for CT*rail* to create a branding strategy, develop a branding guide and undertake other activities to communicate a uniform CT*rail* brand for all commuter rail services in Connecticut. The draft was sent to DOT for review and approval.



Participating Organization Activity

As of March 31, the total number of CT*rides* employer participants, stakeholders and community participants is **314**.

Highlights:

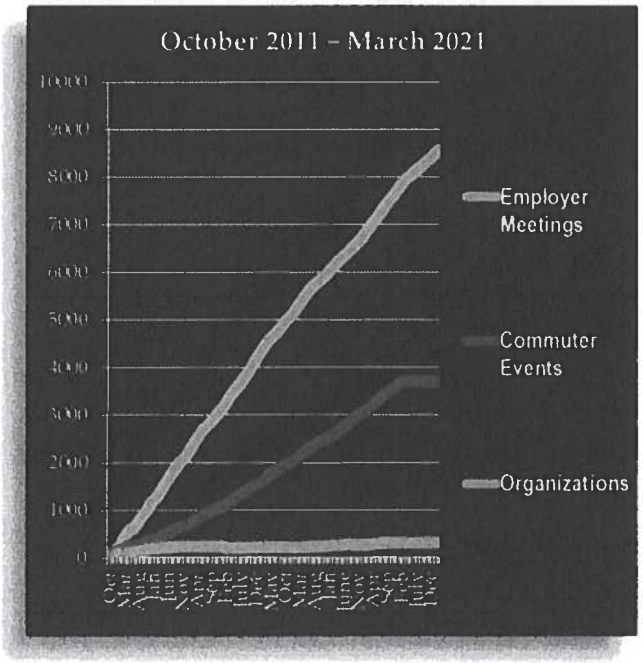
- Notified 2021 Transportation Leaders (TL) members of their achievement and delivered digital seals
- Invited TL members to the recognition event
- Continued strategic planning of activities with partners for 2021
- Continued emphasis on virtual events for partners and stakeholders
  - 9 virtual events
  - 5 scheduled for March
- Completed content development for new targeted outreach initiatives to engage employers based on workforce needs (telecommuting vs. essential employees commuting to worksites)
- Developed outreach initiatives aimed at streamlining the Transportation Leaders program
- Expanded use of virtual event room, and engaged more employers to work on their return to work plans

New Transportation Leaders:

- Stone Academy

The CT*rides* Outreach Team held **183 Events and Meetings** with our worksite partners during Q1. The total number of currently participating organizations is at **314.**

This quarter's worksite activity, segmented by region, can be found on the following pages. A complete list of program organizations/stakeholders is in Appendix A.



Regional Worksite Highlights

Western CT *includes Litchfield, Housatonic, Bridgeport & Stamford regions*

Highlights

Charter Communications
Planning for relocation within Stamford by creating custom commute information for employees and scheduling future events

Marcus Partners - Merritt 7 Complex
Hosted virtual event for employees within multiple building campus. Over 50 employees attended

Amazon
Met with their transportation planner at their HQ to discuss strategic approach for working with all Amazon locations in Connecticut

Blackstone Industries
Recruited new TL bronze member
Provided relocation assistance services to organization, with an emphasis on vanpools

Lincoln Technical Institute - Shelton
Planning a joint virtual event with CT*rides*, Lincoln Technical Institute, and Greater Bridgeport Transit

The Connecticut Association of Adult & Continuing Education (CAACE)
Delivered CT*rides* presentation at 40th Annual virtual conference

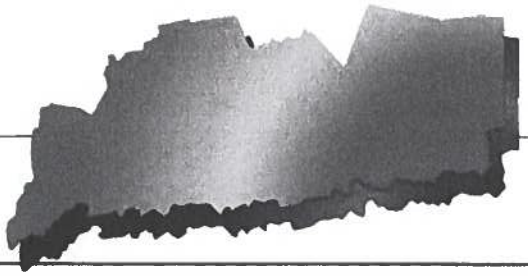
Post University
Sent out an announcement to staff and students announcing their gold status in the Transportation Leaders program in coordination with hosting a virtual event

Virtual Events
Hosted virtual events at Housatonic Community College, Naugatuck Valley Community College, the Office of the Attorney General, and the University of Bridgeport

Reengaged Partners
Reengaged with Blue Crest and connected with new Employer Transportation Coordinator at City of Norwalk

Meetings

- Accessible Pharmacy
- Amazon Delivery Station BDL1
- ASML
- Blackstone Industries
- Bridgeport Regional Business Council
- CAACE The Connecticut Association of Adult & Continuing Education
- CARTUS
- Charter Communications, Inc.
- City of Norwalk
- City of Stamford
- Connecticut Department of Labor (NW and SW Business Service Teams)
- Global Steering Systems
- Greater Bridgeport Transit
- Hartford HealthCare - St. Vincent's Medical Center
- Housatonic Community College
- i2Systems
- Lincoln Technical Institute - Shelton
- Marcus Partners - Merritt 7 Complex
- Monroe Chamber of Commerce
- Naugatuck Valley Community College - Waterbury
- NBC Sports Group
- Northwestern Connecticut Community College
- Post University
- Sikorsky Aircraft Corporation - Stratford
- Silgan Dispensing
- Stone Academy - Waterbury
- University of Bridgeport
- Western Connecticut Council of Governments



Regional Worksite Highlights

Southern CT *includes Middlesex, New Haven & coastal regions*

Highlights

Stone Academy
Provided educational materials for students on campus and hosted a virtual event for all campuses

Quinebaug Valley Community College
Conducted first meeting with new ETC and hosted virtual event for both locations in March

City of New Haven
Planning a series of commuter educational activities in conjunction with the City of New Haven

UCONN - Avery Point
After a meeting with SCROG, UCONN agreed to re-engage as a TL member with a new ETC from its Resilience Planning department

SCRCOG
Invited to present a quarterly update on CT*rides* program

Albertus Magnus College - New Haven
Engaged new Employee Transportation Coordinator (ETC) who runs the Commuter Council on-campus and planned future presentation

Eastern Connecticut State University
Hosted a virtual event and advanced University from a bronze to a silver level in the Transportation Leaders (TL) program

Yale University
Invited to mobility-focused sustainability meeting in April for colleges in New Haven area to recruit new TL members

Meetings

- Accessible Pharmacy
- Albertus Magnus College - New Haven
- Amazon Fulfillment Center BDL3
- City of New Haven
- East River Energy
- Eastern Connecticut State University
- goNewHavengo
- Honeywell Life Safety
- Jewett City Savings Bank
- Quinebaug Valley Community College
- Quinebaug Valley Community College - Willimantic
- South Central CT Regional Water Authority
- South Central Regional Council of Governments
- Southern Connecticut State University
- Stone Academy - West Haven
- University of Connecticut - Avery Point
- Windham Region Transit District
- Yale University
- Yale-New Haven Health System

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Quarterly Report

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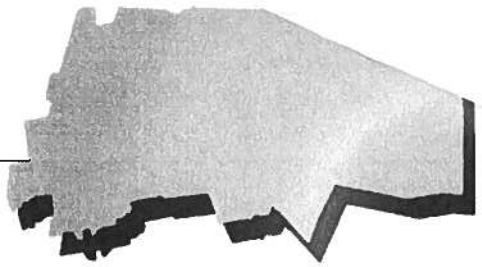

Regional Worksite Highlights

Eastern CT *includes the Hartford, North and Central regions of Connecticut*

Highlights

Vernon Public Schools
Participated in a virtual presentation that was recorded and posted to the Adult Learner's site

Town of Windsor Locks
Hosted a joint meeting with Bradley International Airport to plan for virtual educational events for new companies coming to the area
Hosted two virtual events to build community awareness of CT*rides* program and services

Horizon Services Company
Developing a commuter survey in English and Spanish to identify employee interest with their carpool program

Town of West Hartford
Assisted the Town with getting credit as a TL member towards the 2021 Sustainable CT recognition

Amazon BDL-2
Working with this location to promote safe carpooling

Connecticut Commuter Rail Council
Presented the 2020 Return to Work Survey findings and promoted the Connecticut In Motion webinar series.

Stone Academy (East Hartford)
Joined Transportation Leaders program as a Bronze member

City of Hartford
Working with the City to plan Earth Day virtual events

Virtual Events
Hosted virtual events at Asnuntuck Community College & Tunxis Community College

Meetings

- Albertus Magnus College - East Hartford
- Amazon Fulfillment Center BDL2
- Asnuntuck Community College
- Bradley International Airport
- Capital Community College
- Center for Latino Progress
- City of Hartford
- Commute with Enterprise
- Connecticut Commuter Rail Council
- Connecticut Department of Aging and Disability Services
- Connecticut Department of Energy and Environmental Protection - New Britain
- Connecticut Department of Transportation
- Connecticut Green Bank
- Connecticut Office of the State Comptroller
- Cyient
- Enterprise Rideshare
- Horizon Services Company
- MagicBus
- Manchester Community College
- Office of the Attorney General
- Rich Product Corporation
- Shipman & Goodwin LLP
- Stone Academy (East Hartford)
- The Jackson Laboratory
- Town of West Hartford
- Town of Windsor Locks
- Travelers
- Tunxis Community College
- U.S. Department of Transportation, Federal Highway Administration - Connecticut Division
- UConn Health
- University of Connecticut - Storrs & Regional Campuses
- University of Hartford
- University of Saint Joseph - School of Pharmacy
- Vernon Public Schools
- Voya
- Wesleyan University
- Windsor Health and Rehabilitation Center, LLC

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Quarterly Report

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Customer feedback:

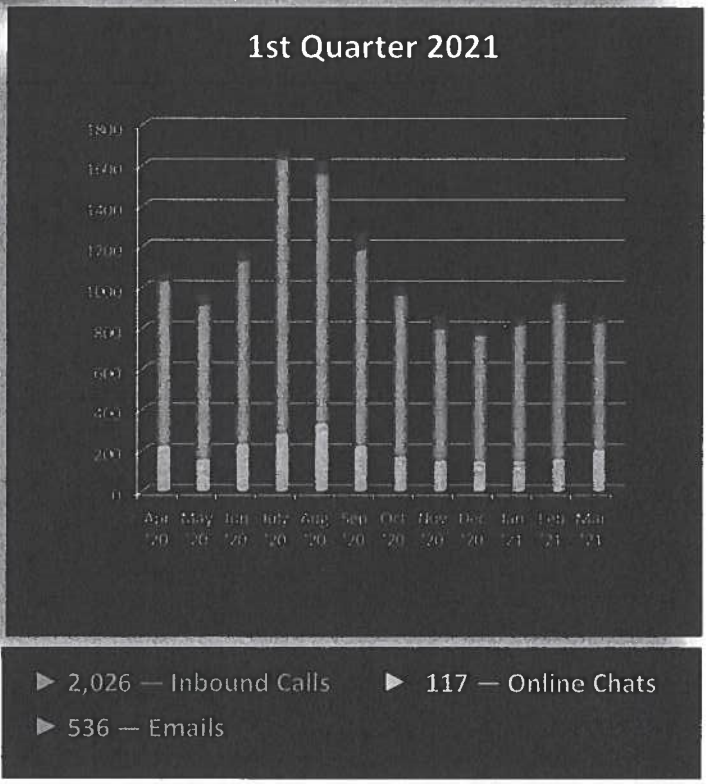
- *"Lost my phone & IDs on the train- called customer service and they were able to find it for me quickly. The customer service team was very kind and helpful. Thank you!"*
- *"Yes. Lisa always does such a superlative job in answering e-mail. It is so refreshing to get a human response that shows concern and caring"*
- *"Michele was really pleasantly helpful. She provided me with all the information I needed!"*
- *"Cindy responded to my query in a very timely manner. Thank you"*
- *"I'd like to express my thanks to Michelle for the help she provided to me. She was friendly, efficient, and informative. I will definitely suggest CTrides to anyone who is in the need of your service. Thank you!!!"*

Customer Service Highlights

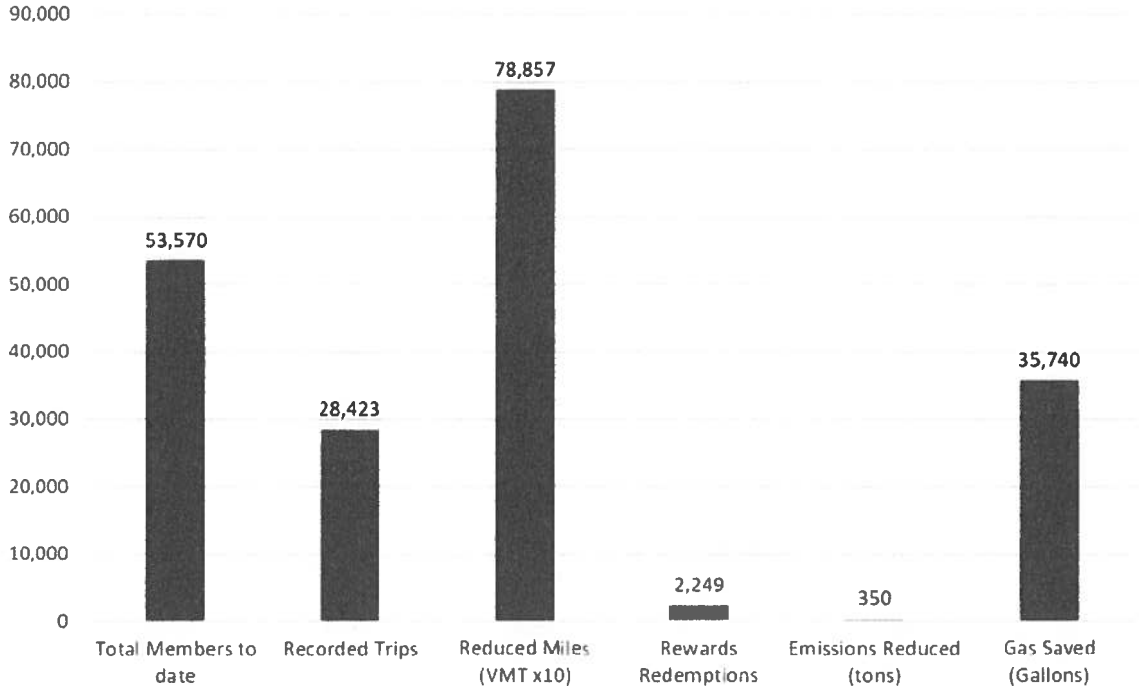
CT*rides*/CT*rail* calls: 3,328
Custom Commute Plans: 2
Total Number of Website Form Submissions: 133
Total Number of Emails Sent and Received: 536

Customer Service Details:

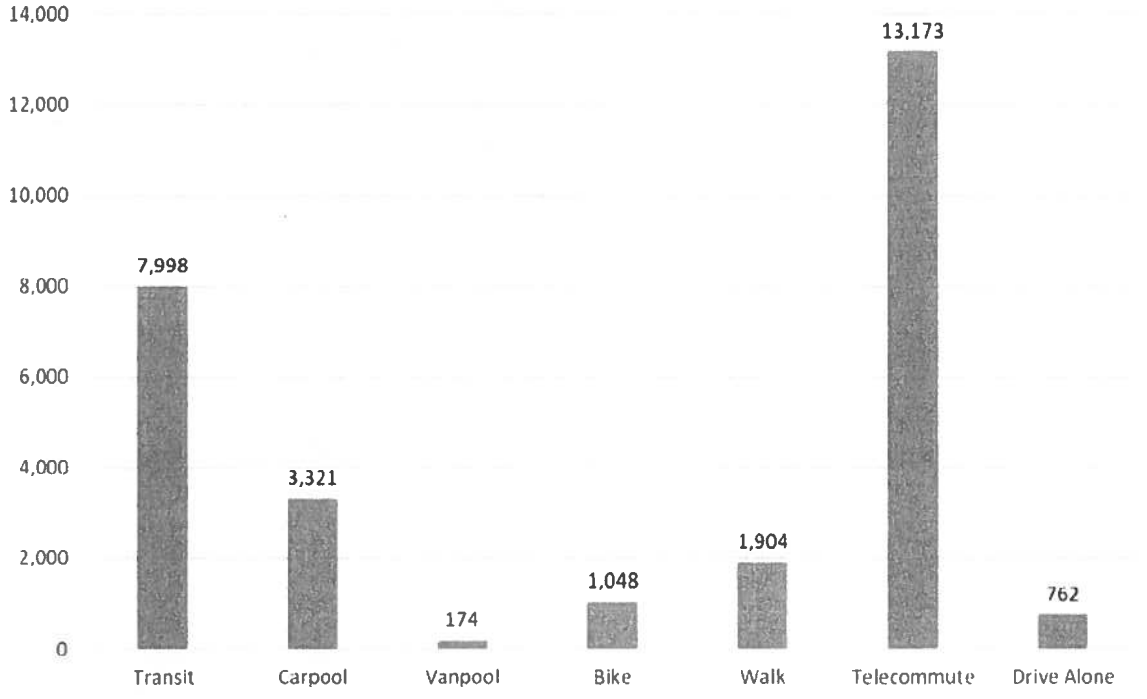
- **2,679 Total** cases into CT*rides*
  - **2,026 calls**
    9 *inquiries about available disabled services*
    7 *bilingual inquiries*
  - **Sent and received 536 emails**
    Great or OK rating on 90% of emails surveyed
  - **Facilitated 117 live online chats of which 21 were SMS (text) chats**
    4.2 out of 5 (best) avg. rating on all chats
- **Provided 2 Emergency Ride Home**
- **Processed 80 CT*rail* Hartford Line** and **35 CT*rail* Shore Line East** complaints, suggestions, questions
- **Distributed 0 trial bus passes to commuters** due to massive decrease in ridership caused by COVID-19.



Membership and Impacts



Breakdown of Recorded Trips



Appendix A: Partner and Stakeholder List

As of Q4 2020, there are more than 300 businesses, agencies and municipalities working with CT*rides*

1. 3PL Worldwide
2. 9Town Transit
3. Advance Auto Parts
4. Advanced Behavioral Health
5. AECOM
6. Aetna
7. Albea
8. Albertus Magnus
9. Albertus Magnus (East Hartford)
10. Alexion Pharmaceuticals
11. All Our Kin
12. Amazon Fulfillment Center BDL-2
13. Amazon Fulfillment Center BDL-5
14. Amazon Sorting Center Wallingford
15. American Institute
16. Aptar Group
17. ARC of Litchfield County
18. Artspace New Haven
19. ASML, Inc.
20. Asnuntuck Community College
21. Avon Health Center
22. Becton Dickinson and Company
23. BHcare
24. Bigelow Tea
25. BikewalkCT
26. BLT Office (Norwalk)
27. BLT Office (Stamford)
28. Bradley Airport
29. Branford Hall (Branford)
30. Branford Hall (Southington)
31. Bridgeport Public Schools
32. Cabelas
33. Capital Community College
34. CARTUS
35. CDM Smith
36. Center for Latino Progress
37. Central Connecticut Chambers of Commerce
38. Central Connecticut Coast YMCA
39. Central CT State University
40. Chabaso Bakery, Inc.
41. Cigna
42. City of Bridgeport
43. City of Danbury
44. City of Meriden
45. City of New Britain
46. City of New Haven
47. City of Stamford
48. City of Waterbury
49. City of Waterbury - Public Health
50. Community Health Center of New London
51. Connecticare
52. Connecticut Children's Medical Center
53. Connecticut College
54. Connecticut Department of Developmental Services
55. Connecticut Department of Energy and Environmental Protection (Hartford)
56. Connecticut Department of Energy and Environmental Protection (New Britain)
57. Connecticut Department of Labor
58. Connecticut Department of Transportation
59. Connecticut Department of Veterans Affairs
60. Connecticut Green Bank
61. Connecticut Innovations
62. Connecticut Mental Health Center
63. Connecticut National Guard
64. Connecticut Probate Court
65. Connecticut Spring and Stamping
66. Connecticut State Insurance
67. Connecticut Valley Hospital
68. Connecticut Valley Industries
69. Connecticut Water
70. Conning, Inc.
71. Continuum of Care Inc.
72. CT Department of Labor
73. CT*transit*
74. CT*fastrak*
75. Datto, Inc.
76. Department of Administrative Services
77. Department of Economic and Community Development
78. Department of Emergency Services & Public Protection
79. Department of Public Health (Hartford)
80. Department of Rehabilitation Services
81. Department of Revenue Services
82. Department of Social Services (Hartford)
83. Diageo, Inc.
84. Dollar Tree Distribution Center
85. DRS
86. East River Energy
87. Eastern Account System, Inc.
88. Eastern Connecticut State University
89. Eastern Connecticut Transportation Consortium
90. Eastern Workforce Investment Board
91. Electric Boat
92. Empire State Realty Trust
93. Enterprise Holdings
94. Enterprise Rideshare
95. ESPN

Appendix A: Partner List

96. Essex Steam Train and Riverboat
97. ExecutNet
98. Fairfield University
99. Foxwoods Resort and Casino
100. FTD Florists
101. Fusco Corporation
102. From You Flowers
103. Gateway Community College
104. Gaylord Specialty Healthcare
105. Global Steering Systems
106. GoNHGO
107. Goodwill of Western & Northern CT
108. Goodwin College
109. Greater Bridgeport Transit
110. Greater Norwalk Chamber of Commerce
111. Greater Waterbury YMCA
112. Greenwich Board of Education
113. Greenwich Chamber of Commerce
114. Group CBS Circuit Breaker Sales
115. Hartford Adult Education Center
116. Hartford Foundation for Public Giving
117. Hartford HealthCare System Support Office
118. Hartford Hospital
119. Hartford Public Library
120. Hartford Steam Boiler
121. HARTransit
122. Henkel Corporation
123. Hispanic Advisory Council of Greater Stamford (HACGS)
124. Hologic
125. Honeywell
126. Hotchkiss School
127. Horizon Services Company
128. Homegoods Distribution
129. Homes For the Brave
130. Hospital for Special Care
131. Housatonic Community College
132. Hubbell Incorporated
133. Human Resource Leadership Association of Eastern CT
134. i2systems
135. IFG Companies (Guilford Specialty Group)
136. Inertia Dynamics Corporation
137. Innovate Stamford
138. IRS
139. Jackson Laboratory
140. JCC of Greater New Haven
141. Jewett City Savings Bank
142. Job Corps (Hartford)
143. Job Corps New Haven
144. Jones Lang Lasalle Americas
145. Key Bank - New Haven
146. Knights of Columbus
147. Konica Minolta Business Solutions
148. Law offices of John Andreini
149. Lawrence + Memorial Hospital
150. Lincoln Life Insurance/Freemont Group Management
151. Lincoln Technical Institute
152. Live Green CT
153. Lower Connecticut River Valley Council of Governments
154. Manchester Community College
155. Manufacturing Alliance Service Corporation
156. Marcus Partners Mgmt.
157. Mary Wade Home
158. MassMutual
159. MedSource Consultants
160. Medtronic
161. Middlesex Community College
162. Middlesex Community College - Meriden Campus
163. Middlesex Hospital
164. Middlesex Hospital Shoreline Medical Center
165. Middletown Area Transit
166. Milford Transit District
167. Mitchell College
168. Mohegan Sun Casino
169. Mystic Healthcare and Rehabilitation LLC
170. Mystic Marriott Hotel & Spa
171. Nalas Engineering
172. Naugatuck Valley Community College (Danbury)
173. Naugatuck Valley Community College (Waterbury)
174. Naugatuck Valley Council of Governments
175. Naval Submarine Base New London
176. New Britain CT Works Center
177. New Britain Downtown District
178. New Haven Coalition for Active Transportation
179. New Haven Mayor's Task Force on Bike Education
180. North East Transportation Co.
181. Northwest Hills COG
182. Northwestern CT Community College
183. Norwalk Community College
184. Norwalk Housing Authority
185. Norwalk Transit
186. Nucor Steel (Wallingford)
187. NWCC Center for Workforce Development
188. Office of Policy and Management
189. Office of the Attorney General
190. Office of the Secretary of the State
191. Office of the State Comptroller
192. Oracle Corporation
193. Paier College of Art
194. Paradigm Property Management
195. Pathway Lighting Inc.
196. Paul Bailey Architects

Appendix A: Partner List

197. Pelli Clarke Pelli Architects
198. People Friendly Stamford
199. People's United Bank
200. PEP - Lacey Manufacturing
201. Pierce Care
202. Pitney Bowes-Danbury
203. Pitney Bowes-Shelton
204. Porter & Chester Institute (Branford)
205. Porter and Chester Institute (Enfield)
206. Porter and Chester Institute (Stratford)
207. Porter and Chester Institute (Waterbury)
208. Pratt & Whitney - Middletown
209. Pratt and Whitney
210. Prudential (Hartford)
211. Quinebaug Valley CC
212. Quinnipiac University
213. Quinnipiac University - North Haven Campus
214. Radiall USA Inc.
215. Randstad
216. Reckson/SL Green
217. Regal Care
218. RGIS
219. Rich Product Corporation
220. Saint Francis Hospital
221. Saybrook Point
222. Sea Corp
223. SeeClickFix
224. Shipman & Goodwin
225. Siemon Company
226. Sikorsky Aircraft Corporation—Bridgeport
227. Sikorsky Aircraft Corporation—Shelton
228. Sikorsky Aircraft Corporation—Stratford
229. Society for Human Resource Management
230. South Central Regional Council of Governments
231. Southeast Area Transit
232. Southeastern Connecticut Council of Governments
233. Southern Connecticut State University
234. Southwest Community Health Center
235. St. Mary's Hospital
236. St. Vincent's College
237. St. Vincent's Medical Center
238. Stamford Chamber of Commerce
239. Stamford Downtown Special Services District (SDSSD)
240. Stanley Black & Decker
241. State Education Resource Center
242. State of Connecticut
243. Stone Academy (East Hartford)
244. Stone Academy (Waterbury)
245. Stone Academy (West Haven)
246. Sun Life Financial
247. Tauck Tours
248. The Business Council of Fairfield County
249. The Hartford
250. The Independence Center
251. The Kennedy Center, Inc.
252. The Watermark at 3030 Park
253. The Workplace
254. Three Rivers Community College
255. Thule Inc
256. Tower Labs Ltd.
257. Town Green Special Services District
258. Town of Branford
259. Town of Burlington
260. Town of East Hartford
261. Town of Fairfield
262. Town of Farmington
263. Town of Greenwich
264. Town of Trumbull
265. Town of Windsor
266. Town of Woodbridge
267. Travelers
268. Trinity College
269. Triumph
270. TSKP Studios
271. Tunxis Community College
272. U.S. Department of Housing and Urban Development
273. UConn Hartford
274. UConn Health Center
275. UConn Law School
276. Ulbrich Stainless Steels and Special Metals
277. United Bank
278. United Healthcare
279. United Illuminating
280. United States District Court: District of Connecticut
281. United Technologies Corporation
282. University of Bridgeport
283. University of Connecticut—Avery Point
284. University of Connecticut—Storrs
285. University of Connecticut—Stamford
286. University of Connecticut—Waterbury
287. University of Hartford
288. University of New Haven
289. University of Saint Joseph
290. University of St. Joseph School of Pharmacy
291. USI Consulting

292. U.S. Federal Highway Administration
293. Valley Transit District
294. Veterans Affairs Connecticut Healthcare System (Newington)
295. Veterans Affairs Connecticut Healthcare System (West Haven)
296. Voya
297. Washington Inventory Systems
298. Waste Management
299. Watch For Me CT
300. Waterbury Hospital
301. Watson Foods
302. Wesleyan University
303. West Hartford Health and Rehab
304. Western Connecticut State University
305. Western CT Council of Governments
306. Wiggin & Dana, LLP
307. Windham Region Transit District
308. Windham Regional Community Council
309. Windsor Health and Rehabilitation Center, LLC
310. Wiremold/Legrand
311. Workers' Compensation Commission
312. Yale University
313. Yale-New Haven Hospital
314. YMCA Greater Hartford

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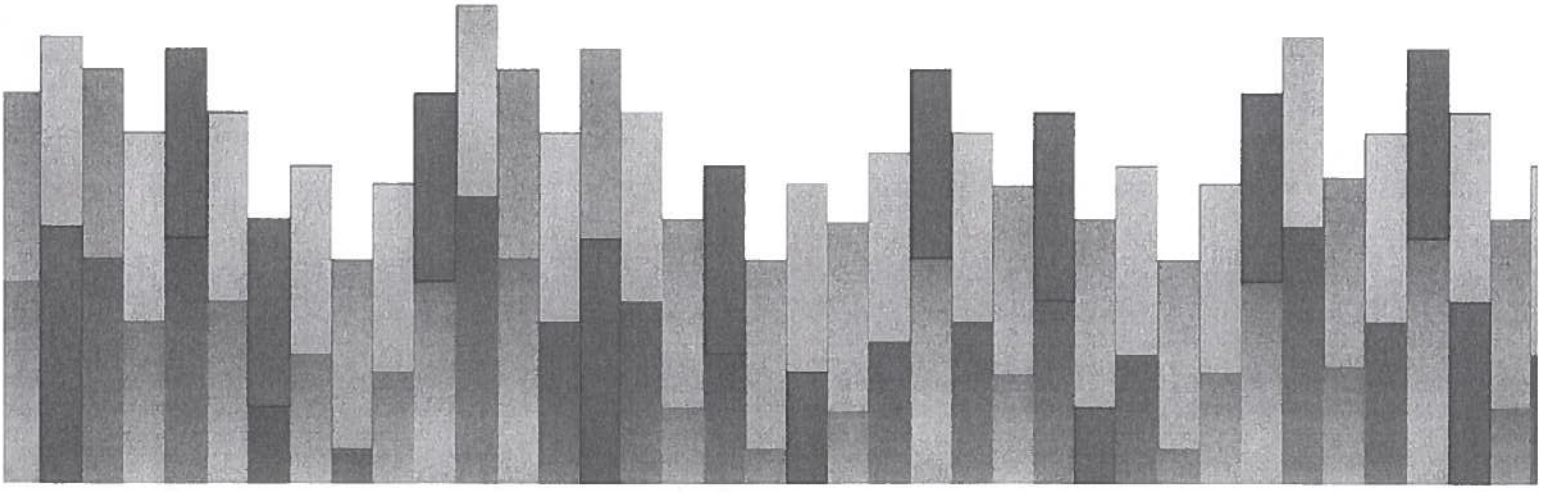
ANNUAL PRIVATIZATION REPORT: AVIATION

by Robert W. Poole, Jr.
Project Director: Austill Stuart

July 2021



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PART 1

INTRODUCTION

In the second half of the 20th century, the world's airports and air traffic control systems were essentially all run by government departments. Two events in 1987 launched an ongoing wave of organizational and government reforms. Those events were the privatization of the British Airports Authority (BAA) and the corporatization of the ATC functions of the New Zealand government as Airways New Zealand.

> *The improved performance of the privatized airports inspired a global wave of airport privatization and long-term public-private partnerships (P3s) that has resulted in over 100 large and medium-size airports being either sold to investors or long-term leased as revenue-based P3s—in Europe, Asia, Latin America, and elsewhere.*

BAA was privatized as a single entity, comprising the three major London airports plus several other U.K. airports. Later government policy decisions led to selling Gatwick, Stansted, and two Scottish airports to new owners. The improved performance of the privatized airports inspired a global wave of airport privatization and long-term public-

private partnerships (P3s) that has resulted in over 100 large and medium-size airports being either sold to investors or long-term leased as revenue-based P3s—in Europe, Asia, Latin America, and elsewhere. The outlier has been the United States, which has only one P3-leased airport (San Juan International) and a small number of P3 arrangements for airport terminals and other individual facilities.

The corporatization of Airways New Zealand in 1987 also led to a global trend under which more than 60 countries subsequently separated their ATC systems from the government's transport ministry and set them up as self-supporting corporations, regulated for safety at arm's length from the government. Within the first decade of this trend, the leading ATC providers organized a trade association, the Civil Air Navigation Services Organization (CANSO). Today CANSO has 93 full members (providers of ATC services) and 89 associate members (mostly supplier companies). It is the ATC counterpart of the global organizations for airlines (IATA) and airports (ACI).

This report reviews developments worldwide and in the United States regarding private-sector participation in airports, air traffic control, and airport security. While the United States remains an outlier when it comes to airport and ATC organization and governance, interest in airport privatization via long-term P3 leases continues, as does interest in reform of the country's ATC system.

PART 2

AIRPORTS

2.1 AIRPORT PRIVATIZATION OVERVIEW

The term "airport privatization" refers to several different kinds of change from traditional 100% government ownership and operation. The most sweeping form is the sale of the airport's ownership (as in the original BAA privatization) via a public offering of shares. A more common model in most of Europe is the sale of either a majority or minority stake in the airport. In Australia, much of Asia, and Latin America, the most common model is the long-term lease as a public-private partnership (P3). Lease terms typically vary from as short as 25 years to as long as 99 years (Australia). The P3 model is also used for components of an airport, such as a new terminal (or even a new runway, as occurred in Bogota, Colombia). The P3 model is permitted under federal law in the United States, for entire airports as well as airport components.

Trade association Airports Council International in 2018 released a policy paper on worldwide airport privatization trends.[1] A table in that report showed that Europe led the way in the fraction of passenger traffic (75%) at airports with majority or near-majority or greater private-sector investment, with Latin America and the Caribbean next at 66%. North America was lowest, at 1% of airports. For the world overall, 43% of all air travelers use airports with significant private ownership.

[1] Airports Council International, "Policy Brief: Creating Fertile Grounds for Private Investment in Airports," January 2018.

TABLE 1: AIRLINE PASSENGERS BY REGION AND AIRPORT OWNERSHIP TYPE

Region	Percent Private	Percent Government
Africa	11%	89%
Asia-Pacific	47%	53%
Europe	75%	25%
Latin America & Caribbean	66%	34%
Middle East	18%	82%
North America	1%	99%
World	43%	57%

Source: Airports Council International, 2018

More than three decades of growth in airport privatization have led to the emergence of global airport companies, some of which began with airports that were privatized early on, such as London Heathrow and Germany's Frankfurt. When new opportunities arise to bid on shares in airport equity or to develop a new airport or terminal via a long-term P3 agreement, these companies are generally among the bidders, sometimes in partnership with infrastructure investment funds and/or public pension funds.

Table 2 lists the largest investor-owned airport companies, ranked according to their 2019 revenue, derived from airport group financial statements. The total 2019 revenue of the investor-owned airport companies from that table is $47.3 billion, representing 27.5% of 2019 total world airport revenue of $172 million.

TABLE 2: LARGEST INVESTOR-OWNED AIRPORT COMPANIES, BY REVENUE, 2019

Airport Company	HQ Country	Main Airport(s)	Privatiz. Status	2018 Revenue ($M)	2019 Revenue ($M)
Aeroports de Paris	France	Paris--DeGaulle	Partial	5,270	5,264
Aena Aeropuertos	Spain	Madrid	Partial	5,088	4,977
Fraport	Germany	Frankfort, Lima	Partial	4,093	4,150
Heathrow Airport Holdings	UK	Heathrow	Full	3,945	4,083
Vinci Airports	France	Gatwick, Lisbon	Full	2,860	2,947
Airports of Thailand	Thailand	Bangkok	Partial	1,924	2,024
New Kansai Intl. Airport	Japan	Kansai	Full	1,985	1,980
Beijing Capital Airport	China	Beijing	Partial	1,698	1,565
Malaysia Airport Holdings	Malaysia	Kuala Lumour	Partial	1,202	1,259
Flughafen Zürich	Switzerland	Zurich	Partial	1,180	1,218
Manchester Airports	UK	Manchester	Partial	1,163	1,183
Guangzhou Baiyun*	China	Guangzhou	Partial	1,167	1,167
Sydney Airport	Australia	Sydney	Full	1,178	1,140
Atlantia	Italy	Rome	Full	1,208	1,067
Flughafen Wien	Austria	Vienna	Full	941	961

Airport Company	HQ Country	Main Airport(s)	Privatiz. Status	2018 Revenue ($M)	2019 Revenue ($M)
TAV Airports	Turkey	Istanbul	Full	1,430	856
SEA Group	Italy	Milan	Partial	839	849
ASUR	Mexico	Cancun	Full	800	826
GAP	Mexico	Guadalajara	Full	733	759
GMR Airports	India	Delhi	Partial	755	746
Brussels Airport Co.	Belgium	Brussels	Full	701	738
Australia Pacific Airports	Australia	Melbourne	Full	782	728
Corporacion Americas	Argentina	Buenos Aires	Full	822	724
Copenhagen Airports	Denmark	Copenhagen	Partial	689	652
Brisbane Airport Corp.	Australia	Brisbane	Partial	600	584
Athens Intl. Airport	Greece	Athens	Partial	563	581
Dusseldorf Airport	Germany	Dusseldorf	Partial	558	530
Airports. Co. S. Africa	South Africa	Cape Town	Partial	517	494
Auckland Intl. Airport	New Zealand	Auckland	Partial	486	490
OMA	Mexico	Acapulco	Full	351	401
Budapest Liszt Airport	Hungary	Budapest	Full	450	370
Perth Airport	Australia	Perth	Full	404	346
Aeroports de la Cote d'Azur	France	Nice	Partial	329	325
Hamburg Airport	Germany	Hamburg	Partial	317	308
Edinburgh Airport	UK	Edinburgh	Full	271	294
AGS Airports	UK	Glasgow	Full	283	289
SAVE Group*	Italy	Venice	Partial	250	250
Birmingham Airport Holdings	UK	Birmingham	Partial	210	214
				48,042	47,339

***Data for 2019 were not available for these two airports, so 2018 revenue was used as a proxy.**
Source: Individual airport group financial statements for FY 2019

It is also interesting to note how the privatized airports on this list score on the annual Skytrax survey of airline passengers about their airport preferences. The majority of the 39 companies in Table 2 have one or more major airports selected by Skytrax passengers as among the world's 100 best airports. Among these are Kansai (#10 in the Skytrax 100), Zürich (#11), London Heathrow (#12), Frankfurt (#14), Vienna (#16), Melbourne (#17), Copenhagen (#19), Paris de Gaulle (#20), Brisbane (#21), Cape Town (#23), Hamburg (#24), Sydney (#26), Madrid (#27), Auckland (#29), and Guangzhou (#30). By contrast, only two U.S. airports rank in the top 50 Skytrax airports: Houston George Bush (#31) and Cincinnati/Northern Kentucky (#34).[2]

Skytrax respondents also gave high scores to airports in Europe and Asia that have been "corporatized," which means reorganized as a government-owned commercial entity,

[2] Skytrax, "World's Top 100 Airports 2020," https://www.worldsbestairports.com (11 May 2021),

operating under normal accounting rules and sometimes paying taxes like any other business. Among high-scoring airports of this type were Singapore Changi (#1). Tokyo Haneda (#2), Munich (#5), and Amsterdam Schiphol (#9).

2.2 AIRPORT INDUSTRY CHANGES IN 2020

The COVID-19 pandemic imposed unprecedented financial stress on airports worldwide. In 2019, Price Waterhouse Coopers issued a report on rising airport valuations, including a map showing near-term airport privatization/P3 opportunities in 15 countries.[3] Little more than a year later, the concern shifted to the economic survival of airports in the face of unprecedented declines in air travel.

A number of privatized airport companies refinanced some existing debt to take advantage of historically low interest rates, thereby reducing annual debt service costs. Table 3, compiled by data firm *Inspiratia*, provides examples.[4]

TABLE 3: SELECTED 2020 AIRPORT DEBT REFINANCINGS

Airport	Country	Date of Financial Close	Amount
Gatwick Airport	U.K.	April 3, 2020	$368 million
Edinburgh Airport	U.K.	April 29, 2020	$ 95 million
Brussels Airport	Belgium	June 9, 2020	$ 53 million
Nice Airport	France	July 30, 2020	$784 million
Brussels Airport	Belgium	September 28, 2020	$ 23 million
Milan Airport	Italy	October 9, 2020	$355 million
Heathrow Airport	U.K.	December 14, 2020	$999 million

Source: Inspiratia.com

Heathrow Airport soldiered on, coping with 88% fewer passengers in November 2020 than in that month in 2019. It suspended operations in Terminals 3 and 4 early in the pandemic, operating only out of T2 and T5. And in December 2020, it announced that T4 would remain closed throughout 2021.[5] Prior to the start of the pandemic, the company received the news that the U.K. Court of Appeal had decided in favor of a lawsuit filed by Friends of the Earth contending that plans to add a third runway violated U.K. commitments under the

[3] Romil Radia, et al., "Airport Valuations Have Taken Off—The Question Is Where Will They Land?" PwC, February 2019.

[4] Omolola Coker, "Airports Remodeling Revenues," *Inspiratia*, 8 March 2020.

[5] Victoria Moores, "Heathrow T4 to Remain Closed for Another Year," *Aviation Daily*, 14 December 2020.

Paris Agreement on Climate Change. But in December 2020, the U.K. Supreme Court dismissed that finding, ruling unanimously that the government's approval of the new runway included conditions more stringent than the country's Paris Agreement commitments.[6]

Aeroports de Paris (ADP) bought 49% of India's GMR Airports for $1.4 billion just prior to the start of the pandemic.[7] ADP reported a net loss of $1.5 billion in fiscal year 2020 compared with a net profit of $735 million the previous year. In early 2021, ADP announced that it does not expect traffic levels at its Paris airports (Charles de Gaulle and Orly) to return to pre-pandemic levels until 2024-27. For its entire group of airports worldwide, it forecast 2021 traffic to be between 45% and 55% of 2019 levels. Previous government plans to sell most or all of its remaining stake in ADP have gone unmentioned during 2020.

Fraport announced early in 2021 that it has stretched out the schedule to complete its under-construction Terminal 3 to 2026, rather than several years earlier. Less revenue combined with construction delays mean that the main terminal building and two piers should open in 2025 (rather than originally scheduled 2021) and the remainder by 2026 (rather than 2023). Board Chairman Stefan Schulte said that, despite the huge drop in passengers and revenue in 2020, "our long-term growth prospects remain intact."[8]

Vinci Airports earned record revenue of $2.95 billion in 2019. Despite large declines in revenue from its 52 airports during 2020, the company made news announcing new initiatives. The first of these is an exploration of variable charges to aircraft based on their CO_2 emissions. The company designated Lyon–Saint-Exupéry Airport as its testbed for such environmental innovations, including possible hydrogen fueling.[9] Later in the year, Vinci Airports launched operational testing of a full facial recognition service to speed passengers through an airport, again using the Lyon airport as the testbed.[10]

6 Victoria Moores, "London Heathrow Wins Third Runway Appeal," *Aviation Daily*, 18 December 2020.

7 Fernando Moncada Rivera, "ADP Buys Significant Minority Stake in GMR Airports," Inspiratia, 25 February 2020.

8 Alan Dron, "Fraport Pushes Frankfurt Terminal 3 Readiness to 2026," *Aviation Daily*, 23 March 2021.

9 Thierry Dubois, "Global Airport Operator Mulls CO2-Based Fees for Airlines," *Aviation Daily*, 22 January 2020.

10 Thierry Dubois, "Vinci Airports Launches Full Facial Recognition Service," *Aviation Daily*, 9 October 2020.

London City Airport, which had remained closed during much of 2020, took advantage of the downtime to complete major portions of its master plan, including adding a full-length taxiway, eight new aircraft stands, and new passenger facilities, as well as continued development of its remote tower (which frees up additional real estate at the land-limited airport). The company projects that it will handle 11 million annual passengers by mid-to-late 2030s, more than double its 2019 count of 4.1 million.[11]

In other developments, infrastructure investment fund F2i bought a majority stake in the Olbia Costa Smeralda Airport in Sardinia, along with partner Alisarda Group. The remaining 20% of the airport remains owned by pre-existing shareholders, including the regional authority of Sardinia and the chambers of commerce of two Sardinian cities.[12] And Canada's giant infrastructure investor, Brookfield, quietly acquired a 0.16% stake in Sydney Airport in mid-2020, prior to the airport raising $1.45 billion in new equity in August.[13]

2.3 GLOBAL AIRPORT PRIVATIZATIONS AND P3 CONCESSIONS

Due to the near-collapse in airline traffic, airport privatization and P3s were far less common in 2020 than in 2019.

2.3.1 EUROPE

Bulgaria's first airport privatization, which was agreed to in July 2019, finally went into operation in early 2021. The Meridiam, Strabag, and Munich Airport consortium signed the concession agreement for the Sofia airport in July 2020, but only began operating it under the 35-year concession in April 2021. The team will construct a new Terminal 3 within the first decade of the concession.[14]

The government of **Greece** announced in 2018 that it would sell its remaining 30% stake in Athens International Airport, after renegotiating and extending the concession with the airport's original developer. Early in 2020, the Hellenic Republic Asset Development Fund announced nine shortlisted candidates, including major players ADP, Ferrovial, Macquarie,

11 Victoria Moores, "London City Airport Traffic to Double in the 2030s," *Aviation Daily*, 15 December 2020.

12 Fernando Moncada Rivers, "F2i Scoops Up Regional Italian Airport," *Inspiratia*, 27 October, 2020.

13 Kate Burgess, "Brookfield Takes Stake in Sydney Airport," *Inframation News*, 12 November 2020.

14 Fernando Moncada Rivera, "Meridiam Consortium Takes Over Sofia Airport," *Inspiratia*, 21 April 2021.

Global Infrastructure Partners, and Vinci Airports.[15] Prior to the pandemic, analysts had expected the stake would be valued based on an EBITDA multiple of 15 to 20 times. But with the pandemic suppressing demand for air travel, the government appears to be waiting for an air travel recovery before proceeding further.

Slovenia issued a request for expressions of interest (EOI) for a concession of the Maribor Edvard Rusjan Airport (MERA) in early 2020. The initial schedule called for the concession to be awarded and in place by the end of the year, so that the local consulting firm managing the airport, DRI, could step down.[16] No further news has been forthcoming during the pandemic.

In the **U.K.**, privately owned London Gatwick Airport received approval from the Civil Aviation Authority to begin using its northern (second) runway for landings and takeoffs. Historically, use of that runway had only been allowed in emergencies or when the southern runway was out of service, due to inadequate spacing between the two. Vinci Airports, Gatwick's majority owner, will continue to seek planning permission to put the runway into routine use.[17] In other U.K. news, the Department for Transport has approved Manston Airport's plans to reopen the airport as a cargo hub. The airport has been closed since 2014 but was acquired by RiverOak Strategic Partners with a plan to provide air cargo capacity to supplement that of the main London Airports.[18]

2.3.2 LATIN AMERICA

Bolivia, changing from a socialist government that nationalized the country's previously privatized airports, has moved back to privatization. In March 2019 it issued a request for expressions of interest to upgrade Viru Viru International Airport in Santa Cruz. The project will cost approximately $280 million. From a shortlist of three bidders, the government selected ADP to negotiate the 30-year concession.[19]

[15] Fernando Moncada Rivera, "Shortlist for Athens Airport Sale," *Inspiratia*, 3 February 2020.

[16] Fernando Moncada Rivera, "EOI for Slovenia Airport," *Inspiratia*, 25 February 2020.

[17] Zak Bently, "Gatwick to Continue with Second Runway Plans as it Clears CAA Hurdle," *Infrastructure Investor*, 6 May 2020,

[18] Tony Osborne, "UK Government Green Lights Manston Freight Airport Plans," *Aviation Daily*, 13 July 2020.

[19] Tony Baini, "Bolivia Picks Groupe ADP for Airport Concession," *Latin Finance*, 2 October 2019.

Brazil continued an aggressive program of P3 concessions in airports, toll roads, and other infrastructure. Following concessions for three groups of mid-size airports in 2019, which yielded $630 million in up-front fees, the government offered 22 more airports in three regional groups in early 2021. In a sign of continuing interest from airport companies and investors, the government raised another $600 million in up-front payments. Brazilian infrastructure company CCR won two of the three sets of airports (15 airports, including Curitiba) while Vinci Airports won the third group of seven airports.[20] The win increased Vinci's airport portfolio to 52. The company stressed that it will expand the cargo capacity of Manaus airport, the country's third-largest cargo airport.[21]

Chile continued its long record of P3 infrastructure with two new projects in 2020. In May, the Ministry of Public Works reached financial close on a 15-year concession for the Chacalluta airport in Arica. The winning team of Agunsa and Sacyr have committed to doubling the size of the passenger terminal, upgrading its capacity to 1.1 million passengers per year.[22] In 2019, Sacyr sold a 49% interest in seven Chilean concessions, in part to enable investments in new projects such as Chacalluta.[23] Given Chile's long use of P3s for infrastructure, its other recent activity was offering a third concession for another small airport, La Florida de la Serena Airport. The new concession is for 21 years and calls for tripling the capacity of the terminal to handle 1.3 million annual passengers. The Public Works Ministry in this case received only one proposal, from Chilean company Cointer and U.S. financier BlackRock.[24]

Peru was an early airport privatization pioneer. Lima Airport Partners (LAP), a Fraport-led consortium that in 2001 was awarded a 30-year concession to modernize the Jorge Chavez International Airport in Lima, negotiated a 10-year extension in 2017. Based on that, in 2018 it committed to a $1.5 billion plan to expand the airport to cope with continued growth to an expected 35 million annual passengers. The project includes expanding a terminal and adding a second runway. In February 2019, LAP hired Morgan Stanley to sell the stakes held by minority partners in the consortium, and in May Fraport increased its

20 Aluisio Alves, "Brazil Raises $600 Million in Privatization Auction of 22 Airports," *Reuters*, 7 April 2021.

21 Helen Massy-Beresford, "Vinci Wins Concession to Run Seven Brazilian Airports, *Aviation Daily*, 14 April 2021.

22 Inframation Deals, Chacalluta Arica Airport (Second Tender), *Inframation News.com/Deals* (21 May 2020).

23 Fernando Moncada Rivera, "Sacyr Sells Stake in Seven Chilean Concessions," *Inspiratia*, 9 April 2019.

24 Fernando Moncada Rivera, "BlackRock Team Only Bidder for Chile Airport," *Inspiratia*, 1 February 2021.

share to from 70% to 80.01%.[25] In 2020, with airport revenues severely depressed by the pandemic, LAP obtained a $450 million financing package from a group of international lenders, including BBVA and the Bank of Nova Scotia.[26]

2.3.3 ASIA AND PACIFIC

Australia's Sydney Airport appears to be attracting investor interest for its post-pandemic prospects. The investor-owned company raised A$2 billion in equity in summer 2020 and has retained its BBB+ credit rating, according to an article in *Inframation News*.[27] The article also suggested some degree of shareholder dissatisfaction if the airport declines to pay dividends (when it is operating at a loss!). It noted in passing that the largest shareholder is pension fund UniSuper (with 15.3%) and also highlighted the tiny purchase of shares by Brookfield in 2020. The article went on to compare Sydney's valuation (trading at 22-23X EBITDA) compared with major European airports such as Aeroports de Paris (13-14X) and Flughafen Zürich (11X). The article also noted some legal obstacles to investing in airports in Australia's state capital cities (such as Melbourne and Sydney): a foreign ownership maximum of 49% and a limitation on the same investor holding major stakes in more than one capital city airport.

India continued its ongoing airport privatization program in 2020, despite the pandemic. In April, it awarded GMR Airports a 40-year concession to develop and operate a new airport in Bhogapuram to replace civilian air services now being provided at Vishakapatnam Naval Airfield. The new airport's initial capacity will be six million annual passengers, compared with the 2.75 million being handled at the Naval Airfield.[28] In a second development, Adani Enterprises announced a deal under which it is acquiring the debt of GVK, which held 50.5% of the equity in Mumbai International Airport (MIAL). Adani also aims to acquire the 23.5% stake in MIAL held by Airports Company of South Africa and Bidvest. The deal also includes MIAL's 74% equity stake in Mumbai's second airport, currently under development.[29] Also in India, Flughafen Zürich signed a 40-year concession to finance,

25 Fernando Moncada Rivera, "Fraport Ups Stake in Lima Airport." *Inspiratia*. 29 May 2019.

26 Fernando Moncada Rivera, "Lima Airport Borrows $450M for Upgrades," *Inspiratia*, 15 September 2020.

27 Kate Burgess, "Case Study: Is Sydney Airport on the Radar for Global Investors?" *Inframation News*, 21 March 2021.

28 Fernando Moncada Rivera, "GMR Gets Award Letter for Airport Concession," *Inspiratia*, 16 April 2020.

29 Adrian Schofield, "Adani Set to Take Control of Mumbai Airports," *Aviation Daily*, 3 September 2020.

develop, and operate the planned second airport for Delhi—the Delhi Noida International Airport. The new airport's planned capacity is 12 million passengers, with construction planned to begin in 2021.[30]

Japan's planned privatization of the Hiroshima Airport has been delayed to sometime in 2021 due to the pandemic. Two teams were shortlisted in October 2019, but a winner has not been announced. The 30-year concession was originally intended to lead to the winning company taking over in July 2020, but the constraints of the pandemic have caused continuing delays. The last available projection started the concession in mid-July 2021.[31]

The **Philippines** announced two major airport privatization projects in 2019, both related to increased airport capacity for Manila, with one resulting in a successful P3 agreement. San Miguel Corporation (SMC) was awarded a 50-year concession for the new Bulacan Airport, with an eventual four runways and capacity for 100 million annual passengers, at an estimated cost of $14 billion.[32] In 2020, San Miguel announced several projects for supporting infrastructure, including an eight km airport toll road linked to the existing North Luzon Expressway, the Metro Rail Transit Line 7 from Quezon City to Bulacan, and several other projects.[33] The other new airport project for Manila—to be located on government land at Sangley Point on the southern shore of Manila Bay—was also announced as a long-term P3 concession. The winning bidder, China Communications Construction Co. (CCCC), was rejected in early 2021 on grounds that its documentation was "deficient in three or four items" and apparently was not fully committed to the $10 billion project.[34]

2.3.4 MIDDLE EAST AND AFRICA

Turkey's $11 billion New Istanbul Airport, procured as a 25-year P3 concession, opened to traffic in April 2019 and celebrated its first anniversary as the pandemic began to hit. Its

30 Kurt Hofmann, "Zurich Airport Signs On to Build Airport Near Delhi," *Aviation Daily*, 12 October 2020.

31 Ji Hyun Kim, "Covid-19 Grounds Hiroshima Airport Privatisation Till July 2021, *Infrastructure Investor*, 5 May 2020.

32 Rose Carr, "San Miguel to Build US$14bn Airport," *Inspiratia,* 2 August 2019.

33 Miguel R. Camus, "SMC Unveils New Toll Road, Railway Proposals for P740-B Airport City," *Philippine Daily Inquirer*, 16 November 2020.

34 Chen Chuanren, "Philippine Province Scraps $10B China-Backed Airport Project," *Aviation Daily*, 1 February 2021.

initial phase includes two runways and a terminal with capacity for 90 million annual passengers. The master plan calls for it to have six runways and capacity for 150-200 million passengers. The reduced air traffic may have helped airport company Istanbul Grand Airport (IGR) with ongoing planning to streamline both aircraft ground traffic and arriving and departing air traffic in the normally congested Istanbul airspace, with two other significant airports nearby.[35]

The only 2020 airport privatization in Africa took place in **Guinea** in February 2020. ADP and Africa50 signed a 25-year concession agreement to expand Gbessia Conakry International Airport. The government will own one-third of the concession company, with ADP and Africa50 each owning another third. The project includes construction of a new terminal with the capacity to handle a million annual passengers, double the airport's current capacity.[36]

2.4 U.S. AIRPORT PRIVATIZATION AND PUBLIC-PRIVATE PARTNERSHIPS

European-type sale of government-owned airports is not legal in the United States (except for general aviation airports that serve private planes). The original 1996 federal Airport Privatization Pilot Program permitted a limited number of long-term P3 leases of commercial airports. Under that law, only two airports were leased. Stewart International Airport, located 60 miles north of New York City, was leased in 2000 to a U.K. company that failed to make that airport financially viable; Stewart was subsequently acquired by the Port Authority of New York and New Jersey. The P3 lease of San Juan International Airport in 2013, however, was a success, leading to large-scale refurbishment and increased airline satisfaction.[37]

As recommended in the White House's 2018 infrastructure proposals, Congress replaced the Pilot Program with a new Airport Investment Partnership Program (AIPP), as part of the FAA reauthorization bill enacted in October 2018. Rather than the Pilot Program's limitation to 10 airports, all commercial airports can now engage in long-term P3 leases. In addition, the AIPP provides for planning grants of up to $750,000 for any jurisdiction that wants to use

35 Thierry Dubois, "A Giant in the Making," *Aviation Week*, 1-14 June 2020.

36 Ott Tammik, "Concession Signed for Guinea Airport," *Inspiratia*, 20 February 2020.

37 John Tierney, "Making New York's Airports Great Again," *City Journal*, Winter 2017.

the program to lease its airport. But the original pilot program's provision giving a super-majority veto to the airlines at any airport that applies remains in the revised legislation.

2.4.1 WHOLE-AIRPORT PRIVATIZATION AND P3 LEASES

St. Louis Lambert Field P3 Lease: Although the prospect of a P3 lease of the St. Louis airport generated extensive interest from global airport companies, infrastructure investment funds, and public pension funds in 2019, the city's mayor abruptly terminated the process in December of that year. The process had gone as far as detailed presentations from 10 pre-qualified teams and a pro-forma agreement with the airlines serving the airport. Based on local reporting, the termination reflected political opposition from government and business leaders in the surrounding counties, who had been pushing for creating a regional airport authority (essentially, wresting control of the airport from the city government).[38] Supporters of the airport lease subsequently gathered signatures to put a measure on the November 2020 ballot requiring the city to proceed with the lease process, hoping to share in the estimated $1 billion in up-front proceeds. But that effort failed to gain enough signatures in the COVID-19 environment, and proponents Carpenters Union and St. Louis NAACP ended the effort in September.[39]

A whole-airport P3 lease was considered for the Charlotte County, Florida's **Punta Gorda Airport** in autumn 2020. Based on presentations outlining the success of San Juan, Puerto Rico airport's P3 lease by Partners Group and a former official of Aerostar Airport Holdings, the County Airport Authority passed a resolution in favor of considering an application to the FAA's Airport Investment Partnership Program (AIPP).[40] That resolution was withdrawn a week later as premature, at which point the Airport Authority authorized its consultant, Vasey Aviation Group, to continue exploring a long-term lease of the airport. But AIPP requires super-majority approval of airlines using the airport in question, and Punta Gorda's sole airline, Allegiant, sent a letter to the board in December stating its opposition. That ended the AIPP effort.[41]

38 Robert Poole, "St. Louis Mayor Cancels Lambert Airport P3 Lease," *Aviation Policy News*. January 2020.

39 Mark Schlinkmann, "Lambert Privatization Plan Yanked from Nov. 3 St. Louis Ballot," *St. Louis Post-Dispatch*, 3 September 2020.

40 Eugene Gilligan, "Florida County Considers Airport P3," *Inframation News*, 8 October 2020.

41 Eugene Gilligan, "Florida County Ends Consideration of Airport P3," *Inframation News*, 28 January 2021.

Tweed New Haven Airport: Since early 2021, this Connecticut airport has been negotiating a long-term P3 contract with its airport management company, AvPORTS. The project would finance lengthening its main runway to accommodate start-up airline Avelo's larger 737 aircraft, and upgrade the terminal. It would also have the option to finance, build, and operate a replacement terminal. If this deal goes through, it would be the first time that an airport's contract manager became its financial partner, presuming that it receives federal approval under AIPP.[42]

Airglades, Florida Airport Privatization: The general aviation airport in Hendry County, Florida holds a slot in the original FAA Pilot Program. With the full support of the County Commission, Airglades International Airport (AIA) LLC has spent years developing a plan to expand the airport into a cargo reliever airport for land-constrained Miami International Airport, 100 miles to the south. AIA built a coalition of agricultural interests, air cargo interests, aviation suppliers, and local organizations in support of its plan to buy and operate the airport in its greatly expanded form. In August 2019, the FAA gave its final approval of the privatization plan, and AIA announced commitments from importers of perishable commodities from Latin America. Following the FAA approval, it also announced the selection of AvPORTS as the new airport manager and that Star America Infrastructure Partners would be investing equity in the project.

2.4.2 WHY THE U.S. LAGS BEHIND

There is continued speculation about why the United States is such an outlier compared with most of the rest of the world on airport privatization and long-term P3s. The Congressional Research Service released a new report on the subject in early 2021. After comparing the global trend with the very limited use of the recent and current federal program, CRS analysts suggested that unequal tax-exempt treatment of municipal revenue bonds for existing airports versus the taxable treatment of revenue bonds for private partners could be a causal factor.[43]

[42] Sean Broderick, "Avelo, Tweed New Haven Airport Team Up on Expansion Plans," *Aviation Daily*, 7 May 2021.

[43] Congressional Research Service, "Airport Privatization: Issues and Options for Congress," Report R43545, 11 March 2021.

A more optimistic outlook is offered in a report from PJ Solomon investment advisors. Their report suggests that U.S. airport managers are unable to operate efficiently "due to inefficient procurement policies, lack of flexibility in credit raising, and the bureaucracies that often come from a system with a large and not-always-directly-aligned set of stakeholders."[44] They suggest that the interests of risk-averse muni bond holders generally prevail over those of airlines, who will be at risk for ensuring airports' financial viability. Hence, they suggest that it is in the airlines' interest to support private capital investment in and management of airports via mechanisms such as AIPP. This is in addition to this program being "the only mechanism for an airport sponsor to realize substantial financial benefits that may be used outside the airport environment."

In 2020, *The Atlantic*, a major U.S. think magazine, published an article by journalist Joe Guinto summarizing the global trend of airport privatization and P3 leasing and suggesting that hard-pressed U.S. airports' governmental owners consider cashing out the asset value of their airports.[45] Guinto had published a cover story in *D Magazine* in 2019 making a case for privatizing the Dallas/Ft. Worth International Airport (DFW).[46] Both articles cited extensive investor interest in acquiring U.S. airports.

In a sign of continued investor interest in whole-airport P3 leases, Oaktree Capital Management (which played a key role in the San Juan airport P3) has formed an alliance with global airport company Royal Schiphol Group to focus on investment prospects under the federal AIPP framework. They will also seek opportunities for P3s to develop and operate specific facilities at U.S. airports.[47]

44 Tim Bath and Shawn Kinder, "Unlocking Value in the Airport-Airline Ecosystem," PJ Solomon, January 2021.

45 Joseph Guinto, "Privatizing Airports Is a No-Brainer," *The Atlantic*, August 2020.

46 Joseph Guinto, "Why We Should Sell DFW Airport, *D Magazine*, March 2019.

47 Eugene Gilligan, "Oaktree and Dutch Airport Operator Seek US Opportunities," *Inframation News*, 11 November 2020.

2.4.3 P3S FOR INDIVIDUAL AIRPORT PROJECTS

> *If there is an ongoing revenue stream generated by the project itself, the airport owner can base the P3 financing, in whole or in part, on that revenue stream, generally with the P3 company at risk if the revenue comes in below forecast.*

While whole-airport P3 leases have still not become a U.S. phenomenon, recent years continue to see projects that use long-term design-build-finance-operate-maintain (DBFOM) agreements to add large, costly facilities to airports. Among these are new or expanded terminals, parking facilities, consolidated rental car centers, and in one case, an automated people mover. These projects are financed in one of two ways. If there is an ongoing revenue stream generated by the project itself, the airport owner can base the P3 financing, in whole or in part, on that revenue stream, generally with the P3 company at risk if the revenue comes in below forecast. If there is not such a revenue stream (as in the case of the LAX automated people mover), then the project can be financed by a guaranteed stream of payments from the owner to the P3 entity over the life of the agreement. This kind of DBFOM is typically called an "availability-payment" structure, since the payments are generally somewhat variable based on the facility's up-time.

New Terminals

Long-term P3s for new airport terminals have a several-decade U.S. history. Among the earliest are the passenger terminals at Orlando Sanford Airport and Terminal 4 at Kennedy International in New York. More-recent projects include renovating the south terminal at Austin Bergstrom into a no-frills terminal for ultra-low-cost carriers and replacing the outdated central terminal at New York's LaGuardia Airport, which is nearing completion.[48] These projects are generally financed based on revenues generated by the terminal, so they are considered revenue-risk DBFOM P3s.

[48] Aileen Cho, "Final Destination In Sight for $8B LaGuardia Modernization," *Engineering News-Record*, 26 October, 2020.

Under way currently are major new terminals at both Newark Liberty and Kennedy International. One of the several projects at JFK—Terminal One—is a $7.4 billion DBFOM P3. The equity investors are Carlyle, Ullico, and JLC Infrastructures, working with airline partners Terminal One Group Association (Air France, Japan Airlines, Korean Air, and Lufthansa). The pandemic's greatly reduced airline revenues led to delays in financing this project, and its lead design-build contractor (AECOM) withdrew from the project, leading to an RFQ being released by the project team in January 2021.[49] The new $2.7 billion Terminal One at Newark is being procured conventionally by the Port Authority, but it will be operated and maintained by a subsidiary of Munich Airport International, which has also advised on the terminal's design.

Another terminal revamp, the planned $1.8 billion DBFOM under which Ferrovial Airport was to redesign and expand the landside Great Hall terminal at Denver International Airport, was terminated for convenience in August 2019. Lengthy negotiations between the parties reached a settlement in March 2020, under which the city (owner of DEN) agreed to pay Ferrovial $183.6 million.[50] In November, the airport released scaled-back plans to finish the renovation without adding a new TSA screening checkpoint.[51]

On a much smaller scale was the development of a first-ever airline terminal at Paine Field in the northern suburbs of Seattle. Propeller Airports entered into a long-term P3 agreement with airport owner Snohomish County. After winning FAA approval, construction began in 2018, with airline service by Alaska and United starting early in 2019. Unfortunately, the 2020 collapse in air traffic due to the pandemic led to serious decreases in revenue. In May, Propeller decided to shut the terminal down, so it could expeditiously resurface the ramp area without any aircraft getting in the way. After a 10-week hiatus, it re-opened in August.[52] Despite its difficult 2020, the airport's new service and new terminal has won a strong fan base. For the second year in a row, it was voted one of America's 10 best small airports in a *USA Today* readers' poll.

[49] Jon Berke, "JFK Terminal One Sponsors Launch RFQ for Lead DB Contractor," *Inframation News*, 22 January 2021.

[50] Olivia McFadden," Denver Airport Finalizes Contract Termination with SPV," *Inframation News*, 23 March 2020.

[51] Jon Murray, "Denver Airport Unveils Scaled-Down Plans to Finish Great Hall Terminal Renovation," *The Denver Post*, 24 November 2020.

[52] Geoff Baker, "Paine Field Set to Reopen Saturday," *Seattle Times*, 1 August 2020.

Consolidated Rental Car Facilities

> *Two major airports are developing consolidated car rental centers under long-term DBFOM P3 agreements.*

Two major airports are developing consolidated car rental centers under long-term DBFOM P3 agreements. At Los Angeles International, the $2 billion facility is being developed by Fengate Asset Management and PCL Investments and financed based on LAX's commitment to 28 years of availability payments. Across the country in Newark, the new consolidated car rental center itself has a revenue source in the form of a $7/day rental car customer facility charge to finance the project. Hence, it is a revenue-risk P3, and its financing is not an obligation of the airport. This project, developed by Fengate, Conrac Solutions Capital, and Related Fund Management, is also under way and was featured in a detailed article in *Airport Business* magazine.[53]

Cargo Facilities

Two airports announced plans to develop new cargo facilities under a P3 model during 2020. The Atlanta Department of Aviation released a Request for Information (RFI) for a Modern Air Cargo Terminal facility at Hartsfield-Jackson International Airport in June. After receiving significant response, it issued an RFP on January 7, 2021 for a DBFOM project for the new facility. Six teams had responded to the RFI, including AFCO and Balfour Beatty.[54] AFCO had recently been selected to develop cargo facilities at Laredo International Airport.

The Anchorage, Alaska International Airport received an unsolicited proposal to develop and operate a $500 million cargo facility. IC Alaska Airport has proposed a 55-year deal

[53] Joe Petrie, "Port Authority Embraces P3 Development for Newark's New ConRAC Facility," *Airport Business*, August-September 2020.

[54] Eugene Gilligan, "Atlanta Airport Issues RFP for Cargo Facility P3," *Inframation News*, 13 January 2021.

under which it would build a 360,000 sq. ft. cargo facility with 14 aircraft hardstands, paying $0.18/sq. ft. per year over the 55-year period.[55]

Other Airport P3 Facilities

San Diego International Airport is seeking a P3 developer/operator for an airport lounge, open on a fee basis to all airline passengers, unlike airline-membership lounges. The Airport Authority issued an RFP in early 2021. The project would use approximately 18,000 sq. ft. in Terminal 2 West, and the Authority has a number of specific requirements for the facility.[56]

The Phoenix-Mesa Gateway Airport in Mesa, Arizona unveiled plans in January 2021 for a long-term P3 to develop a 400-acre retail and entertainment development on the airport's vacant east side, including a new terminal, once traffic grows enough to support a larger facility. The Gateway East project will be accessible from the new SR 24 freeway, currently being built.[57]

The San Bernardino County Transportation Authority seeks to connect its Rancho Cucamonga Metro Rail station with Ontario International Airport, located in the Inland Empire region east of Los Angeles. The only responder to the agency's RFQ was Elon Musk's Boring Company, which submitted a proposal for a 6.4 km tunnel, estimated to cost $83 million.[58] HNTB is advising the agency on the project.

In Toronto, Ports Toronto is seeking an investor for its downtown Billy Bishop Airport. It has issued an RFI to interested parties, looking for a financial partner that would operate the airport under lease and ensure the airport's long-term viability. Billy Bishop is served by Air Canada and Porter Airlines. Both have suspended service for most of the pandemic.[59]

55 Andrew Vitelli, "Private Firm Proposes Cargo Facilities at Alaska Airport," *Inframation News*, 21 November 2020.

56 Olivia McFadden, "San Diego Seeks Proposals for Airport Lounge P3," *Inframation News*, 25 March 2021.

57 Robert Poole, "Major Project Planned at Phoenix-Mesa Gateway Airport," *Aviation Policy News*, February 2021.

58 Jon Berke, "Additional Details Disclosed on Boring Co.'s Proposed Airport Project," *Inframation News*, 8 February 2021.

59 Jon Berke, "Billy Bishop Operator Seeks Financial Partners," *Inframation News*, 31 March 2021.

Contract Management

Separate from whole-airport P3 leases is contracting out airport operations and management. This approach has been used for decades, with FAA's blessing, most often for general-aviation airports but also for small to medium-size air carrier airports such as Albany, New York and Burbank, California. Several new developments in airport contract management occurred in 2020.

The Gary/Chicago Airport, located in Gary, Indiana, received its first commercial air carrier service when UPS opened a base at the airport.[60] UPS began Next Day Air Service at the airport on Nov. 2, 2020. Its agreement with the airport, which is managed by AvPORTS, includes office space in the airport's passenger terminal, 150,000 sq. ft. of ramp space, plus hangar space for support equipment. The airport continues to seek passenger air service for those wanting a more convenient alternative to Chicago's Midway and O'Hare airports.

Starting January 1, 2020, the aforementioned Stewart International Airport in New York State turned over operations and management to private firm Future Stewart Partners under a 10-year contract with airport owner Port Authority of New York and New Jersey. FSP is a joint venture of AvPORTS and Groupe ADP. The latter company sees this contract as an opportunity to showcase its expertise in transforming customers' airport experience in the United States.[61]

Puerto Rico's Public-Private Partnership Authority announced in early 2021 that it plans to seek a contract operator or operators for its nine regional airports.[62]

60 Gary/Chicago International Airport, "Highly Anticipated UPS Operations Begin at Gary/Chicago International Airport," 3 November 2020.

61 "FSP Takes on NY Stewart Contract," *International Airport Review*, February/March 2000.

62 "Puerto Rico P3 Authority Searches for Airport Operator," *Inframation News*, 11 February 2021.

PART 3

AIR TRAFFIC CONTROL

3.1 AIR NAVIGATION SERVICE PROVIDERS (ANSPS)

Historically, most of the world's governments provided air traffic control (ATC) services as part of the transport ministry, whose aviation division served as both the aviation safety regulator and the operator of the ATC system. That remains the organizational form in the United States, with the FAA providing both of those functions as part of the U.S. Department of Transportation (DOT).

Globally, that model has undergone major change since 1987, when the reformist government of New Zealand removed its ATC system from the transport ministry by "corporatizing" it as Airways New Zealand, a self-supporting government corporation. Within 10 years, more than a dozen other countries had done likewise, and the fledgling industry created a trade association, the Civil Air Navigation Services Organization (CANSO) as its counterpart to the global organizations representing airlines (IATA) and airports (ACI). CANSO introduced a new term to describe these providers: air navigation service provider (ANSP), which has become standard terminology worldwide.

> *The revenue source for ANSPs is globally accepted ATC user fees, based on the charging principles promulgated by the International Civil Aviation Organization (ICAO), a UN agency.*

The revenue source for ANSPs is globally accepted ATC user fees, based on the charging principles promulgated by the International Civil Aviation Organization (ICAO), a UN agency. Prior to ATC corporatization, those revenues were nearly always paid by airlines and other airspace users to the respective national governments. In most cases, once an ANSP has been corporatized, the user-fee revenue flows directly to the ANSP as its primary source of revenue. This makes it possible for the corporatized ANSPs to issue revenue bonds based on their projected revenue streams, just as airports and toll roads do.[63]

Table 4 lists all ANSP members of CANSO, separated into organizational categories. The first four are the ones outside of government. Nav Canada is a nonprofit private corporation to which the Canadian government has delegated all ATC responsibilities for both domestic and oceanic airspace. ENAV is the partly-privatized ANSP of Italy, with 49% of its shares traded on stock markets. Serco is an investor-owned U.K. company that provides ATC services to governments on a contractual basis. And NATS is the partly-privatized ANSP of the U.K., with 42% of its shares owned by airlines and pension funds, 4% by Heathrow Airport, and 5% owned by employees—with the balance of 49% owned by the government.

TABLE 4: AIR NAVIGATION SERVICE PROVIDERS, BY TYPE OF ORGANIZATION

Country	ANSP	Organization Type	Notes
Canada	Nav Canada	Nonprofit corporation	
Italy	ENAV	Part investor-owned	
UK	NATS	Part investor-owned	
UK	Serco	Shareholder-owned	
Albania	ALBCONTROL	State-owned company	
Argentina	DGCTA	State-owned company	
Armenia	ARMATS	State-owned company	
Australia	Airservices Australia	State-owned company	

63 Robert Poole, "Air Traffic Control as a Quasi-Private Corporation," Robert Clark and Simon Hakim (eds.), *Public-Private Partnerships*, Springer, 2019.

Country	ANSP	Organization Type	Notes
Austria	Austro Control	State-owned company	Also regulates
Belgium	Belgocontrol	State-owned company	
Botswana	CAAB	State-owned company	
Bulgaria	BULATSA	State-owned company	
Cambodia	CATS	State-owned company	
Croatia	Croatia Control	State-owned company	
Curaçao	DCANSP	State-owned company	
Czech Republic	ANS CR	State-owned company	
Denmark	Naviair	State-owned company	
Egypt	NANSC	State-owned company	
Estonia	EANS	State-owned company	
Fiji	Airports Fiji Ltd.	State-owned company	
Finland	Finavia Corp.	State-owned company	
Georgia	Sakaeronavigatsia	State-owned company	
Germany	DFS	State-owned company	
Hungary	HungaroControl	State-owned company	Also regulates
Iceland	ISAVIA	State-owned company	
India	Airports Authority of India	State-owned company	
Indonesia	AirNav Indonesia	State-owned company	
Iran	Iran Airports Company	State-owned company	
Ireland	IAA	State-owned company	Also regulates
Israel	Israel Airports Authority	State-owned company	
Kazakhstan	Kazaeronavigtsia	State-owned company	
Latvia	LGS	State-owned company	
Lithuania	Oro Navigacija	State-owned company	
Macedonia	M-NAV	State-owned company	
Maldives	Maldives Airports Co.	State-owned company	
Malta	MATS	State-owned company	
Moldova	MoldATSA	State-owned company	
Mozambique	Aeroportos de Mocambique	State-owned company	
New Zealand	Airways New Zealand	State-owned company	
Nigeria	NAMA	State-owned company	
Norway	Avinor	State-owned company	
Papua New Guinea	PNG Air Service	State-owned company	
Portugal	Nav Portugal	State-owned company	
Romania	ROMATSA	State-owned company	
Russia	State ATM Corporation	State-owned company	Also regulates
Serbia & Montenegro	SMATSA	State-owned company	
Slovak Republic	LPS SR	State-owned company	
Slovenia	Sovenia Control	State-owned company	
South Africa	ATNS	State-owned company	
Spain	ENAIRE	State-owned company	
Sri Lanka	AASL	State-owned company	
Sweden	LFV	State-owned company	
Switzerland	Skyguide	State-owned company	
Thailand	AEROTHAI	State-owned company	
Turkey	DHMI	State-owned company	
Uganda	CAA Uganda	State-owned company	
Ukraine	UkSATS	State-owned company	

Country	ANSP	Organization Type	Notes
Vietnam	VATMC	State-owned company	
Zambia	NACL	State-owned company	
Bangladesh	CAAB	Civil aviation authority	Financially autonomous
Cyprus	DCA Cyprus	Civil aviation authority	
Dominican Republic	IDAC	Civil aviation authority	
Ghana	Ghana CAA	Civil aviation authority	
Greece	HCAA	Civil aviation authority	
Japan	JCAB	Civil aviation authority	
Jordan	CARC	Civil aviation authority	Financially autonomous
Kenya	Kenya CAA	Civil aviation authority	
Kingdom Saudi Arabia	GACA	Civil aviation authority	
Mongolia	CAA of Mongolia	Civil aviation authority	
Myanmar	DCA Myanmar	Civil aviation authority	
Nepal	CAA Nepal	Civil aviation authority	
Swaziland	SWACAA	Civil aviation authority	
Singapore	CAAS	Civil aviation authority	
Taipei FIR	ANWS	Civil aviation authority	
Tanzania	TCAA	Civil aviation authority	
Trinidad & Tobago	Trinidad & Tobago CAA	Civil aviation authority	
Tunisia	OACA	Civil aviation authority	
United States	FAA	Civil aviation authority	
Azerbaijan	AZANS	Government department	
Brazil	DECEA	Government department	
France	DSNA	Government department	Financially autonomous
Mexico	SENEAM	Government department	
Netherlands	LCNL	Government department	
Poland	PANSA	Government department	
United States	DOD Policy Board, Aviation		
Belgium	MUAC	Intergovernmental	
Honduras	COCESNA	Intergovernmental	6 countries
Senegal	ASECNA	Intergovernmental	17 countries
Angola	ENANA-EP	uncategorized	
Haiti	OFNAC	uncategorized	
Luxembourg	LANA	uncategorized	
Sudan	Sudan ANS	uncategorized	
Dubai	DANS	uncategorized	

Source: Civil Air Navigation Services Organization (2015) plus author analysis

Next in the table are 55 ANSPs that are wholly-owned government corporations, such as Airservices Australia, Germany's DFS, and the pioneering Airways New Zealand. Four of these corporations also have aviation regulatory responsibilities, which conflicts with

ICAO's 2001 recommendation that calls for the organizational separation of ATC provision and aviation safety regulation.[64]

Next in the table are 20 of the old-style civil aviation authorities, usually part of the transport ministry and with aviation safety regulation in the same entity as provision of ATC services. These are nearly all developing countries such as Bangladesh, Kenya, Myanmar, and Swaziland. But also included are several developed countries that have not corporatized ATC, including Japan, Singapore, and the United States. Another seven are self-described as government departments, the largest of which are in Brazil and France. The last five in the table were listed by CANSO as "uncategorized."

Prior to those are three intergovernmental entities that operate as multi-jurisdictional ANSPs for specific airspaces. Maastricht Upper Airspace Control Center (MUAC) provides ATC services above 24,500 ft. for Belgium, Luxembourg, Netherlands, and northwestern Germany. COCESNA provides ATC services for the six countries of Central America. And ASECNA provides ATC services for 17 countries in Africa. All three charge ICAO-based user fees and operate as corporatized ANSPs.

Table 4 permits one to answer the question: How many ANSPs operate as corporations funded by user fees? The usual answer is 62, consisting of the non-governmental first four, the 55 government corporations, and the three intergovernmental ANSPs. In terms of *countries* served by such ANSPs, however, the total is higher; adding the six countries served by COCESNA and the 17 served by ASECNA brings the net total to 85.

3.2 GLOBAL SPACE-BASED ATC SURVEILLANCE

A basic function of an ATC system is *surveillance*—keeping track of where planes are in real time. Historically, air traffic control over most populated countries has, since World War 2, relied largely on radar, later supplemented by transponders that report altitude and other basic information in real time. But there is no radar in the oceans, in mountainous terrain (e.g., the Alps, the Himalayas, the Rockies), and in polar regions, all of which are traversed by aircraft, including airliners. Surveillance there has long been carried out by "procedural" methods, which means periodic reports from pilots to ATC of their estimated positions based on the plane's inertial navigation system. Since those updates are both imprecise and

[64] ICAO, *Safety Oversight Manual*, Doc. 9734, Part A, Paragraph 2.4.9. 2001

only periodic, ATC protocols require very large spacing between oceanic flight tracks and between planes flying the same flight track.

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This began to change in 2019, when an investor-owned company—Aireon—started offering near-real-time global surveillance via satellite. The company contracted with satellite company Iridium to place its transponders on all 66 satellites in its new Iridium-Next constellation that was launched mostly in 2018. Since most ANSPs are now implementing ground-based surveillance using a system called ADS-B (Automatic Dependent Surveillance-Broadcast), business jets and airliners flying oceanic, mountainous, and polar routes are increasingly equipped with ADS-B transponders that broadcast the plane's identity, GPS position, speed, and other data every three seconds. The new satellites detect that signal and retransmit it to domestic ANSP control centers that subscribe to Aireon's services. The space-based information then shows up on controllers' screens, just as do ADS-B transmissions in domestic airspace.

Aireon's service, which went live in March 2019, can now offer radar-like surveillance to the 70% of the globe where this has been lacking. But this is only available to ANSPs that subscribe to the service. With the addition of the Port Moresby Flight Information Region of Pacific airspace in March 2021, Aireon reported that its system is in use over 248 million sq. km. of the earth's service, nearly 49% of the total.[65] Subscribers include the ANSPs of Canada, Denmark, the Dutch Caribbean, Hong Kong, Iceland, India, Ireland, Singapore, the

[65] Aireon, "NiuSky Pacific Begins Operational Usage of Aireon Data, news release, 20 March 2021.

U.K. and three multi-country providers: Eurocontrol's MUAC, the six COCESNA countries of Central America, and the 17 countries of ASECNA.

> *Aireon's service, which went live in March 2019, can now offer radar-like surveillance to the 70% of the globe where this has been lacking.*

Aireon is a joint venture of Iridium and five ANSPs: ENAV (Italy), IAA (Ireland), NATS (U.K.), Nav Canada, and Naviair (Denmark). The first to implement oceanic ADS-B service were Nav Canada and NATS across the North Atlantic. While that is technically a trial, ICAO agreed that the two ANSPs could reduce the lateral spacing (between tracks) and longitudinal spacing (nose to tail on a given track) for the trial period, with further reductions likely once performance has been measured and analyzed. Results during 2019 showed significant savings in time and fuel (and hence CO_2 emissions), as well as safety benefits from controllers able to quickly identify deviations from assigned tracks or assigned altitudes. Significantly reduced traffic levels during 2020 enabled NATS and Nav Canada to experiment with "free route airspace" rather than restricting traffic to the traditional Organized Track Structure. As of 2021, the OTS will be abandoned on days when traffic levels allow, which will let airlines select the best flight plan for each individual flight, thanks to space-based ADS-B surveillance.[66]

To the extent that Aireon has a competitor, it is Inmarsat, which operates a communications mechanism known as ADS-C. Among other communications services, it has long provided airlines with position reporting at 10- to 14-minute intervals, by contract (the C in ADS-C). Inmarsat has proposed an "enhanced" version that would transmit reports every 3.2 minutes (compared with every three *seconds* for space-based ADS-B).[67] Inmarsat was originally an international satellite communications agency, but its commercial services were privatized in 1999, and it was listed on the London Stock Exchange in 2005.

66 Tony Osborne, "Use of Transatlantic OTS Being Scaled Back," *Aviation Daily*, 4 February 2021.

67 GAO-19-532, "FAA's Analysis of Costs and Benefits Drove It Plans to Improve Surveillance in U.S. Oceanic Airspace," Government Accountability Office, July 2019.

In 2019 it was acquired by a joint venture of infrastructure investment funds: Apax Partners and Warburg Pincus plus two Canadian pension funds, CPPIB and OTPP.[68]

In 2019, FAA signed a research agreement with Aireon aimed initially at exploring the use of its ADS-B data in the Caribbean. This focused on using a modified version of the ERAM system at Miami Center to control traffic between Miami and San Juan, but FAA also modified the ATOP software used in its New York, Oakland, and Anchorage oceanic Centers for experimental use in their oceanic airspaces. In January 2020 *Aviation Daily* reported that FAA was developing a one-to-three-year roadmap to expand its use of space-based ADS. And on November 12, 2020, FAA and Aireon announced an agreement under which the agency will use the company's ADS-B data to analyze possible uses in managing both domestic and oceanic air services.[69] Observers expect FAA to formally subscribe to Aireon's services in the near future.

3.3 DIGITAL, REMOTE AIR TRAFFIC CONTROL TOWERS

> *Instead of a tall building with a staffed control cab on top, the center evaluated carrying out surveillance functions using cameras and other sensing devices at various airport locations, with the control cab and large display screens on the ground.*

In 2007 the FAA research center in Atlantic City, New Jersey conducted a demonstration project on a new kind of airport control tower. Instead of a tall building with a staffed control cab on top, the center evaluated carrying out surveillance functions using cameras and other sensing devices at various airport locations, with the control cab and large display screens on the ground. Besides saving the cost of constructing and maintaining the tall building, the demonstration showed that controllers would have increased visibility (especially at night and in rain or fog when infrared cameras provided better views) and

[68] "Inmarsat Acquired by Private Equity Consortium for $3.4bn." *Air Traffic Management*, 25 March 2019.

[69] Robert Poole, "FAA to Use Aireon Space-Based ADS-B Data," *Aviation Policy News*, November 2020.

decreased workload.[70] Despite these very positive results, no further FAA work on the subject has been reported, and no FAA program to implement remote towers materialized.

Drawing on these findings, technology companies and corporatized ANSPs overseas began developing and testing remote tower concepts. LFV in Sweden and Avinor in Norway were among the first to implement remote tower programs, and the first remote tower to be certified for operational use was developed for LFV by Saab-Sensis Corporation and became operational in 2015. In the years since then, remote towers have been planned or implemented in Australia, Brazil, Denmark, Germany, Hungary, and the U.K., among other countries. Germany, Sweden, and Norway have subsequently implemented remote tower *centers* in which controllers can manage air traffic at a number of airports from a single location, providing additional cost savings. Such centers are already in operation in Germany, Norway, and Sweden and are in the planning stages in other countries.

During 2020 there were a number of new remote tower developments in Europe.

- Sweden's LFV opened the world's first new airport designed to be managed via a remote tower, the Scandinavian Mountain Airport.
- Norway's Avinor opened its remote tower center at Bodo, designed to handle air traffic at up to 15 small airports. At the end of 2020, Avinor announced that two additional airports were being controlled from the center at Bodo.
- In Germany, DFS opened its remote tower center at Leipzig and it began controlling traffic at Saarbrücken; two other airports were to be added in 2020, but those actions were delayed by the pandemic.
- Danish ANSP Naviair announced plans to develop a remote tower center at the country's second-largest airport, Billund. It will be designed to provide tower services for a number of other Danish airports, except Copenhagen.
- Belgian ANSP Skeyes announced plans to establish remote tower services to serve six airports, including the main hub in Brussels.
- In October, Spanish ANSP ENAIRE announced its entry into remote towers, with a remote tower to serve the island of Minorca. And airport company AENA announced a project for the Vigo Airport.

[70] Daniel Hannon, et al, "Feasibility Evaluation of a Staffed Virtual Tower," *Journal of Air Traffic Control*, 55, no. 1. 2013.

- At the end of 2020, NATS (the U.K. ANSP) announced that its remote tower project serving London City Airport had completed operational testing and was certified for full operation on May 1, 2021. The project's 164 ft. mast at the airport replaces the physical tower and hosts 16 high-definition cameras and other sensors. The new control room is 100 miles to the south, at NATS's Swanwick Center.

By contrast, remote tower progress in the United States has been very slow. In the 2018 FAA reauthorization bill, Congress authorized a pilot program under which the agency would develop and test five remote towers at five different locations. As this is being written in spring 2021, no funding has been appropriated by Congress to begin this program. Meanwhile, two U.S. remote tower projects are still awaiting FAA certification, one in Leesburg, Virginia and the other at Loveland, Colorado. They are funded by a combination of state funds and private investment, not by FAA.[71]

3.4 U.S. AIR TRAFFIC CONTROL REFORM

Efforts to have the United States join the global trend by corporatizing its ATC system began in earnest during the Clinton administration, when the idea was proposed by Vice President Gore's reinventing government workshop and then studied in depth by a task force in the Office of the Secretary of Transportation.

Efforts to have the United States join the global trend by corporatizing its ATC system began in earnest during the Clinton administration, when the idea was proposed by Vice President Gore's reinventing government workshop and then studied in depth by a task force in the Office of the Secretary of Transportation. That effort failed, due to only lukewarm support from airlines, strong opposition from the private plane community, and

[71] Robert Poole, "U.S. Getting Further Behind on Remote Towers," *Aviation Policy News*, January 2020.

lack of a champion in Congress. Various partial reforms were attempted during the George W. Bush administration, but they got no further.

In 2012 the Business Roundtable organized an ATC reform group to develop a business plan for a nonprofit, user-funded, stakeholder-governed ATC corporation similar to Nav Canada (the world's second-largest ANSP, after FAA's Air Traffic Services division).[72] That effort found a congressional champion in Rep. Bill Shuster (R, PA), then chairman of the House Transportation & Infrastructure Committee.

The committee held hearings on the subject in 2014, with strong support from Airlines for America and the National Air Traffic Controllers Association. The bill drafted by the Republican majority was approved by the committee in 2016, but it was strongly opposed by private-plane groups AOPA and NBAA, as well as all federal employee unions except the controllers.

The bill was revised in 2017 to address concerns raised by small airports and private plane groups, and it was approved by the T&I Committee in 2018. But House GOP leadership did not bring it to the floor, lacking the votes to ensure passage, due in part to an unfilled White House commitment to lobby wavering GOP members.[73] There was also no companion ATC provision in the Senate bill, due to intense lobbying of rural-state senators by the anti-corporatization coalition led by private-plane groups AOPA and NBAA. The overall FAA reauthorization bill was enacted later in 2018 with no ATC reform section.

[72] Poole, "Air Traffic Control as a Quasi-Private Corporation."

[73] Lauren Gardner, "How ATC Got Grounded," *Politico,* 2 April 2018.

PART 4

AIRPORT SECURITY

When Congress mandated a federal take-over of airport security in late 2001 in the wake of the 9/11 terrorist attacks, it allowed room for some degree of private-sector provision (besides the role of producing items like walk-through screening devices and baggage scanners). One concerned the provision of passenger and baggage screening; the other concerned assisting the new agency (TSA) with implementing a "trusted traveler" program.

4.1 CONTRACT SCREENING

In response to the 2001 House bill emphasizing use of federally certified security companies rather than a new cadre of federal employees, the Senate compromised on its preference for 100% federal employees by allowing some airports to opt out, with TSA approval, by hiring TSA-approved security companies to do the screening. The first step was a five-airport pilot program under which only San Francisco, Kansas City, Rochester, Tupelo, and Jackson Hole could use approved security screening companies. After the pilot program was judged successful (by the DHS Office of Inspector General and the Government Accountability Office), the program was opened up to other airports. TSA created the Screening Partnership Program (SPP), under which the 22 airports in Table 5 currently provide passenger and baggage screening using TSA-approved contractors.

TABLE 5: AIRPORTS WITH PRIVATE SCREENING UNDER SPP, 2021

Airport	State
Atlantic City International Airport	New Jersey
Bozeman Yellowstone International Airport	Montana
Charles M. Schulz-Sonoma County Airport	California
Dawson Community Airport	Montana
Glacier Park International Airport	Montana
Greater Rochester International Airport	New York
Havre City-County Airport	Montana
Jackson Hole Airport	Wyoming
Kansas City International Airport	Missouri
Key West International Airport	Florida
L.M. Clayton Airport	Montana
Orlando Sanford International Airport	Florida
Portsmouth International Airport	New Hampshire
Punta Gorda Airport	Florida
Roswell International Air Center	New Mexico
San Francisco International Airport	California
Sarasota-Bradenton International Airport	Florida
Sidney-Richland Municipal Airport	Montana
Sioux Falls Regional Airport	South Dakota
Tupelo Regional Airport	Mississippi
Wokel Field/Glasgow International Airport	Montana
Yellowstone Airport	Montana

Source: Transportation Security Administration, www.tsa.gov (accessed 18 May 2021)

While that number has grown a bit year after year, there were no additions in 2020 to the 22 airports that had private screeners in 2019. Many observers and a growing number of airports point to a complicated and time-consuming process, in which TSA holds all the cards. The normal situation for contract provision of services is that the government agency wishing to contract issues a request for proposals (RFP) and reviews bids from competing firms. In the case of airport screening, the normal process would be that airports would send their RFP only to firms that have been certified by TSA (which maintains this list on its website), and the airport would select the one that best meets its needs. TSA might then have final approval authority, in addition to its ongoing role as the aviation security regulator.

Instead, the airport must go hat in hand to TSA stating its desire to change, and in response to the airport's detailed request, TSA decides which company it thinks is the best fit and assigns it to the airport—take it or leave it. Also, the contract is between TSA and the company, rather than between the airport and the company.

In 2018, Sen. Mike Lee (R, UT) introduced a bill to reform the Screening Partnership Program. His Screening Partnership Reform Act (S.3441) would have shortened the time allowed for TSA to review an airport's request to switch to contract provision from 120 days to just 30 days. That would be reasonable, since TSA would no longer be tasked with figuring out which company to assign to the airport. The airport would do that itself, subject to subsequent approval by TSA. Also, the bill required TSA to include the full cost to the federal government of its screening operation, when comparing the cost-effectiveness of contract screening with TSA screening at that airport. Currently, TSA does not include employee benefits such as insurance and pension fund contributions, which are real costs for the private companies.

Lee's bill did not get very far, and he has not reintroduced it. There would be real benefits from an expanded contract screening effort. Tracy Miller of the Mercatus Center at George Mason University pointed some out in an op-ed distributed by Tribune News Service in the wake of the January 2019 federal government shutdown (during which TSA screeners did not get paid, but contract screeners did).[74] These include:

- Better screening performance, as attested by red-team tests by the DHS Office of Inspector General and the GAO;
- Ease of firing low-performing screeners;
- Staffing properly to meet peaks and valleys in checkpoint passenger volume; and,
- Cost savings, due to better matching of staffing to demand, as documented in a comparison of LAX (TSA screening) and SFO (contract screening).[75]

4.2 TRUSTED TRAVELER

The 2001 legislation creating TSA also called for the government to initiate a trusted traveler program, under which air travelers who volunteered could be pre-screened (analogous to getting a low-level security clearance). Those who succeeded would be recognized when they arrived at the airport checkpoint and subjected to streamlined screening compared with ordinary travelers.

[74] Tracy Miller, "Why Should a Government Shutdown Affect Airport Security?" Tribune News Service, 24 January 2019.

[75] House Transportation & Infrastructure Committee, "TSA Ignores More Cost-Effective Screening Model," 3 June 2011.

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Dawson Community Airport	Montana
Glacier Park International Airport	Montana
Greater Rochester International Airport	New York
Havre City-County Airport	Montana
Jackson Hole Airport	Wyoming
Kansas City International Airport	Missouri
Key West International Airport	Florida
L.M. Clayton Airport	Montana
Orlando Sanford International Airport	Florida
Portsmouth International Airport	New Hampshire
Punta Gorda Airport	Florida
Roswell International Air Center	New Mexico
San Francisco International Airport	California
Sarasota-Bradenton International Airport	Florida
Sidney-Richland Municipal Airport	Montana
Sioux Falls Regional Airport	South Dakota
Tupelo Regional Airport	Mississippi
Wokel Field/Glasgow International Airport	Montana
Yellowstone Airport	Montana

Source: Transportation Security Administration, www.tsa.gov (accessed 18 May 2021)

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For nearly a decade, TSA resisted creating such a program. In hopes of jump-starting the process, a group of private investors created a company, CLEAR, intending to recruit would-be participants and obtain biometric identifiers for them (iris scan and/or fingerprints). The business plan called for the company to submit applications to TSA from people it had signed up, which it expected TSA to send to the FBI for review, as it was already doing with airport employees who needed regular access to secure portions of the airport. TSA refused to do this, so the company tried to market itself as simply verifying passenger identity. But without actual clearance to get streamlined screening, the value proposition was poor, and the company filed for bankruptcy.

When TSA finally introduced PreCheck in 2011, investors under the name Alclear bought the assets of the bankrupt company, this time offering to supplement PreCheck by allowing its members to skip the long lines at checkpoints and then receive either PreCheck or regular screening, depending on their membership status. TSA agreed to this, and the new CLEAR began marketing it to individual airports. That was slow going when only a few airports offered the service, but a critical mass appeared to be reached by 2019, when CLEAR announced an agreement with St. Louis as its 35th airport with this service.

TABLE 6: AIRPORTS OFFERING CLEAR SERVICE AS OF 2020

Airport Code	Airport Name
AUS	Austin Bergstrom
ATL	Hartsfield-Jackson Atlanta International
BWI	Baltimore Washington International
BHM	Birmingham
BOS	Boston Logan
ORD	Chicago O'Hare International
MDW	Chicago Midway
CVG	Cincinnati/Northern Kentucky
CLE	Cleveland Hopkins
DAL	Dallas Love Field
DFW	Dallas/Ft. Worth International
DEN	Denver International
DET	Detroit Metro
IAH	Houston Intercontinental
HOU	Houston Hobby
LAS	Las Vegas McCarran
LAX	Los Angeles International
MSP	Minneapolis/St. Paul
BNA	Nashville
EWR	Newark Liberty
MSY	New Orleans
JFK	New York, Kennedy International
LGA	New York, LaGuardia

ABOUT THE AUTHOR

Robert W. Poole, Jr. is director of transportation policy and the Searle Freedom Trust Transportation Fellow at Reason Foundation, a public policy think tank based in Los Angeles and Washington, D.C.

He was among the first to propose the commercialization of the U.S. air traffic control system, and his work in this field has helped shape proposals for a U.S. ATC corporation. A version of his nonprofit corporation concept was implemented in Canada in 1996. He has advised the Office of the Secretary of Transportation, the White House Office of Policy Development, the National Performance Review, the National Economic Council, and the National Civil Aviation Review Commission on ATC commercialization. He is a member of the Air Traffic Control Association and of the GAO's National Aviation Studies Advisory Panel. In 2012-13 he was a member of the Business Roundtable task force on ATC reform, and in 2014-15 he was part of the Eno Center for Transportation working group on ATC reform. In 2018 he received the Eno Center's Thought Leader Award for his work on ATC corporatization.

Poole's Reason studies helped launch a national debate on airport privatization in the United States. He advised both the FAA and local officials during the 1989-90 controversy over the proposed privatization of Albany (NY) Airport. His policy research on this issue helped inspire the privatization of Indianapolis airport management under Mayor Steve Goldsmith and Congress' 1996 enactment of the Airport Privatization Pilot Program.

In aviation security, Poole advised the White House and House Republican leaders on what became the Aviation & Transportation Security Act of 2001, enacted in response to the 9/11 attacks. He has authored a number of Reason policy studies on aviation security and is the author of a paper on risk-based aviation security for the OECD's International Transport Forum.

Poole has testified on airports, aviation security, and air traffic control on a number of occasions before House and Senate aviation and homeland security subcommittees, and he has spoken on these subjects before numerous conferences. He has also done consulting work on several airport privatization feasibility studies. Poole also edits a monthly Reason Foundation e-newsletter on aviation policy issues. He received his B.S. and M.S. in mechanical engineering at MIT and did graduate work in operations research at NYU.