



METROPOLITAN AIRPORTS COMMISSION

Minneapolis-Saint Paul International Airport

6040 - 28th Avenue South • Minneapolis, MN 55450-2799

Phone (612) 726-8100 • Fax (612) 726-5296

December 30, 2010

TO WHOM IT MAY CONCERN:

RE: Metropolitan Airports Commission Sustainability Achievements at MAC's System of Airports

The Metropolitan Airports Commission (MAC) is committed to keeping the Minneapolis-St. Paul International Airport (MSP) as the airport of choice for travelers, the airlines, and the aviation industry. The MAC strives to make sure that MSP and our six Reliever Airports operate as safe, secure, customer oriented, economically sound and environmentally responsible airports.

The MAC's Vision Statement includes the ongoing commitment to sustainability and stewardship: "MAC sets the standard in environmental stewardship in the development and operation of our airport system." Being good stewards means operating and developing our airports in ways that meet the needs of the present without compromising the ability of future generations to meet their own needs.

The MAC has been a long time leader in proactively responding to environmental concerns across a wide spectrum ranging from a standard-setting noise mitigation program to the preservation of Minnesota wetlands. The MAC is committed to improving air and water quality, to reducing noise impacts, to continuing and improving recycling, and to preserving natural resources. In 2008, the staff introduced the Stewards of Tomorrow's Airport Resources (STAR) Program to the MAC with the goal of maintaining a focus on the MAC's commitment to the environment and the community through the development of initiatives that are environmentally sound and contribute to the financial viability and operational efficiency of the MAC airport system.

The MAC has a number of sustainable practices that are incorporated into the everyday operation and planning practices that support the STAR initiatives. The following programs are some of the highlights of the STAR activities.

Greenhouse Gas Report - The MAC has completed an evaluation of the greenhouse gas (GHG) emissions associated with MSP for the 2009 calendar year using the *Airport Cooperative Research Program Guidebook on Preparing Airport GHG Emissions Inventories* protocol. The vast majority of all GHG emissions at MSP are the result of fuel combustion. This report provides a clear distinction between the CO₂ emissions associated

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with MAC-controlled and MAC-owned sources and sources associated with the airlines and other MSP tenants. Additionally, to provide a perspective on how emissions are changing over time, the (CO₂e) footprint is compared with the previous analyses completed for 2007 and the 2005 base year. The following are some of the key findings of the analysis:

- MAC-controlled sources at MSP accounted for 1% of the total MSP CO₂e emissions
- MSP Airport Tenant Non-Aircraft sources accounted for 5% of the total MSP CO₂e emissions
- Aircraft emissions at MSP accounted for 94% of the total MSP CO₂e emissions
- 2009 airport operator owned/controlled emissions were 4.5% lower than the 2005 baseline
- 2009 airline, aircraft operator and tenant owned/controller emissions were 35% lower than the 2005 baseline

Electric Vehicle Purchase - The MAC is working with Xcel Energy to purchase an all electric Ford Motor Company/Azure Motors-designed electric vehicle. The purpose of the project is to learn about driver behaviors with electric vehicles; driver charging decisions; environmental, emissions and electric grid impacts; and fuel cost savings possible through advanced transportation technology. The MAC is one of seven agencies that are participating in this program and would be responsible for sharing data with Excel Energy.

MSP Organics Composting Pilot Program - In May 2010, the MAC initiated a pilot organics composting program at Terminal 1 - Lindbergh. Food waste and other organic materials are diverted from the solid-waste stream at Rock Bottom Brewery, Ike's and the French Meadow Bakery. The separated material is transported to a composting site in Rosemount, MN. The composting process converts organic waste material to a valuable soil amendment, which is sold to private citizens, landscape contractors and public works entities. To date, 53% of the total waste generated by the three locations mentioned above has been diverted for recycling or composting. Ten tons of organic material is being collected per month. MAC staff is exploring options to expand the program to other locations in both Terminal 1-Lindbergh and Terminal 2-Humphrey.

RNAV - Since 2007 MSP Noise Oversight Committee (NOC) and the MAC STAR Team have been analyzing possible air traffic procedures to reduce noise and emissions around MSP. RNAV (Area Navigation) is a method of navigation that permits aircraft to fly a desired track in a manner that is reproducible and allows for more accurate concentration of aircraft over a desired area. This approach also allows for more seamless transition to Required Navigation Performance (RNP) operations in the future. The MAC is working with FAA RNAV procedures office staff and Delta Air Lines and Southwest Airlines representatives to continue discussions on PBN development at MSP, including Optimized Profile Descent (OPD) procedure development and implementation. The FAA RNAV Project Office determined that MSP is an excellent airport for airspace-wide RNAV implementation given the present airspace design and the lack of conflicts with other airport airspaces. Local FAA tower personnel have agreed to move forward with the airspace-wide RNAV implementation at MSP. In September and October 2010 the NOC and the MAC

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took actions to endorse RNAV arrival and departure procedures development in concert with the FAA's airspace-wide RNAV procedure design and implementation effort.

MSP Energy Conservation Program - The MAC has an extensive energy conservation program. Since 2002, the MAC's annual \$1M investment has funded projects to increase the cooling capacity of existing chillers by over 1,000 tons, replace chilled water valves and steam traps, recommissioned air handling systems, and add year-around cooling by eliminating split or stand-alone systems. These efforts save over 21,244 MWH, 841,500 cubic feet of water and 5,800 decatherms each year, resulting in annual savings of \$2,400,000. *This project resulted in a net CO₂ reduction at MSP of 12,996 metric tons annually.*



MSP Ground Power and Pre-conditioned Air - The MAC has a strong commitment to airline customers and the traveling public. To facilitate fast, efficient aircraft turns, the MAC installed 400 Hz ground power to all gates at both Terminal 1-Lindbergh and Terminal 2-Humphrey and offers pre-conditioned air at all 117 Lindbergh gates. Ninety-three percent of the gates at MSP are now equipped with ground power units (GPUs). As a result, airlines can connect aircraft to terminal power and air supply systems and shut down all aircraft engines or auxiliary power units (APU) while aircraft are at the gate. Airlines at MSP estimate using these systems instead of APUs has saved up to 3,500,000 gallons of jet fuel. Even though there is an associated increase in electricity consumption, *the net CO₂ emissions at MSP are reduced by more than 27,171 metric tons per year* as a result of this project. This cooperative action demonstrates the MAC's and MSP airlines' commitment to the environment and long-term preservation of natural resources



MSP Fuel Hydrant System - MSP Airport has the 15th busiest airfield in the United States. Consequently, ramp and gate areas are extremely busy. To reduce congestion and increase safety, the MAC's underground hydrant system delivers fuel to the gates and virtually eliminates the need for fuel trucks in the ramp area. Stationary, motor less fueling carts at each gate transfer fuel from the underground system to the aircraft fuel tanks. Fueling trucks would consume approximately 72,000 gallons of fuel annually to ferry between gates. Eliminating such trips significantly lessens vehicle fuel consumption and *reduces CO₂ emissions by approximately 732 metric tons annually.*



MSP Light Rail System - The MAC is strongly committed to improving air quality at MSP. To more efficiently transport passengers and airport employees between MSP's terminal



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buildings, the MAC teamed with the Metropolitan Council to construct a light rail line. Light rail service replaces conventional buses previously used for such transportation. The free-of-charge rail between the terminal complexes runs on electricity, *eliminating an estimated 350 metric tons of CO₂ emissions annually*.

MSP On-airport Roadway Enhancements - The MAC reconstructed inbound and outbound roadways at MSP to ease traffic flow. These roadway enhancements have reduced congestion, traffic delays, and idling time at the terminals thereby reducing CO₂ emissions from automobile traffic.

Additional Vehicle Parking Space for Passengers - With the addition of 4,500 more parking stalls coming in 2009 at a newly constructed ramp at Terminal 2 - Humphrey, the MAC has added nearly 18,000 new parking spaces at MSP in the last 10 years. This additional parking space helps eliminate vehicular traffic congestion at the airport and reduces the need for curbside drop-offs and pick-ups. When considering the distance local passengers may travel to the airport to take a flight, the CO₂ emissions from each passenger's visit are cut in half with the ability to park at the airport. This is a significant overall reduction in the off-airport CO₂ footprint associated with MSP operations.

Parking Ramp Processing Enhancements - The MAC has implemented Epark, an electronic payment method that helps speed customers through the parking exit plaza. Epark virtually eliminates vehicle idling time while waiting for attendants to process the toll parking fee for each vehicle. This has reduced exit plaza processing time by more than 80 percent and *eliminates over 138 metric tons of CO₂*. Another benefit of Epark is a significant reduction in the number of parking attendants required to staff the parking exit plazas, thereby reducing the CO₂ emissions from employee vehicle traffic while commuting to work.



MSP Vehicle Tunnels - To eliminate the amount of vehicle traffic crossing the airfield runways and taxiways, and to make on-airport traffic flow more efficient, the MAC constructed several vehicle tunnels throughout MSP. The increased efficiency of traffic flow across the airport due to the vehicle tunnels has reduced the CO₂ emissions at MSP by shortening the distances traveled across the airfield and reducing idling time at runways and taxiways while waiting for planes – thereby reducing CO₂ emissions by approximately 153 tons per year.

MSP Runway 17/35 - The MAC contracted design and construction of MSP's fourth runway, Runway 17/35, which opened for service on October 27, 2005. Runway 17/35 increased the airfield capacity of MSP by as much as 25 percent. This increased capacity directly reduced CO₂ emissions at MSP by reducing delays associated with ground and air congestion of aircraft. This reduced the potential for aircraft needing to enter into air borne holding patterns or ground holds while congestion clears, in addition to reducing the length of taxiing time by increasing the number of operating runways and taxiways.

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Reducing the number of aircraft delays also reduced public delays waiting for arriving passengers thereby reducing vehicle idling time and circling at the terminals.

MSP Noise Mitigation Program – The MAC continues to implement a nation leading noise mitigation program at MSP. Under a 1992 FAA Part 150 program, MAC provided sound insulation to 7,846 homes and over 1,400 multi-family units. The MAC is continuing to provide various levels of noise mitigation to an additional 5, 776 single-family homes and 1,931 multi-family homes under a new program that is anticipated to be completed by 2014.

The MAC's STAR Team continues to work on a number of other on-going initiatives including:

- Green Buildings, Facilities and Infrastructure Design
- Water Quality and Conservation
- Alternative Energy Sources
- Fleet Fuel Consumption Efficiencies
- Environmental Purchasing and Human Resources Policies

If there are any questions concerning MAC's sustainability efforts and activities, please feel free to contact me at 612-726-8134

Sincerely,

A handwritten signature in cursive script that reads "Roy Fuhrmann". The signature is written in black ink and is followed by a horizontal line that extends to the right.

Roy Fuhrmann
Director of Environment
Metropolitan Airports Commission

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