Sustainability at O'Hare and Midway International Airports

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Deputy Commissioner, Sustainability

CHICAGO DEPARTMENT OF AVIATION

CHICAGO CDA DEPARTMENT OF AVIATION
Rosemarie S. Andolino
Commissioner

O'Hare Modernization Program

CHICAGO DEPARTMENT OF AVIATION

- **O'Hare** and **Midway International Airports**
- 1,500 CDA employees/47,000 badged airport employees
- Generate **540,000 jobs** and **$45 billion** today

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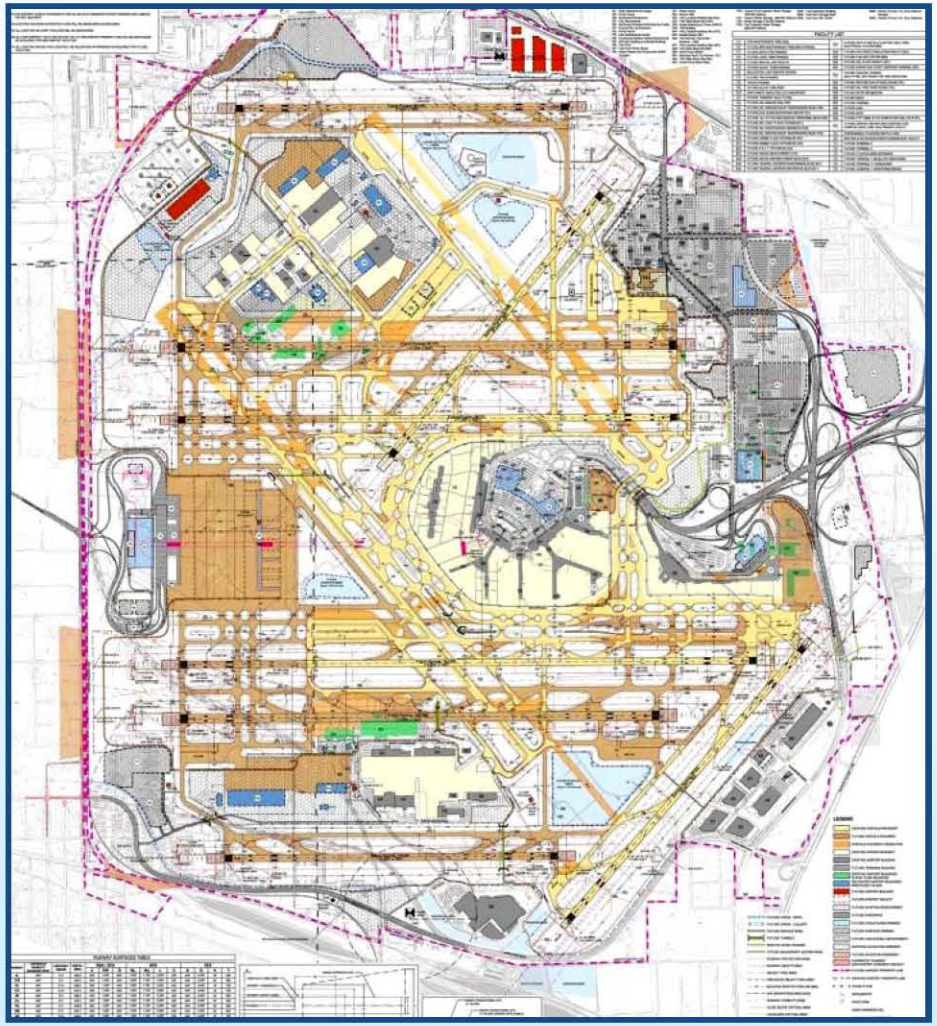
O'HARE FACILITIES



- More than 7,000 acres
- 4 Terminals
- 7 Runways and Associated Taxiways
- 2 Air Traffic Control Towers
  - No. 3 in design
- Rapid Transit to Downtown Chicago
- Bus/Shuttle Center
- Automated People Mover

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SUSTAINABILITY INITIATIVES

- Energy Management
  - Energy efficiency & conservation
  - Renewable energy
- Water Resources
  - Domestic water
  - Stormwater & de-icing
- Solid Waste
  - Recycling
  - Organic waste
- Ground Transport
  - Alternative fuels
  - Airport infrastructure

SUSTAINABILITY INITIATIVES

- Sustainable airport construction
- *Chicago Climate Action Plan* implementation
- Workforce development & green jobs
- Grant and incentive opportunities
- Annual *Airports Going Green* Conference
- Public outreach & education

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SUSTAINABLE AIRPORT MANUAL

- OMP Sustainable Design Manual (December 2003)
  - Rating and awards system for airport design
- CDA Sustainable Airport Manual (August 2009)
  - Administrative, design and construction procedures
- SAM Version 2.0 (November 2010)
  - Administrative Procedures
  - Planning
  - Design & Construction
  - Operations/Maintenance
  - Concessions/Tenants
- Developed with input from more than 200 industry stakeholders
- More than 60 CDA projects have been successfully rated

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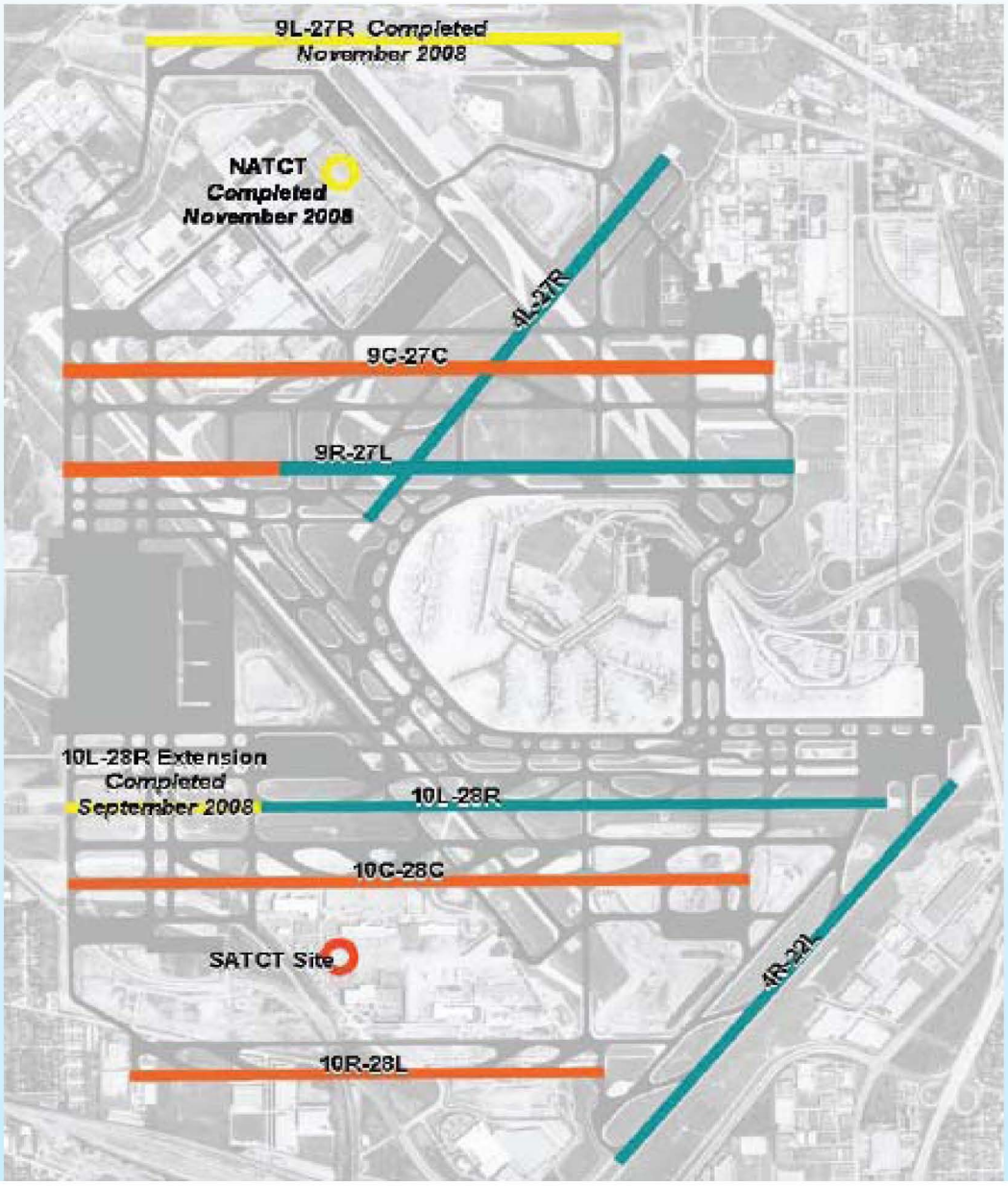
O'HARE MODERNIZATION PROGRAM



- $6.6 billion project to:
  - Extend existing runways
  - Develop a new runway & associated airfield components
  - Develop terminal facilities & landside improvements
- Reconfigure intersecting runways into a parallel layout, reducing delays & increasing airfield capacity

Existing Runway

Completed OMP Project

Future OMP Project

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RECYCLED CONSTRUCTION MATERIALS

- 98% of all construction and demolition materials on OMP are reused
- Reclaimed over 500,000 tons of asphalt grindings and crushed-concrete aggregate for re-use on other projects
  - $4.5 million in savings

OMP BALANCED EARTHWORK PLAN

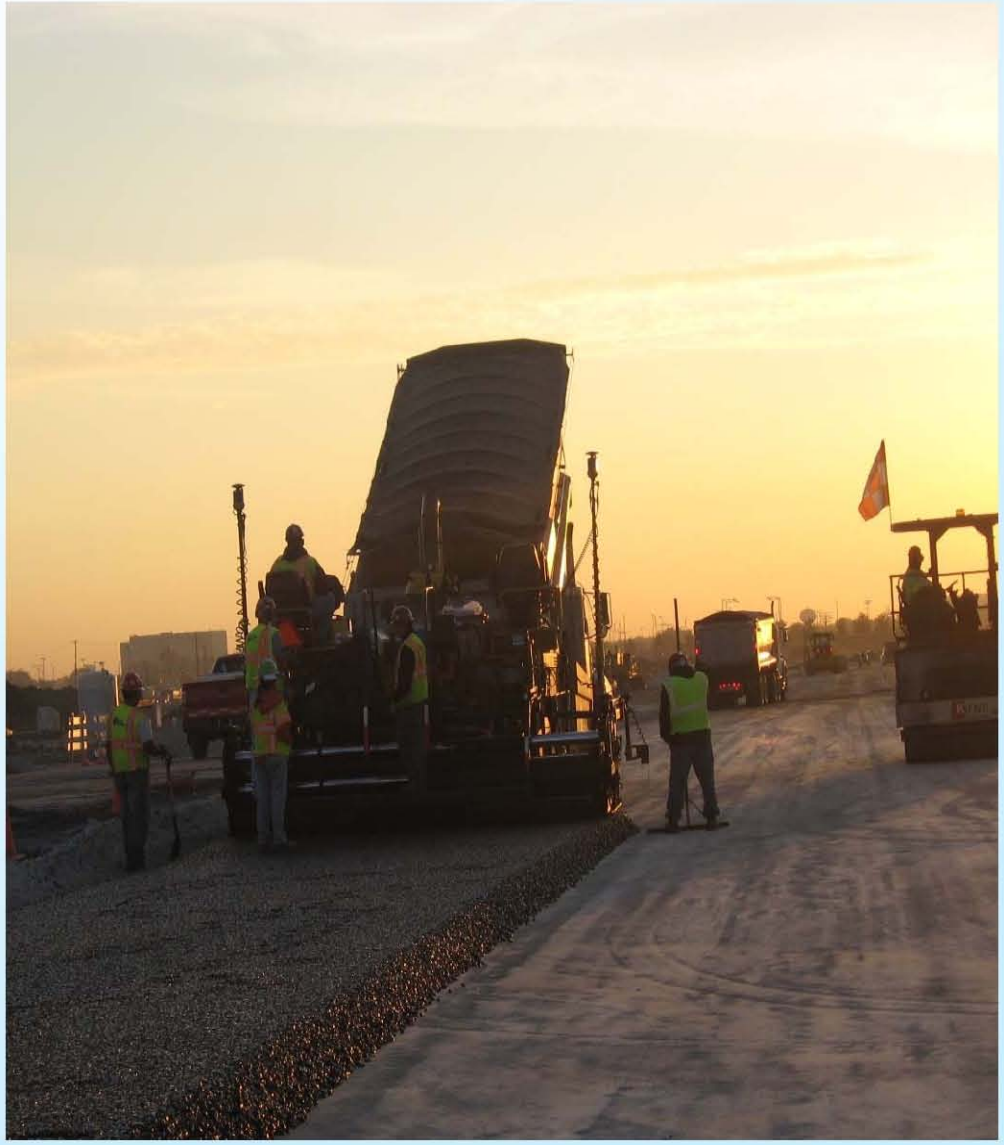
Quantities to Date	Description
Over 18 Million Cubic Yards	Soil Handled
Over 6.3 Million	Cubic Yards of Soil Kept On-site
Over 600,000	Haul Trips Saved
Over 1 Million	Hours of Roadway Travel Saved
Over 44 Million	Vehicle Miles Traveled (VMT) Saved
Over $130 Million	Dollars Saved
Over 6.6 Million	Gallons of Diesel Fuel Saved
Over 72,000	Tons of CO_2 Saved

CLEANER CONSTRUCTION EQUIPMENT

- Ultra-Low Sulfur Diesel (ULSD) Fuel used for vehicles over 50hp
  - Initiated in October 2005, 5 years prior to the federal mandate
- Diesel oxidation catalysts and particulate traps for cleaner emissions
- Idling restrictions
  - < 5 minutes per hour

WARM-MIX ASPHALT

- Production and lay-down temperature 50-100˚ lower than HMA
- Performance meets or exceeds HMA for:
  - Air voids
  - Smoothness
  - Surface texture
  - Skid resistance
  - Fatigue
- Accepted by FAA for OMP on taxiways/shoulders
- Used by IDOT/Tollway

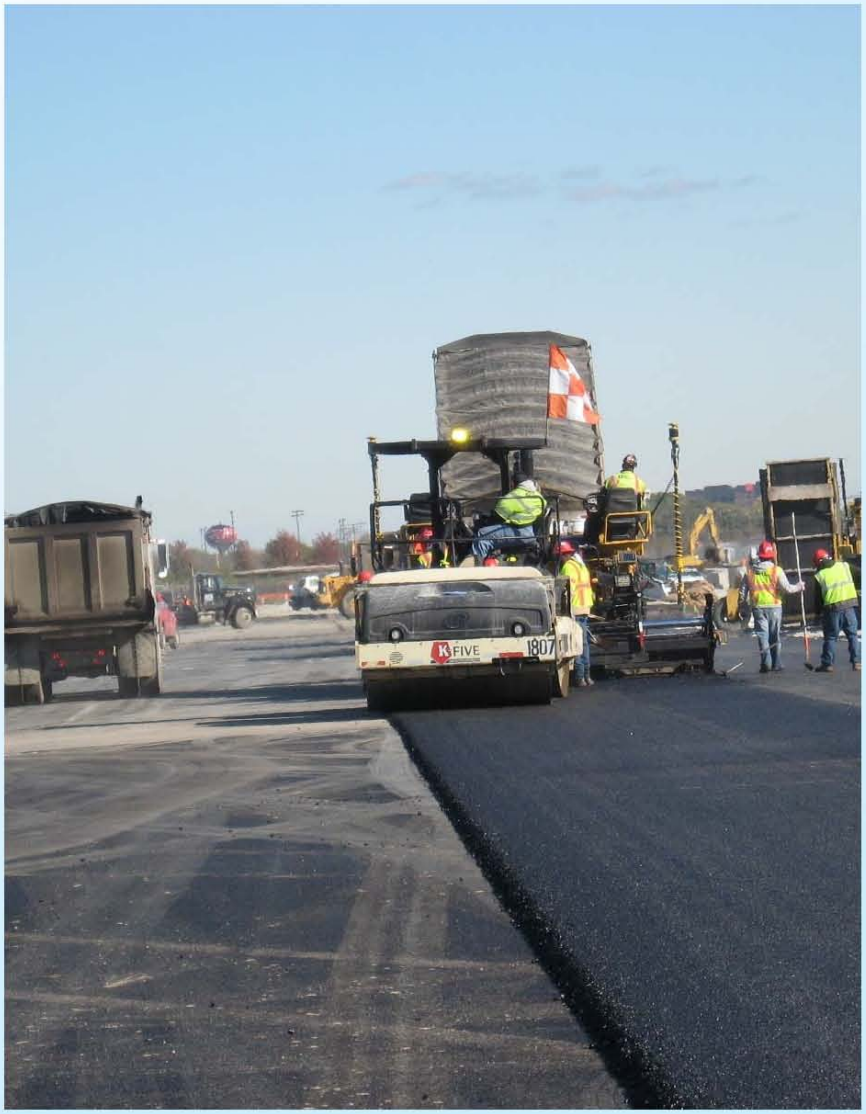


WARM-MIX ASPHALT: BENEFITS

- Lower energy use during construction
- Higher recycled content
- Lower VOC
- Minimal “blue smoke” or smell
- Safer handling
- Shorter construction duration
- Longer pavement life

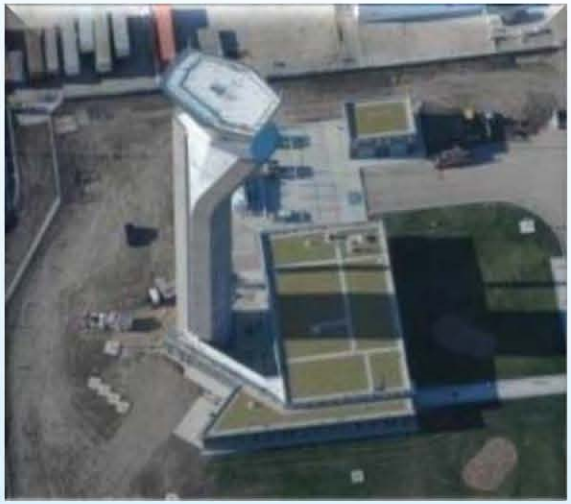
OMP PROJECTS USING WMA

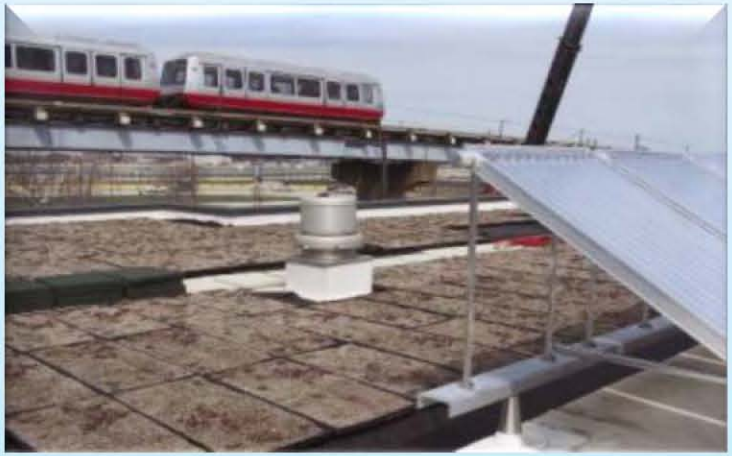
- 10R-28L taxiway "ZS“
- Runway 9C/27C Northeast Package (FBO)
- Runway 10C-28C-Center



VEGETATED ROOFS

- 232,534 ft^2 at O'Hare and Midway on 14 separate buildings
  - First-ever FAA Airport Traffic Control Tower green roof
  - Largest contiguous airport green roof in US





AEROPONIC GARDEN

- 1st hydroponic garden at any airport in the world
- Opened late summer 2011
- 26 towers, 928 ft^2, over 1,100 planting spots
  - Each spot is ready to harvest within 4 weeks
- Located between Terminals 2/3 in the Rotunda Building

AEROPONIC GARDEN

- Other Benefits:
  - Reduces traffic congestion, urban sprawl, habitat loss, and pollution from transportation
  - Strengthens the local economy and job market
  - Educational opportunity for travelers
  - Year-round cultivation
  - Can produce a higher yield per square foot
  - No weed pulling
  - Uses 2/3 less water than traditional gardens

APIARY

- Installed May 2011
  - 33 beehives
  - 1.3 million bees
  - Largest at any airport in the world
  - First major on-airport apiary in the U.S.
- East side of the airport in between Mannheim Road and I-294

APIARY

- Helps replenish bee populations
  - 1/3 colony losses for the last 4 years in the US and Canada
  - US is importing bees – approx. 1/3 of all US crops pollinated by bees
- Local, all natural honey
  - Each beehive may produce up to 25 pounds per year
  - Raw honey and skincare products
  - Processed & distributed by Sweet Beginnings, LLC Beeline®

www.sweetbeginningsllc.com

Rian Burger, Stantec, AGG Presentation, 2011

SOLAR AT ORD

- Ground-mounted solar PV panels on:
  - 60 acres
  - 7 sites
- Seeking private developer to:
  - Finance
  - Design
  - Install
  - Operate
  - Maintain
- CDA will enter Power Purchase Agreement with selected developer

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WHY SOLAR AT ORD?

- Increased energy independence
- Fixed long-term energy price
- Protection against grid instability
- Highly visible to traveling public
- Good use of land not reserved for aviation activities

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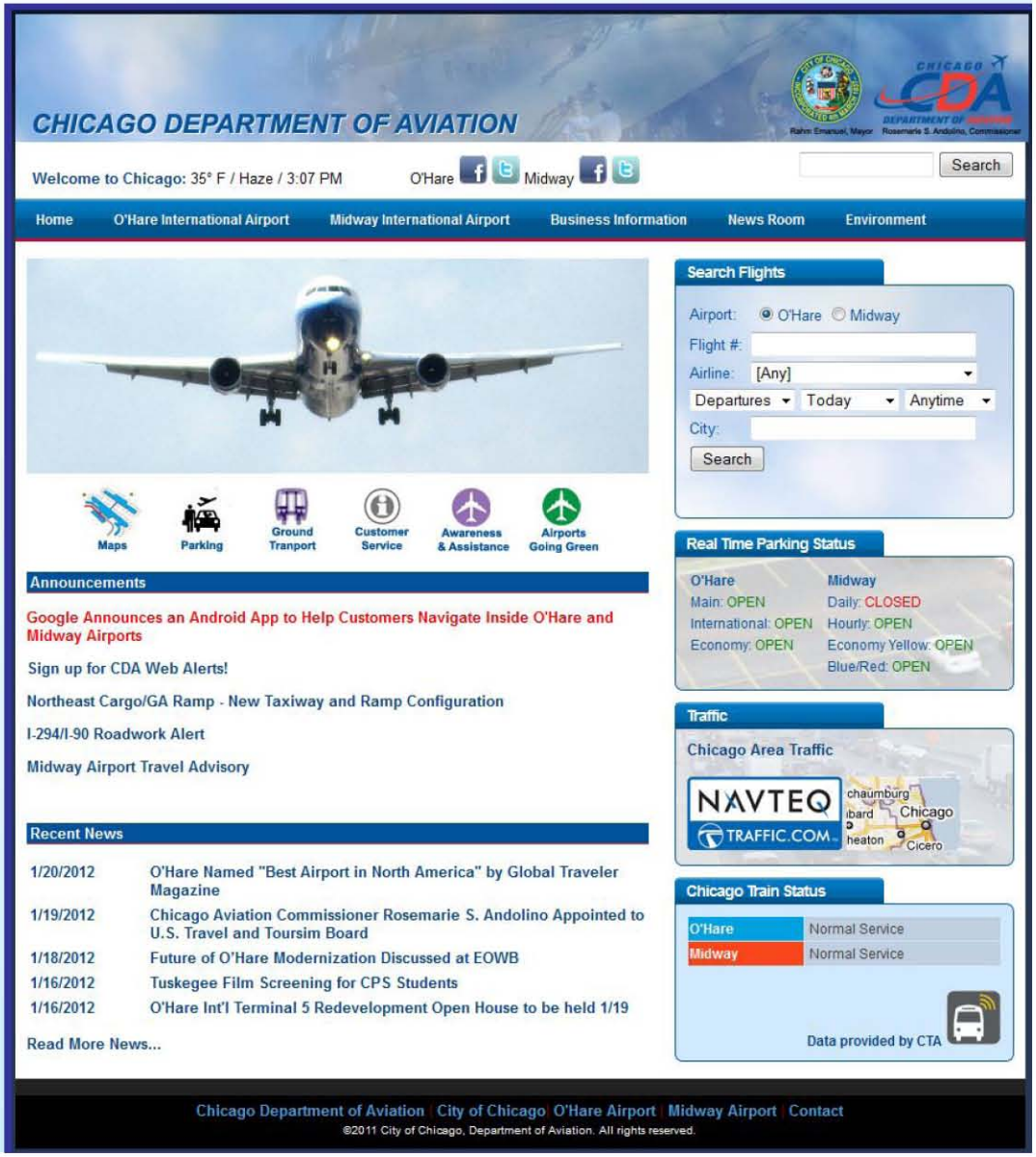
VISIT OUR WEBSITES

www.FlyChicago.com
www.AirportsGoingGreen.org



THANK YOU!

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