Construction Management of Multiple Projects within a Large Scale Program

Tim Mentel, PMP
RDM
Rick Hines, P.E.
RDM

Agenda

• Overview of Port Columbus Airport (CMH)
• 10R/28L Replacement Program
• Planning the Program Execution
• Design for the Construction Program
• Standards/Specifications/Requirements
• Training, Safety & Security
• Field Work
• Questions
Tim Mentel, PMP

- Project Manager with Columbus Regional Airport Authority 2005-2014
- Responsible for all aspects of the Runway 10R/28L Replacement Program

Port Columbus International (CMH) 2008
Multiple Projects within the Program

- Convert Runway to Taxiway
- Earthwork/Utilities & Paving, Electrical, NAVAIDs
Program Execution Logic

• Demolish Structures first to find any “surprises”
• Earthwork & Utility next to prepare the site for paving and excavate Turkey Run basin
• Paving, Electrical & NAVAIDs have adequate work area due to head-start by Earthwork
• Golf Course work coordinated with city and to minimize loss of MALSR
• Obstruction Mitigation to avoid wildlife (Indiana Bat) issues
• Convert old runway to taxiway after new runway is commissioned

Projects, Schedules & Costs
Contracts by Specialty for Design

- Storm Water Master Plan Consultant designed Turkey Run Basin & assisted with review of Airfield drainage design
- Primary Airfield Engineering firm for all on-airfield work – including airside demolition. Led Permitting efforts to avoid or schedule around possible delays and meet permit conditions
- Residential removal was done “in-house” in coordination with city and utilities
- Specialized Golf Course Architect for re-design of the golf course
- Obstruction removal plans by the Airspace consultant
- NAVAIDs designed by consultant with FAA approval

Design & Plan for Next Phases

- Dirt stockpiled on-site for use by future projects
- Complete electrical work to power lighting while future phases are under construction
- Minimize rework in future phases
- Future pavement connections brought up to base course
- Install temporary signs on permanent bases where possible
Specifications

Airport Specifications for data, security, safety, fence details & wildlife

FAA(most) & City (Sanitary)  
AEP

Spec Management

City of Columbus Ohio
CONSTRUCTION AND MATERIAL SPECIFICATIONS

State of Ohio Department of Transportation
CONSTRUCTION AND MATERIAL SPECIFICATIONS

Columbus, Ohio  
January 1, 2010
Game Changers

• All new for 2013
• All projects that used ODOT Specs had been bid prior to 1/1/2013

FAA Game Changers

• A/C 150/5370-10 – Standards for Specifying Construction of Airports
  – Design started under –E
  – Revision –F Effective 9/30/11
  – Revision –G Effective 7/21/14
FAA Changes

• Multiple Changes to Several A/C’s
  – Pavement Markings
  – Lighting (LED)
  – Survey (5300 18, 18A & 18B)
  – Safety – 5370-2F Update created some confusion
    • Had to make sure everyone (OPS, Contractors, Inspectors) knew the rules that applied to project.
  – 5300-13A - Airport Design – Taxiway Design Changes

Other Hazards

• Local Utilities – Allow time for review & comment. Work out who pays for “options”.
• National Weather Service – NOT just a phone call. About 6 months to review the new site & provide comments. On-site during the work for inspections. Multiple visits for site approvals.
• FAA Inspector/RE – Make sure they have everything they need. Brief them on design considerations that may be “non-standard” but approved by Region or local reps.
Funding

• Majority funded through AIP LOI (61.3%)
• Most of the remainder funded through PFC’s
• Non-eligible items (LED HIRLs) funded by the airport
• Make sure eligible vs non are clearly agreed to with the ADO!

Construction Management

• Single CM Firm selected for majority of the projects
  – Sub consultants for survey Q/A and testing Q/A
  – CM assisted with program communications
  – Designer provided CM services for Conversion Package
Contractors

- Demolition
  - Airside – Single contract to specialty Demo contractor
  - Residential – 3 firms on a Job Order Contract basis. Single firm for abatements
- Earthwork & Utility – Earthwork firm
- Golf Course – Specialty Golf Course Contractor
- Obstruction Mitigation – Bid won by Earthwork firm with a “clearing” sub
- Paving, Electrical & NAVAIDs – Paving firm with same electrical sub from Earthwork
- Conversion – Earthwork firm returned – Same Electrical sub

Program Team

- Pavement Design/CM
- Survey/GeoTech
- Runway Design/Conversion CM
- Construction Manager
- Golf Course Design
- Paving/Electrical/NAVAIDs
- CAD/Graphic & Admin Support
- Storm Water Design
- Earthwork & Conversion
- Asphalt Paving
- Airfield Demo
- Electric/Data/NAVAIDs
- Airfield Lighting & Signs
Program Continuity

- It was recognized early that multiple firms would be working on multiple projects across a three square mile construction site. The need for a common safety and security training program became clear.

Common Location Reference
Common Safety Training

- TTD Orientations: 868
- Annual Renewal
- Site Access with Sticker
- Required for ALL Projects
- No Exceptions

Locally Produced with Site and Program Specific Details

Security Training

- Site specific training provided all Gate Guards
- Vehicle search procedures
- Emergency Contacts
- Training program for Crossing Guards stationed where construction equipment cross active taxiways
- Security for Golf Course – Blocked access to keep the public out
Rick Hines, P.E.

- Construction Manager
- Responsible for Field Operations and Inspections of the Runway 10R/28L Replacement Program

Managing The Program During Construction

- Airport Operation
- Contractors
- Tenants / Neighbors
- Utilities
- Municipalities

PROGRAM
Demolition Project

• First construction project of the program
• Multiple structures
• Abatement
• Utility Coordination

Golf Course Project

• City Owned Facility
• Different Construction Method
Turkey Run Detention Basin

- 26 Acre Site

Earthwork Project

- Preparing the site
Earthwork Project

• Unforeseen Obstructions

Earthwork Project

• Infrastructure Installation
Paving Project

• Major Paving Operation

Paving Project

• NAVAID & Electrical Installations
Conversion Project

- Final Project of the Program

Issues

- Light Base Epoxy Coating
- P-606 Sealant
- Longitudinal Paving Joints
- Detention Basin Vegetation
Conclusion

Communication & Coordination