A ten-year project, ten years in the making

Overall Design Work for RWY 5-23 Projects started in 2006

Phase I: RWY 5-23 Keel Repair project (2015 – 2017)
- Preparation for remaining RWY 5-23 phases
- New Keel section provided the proper structural integrity for impending phases

Phase II: RWY 5-23 Safety Area Construction, Culvert Replacement & New MALSR System installed

Tenants involved in Safety Management System (SMS) – December 2018
- Operational impacts to be discussed throughout presentation

Overall Project Benefits
- Installation of brand-new MALSR system
- Appropriate grading for Runway Safety Areas for RWY 23
- Replacement of deteriorated drainage culverts beneath MALSR road

Remaining Phases: (2021 – 2028)
- Detailed explanations to follow closer to phase start time
Phase 1 Recap

 поможет RWY 5-23 Keel Repair Work

- Milled out and repaved center 50’ Keel Section of 5,800’ of RWY 5-23
- Addressed depression on RWY 5-23 to provide pilots with a better operational surface
- Provided daily project updates via Email, Social Media and Website to airport operators
- Recent large-scale project experience
## Timing of Upcoming Phase II

<table>
<thead>
<tr>
<th>Phase II A*</th>
<th>Phase II B*</th>
<th>Phase II C*</th>
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<td>Fall 2019 and Spring 2020</td>
<td>Summer 2020 through Fall 2020</td>
<td>Summer 2021 through Fall 2021</td>
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*All timing of Phase II, sections A, B & C are subject to change*
Why is this project necessary?

Continuing to provide a premier general aviation airport for our tenants and transient users is the **Most important job DM has!**

This RWY 5-23 Rehabilitation Project allow us to do that
- Separating phases over a number of years minimizes operational impacts
- Overall contract times have built in weather days
- Actual contract times could be shorter than expected
- Adhere to all the environmental requirements
Phase II A: Work to Begin Fall 2019 or Spring 2020

Total Contract Time = 60 Calendar Days

**Phase A Work Summary:**

- **Fall 2019**
  - Construction of entry road and staging area

- **Spring 2020**
  - Construction of access road along east side of RWY 23
  - Grading in Runway Safety Areas

  *JCP&L line work pushed to a later phase.*

**NAVAID Impacts:**

- **Approaches/NAVAIDs out of service (OOS):**
  - ILS & LOC RWY 23 OOS for grading within RSA/LOC critical area

- **Approaches Available:**
  - RNAV (RNP) Y RWY 23
  - RNAV (GPS) RWY 05
  - RNAV (GPS) Z RWY 23

*Approach availabilities subject to change from FAA*
Phase II A: RWY 5-23 Operational Impacts

RWY 5-23 Closed for 30 night closures: (2200L – 0600L)

RWY 13-31 OPEN

✦ Taxiway Delta closed from Taxiway Alpha to RWY 5

✦ Taxiway Alpha closed from RWY 13-31 to RWY 23

✦ Taxiways Echo, Foxtrot, Golf & Hotel closed from Taxiway Alpha to RWY 23

✦ All taxiway closures during 2200L – 0600L

✦ Construction traffic crossing Taxiway Bravo and RWY 13-31
Phase II A: RWY 13-31 Operational Impacts

RWY 13-31 Closed for 8 night closures 2200L – 0600L (within 60-day contract time)

- **Taxiway Bravo East** closed from RWY 5-23 to RWY 13-31

- **Taxiway Charlie** closed from Taxiway Bravo to RWY 13-31

- **Taxiway Bravo** closed from Taxilane Kilo to RWY 13

- **All taxiway closures during 2200L – 0600L**

  - Construction traffic crossing Taxiway Bravo and RWY 13-31 with escort from Airport Ops
Importance of Phase II A Construction

- Access road necessary for equipment to efficiently move to and from the RSA and ultimately to access the approach end of RWY 23 construction areas which will occur in Phase B

- Grading of RSA enhances proper drainage away from RWY 523 providing a stable surface that does not retain water

- Grading of RSA reduces chance of aircraft damage when deviation from RWY occurs
**Phase II B:** *Work to Begin Summer through Fall 2020*

**Total Contract Time = 75 Calendar Days**

**Phase B Work Summary:**
- RWY 23 Approach End displaced
- 5,097’ of remaining RWY
- Installation of two culverts off the approach end of RWY 23
- Complete perimeter road
- Install sheet piling – 60’ high using 180’ crane

**NAVAID Impacts:**
- Approaches/NAVAIDs out of service (OOS):
  - ILS RWY 23 & MALSR OOS entire phase
- Approaches Available:
  - LOC RWY 23
  - RNAV (RNP) Y RWY 23
  - RNAV (GPS) RWY 05
  - RNAV (GPS) Z RWY 2#

*Timing dependent on Phase II A completion*

*Approach availabilities subject to change from FAA*
Phase II B: RWY 5-23 Operational Impacts

RWY 23 Threshold Displaced for 75 days

- **Taxiway Alpha** closed from RWY 23
  - Hold line to approach end of RWY 23

- **Approx. 5,097’ of usable runway length** during threshold displacement
Phase II B: RWY 5-23 Operational Impacts

RWY 5-23 closed for 30 Night Closures; within the ‘Phase B’ 75-day contract time

RWY 13-31 OPEN

(2200L – 0600L)

- **Taxiway Delta** closed from Taxiway Alpha to RWY 5
- **Taxiway Alpha** closed from RWY 13-31 to RWY 23
- **Taxiways Echo, Foxtrot, Golf & Hotel** closed from Taxiway Alpha to RWY 5-23
  - Construction traffic crossing Taxiway Bravo and RWY 13-31 with escort from Airport Ops
Importance of Phase II B Construction

- Significantly improves RSA by establishing weight-bearing structures under MALSR road for the first 1,000’

- Replacing older drainage culverts modernizes the structures and improves the structural integrity
Phase II C: *Work to Begin Summer through Fall 2021

**Phase C Work Summary:**
- RWY 23 Approach End displaced
- 5,097' of remaining RWY
- RWY Threshold Displaced
- Regrading of Runway Safety Area for RWY 5 Departure
- MALSR Light Plane replacement
- Installation of JCP&L Power Line
- Replace deer grates

**NAVAID Impacts:**

- **Approaches/NAVAIDs out of service (OOS):**
  - ILS RWY 23 & MALSR OOS entire phase

- **Approaches Available**
  - LOC RWY 23
  - RNAV (RNP) Y RWY 23
  - RNAV (GPS) RWY 05
  - RNAV (GPS) Z RWY 23

*Timing dependent on Phase II B completion

*Approach availabilities subject to change from FAA

**Total Contract Time = 120 Calendar Days**
Phase II C: RWY 5-23 Operational Impacts

RWY 23 Threshold Displaced for 120 days (approximately 5,097’ RWY remaining)

✈ Taxiway Alpha closed from RWY 23
Hold line to approach end of RWY 23
Phase II C: RWY 5-23 Operational Impacts

RWY 5-23 closed for 30 Night Closures; within the 120 day total contract time (2200L – 0600L)

- **Taxiway Delta** closed from Taxiway Alpha to RWY 5
- **Taxiway Alpha** closed from RWY 13-31 to RWY 23
- **Taxiways Echo, Foxtrot, Golf & Hotel** closed from Taxiway Alpha to RWY 5-23

- Construction traffic crossing Taxiway Bravo and RWY 13-31 with escort from Airport Ops
Importance of Phase II Construction

- Grading work and culverts provides an enhanced Runway Safety Area when departing RWY 5
- Current MALSR system is outdated and needs to be upgraded to provide pilots with the best navigational aids
- Replacement of deer grates will deter wildlife from airfield and approach end of RWY 23 while creating greater structural integrity than existing system

End of Phase C Overview
Online Resources

- www.mmuair.com/airfieldimprovement

- Airfield Alerts:
  - www.mmuair.com home page
  - Click on “Sign Up for Airfield Alerts”

- Follow @MMUairport on Twitter

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