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# NAVAL STATION CORPUS CHRISTI – TRUAX FIELD AIRFIELD LIGHTING AND NAVAID RECAPITALIZATION- TEAMING WITH NAVFAC

Presentation to  
2014 IES Airfield Lighting Committee

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Delta Airport Consultants, Inc. – Military Design Group  
with Burgess Engineering and Leidos, Inc.

21 October 2014



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# PRESENTATION OUTLINE

- 1) Description of NAS CC and Mission
- 2) Existing Airfield Conditions
- 3) 2011 Design-Build Project Attempt
- 4) 2013 Assessment and Design
- 5) Runway Repairs
- 6) Vault Renovation
- 7) NAVFAC Design Teaming
- 8) Results and Summary



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# NAS CC Airfield Layout and Mission

- 1) 4 Runways
- 2) ILS Runway 13R-31L, 8,000' x 200'
- 3) Three 5,000' x 200' Runways
- 4) Over 200 Based Aircraft
- 5) Training Mission
- 6) Transition to T-6 and T-44
- 7) Operational Missions – USCG and C&PB
- 8) CC Army Depot (CCAD)



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# NAS CC Airfield Repairs Design – 2013 Scope of Work

- 1) Airfield Assessment
- 2) Design Projects Identified in the Assessment
- 3) How do you prepare a contract for that?
- 4) Here's the story
- 5) Go Back to 2011



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# NAS CC Airfield Conditions - 2011

- 1) Edge Lighting
- 2) NAVAIDS - Signs
- 3) Pavements
- 4) Geometry
- 5) Obstructions
- 6) Vault and CCRs
- 7) Limited Repairs
- 8) Need for Comprehensive Airfield Rehab



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# NAS CC Airfield Existing Conditions

Last 10 to 15 Years:

- Limited improvements and repairs without a coordinated plan
- Missed opportunities on major apron expansion projects and repair funds to modernize.



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# 2011 Airfield Lighting Repairs Design-Build Project

- 1) Invitation to Bid to 9 Small Disadvantaged Business Contractors
- 2) End of Year Design-Build
- 3) Replace Edge Lights with LED
- 4) Convert Signs to LED
- 5) Replace CCR's
- 6) Replace and Upsize Main Panel and Generator



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# Design-Build Project - Challenges

- 1) Incorrect Assumptions of Cause of Problems
- 2) LED Runway Lights not available
- 3) Airfield Signs could not be converted
- 4) Project did not include re-cabling
- 5) Ambiguous scope
- 6) Potential to low-ball bid



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# Design-Build Project - Opportunities

- 1) \$3.5 million budget
- 2) Required qualified and experienced design-build team
- 3) Experienced airfield electrical contractor



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# 2011 Design-Build Project - Results

- 1) Amstar-F&W Electric- Delta Team Won!
- 2) Project funding then was cut
- 3) Several attempts at partial award
- 4) 2012 – Project cancelled



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## NAS CC – Follow Up in 2012 and 2013

- 1) Met with Public Works
- 2) Feedback and Advice
- 3) Recommend Design Project
- 4) Risk of disqualifying ourselves if re-issued as Design-Build



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# 2013 – Scope of Work Issued for Assessment and Phase 1 Design Airfield Electrical

## 1) SOW Included

- Whole Airfield Assessment
- Sign Plan
- Parking Plans – New aircraft
- Identify Priority Projects

## 2) Design for first three or four projects

## 3) Align with NAVFAC Pavement Repairs



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## 2013 – Scope of Work Issued for Assessment and Phase 1 Design Airfield Electrical

- 1) Leidos responsible for NAVFAC AE Contract
- 2) Work primarily by Delta for the airfield
- 3) Trust that Delta knew the projects and scope of work that would result from the Assessment
- 4) No- we had not worked together before
- 5) Agreement on engineering work share



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# 2013 – Assessment Findings and Priorities

- 1) Airfield Lighting Vault and Circuits
- 2) Edge Lighting
- 3) Signs – Phased Installation Plan
- 4) Approach Lights – Needed Repair/Replace
- 5) Obstructions - Numerous
- 6) Geometry – Remove Hazards and FOD



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## 2013 – Assessment

Some conditions required tact and careful language to address. For example, the Approach Lights had been recently repaired.

Runway 13R SALSF: 1,700' long, wood pier repaired a couple years ago after a major storm



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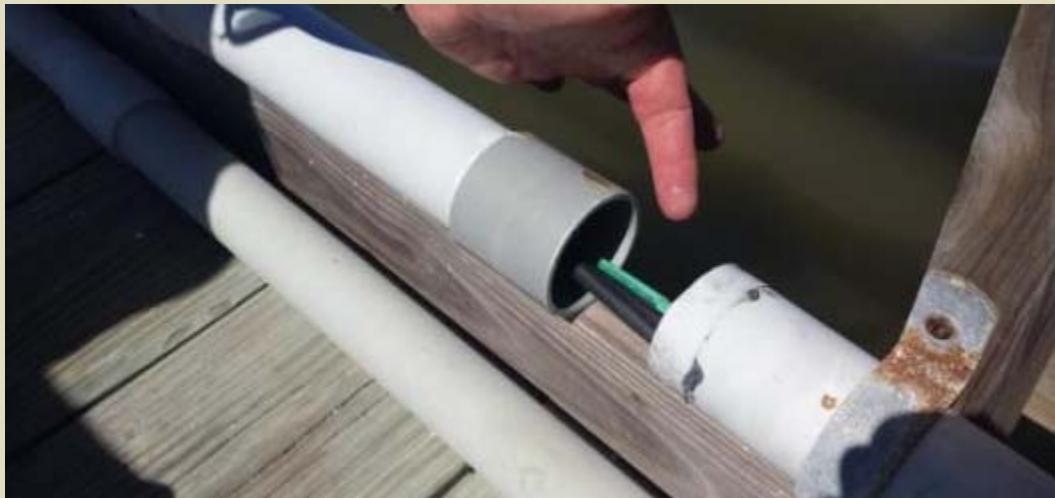




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## 2013 – Assessment

Many airfield electrical items were in poor condition and were obstructions

- NAVAIDs
- PAR racks
- Equipment racks



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# Design Initiatives

- 1) Airfield Lighting Circuit Replacement in Whole - fixture to vault
- 2) New Cable and Conduit
- 3) Pull Can Plazas OK for Navy
  - UFC 3-535-02 Detail (AF Only)
- 4) Airfield Signage Phased Implementation
- 5) Design to Operating Environment
  - Maintenance Capabilities
  - Environment



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# Airfield Lighting Vault Conditions

- 1) 8 CCRS: 4 Runway, 1 App Lt
- 2) 3 CCRs for 25 Taxiway Circuits
- 3) Limited floor and wall space
- 4) Generator room
- 5) Maintenance Shop and Office



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# Airfield Lighting Vault Renovation Design

- 1) Existing footprint limitation
- 2) Cabinet Style CCRs
- 3) Phasing Plan
- 4) Conversion of generator room
- 5) Building Improvements



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# 2013 Project Priorities: Paving and Lighting

Budget limitations varied...

*\$24 million to \$16 million to \$6 million*

- 1) Runway 4-22. Pavement, Marking, Lighting
- 2) Runway 17-35. Same
- 3) Taxiway E West – Also Remove Excess Pvmt
- 4) Airfield Lighting Vault
- 5) Taxiway E Midfield and East



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# NAVFAC Design Partnering – Phasing

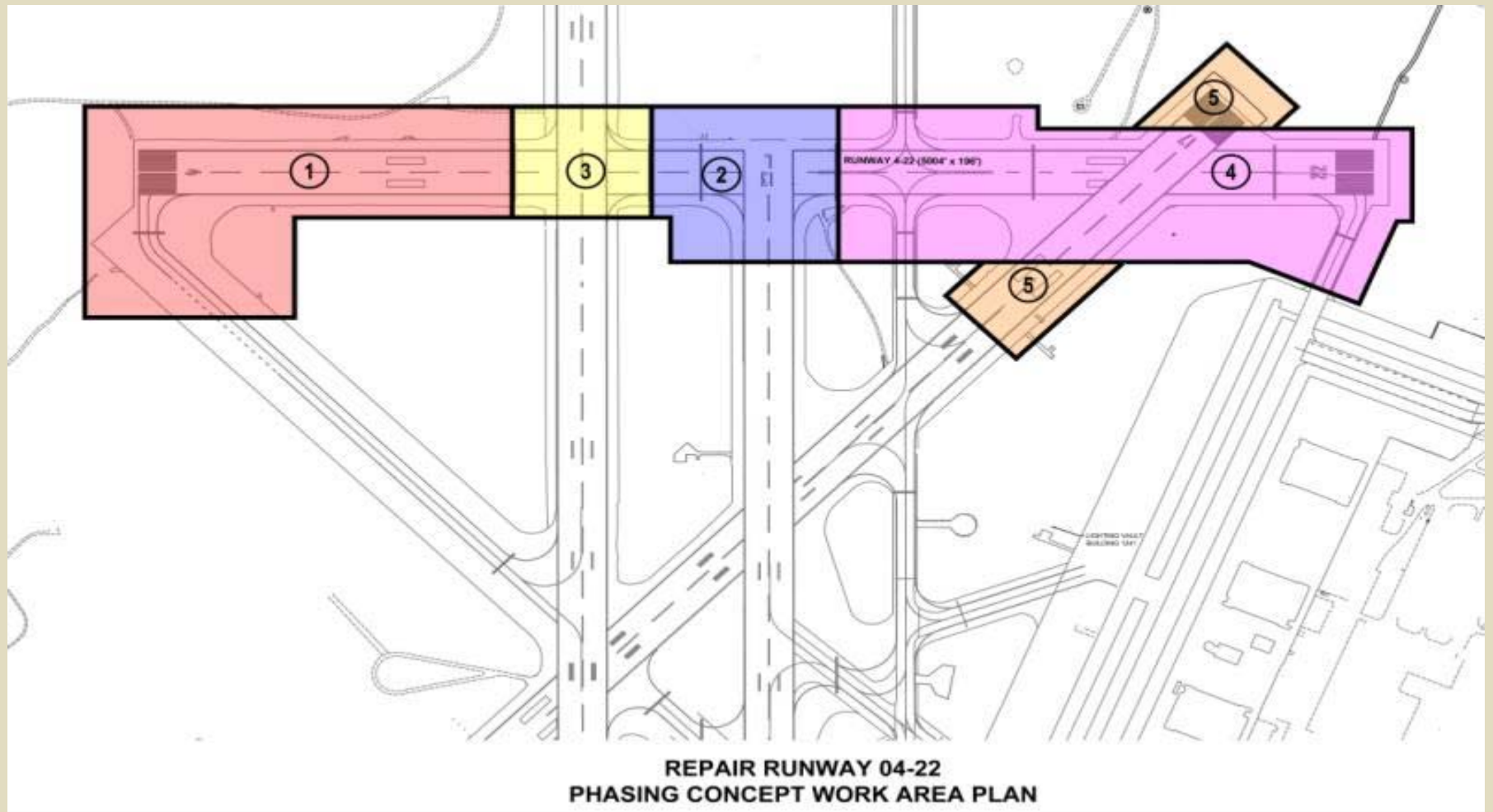
- 1) Lighting was more restrictive
- 2) Delta take lead
- 3) Operational priorities – Runway seasons
- 4) Disagreements



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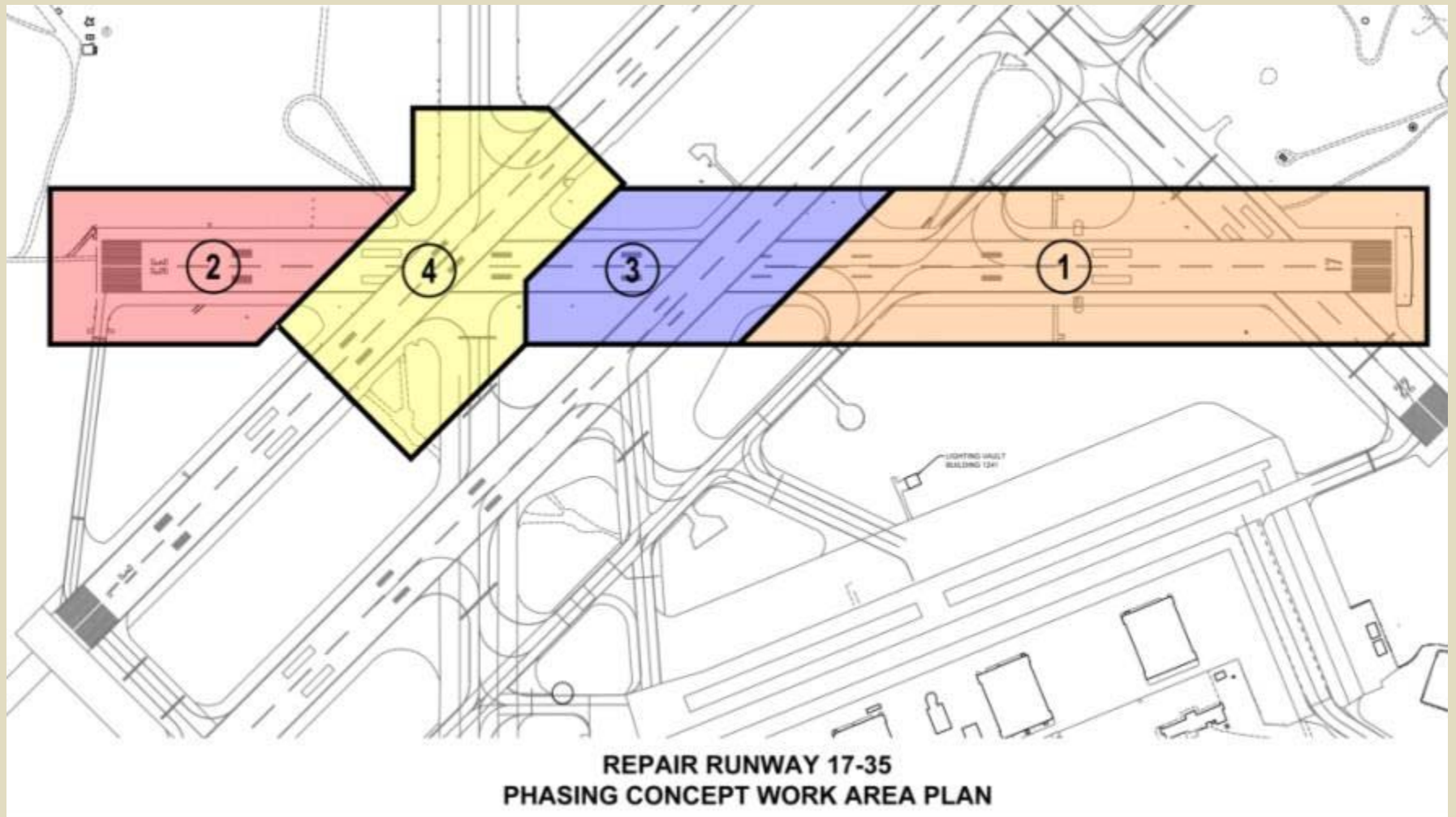


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# NAVFAC Design Partnering – Paving Plan

- 1) Limits of Work
- 2) Constructability
- 3) Markings – QC
- 4) Changes



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# NAVFAC Design Partnering – Snags

- 1) Budget limits
- 2) Bid Options
- 3) Changes - Adds
- 4) NAVFAC personnel – one deep in design



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# Results

- 1) Two Bid Packages planned for approx \$12 million
- 2) One Bidder – Head, Inc. and F&W Team
- 3) \$17 million
- 4) Awarded Sept 2014
- 5) 2 years of construction due to phasing limits



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## Follow On: 2015 and Beyond

- 1) Taxiway E - West
- 2) Vault
- 3) Apron Parking
- 4) Approach Lights
- 5) Taxiways
- 6) Runways 13R-31L and 13L-31R



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# Summary

- 1) Airfield Conditions Required Action and A Multi-Year Plan
- 2) Budget and Operational Constraints Dictate the Approach
- 3) Airfield Electrical Expertise and Focus is Needed
- 4) Projects need to be addressed across disciplines: Civil and Electrical
- 5) Teams and approaches vary-Hopefully there will be more focus and design to improve projects.



# Acknowledgements

- 1) NAS Corpus Christi – Public Works and Operations Staff
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# Thank You

## Delta Airport Consultants Military Design Group

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