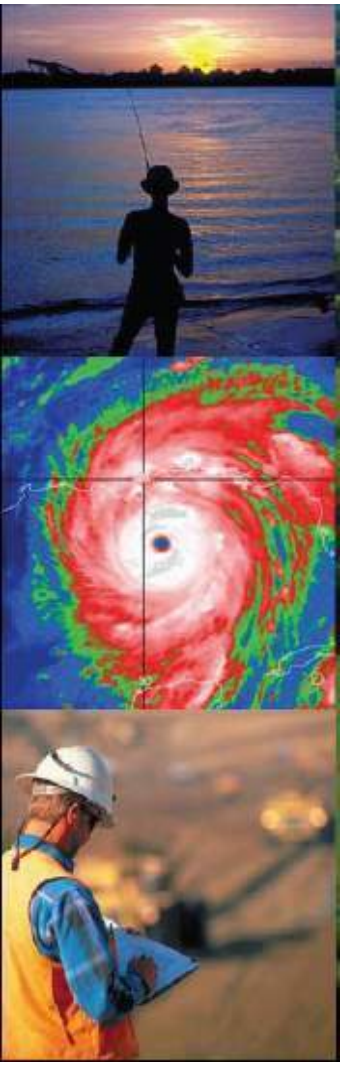

Louisiana Coastal Protection
and Restoration
(LACPR)
www.lacpr.usace.army.mil



Louisiana Coastal Protection and Restoration (LACPR)

Draft Technical Report Overview

Stakeholder Meetings

April 2008

Department of Defense Appropriations Act, 2006
(P.L. 109-148)

SEC. 5009. Public Law 109–103 amended as follows…

- …Chief of Engineers, is directed to conduct a comprehensive hurricane protection **analysis and design** at full federal expense to develop and present a full range of **flood control, coastal restoration, and hurricane** protection measures **exclusive of normal policy considerations**…
- …submit a **preliminary technical report** protection within 6 months…
- …submit a **final technical report** within 24 months
- …consider providing protection for a storm surge equivalent to a Category 5 hurricane within the project area and may submit reports on component areas of the larger protection program for authorization as soon as practicable…
- …analysis shall be conducted in close coordination with the State of Louisiana and its appropriate agencies.

Where We Are Now

- **Significant products available**
  - Preliminary Technical Report
  - Risk Informed Planning Methodology
  - Plan Formulation Atlas
  - Progress Report

- **Completing Technical Review of draft technical report**

- **Remaining work involves**
  - Modification of evaluation and methodology based on review
  - Systems analysis with MSCIP and ERDC
  - Revision of performance evaluation data as necessary
  - Extensive stakeholder education and engagement (spring and summer)
  - Second iteration of MCDA
  - Identification of potential Comprehensive Plans

- **USACE goal remains meeting requirements of the legislation to provide Congress a Technical Report on Comprehensive Protection & Restoration**

Path Ahead

- **Final Technical Report (FTR) will include:**
  - External Peer Review
  - Refined evaluation data
  - Systems modeling analysis (LACPR and MSCIP)
  - Additional Stakeholder engagement
  - 2nd Iteration of Multi-Criteria Decision Assessment
  - Expanded Risk Assessment
  - Limited Recommendations for further study
- **Environmental Documentation**
- **Report to Chief of Engineer's**

Report to the Chief

- Will not contain specific recommendations
- Using MCDA, team will identify alternatives with values based on stakeholder input
- Corps will look at using existing authorities to authorize work or begin additional study

Schedule

- May 2008 - NAS letter report provided
- Spring 2008 - LACPR team re-evaluating data to prepare for incorporation in system modeling
- Late Spring 2008 - Complete system modeling of the LACPR/MSCIP
- Summer 2008 - Re-engagement of stakeholders, incorporating comments of NAS review panel
- December 2008 – Technical Report ready for coordination

Draft Technical Report

- Describes planning objectives and process
- Details storm threats and consequences
- Evaluates multiple alternative solutions
- Spans 3,200 pages
- Includes detailed appendices on
  - hydrodynamics
  - preliminary engineering and design
  - cost estimates
  - environmental benefits and impacts
  - real estate considerations
  - other support pieces

LACPR Report Components

- Main Technical Report
- Evaluation Results Appendices
- Coastal Restoration Plan Component Appendix
- Structural Plan Component Appendix
- Non-Structural Plan Component Appendix
- Engineering Appendix
- H&H Appendix
- Economics Appendix
- Risk-Informed Decision Framework Appendix

What's in the Report

- Formulation and screening of alternatives by major type
  - Coastal Restoration
  - Structural
  - Non-Structural
- Maps and plan descriptions for 100+ remaining alternative plans
- Hydrodynamic analysis of alternative plan & landscape performance
- Evaluation data for all remaining alternative plans
  - Assessment of 14 performance metrics
  - Against four future scenarios with upper and lower uncertainty values
  - Detailed descriptions of evaluation data & methodology
- An initial iteration of Multi-Criteria Decision Analysis
  - listing of ranked plans based on multiple metric weight values.
- A discussion of implementation integrating Decision and Adaptive Management Strategies as well as Existing Authorities

What's Not in the Draft Report

- Detailed field investigations & data collection to support design analysis
- Hydrologic modeling to support ecologic evaluation of coastal restoration plans
- Refined interior drainage routing for economic damage evaluation
- Refined input/output analysis of regional economic evaluation
- Traditional NED/NER analysis of alternatives
- Final Multi-Criteria Decision Analysis output
- Plan selection process or criteria

Key Assumptions

- **Base condition includes the authorized upgraded 100 year level of protection for existing levee projects but not projects authorized in WRDA 2007**
- **The “Future Without” Action Condition is based on a 50 year forecast of the coastal landscape degradation**
- **Coastal restoration is fundamental to comprehensive protection and is included as a component of every plan considered**
- **Coastal restoration plans were not constrained by the availability of the resources needed to achieve the desired virtual no net loss condition**

Key Assumptions (con't)

- **Protection levels (100, 400, 1000 yr) are not combined in any plans**
- **No system failure modes are considered in establishing damage estimates, only design exceedance (overtopping)**
- **Damage reduction resulting from local actions to regulate development and/or construction are not estimated in the LACPR analyses**
- **Future compliance with National Flood Insurance Program base flood elevation requirements is assumed to be 100%**
- **Non-Structural alternative assessments assume 100% participation in any recommended action**

Team Composition

- **USACE Planning Centers of Expertise, National Non-Structural Flood Proofing Committee**
- **State of Louisiana - Coastal Protection and Restoration Authority, LDNR, LDOTD, LDWF, LDEQ**
- **LSU, UNO, ULL, Tulane, Notre Dame, University of North Carolina, University of Maryland, University of Delaware, and Massachusetts Institute of Technology**
- **NOAA Hurricane Center, EPA, NMFS, USFWS, USGS, NRCS, FEMA, NPS, and FHWA**
- **Dutch Rijkswaterstaat**
- **Consultants - Oceanweather, Group Solutions, URS, HDR and others**

Modeling Effort

- Hydrodynamic analysis initiated in Dec 2005 and is **near feasibility level**
- Work performed by **multiagency**, academic, international, & private consultant teams
- Storm modeling efforts supported: FEMA mapping, 100 yr hurricane design, & LACPR technical effort
- Modeling team identified significant model grid related effects that called for expansion of the basic models and reanalysis
- The modeling team and PDT identified **issues with the application of friction** in the modeling of storm waves that required a significant sensitivity analysis to be undertaken
- Initial hydrodynamic analysis of hurricane risks for South Louisiana LACPR alternatives completed Nov 2007
- The PDT has identified potential surge effects along the Mississippi coast related to LACPR alternatives that have triggered an **expanded systems analysis**; effort being conducted in concert with Mobile District and ERDC

Technical & Stakeholder Workshops

- **Wind, Waves and Water - Dec 2005**
  to develop state of the science for hurricane design comparison and analysis Included National Hurricane Center, LSU and Dutch

- **Initial Plan Formulation Workshop - Feb 2006**
  to develop potential risk reduction plans, 100+ participants, 125+ concepts involving coastal restoration and protection offered

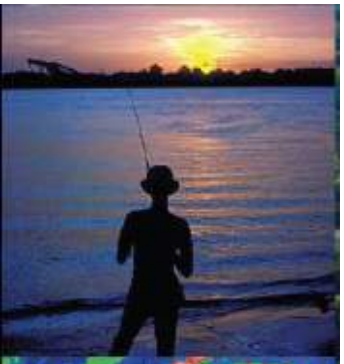
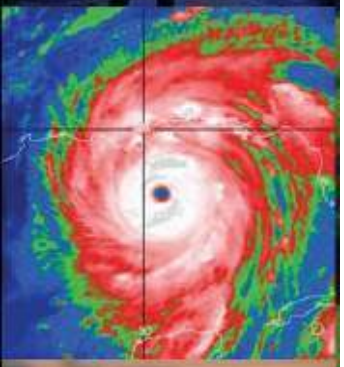
- **Engineering Technical Approaches and Innovations - Mar 2006**
  to assess alternatives and apply both standard and innovative approaches in preparation of information gathering plans and tools for analysis

- **NGO/Scientist Workshops - May & Sep 2007, Feb & Mar 2008**
  to inform these technically informed stakeholders on LACPR progress, engage them in the decision process, & capitalize on the available expertise

- **Coordination with LCA Science Board – Apr 2007**

- **State-Wide Stakeholder Engagement Workshops – Jun & Oct 2007**
  to inform stakeholder groups on LACPR progress, engage them in the decision process

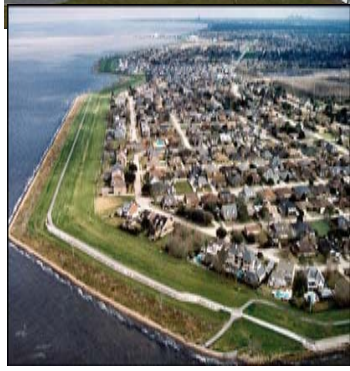
DISCUSSION


Louisiana Coastal Protection and Restoration (LACPR)

Metric Data Development Considerations





General Overview

- Metric data reflect project performance & project impacts (direct and indirect) associated with measures/plans developed primarily to reduce residual damages to people and property.
- Metric data developed for **4** future “without” project scenarios which combine **2** levels of relative sea level rise with **2** levels of regional redevelopment
- Project costs & damages evaluated over 65 years (2010 to 2075)
- Year 2025 chosen as common base year for evaluating metric data and comparing alternatives and showing tradeoffs
- Consideration has been given to environmental factors for coastal landscape features that extend beyond the period of analysis (100-year) – but are not reflected in metric data

Four LACPR Scenarios

		Redevelopment	
		High Employment, Dispersed Population	**Business-as-usual, Compact Population**
Relative Sea Level Rise	Projection 1	Scenario 1	Scenario 3
	Projection 2	Scenario 2	Scenario 4

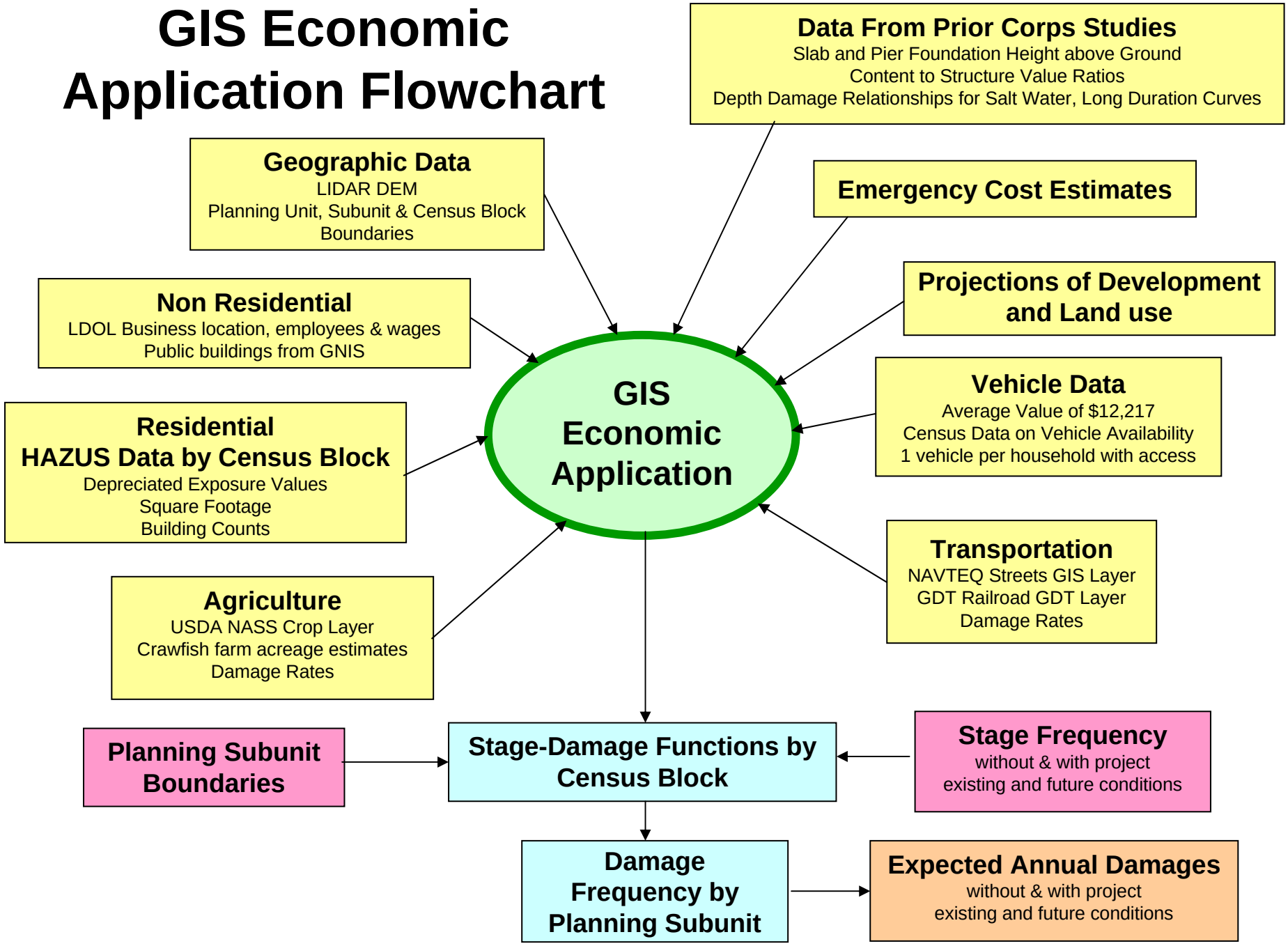
Risk Metrics

- National Economic Development
  - Residual Damages
  - Life-Cycle Costs
  - Construction Time
- Environmental Quality
  - Spatial Integrity
  - Indirect Impacts of Levees
  - Archaeological Sites
  - Direct Wetland Impacts
  - Wetland Acres Protected or Restored
  - Historical Properties
- Regional Economic Development
  - Gross Regional Output
  - Employment
  - Income
- Other Social Effects
  - Population
  - Historical Districts

Economic Considerations

(People and Property)

GIS Economic Application Flowchart



Residual Damages

- Residual damages are a measure of the remaining dollar damages to assets in each planning unit expressed in annual equivalent terms for each alternative.

- The equivalent annual damage value includes damages to residential and non-residential properties, emergency losses, losses to agricultural resources, and damages to the transportation infrastructure.

Regional Economic Development and Population

- Based on individual businesses
- Employee Output Ratios (sales per employee) developed from Regional Economic Model, Inc. as used for IPET
- If stage of frequency event is greater than 1st floor elevation of business – employment, income and output impacted
- Based on population by Census Block
- If stage of frequency event is greater than the mean ground elevation, that population is impacted

Engineering Considerations
(Life-Cycle Costs & Construction Time)

Design/Cost Considerations

Parametric Approach

- Prepare designs for a variety of elevations and conditions and plug in appropriate features

Levees

- 4 soil reaches and 3 crown elevations: 25’, 30’ and 40’
- Two levee design types (geotextile & soil mix) and overflow weir
- Levee Alignments broken into sections

  - Include future Lifts for subsidence & consolidation, relative sea level rise

Structures

- Prepare parametric estimates for structures - 30’, 35’, 45’

  - Used generic Structures (i.e. Sector Gates – 56’ and 110’, Tainter Gates, Sluice Gates)

Environmental Considerations
(Spatial Integrity, Wetlands Created and/or Protected, Direct/Indirect Impacts)

Spatial Integrity

(size, shape, density, configuration & structure)

- Based on ARCGIS model output using base spatial data and restoration pan shapefiles
- Goal is to promote ecological sustainability
- A spatially explicit model to assess synergies among arrangements of wetlands, ridges, barrier islands and sediment and freshwater inflows at a basin scale.
- Measured using a **Landscape Stability Index which ranges from 0 to 1**, with probability of land retention increasing as the index approaches 1.

Wetlands Created and/or Protected

- Based on Boustany Model for diversions; USACE estimates for marsh creation and levee impacts; USGS 1978-2006 wetland loss rates for background losses
- Goal is to reduce rate of wetland loss to achieve no-net loss in natural landscape over period of analysis
- Direct measure of wetlands created and/or restored and those existing wetlands protected from further degradation.
- Annual net wetland gains through marsh creation, diversions and other measures, offset by annual loss rates, are summed for metric value

Wetland Created and/or Protected

Wetland Loss Rates Uncertainties
Subsidence rate changes
Sea level rise changes
Future hurricane effects
Satellite imagery methodology issues
Loss rate extrapolation methodology
Synergistic and complimentary wetland restoration benefits

Direct Wetland Impacts

- Based on ARCGIS, USACE estimates for levee impacts
- Goal is to restore and sustain diverse fish and wildlife habitats
- Utilizes “max-gross” approach
- There is no consideration of temporal aspects such as background wetland loss rates and phased levee construction
- The potential direct wetland losses are calculated by simply overlaying the footprint of a given levee and associated borrow areas on the existing coastal landscape, assuming that all construction impacts occur simultaneously

Indirect Impacts

- Based on expert opinion
- Goal is to reduce impacts of project
- Indirect impacts ranking matrix used in analysis covers hydrologic, fishery, induced development impacts and ecological sustainability/consistency with coastal restoration.
- Indirect matrix describes how a particular alignment is expected to perform relative to other alignments in the same planning unit. The matrix is toll for comparing levee alignments in terms of indirect impacts.
- Measurement ranges from +8 if alternative has a high potential for positive environmental impacts to a -8 if an alternative has a high potential for adverse environmental impacts

Cultural Considerations

(Archaeological Sites, Historical Properties, Historical Districts)

Cultural Metrics

Purpose is to capture how the unique heritage of coastal Louisiana can be sustained by protecting Cultural Resources

- Three metrics
  - Archaeological Sites (Environmental Quality)
  - National Register Properties and National Historic Landmarks (Environmental Quality)
  - Historic Districts (Other Social Effects)
- Calculation
  - Metrics are calculated by comparing spatial data of site location and areas flooded by levee overtopping. When sites are not flooded and protected by alternatives, then the site is considered “protected”.

The Archaeological Sites Metric captures the number of archaeological sites that will be protected by an alternative

Archaeological sites include prehistoric or historic remains of buildings, trash pits, hearths, villages and communities. Archaeological sites are important because of their ability to yield information about past societies that are not available by other means.

The Historic Properties Protected metric includes the number of National Register listed and eligible properties and National Historic Landmarks protected by an alternative.

The Historic Districts Protected metric captures the number of historic districts protected

Although historic districts consist of clusters of historic buildings and structures That share a similar date and theme, they also encompass living communities And serve a purpose for community integration and identification.

Report Presentation of Metric Data

Example: Plan Metric Summary Table

Planning Unit:	3b	**Alt. No.**	PU3b-RL-100-1	**Category**	Coastal Restoration + Structural Measures
Alternative Description:	Sustain coastal landscape through restoration. Raise ring levee around Patterson/Berwick to 100-year design level and construct ring levees around Franklin/Baldwin, New Iberia, Erath, Delcambre, and Abbeville at the 100-year design level.				
Coastal Component:	R1			**Nonstructural Component:**	None
Structural Component:	See alternative description.				

		Metric Results by Scenario with Uncertainty Bands								
		Life-cycle Cost	Resident Population Impacted	Residual Damages	Gross Regional Output Impacted	Employment Impacted	People's Earned Income Impacted	Archeo. Sites Protected	Historic Properties Protected	Historic Districts Protected
		$ Billions	Ann. Equiv. #	Ann. Equiv ($ 1000's)	Ann. Equiv ($ 1000's)	Ann. Equiv #	Ann. Equiv ($ 1000's)	# Sites	# Properties	# Districts
Scenario 1	Low		3,723	221,447	213,062	701	41,263	123	11	0
	Mean	16.3	6,342	401,096	349,938	1,354	75,008	147	12	3
	High		8,156	562,632	445,623	1,728	92,851	171	15	3
Scenario 2	Low		4,017	241,635	232,621	755	46,273	123	8	0
	Mean	16.4	6,598	424,167	366,676	1,399	79,097	147	12	1
	High		8,377	586,939	461,895	1,763	96,706	171	13	3
Scenario 3	Low		3,435	201,370	236,261	718	44,292	123	11	0
	Mean	16.3	5,885	360,777	384,285	1,383	79,527	147	12	3
	High		7,567	507,348	480,301	1,719	94,846	171	15	3
Scenario 4	Low		3,708	217,470	256,060	769	48,772	123	8	0
	Mean	16.4	6,083	379,422	398,675	1,414	82,062	147	12	1
	High		7,811	525,225	493,831	1,743	97,498	171	13	3

Other Metric Results							
Construction Time (years)	10	Wetlands Created/	Scen 1&3	Scen 2&4	PV Cost of NS Comp ($ Billions)	Scen 1&2	Scen 3&4
Direct Wetland Impacts (acres)	-940	Protected (acres)	50,027	62,021			
Indirect Impacts	4	PV Cost of Coastal				N/A	N/A
Spatial Integrity	0.505	Component ($ Billions)	4.76	4.80			
		PV Cost of Structural Component ($ Billions)	11.58	11.61			

Planning Unit 3a - Summary

Summary - Metric Results With-Project Conditions
PLANNING UNIT 3a
(All Alternatives)

	Metric Value Range Based on High (90%) Confidence Limit on Water Surface Elevations	Metric Results Related Directly to Hydromodeling - Surge Elevations							
		Resident Population Impacted	Residual Damages	Gross Regional Output Impacted	Employment Impacted	People's Earned Income Impacted	Archeo. Sites Protected	Historic Properties Protected	Historic Districts Protected
		Ann. Equiv. # 1,000's	Ann. Equiv ($ millions)	Ann. Equiv ($ millions)	Ann. Equiv # 1,000's	Ann. Equiv ($ millions)	# Sites	# Properties	# Districts
Scenario 1	Best	14.9	970	897	4.0	194	203	18	1
	Worst	32.9	2,693	3,425	11.2	699	92	7	1
Scenario 2	Best	15.1	1,028	984	4.2	211	203	18	1
	Worst	33.0	2,816	3,638	11.8	750	92	5	1
Scenario 3	Best	13.3	825	804	3.4	158	203	18	1
	Worst	28.9	2,318	2,981	9.8	597	92	7	1
Scenario 4	Best	13.4	871	868	3.5	171	203	18	1
	Worst	29.0	2,447	3,154	10.3	640	92	5	1

	Metric Value Range	Metric Results Not Directly Related to Hydromodeling - Surge Elevations							
		Direct Wetland Impacts (acres)	Indirect Impacts	Spatial Integrity	Wetlands Created/ Protected (acres)	Present Value - Life Cycle Costs			Construction Period (years)
						Coastal Component ($ Billions)	Nonstruct Component ($ Billions)	Structural Component ($Billions)	
	Best	-4,200	-5	0.525	110,000	23.3	0.7	19.0	10
	Worst	-6,600	-5	0.525	107,700	23.7	15.0	27.7	15

NOTES:
Scenario 1- Low Relative Sea Level Rise (RSLR), High Employment, Dispersed Population ; **Scenario 2 -** High RSLR, High Employment, Dispersed Population; **Scenario 3 -** Low RSLR, Business-As-Usual, Compact Population; **Scenario 4 -** High RSLR, Business-As-Usual, Compact Population.

Metric Values have also been developed for Low (10%) and Medium (50%) Confidence Bands for surge elevations for use in Multi-Criteria Decision Analysis (MCDA).

Planning Unit 3b - Summary

Summary - Metric Results With-Project Conditions
PLANNING UNIT 3b
(All Alternatives)

	Metric Value Range Based on High (90%) Confidence Limit on Water Surface Elevations	Metric Results Related Directly to Hydromodeling - Surge Elevations							
		Resident Population Impacted	Residual Damages	Gross Regional Output Impacted	Employment Impacted	People's Earned Income Impacted	Archeo. Sites Protected	Historic Properties Protected	Historic Districts Protected
		Ann. Equiv. # 1,000's	Ann. Equiv ($ millions)	Ann. Equiv ($ millions)	Ann. Equiv # 1,000's	Ann. Equiv ($ millions)	# Sites	# Properties	# Districts
Scenario 1	Best	5.0	285	198	0.9	41	312	20	5
	Worst	11.7	835	805	2.9	169	19	13	1
Scenario 2	Best	5.1	294	207	0.9	43	312	20	5
	Worst	12.3	894	863	3.0	183	19	11	1
Scenario 3	Best	4.7	202	159	0.7	34	312	20	5
	Worst	11.0	779	887	2.9	177	19	13	1
Scenario 4	Best	4.8	275	212	0.9	41	312	20	5
	Worst	11.6	829	942	3.0	189	19	11	1

	Metric Value Range	Metric Results Not Directly Related to Hydromodeling - Surge Elevations							
		Direct Wetland Impacts (acres)	Indirect Impacts	Spatial Integrity	Wetlands Created/ Protected (acres)	Present Value - Life Cycle Costs			Construction Period (years)
						Coastal Component ($ Billions)	Nonstruct Component ($ Billions)	Structural Component ($Billions)	
	Best	-940	-8	0.505	62,000	4.8	0.2	11.6	10
	Worst	-5,188	4	0.505	50,000	4.8	6.5	31.1	15

NOTES:
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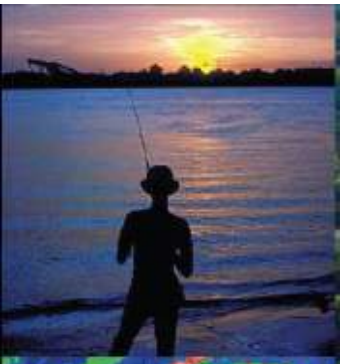
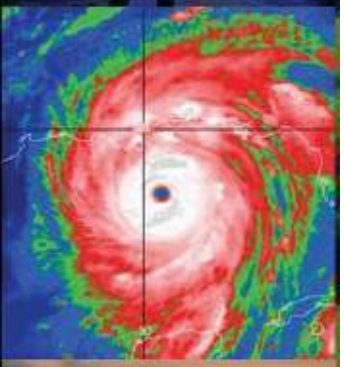
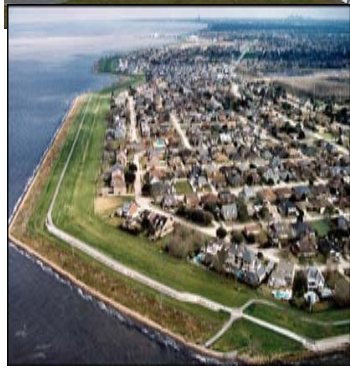
DISCUSSION


Louisiana Coastal Protection and Restoration (LACPR)

Risk Informed Decision Making





Objectives for RIDM

- Work within the planning process
- Cover the system of accounts
- Evaluate risks in regard to planning objectives
- Promote transparency in decision making
  - Using decision analysis methods to evaluate the performance of alternative plans
    - Performance measured in terms of a metrics
    - Preferences regarding objectives elicited as metric weights

Multi-Criteria Decision Analysis

- An approach for structuring and analyzing decision problems

- Emphasis given to:
  - Establishing explicit objectives
  - Defining metrics for evaluating alternative solutions/plans
  - Incorporating human values in regard to objectives, i.e., preferences
  - Ranking plans based on quantitative scores derived from metrics and preferences
    - Using multi-attribute utility theory

LACPR Objectives and Metrics

Planning Objectives

- Reduce risk to public safety from catastrophic storm inundation
- Reduce damages from catastrophic storm inundation
- Promote a sustainable ecosystem
- Restore and sustain diverse fish and wildlife habitats, and
- Sustain the unique heritage of coastal Louisiana by protecting historic sites and supporting traditional cultures

Performance Metrics

- National Economic Development
  - Residual damages
  - Life-cycle costs (Implementation, O&M)
  - Construction time
- Regional Economic Development
  - Regional Economic Development (jobs, income, regional output)
- Environmental Quality
  - Spatial integrity
  - Wetlands restored and/or protected
  - Direct impacts
  - Indirect impacts
  - Historical properties protected
  - Archeological properties protected
- Other Social Effects
  - Residual population impacted
  - Historical districts protected

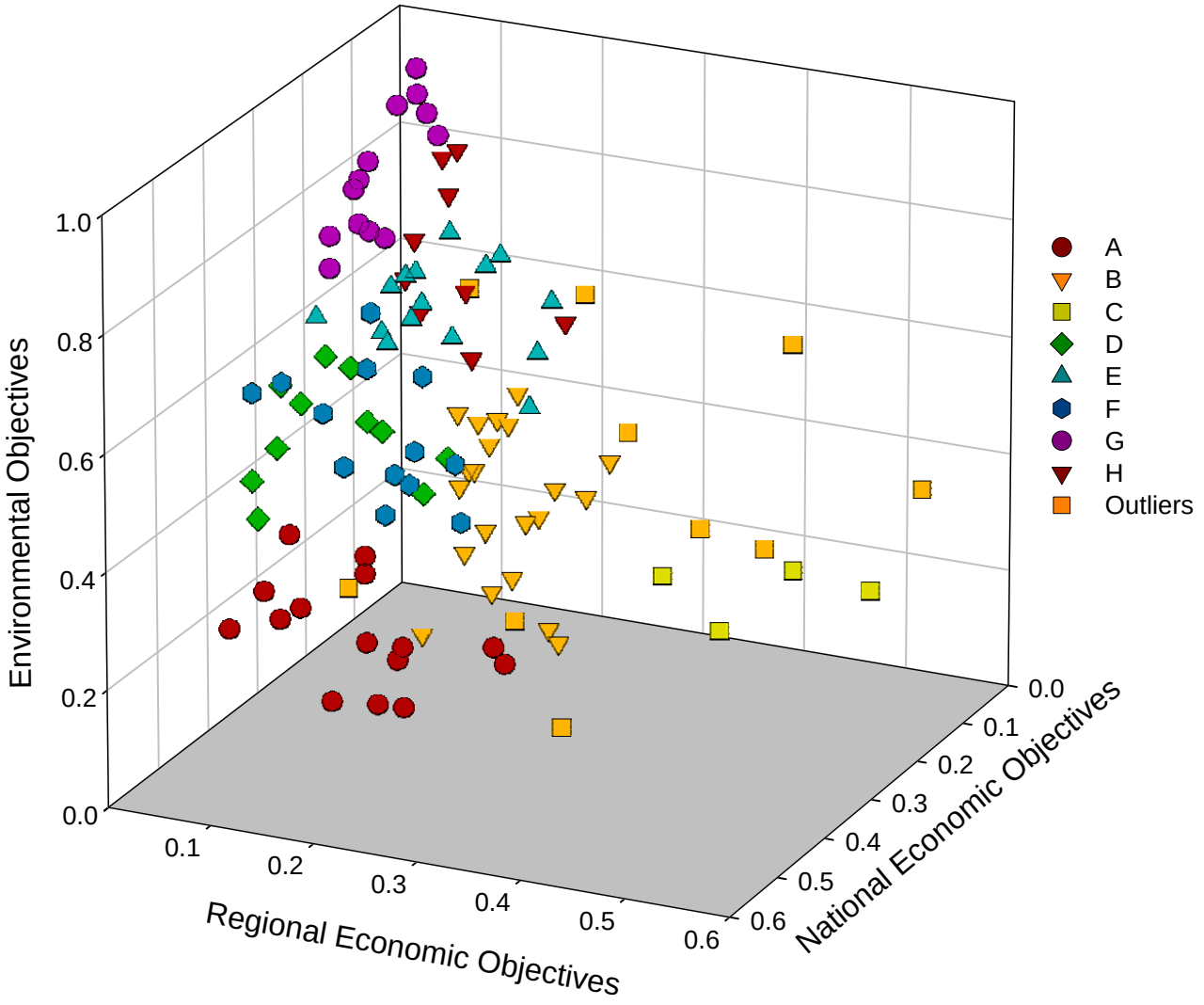
LACPR Stakeholder Weightings Workshop

16, 22-25 October 2007

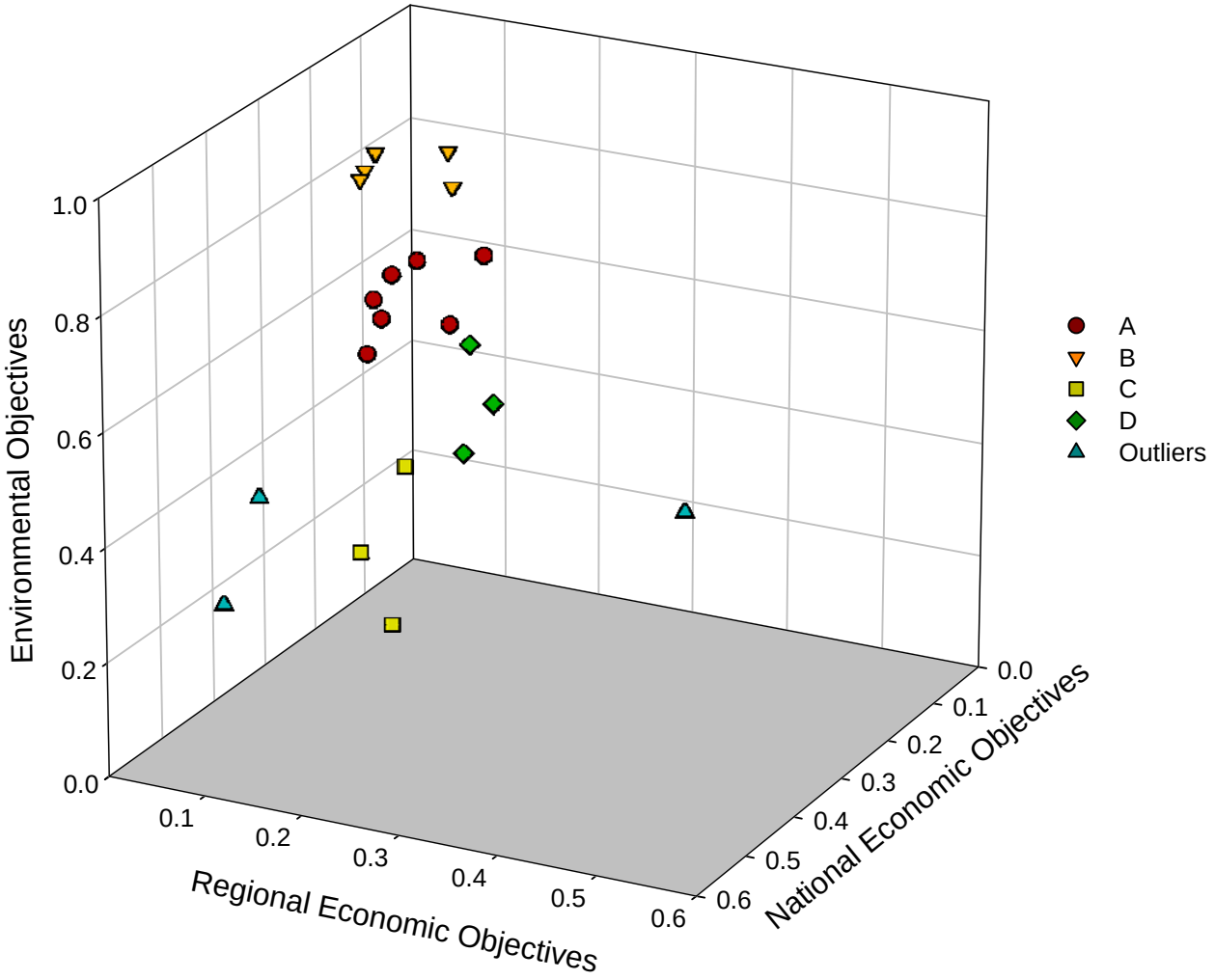
- Baton Rouge (Federal and State Government) (22)
- New Orleans (PU1 & PU2) (23)
- Houma (22)
- Lake Charles (20)
- Abbeville (22)

- Federal and State
  - LDNR, FEMA, FHWA, USGS, USFWS, NMFS, NOAA, USEPA, LADOTD, etc.
- Local and Parish
  - New Orleans, St. Bernard, St. Tammany, Jefferson, Terrebonne, Vermillion Parishes, Ports, Levee districts, Congressional offices, mayors, etc.
- NGOs and Academia
  - BTNEP, CRCL, LPBF, Audubon, NWF, UNO, LSU, Ducks Unlimited, etc.
- Business/Developers
  - ConocoPhillips, Shell, Tower Land Co., etc.

LACPR Weightings Results



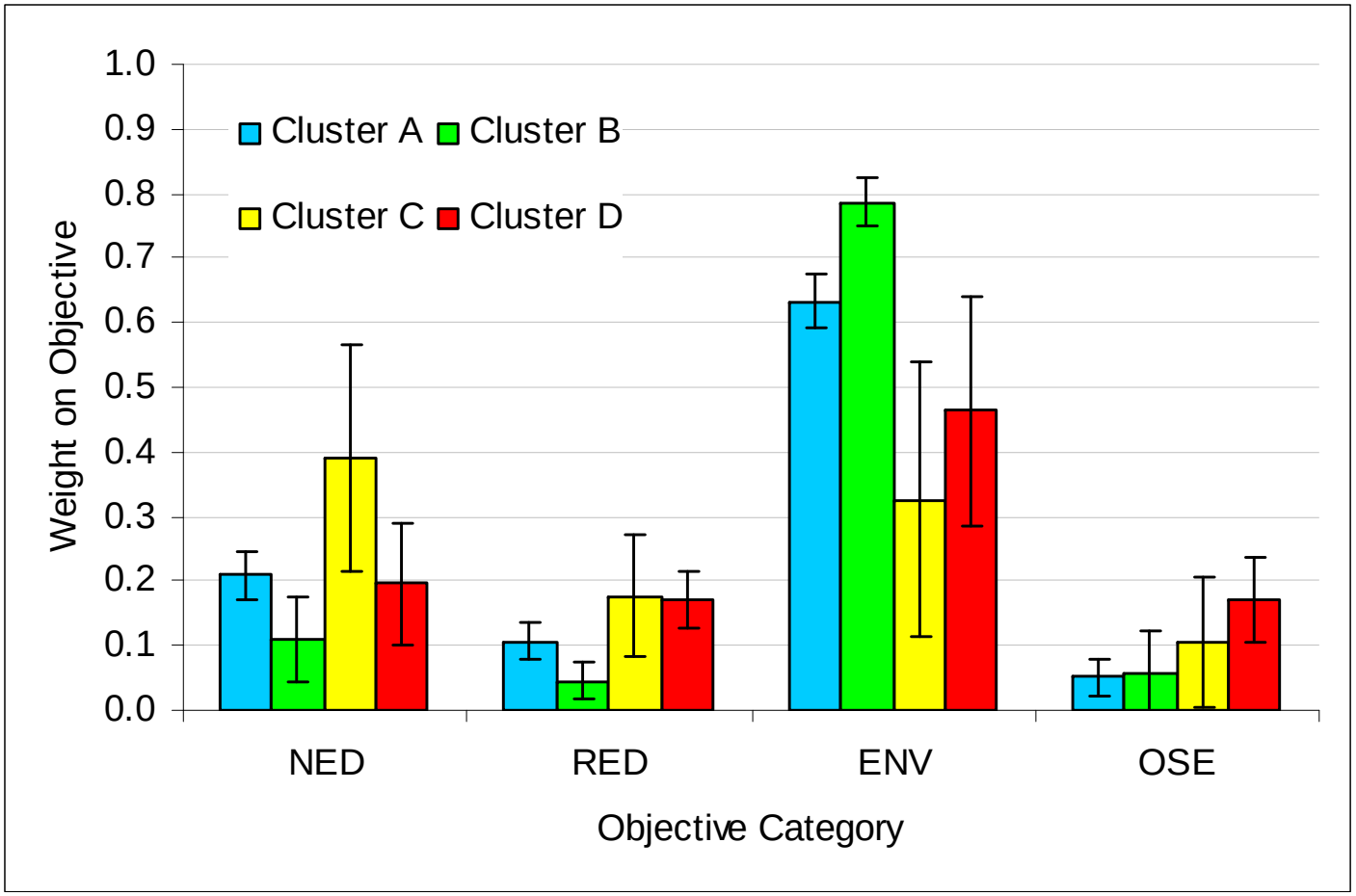
LACPR Weightings Results



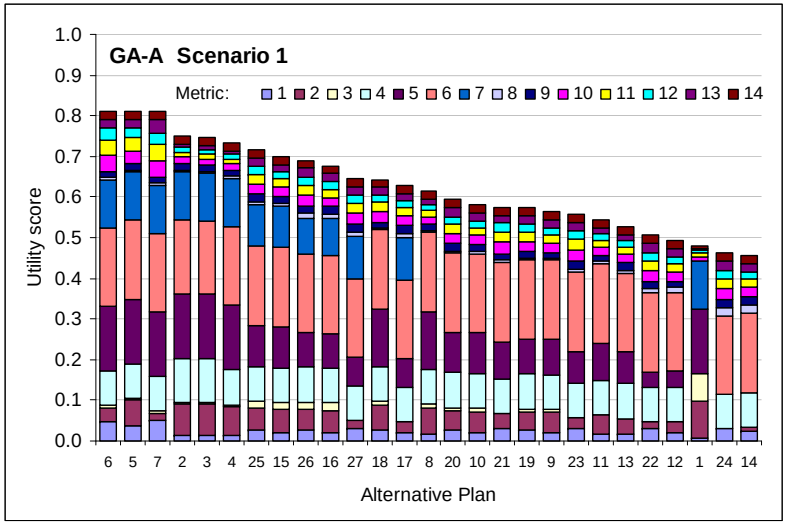
Weight allocation for government agencies

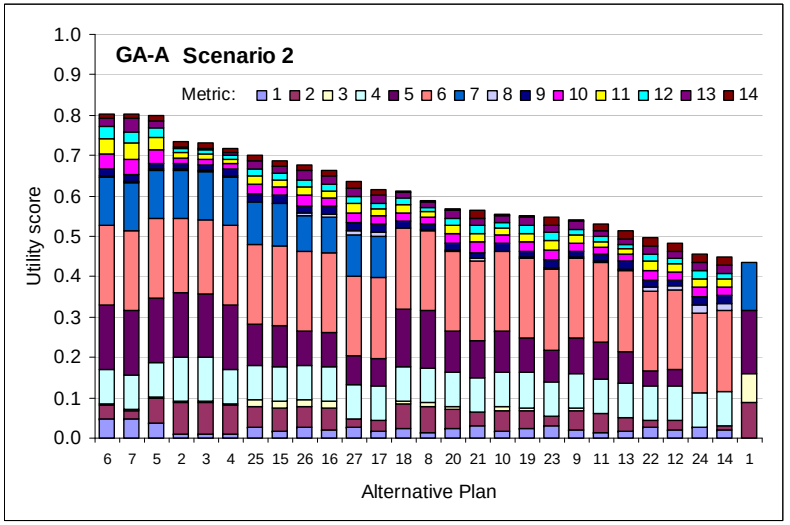
LACPR Weightings Results

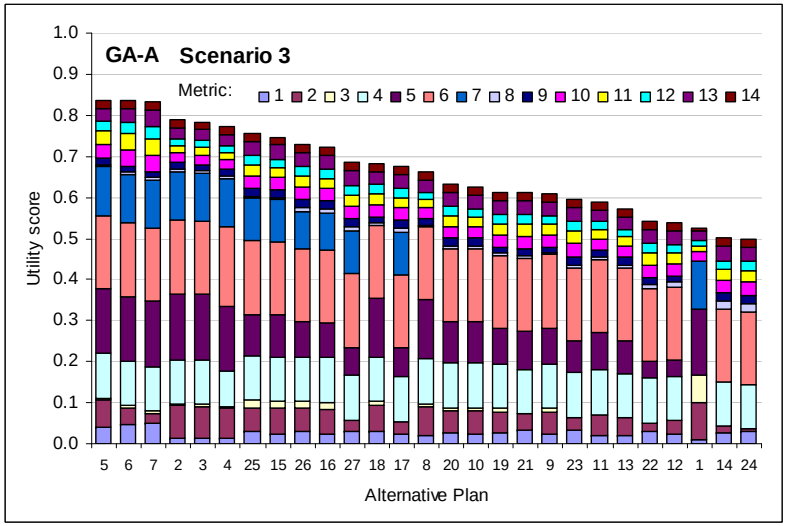
Mean weights by aggregate planning objective for gov't agency clusters A through D (± 95% confidence limits)

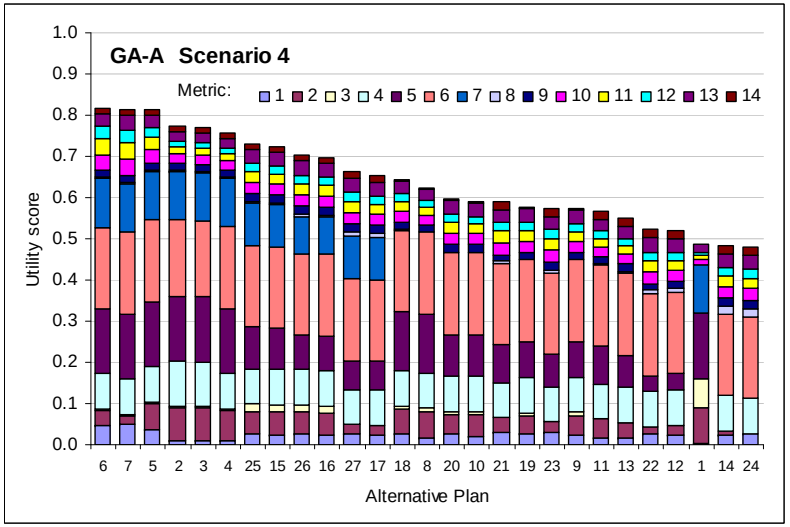


Example of LACPR Plan Rankings









Comparing Rankings Among Preference Patterns– PU 3b

Comparative MCDA Rankings Planning Unit 3b				
Plan Rank	Weight-1A	Weight-1B	Weight-1C	Weight-1D
1	RL-100-1	RL-100-1	RL-100-1	RL-100-1
2	RL-400-1	C-RL-100-1	RL-400-1	RL-400-1
3	C-RL-100-1	RL-400-1	C-G-100-1	F-1000-1
4	NS-1000	NS-1000	C-F-100-1	C-F-100-1
5	NS-400	NS-400	G-100-1	C-F-400-1
6	C-F-100-1	C-RL-400-1	F-100-1	F-100-1
7	F-100-1	C-F-100-1	F-1000-1	C-G-100-1
8	C-RL-400-1	F-100-1	C-RL-100-1	F-400-1
9	NS-100	NS-100	NS-1000	G-100-1
10	C-F-400-1	R1	NS-400	C-RL-400-1

Proposed Path Forward

- Seek improvements to objectives hierarchy and metric set

- Hold second and final set of stakeholder weight elicitation meetings
  - Seeking additional stakeholders
  - State-wide perspective
  - Read-aheads for metrics set and their descriptions
  - Swing-weighting method
  - Develop and deploy user-friendly interface to obtain stakeholder weights
  - Obtain more data on each stakeholder to inform preference patterns

Proposed Path Forward

- Develop and apply approach for identifying the combination of plans that maximizes utility for the state as a whole

- Develop supplemental information on cost-effectiveness and incremental cost analysis to identify “best buys”
  - Analysis will consider life cycle project costs and 2 risk reduction benefits, treated separately
    - Property: monetary damages avoided
    - Health and safety: residential population protected from inundation

- Organize a deliberation workshop for USACE decision-makers
  - Consider stakeholder preference patterns
  - Consider CE/ICA
  - USACE chooses a set of weights representing Agency interests
  - MCDA performed in real-time
  - Rank and select plans

DISCUSSION


Louisiana Coastal Protection
and Restoration
(LACPR)
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