



**US Army  
Corps of Engineers**

Ministerie van Verkeer en Waterstaat



**Rijkswaterstaat**

**US-Dutch Technical Exchange  
Louisiana Coastal Protection and Restoration  
Project (LACPR)**

**10-11 October 2006  
The Hague, the Netherlands**

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## ***SUMMARY***

### **Background**

The US Army Corps of Engineers (USACE) and the Dutch Rijkswaterstaat (RWS) signed a Memorandum of Agreement (MOA) in May 2004 to collaborate on a range of technical and policy related areas that are proving to be mutually beneficial for the two organizations. A wide range of topic areas focused on water resources planning and management were identified in the agreement. In May 2005, a high-level contingent from RWS visited New Orleans and coastal Louisiana to gain insight on a delta region that in many ways is analogous to their own. The aftermath of Hurricanes Rita and Katrina have given particular credence to this partnership, as both parties seize the opportunity that disasters of this magnitude provide to learn from one another on matters related to coastal zone protection and management.

### **October Workshop**

This report highlights the results of the second of a planned series of workshops related to delta protection and management, which was held in The Netherlands on 10-11 October 2006.\* There were two separate sessions covered during the Workshop:

#### Risk-Informed Decision-Making.

This session built forth on discussions held during the first workshop stemming directly from the Louisiana Coastal Protection and Restoration Program (LACPR). The following four subjects were discussed:

1. the current status of a Risk-Informed Planning (RIP),
2. adaptive management in the RIP process,
3. the LACPR fifth objective and characteristics of a desirable plan in RIP, and
4. the possibility of a "shadow" (independent) delta plan for Metropolitan New Orleans and coastal Louisiana.

#### Design-Build Contracting Measures.

The Dutch experience with contracting the Maeslandt Storm Surge Barrier and the Dutch High Speed Line (HSL) were presented and discussed.

The conclusions of these two sessions are detailed out in this report.

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\* The 1st Technical Workshop was held in The Hague on 10-12 July, 2006, the results of which are available upon request.

### **Third Technical Workshop**

The next workshop is scheduled to convene in New Orleans (US) on 14-16 March, 2007.

The tentative agenda is:

- Review the general status of LACPR
- Dutch Independent ("Shadow") Delta Plan
- Evacuation/economical loss/loss of lives
- Technical aspect of breaches/ failure mechanisms – robust design
- Roles and responsibilities of RWS, waterboards, policy/execution/inspection (O&M)
- Requirements for contractors

Any feedback on how to improve these exchanges is encouraged.

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RWS MOA Program Manager

## ***PROGRAM***

### **Tuesday October 10<sup>th</sup> 2006**

- Transport to Maeslandt Storm Surge Barrier
- Opening, welcome and introductions (Jean-Marie Stam)
- Maeslandt Barrier tour
- Parallel sessions

#### **Innovative Design Competition and Design-Build Contracting**

LACPR plans for large-scale contracting; problem definition (USACE)  
Contracting of the Maeslandt Barrier and Lessons Learned (Bijkerk)  
Open discussion (All)

#### **Risk-Informed Decision Framework**

Theme: Risk frameworks

Presentations: 1) Brief presentation of USACE risk framework (Russo)  
2) Brief presentation of RWS Risk Framework (Timmer /Jonkman)

Background Documents: USACE and RWS risk frameworks

- Wrap up & dinner in The Hague

### **Wednesday October 11<sup>th</sup> 2006**

#### **Innovative Design Competition and Design-Build Contracting**

Location: High Speed Line (HSL)

- Short tour HSL (for background and context)
- Presentations by Theo Podt, John Boss and Fred Beijerling

#### **Risk-Informed Decision Framework (Delta Planning)**

Location: The Hague

- Perspectives on a Desirable Dutch Delta Plan (Russo)
- Dutch Perspectives on a Delta Plan for SE Louisiana (Vrijling: TU Delft)
- New Orleans: IHNC flood gates conceptual study (Dircke: Arcadis)

Focus: Adaptive Management and Social, Cultural Aspects

#### **Wrap-Up**

- Conclusions Innovative Design Competition & Design-Build Contracting
- Conclusions Risk-Informed Decision Framework
- Operations and Maintenance
- Evacuation and Planning
- Technical Aspects of Dike Breaches

## *Innovative Design Competition and Design-Build Contracting Group*

### **1) Observations at the Maeslandt Barrier**

On operations and maintenance the following points were noted:

- The Netherlands has a system of 53 dike rings, which is similar to the levee protection systems in the New Orleans area. These dike rings are called the primary flood defenses. The primary flood defenses bordering the sea and the main rivers (with the exception of some major storm surge barriers) fall under the responsibility of the Water Boards.
- Flood-fights, operation and maintenance are performed by the water boards. The flood defense manager (RWS or the water boards) conduct a 5-year safety assessment, which would be similar to our periodic inspection. Rijkswaterstaat publishes the hydraulic boundary conditions and the Regulations for Safety Assessment with which to check these dykes. The assessment is required by law. The inspection includes surveys, borings (taken every 100m) and soil stability (strengths) and is submitted to the RWS. RWS collects the results of the inspection and the Minister submits it to the Upper and Lower houses of Parliament. RWS is not involved with O&M; this is the task of the Water Boards. They also provide the budget for O&M.
- Some water boards have more funding than others. There is movement that the government is trying to merge the water boards. Some water boards have big staffs (i.e. few hundred employees).
- If improvements have to be made to flood protection structures, the preparation and execution is done under the responsibility of the Water Boards. The budget for improvements is provided by RWS.
- Trees in dikes/levees are an issue in the Netherlands as they are in New Orleans. the Netherlands relies on water boards to remove trees that pose a threat to flood protection structures.
- Water boards have their own inspectors. The water boards have responsibilities for pumps, roads, water supply lines, sewage, etc.
- Armoring is not standard but is used in some cases on the flood-side of levees. Clay has to be brought in to construct levees.
- Water board O&M is performed by contractors. The water boards have no hired labor.
- Local counties are responsible for grass cutting. Sheep are allowed on levees but cows are not due to rutting of levees. Laws are passed for the local counties to adhere to.
- The Dutch are much more proactive in periodically analyzing the system (constant IPET study) to determine if improvements are necessary - i.e. do levees need to be raised? Do barriers need to be constructed?

### General Notes on Contracting

- A major difference between the US and the Netherlands is a maintenance requirement in the original contract. For instance, if we issue a design-build contract, the contractor's obligation ends after the project is constructed. The Dutch include design-build-and maintenance as part of their contract. The contractor may

be required to provide maintenance for 25 years (i.e. High Speed Line). There is more emphasis on O&M in Dutch contracts than in US contracts.

- The Dutch do not concern themselves with small business requirements.
- Hurricane Katrina helped bolster the Dutch commitment to flood protection.
- The RWS is the single entity responsible for flood protection measures.
- Prior to 1953, only dikes were in place in the Netherlands. There were no primary barriers or secondary forms of protection.
- Unlike the US, dedicated dredging to pump material on the beach is a never-ending mission for the Dutch. Their dredging does not have to be tied to navigation. They define the coastline and use dedicated dredging as a means to maintain the coastline.
- There are no floodwalls in the Netherlands, only earthen dikes.
- To demonstrate risk, it was suggested that the risk of flood failure be compared to events that are easier understood by the public. It is important to know the risk of the "do-nothing" option.
- To sell long-term goals, it may be necessary to emphasize short-term benefits.

## 2) Observations of the High Speed Line

The contracting of the Dutch High Speed Line (HSL) was discussed during the second day. The following points were made:

- The pressing issue is Contract and Building. The primary focus was on risk and one important decision tool is learn-as-you-go. One lesson was how the invitation to tender was formulated. Formulations were on designing a delivery system from A to B, so you get a more creative process instead of giving a tight and detailed outline for design: work with minimum demands.
- The HSL project is financed via a public-private partnership. After the whole project is completed the partnership is paid, with the project divided and controlled in parts. As needed, penalties are levied during the project process
- During this process several quality reports are made by special measurements. In the Netherlands, the constructor demonstrates the contractor on a regular basis. This is different from the situation in the US, where the constructor normally demonstrates the contractor at the end of the project. Gross Costs are divided: 85% for the contracts and 15% for the state. This system appears to be efficient and effective.
- The timeframe for operating the HSL is 20 years, which is a much longer horizon than those used in the US. If the risk is a matter of construction, the builder has to deal with the constructor. If the risk is a matter of financial risk, the builder has to deal with the owner.
- In the US, there are several social-economic demands to take into account. This can be viewed as a disadvantage compared to the situation in the Netherlands. For instance, in the US the total workflow has to be divided among several ethnic subcontractors.
- For the design of the High Speed Line, the Dutch Government held a design competition. After the chosen deadline, a special committee of the government selected several designers and invited them to make a detailed design within 30 days. This is very different in the US where the contract proceedings tend to be close-hold competitions. It was pointed out that there are many similarities between the

Netherlands and the US. As always, sound communication is the key for risk management.

## ***Risk-Informed Decision Making Group***

### **1) Background.**

Members of the US–Dutch Risk Workshop Group met on 10 October 06 to advance the Risk-Informed Planning (RIP) process development, following several different collaboration events since the initial meeting on risk assessment in July 06. Much progress in process development has been made since this point, with remaining issues raised and discussed by the team based on presentations of RWS and USACE reports on the topic.

### **2) Planning Tradeoffs.**

Tradeoffs are expected to occur during project planning, where one or more desirable characteristics of plans may be given up to receive other benefits that given the whole, are more desirable. Conflicting tradeoffs may be identified, where decisions have to be made between values that drastically change how plans are developed, analyzed, and eventually taken in to serious consideration for action, at the detriment of one value or others. Choices may not be easy in this case among those involved in the process when major, deeply conflicting components of plans suggest mutual exclusivity in the formulation.

For coastal Louisiana, one such case is the tradeoff of supporting navigation activities in the ways they are currently handled, especially on the Mississippi River between Baton Rouge and the Gulf of Mexico. Navigation in the region, and beyond on the national scene and globally, is considered a top economic priority. However, the way these activities occur, within current legislative, policy, and regulation guidelines, currently forego many coastal restoration options. Many of these restoration options would occur on large scales that, due to severe coastal land loss in the region, are considered vital to the long-term survival of southeast Louisiana against tropical cyclone surge and wave inundation.

The topic of tradeoffs was discussed in the navigation-versus-coastal restoration context, examining the issue whether each of these activities are mutually exclusive, dependent, or combinable for co-existing in development of measures and alternatives pursuant to LACPR project directives. It was suggested that when such tradeoffs exist, there should be an exploration of ways to strategically separate basic functions in plan formulation for avoiding having to make difficult, controversial decisions, which often result in no decision at all for overall positive change.

Examples of planning and execution in separation of these functions were offered by the group. Projects where this concept has been implemented include the Western Scheldt Estuary – Port of Antwerp, Belgium; the Siene River – Port of Le Havre, France; and in Korea. The Louisiana Department of Natural Resources (LADNR) recently conducted a scale model study to examine the possibilities of modifying the lower

Mississippi River to have a dedicated navigation channel apart from the delta, thus allowing for the return of natural riverine processes to occur. Based on early technical findings, the potential for Mississippi River modifications might be possible that allow navigation and coastal restoration on large scales to co-exist.

The challenge is identifying how to approach navigation interests for gaining support of exploring these types of changes without causing concerns of shipping reliability on the regional, national, and global scene as it relates to Mississippi River waterborne commerce. Group discussions ensued in strategy development that would provide an opportunity to open a dialogue with navigation interests of the Mississippi River to such investigations. The effects of Hurricane Katrina have impacted many if not all political, social, and economic interests in the region, promulgating a re-prioritization of needs, and thus, the potential to re-open the idea that modification of the river may be necessary for long term survival of Southeast Louisiana and Metropolitan New Orleans against catastrophic storm threats.

A strategy for re-opening these discussions might begin with the establishment of planning policies that will give confidence to shippers that their economic interests will not be impacted by any studies to modify the river for coastal restoration. Moreover, in order to move opinions of navigation interests in favor of re-examining the problem, the policy should include investigations of navigation system improvements beyond existing conditions, simultaneously to analysis of coastal restoration alternatives. A “same or better” navigation policy was thus proposed.

The “same or better” navigation policy might include investigations that while separating navigation from the river for coastal restoration purposes, should also sustain and/or ease navigation access to the deep and shallow draft ports from Baton Rouge to the Gulf of Mexico, and/or other related choke points on the navigation network. In addition, and/or alternatively, examinations for coastal restoration might include bringing navigation infrastructure closer to the seaside, achieving equitable purpose.

### **3) Adaptive Management.**

The issue was raised that during scenario-based planning, the identification of relatively well performing plans no matter what actual future is realized suggests that the overall efficiency of the acted upon plan will be lower than for a plan established for the future condition actually occurring over time. This phenomenon is due to the need in such a plan for what might be perceived as over design in addressing multiple-scenario concerns. As the future occurs during plan implementation, these inefficiencies may become evident, and decisions may be necessary for plan modification – or adaptive management – to guide plans towards producing stronger cost efficiencies, as well as sustaining outputs envisioned during earlier phases of planning.

Without adaptive management actions, substantial investments during plan implementation could result in migration of plan outputs declining over time without full realization of such impacts – in the case of catastrophic storm inundation – in sudden and

very consequential ways some time during the project life. Where system recovery is an imperative, substantial costs may also be incurred. Performance of the existing hurricane protection system of Metropolitan New Orleans is a classic example having experienced this problem that many agree should not be repeated.

The group examined the case of the Dutch flood defense project. The overall goal – or policy – was to strengthen the shoreline against flooding catastrophe to people and developments. After a catastrophic flood event in 1953, work advanced by formulating a master plan agreed upon in concept, with features developed in detail during phases of planning, design, and construction. The Dutch began with planning, designing, and constructing reaches of flood defenses considered easiest to build first. Recognizing the complexity of the overall endeavor, they embarked upon a management, planning, and technical learning process, which supported achievement of ever-greater, subsequent challenges in flood defense planning, design, and construction of other reaches.

Key tenants of the Dutch approach that can be adopted in RIP for adaptive management include the following:

- a. From the very beginning, establish a goal at the national level of keeping agreed-upon safety standards by planning unit constant into the future, as the nature of consequences increases, as well as when greater understanding of flooding threats become apparent. This approach requires regular re-evaluation of safety standards required and safety conditions that actually exist, which forms the basis for identifying vulnerabilities, and thus, recommendations for specific flood defense improvements.
- b. Aspire to build workforce capabilities in development and application of innovative technologies, as well as organizational competency in planning and execution. As phases of work are completed, the next greater challenges should be addressed, and in each step, bolstering the confidence of decision makers in striving toward completion of a comprehensive safety-based system or risk reduction of low-lying lands vulnerable to flooding.
- c. Adopt a two-pronged implementation approach of: (1) building for achievement of short-term benefits during implementation of long term goals, to include arrival of an optimal design at some point in the future via adaptive management. This strategy aids in realization of results along the path of project planning and execution, which is imperative for long term political and societal support of the overall project; and (2) seeking “no-regret” measures for implementation, i.e., those measures working well in the short- to long-term no matter what conditions actually occur in the planning setting.
- d. When adaptive management is necessary, first begin with changing management practices of implemented civil works. Next, and to the extent necessary, consider and act upon modifying coastal, non-structural, structural components to satisfy needs. Lastly, consider partial to total system re-planning, where conditions of probabilities or consequences of risk have changed so dramatically that existing plans are deemed no longer relevant.

Another consideration discussed by the group when conducting planning in the beginning is portraying high-to-low ranges of cost implications associated with adaptive management activities that could occur in the future for several plausible scenario combinations besides the governing one, for consideration of decision makers when striving to gain sufficient confidence in acting upon a plan without having a sense there will be uncontrollable cost escalations into the future with plan implementation.

#### **4) Remaining Issues for Discussion.**

The team agreed to take up discussions of the Fifth LACPR objective and “characteristics of a desirable plan” on 11 OCT 06. There were several additional topics raised during the discussions of RIP process development on 10 OCT 06, which resulted in the following as issues that should be addressed through continued dialogue:

a. Consider the Dutch methodology for calculating loss of life, based on experiences of the 1953 flood in The Netherlands.

b. Consider the implications that the higher the flood protection provided to leveed areas, the higher the risk to populations that remain in flood-prone areas due to having a sense of confidence of not flooding, and thus, who become vulnerable to loss-of-life if and when a flood event would occur for any reason.

c. Consider the economic, environmental, and social risks associated with Hazardous, Toxic, and Radioactive Waste (HTRW) contamination in evaluating no-action and alternative plans, especially those that have occurred in the past and will likely to continue occurring, due to coastal land loss, as well as during storm-related catastrophes, both cases of which have been largely overlooked up to this point.

d. Consider incorporating into the Final Technical Report (FTR) recommendations that RIP application continue as a process governing future planning, design, construction, operations, and maintenance of the system.

e. Consider recommending in the FTR that the Federal Government periodically re-assess and establish safety standards system-wide by planning unit commensurate to changes in consequences in the future, with a view towards ensuring the integrated benefits of coastal protection and restoration envisioned during planning is retained throughout the project life.

f. Consider explaining in sufficient detail and simplicity the uncertainties in plan development and performance, for the information of decision makers and the public in making appropriate responses.

g. Consider including phase-ability and constructability as characteristics of a desirable plan, or somewhere else in the planning process to inform decision makers in identifying plans for action.

h. When communicating existing risks, as well as reduced and residual risks of alternative plans, consider comparing those to other types of risks we face in society, such as that of terrorism, war, diseases, etc., which will bolster the argument that flood damage reduction integrated with coastal restoration is a relatively sound investment with the limited Federal, State, and local budgets.

i. Strive for conducting true interactive planning in RIP application with decision makers and the public, which could have the strongest chance of arriving at consensus-based risk tolerance levels that support plan implementation.

j. Consider recommending that provisions in authorization and funding of plans for implementation include pilot projects during adaptive management, especially where they would be high risk – high reward, and there is considerable knowledge that can be gained in the process towards meaningful planning, design, and construction innovations.

k. Consider delineating where the breakpoints in wind and water damages occur in planning towards implementation, such that plans make sense on what potential consequences are avoided from flooding versus what could be lost via wind damage for those plans, making the former marginally to significantly irrelevant in high wind events.

## **5) Dutch Scenario for Coastal Louisiana**

### **Background**

During this and the previous workshop, the idea of developing a Dutch conceptual plan for flood protection in the Louisiana coastal area was discussed. An independent Dutch view would be interesting for LACPR, as it would be an independent study, carried out by a party with a substantial experience and not restricted by the legal or institutional framework of the US. The resulting New Orleans Delta Plan would be devised to complement the Master Plan of the State of Louisiana. This plan would take into account the relevant information of the total project, with a broad, regional view taken into consideration. The US timetable will determine the scope and detail of the Dutch Delta Plan, which must be finished by spring 2007.

### **Aim:**

To develop a 'Delta plan' for SE Louisiana using the Dutch experience.

### **Parties Involved:**

Delta Institute partners (Rijkswaterstaat, Geodelft, WL|Delft Hydraulics), academia, private sector, Netherlands Water Partnership

### **Focus Area:**

Metropolitan New Orleans Area: Planning Unit 1 in existing state and LACPR plans. Interactions with neighboring areas, including wetland restoration, should be considered.

**Period:** mid-February through mid-April

**Level of detail:**

To be determined during plan development. At least give insight in main features in proposed solution(s).

**Cost estimates:**

Include (rough) cost estimates for the proposed plan. Relate the costs estimates to the existing legal situation:

- Give a cost estimate for the current legal situations (US market)
- Give a cost estimate without current legal situation (global market)

**Information:**

Information (GIS, maps, etc.) will be supplied by LACPR. Much information is already available on the web. Existing information (past studies) could be used as a starting point. The state master plan includes a comprehensive overview of past information (additional information on non –structural approaches might be useful).

**Status of the Dutch Delta plan:**

Public and transparent (that the Dutch are working on the plan). Procedures for making public of interim and final results will be determined.

**Points to take into account:**

- Develop innovative solutions using Dutch experiences and expertise (out-of-the-box thinking is encouraged). Existing information from the risk-informed decision framework, such as the proposed metrics could be used for plan development. Also, the principles of the state master plan should be considered in this plan formulation. However, the plan should not be constrained by this information.
- Try to integrate interim and long-term solutions
- Include recommendations on the organizational structure, planning, management and maintenance
- Credibility and 'implementability' are very important. Are proposed solutions acceptable to communities in SE Louisiana? Benefits of the proposals will have to be highlighted. Information on public participation is available and can be used.
- To cover the above point some interaction with state and USACE will be necessary to have feedback on credibility and execution of the proposed plans.
- Consider structural, non-structural measures and coastal restoration.

**Assumptions:**

- MRGO (Mississippi River Gulf Outlet) will be a shallow draft canal
- Assumptions with respect to rebuilding:
  - New Orleans will be rebuilt – Dutch plan could include recommendations on (different) levels of protection for different parts of New Orleans

For other areas, e.g. Lower two-third part of Plaquemines, give recommendations related to level of protection and feasibility and benefits of rebuilding.

## ***Attachment 1 Participants***

### **Participants USA**

#### **Innovative Design Competition & Design-Build Contracting Tentative**

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### **Risk-Informed Decision Framework. Location The Hague**

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## ***Attachment 2 Organizations***

### **The Netherlands**

#### Direcorate-General Rijkswaterstaat (RWS)

- Civil Engineering Department (BD)
- Institute for Road and Hydraulic Engineering (DWW)
- High Speed Line (HSL)

#### Laboratories

- National Institute for Geo-Engineering (Geo-Delft)
- WL Delft Hydraulics
- Delft University of Technology (TU-Delft)

#### Sector

- Arcadis
- HKV
- DGW

### **United States**

#### US Army Corps of Engineers (USACE)

- New Orleans District

#### State of Louisiana

### *Attachment 3*

## *Agenda Items Risk Informed Planning*

### **1. Review of current status of RIP process development.**

a. Issue. USACE identified the need in the LACPR Preliminary Technical Report for developing a Risk-Informed Decision Framework (RIDF), built upon principles of the Planning Principles and Guidelines (P&G), to be established in support plan development on the LACPR Project.

b. Directive. The LACPR Project Delivery Team (PDT) was directed by higher authority early in calendar year 2006 to engage the RWS in a technical exchange under a USACE-RWS Memorandum of Understanding (MOU) to elicit their experiences and advice on planning, designing, building, operating, and maintaining large, complex, and controversial water resources projects expected under LACPR. The topic of risk assessment was decided among others for discussion in LACPR project process development.

c. Status. Initial concepts were established in the first exchange event held during 10-12 JUL 06 in The Hague, The Netherlands, and documented in a report developed by the RWS. This report was presented in draft form for comment at a 31 JUL-2 AUG 06 LACPR Risk Workshop, held in New Orleans, LA. Using RWS report contents and other sources, the LACPR PDT crafted and provided the Dutch with the LACPR Draft Interim Report for review and comment, advancing process development. The RWS made comments on that report, which were incorporated by the PDT. The Final Interim Report will be submitted to higher authority by the PDT on 6 OCT 06 for review and approval. There is recognition that specific elements of the process need refinement and improved definition. This work is expected to occur with the next stage of work, which will occur via advancement of a “proof-of-concept” during the month of OCT 06.

d. Action Plan. Follow-up is planned for presenting for discussion with RWS the completed Final Interim Report in a trip scheduled for 10-11 OCT 06 in The Hague, The Netherlands. Feedback will be solicited and used as the process is refined and improved for conducting and presenting results of the RIP proof-of-concept.

e. Deliverable. The proof-of-concept report will be completed and delivered to higher authority in NOV 06, which will incorporate the findings made via the upcoming RWS exchange

### **2. Adaptive management in RIP process.**

a. Issue. On 19 JUL 06, comment was made during a joint meeting of the Coastal Engineering Research Board and Environmental Advisory Board that adaptive management be a part of LACPR project development and implementation. On 28 SEP 06, based on the PDT’s presentation to the Federal Principles Group (FPG) of the RIP

process as currently developed, there was comment that the process should include how adaptive management will be addressed in process application.

b. Directive. MG Riley directed the PDT during the FPG meeting to address how adaptive management will be implemented in RIP development and application.

c. Status. Whereas: (1) with the current state of limited information and uncertainties about field conditions now and into the future, (2) limited understanding of governing system science and physics, (3) the need for rapid RIP process development, (4) the need for rapid LACPR project planning and project implementation to reduce risks to people, economy, and environment; it is resolved by the team and its governance there is recognition project features planned and implemented will require modification to ensure performance as intended into the future. The current state of the RIP process does not explicitly address how adaptive management will be implemented in project planning and execution. The process also does not quantify how the use of adaptive management will affect project performance, costs, impacts, and benefits during project implementation, and therefore, does not have a mechanism to fully disclose and inform decision makers of the true overall project performance, costs, impacts, and benefits that would be had with use of adaptive management.

d. Action Plan. The PDT will engage the RWS to explore how RIP can address the following needs in project development and implementation as it pertains to adaptive management: (1) project planning horizon for evaluation purposes versus project life performance expectations during implementation; (2) project performance monitoring needs to inform periodic RIP process re-evaluations; (3) use of RIP in periodic project performance assessment against policy-informed objectives and metrics; (4) authority and funding mechanisms for modification of project features and practices for maintenance of expectations (i.e., built into initial authority and funding versus the concept of post authorization change); and (5) planning and execution of project feature adaptations required to maintain intended project outputs.

e. Deliverable. The PDT will incorporate adaptive management findings from the upcoming RWS exchange into RIP process refinements. It is expected that the RIP process will undergo incremental refinements as it is applied and as the PDT learns more on its use, through interaction with the public, technical team members, and decision makers.

### **3. Improvement of LACPR Fifth Objective.**

a. Issue. During the FPG presentation of the RIP process, there was discussion that the Fifth LACPR Objective needs improvement. MG Riley indicted that there is a deficiency in understanding and definition of the relationship of culture, heritage, and tradition contained in the Fifth LACPR Objective.

b. Directive. MG Riley charged the PDT to identify how peoples of coastal Louisiana wetlands that are tied to, working in, and harvesting resources there from, must reside

locally in this setting to have measurable regional and national economic outputs that cannot be sustained anywhere else in any other way.

c. Status. The Louisiana Coastal Protection and Restoration Authority (CPRA) is exploring this topic with UNO academics at this time. The PDT has engaged IWR to explore the issue. Currently, this topic is covered in Other Social Effects (OSE) of the four P&G accounts. The topic is traditionally covered during studies in a qualitative manner, and considered as factors for consideration behind driving net benefits analysis of the National Economic Development (NED) P&G account. In a RIP workshop held during 18-19 SEP 06 at IWR, there was recognition that there are needs for improvement of this OSE consideration in water resources planning for use as needed quantitatively on the LACPR project. The Dutch and other European Union nations recognize that economies and associated jobs development, sustainability, and growth, are tied to the state of cohesion at the local, regional, national and international levels. There are specific regions in Europe that suffer from lack of this cohesion (e.g., West Netherlands) and suffer from a lack of jobs and therefore less than desired prosperity in economy. Indeed, The Netherlands, nor many other European nations with limited land resources, can afford to not address such problems. Rather than abandon these locations and conditions for those more efficient to conduct business, Europeans are seeking ways to increase prosperity in these regions through support of jobs.

d. Action Plan. The PDT will discuss this issue with RWS, and within this scope, examine the European Union Cohesion Policy (EUCP) 2007-2013, for adaptation in concept to advancing development of the LACPR Fifth Objective. The EUCP informs three main objectives: Convergence, which will stimulate growth and employment in the less-developed regions; Regional Competitiveness & Employment for the rest of the EU; and, Territorial Cooperation to encourage cooperation between regions in different Member States. While this policy is not exactly the same intent as what is required for LACPR needs, it is similar and constitutes advancement on concepts the LACPR and USACE in general is challenged with, having potential that it may be in some form transferable for PDT modification and use.

e. Deliverable. The PDT will document the findings of the discussions on laying out a supportable Fifth LACPR Objective.

#### **4. Refinement of “Characteristics of a Desirable Plan” in RIP.**

a. Issue. During the FPG presentation on RIP process development, Mr. George Dunlop, Deputy Assistant Secretary of the Army (Policy and Legislation), Office of the Assistant Secretary of the Army for Civil Works (OASA CW), stated that a rating system for this phase of RIP should take into consideration the concepts and format of ratings that Consumer Reports use in rating products they evaluate. During the LACPR Steering Committee meeting held 28 SEP 06, there was comment by the CPRA that the dozen characteristics could be simplified to four that they suggested.

- b. Directive. MG Riley directed the PDT to take the comments of OASA CW and CPRA into consideration for improving these characteristics.
  
- c. Status. There are currently 12 characteristics of a desirable plan with a rating system that might be used based on + / -, Yes/No, green / yellow / red, or something similar. There is no definition of the system beyond this point.
  
- d. Action Plan. The PDT will present this concept to the RWS in their upcoming exchange for feedback on an approach they may have used before or might otherwise recommend.
  
- e. Deliverable. The PDT will incorporate its findings into RIP improvement for use during proof-of-concept.