

Will Mandates from Federal Principles & Guidelines Tip the Balance to the Environment for Funding of Water Resource Projects?

Seeking Federal Support to Water Resources Projects

States and local agencies have traditionally turned to the Federal Government to help fund, study design and construct our nations major water resources projects. For the past 28 years, the federal governments four major water resource development agencies: the U.S. Army Corps of Engineers, the Bureau of Reclamation, the Natural Resources Conservation Service, and the Tennessee Valley Authority, have been required to determine if a project seeking federal assistance is, in fact, in our nations interest and therefore worthy of funding.



Currently the determination must be made that the proposed project meets specific “Federal Interest” criteria before Congress will authorize or appropriate money for it. The guidance used to determine “Federal Interest” is codified in a document known as the *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*.¹ This guidance document and the principles within it have a history dating back to the 1960’s.

The original Congressional mandate for “principles, standards and procedures for the evaluation of federal water and related land resources” is the Water Resources Planning Act of 1965. This act established standard criteria for economic evaluation of water resources projects. The required minimum framework for evaluation of project alternatives and their effect on the human environment were Public Safety (PS), National Economic Development (NED), Environmental Quality (EQ), Regional Economic Development (RED) and Other Social Effects (OSE). However, federal action could only occur if the project would advance the national planning objective. The federal selection criteria was a combined NED and beneficial EQ effects that outweighed the NED and adverse EQ effects.

The “Federal Interest” became the gold standard that the federal government continues to use to provide financial and technical assistance to a project. In 1983 President Ronald Reagan, signed into law the current framework for water resource project evaluation. The Principles and Guidelines or “P&G” continue to direct the format for evaluation of our nations federally funded water resources projects. The purpose of the P&G is to provide a consistent planning framework for the formulation and evaluation of project implementation studies.

Building on the 1965 Principles, the 1983 P&G allows for assessment of four accounts for the assessment of alternatives against the proposed project: NED, EQ, RED and OSE.

¹ http://www.usace.army.mil/CECW/Documents/pgr/pg_1983.pdf



However, the keynote of the P&G criteria is measured using a benefit cost analysis as a projects contribution to the NED. A positive NED means that a project will increase the net value of our nation's output of goods and services, and therefore worthy of federal funding assistance. Section VII of the P&G makes clear that "The NED is the only required account".

So, while the investigation, assessment and evaluation of environmental, social and regional effects has been acknowledged in the analysis for almost 50 years, the primary focus on economic factors fails to address current planning techniques as well as evolving understanding and importance of social, environmental and cultural issues.

Habitat values, environmental protection, resource sustainability and nonstructural measures for floodplain management have largely been excluded from meaningful consideration under the current P&G and its predecessors. As is often the case, changes to modernize our nations laws occur periodically to ensure that they keep pace with technology, recent scientific findings and social priorities. Such a change is currently ongoing with the P&G as a result of action by the U.S. Congress. Sweeping revisions are being proposed; however, details on the required guidelines for implementation have yet to be developed. A list of some motives necessitating revisions to the P&G is found below.²

NEED FOR CHANGE TO THE 1983 P&G

Source: A Review of the Proposed Revisions to the Federal Principles and Guidelines for Water Resources Planning Document
Committee on Improving Principles and Guidelines for Federal Water Resources Project Planning²

Many of today's key national water management issues lie largely outside the missions of the agencies for which the P&G was written. A partial list of prominent issues and challenges in today's national water planning context include:

- Integrating floodplain management, risk management, public safety, and ecosystem values;
- Aging water control infrastructure and port and inland navigation facilities in many areas;
- Accommodating diverse stakeholder preferences in operational decisions;
- Integrating social and cultural values into technical aspects of water project decision making;
- Rapid population growth and increasing water demands;
- Increasing demand for water resource projects with diminishing ability to fund, as evidenced by the backlog of authorized but unfunded projects;
- Reallocating water resources to new uses, including ecosystem restoration;
- Water quality, especially nonpoint source pollution;
- Extreme climate events and changing climate conditions;
- Fulfilling legal obligations to protect endangered species while simultaneously meeting demands of traditional water users.

² http://www.nap.edu/catalog.php?record_id=13071



The Coming Change

In 2007, Congress directed that the Secretary of the Army make changes to the P&G to reflect current national priorities, encourage economic development and protect the environment. This direction was provided as §2031, located deep within the massive 252-page long Water Resources Development Act of 2007 (PL 110-114)³. Congress mandated that revisions to the P&G be made to maximize sustainable economic development, avoid the unwise use of floodplains, and protect and restore natural ecosystems. Congress has directed that these National objectives be met by requiring that the revised P&G address the following six considerations:

- (A) The use of best available economic principles and analytical techniques, including techniques in risk and uncertainty analysis.
- (B) The assessment and incorporation of public safety in the formulation of alternatives and recommended plans.
- (C) Assessment methods that reflect the value of projects for low-income communities and projects that use nonstructural approaches to water resources development and management.
- (D) The assessment and evaluation of the interaction of a project with other water resources projects and programs within a region or watershed.
- (E) The use of contemporary water resources paradigms, including integrated water resources management and adaptive management.
- (F) Evaluation methods that ensure that water resources projects are justified by public benefits.

Interestingly, many of the above objectives seem to have already appeared in past legislation. Concepts such as harnessing accurate and high quality data, using expert knowledge, and taking an interdisciplinary approach, date back to at least 1965. Additionally, recommendations that planning should take place at the watershed level, include peer review, evaluate risk and uncertainty, and be conducted in a transparent manner to facilitate public participation in the process, are all ideas that have been included in previous incarnations of the P&G.

What Will Change Look Like?

In an effort to further modernize the new approach to water resources development, the Obama Administration is expected to expand the scope of the P&G to cover all Federal Agencies that undertake water resource projects, not just the current four agencies. The future procedures and policies of the P&G are therefore expected to apply to the Environmental Protection Agency (EPA), and the Departments of Commerce, Interior, Agriculture and Homeland Security.

³ http://www.usace.army.mil/CECW/PlanningCOP/Documents/library/hr1495_pl110-114.pdf



One fundamental concept that is proposed for change is the requirement that a project be expressed in terms of desired output. Since the requirement has, up to now, been for a project to increase NED, major water resource projects receiving federal support have been formulated to increase production, reduce costs, and increase economic values. The proposed new expression of project purpose and the basis of a projects purpose and objectives, may now fundamentally and dramatically change.

The first chapter of the P&G, put forward by the CEQ, establishes the following Standards to modernize the current approach to water resources development:

- **Achieving Co-Equal Goals:** A dramatic change to the P&G, where federal water resources planning and development should protect and restore the environment and improve the economic well-being of the nation for present and future generations. This change aims to maximize net national economic, environmental, and social benefits.
- **Considering Monetary and Non-Monetary Benefits:** Non-monetary benefits are only acknowledged in minor ways in the current P&G. This proposed change will place much greater emphasis on analysis and selection of project alternatives with the greatest overall net benefits to the nation, unlimited by traditional monetized factors. While it is not yet clear what analytical procedures will be used or the translators that will need to be developed to assess non-monetary benefits, this new standard represents another dramatic change from what has been a purely economic analysis to instead integrate the valuation of environmental assets.
- **Avoiding the Unwise Use of Floodplains:** The analysis of net benefits are called for in the recommendations for projects and evaluation of project alternatives related specifically to functions and values of floodplains. While previously given only minor consideration, the anticipated outcome of this new objective will be an expansion of the consideration of non-structural measures as alternatives to levees, dams and other hardscape measures.
- **Increasing Transparency and "Good Government" Results:** Transparency in government has long been regarded as a means of ensuring better service delivery and decision making. Additionally, the focus here is on the use of best science, and peer review, to ensure that projects undergo a rigorous study process that informs project authorizations and appropriations.

How Will Change Be Perceived?

Metaphors such as how foggy one's crystal ball is or how well one can read tea leaves come to mind in an attempt to forecast the likely effects of a revised P&G on major water resource projects. To try to understand these effects it helps to view the overall context, within which this change is occurring. The following may be seen as mileposts on the road to a new brand of federal support:



- On January 21, 2011, President Obama signed Executive Order 13563⁴ to “improve regulation and regulatory review”. He laid out general principles for regulation that include protection of public health, welfare, safety, and our environment, while promoting economic growth, innovation, competitiveness and job creation. It directs that our regulatory system take into account benefits and costs that are “both quantitative and qualitative”. A new federal balance point seems to be emerging that attempts to equalize the reliance of the economic analysis of old from what may be a singular dependence on the benefit cost analysis of NED with new approaches that “maximize net benefits including potential economic, environmental, public health and safety.”
- On September 12, 2008, in response to the WRDA 2007 directives, the Corps released a draft of a revised principles for public comment⁵. The responsibility for the lead role to revising the P&G was moved from the Secretary of the Army to the Council on Environmental Quality (CEQ), the same agency that has the authority for the creation and maintenance of the guidelines for the National Environmental Policy Act (NEPA). The CEQ is part of the Executive Office of the President, and “works to advance the presidents agenda”. The CEQ coordinates Federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives
- In December of 2009, the CEQ released its proposed revision of the P&G. That document is the “Proposed National Objectives, Principles and Standards for Water and Related Implementation Studies”. “It has received considerable critical review and attention including a review by the National Academy of Sciences.

So, if one were making crystal ball forecasts about the revised P&G, some guesses about its future impact on planning for our nations water resources projects that could be made may include the following:

1. The expectation that the new P&G will be signed as an executive order by President Obama in the summer of 2011. Two draft versions have been released to the public for review and comment. Details that specify if and how economic analysis, as measured by NED, may continue to dominate the analysis have yet to be revealed. The degree to which this revision of the P&G changes project alternative analysis and selection for federal funding inclusive of an accounting of the non-monetary benefits and costs of environmental, social and cultural effects is yet to be determined.
2. If preserved in its final version, one significant change could be the lengthening of the list of federal agencies that will need to adhere to and adopt the P&G and apply them to their funding, design and construction process. It s difficult to imagine how for instance, the EPA will modify its State Revolving Fund (SRF) programs for water and wastewater project funding. Could the EPA require

⁴ <http://www.gpo.gov/fdsys/pkg/FR-2011-01-21/pdf/2011-1385.pdf>

⁵ http://www.usace.army.mil/CECW/Documents/pgr/pg_draft.pdf

⁶ <http://www.whitehouse.gov/sites/default/files/microsites/091203-ceq-revised-principles-guidelines-water-resources.pdf>



- states to comply with the P&G as a part of their federal capitalization of state programs, or, would the EPA pass this obligation along to the states as a part of their Intended Use Planning? Will the NRCS modify its Watershed Protection and Flood Prevention Program? It seems likely that any change in the planning process by these agencies could slow the pace of their programs and increase administrative costs.
3. Key to the changes taking place with the P&G will likely be a lengthy process for development, comment, revision and adoption of the new Guidelines. Further, implementing procedures will need to be developed by each agency that is required to adhere to them. These implementing procedures will be specific to the mission of each agency and will take additional time to evolve, place into use, and provide time for agency staff to gain comfort and experience in their use.
 4. A much closer relationship between project justifications using the new P&G and environmental determinations using NEPA is likely considering that the effort to reshape the P&G is being directed by the CEQ. If this occurs, it could be expected that project approvals would take longer to obtain, would be more costly to complete and likely be more subject to legal challenge than are today's current NEPA documents. Likely, new NEPA case law would expand as it evolves to address the procedures applied to such joint-documentation. Considering that local sponsors share the responsibility for funding major water resources projects, it is conceivable that project implementation plans would now combine with both state and federal documentation, creating what may be very complex and lengthy documents.
 5. A return to place-based analysis is a potential likely outcome of the P&G revisions, such as was undertaken by the EPA in their development of the watershed approach to Clean Water Act regulation. Watersheds come in a variety of sizes, demarked by their hydrologic coding by the NRCS and the USGS. Therefore, additional funding and participation by these agencies may be required in the development and analysis of the regional effects of costs and benefits of a proposed project. It is not beyond the imagination to foresee differences resulting in the interpretation of the regional range of project impacts and the methods of describing the area of environmental, economic and social impacts. Watershed boundaries that work well in the evaluation of natural resources may complicate the economic assessment of the P&G when attempting to identify the benefits and costs of a range of project alternatives.
 6. There is likely to be much experimentation as the nation searches for new procedures and methods to establish a consistent economic framework that sufficiently values the environmental, cultural and social costs and benefits provided by a project and its alternatives. This is likely to be a time consuming process that may limit opportunities for new projects to gain Congressional support for authorization and funding. Determining a monetized value for traditionally non-monetized resources can be complex. Gaining agreement by the project stakeholders, state and federal agency participants, the public and peer review team members may increase the complexity of document review and provide avenues for increased critique.



The federal government has historically enacted legislation that acknowledges the goodness of achieving sustainable economic analysis. The principles for including analysis of alternatives and funding of projects according to their effect on environmental, social, regional and cultural costs and benefits, has similar deep roots in federal legislation. However, the current effort to modernize the federal Principles and Guidelines appears to be at a crossroad for the future of our nations major water resources projects. Whether or not it will bring us to a mandate for the inclusion of these effects, in addition to classical benefit cost analysis, is yet to be seen.

In summary, it is the hope of many of us that the agencies involved will provide the time and the opportunity for stakeholders in this process to submit meaningful comments to the guidelines by which they will implement the P&G. Given the complexity of the coming process, what appears on the horizon will require significant investments of time and effort to achieve future federal approval of major water resources projects. One begins to wonder what the alternatives to this process look like. Our next issue of the Path Forward will provide some background and ideas on the planning, designing and construction of similar projects using less traditional methods.