H.R. 765 Water Infrastructure Resiliency and Sustainability Act of 2013

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H.R.765: Water Infrastructure Resiliency and Sustainability Act of 2013

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Cover Art Source: CNN World

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Abbreviations

CWNS	Clean Water Needs Survey
EPA	United States Environmental Protection Agency
H.R.	House of Representatives
ODWGW	Office of Drinking Water and Ground Water
OTPS	Other Than Personnel Services
OW	Office of Water, EPA
RO	Regional Office(s)
WIRSA	Water Sustainability Resiliency and Sustainability Act

Executive Summary

Changing hydrologic conditions and a backlog in necessary capital investment across the United States are posing a great challenge to the country's water infrastructure. A root cause of this problem is that while low-cost, sustainable solutions exist, most water operators doubt their effectiveness and continue to use an outdated, expensive, hard-infrastructure intensive approach. Changing this mindset could lead to far greater sustainability in U.S. water infrastructure. It is necessary first to demonstrate to the industry that green solutions are effective and then show their corresponding mechanisms of action and methods of implementation. H.R. 765 will demonstrate the effectiveness of decentralized, adaptive, and proactive solutions in pre-emptively addressing changing hydrologic conditions and their impact on human livelihood. Through promotion of these successes, industry awareness will increase and subsequent investments in green solutions will gain traction as the industry mindset changes from grey to green.

The program supports impactful projects and is designed to be operationally lean. The United States Environmental Protection Agency (EPA) will create and execute this program; distributing work among staff at headquarters and ten regional offices. The EPA will be able to efficiently distribute funds to exceptional applicants at a low administrative cost by using existing government processes and personnel. A tiered system of performance management will ensure that H.R. 765 is on track to achieve its overarching goal of mindset change within the water infrastructure industry.

(Source: U.S. Water Alliance)

Chapter 1 - The Physical and Political Problems of Water Infrastructure

Hydrologic conditions, as defined by the quantity, quality or reliability of water resources, are affected by several aspects of climate change, notably changes in precipitation and rising sea levels. As temperatures rise, moisture content in the atmosphere increases. This causes an increase in total precipitation, but alters its distribution, causing wet places to become wetter and dry places to become dryer. The East Coast has experienced more frequent and intense storms while the Southwest and heartland states have endured multi-year droughts. Rising sea levels caused by the thermal expansion of water and melting ice sheets physically threaten coastal states and force saltwater into aquifers.

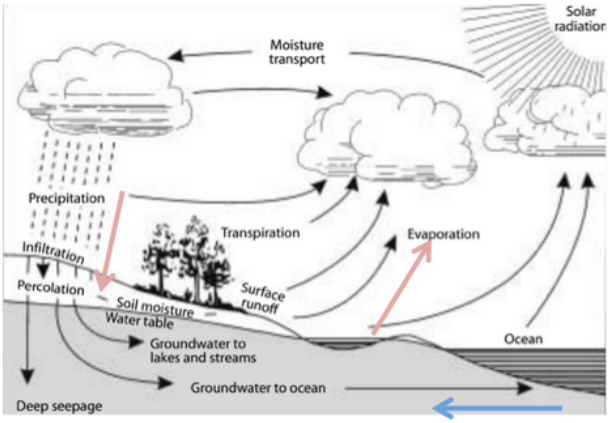


Figure 1.1 Changes to Hydrological Cycle
(Source: Australian Centre for International Agricultural Research with modifications by ODV)

These conditions impact daily life and have long-term economic and social ramifications. Due to severe water shortages over the last few years, California residents have been forced to ration water use for extended periods of time and farmers have left fields fallow. California produces more than half of the fruits and vegetables in the United States and changing hydrologic conditions put both farmers' livelihoods and the nation's food supply at risk. These urgent times bring to the forefront the necessity to improve water infrastructure, in California and across the country as a whole.

Owing to the potential scale of negative impacts, dramatic changes to the nation's water infrastructure are warranted. However, the industry's size and traditional focus on public health, reliance and compliance with regulations make it resistant to change. Current infrastructure systems are not well suited to run smoothly in the face of changing hydrological conditions and are too rigid to adapt quickly and effectively. Also, once implemented, the infrastructure stays in place for decades and serves such large populations that it can be daunting to tackle the issues that arise properly. However, ignoring these problems has presented more obstacles for the nation's water quality, quantity, and reliability. A change in approach is required.

In response to these increasingly challenging situations, Congresswoman Lois Capps authored H.R. 2738, the Water Infrastructure Resiliency and Sustainability Act (WIRSA), which she introduced to Congress in 2011. This act did not make it past the first committees. In 2013, Congresswoman Capps re-introduced the act to Congress in the form of H.R. 765, with the support of 23 Democratic co-sponsors and a number of water utilities and environmental organizations.

H.R. 765 Water Infrastructure Resiliency and Sustainability Act of 2013 aims to change water operators' approach to infrastructure development to increase the resiliency and sustainability of water infrastructure in the face of changing hydrologic conditions. This act authorizes the

formation of a $200 million grants program, administered by the United States Environmental Protection Agency (EPA), to finance water infrastructure projects in the U.S. over four years. It emphasizes innovative and holistic approaches to increasing water quantity, quality, and sustainability, with more decentralized, adaptive and proactive solutions.

Chapter 2 - Goals of the Program & Theory of Change

H.R. 765 outlines six physical objectives with an implicit theme of mindset change that is necessary to effectively improve the nation's infrastructure. The act seeks to improve a wide range of water infrastructure systems, including those that supply drinking and irrigation water; treat or manage industrial process water or municipal wastewater; or remove storm water. H.R. 765 will grant funds to water system operators to increase the resiliency and adaptability of their systems to tackle any ongoing or forecasted changes, such as seawater intrusion in drinking water or the threat of increased storm intensity. Grant recipients may utilize the funds at any stage of the planning, design, construction, implementation, operation, or maintenance of their project.

To ensure innovative projects are being selected and implemented, the projects must meet at least one of the following six goals: 1) Promote more efficient water use, water conservation, water reuse, or recycling; 2) Use decentralized, low-impact development technologies and nonstructural approaches, including practices that use, enhance, or mimic the natural hydrological cycle or protect natural flows; 3) Reduce storm water runoff or flooding by protecting or enhancing natural ecosystem functions; 4) Modify, upgrade, enhance, or replace existing water system infrastructure in response to changing hydrologic conditions; 5) Improve water quality or quantity for agricultural and municipal uses, including through salinity reduction; and 6) Provide multiple benefits, including to water supply enhancement or demand reduction, water quality protection or improvement, increased flood protection, and ecosystem protection or improvement.

In addition to these six goals, there is also an overarching goal of infrastructure metamorphosis through mindset change that the program hopes to achieve. Approaching water infrastructure with a modernized mindset will help improve the systems' reliability and the country's overall quality of life. H.R. 765 encapsulates solutions that are decentralized, innovative and proactive and help initiate this paradigm shift by assisting and encouraging water operators to try out modern water systems. These new systems will still provide the same quality of service that the nation has always relied upon, but will contribute to more reliable water quantity and quality and provide greater adaptability. The biggest benefit of these improved systems will be their flexibility to deal with sudden or prolonged storms or disasters. Indeed, this is the most important difference between traditional infrastructure and the more modern approach, in that traditional systems are too rigid to adapt quickly and effectively. Newer systems with updated technology, however, can be more nimble and mitigate the consequences of adverse effects and proactively ease stress on local systems.

The opportunity for change is visualized as a dynamic conceptual pyramid that builds upon each component (see Figure 2.1.) The essential foundation for this theory of change is the selection and implementation of enterprising projects. Effective projects that can address one or more of the

program's six goals will help lay the groundwork for more pioneering initiatives and achieve an overall fresh approach to infrastructure. The second building block is the physical infrastructure impacts of the projects. This will show the successful influence of the projects in improving water quality, quantity, and reliability. Increased overall industry awareness will incite more investment in decentralized solutions, reflective of greater industry desire to change the direction of infrastructure development. Measurement and monitoring will show the effectiveness of the new projects and demonstrate how it is possible to bring about change with a small amount of funds, displaying the significant positive impacts these projects can have around the country. This thoughtful and methodical program can be an agent of change that will chaperone the water industry into more modern infrastructure solutions and better prepare the nation against changing hydrological conditions.

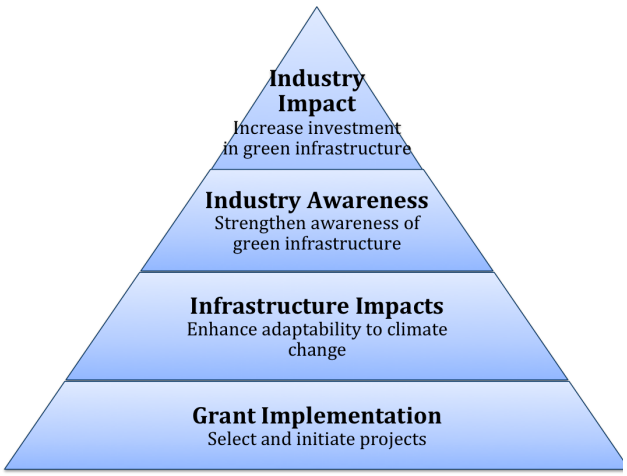


Figure 2.1: Theory of Change. Quality projects must first be implemented. As their physical successes become apparent, the projects will be publicized within the industry to eventually attract more funding. *(Source: ODV)*

Chapter 3 - H.R. 765 Program Design

H.R 765 is designed to be implemented over a four-year period, with annual appropriations of $50 million for grant funds and administrative costs. The water system operator must match all federal funds, such that this grant makes up no more than 50% of the total project budget.

The success of H.R. 765 will be based on the effective collection of grant applications from water system operators, and the appropriate selection of water infrastructure applications for funding. This will require a coordinated effort involving the EPA headquarters and the regional offices, and a robust grant application and selection process that ensures funds are distributed in a timely and justifiable manner. The overall program is designed to operate on an annual cycle, with collection and evaluation of grant applications by regional EPA offices during the first half of the year, and fund distribution by the EPA's national Office of Water after federal budget appropriations in the second half of the year (see Chapter 7.) Longer-term program design elements include a performance measurement system that serves to relay information from the EPA to Congress, water system operators, and the general public (see Chapter 4.) This chapter focuses on the design of the grant application and selection processes.

Principal Actors and Responsibilities

Within the EPA, the Office of Water (OW) oversees the delivery of national water programs, while the regional offices work with states, tribes, territories, and others to support and implement these programs.[1]

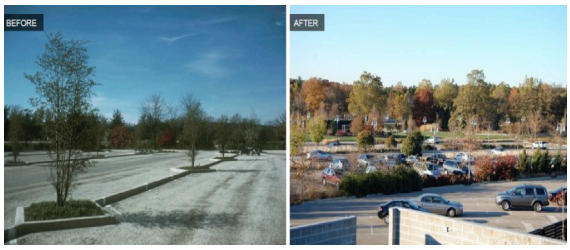
[1] US EPA, OW. "FY 2015 National Water Program Guidance." Policies & Guidance. (http://water.epa.gov/resource_performance/plannin

When a project has been approved, an Operations Agreement signed by the grant recipient and the regional office of the EPA defines responsibilities in greater detail. The following actors will be responsible for the implementation of the grant program:

- *EPA Office of Water, Office of Drinking Water and Groundwater (ODWGW):* Responsible for establishing the structure and rules of the grant program; balancing and finalizing approved projects, and overall grant management. The ODWGW will oversee the screening and scoring process by each regional office and balance projects geographically.
- *EPA Regional Offices:* Responsible for screening and scoring of proposals, project management, fund allocation, as well as providing technical support to recipients. Each regional office will ensure that projects are in compliance with other regulations within the EPA such as protection of endangered species, coordination with indigenous tribes, etc.
- *The Grant Recipient (Water Operator):* Responsible for project implementation and corresponding technical, environmental, and financial arrangements. The grant recipient will keep the EPA regional offices informed of technical and financial progress.

Grant Application Process

To be considered for a grant funded by H.R. 765, the water operator must demonstrate that the water system is currently under water stress or facing immediate threats of adverse impacts from changing hydrologic conditions. These problems must be demonstrated using current research and data from reliable sources. Applicants must also demonstrate the potential positive impacts of their water infrastructure project in the face of changing hydrologic conditions. Other application details include: a budget that estimates the amount of federal funds needed for the project; the general purpose of the funds (design, construction, operation and maintenance, etc.); and a schedule of the proposed work.



Permeable Parking Lots
The Morton Arboretum, Lisle, IL

Budget: $3.8 million

- Infiltrates and collects rainwater through a subsurface gravel bed, channels water through bioswales, and directs overflow a wetland area within the restored lake system.
- Eliminates need to seal, stripe and resurface, reducing costs by $25,100.
- Retains virtually 100% annual rainfall on the site.

(Source: Landscape Architecture Foundation)

Grant Selection Process

Grants will be awarded in a rigorous and quantitative manner, with the goal of implementing a wide variety of innovative water infrastructure solutions in water

g/FY-2015-National-Water-Program-Guidance.cfm), Apr. 2014. Web. Sept. 14, 2014.

stressed regions across the country. A quantitative ranking system will normalize the benefits of the diverse infrastructure solutions that the program supports, allowing each grant application to be compared equitably. This ranking system also ensures that priority is given to regions facing the most immediate threats from changing hydrologic conditions and that funds are distributed evenly throughout the country.

After all grant applications have been collected by the regional EPA offices, the applications will be subject to a three-stage selection process to meet various goals and requirements of the act: prioritization by water stress, quantitative comparison, and even distribution of funds. The first stage of the process will screen based on the level of water risk faced by the applicant's water system. Successful applications will then be scored according to criteria that measure innovation, economic and environmental benefit, and water stress. Finally, balancing criteria will be applied to ensure that no region of the country receives a disproportionate amount of funds.

Retrofit Neighborhoods
Elmer Avenue, Los Angeles, CA

Budget: $2.2 million (streets and residential lots that collect storm water over a 40 acre area)

- Reduces potable water use by 30% for homeowners with enhanced front yards and 10% for others, saving homeowners $120-$360 annually.
- Improves water quality by reducing concentrations of lead, copper and total suspended.
- Educated residents that rain falling on local homes can be captured and used to supply the community with water. Only 60% of survey respondents agreed with this statement in 2006 compared to 100% in 2011.

(Source: Landscape Architecture Foundation)

Water Stress Screening

As prioritized in the act, water systems facing high levels of water stress will be given special consideration. Water stress will be quantified by the expected change in water flows through the applicant's water system brought on by changing hydrologic conditions. Examples of these changes include, among other things, measures of increased storm surge in coastal cities, reduced precipitation, and higher wastewater discharge. These measures of stress will be normalized by the size of the population affected and economic impact, to allow for equal comparison of rural and urban water systems. A threshold for water stress will be set to allow a reasonable number of proposals to pass on to the scoring stage.

Applicant: *ABC Utilities Commission*								
	A. Innovation	Score	B. Economic Impact	Score	C. Environmental Impact	Score	D. Water Stress	Score
Metrics	Solution novelty		Number of positions generated		Environmental benefit*		Number of People affected	
	Projects that promote decentralization; demand-side management, and/or natural water systems		Value of water/energy saved		Increased resiliency		Geographical area affected	
			Total annual non-routine repair costs avoided				Expected frequency of (re-)occurrence of catastrophic conditions	
Sub-Total		Subtotal A		Subtotal B		Subtotal C		Subtotal D
Weight	40%		15%		25%		20%	
Score	(Subtotal A x 40%) + (Subtotal B x 15%) + (Subtotal C x 25%) + (Subtotal D x 20%) = Total Project Score							

Figure 3.1 Projects are scored on innovation, economic impact, environmental impact and water stress. A cumulative score is calculated from a weighted average. *(Source: ODV)*

Scoring Criteria

Projects that meet the screening criteria will be ranked quantitatively in four categories: innovation, environmental benefit, economic benefit, and water stress. (Figure 3.1) High scores in each category will result in successful applications. The innovation score will reward applicants who propose novel solutions to water infrastructure problems, have low environmental impact, are decentralized in nature, and promote natural flows of water. The environmental score will quantify the increased environmental health of the land served by the water system, and reward applicants who can show benefits to large areas. The economic score will quantify the financial return provided by the infrastructure solution, taking into account quantities of water or energy saved, and future construction or repair costs that are avoided by the proposed project. The water stress score will be carried over from the screening stage in order to maintain a priority for high-risk water systems. A cumulative score for the application will be calculated from a weighted average of the four category scores; innovation at 40%, environmental benefit at 25%, economic impact at 15% and water stress at 20%.

Grants Implementation	Number of projects selected and value
	Quantity and strength of selected projects
	Execution according to schedule and budget
Environmental Impact (Outcome vs baseline)	Water/energy saved
	Water quality improvement
	Water supply increase
	Population/Geographic areas covered
Industry Awareness	Number of media channels for promotion
	Number of mentions in industry media
	Site visits to marquee projects
Industry Impact	Increased amount of applicants
	Green infrastructure spending as a share of total spending
	Water infrastructure financial needs

Table 4.1 Four Tiers of Metrics within the Performance Management System *(Source: ODV)*

Regional Balancing

The scoring stage of the selection process will produce a ranked list of infrastructure projects and their expected financial costs, ordered from most to least beneficial. The final set of projects to be funded will be chosen by selecting the most beneficial projects from this list until one region reaches 10% of the total grant fund. Given the maximum allowable annual allocation of $50 million, this means that no region will receive more than $5 million in funding. This threshold allows for each of the ten EPA administrative regions to compete fairly for a share of H.R. 765 funds.

Chapter 4 - Program Performance Management

The ultimate goal of H.R. 765 is to change water operators' approach to infrastructure solutions. A performance management system is needed to evaluate metrics at each tier of the industry awareness process and provide necessary reporting and feedback. (Table 4.1)

Metrics

Grant Implementation: The program must ensure that projects meeting the goals of the act are selected and implemented successfully.

Environmental Impact: Upon the project's completion, reduced water stress and increased water sustainability should be measurable. Water operators will calculate the direct outcomes of these projects in terms of alleviated water stress in the region. These metrics inform the EPA of project success in physically improving water quality, quantity and reliability.

Industry Awareness: The EPA regional offices and headquarters will work together to publicize and promote successful water projects and increase industry awareness of H.R. 765 and its innovative solutions. This is a key step to increase awareness in the industry. Marquee project operators will conduct media campaigns once the projects are done and will be open to visits.

Industry Impact: Long-term industry impact will be measured by the financial needs of water infrastructure. Since this is an intensive task, the program will use data from the Clean Water Needs Survey (CWNS). This survey measures the financial needs of water systems to fulfill their requirements under the Clean Water Act, and encompasses a wide range of water issues, all of which can be impacted by projects supported by the H.R. 765 grant program. The CWNS is conducted every four years, with the most recent one in 2012.

Reporting and Feedback

There will be a cumulative reporting protocol from water operators to EPA regional offices and onwards to EPA HQ and Congress (see Table 4.2.)

Internal and external program

Reporting Organization	Focus	Data Collection Activities	Frequency
Grant Recipient	Illustrate the physical success of the projects	**Collect data on** Project construction progress Water stress reduced	Quarterly
Regional EPA	Provide insights on the program's impact on overall development of the region's water industry	**Compile data from** Grant recipients **Collect data on** Green infrastructure spending Overall funding gap	Annually
EPA HQ	Show the overall success of H.R. 765	**Compile and analyze data from** Regional EPA offices	Every 3 years

Table 4.2 Process of Data Collection and Reporting *(Source: ODV)*

evaluations will take place at every level of reporting. This will ensure that administrative processes associated with grant scoring and selection enhance project outcomes over the grant's lifetime.

After the first year, internal evaluation ensures that the administrative structure is effective and efficient. After the second year, implementation status will be tracked and successful cases will be shared with other regions. If necessary, revisions to project selection criteria will take place at this time. Lastly, Congress will be informed of overall implementation and corresponding industry impact, to show the program's effective use of funding.

Chapter 5 - Organizational, Contracting, and Staffing Plan

The OW currently oversees a $5 billion budget and has almost 1,400 staff members distributed between its headquarters in Washington D.C. and ten regional offices. The H.R. 765 grants program is expected to produce extra workload of approximately 1,028.5 person-days. Given the organization's current size and budget, this is only an incremental increase to current EPA operations. Therefore, no additional permanent personnel will be necessary to accommodate the program's implementation.

Estimated Workload

The estimated workload required to implement the H.R. 765 grants program is 143.5 person-days in the EPA headquarters, and 88.5 person-days in each regional office. Table 5.1 shows the estimated workload in the first year. During project implementation, the grant selection process will be the most time intensive task for the headquarters while the regional offices will spend more time on periodic monitoring. Once the grant system is established, the workload is expected to decrease in subsequent years. The overall implementation structure of the grants program is shown in Appendix 4 Figure 4. Detailed tasks and workload calculation are described in Appendix 4 Table 3.

Assumptions of workload estimate:

- Each regional office will receive

Wetland Restoration

Vernal Pool and Alkali Seasonal Wetland Complex Restoration, Bay Delta Conservation Project, CA

Budget: $1.7M

- Wetlands naturally buffer against floods, filter water and facilitate groundwater recharge and discharge - key aspects of maintaining water resource quality and quantity.
- Costs cover land acquisition, construction and planting, and weed management during the establishment period.

(Source: Landscape Architecture Foundation)

approximately 30 proposals, out of which four will pass the screening process (40 nationally.) The OW will confirm the evaluation process for the remaining 260 screened projects in order to avoid bias and inequality among the regions.

- Approximately 25 projects will be approved per year, on average 2.5 from each regional office. (This is based on an average project cost of $2 million)
- Each proposal is about 20 pages.

Comparison of Increased Workload to Current Organization Structure

Based on the two factors of headcount and budget, the EPA will be able to implement the grants program within the current organizational structure. The OW has a staff of 569 and about 100 water program officers within the drinking water section. Each regional office has 80-100 water program officers. Thus, current staff can handle the estimated increased workload.

Implementation Phase	EPA HQ (person-days)	Regional Office (person-days)
Phase 1 and 2: Program Launch	14	1
Phase 3: Evaluation and Selection Process	54	12.5
Phase 4: Implementation	25.5	67.5
Contingency	50	7.5
Total across the agency (10 regional offices)	143.5	885
Grand Total		1028.5

Table 5.1 Implementation Tasks and Person-days at EPA HQ and Regional Offices *(Source: ODV)*

Additionally, the OW spends $5 billion per year, which is more than half of the budget of the entire EPA, totaling $9 billion. This indicates that a substantial ratio of staff has already been allocated to the Office of Water, which has the greatest portion of manpower and thus greater flexibility to accommodate additional workload than other departments and sections. Given that the grant program's annual budget is $50 million, merely 1% of the existing budget of the OW, it is not justifiable to seek additional permanent staff, nor is it worth establishing a separate branch in the EPA.

While no new permanent staff will be needed, temporary administrative assistants might be necessary for clerical tasks such as compiling and sorting application forms, progress reports, and other documents.

Chapter 6 - Program Budget Overview

Budget Overview

The proposed operational budget for the first year of the program is $417,248.93. (See Table 6.1 and 6.2) This amounts to 0.8% of the $50 million annual grant allocation. The program design allows for a lean administrative budget, much less than the average 5% federal intramural cost and allows most of the funds to go towards grant recipients. A number of thoughtful considerations keep the administrative costs low, such as not requiring the hiring of additional permanent staff, while leaving room for the hiring of temporary staff. Assigning tasks and responsibilities to regional EPA offices also reduces travel costs.

Budget Breakdown

The administrative budget is divided into estimated expenses for the OW in Washington, D.C. and ten regional EPA offices. Offices at both levels will incur similar types of expenses throughout the program's life cycle: "Personnel Services" for compensation and benefits and "Other Than Personnel Services (OTPS)" expenses, for public relations, travel and general administration. After the first year, the

budget will be lower as the program will be established.

Personnel Services

"Personnel Services" include employee base salaries and employment benefits, which are set at 25% of the base salary. (Refer to 2014 General Schedule and Executive & Senior Level Employee Pay Tables.) [2] The grade level at which an individual enters a job depends on the specific position as well as the individual's qualifications. In practice, the exact amount will vary based on the grade level and geographical location. As detailed in Chapter 6, the estimated total workload is 1028.5 person-days between headquarters and regional offices. The percentage of workload is calculated based on a person work-year of 250 days. Based on EPA standards, the salary for any temporary contractor is estimated at $30 per hour.[3]

Regional Offices (88.5 person-days) x 10 regional offices		
Personnel Services		
Regional office admin (10%)	$	6,602.70
Operation staff (20%)	$	9,882.00
Contracting admin staff	$	2,880.00
Total Base Salaries	$	19,364.70
Fringe Benefits 25%	$	4,841.18
Total Personnel Servies	$	24,205.88
Other than Personnel Services		
Supplies (office expenses)	$	228.00
Total OTPS	$	228.00
Marketing and PR		
Supplies & Events Fees	$	5,000.00
Total Marketing & PR	$	5,000.00
Travel		
Airfare	$	750.00
Per Diem (hotel, meal, etc.)	$	750.00
Other	$	1,000.00
Total Travel	$	2,500.00
Budget Per Region	$	31,933.88
Total Regional Budget	$	319,338.75
Discretionary Fund		
Discretionary Fund	$	10,000.00
Total Budget	**$**	**417,248.93**

Table 6.1 Total Expenses for Ten Regional Offices. *(Source: ODV)*

EPA Headquarters (143.5 person-days)		
Personnel Services		
Deputy assistant administrator (0.5%)	$	6,037.45
Management and Operation staff (30%)	$	16,371.00
Resource management staff (30%)	$	16,371.00
Total Base Salary	$	33,345.75
Fringe Benefits 25%	$	8,336.44
Total Personnel Services	$	41,682.18
Other Than Personnel Services (OTPS)		
Supplies	$	228.00
Total OTPS	$	228.00
Marketing and PR		
Webinar	$	2,000.00
Advertisement (online, conferences, etc.)	$	5,000.00
Website	$	3,000.00
Total Marketing & PR	$	10,000.00
Travel		
Airfare	$	20,000.00
Per Diem	$	12,000.00
Other	$	4,000.00
Total Travel	$	36,000.00
		87,910.18

Table 6.2 Total Expenses for EPA Headquarters. *(Source: ODV)*

Other Than Personnel Services

OTPS includes marketing and public relations, travel, and office supply expenses. Supplies are based on the national average for a medium-sized office of $19 per month. Marketing and public relations expenses include website development, webinars, and online/offline advertising for publicity costs. The estimates are based on current market prices. Travel costs will incur during the selection process, when EPA representatives will evaluate 40 semi-finalist sites before the final selection. The site visit will be approximately 2-3 days with average round-

[2] U.S. Office of Personnel Management, "2014 General Schedule (GS) Locality Pay Tables." http://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/2014/general-schedule, (accessed Oct. 04, 2014)

[3] U.S. Environmental Protection Agency, "Contracting with EPA", www.epa.gov/home/contracting-epa.

trip airfare of $500 and per diem of $150 based on the U.S. General Services Administration. It should be noted that travel expenses vary between regions and states and additional expenses will be distributed upon request.

EPA regional offices will incur expenses during the selection and implementation phases of the program. The marketing and public relations budget includes information sessions, supplies and event costs that will be incurred before the selection process. For monitoring purposes, regional offices will send one person to each site within the region. It is estimated that nationally 25 projects will be selected; therefore 2.5 sites per region is used to calculate the total regional expense. Estimated airfare is lower than for headquarters because staff will be travelling locally.

Finally, a contingency fund of $10,000 is established for emergencies and unexpected expenses. These budget projections will enable the transformation of the abstract goals of H.R. 765 to concrete policy actions.

Chapter 7 - Master Calendar

The first year of the program is composed of four major phases: pre-launch, program launch, evaluation of grant applications received, and implementation of the program. Calculation of the timeline of events is based on the workload estimation made in the staffing plan. Tasks that will require action outside of the EPA's control are allotted extra turnaround time. Additionally, seasonal considerations including holiday and vacation delays within the EPA are taken into account. Major activities are given sufficient time for proper care and consideration (see Table 7.1.)

During the first two months, personnel from the regional EPA offices and headquarters will be assigned these tasks. Activities will be divided into two main categories: institutional development and communication and dissemination. Institutional development will consist of activities within the organization to develop and finalize program design and capacity building.

Initial communication and marketing of the program to interested parties will also be done during this period. Communications will target industry publications and

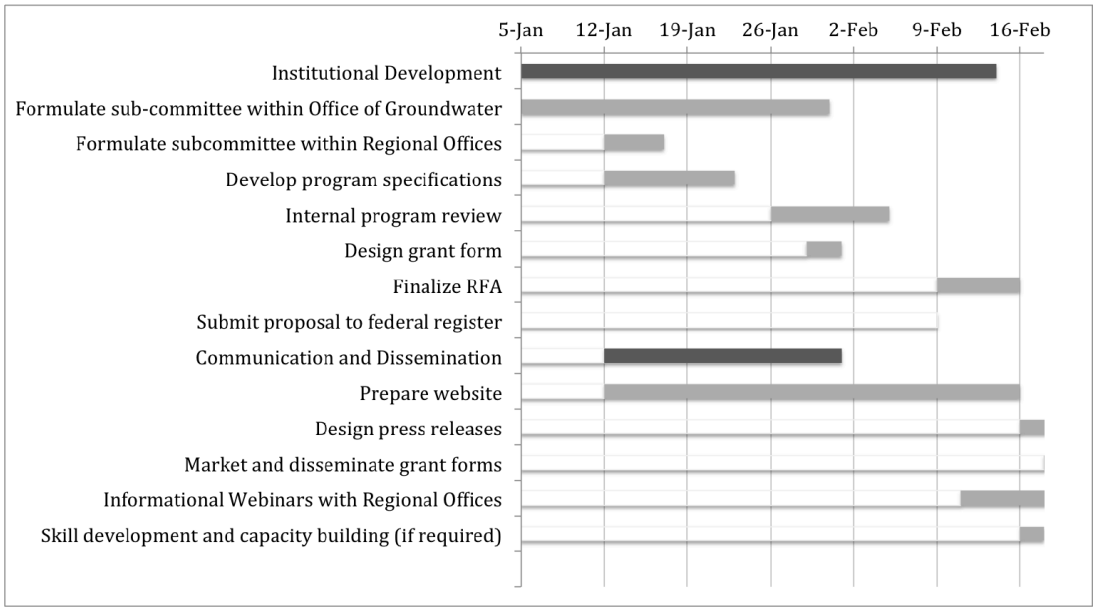


Table 7.1
Breakdown of timeline.
(Source: ODV)

conferences all over the United States. Each regional office will be responsible for reaching out to their respective water management contacts to educate them about the grant program. Water officers should also take this time to understand projects that have potential for making the greatest impact in their regions.

The evaluation process will be subdivided between the regional offices and EPA headquarters (see Chapter 3.) Once applications are received, regional offices will screen and score them. This is expected to take about a month, after which a recommendation report will be sent along with the scorecards to the EPA headquarters. Once the headquarters receives scorecards, the judgment analysis will be reviewed, scoring will be confirmed, and finally projects will be balanced for equitable geographic distribution. Award winners are to be finalized internally by September 30th.

The final phase of the first year process will take two months and consists of tasks related to notifying grant winners and finalizing contracts between grantees and the EPA.

Chapter 8 - Risks

The operationalization of the H.R. 765 grants program is subject to potential risks of timeline and execution. Risks are important to anticipate in order to be prepared for any eventualities.

There are a variety of issues that can cause delays in adherence to the calendar during the first year of implementation. Implementation delays within the EPA are possible if the number of applications received greatly surpasses the estimated number. This could result in a longer evaluation process at the screening and scoring stages. Additionally, an increased number of applications could potentially cause an organizational reshuffle, thus stalling execution. External delays outside the EPA's reach, such as obtaining approval from the White House for the final list of grantees, might take longer than anticipated as well.

In addition, executional risks can include not receiving enough applications. In this case, the program structure is designed to carry out the grants program regardless of the quantity of applications received. It would be wise to convey grants information to the regional offices as they are finalized so that preliminary communication with water operators can begin. There is the assumption that water operators are not commencing project planning specifically with this program in mind as any applications will be coming from ongoing projects, where funding is required for a phase or module and not necessarily the entire project. In addition, given the various problems facing the water industry, it is likely water operators are only waiting for funding to activate existing plans. In case the number of applications received is much lesser than anticipated, the program will run regardless. However, the amount of funds disseminated will be proportional to the project size. Remaining funds will be carried forward to the next program cycle.

Another area of concern could be the quality and types of applications received. This is an important risk to consider as quality of applicants directly affects the possible physical impacts. To ward off this risk, effectively marketing the program and its unique requirements will start much earlier than the official program launch. Regional offices and coordinators are encouraged to reach out to water system operators with potential new or ongoing water infrastructure projects, especially those with access to new technology.

The program design structure necessitates an equitable geographic

distribution of funds. While the balancing stage of the evaluation process is an important one to fend off potential controversies, this might give rise to other risks. In the case where applications are heavily skewed to particular regions of the country, balancing funds geographically could become complicated. The balancing stage would also be threatened if a region is hit by a natural disaster and project timeliness is impacted. This could also delay applications and limit the applicant pool significantly. Balancing will proceed as designed but adjustments will be made if project quality could be significantly impacted.

Certain program deficits might become clear only after the implementation process. The program measurement metrics and feedback mechanism ensures periodic turnaround from regional offices to the headquarters and finally to Congress. This channel of accountability provides an opportunity to monitor any and all issues and suitably change or adapt strategies.

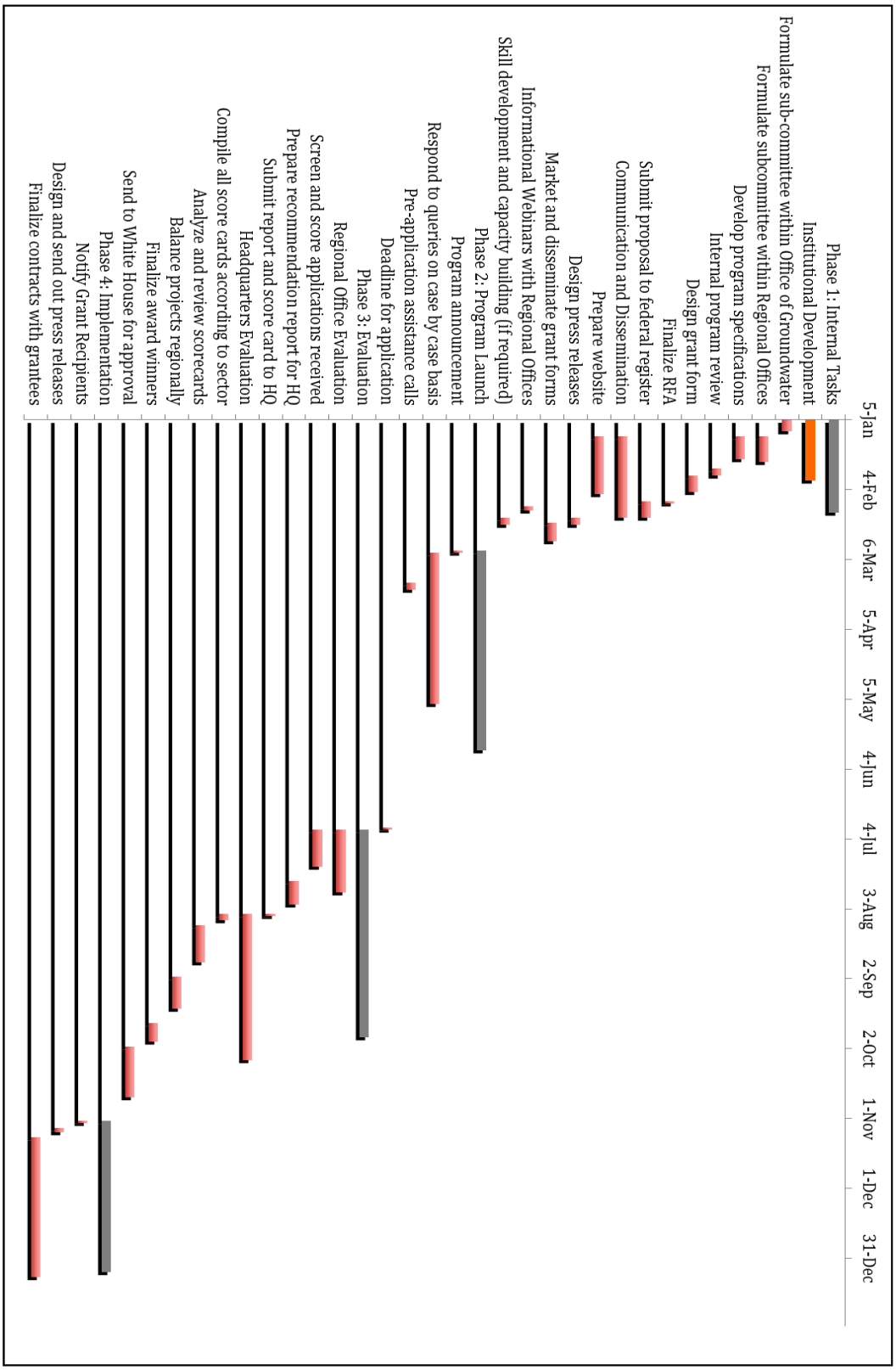
Conclusion

Changing hydrological conditions further exacerbate challenges caused by aging water systems. H.R 765 is designed to initiate a paradigm shift within the water sector by demonstrating the effectiveness of decentralized and proactive infrastructure solutions. This shift from traditional hard infrastructure will serve as a prototype for innovative and adaptive systems. The careful selection process of projects will ensure quality projects that use inventive and adaptive infrastructure produce positive environmental impacts in improving water quantity, quality and reliability. Reinforcing the decentralized solutions that it supports, H.R. 765 will also be administratively lean. Delegating work between EPA headquarters and regional offices while using existing department processes will significantly reduce personnel costs. Comprehensive and structured performance management and feedback mechanism are designed to allow the EPA to effectively monitor and measure the success of projects. A calendar including major timelines and milestones has been included to help ensure schedules and deadlines are met. The strength of HR 765 is in its rigorous evaluation, selection and monitoring processes through which high standard competitive projects will be chosen to demonstrate the efficacy of green infrastructure solutions.

Appendices

(All graphics and charts attributable to ODV unless otherwise specified.)

Appendix 1: The Master Calendar



Appendix 2: The Organizational Structure of the EPA[4]

The EPA consists of the Headquarter Office in Washington DC, and 10 Regional Offices located throughout the country. The Headquarter consists of 13 Offices including the Office of the Administrator.

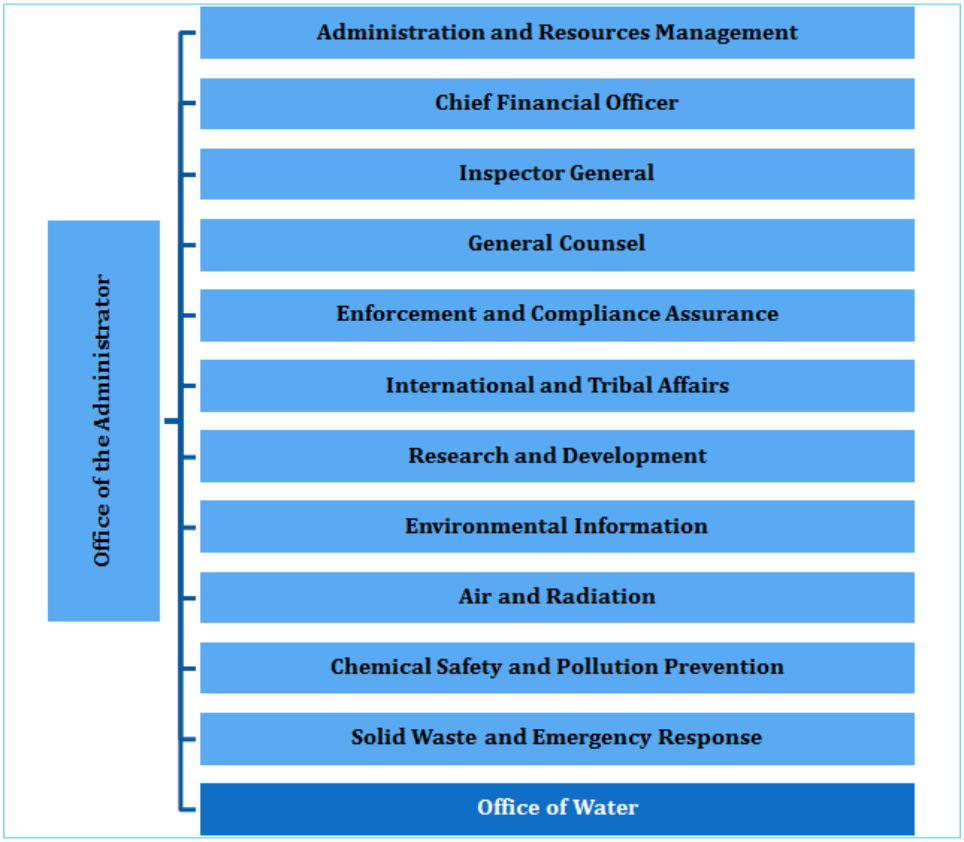


Figure 1: Organizational Structure of the EPA *(Source: EPA OA)*

[4] US EPA, OA. "Organization Chart for the Office of Water (OW)." Collections and Lists. (http://www2.epa.gov/aboutepa/organization-chart-office-water-ow), n.d. Web. Sep. 12, 2014.

Regional Offices[5]

The EPA has ten Regional offices, each of which is responsible for the execution of our programs within several states and territories.

- Region 1 – Boston (serving CT, ME, MA, NH, RI, and VT)
- Region 2 – New York City (serving NJ, NY, Puerto Rico, and the U.S. Virgin Islands)
- Region 3 – Philadelphia (serving DE, DC, MD, PA, VA, and WV)
- Region 4 – Atlanta (serving AL, FL, GA, KY, MS, NC, SC, and TN)
- Region 5 – Chicago (serving IL, IN, MI, MN, OH, and WI)
- Region 6 – Dallas (serving AR, LA, NM, OK, and TX)
- Region 7 - Kansas City (serving IA, KS, MO, and NE)
- Region 8 – Denver (serving CO, MT, ND, SD, UT, and WY)
- Region 9 - San Francisco (serving AZ, CA, HI, NV, American Samoa, Commonwealth of the Northern Mariana Islands, Federated States of Micronesia, Guam, Marshall Islands, and Republic of Palau)
- Region 10 – Seattle (serving AK, ID, OR, WA and 271 native tribes)

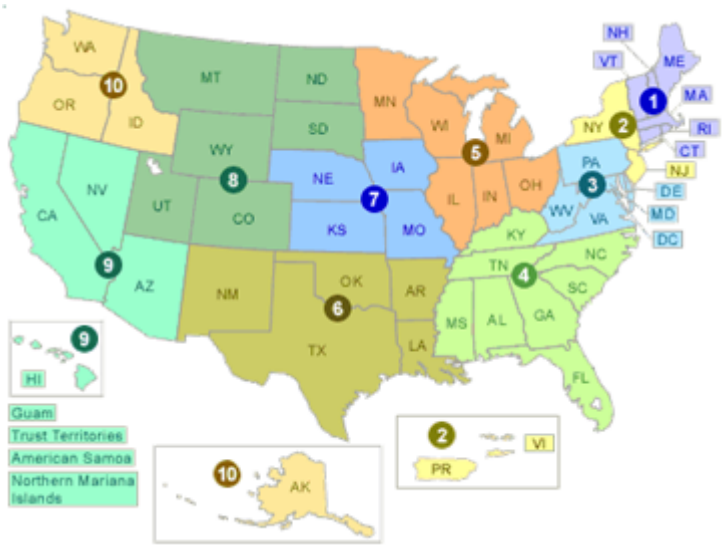


Figure 2: Ten Regional Offices of EPA *(Source: EPA OA)*

[5] US EPA, OA. "About EPA." Collections and Lists. (http://www2.epa.gov/aboutepa#pane-4), n.d. Web. Sep. 25, 2014.

Appendix 3: The EPA Budget[6]

Figure 3 shows the fiscal year 2012 costs of the EPA, sorted by targets. Clean & Safe Water has spent $5.09 billion, 54% of the EPA's $9.43 billion budget.

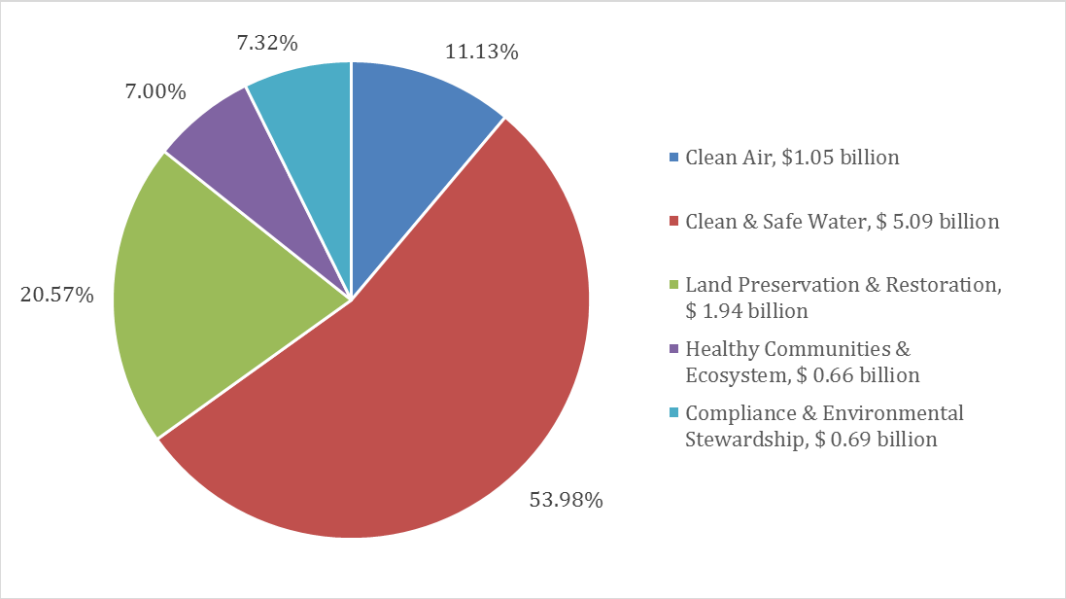


Figure 3: EPA Expenditures for fiscal year 2013. *(Source: EPA OCFO)*

Appendix 4: Task Workload Estimation Details

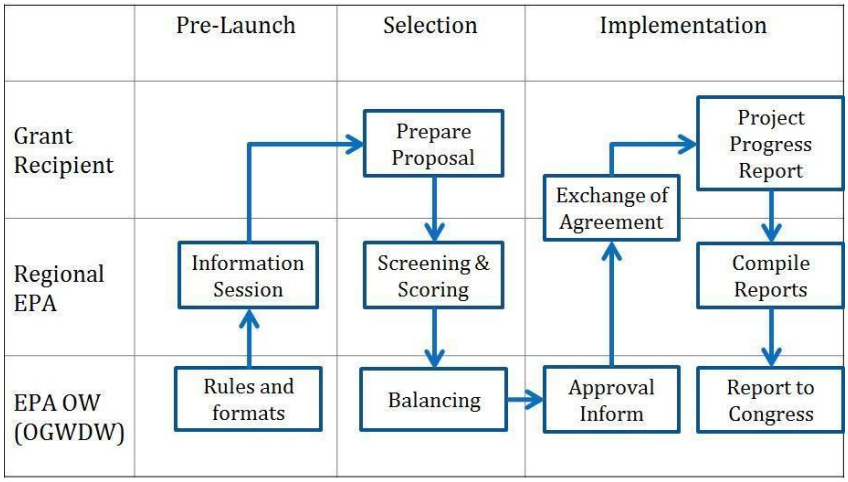


Figure 4: Draft Implementation Structure of the H. R. 765 Fund

[6] US EPA, OCFO. "EPA's Budget and Spending." Overviews and Factsheets. http://www2.epa.gov/planandbudget/budget), n.d. Web. Sep. 17, 2014.

Table 3: Implementation Tasks and Breakdown of Person-days at EPA HQ and RO

	Task Description	EPA HQ (person-days)	Regional Office (person-days)
I	**Pre-Launch**		
1	**Preparing Rules** The EPA HQ Office of Groundwater and Drinking Water (OGWDW) within the OW drafts selection rules, application and implementation guidelines, screening, scoring, and balancing formats, for the Grant. EPA HQ: 2 days, assuming the preceding programs can be a good reference	2	n/a
2	**Finalizing the Rules** OW sends the drafts prepared in (1) to other relevant departments (approximately 15) to obtain comments, revise and finalize. EPA HQ: half day for 15 sections (5 in HQ, 10 regional offices) RO: half day	8	0.5
3	**Establish Website** Construct a website for publicity as well as application submission. (Site building will be outsourced to a website company) EPA HQ: 2 days for design	2	n/a
4	**Internal Webinar for Regional Offices** HQ conducts an information session to Regional Offices about the basic strategy of the Grant, screening and scoring directions, how to provide guidance to the water operators, schedules, etc. EPA HQ: 2 days including preparation RO: 0.5 to receive briefing from HQ	2	0.5
	Sub-Total	14	1
II	**Selection Process**		
5	**Information Session in Regions** Invite Water Operators (potential recipients) and conduct an information session about the Grant, guidance on how to prepare the proposal, selection criteria, schedule, etc. EPA HQ: 3 days for follow up in HQ throughout the application period	3	3.5

	RO: 2 days in preparation, half day for orientation, 1 day for follow up		
6	**Project Identification and Request** Water Operators identify projects and prepare the fund request and submit to the Water Division of the EPA Regional Office. RO: 1 day for responding to inquiries from water operators half day for receiving and compiling proposals	n/a	1.5
7	**Project Evaluation, Screening, Scoring, Balancing and Selection** The Regional Office reads through the proposals, prepares the screening sheet and scoring sheet, and then forwards to EPA headquarter OW Office of Groundwater and Drinking Water (OGWDW). The OW will compile application from 10 Regional Offices and finalize the approved projects through the balancing process. EPA HQ: - (half day for reading the proposal and scoring sheets, half day for balancing)*40 projects - (1 hour for reading the pre-screened proposals)*260 proposals - half day for finalizing the evaluation in HQ RO: - (1 day for reading, 1 day for filling in the screening and scoring sheets)*30 proposals - half day for finalizing the evaluation in Regional Office	50	6.5
8	**Announce Results** Officially inform Regional Offices which projects are approved, prepare for press release. Regional Office forwards information to all applicants.	1	1
	Sub-Total	54	12.5
III	**Implementation**		
9	**Prepare Implementation Agreement** Regional Office drafts Agreement, confirms detail with water operator, obtains approval from HQ, Arrange signing meeting. Report to HQ. EPA HQ: half day* 25 projects in HQ RO: 3 days in Regional office *2.5 projects	12.5	7.5

10	**Disburse fund, monitor progress** Disburse fund based on fund request, monitor procurement process and attend monthly progress meetings, report to HQ if necessary. RO: 2 days/month*2.5 projects in Regional Offices	6	60
11	**Compile Annual Progress Report** Regional offices compile all technical and financial progress and report to HQ. HQ compiles all reports, prepares Annual Progress Report of the Grant, prepare press release and report to congress EPA HQ: 7 days in HQ RO: 1 days*2.5 projects in Regional Office	7	2.5
12	**Contingency work days for emergencies and unexpected issues** EPA HQ: 2 days*25 projects in HQ RO: 3 days*2.5 projects in Regional Office	50	7.5
	Sub-Total	75.5	75
	Total Estimation of increased workload	143.5	88.5
	Sum 10 Regional Offices		885
	Grand Total	1028.5	