

## **NATIONAL INFRASTRUCTURE ADVISORY COUNCIL**

### **QUARTERLY BUSINESS MEETING AGENDA**

Friday June 24, 2016

9:00am-1:00pm PDT

Los Angeles Environmental Learning Center

12000 Vista Del Mar Los Angeles, CA 90293

- I. OPENING OF MEETING** *Ginger Norris, Alternate Designated Federal Officer (ADFO), National Infrastructure Advisory Council (NIAC), Department of Homeland Security (DHS)*
- II. ROLL CALL OF MEMBERS** *Ginger Norris, ADFO, NIAC, DHS*
- III. OPENING REMARKS AND INTRODUCTION** *Constance H. Lau, NIAC Chair*  
*Stephanie Morrison, National Security Council (NSC) (invited)*  
*Caitlin Durkovich, Assistant Secretary for Infrastructure Protection, DHS*
- IV. APPROVAL OF MARCH 2016 MINUTES** *Constance H. Lau, NIAC Chair*
- V. WORKING GROUP PRESENTATION AND RECOMMENDATIONS ON WATER RESILIENCE STUDY** *Jack Baylis, Working Group Chair*
- VI. PUBLIC COMMENT: TOPICS LIMITED TO AGENDA TOPICS AND PREVIOUSLY ISSUED NATIONAL INFRASTRUCTURE ADVISORY COUNCIL STUDIES AND RECOMMENDATIONS** *Ginger Norris, ADFO, NIAC, DHS*

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**VII. DISCUSSION AND DELIBERATION ON RECOMMENDATIONS FOR THE WATER RESILIENCE REPORT** *Constance H. Lau, NIAC Chair*

**VIII. DISCUSSION OF NEW NIAC BUSINESS** *Constance H. Lau, NIAC Chair*

**IX. ADJOURNMENT** *Constance H. Lau, NIAC Chair*

**NIAC MEMBERS PRESENT IN LOS ANGELES:**

Ms. Jan Allman, Mr. Jack Baylis, Mr. Robert Carr Dr. Georges Benjamin, Mr. Ben Fowke, Ms. Constance Lau, Ms. Constance Lau, Ms. Diana Bolt Perreiah, Dr. Beverly Scott

**NIAC MEMBERS ATTENDING VIA CONFERENCE CALL:**

General Albert Edmonds, Mr. Keith Parker, Mr. James Murren, Mr. Tom Noonan

**MEMBERS ABSENT:**

Mr. Rand Beers, Senator Jeff Bingaman, Mr. David Grain, Ms. Peg Grayson, Mr. Philip Heasley, Mr. Bruce Rohde, Mr. Michael Wallace

**SUBSTANTIVE POINTS OF CONTACT PRESENT IN ARLINGTON:**

Ms. Rivka Tadjer with Mr. Robert Carr

**SUBSTANTIVE POINTS OF CONTACT OBSERVING VIA CONFERENCE CALL:**

Mr. Clark Dumont with Mr. James Murren

**OTHER DIGNITARIES PRESENT:**

Ms. Caitlin Durkovich, IP, DHS; Ms. Stephanie Morrison, NSC (phone)

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### **I, II. OPENING OF MEETING, ROLL CALL OF MEMBERS**

*Ginger Norris, Alternate Designated Federal Officer (ADFO), National Infrastructure Advisory Council (NIAC), Department of Homeland Security (DHS)*

Ms. Norris introduced herself as the Alternate Designated Federal Officer of the National Infrastructure Advisory Council. She then said she would call the roll and asked any points of contact for a member to also say their name and whom they are representing. The attendance list can be found on page 2. Ms. Norris reminded the Members that the meeting is open to the public and asked them to emphasize care when discussing potentially sensitive information at the meeting. She asked that those on the phone to ensure they mute the phone when they are not speaking and to announce themselves before speaking. She then welcomed the Members of the NIAC, Assistant Secretary for the Department of Homeland Security's Office of Infrastructure Protection, Caitlin Durkovich, and Stephanie Morrison of the National Security Council, as well as all other Federal, state and local government representatives and partners, members of the press and public that attend. Before calling the meeting to order, she invited Ms. Durkovich to come to the front of the room along with four of the NIAC's newest Members, Ms. Allman, Dr. Benjamin, Mr. Fowke, and Ms. Perreiah, to administer the oaths to officially swear them in as Members of the NIAC. She invited their guests to move about the room to take photos.

Ms. Durkovich said it was her privilege to administer the Oath of Office. She it is an important duty as well as a solemn promise to their truthfulness made as a new Member of the NIAC. She said it would be easiest for all four of them to do it together. She asked Ms. Allman, Dr. Benjamin, Mr. Fowke and Ms. Perreiah to raise their hand and repeat after her: "I (they each stated full name) will support and defend the Constitution of the United States against all enemies foreign and domestic, that I will bear truth, faith and allegiance to the same, that I take this obligation freely, without any mental reservation or purpose of evasion, and I will faithfully discharge the duties of the office I am about to enter, so help me God." Ms. Durkovich congratulated the newest NIAC members. Ms. Norris thanked Ms. Durkovich.

Ms. Norris said the National Infrastructure Advisory Council is a Presidential Advisory Committee created by Executive Order 13231 and amended by Executive Order 13652 with the continuation of this EO dated September 30, 2015. The NIAC is composed of members appointed by the President and includes senior executive expertise in the critical infrastructure sectors identified in Presidential Policy Directive 21, Critical Infrastructure Security and Resilience. This Council provides the President, the Secretary of the Department of Homeland Security, and other relevant agency leaders, advice on the security of critical infrastructure supporting the public and private sectors. During its more than 10-year history, this Council has completed 27 studies, all of which have been made available to the public. These studies have focused on matters ranging from the cooperation and partnership between the public and private sectors, to policies and strategies involving risk assessment, information sharing, and critical

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infrastructure protection and resilience, all affecting the national and economic security of our society.

Ms. Norris said that if someone who is not a Council Member would like to make a comment during the public portion for the Council to consider, the floor will be open for public comment during Part 6 of the agenda, as explained in the Federal Register Notice. She said to ensure all topics on the agenda are covered today, public comments were requested in advance. She said if anyone would still like to make a public comment to write down his or her name, email, and comment and pass it to Ms. Megan Wester of the Secretariat Team. Ms. Wester will collect them and Ms. Norris will call upon the people during the public comment period to make the comments. She said they would fit in as many appropriate comments as they can, give the time they have allotted. She said comments are limited to three minutes, pending any questions from the Council following the comment. Additionally, she said she will read written comments submitted to the Council before the meeting.

Ms. Norris said that pursuant to her authority as Designated Federal Officer, she called to order this meeting of the NIAC on 24 June 2016. She then introduced the Chair, Ms. Constance Lau and Vice Chair, Dr. Beverly Scott and turned the meeting over to Ms. Lau. Ms. Norris said she would return to the podium to manage the public comment portion of the agenda.

### **III. OPENING REMARKS AND INTRODUCTION**

*Constance H. Lau*, NIAC Chair

*Stephanie Morrison*, National Security Council (NSC) (invited)

*Caitlin Durkovich*, Assistant Secretary for Infrastructure Protection, DHS

Ms. Lau thanked Ms. Norris and welcomed all the Members of the NIAC, particularly the new Members. She said this is a very special meeting for the NIAC because in the entire history of the NIAC, this is the first meeting that is outside of the DC area. She said she and Dr. Scott like to emphasize that this is a national Council and it is nice to get out of DC and see the rest of the country. She said one of the primary reasons for that is at the meeting they will be reviewing, deliberating and voting on the resilience study on the Water Sector. This study has been led by Mr. Jack Baylis who is located in Los Angeles. In addition, the head of the Study Group, Mr. Adel Hagekhalil, is head of the Los Angeles Department of Water and Sanitation, where the meeting is located. She said this is a special time to come to LA as they have had leading role in water resilience for the entire nation. She thanked all the stakeholders in the Water Sector who are attending the meeting. She thanked Mr. Hagekhalil for hosting the meeting at the Environmental Learning Center where he also offered a tour of the sanitation facility the day before the meeting. Ms. Lau announced another that depending on time, another tour of the city would be offered immediately following the meeting. She referenced that Mr. Hagekhalil gave out reusable water containers that say "make me habit". She then thanked Mr. Hagekhalil again. She then invited Dr. Scott to make opening remarks.

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Dr. Scott thanked everyone at the meeting. She said that Mr. Hagekhalil had been fabulous and Mr. Baylis provided tremendous leadership on the Water Working Group. She offered a warm welcome to all of the new Members of the NIAC. She said they bring a variety of experience, exposure and wisdom. She thanked them for serving their country. Ms. Lau thanked Dr. Scott and invited Ms. Durkovich to make opening remarks.

Ms. Durkovich thanked Ms. Lau and Dr. Scott. She said it is wonderful to be in Los Angeles on a beautiful June morning. She thanked Mr. Hagekhalil for being a wonderful host at this great venue. She said the purpose of her remarks is to thank the Members on behalf of the Federal government for dedicating their time to these important issues. She referenced that they all have full time jobs, but still put in so much time to tackle these important issues and help the Federal government think strategically about where they need to go. She said she is very grateful for that. She welcomed the new Members and said she is excited to have them there and continue to grow the ranks and enlist people on these important issues so they can continue to be better. She said she is also happy to announce Senator Jeff Bingaman and Mr. Rand Beers will be joining the NIAC in September. She said she could attest for the two of them and the value they will bring to the Council. She said it is great to break the norm and get out of DC. She said she is trying to make the case to Congress that most of the customers, owners, and operators of critical infrastructure do not live in the DC area and they have to apply their resources to make sure they are doing outreach in the field where the customers are. She said she thinks this should become a tradition because there is certainly amazing infrastructures to visit all over the country. She said she also wanted to thank Mr. Baylis for chairing this Working Group. The tasking for the report was given in June and she has had the opportunity to read the report. She said it is a remarkable study. She knows it was challenging and difficult because they did it in a short amount of time. She thanked him for his leadership. She said she also knows that he had assistance in the report from the Working Group Members. She thanked General Al Edmonds, Peg Grayson, Joan McDonald, Jim Murren and Dr. Scott. She also thanked the Study Group and Mr. Hagekhalil for leading the efforts. She said it is amazing when coming to facilities like LA Sanitation to realize the complexity of the world they have built, yet the important work they are doing to ensure the security and resilience of the communities. She thanked him for all he does in the water resilience and water security fronts. She said she is looking forward to hearing the presentation of the final report, listening to the public comments and the deliberation period. She said they have covered a lot of ground in the report and she is very impressed. She said it is their job in the Federal government as this report becomes final to make good on the commitment to implement these recommendations. She thanked the Working Group for acknowledging the important work of the Water Sector Coordinating Council and their efforts over the years on security and resilience in the water sector. She said she is hoping at the end of meeting they have time to discuss the next topic for the NIAC to study and to see how they might get new Members involved in their efforts. She thanked the Council again for their hard work and dedication.

Ms. Lau thanked Ms. Durkovich. She then introduced Ms. Stephanie Morrison from the National Security Council. Ms. Morrison said she is very excited to listen to the meeting today. She welcomed and congratulated the newest members of the NIAC. She said she looked forward to

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hearing the report by Mr. Baylis and the Water Working Group. She said she is looking forward to speaking with them at the end of the meeting to discuss the next study topics. She then turned the meeting over to Ms. Lau. Ms. Lau thanked Ms. Morrison. Ms. Lau said the big order of business for this meeting is to deliberate on the Water Resilience study, and to talk about the next study topics for the NIAC. She said they would now start with the formal agenda.

### **IV. APPROVAL OF MARCH 2016 MINUTES**

*Constance H. Lau, NIAC Chair*

She said the first order of business would be the approval of the March 2016 quarterly business meeting minutes. She asked if there were any comments or changes to that document. Hearing none, she asked for a motion to approve the minutes. Mr. Baylis motioned and Ms. McDonald seconded. Ms. Lau asked all in favor to say “aye”. The council said “aye”. She asked if there were any apposed, hearing none she thanked the Council and the minutes were approved.

### **V. WORKING GROUP PRESENTATION AND RECOMMENDATIONS ON WATER RESILIENCE STUDY**

*Jack Baylis, Working Group Chair*

Ms. Lau then turned the meeting over to Mr. Baylis and the Water Resilience Study Working Group Report. Mr. Baylis said many people would be thanked today. It was a large team effort. He thanked Ms. Lau for the tasking and trust in the working group to present the paper for deliberations at the meeting. He hoped that the report will move forward as is, or that good changes will be made. He thanked Ms. Durkovich for attending as well as Stephanie Morrison of the National Security Council, Ms. Norris for acting as DFO for the meeting. He said they were four great leaders in this process. He also thanked Dr. Scott for her many corrections to the report on the phone and via email. He then thanked Mr. Hagekhalil, who made a significant difference in the Study Group by the number agencies he involved. The Study Group was a very important element. He described it as a “three step tool”, the Study Group report, the Working Group interviews, and the deliberations by the Members. He feels that it resulted in a great study. He said they started the study in September with an ambitious period, which they have completed. He said the Working Group deserves much of the praise for this. Ms. McDonald and Dr. Scott are at the meeting, and General Edmonds and Mr. Murren who are on the phone, as well as Ms. Grayson.

Mr. Baylis said that clean drinking water was underscored by the crisis in Flint, Michigan. He said the water infrastructure failed the people of Flint. As reported, poor operational and political decisions, inadequate pipe material and treatment methods, and inattention to health concerns to the citizens, all converged to poison the people of this city. Regardless of the cause, the Flint tragedy reveals how compromised our water systems are. It took down the trust Americans have in water infrastructure. In this report, NIAC focuses on security and resiliency of water systems in response to a man-made strike or natural event, which was mainly due to a political and

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operational decision. However, they reviewed the news reports and preliminary studies on Flint and concluded that many of the underlying conditions that led to the Flint situation also result in poor infrastructure resilience. The Working Group believes that if implemented, its recommendations will greatly reduce the likelihood of another Flint-like crisis.

He said to begin he will go through an overview of the study and the challenges it faces. After that, he will go through the Working Group's findings and recommendations and underscore the urgency of the situation. Throughout the presentation, he said he would be calling on fellow Working Group Members to elaborate on certain findings. He said he would like to take the opportunity to thank all the people who helped on the study. A full list of contributors is included in Appendix A of the report. He said they had an amazing and highly engaged Working Group and he said he would like to acknowledge the contributions that each of them made based on their experience and insight. He said Mr. Murren's perspective outside of government, including how to leverage land-grant universities to provide technical and financial resources to help local water utilities. He said Mr. Murren also reminded them that non-governmental Organizations and industries can be important partners to uncover solutions and drive actions. Mr. Baylis said Ms. Grayson's experience with previous NIAC studies was invaluable in helping them frame issues and properly providing examples from other studies to help shape recommendations to help frame impact and drive actions. She also helped bring a financial perspective to their discussions. Mr. Baylis said General Edmonds experience working with government was crucial, particularly in understanding how to use the pilot projects and public-private partnerships to launch initiatives. He said General Edmonds' knowledge of government agencies and how they interact, particularly as the White House and Secretary of Homeland Security will be reviewing this, was critical. General Edmonds' gave critical help to develop accurate and actionable recommendations. Mr. Baylis said Ms. McDonald, one of NIAC's newer Members, was the New York State Department of Transportation Commissioner during Superstorm Sandy. She provided insights into state experience particularly for disasters and brought innovative ideas on how to use different financial options such as century bonds to address funding issues. He said Dr. Scott brought years of experience in the Transportation Sector and dealing with NIAC resilient issues. She was able to look across the sectors at issues such as workforce challenges and tie together insights from other resilience studies to make the case for increased Federal investment and community engagement. He said they were lucky to have an exceptional 16 member Study Group of professionals with experience in planning, financial construction, operations regulations and evaluation of water and wastewater systems. They represent public utilities, state and municipal agencies, academia, private sector companies and natural laboratories. They were led by Mr. Hagekhalil who was able to draw out the insights from subject matter experts from across the Water Sector. With the Study Group Members proving the Working Group with an exceptional summary report, including findings and conclusions that served as a valuable input for the Working Group to consider, which are included as an appendix of the report. He said none of this would have been possible without the subject matter experts who took time out of their busy schedule to provide information data and insights on topics such as aging infrastructure. Throughout the study, they were supported by their consultants, the Nexight Group particularly Mr. Jack Eisenhauer and Ms. Beth Ward. They provided in depth research and analysis, led interviews, helped the Working Group tease out the key issues and kept the

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tight schedule. He thanked the Secretariat team for their support in scheduling the subject matter experts, developing meetings, interview transcripts, and all the logistical pieces that happen behind the scenes that are so important. Lastly, he thanked the Alternate Designated Federal Officer, Ms. Ginger Norris. Ms. Norris made sure they stayed within the scope and was conducted with the requirements of the Federal Advisory Committee Act (FACA). She was tireless in getting interviews lined up, managing the logistics and leading the Working Group through the process. This is Ms. Norris' first NIAC study but it was run smoothly and professionally.

Mr. Baylis said he would next read the study charge. They were asked to test and validate the usefulness of the NIAC's framework for the Water Sector. They were asked to look at water resilience issues and opportunities to address them. In particular, they wanted to understand some of the key interdependencies between water and other sectors and how that affects national resilience. He said there was a confidence in the water systems. Many people are used to getting up in the morning, turning on the water and the toilets flush and things work. However, they recognize that even when an event happens such as the power going out, it is devastating, but people get the candles out and figure it out. He said if people get up and cannot turn on the water and cannot flush the toilet, a community can panic. That is how important this is. Mr. Baylis said they looked at the NIAC framework, something he once spent a lot of time on in 2010. There is a 2010 NIAC report with the background of the framework. The Water Working Group validated the framework through this study, in particular the use of a high impact scenario by the Study Group, summarized by Appendix C in the report, helped uncover gaps in resilience. Five scenarios were examined by the Study Group. They looked at Midwest floods in 2008, Superstorm Sandy, the Northeast Blackout of 2003, a cyber based attack and a fictional New Madrid earthquake.

Mr. Baylis said that before he gets into the findings of the study, he would like to discuss some key aspects of the Water Sector. He then referenced the graphic on page 10 of the report, which lays out how communities get their water and discharge it. There are many areas that are vulnerable. Most people do not think about what it takes to have clean water flowing from their taps and how wastewater is processed after the use. These water and wastewater services rely on a vast network of infrastructure assets and people. The pipelines, water mains, treatment plants, skilled workers and information technology networks enable monitoring communities. There are approximately 153,000 public water systems and more than 16,000 publicly owned treatment works (POTWs) in the U.S. The majority of the population is served by a small percentage of mostly large and very large systems. Less than 20% of community water systems serve 92% of the population that receives drinking water from these studies. 79% of POTWs treat less than a million gallons per day and serve less than 10% of the population. A finding from the Study Group was that while utilities vary wildly in size and complexity, this graphic shows a typical design of water and wastewater systems under typical conditions. These conditions include the critical sectors they rely on while operating, specifically the electricity to operate pumps, treatment facilities, delivery systems and processing, communications and IT for external and internal communications and control systems, monitoring systems and communication with the public and emergency responders. Chemicals are required for water and



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wastewater treatment, and transportation of chemicals and other supplies are delivered by truck and rail. Utility workers also rely on transportation and remote assets. Water is significantly dependent on the other sectors. Water services are essential to human life and health. Their functions are also central to the core operations in nearly each critical sector. He said that everyone should think about how much they use water every day. It is a central part of everyone's lives. He then said to think about what would happen if there were no water services. It is not just an inconvenience. Sometimes a lack of water can induce panic. He said the report shows how important water is and how it is linked to the other critical sectors. Without water and wastewater services, hospitals will need either to reduce service or close. Most office buildings, hotels and restaurants would shut down. Hotels, and government facilities close, and water may not be available to fight fires and manufacturing plants to curtail production. This is recognized acutely in California as they battle fires, as it gets drier and drier. One analysis of over 2,600 vulnerability assessments conducted by DHS revealed that the services of critical infrastructure depend on water are degraded 50% or more within eight hours of losing drinking water. This is also true for a loss of wastewater treatment services. Mr. Baylis said they heard from experts in the Water Sector that they do an excellent job with short-term disruptions, but when these disruptions last days or weeks, resources and other factors such as access to back up generators and fuel, the consequences can be catastrophic. He said he wanted to "bright line" this finding. The water systems behave pretty well under crises for a couple of days, but where they becoming exponentially more vulnerable are if that impact, either manmade or natural, extends, that community significantly degrades. Most people stock up on flashlights or bottled water when a large storm is coming. However, if wastewater treatment facilities are unable to operate, people are not able to shelter in place. Hurricane Katrina is an example of what can happen in these catastrophic events when large segments of the population have to be relocated due to a loss of critical service.

Mr. Baylis said he would now discuss finances. He said many of the nation's infrastructure suffers from chronic underinvestment. Water is no different. The risk posed by these systems' underinvestment is intensified by vulnerability to extreme weather, cyber security, seismic events and other threats. The estimates of needed investment come from the American Society of Civil Engineers 2011 report, *Failure to Act*. The report demonstrates the lack of investment in water and wastewater. Mr. Baylis clarified this report has just one estimate of the amount of money needed to address the systematic underinvestment in water infrastructure. For example, The Environmental Protection Agency (EPA) estimates \$384 billion is needed to make necessary improvements for drinking water infrastructure between 2011 and 2030. The agency estimates \$271 billion is needed to maintain and improve the nation's wastewater infrastructure within the next five years. The American Water Works Association estimated it could take as much as \$1 trillion over the next 25 years to maintain current level of service. He said despite the different numbers, the bottom line is that more investment is required, more than what is currently spent on the sector. The longer investment is delayed, the larger the cost and most importantly, the greater the risk.

Mr. Baylis said underinvestment is just one of the challenges facing the Water Sector. Other key challenges include emerging infrastructure threats, workforce and training, paying for

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infrastructure improvements, disparity of capabilities and resources, and characteristics of a public good. He said more information on all of these could be found in the report. He said emerging infrastructure risk includes cyber risk, increasing cross-sector risk and more intensive weather patterns. The need for better work force and training is something Dr. Scott constantly emphasized. As workers retire, they take out institutional knowledge and their skills with them. He said figuring out how to pay for infrastructure improvements, particularly in areas that have declining populations and limited economic prospects, such as Flint. There is disparity of capabilities and resources between large utilities and smaller utilities, in which security and resilience functions are “someone’s part time job”. One challenge that may be unique to water is the characteristics of a public good. It is considered an essential good for all citizens, but it is charged as a fee for service, which makes it difficult to raise rates to reflect the full lifecycle cost of building, maintaining, upgrading and replacing the infrastructure. A public good requires public investment. He said he thinks it will be agreed upon that several of these challenges are found in other critical infrastructure sectors.

Mr. Baylis said they would now discuss the findings. He said would be providing a high-level overview of the findings. The complete findings can be found in the report. He said during the course of the study security measures are embedded in good resilient practices. The first finding is that there is a poor understanding of the criticality of the Water Sector. As such, it is not given an appropriate, high priority as a critical lifeline sector. The Water Sector has an excellent record of maintaining service during short-term disruptions, 24-72 hours. Beyond that, a facility’s ability to respond often depends on their resources and capability, such as the extent of the backup generation, fuel supply, and inventory of critical chemicals. However, even the well-resourced utility will struggle if a disruption such as a large, cross-jurisdictional power outage extends past a week. If water services are lost, the potential cascading impacts can be catastrophic. However, the criticality of maintain and restoring water service following an event is not fully understood by state and local leaders, operators of other infrastructure, and water service customers. As a result water and wastewater services are receiving inadequate attention, disaster planning prevention, and response from public sector officials in dependent sectors.

Mr. Baylis said the second finding is that water services are undervalued and often taken for granted. Unlike a bridge or road, you can see deteriorating and in need of repair, there is no such visibility of water assets. Even when water main breaks occur, the focus is often on the effects on transportation and not on the water main itself. This makes it difficult to gather public support and political will to try to make proactive investments. Mr. Baylis said the third finding is the utilities and agencies that operate water systems vary greatly on the size of their assets and the population served. Moving on to the fourth finding, Mr. Baylis said one of the most repeated messages they heard was the significant underinvestment in water infrastructure and the data backs this up. Consistently, the subject matter experts, the Study Group, everyone the Working Group spoke to talked about the underinvestment in water. Estimated funding needed to maintain and improve water and wastewater infrastructure ranges from \$400 billion to \$1 trillion across the U.S. To some extent, a large portion of public ownership within the sector and the current regularly structure makes long-term investment and resilient water and infrastructure quite challenge. POTWs have difficulty in raising rates, particularly if it harms underserved

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neighborhoods and disadvantaged customers. Smaller facilities also may not have easy access to the resources, time and manpower, and the required matching funds. He said the fifth finding is that resilience has not been substantially integrated into the actions of the Federal government. Resilience outcomes are typically not part of the Federal guidance and resources. He said it is critical that NIAC has pointed this out. The Federal agencies and departments that oversee the Water Sector such as EPA and state agencies are primarily focused on public health and environmental protection measures. Resilience programs are often voluntary. Some Federal regulations hinder utilities from taking steps to improve resilience and build in redundancy such as building in a separate power generator or allowing different water quality standards to be used during an emergency. The focus on water at the Federal level has been on clean water, control of water resource infrastructure and emergency response. Resiliency is included in part of these efforts, but it not the focus. Their final finding is that regional collaboration among neighboring jurisdictions is valuable, but not as broadly applied across the nation. They found some excellent examples of regional collaboration, specifically the water districts in the Las Vegas area that partner to address the issues of water scarcity and meet the demand caused by incoming growth. The partnerships allow them to pool their resources and take a more holistic approach to water management, securing a more sustainable long-term path for that region. However, too often, limited regional coordination across jurisdictions and water systems led to ineffective siloed decision making, which can hamper resilience and emergency response. He said one bright spot is the cooperation of the Water/Wastewater Agencies Response Network (WARN), which is an interstate voluntary network of utilities, which provide mutual aid between members following a disaster.

Mr. Baylis then moved on to the recommendations. He said, "How these issues should be addressed?" This is where he would like to spend the balance of the time. He said he would be calling on fellow Working Group Members to elaborate on some of the recommendations and support actions. He said as with the findings, the slide deck is kept at a high level and more details can be found in the slide deck appendix. The complete recommendations can also be found in the report. The Working Group is making five recommendations that they believe will help address the issues they have outlined and help improve water infrastructure security and resilience. To accomplish each recommendation, they identified specific actions to take including what needs to be done, by whom and when. He said he and the Working Group Members will highlight the actions that need to be taken under each recommendation and more detail can be found in the Appendix.

Recommendation One is that water and wastewater services are provided on a local and regional basis, however the Federal government can provide leadership and resources to help the sector analyze and map complex risks of major water disruptions and develop mitigation measures. One way is to have DHS in coordination with other government and sector partners conduct joint tabletop exercises across jurisdictions and interdependent sectors, focusing on the water infrastructure. He said as they have indicated, the criticality of water is not well understood outside the sector. The Working Group believes these joint exercises with all levels of government and affected sectors is the best way to increase the understanding, identify the risk and take the steps to address resilience.

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Mr. Baylis then turned the meeting over to Ms. McDonald to discuss the second recommendation. Ms. McDonald thanked Mr. Baylis. She said most of her career in infrastructure has been in the Transportation Sector. She said learning about water delivery and wastewater was very eye opening. One of the areas that she thought was different is the role between the Federal government, the state government and local governments. In the Transportation Sector, there is a very strong link between the Federal government and the states, going back to the Eisenhower Administration and the interstate road system. She said that partnership is very much there in the Transportation Sector. With the many water authorities throughout the country, that is not as strong in the water/waste water arena. One of the Working Group's recommendations is focused on fortifying Water Sector response and recovery capabilities. Even though this sector has a good record of accomplishment to date, of maintaining service and rapidly responding to disasters, it is only good for about five days. She said The Working Group believes the Federal government should take immediate actions to formalize and improve the response and recovery capabilities at every level of the Water Sector. This includes increased planning for extreme events, consolidating Federal responsibilities and increasing funding for successful sector mutual aid efforts. One specific action is to create a government industry playbook that clearly defines the roles and responsibilities of agencies and utilities during major disasters. A similar playbook was successfully developed by the Electricity Sector, which can be attested to by Ms. Lau and Mr. Wallace. The Working Group believes that a playbook will help not only utilities understand their responsibilities and what they can expect from government assistance, but will also raise awareness on what the water utilities need to maintain operations so that supplying these resources is a priority following an event. She said details could be found in the report. She then turned the meeting over to Mr. Baylis.

Mr. Baylis thanked Ms. McDonald. He said they have talked a lot about the investment needed in the Water Sector. He said their recommendation identifies specific ways the Federal government can address this. One is the message they heard repeatedly, which is sometimes utilities are unable or unwilling to raise rates to reflect the true cost of water and fund necessary infrastructure investment. It was going to negatively affect underserved neighborhoods, low income or disadvantaged customers. There is a model already being used effectively through the low-income housing energy assistance program (LIHAEP). He said a similar program should be established to help reduce the financial burden on low-income communities from water rate increases and allow communities to set rates that reflect the true cost of providing services. The Working Group recommends that to launch the program, The Environmental Protection Agency, working with major water associations should implement a pilot with 5 water utilities within 12 months of this report. One of the actions he said he would like to highlight is creating a disaster deductible for all allocating Stafford Act funding to incentivize these communities to make investments to increase resilience. They have heard from experts that there is a moral hazard around this issue. Communities are not investing in measures that could mitigate the impact of a low frequency, high-consequence event because they expect the Federal government to step in and provide post-disaster relief. He said during the study, they learned that FEMA is currently exploring the area. This spring, the agency was seeking comments and questions on the idea of a disaster deductible and how it should be implemented. By including this specific action in their recommendations, the Working Group hopes to call attention to the need for the disaster

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deductible. They also recommend that any such deductible take into account multiple factors that can affect investment and utilities such as size and population served. As such, they recommend a deductible that takes a regional approach, especially since these events are often cross jurisdiction areas and affect multiple events in a given area. He then turned the meeting over to Dr. Scott.

Dr. Scott said they found that the chronic lack of investment in the Water Sector was a major issue. Rather than simply repeating that again, and saying “oh my goodness why doesn’t the public get it and why does the NIAC have another report saying that the root of the problem is a tremendous lack of investment”, they have an opportunity to think more creatively and to advance a more strategic recommendation. To say that they can in fact with “no apologies” utilize this as an opportunity to be able to target increased investment, such that they can in fact improve the lives of people within communities and improve the communities themselves by stimulating job creating, workforce development opportunities particularly with a focus on underutilized groups such as utility communities. She said there is a cycle of lack of jobs, lack of investments and lack of money to pay for investments. The Working Group feels this will stimulate jobs creation and at the same time, catalyzing investments in smart resilient and cyber-secure infrastructure that is desperately needed. She said that is the heart of the recommendation. To do this, they recommend a more holistic and targeted approach to Federal investment by having the Office of Management and Budget in coordination with the National Security Council and Federal agencies to identify and report their current and planned investments in critical infrastructure. She said these Federal infrastructure investments should be used to design innovated programs and sustainable procurement of programs that create job opportunities; much needed workforce development pipelines, and other local community benefits that target underutilized groups such as women, low-income population, youth, and veterans. It is intentional to look at the advancing of community benefits. She said the agencies should also establish multi-year goals, performance milestones for critical infrastructure investment, and include them in department agencies’ strategic plans. She said this is not anything new; it is borrowing a piece of the playbook from The New Deal, in how they intend to make investments in communities and people. She said at this point, if they look at the Secretary of Transportation’s extremely vigorous opportunities agenda, which is quite clear. It actually includes such aspects as innovative procurement and a U.S. employment plan. Dr. Scott said the Water Sector “is on steroids”. She said she had seen Mr. Harlan Kelly in San Francisco to walk into environmental justice policies, a benefits program that has been in operation for almost a decade and doing tremendously. This is similar to the recommendations that the Working Group is making. She turned the meeting back to Mr. Baylis.

Mr. Baylis said he would be discussing the fourth recommendation. He said this recommendation is an idea from Working Group Member, Mr. Murren. They discussed how capabilities vary across the Water Sector due to size of utilities and the availability of resources. Because utilities serve a local population, he asked, why not tap local resources from land grant universities. These universities have a strong understanding of the regions where they are located and provide strong technical resources and serve many of the utilities that may not have access to this otherwise. In addition, land grant universities can attract additional resources from

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companies and foundations to address the emerging risks facing the sector in that region. He then turned the meeting over to Ms. McDonald for the fifth recommendation.

Ms. McDonald said one of the key questions that the Working Group repeatedly asked them was “what is the Federal role?” They had some very encouraging and heated discussions on this topic. Despite the highly localized nature of this sector, they believe the Federal government has an extremely important role to play. In addition to what they have already outlined, they think strengthening Federal leadership, coordination and support will also help to strengthen water resilience in this sector. She said they are recommending the creation of a temporary high-level Federal coordinating body, led by the Department of Homeland Security with senior level representatives from the major agencies with a role in water. She stressed that this would be temporary. This coordinating body would be tasked with looking across all levels of government in the Water Sector to lead collaboration, identify barriers in resilience and rapid recovery, and increase awareness of the importance of water services. She said it is not their interest to create another level of bureaucracy. She said they strongly believe that the coordinating body can accomplish its work within two years. She said that those who have worked in government know that to move some of these agenda items require political will. It needs to have the buy-in from Federal agencies that are affected for everyone to benefit from what the Working Group is recommending. She then turned the meeting over to Mr. Baylis for the remainder of the presentation.

Mr. Baylis said they would now discuss the call to action. He asked, “How do we move forward?” He said through Dr. Scott’s leadership, she was involved with the Council’s previous resilience study and encouraged the Working Group to take a broader view of the needs of all lifeline sectors in infrastructure and be bold in what needs to be done as a nation. Mr. Baylis said they could no longer ignore the deterioration of the nation’s water infrastructure in the face of emerging and uncertain risk. He said they need to take immediate steps to address resilience in the Water Sector. Water utilities have done a remarkable job in keeping the water flowing in the face of disasters and budget challenges. Growing interdependence among lifeline sectors and the vital role that water plays in nearly all human endeavor demands they take a more active approach. He said simply put, building and sustaining a resilient water infrastructure must be a top national priority. He said they need strong public interest support and political will. As they move forward, he said they need to be mindful of more than just the immediate needs. Making investments in smart, sustainable, resilient infrastructure will help build up communities and help job creation, improve economic competitiveness and set communities up for equitable and shared prosperities. There is no silver bullet that will improve the resilience of critical water infrastructure overnight. The risks are complex. The investments required are massive and the task exceeds any one company, sector, or government agency. It will take a whole-of-nation approach, Federal leadership and resources must be complimented. He said insights and expertise across many partners need to be used. State and local authorities, water utilities and their associations, non-government organizations (NGOs), academia and, the private sector (particularly CEOS), all must be engaged and mutually committed to the progress. Mr. Baylis said today there is a sustainable base of knowledge, tools, and lessons learned on resilience waiting to be applied, much of it to be developed by associations and other partners. Innovation

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and financial opportunities are also available throughout NGOs and corporations. He said much of the work described in the report could start immediately.

Mr. Baylis said at this time he would be happy to answer any questions. Ms. Lau said that from a procedural standpoint, at this time they would take questions for clarification purposes. She said discussions that are deliberative in nature would occur at the end. After the clarification questions, the meeting will be turned over to Ms. Norris for the public comment section of the agenda, then they will come back to deliberative discussion, taking into account any public comments.

Dr. Benjamin asked what the role of gathering resource allocators was. He said they pretty much picked all the other sectors to support these things, but he wondered about the role of governors, mayors and other resource allocators and getting them on board. Mr. Baylis said that there are sector councils. He then asked Ms. Durkovich if she could describe the type of role that they play in coordinating the efforts at a state level. Ms. Durkovich said under the National Infrastructure Protection Plan (NIPP), through Public Policy Directive (PPD) 21, DHS has divided the role of critical infrastructure into 16 sectors. Each of the sectors has a government coordinating council (GCC), which is made up largely of the Federal departments and agencies that have a role in that sector, although there are state and local governments that can be enrolled in that. Then there is a sector coordinating council, which is representative of industry. It all operates under the Critical Infrastructure Partnership Advisory Council (CIPAC), which brings the sectors together to deliberate, seek advice, puts tough questions related to security and resilience in front of these joint councils, and gets their input and recommendations. She said they also have a State, Local, Tribal and Territorial Government Coordinating Council (SLTTGCC) which brings together many of the state and local officials, both whom are elected, but also represent various states agencies, law enforcement and homeland security agencies. She said this is a mechanism by which they can bring the multiple players, those who have equities in infrastructure securities together to help inform a variety of different homeland security issues. The degree to which the allocators are involved in the process, she said she would have to turn back to Mr. Baylis. Mr. Baylis said that what came across in their analysis is that the local agencies, mostly run by the mayors and governing bodies, are pretty well run. Some do better than others. Some have more financing. He said where they saw the gap, is exactly what NIAC is charged to do, to identify the Federal government's role. He said the Federal government is not as connected to the mayors and those local agencies, as in transportation, which was brought up by Ms. McDonald and Dr. Scott. Mr. Baylis said that was a great question. Mr. Benjamin said that clarified his point. Ms. Durkovich added that in the sector coordinating councils (SCCs), it is not just private sector or investor owned. The SCCs represent both private and publicly owned utilities and infrastructure.

Ms. Durkovich asked for a clarification on the executive summary where they discussed how water is a lifeline sector that brings business and neighborhoods back to normal. She said she thinks there is an opportunity within that statement to also highlight water's importance in everyday life, not just bringing it back to normal. She feels that there is a missing phrase there. Mr. Baylis said that they could make that change immediately. Ms. Durkovich said that was very good. She continued her comments saying under Recommendation 2.1, they talk about creating a

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government industry playbook. This is leveraging best practices from ESCC and leveraging the playbook they have created. She said this is certainly a best practice they are to promulgate across multiple sectors. She said she just had a conversation with the Financial Services Sector about the value of this playbook that the ESCC has created. She said to the point of clarification, the Working Group tasked the National Security Council to work with the water associations, and she wondered why they did not task it to the Water Sector Coordinating Council (WSCC) to look at. She said her question is based on how the ESCC playbook came to be. Mr. Baylis said he is comfortable with doing that. He said they thought it would need the further involvement of the NSC for emphasis and to go further, noting it has been with the WSCC already. Ms. Durkovich said she thinks they can work with the WSCC to continue to carry it further. She said one thing they have done with the Electricity Sector is to exercise the playbook, because as good as any plan is, exercises are needed to understand where the gaps are. She feels that is one way they can continue to mature.

Ms. Durkovich then commented on Recommendation 3.4, informing the NIAC that the DHS Science and Technology Directorate have reorganized and there is no longer an Office of Resilience. She said it might be better to say “the DHS Science and Technology Directorate” on page 43. Mr. Baylis said he thought that was a good change for clarity. The other Members agreed. Before moving on, Ms. Lau asked Ms. Norris for clarification on who was capturing all of these changes because they will have to restate all of the changes to the report publicly and then be able to vote on it. Ms. Norris said, procedurally if it is an editorial change, it does not require a vote, however the Secretariat and Analytics Teams are capturing everything that is said, so they can go through the steps during the deliberative session. Mr. Baylis thanked Ms. Lau for bringing this up for the benefit of the public. He said while the last change was editorial he thinks the rest have all been important material changes that they can make and he does want to walk through them all. Ms. Durkovich said her final question for clarification is under Recommendation 5, about strengthening Federal leadership. She said in 5.1 they call for the establishment of a temporary high-level coordinating body led by DHS. She said in her mind, this is analogous to what the Water Government Coordinating Council (WGCC) is. She said if the intent of this recommendation is how to give that coordinating council, more “teeth”, she worries that another body might be able to direct the WGCC to do this. Mr. Baylis said consistent with Ms. Durkovich’s first suggestion, it is a good one. He said for some background, this recommendation started out as they brainstormed about the idea of a White House designated person on water. They were using the term “water czar”. He said as they deliberated past attempts at doing this, assigning it to a specific body that already exists would be more effective. He said unless the other Members disagree, he thinks it is a good change. Ms. Norris said when they get to the deliberative portion that point should be brought back up.



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### **VI. PUBLIC COMMENT: TOPICS LIMITED TO AGENDA TOPICS AND PREVIOUSLY ISSUED NATIONAL INFRASTRUCTURE ADVISORY COUNCIL STUDIES AND RECOMMENDATIONS**

*Ginger Norris, ADFO, NIAC, DHS*

Ms. Lau said if there were no other clarification questions from the Members, then she would turn the meeting over to Ms. Norris for public comment. She then asked if any of the Members on the phone or Ms. Morrison had any questions. They did not. Ms. Lau said in preface to what Ms. Norris is going to say, she thinks a lot of the recommendations, and at this public comment stage, the public is able to both ask questions for clarification as well as make substantive comments. She said she knows that many of the people in attendance are substantively involved in the Water Sector and that many of these recommendations have direct application to the work that they are doing. She said they would very much welcome any comments that they have that would help the Council in their deliberations on the report. Ms. Norris thanked Ms. Lau. She said if anyone has a public comment that they did not have a chance to voice in the room or through email prior to this meeting, they can still submit them through [www.regulations.gov](http://www.regulations.gov).

Ms. Norris then formally opened the public comment period. She said she is going to begin with one written comment from Ms. Joyce Dillard for the Council's consideration. Ms. Dillard wrote that the Council was asked to assess security and resilience in the Water Sector, uncover key water resilience issues, and identify potential opportunities to address these issues. She wrote, "Western water issues, especially California, are State regulated, not Federal. California is viewed in its water supply for the entire state with supplemental supplies from other agreements such as the Colorado River Compact. Underplayed is the aspect of weather and ocean conditions. Water is collected where snow and water falls, not where there are dry seasons such as that in Los Angeles. We would like to address a presentation by Dr. Michael Gunson from JPL, presented at the May 2016 Southern California Water Dialogue. It can be accessed at <http://www.socalwaterdialogue.org/calendar/papers.html>. NASA Western States Water Center would like to address a potential fleet stations/planes to access and study Atmospheric Rivers and its effects on water supply. This is a Federal agency left out of the equation in California. USEPA is water quality, not water supply. Costs and benefits should be addressed. The Los Angeles Regional Water Quality Control Board issued the ORDER R4-2012-0175 NPDES Permit CAS004001 Municipal Separate Storm Sewer System (MS4) for Los Angeles County, Los Angeles County Flood Control and 84 incorporated cities. In this permit, is a voluntary compliance plan that includes EWMPs Enhanced Watershed Management Plans, which is storm water capture to ensure water quality. There are more than enough problems with this permit and it is being challenged by some cities and environmental groups, in separate lawsuits. Modeling includes non-source point sources, not allowed in MS4 permitting. It is a safe harbor. There is no data for a baseline. There is no funding and costs for the permit is estimated at \$20,689,404,378. Smaller cities just cannot afford this. It could force some into bankruptcy. On the other hand, City of Los Angeles celebrates this aspect by One Water LA, as in your report. The City's local bond of \$500,000,000 for Measure O-Clean Water, Ocean, River,

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Beach, Bay Storm Water Cleanup Measure has no data to justify the expense. Without this capital infrastructure infusion, City of Los Angeles could not address storm water as a supply. It just does not rain much in Los Angeles and wastewater is the solution hidden in the One Water Plan. Local governments need to allocate operations and maintenance funding. We find that not the case in the City of Los Angeles. Instead these Enhanced Watershed Management Plans plan for Green Streets and for Great Streets Initiative, with questionable ownership of any water collected. You state: *Green infrastructure is a relatively new concept to utility customers. And The Water Sector should build on green infrastructure practices to add resilience. It takes time for the government and customers to change their perceptions, and include security and resilience in infrastructure are new practices.* Utility customers do not necessarily benefit. There are too many types of water suppliers in LA County alone. San Gabriel Valley, because of its location to the mountains, already capture (storm) water. Green infrastructure is unnecessary. Metropolitan Water District, on the other hand, does address water storage. Gravity, conveyance and storage are issues routed in reality. Water is a State Constitutional issue with requirements for existing, new or increased fees and charges on property. In the City of Los Angeles, LA Department of Water and Power is the water supplier, yet their Capital Improvement Program is only forecast for 10 years when pipeline failure is frequent and long past the life of pipes laid 100 years ago. The Bureau of Sanitation's Hyperion Treatment Plant is situated on a coast and is the concern for scientists on the climate issue. West Basin Municipal Water District's recycling treatment plant would be the beneficiary of City of LA water from that location. LADWP needs capital improvements including another treatment plan and groundwater cleanup to supply water to customers. LADWP has adjudicated jurisdiction in the San Fernando Basin and the Central Basin. Other basins within the City of Los Angeles are under each individual property owner. Water and development, especially density, should be addressed. Resiliency is a complex issue." Ms. Norris said that concluded Ms. Dillard's comments.

Ms. Norris said there were no other written submissions provided to the NIAC. Ms. Norris clarified that those can be accepted at the conclusion of the meeting for consideration by the Council and they will be posted to the website without any alternation. She then asked if there were any members of the public in attendance who wished to make a comment. Hearing none, she closed the public comment portion of the agenda. She then turned the meeting over to Ms. Lau.

### **VII. DISCUSSION AND DELIBERATION ON RECOMMENDATIONS FOR THE WATER RESILIENCE REPORT**

*Constance H. Lau, NIAC Chair*

Ms. Lau said at this time, the Council would deliberate on the report. She asked if any of the Members had any questions or discussion points. Mr. Carr said he felt the report was terrific and very educational. He said he was surprised that the call to action was not more specific in some areas. He wondered if the Working Group had considered talking about best practices or setting some standards. There are thousands of water breaks and there are pipes that are hundreds of years old. He asked if it was possible to put some of these recommendations into very specific

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ways so the success can be measured. Mr. Baylis answered yes. He said that Mr. Carr had a very good question and he will respond as these issues did come up in the Working Group. He said when they thought through the exercises in Recommendation 3, after they are completed, he feels a lot will come out of that. The challenge of talking about water main breaks, new technologies and best available material, there is a myriad. He said there are hundreds of opportunities to fix water. He said they wanted to move at a measured fashion at the Federal level and get the disconnect between the Federal and local agency to address specifically what they are getting at. He said that they recognize that they do not even have the framework to do that. Dr. Scott said to clarify, that is one of the reasons why in bullet 3.5, the specific direction for the Departments to establish multi-year goals and performance milestones. He said that they know that all of that has to rest on a strong asset management foundation where they can literally get hazard risk mitigation, but they have to have a framework. Their direction is to say they want to have goal and performance metrics. She said the Water Sector has done a tremendous job in terms of identifying and providing tremendous resources, but the utilization of those resources is not very convenient. She said she appreciates what Mr. Carr has said. General Edmonds added that one of the things they realized as they started deliberating was that there is a lack of funding or commitment to funding. They discussed how to get Congress and decision makers open to the idea of some money. They thought about the projects, the five regional projects, land grant universities, states, and congressional districts and how they can marry some projects and tasks with those universities that the Senators and Congressmen might be willing to put some money toward. He said they could make it reasonably attractive geographically so they can work with others on projects in those regions. General Edmonds said they could also consider adding water resilience as part of those projects. He said the Working Group were trying not to be so blatant to point out that they need cash, but they are trying to find out other ways to get in the door. He referenced that they had talked about Acts that are already out there for emergency funding. They are trying to piggyback on experience from other sectors to try to get some money flowing towards water in the community. Large water companies with money and little companies without money are just getting started. He said they are trying to get started with something as their next step, and they did not want it to get too big, too fast and frighten everyone away.

Mr. Carr said he agreed that obviously the funding is evolving. He said he had been head of the water department in his hometown, 30 years ago as an elected official. He said they thought they were in good shape. He asked what the standards were so they know estimates should be made and the points about funding to low income areas are so relevant and important. They drive a lot of the decision making for funders. He said if there were a way for a municipality or any water company to be able to determine how they compare in terms of best practices, the standards and the deficits. He said then it would be possibly possible to pass bond issues and do some of that funding and have an educated community behind it. Mr. Baylis agreed. He said in their recommendations, he feels they are addressing that, but it is at a “30,000” foot view. Mr. Carr said they should bring it down a little. Mr. Baylis said they would like to. He said that this is not a final report on water, but just a start that they are trying to get moving. He said some agencies do really well with water main breaks but may not do well on other issues. He said Mr. Carr is correct that there needs to be more collaboration between those agencies and an understanding of how to be uniform. He said some of the professional groups such as the National Association of

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Clean Water Agencies (NACWA) and the American Water Works Association (AWWA) are participating and the agencies are very active. He said they are doing this in a uniformed, measured approach. He feels Mr. Carr is correct that they need to take it down a notch, reiterating that this is step 1 in that process.

Ms. Lau wondered if on that point, if that could be coming from the WSCC as well. She said regarding the playbook that they recommended, as they do that playbook they will identify some of the gaps and seams and where investment is necessary and perhaps that morphs into the best practices at the state and local level. Mr. Baylis said that was a great input. He added that when Ms. Durkovich wisely suggested designating the sector councils to take much of this on, he asked who measures that, whether it would be NIAC or DHS so that recommendation is carried through. Ms. Durkovich said that was a great question. She said one of the key parts of the process for the sector coordinating councils is working to develop the sector specific plan, which not only guides the sector, but the GCC partners. She said they just went through a refresh of all of the 16 sectors in developing those sector specific plans. They align to a set of priorities that they worked to create in government and industry that she thinks from an overarching perspective account for many of the issues that they are discussing. She said she thinks they can work with the EPA and the WSCC to fit these recommendations in. She said they are getting much better at measuring progress. They have metrics now and she feels it is an important evolution of where they have gone in the sector specific plans. She said they would certainly work with the GCC and the SCC to align this to the priorities in the water and wastewater sector specific plan.

Ms. Lau said that while she does not mean to go into the next study topics at this time, when they were talking about them, they were looking at the NIAC charter and one of the tasks that they have been assigned is to evaluate SCCs. She said that was not one of the topics that rose to the top of the list and NIAC cannot get into the implementation they are recommending. A lot of the work of implementing the recommendations falls onto the GCC side, but they need the assistance of the SCC. She asked Ms. Durkovich if she could tell the NIAC how the SCCs are managed, because she feels there is a wide diversity in SCCs. Ms. Durkovich said that was a great question. There are 16 sectors and each has their own SCC and GCC. Some of it is driven by who the Sector Specific Agency (SSA) is. For example, DHS is the SSA for nine sectors, ranging from Chemical and Commercial Facilities, to Dams and Nuclear. They also co-chair parts of Transportation and Government Facilities. She said the Water Sector's SSA is the EPA and for the Electricity Sector it is the Department of Energy. However, DHS is in a strong support role. She said how those sectors are managed is in part dependent on the sector specific agency and how they want to oversee the implementation of these things. In addition, how the SCC itself wants to organize, create a work plan, and implement and execute the priorities. She said part of what DHS tries to do is establishing the joint national priorities, which was part of the rewrite for the National Infrastructure Protection Plan (NIPP) for 2013. It has established a common set of priorities that would then inform and be the basis for the sector specific plans (SSPs). She said unfortunately off the top of her head, she cannot recite all of the joint national priorities, but they are focused on response and recovery, cyber security, resilience, incentives, etc. It is then up to the sectors themselves to write a sector specific plan based on the unique

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threats and hazards that can affect the sector. It is then deliberated and then comes to her office and the SSAs office for signature and that is supposed to be the work plan for the next four years. How that is implemented and executed depends on the strength of the SCC and the GCC. She said she thinks this is one area where “if you have been involved in one sector, you have been involved in one sector, it all depends.” Some sectors are made up of CEOs. She said she thinks the Electricity Sector is a great example, because in the case of the Water Sector, there is a mix of general managers, and CEOs. She said the NIAC report indicates that it is a very diverse body of infrastructure assets and facilities. Many of them are driven by trade associations, so the output and execution varies from sector to sector. She said they are in a much better place as she has indicated in the SSPs, there are clear priorities and actions with those priorities and how they are going to measure them. She asked if that addressed Ms. Lau’s question. Ms. Lau said that as Ms. Durkovich was talking, she was reminded of Dr. Benjamin’s question about allocation and who actually makes the decisions. One of the things the NIAC has said is that on the SCCs, they really need the people that can influence those allocation decisions. If they are not on that Council, they need to figure out how to involve them in the process. She said as has been mentioned several times, the Electricity Sub-sector Coordinating Council (ESCC) was redone at a CEO level, after a NIAC recommendation that the allocation was needed. She said she wanted to underscore that this is Dr. Benjamin’s first meeting but he hit a key point that the Council has reiterated several times, that they have to get to the decision makers.

Ms. Allman said the US Commerce did a big report on the Protective Trade Subcommittee. They used their upgraded infrastructure and how it affected manufacturing. She said they were not aware of the issue that their waterways and road systems were very antiquated. This year one of the largest bills passed and they also did a recommendation to support that. She feels there is a lot of interlinkage between the various committees and Councils for that. She said they have thought about and looked for expansion. She said this goes with Mr. Carr’s comments associated with if they had a standard and were able to do a common assessment, that they could actually expand the Federal funding for public, private or government sectors to apply for it, similarly to their road and waterways systems. She feels that might be needed as well. Ms. McDonald said that was an important point and she thinks that it is one of the things they need to go back to, which is within the report and within the presentation. There are 153,000 public water systems and more than 16,000 water treatment works, the small percentage of those authorities, which serve the greater populations. She said that is what the Working Group grappled with through the process. She said in the transportation arena, they have good indicators between the Federal government, the state governments and local governments on pavement conditions, bridge conditions, etc. and they are visible to the public eye. Most of what they have been discussing in the water resilience area is not visible to the public eye. She said overgrown with the 153,000 authorities is who to get those indicators and performance measures and that is why she believes they have to work with the councils and the various trade associations, because they are the ones that know how to do that. She said the playbook that they are recommending is so critically important to moving that forward. They did not feel they were in a position to say, “How do you judge investments that are needed to prevent water mains breaks, to prevent what is needed for some of the investments that are needed for water treatment plants should a ‘Sandy’ occur

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again.” She said those are the types of things they are hoping with this study elevates the need for this continuing dialogue and assessment.

Mr. Fowke asked for the amount of funding identified in the slides, how much of that today is coming from the Federal government. He said he imagined it is just “very small sliver”. Ms. Lau said it is less than 1%. Mr. Baylis said it was a great question and would take it to underscore that when the Clean Water Act passed in the 1970s and there were rivers on fire in Ohio, amongst many problems, there was a huge bipartisan effort on the upgrade of most of the utilities. That has now diminished to very few grants. There are loan programs, as well as the state revolving fund. There are mechanisms where they get money, but it is very small. The issue comes down to ratepayers. He said what is great about the water utilities is that they are pretty self-sufficient and very local, which is something that works. They keep operating, they keep working. He said what they saw that was missing was that the long-term security and resiliency of the water systems. He said he feels that is the job of the task force. People are going to keep getting their water and wastewater; it is a reliable industry when things are running normal. However, the lack in attention and Federal funding for the government is not there. Mr. Fowke said going back to Mr. Carr’s point, having those national standards when they have to raise their funds locally. It is a double-edged sword because they might be forced to do it without funding, but he thinks typically the standards give the platform to raise the funding. He said he thinks that is a great point. Mr. Baylis said that is correct. From a water quality standard, they are given their discharge permits, and all those issues. He said the Working Group points that out in the report, that there are very good standards for the quality of water, barring the devastating issue of Flint. He said what is not measured are asset management standards and best practices that are out there. As they point out in the report, it is more of a voluntary basis and non-profit. He said as they move forward, as the recommendations are implemented, he said he thinks Mr. Fowke and Mr. Carr are already at Step 2, which is typical of CEOs. CEOs say “that is good, what are you going to do next”. Mr. Baylis said they have to get there and get that framework to get there. Mr. Fowke thanked Mr. Baylis.

Ms. Durkovich said that it is interesting to reflect on this conversation. She said she thinks that there are some recommendations that certainly the Executive Branch needs to think about how it can do a better job raising the awareness about the need to make investments in water resiliency and water security. She said that is worked through the Office of Budget Management. She said each one of these public water systems has a Member of Congress and two Senators. She said at the end of the day, they can put out a budget that talks about security and resilience, how weather is affecting infrastructure, and all the other threats and vulnerabilities and why they need to make investments in critical infrastructure, but the Executive Branch is one part of the Federal government. There is another part of the Federal government, Congress, which has a role in all of this. They are the ones who provide appropriations. She said they are at the end of an Administration. They already have the Fiscal Year (FY) 2017 budget. It was written a long time ago. The FY 2018 budget has already been written and ultimately the budget cycle is one of the biggest challenges they have because of how it works and how it can be influenced. She said part of that influence is within Congress. She said there is a transportation that has to be reauthorized all the time. She said there ought to be a water bill at some point, and not just on environmental

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issues. Ms. Allman said there are many things in that bill that are folded. She described it as an infrastructure enhancement. Ms. Durkovich said she was absolutely right. She said as part of that bill there were a number of authorities that were granted to the Department of Energy around the electric infrastructure. Ms. Allman said her recommendation would be to get more awareness and a common scorecard associated to get funding into that. She said it is the largest transportation bill and there are many elements to it and this would fold in very nicely.

Mr. Baylis said that Mr. Fowke had said something that he would like to highlight, which came out of the Study Group. He said it is not just about not getting Federal funding, but they are restricted by the underserved neighborhoods' inability to afford water so they drive many of their budgets by that. It is something the Federal government could do that would enable the local agencies to raise their rates and they would not have to raise their rates in underserved neighborhoods. He said it would be very cost effective if they could do that. He said that was a "very low hanging fruit", that he feels they covered very well. He said the Study Group emphasized that their "hands were tied" not only because the Federal government does not give funding, but they have to set their rates, and all the costs to be affordable to underserved neighborhoods. He said he knows this is Dr. Scott's key point, that if they address this, it will really help those utilities and is something the Federal government can do sooner rather than later. Mr. Carr added that it does not have to be the Federal government that is supplying the discounted water to the lower-income people; it can be the state or the local community. He said this could be a blue print for people who are not experts to follow. He said he felt that would be a great call to action. Mr. Baylis agreed. Ms. Lau said when the Council first took on this study, and Mr. Baylis agreed to lead the Working Group, she thought "how are we going to get our hands around recommendations that can actually make a difference in this sector when less than one percent of the funding does come from the Federal government and we are making recommendations to the Federal government." She said they are not going to change that funding picture overnight, therefore she said she had to compliment the Working Group because she thinks that the recommendations that they have come up actually can make a difference on the Federal level. She said a lot of that, whether it is the playbook or setting out what the sector looks like and the challenges it faces, maybe can be used by a lot of the water agencies at the state and local level to actually make some of the investments in resiliency. As they know from the Flint situation, she said yes water quality has standards, but if they do not make longer term investments, even that goes, although it may not be recognized today.

Ms. Lau then asked of the Members on the phone have any questions or comments to make. Mr. Parker said he did not, but added it was a very interesting discussion. General Edmonds said he felt ready to vote. Mr. Baylis then asked about the procedure moving forward. He wondered if they could easily pull in Ms. Durkovich's comments involving the sector councils. Ms. Norris said that Mr. Jack Eisenhower from the Analytics team would display those changes in the document on the screen in the room. Mr. Baylis said he would also like to address the comments from Mr. Carr and Mr. Fowke regarding the measureable actions. He said it is not in the recommendation phase yet, but asked if it could be folded in to part of the report. Mr. Baylis wanted to clarify that it does not end with this. The recommendations are not final and follow-ups should be included. Ms. Norris said she would suggest that the Council add an additional

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paragraph to the conclusion of the report, which Mr. Eisenhower will pull up so the Council can visibly see the two changes that were discussed, and they can add what they would like to communicate in the report. Mr. Baylis agreed.

Ms. Norris said that could start with the changes that were discussed previously; Mr. Eisenhower will type them as the Members make them. Mr. Eisenhower said the first change discussed was a comment that Ms. Durkovich made, noting that water is a lifeline sector that serves businesses and communities on a daily basis. Ms. Lau asked Mr. Eisenhower to identify the page. Mr. Eisenhower said this is on page 1, the first paragraph of the executive summary. He then highlighted on the screen the sentence they were discussing. The sentence was originally, *“Water is a lifeline sector that brings businesses and neighborhoods backs to normal which makes maintaining water services and quickly restoring them after a disaster a priority.”* It has been changed to say, *“Water is a lifeline sector that services businesses and communities on a daily basis and brings them back to normal after a disaster which makes maintaining water services and quickly restoring them a priority.”* He then displayed the change on the document on the screen. Mr. Baylis agreed, as did Ms. McDonald.

Mr. Eisenhower said the next change is on page 41. It is on specific action 2.1. He said the comment was that the National Security Council would not be the best organization to work on a government industry playbook. He said they are replacing that with the Water Sector Coordinating Council. It now reads, *“The Water Sector Coordinating Council working with major water associations and relevant Federal agencies to create a government industry playbook for managing extreme events.”* He said the rest of the paragraph would stay the same. Ms. Lau said she thought it was the Water Sector Government Coordinating Council, the GCC as opposed to the SCC. Ms. Durkovich said that in the Electricity Sector it was driven by the ESCC. Mr. Baylis suggested that they use both to give it flexibility. Ms. Durkovich said she thought both were fine and everyone was on the same page. Ms. Lau disagreed. She said with Electricity, the GCC came together with the SCC side and that is what really made it happen. She said she does not think the ESCC could have done it alone. Ms. Durkovich said she thinks they are saying the same thing. She said the Ms. Lau was correct; the ESCC took the pen for drafting it. Ms. Durkovich said she thinks it should be the Water Sector and Government Coordinating Councils. Mr. Baylis clarified that this does not disable the NSC or any other agencies from involvement. Ms. Durkovich concurred; the NSC would still be part of the process. She said in reality of the tasked it to the NSC, they would delegate it. Mr. Eisenhower said the revised version would now say, *“The Water Sector and Government Coordinating Councils, working with major government associations and relevant Federal agencies, should create a government entity playbook for managing extreme events.”* Ms. Durkovich said her only comment would be that by calling out the WSCC and the WGCC within that, it encompasses water associations and relevant Federal agencies so they could strike that out. Mr. Eisenhower changed it to, *“The Water Sector and Government Coordinating Councils should create a government industry playbook for managing extreme events.”* Ms. Lau said she would underscore why the GCCs have to be mentioned, particularly because the Working Group attended a meeting, and there are so many Federal agencies involved. She said she was surprised by the emergency support function (ESF), and multiple ESFs where the Electricity Sector only has one, and one sector specific agency. Mr.



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Baylis and Ms. Lau both asked who is in charge on the Federal side. Mr. Eisenhower asked if the change was accepted and if he should move on to the next change. Ms. McDonald said yes.

Mr. Eisenhower said the next change is on page 43, item 3.4. He said the comment was made that with the reorganization of the science and technology directorate, there is no long an office of resilience, so they should strike that piece of it. Ms. McDonald concurred. Mr. Eisenhower said the final change is on page 44, specific action 5.1. He said if he understood the comment correctly, rather than establishing a temporary high-level Federal coordination body, this should be the Water Sector GCC. However, he said if he understands correctly, this would be to try to increase senior level representation on that Council. He said he was not sure if that is what the NIAC meant. Ms. Lau said no, it is just the GCC in this case. Ms. Lau then asked Ms. Durkovich who is on the GCC and who chairs it. Ms. Durkovich said the EPA is the SSA. They are the chair. Mr. Baylis said to be candid, the Working Group felt when they observed EPA's role that they think that a better role could be done and they were concerned with continuing with the same playbook. Ms. McDonald concurred. Mr. Baylis said that is "throwing the elephant on the table". Ms. Durkovich said that was definitely the case. Ms. Lau said they did not mean to put Ms. Durkovich on the spot, and said maybe they needed to talk to Ms. Morrison on this too. Ms. Durkovich said what was interesting about Mr. Baylis' original edit about increasing senior level participation; she said she could also make the argument by being well served by another part of the EPA. She said she understands where they are going. Ms. McDonald asked if the EPA's mandate was resiliency and security. Ms. Durkovich said they have an office of homeland security. However, Ms. McDonald said that is not their primary mandate and that is what they struggled with and ultimately decided not to give it to EPA. Ms. Durkovich said there is an office of homeland security within EPA, which is very small, however that is not their mandate. Ms. McDonald then referred to Ms. Durkovich's point about Congress and how EPA is much more in the crosshairs of Congress than DHS. Therefore, she said if they were looking at this from a practical, pragmatic standpoint, she personally would be in favor of DHS because DHS' mandate is resiliency and security. Ms. Durkovich said who is the SSA is a result of PPD21 Critical Infrastructure Security and Resilience. She said she would leave it up to the wisdom and great minds of the NIAC if they want to make a recommendation to the next Administration when they update PPD21, if they might want to rethink that. She then said she would defer any further comment.

General Edmonds said he was hoping to get comments from Ms. Morrison regarding the finding that water does not get the proper attention. He said in his experience it not as important in Washington, DC. He said the NSC or OMB to take charge of the subject either by budgetary reasons or something else. He said he feels it is not a top 10 priority for EPA. Ms. Morrison then informed the Council that she had lost her connection but heard the NSC be mentioned and asked for a summary of the discussion. Mr. Baylis said that they are in deliberations and they accepted a change regarding having the SCCs involved, but now they are at the point of talking about who has oversight for water agencies on resiliency. He said the Working Group felt pretty strongly that they did not want to put that role with EPA or leave it with EPA. Ms. McDonald concurred. Mr. Baylis said that he would like to speak on behalf of the Working Group that they would like to keep that recommendation. He then handed the meeting over to Ms. Morrison. Ms. Morrison

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asked to clarify if this is the recommendation in regards to the playbook. Ms. Lau said that is actually two recommendations, the playbook in 2.1, which they earlier decided should be the Water Sector Coordinating Council and Water Sector Government Coordinating Council. Ms. Lau said she believed that used to say the National Security Council and suggested going back to that. She said they could mention both coordinating councils. Mr. Baylis said he thinks they can mention the great role that both coordinating councils do. He said one of the findings they found and one of the recommendations throughout both recommendations 2 and 5, were to have the NSC oversight water resiliency and security. He said what he is hearing is that the Council still feels that way. Ms. McDonald concurred.

Ms. Morrison said that she agreed with Ms. Durkovich's earlier point in that, the ESCC developed a playbook as part of their SCCs efforts. She said her thoughts are if the EPA is a designated agency for that agency, is it needed for the NSC to do oversight in the development of the playbook. She said if they already have a Federal agency that is supposed to be responsible for that; she asked "wouldn't you want to include them to develop the actual framework itself." Ms. Lau said she would like to go back and give the history of how the ESCC did that. She said it actually came from the NIAC recommendation and they needed a letter to the White House and direction from the White House to the SSAs, specifically DOE on the energy side, but also DHS to be involved from the resiliency side. Then the two Secretaries came together in informal meetings with the Electricity Sector and from that, the ESCC was remade at a CEO level. Then it could interface with the ESCC side that was primarily staffed by DOE as the lead agency and DHS as the support agency. Ms. Lau said Ms. Morrison might have missed her earlier comment where the Electricity Sector came to the table, but then the government side also had to come to the table and it had to come together on the resiliency issue. She said she thinks on the waterside, the Working Group has focused mainly on the fact that EPA is mostly about water quality issues, as opposed to resiliency issues. Dr. Scott said the matter is much too important to just dance around. She said while not trying to be critical, the Working Group's assessment was that EPA is not effective in this role and it was time to put the "cards on the table", and one of the ways they hoped to do that was once again recognizing that they do not appreciate everything that departments are dealing with. She said they need to have a reevaluation and be clear where responsibility should lie, nor has it been in the past. Mr. Baylis said they were not talking about the NSC having oversight over the EPA, but talking about the NSC replacing that role that EPA has. He said obviously EPA would still be involved, but the NSC or DHS would have oversight versus EPA. He said EPA is attached with many things and he feels they do a great job with regulation and water quality and discharge permits, but they found out that the state of infrastructure in the Water Sector is not resilient, nor secure especially for an event that could impact a community in a longer timeframe. He said they think it warrants the capability of the NSC. He said that is their recommendation. He also feels Ms. Durkovich's recommendation about the sector councils makes sense, but as far as the oversight, the Working Group felt strongly that it needed a significant shift. He said he knows it is not a "light balloon" they are sending up and that they will "ruffle some feathers", but he feels that is what their job is. Ms. Durkovich then informed Ms. Morrison that she had explained to the Council that this is rooted in PPD2, which calls out EPA as the SSA for the Water Sector and that this might be a recommendation for the next Administration in the update of all of the various PPDs that they

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reevaluate who is the SSA or that they make a recommendation to the NSC to reevaluate the SSA. Mr. Baylis said that amendment is very good, and he suggested putting in their recommendation that at the time PPD21 is reevaluated, they would like to remove it from EPA and direct it to NSC and EPA. He said the worst-case scenario would be they get attention over this.

Ms. Lau then informed Mr. Eisenhower that her suggestion on 2.1 is to just add back in the NSC. She said it would read, “The National Security Council working with the Water Sector Government Coordinating Councils.” She said then they need to work on 5.1. Ms. Lau said she thinks they should keep it the same, which Ms. McDonald agreed to. Ms. Lau suggested adding Ms. Durkovich’s idea, which the Working Group seems to like. Ms. McDonald clarified that she does not want to take NSC out. Ms. Lau said that it does not mention the NSC and suggested they add, “The NSC should establish...” Mr. Baylis said he thinks they need to get the language of the directive. Ms. Lau asked Mr. Eisenhower to go to 5.1. Mr. Baylis asked if Mr. Eisenhower understood how they want to change 2.1. Mr. Eisenhower confirmed. Ms. Lau explained to the new Members that are the process they have to go through because of the Federal Advisory Committee Act (FACA). Mr. Eisenhower then brought up the original version of 5.1. Mr. Baylis said what he thinks they are recommending is either in 5.1 or 5.3 that they want to recommend that the time PPD21 is established. He then asked Ms. Durkovich what fiscal year that would take place. Mr. Durkovich said it depends on the next administration and if they get to the various PPDs. Mr. Baylis asked if they could make the recommendation as the policy directives are established under the new Administration. Ms. Durkovich suggested it say “established and updated”. Ms. Lau suggested adding “when PPD...” Mr. Baylis disagreed on using “when” because they may not establish the directive. Ms. McDonald agreed. Mr. Baylis said that they want a directive. He said he would like to say either “‘set’ or ‘update’ the directive on resiliency and security on the Water Sector to be with oversight by the NSC. Ms. Durkovich said they have to have a department or agency have oversight. Ms. McDonald said it should be DHS, as reflected in 5.1. Ms. McDonald said she thinks there are two separate issues at hand. She said she thinks they are getting ahead of themselves when they talk about the PPD21 and they need to focus on a water security and resiliency group. She said as a Member of the Working Group, she stands by their recommendation that DHS should be the one to do this. Then if at some future time, there is a rewrite of PPD21, or if they are making global recommendations, that is the time to say change out EPA for DHS. She reiterated that on this specific recommendation, as a Working Group member, she stands behind the original specific action, which is a temporary high-level Federal coordinating body led by DHS. Mr. Baylis agreed.

Mr. Baylis asked Ms. Morrison if she had anything to add. For clarity, Ms. Lau told Ms. Morrison that they are on recommendation 5.1 and Ms. McDonald just spoke to keeping the original formulation that establishes this temporary effort led by DHS. Ms. Morrison said she had it on her screen. Ms. Lau asked if they wanted the additional recommendation. Ms. McDonald said that she would not advocate for the additional recommendation because she feels that is setting up the recommendation further down the road and she feels that should be something, if at some point in time NIAC is directed to look at the PPD, they should look at it globally and not just in relation to this one. Mr. Baylis said he is comfortable with that, now that

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there has been arbitration on the draft report. Ms. Lau then asked the Council to consider recommendation 2.1, and asked if they should be mentioning DHS as well as NSC. Ms. McDonald asked if that is because it needs a department. Ms. Lau said no, because they do not know about the GCC. Mr. Baylis said it is inferred by working with the Water Sector councils, they are working with DHS. Ms. Lau said she thought it was part of EPA because they are the lead sector specific agency. Mr. Baylis suggested putting NSC, DHS and EPA. Ms. Durkovich said DHS is the co-chair of the Water Government Coordinating Council. She said for the record it is U.S Department of Agriculture (USDA), the Department of Defense (DOD), the Department of Health and Human Services (HHS) and the Department of the Interior (DOI) is also on the Water Government Coordinating Council. Ms. Lau clarified that they do get DHS. Ms. Durkovich confirmed that the EPA is the SSA and DHS is the co-chair. Ms. Lau said it is actually like the GCC office of the ESCC. Ms. Durkovich confirmed. Mr. Baylis said in this case, they are not removing EPA's involvement; they are just having NSC work with them on the playbook. Ms. Lau confirmed. Mr. Baylis said that recommendation 2.1 is okay. He said they would then move onto 5.1 and 5.3. He then addressed General Edmonds and said that they have to add on the points from Mr. Carr and Mr. Fowke as well, in the summary conclusions.

Mr. Baylis said 5.1 recommends they establish a temporary coordinating body. He asked Ms. Durkovich for clarification if this is where they specify DHS or NSC, in order to fix it for Ms. McDonald. Ms. McDonald said she thought it was fixed and they do not need to change it. Dr. Scott said she wanted to go into the charge of 5.2. She said the last sentence on resilience says one of the first tasks for the Federal coordinating body should be to identify various resilience and rapid recovery in existing Federal oversights. She said she wanted to add Federal oversight laws, information through analysis. Mr. Baylis agreed. Mr. Carr said he had an informational question. He said they have identified that they need to spend at least \$1 trillion to meet the need. He asked if there has been any work done to see how many jobs that will create. Mr. Baylis said they talked about how it would create jobs but they did not do the research to forecast a number. However, he said that is a great point. Dr. Scott said she would like to insert "Federal oversight, laws, and regulations." She said the oversight piece could lead them into the work of PPD21 but specifically calling out oversight. Mr. Baylis said he understood. He asked if the Working Group and full Council agreed. Everyone did.

Ms. Lau then moved on to the summary paragraph. Mr. Baylis referenced Mr. Eisenhower's suggestion that they add in Mr. Carr's point. Mr. Eisenhower asked to clarify which page and paragraph they were talking about. Mr. Carr said it was in the "call to action". Mr. Eisenhower said he has made the edits to the recommendations in the recommendation section. Ms. Lau said she believes Mr. Carr was referring to the "call to action" in the slides and where that slide translates into the report is where they want to look. Mr. Eisenhower said the call to action slide was a combination of moving forward from the executive summary and next steps from the recommendation sections. Mr. Carr said they talking about developing a set of measureable standards that water departments could utilize. Ms. McDonald suggested putting that in "best practices". Mr. Baylis said they are not adding this as a recommendation, but they want to emphasize that a follow-up to this is best practices and measureable standards. Ms. McDonald suggested putting it in recommendation 1.5. She asks what the group thinking about adding a

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recommendation 1.5 because in section 1, it is analyzing and mapping water disruptions and developing mitigation. She said what Mr. Carr and Mr. Baylis were saying might flow nicely as an additional recommendation 1.5. General Edmonds said they addressed this in the report itself such as cyber security and other things that the Water Sector already has in place. He said looking at this on regional basis, large companies could share standards and metrics with small companies. He said one of the reasons they wanted to do these pilots, modeling and simulations so they can exchange information that already exists. Mr. Baylis said General Edmonds was correct and that was his response, however he thinks Mr. Carr wants to put a finer point on that. General Edmonds said it is okay to do that, but he said to make sure they do not change the whole report without making sure they can reference it so it does not stick out by itself. He said they have to take the time to find the spot and make sure to pull the reference forward. Mr. Baylis said that is why they put it in the conclusion. General Edmonds said they talked about cyber security, operating systems, large companies vs. small companies, etc. He said they discussed the theme of modelling standards, sharing information between industries and between large and small companies. Mr. Baylis concurred with General Edmonds. He said he thinks they are adding it in a way that they can make things small changes. He said by adding Mr. Carr's comments in the conclusion and moving forward is a good step. Mr. Eisenhower said he had a suggestion on the last paragraph of the executive summary on page 6. He said the last paragraph has a number of different comments on how a great deal needs to be done to strengthen security and resilience of critical infrastructure. He said it goes on to say Federal and state governments go on to do a number of things. One point is that it says, "It must develop standards and best practices to guide water agencies in their resilience efforts". He asked if that was close. Mr. Baylis said that was it. The Council was in agreement.

Ms. Perreiah said she thinks 1.4 captures the spirit of what they are saying. Mr. Baylis said that is why Ms. McDonald made the addition. He said they have had many phone calls on these, usually twice a week. Ms. Lau said she thought that it did not seem measure. Ms. Perreiah concurred and said she thought they could enhance it with a measureable word. Mr. Baylis said he is ok with that. Mr. Baylis asked for General Edmond's opinion. Ms. Perreiah said they could say, "Provide water utilities with measureable actionable information". Mr. Baylis said he liked that a lot. General Edmonds said it was fine. Ms. Lau asked Mr. Eisenhower if he could make the change. Ms. McDonald said that Mr. Eisenhower already had.

Ms. Morrison then asked if they could go back to 2.1 and tell her, what the language ended up being. Mr. Baylis said he would read it. He said 2.1 say, "The NSC working with the Water Sector and Government Coordinating Councils should create a government body industry playbook for managing extreme events." Mr. Baylis explained that it has the NSC working with the Water Sector councils and they envision that as an oversight. Ms. Morrison said she thinks using the term "shall create" is problematic. She said the NSC typically does not create anything. They do not create products. She said Federal departments or the SCCs or GCCs create those products. She suggested slightly tweaking the language to mirroring 2.2 and say something like, "the NSC should direct the WSCC or the WGCC". Mr. Baylis said that is fine, but they want not only the direction from the NSC but the follow through. He said the key to this is the follow through, that the NSC is involved. Ms. Morrison said she understood, but she thinks to say the

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NSC is going to produce it is problematic. Mr. Baylis agreed and said it was being deleted. He asked if they should say, “DHS should create a government industry...” The Council disagreed. Mr. Baylis tried again and said, “The NSC shall direct the Water Sector and Government Coordinating Councils to create...” General Edmonds said that was good. Ms. Morrison agreed that that is a better way to put it. She said if the NSC are asking someone to do something, they are responsible for following up and making sure it is done to their expectations, therefore they would be engaged. Mr. Baylis said that is good, by having the NSC direct it, the emphasis is good. Ms. Morrison said she thinks so, but she will defer to the NIAC because it is their report. Mr. Baylis said no, her input is good. Mr. Baylis said with that, he thinks they are ready to go.

Ms. Lau asked if there were any final questions, comments, changes or edits. Hearing none, she said they are ready for a vote. She asked if there was a motion. Ms. McDonald motioned. It was seconded. Ms. Lau asked all in favor to please say “Aye”. All Council members said “Aye”. There were none opposed. Ms. Lau said that the motion has passed.

### **VIII. DISCUSSION OF NEW NIAC BUSINESS**

*Constance H. Lau, NIAC Chair*

Ms. Lau said the next order of business would be the next topics. She turned the discussion over to Ms. Morrison. Ms. Morrison introduced herself to the new Members of the NIAC. She is the Director of Critical Infrastructure Policy with the Resilience Directorate on the National Security Council staff. She said she has been in the job for about a year and had had the pleasure of working with the NIAC during that time. She said she is the conduit between the NIAC and the White House and is the primary point of contact. She said she works frequently with the Cyber Directorate as well as the directorate in charge of the critical infrastructure portfolio. She said they work very closely hand and in hand. She said she would like to talk about two study topics in no particular order. She said the Members should have received a one-page outline. She said she will take a similar approach to what they did a year ago where she introduced two study topics and then the NIAC chose to move forward with one of those topics. She said she does not have the expectation that the NIAC will take on both of these topics at the same time. She said she would defer to the Council on what they choose to do. She said she thought it might be helpful to have two different topics to discuss and decide which they prefer to take on, or they could do both, or one after the other. She said it is however, they want to proceed. She said going into this, the NSC does not think they have to do both. She said the two topics are somewhat loosely gauged on the feedback that the Council provided to Ms. Norris in May. Ms. Norris provided a number of topics for the NIAC to pursue for the next study. She said these two topics were up towards the top of what the NIAC was interested in. She said these are the two that she decided to push forward.

Ms. Morrison said the first one, reiterating that this is in no particular order, is the “book end” study, which is about making the NIAC recommendations even more impactful and having future focus priorities. She said she would like to very briefly talk about this and then answer questions. She explained the deliverable, which is the most important thing, is the objective for the NIAC to produce a report to the President that has an informed list of recommended topics to

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inform the Administration on recommendations to improve the development of the studies and make them more impactful. She said the NIAC has done some amazing work with their 27 reports. She said she thinks this is an opportunity to take a retrospective look, glean some best practices, consider developing a methodology for future reports and have an opportunity to tell the new Administration what the NIAC has done and its passion to have the vision completed. She said what she thinks is of the most value is a forward leaning look for the new Administration to say “these are the studies we think would bring much value, here is why, and here is what we are going to do moving forward.” She said that was a summary of the potential tasking. She said that in their folders they would find some framing questions listed, as well as possible interview questions. She said she hoped they had a chance to take a look at these before the meeting and asked if there were any questions before she moved to the next topic. There were no questions. Ms. Morrison said she would move on to the second study and said that they could ask questions at the end on either one, stating she was happy to address any.

She said the second study, which she feels would be of great value, is taking a look at cyber threats, both with and without physical consequences to critical infrastructure. She said the NIAC did a great study back in 2007 and the point of this study would be to build on the work that has already been completed. She said the deliverable or the desired outcome would be a report to the President to provide recommendations and outline what would be most helpful to the Federal government and the private sector addressing cyber threats to critical infrastructure. She said the NSC thought that with the NIAC’s experience in the corporate world, they would bring tremendous view and perspective in putting a report like this together. She said gaining that perspective, especially from industry would be incredibly valuable from the Federal government’s standpoint. She said that like the previous study discussed, they have provided framing questions and possible interview questions, and the goal would be to build on what they have done in the past, but it has been almost ten years since the last cyber report was completed. She thinks there is a lot of new information out there, many new things that could be discussed, especially today’s cyber threat environment. She asked how industry is helping the private sector stay on top of that. She said there many things to be examined with both of these studies.

Ms. Morrison then opened the meeting up to questions to see what the NIAC Members think. Mr. Carr said his major question was how they would coordinate topic 2 with the other government agencies that are addressing this in various areas. He asked if they would be duplicating that work by working together or if they would be on their own to have some coordination. He said there is a lot of work that is being done in this area and there is a lot of work that needs to be done in this area. He said it is super critical, but he wondered what their role would be relative to the rest of the Administration. Ms. Morrison clarified that Mr. Carr was asking what type of coordination would be in place to work with other government agencies who are already undertaking cyber studies. She said that is something that they are going to have to work very closely with Ms. Norris on to make sure that they all are able to talk to subject matter experts from various agencies and make sure there is good coordination, and possibly set up some classified briefings which might be helpful. She said there would be a passing of information and that they will need access to a number of subject matter experts in other departments and agencies in order to give that perspective, but the perspective from the private

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sector will be very helpful here. Dr. Scott said that cyber has become a “boutique thing”. She said she had been telling Ms. Lau that across the sectors there are so many studies that are going on that have analyses on cyber. She said this whole thing in terms of coordinating and being sure about “you do not know what you do not know”, and what actions in terms of significant reports that have Federal implications are either ongoing or out there on cyber, would be tremendous. She said otherwise they could unwittingly be already treading ground in a category that someone else already has a report on and that would not be productive. Mr. Fowke said that he knows in the Electricity Sector they currently have a number of initiatives to try to cross liaison work through the Information Sharing Analysis Centers (ISACs) and through the ESCC and it does involve critical industry sectors. He said he is not saying this is not a good study, but it might be worthwhile to cap what is out there and make sure they have members that could participate in other forums that he and Ms. Lau already do, without being conflicted. Ms. Morrison said that is a great point and that one thing NIAC could consider if they think it would be more valuable, is instead of launching forward into the study, perhaps think about scoping this over the next few months. She said if they think this may be more insightful by narrowing down what they think would be most impactful is one perspective in taking a first step. She said they could scope this out based on what they think would be most helpful based on what the Working Group does and go from there. She said that is one other approach that they could take to pull of another splotch of the cyber study. It would give people the time to gauge what is already out there, scope it more narrowly, and see what would be most helpful.

Dr. Benjamin said he thinks they should do the scoping study as part of topic 1. He said the first bullet considers new topics for further action. He thinks they should put cyber under that and make it one of the actions. Ms. Lau said that is a great idea. Ms. Lau and other NIAC members said they thought that was a great idea. Ms. Lau asked if there were any other questions or comments, specifically on topic one besides Mr. Benjamin’s amendment to that. Hearing none, Ms. Lau asked if there is a motion from the Council to adopt study topic 1 with Dr. Benjamin’s amendment. Ms. Perreiah motioned. Ms. McDonald seconded. Ms. Lau asked all in favor to please say “aye”. She asked all in favor to please say “aye”. Everyone in the room said “aye”. She then asked all in favor on the phone to say “aye”. They all said “aye” as well. Ms. Lau thanked the Members on the phone. She then asked if there were any opposed. There were none. She then told Ms. Morrison that she has a new topic. Ms. Lau then said they would be soliciting volunteers for anyone who wants to serve on the Working Group. She said in particular they would love to have some members of the Water Working Group because she feels that study was especially well done and engaged the sector itself, which was very helpful. Ms. McDonald asked in that regard, since the water study was her first and to clarify for the new people, if there would be the support from DHS to help the NIAC pull this together. Ms. Lau said yes. Ms. McDonald said for the new Members, having the Study Group and consulting services is extremely valuable in moving the agenda and the topic forward. Ms. Lau said Ms. Norris has already been thinking about the type of support that might be necessary for these studies. She said they have also talked about the period for it. She said her personal desire is that they can do it by the end of the year and hand it over to the new Administration, which would be different than the Water study. She said she thinks a lot of it will be tapping the thoughts of Members, particularly the Members who have been through the studies to determine how they can make them more impactful.



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### IX. ADJOURNMENT

*Constance H. Lau, NIAC Chair*

Ms. Lau said that they are at the agenda and asked Ms. Morrison and Ms. Durkovich to make closing remarks. Ms. Morrison thanked Ms. Lau, as well as Mr. Baylis, the Working Group and the Study Group. She said they did a fantastic job and she is looking forward to further digesting the recommendations that came out of the report, but she said it is absolutely very thoughtful document on an incredibly important topic. Ms. Lau thanked Ms. Morrison and said she wishes she could have been there and really appreciate that she was able to call in. Ms. Morrison thanked Ms. Lau again for her leadership and thanked Assistant Secretary Durkovich for her leadership as well.

Ms. Durkovich thanked Ms. Lau and all the NIAC Members both present and on the phone, as well as Mr. Baylis and the Working Group for a productive day. She said they have put together a fabulous report and she looks forward to the official transmission of the Water Resilience Report and Recommendations. She pledged to the NIAC that she would work to ensure that those recommendations are implemented. She said she also wanted to commend the NIAC for thinking about bold action. She said she thinks they have seen specifically in LA what happens when there is leadership on tough issues and the impact they can have, and more of that is needed. She encouraged the new Members to get involved. She said it is a great way to get to know their fellow Members, but also fully understand how the NIAC works and the resources that are available to them as they do the reports and the impact that they can have. She then turned the meeting over to Dr. Scott.

Dr. Scott said she wanted to thank everyone. She said Ms. Norris and the support teams have been wonderful. She then made a “special call out” to the Water Sector and Mr. Hagekhalil. She said she is so impressed. She has been on the NIAC for almost four years and has done a number of studies. She said they could not have asked for more in the way the Study Group “got in there and absolutely engaged”. She said that is what makes the NIAC’s work the most relevant and that the Water Sector has been unbelievable. She then thanked Mr. Baylis. Mr. Baylis then said he would like Ms. Norris to pull up a slide to recognize the incredible team effort. The slide reflected many people who contributed to the report in terms of interviews, the Study Group, etc. He said Mr. Hagekhalil pulled together a great Study Group and he hopes the NIAC can continue to follow the implementation of it. He also thanked Mr. Hagekhalil’s partner, Ms. Traci Minamide, who is in charge of the facility the meeting was held at.

Ms. Lau thanked everyone for coming to the NIAC’s first meeting outside of the beltway. She said she thinks it has been incredibly fruitful to have the meeting in LA and that the discussion has been very robust and rich. She said she wanted echo Ms. Durkovich and encourage the new Members to jump in on the study. She explained that Ms. McDonald had done so with the water study and she added incredible value. She said they would love to any or all of the new Members to participate in the future Working Group on future study topics. She also thanked those in the Water Sector. She said it was very interesting, because as she had said earlier, the NIAC actually stops at the recommendation stage, but the really important part of the recommendations are

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whether or not they get implemented. She said she thinks everyone in the room, including NIAC Members, when they leave the room and take off their “NIAC hats”; they have the ability in their own sectors to help encourage implementation. She asked that the Water Sector members who are present and believe in these recommendations to help in the implementation. She thanked everyone again and adjourned the meeting.

DRAFT