URISA

ANAHEIM, CA

September 29–October 2, 2009

CORE INFORMATION CHALLENGES AND OPPORTUNITIES, 2010-2020: BUILDING ON STRENGTHS

Comments on the PowerPoint Slides for the Keynote Address

Wellar Consulting Inc.

Dr. Barry Wellar

Comments on the PowerPoint Slides for the Keynote Address

CORE INFORMATION CHALLENGES AND OPPORTUNITIES, 2010-2020: BUILDING ON STRENGTHS

Dr. Barry Wellar
wellarconsulting.com
Wellar CONSULTING INC.

This is No Time for Business As Usual

URISA ANAHEIM, CA
URISA
URISA 2009 Annual Conference & Exposition
Providing Solutions to Challenges
September 29 - October 2, 2009 • Anaheim Marriott • Anaheim, California

CORE INFORMATION
CHALLENGES AND OPPORTUNITIES,
2010-2020: BUILDING ON STRENGTHS

COVER. More than 40 years ago I attended my first URISA conference, and over that span I have participated as a conference chair, program chair, track leader, plenary speaker, workshop instructor, and presenter. This Keynote Address builds on those experiences, adds some lessons learned from recent appointments and, by rolling out a ten-year activity agenda, endorses and elaborates the 2009 URISA conference theme, ***This Is No Time for Business As Usual***.

CONTEXT

SLIDES 1, 2, and 3. Prior Activities. The contents of these presentations illustrate both the evolutionary and the revolutionary aspects of the urban and regional information systems field, and serve to underline the tradition of URISA and URISANs to consider both challenges and opportunities when discussing information systems futures.

Two of the recent presentations warrant a comment since they may seem to be outside the URISA ambit. The Anderson Lecture was posted by the Applied Geography Specialty Group, Association of American Geographers, and has been selected as the lead article for the inaugural issue of the *International Journal of Applied Geospatial Research* to be launched this Fall. Many of the comments and references are in fact URISA-based, and this is a heads-up about the impending publication.

As for the National TravelWise Association (NTWA) presentation in Belfast, the conference theme was ***Transport & Climate Change: Understand the Problem – Be Part of the Solution***, and my task was to give a plenary address about progress in identifying, adopting, and implementing sustainable transport best practices, with emphasis on the means of acquiring and applying the information necessary to achieving the practices. I credit my involvement in URISA for much of the design and content of the NTWA plenary address.

STRENGTHS OF URISA

SLIDE 4. Recognizing Real Strengths. Two criteria in particular guide the designation of URISA strengths. First, the most obvious strength of URISA is demonstrated by a pair of inter-related achievements: a distinguished record of numerous, leading-edge contributions to the literature on EIS/FIS/GIS/LIS/MIS/PPIS/PWIS/TIS and other IS fields over four decades; and, the thousands of individuals as well the numerous local, state/provincial, and federal agencies, academic organizations, private sector businesses, and community groups that make day-to-day use of URISA conference and workshop materials.

Second, and less apparent but perhaps even more revealing about the strength of URISA, is the kind and amount of product which originates in URISA and is copied, lifted, borrowed, pilfered,

plagiarized, cut-and-pasted, etc., for inclusion in publications, websites, blogs, newsletters, theses/dissertations, conference presentations, and so on.

In my experience, and drawing on those two criteria for support, it is my opinion that URISA is the only organization which currently has the credentials and the credibility to undertake the program of **Core Information Challenges and Opportunities** discussed in this presentation.

TIMEFRAME

SLIDES 5 and 6. The Discipline of Time. The 2010-2020 timeframe reflects my experience that public and private sector policies, plans, programs, etc., which are subject to the discipline of time (as per the 2009 conference theme) are more likely to get done than those which are open-ended, have long-distance due dates (e.g., 2050), or do not include a hard schedule for tracking progress and establishing accountability from the get-go.

CORE INFORMATION THEMES

SLIDE 7. The Information Hook. The selected themes – interdependent infrastructures, climate change adaptation and mitigation, safety and security, and GIS -- represent four domains in which URISA has demonstrated expertise, involve public policy, business, and civic matters of growing significance, and include an information hook that speaks directly to the contribution that URISA can make in elaborating the core information challenges and opportunities associated with each theme.

THE INFORMATION LINK

SLIDE 8. Information is our Game. The *raison d'être* of URISA when it was created more than 40 years ago was to address issues associated with all aspects of information, and over the years URISA has established itself as a premier, professional, information-driven organization. Part of the reason that ***This is No Time for Business As Usual*** is because not enough quality attention has been paid in the past by governments, businesses (including the media), interest groups, and citizens to acquiring and applying pertinent, timely information to personal, organizational, and institutional decisions. One purpose of this Keynote Address, therefore, is to re-affirm and re-energize URISA's information mission over the next decade via a focus on the information links connecting URISA and the four themes selected for the presentation.

INTERDEPENDENT INFRASTRUCTURES

SLIDE 9. Shades of URISA 1977! Three decades ago critical, essential, and interdependent infrastructures were part of my URISA conference presentation. The infrastructure issue is now front-and-center in countries around the world. The descriptors in this slide represent the Government of Canada's take on infrastructures, which is similar in many respects to how other national governments perceive infrastructures.

The phrase "illustrative infrastructures" is used by design, since there are other infrastructures that could be pertinent to governments, institutions, enterprises, and people. One of the core information challenges and opportunities for URISA in the coming decade is to elaborate federal and state/provincial government perspectives on infrastructures, so that they are consistent with urban and regional realities.

It is emphasized that although the focus of this presentation is on interdependencies between and among infrastructures, there are numerous interdependent relationships *within* infrastructures. As a case in point, in the urban and regional transportation sector there are interdependencies between and among the respective modes of transport, that is, the walking, cycling, transit, and private motor vehicle modes for moving people, and the rail and truck modes for moving freight. However, intra-infrastructure dependencies have been known about for decades, and hence the focus in this presentation on inter-infrastructure dependencies.

SLIDES 10 and 11. Sort out the How Questions and the Rest Follows. The credibility of URISA resides in its expertise involving the data-information-knowledge transform process, and urban and regional information systems. Building on strengths includes taking advantage of what you do better than anybody else, and working on applications for which you already have a proven track record. Answering the (two) how questions presents many challenges and opportunities, and the 2010-2020 timeframe applies pressure to get on with the job. NOW.

SLIDE 12. The Initial Inventory is Easy, and Then Things Get Complicated. The shift from regard for isolated or individual infrastructures to interdependent infrastructures is illustrated by a matrix in which each cell off the diagonal represents a relationship between pairs of infrastructures. Entries in the cells in this framework elaborate how one infrastructure affects other infrastructures, or is affected by other infrastructures.

For the purposes of a conference keynote presentation, it is sufficient and appropriate to illustrate the interdependence relationship by using pairwise combinations of infrastructures. In the real world of urban and regional information systems, however, complexity sets in and it is necessary to deal with infrastructure combinations, that is, triples, quadruples, quintuples, etc.

The timeframe of 2010-2020 agrees with the conference theme that ***This Is No Time for Business as Usual***. Simply put, due to globalization, urbanization, and other political, social, and economic forces, the complexity of II relationships is likely to increase significantly in the coming years, which means that there is no time to lose in answering the general and the specific How questions in slides 10 and 11.

SLIDE 13. Triple-I Agenda. There are 90 II cells in the illustrative matrix. The initial challenge and opportunity is to decide how to stake an active, substantive claim as the Go To organization for information on a prioritized set of II cells, and to then demonstrate how to fill selected II cells. A related challenge and opportunity for URISA is to champion interdependent infrastructures information (III) as critical to a successful core enterprise decision support capability.

Further, becoming the Go To organization does not mean going it alone; rather, there are strategic advantages to developing partnerships with entities that share URISA's III vision, and have an interest in cells that complement URISA's vision.

SLIDE 14. Raising the Bar on R&D Involving Cascading Processes. The cascading process refers to chains of events (which may be foreseen, unforeseen, or a mix at a point in time) that result from an event that affects a system, or, in the case of this presentation, affects one or more interdependent infrastructures. This domain is in serious need of attention that deals with both the positive and negative sides of the cascading process in general, and within, between, and among urban regions in particular. (The collapse of banking and other financial institutions, and the uncertain bail-out of the auto industry, are ongoing lessons of what happens when the bar is set too low, or perhaps dropped completely.)

In regard to the cascading process it is noted that: 1) urbanization represents a cascading process, as do such change-of-state descriptors as inflation and deflation, appreciation and depreciation, growth and decline, expansion and contraction, etc.; and 2) the central challenge associated with the cascading process is: a) knowing how the cascading causes and effects work for different relationships over space and time; and b) having the information which enables modifying the cascading process to achieve such outcomes as policy, program, or plan purposes in the public domain, and enhanced competitive advantage in the private domain.

The challenge and opportunity that I see for URISA is to become the Go To organization for those seeking help in understanding how II information can assist in identifying, promoting, and serving positive cascading processes and, conversely, identifying, mitigating, or denying negative cascading processes. It is my expectation that it will take a decade of concerted effort to get the urban region Triple-I house in operational order.

SLIDE 15. Pertinent Criteria to Measure Cascading Effects. All urban regions experience the workings of interdependent infrastructures, including both the positive and negative cascading effects. However, reviews of the literature, and consultations with officials and other researchers reveal that the amount of effort put into methodologically studying how interdependent infrastructures relationships in urban regions arise and unfold over time and space is extremely limited.

This finding is supported by a Google search on April 4, 2009 which produced the following results: interdependent infrastructures (540,000); "interdependent infrastructures" (3,350); municipal interdependent infrastructures (91,600); and, "municipal interdependent infrastructures" (0). Yes, **zero, *nada*, nothing, *rien*, zilch, zip.**

Examination of several dozen pages of Google search results served to underline the significance of the challenge and opportunity to raise the bar on II research and applications in urban and regional governments. In addition, and this point cannot be over-stated, the results point to the urgent need for a group such as URISA to take on the role of "honest broker", and ensure that raising the bar on II research and applications is grounded on the provision of urban and regional information that meets the high-level criteria set out in slide 15.

CLIMATE CHANGE

SLIDE 16. Setting the Climate Change Agenda. The big public sector players on climate change matters have been national governments which, in point of fact, do little to actually put mitigation and adjustment measures into practice, and have only a vicarious appreciation of the climate change experience. Municipal governments need to look to themselves to make the connection between interdependent infrastructures and the implementation of climate change mitigation and adjustment measures.

SLIDE 17. Prioritizing Climate Change Agenda Items for Action. The causes of climate change effects are attributed to a number of sources, including activities within, between and among several infrastructures, such as those that encompass the industrial, transport, food, energy, utilities, water, forestry, housing, and construction sectors. All these sectors have an urban and regional presence; URISA needs to develop a strategy for prioritizing its interests in the pertinent II cells.

SLIDE 18. Again with the Better Information Argument. A necessary element for achieving informed climate change initiatives by governments, corporations, and citizens is better information. URISA is uniquely positioned as a result of its history, expertise, and membership to play a lead role in identifying the information that is needed for climate change mitigation and adjustment programs involving urban and regional governments.

SLIDE 19. Better Information Systems Design. The need for more and better information can only be met through increasingly sophisticated information systems. URISA is uniquely positioned as a result of its history, expertise, and membership to play a lead role in identifying the information systems that are needed for climate change mitigation and adjustment programs involving urban and regional governments.

SLIDE 20. Better Information Systems Applications for Climate Change Initiatives. Federal and state/provincial agencies may provide a useful oversight function, but the responsibility falls to local governments to generate the information necessary to describe the climate change situations in their jurisdictions, and to analyse, evaluate, and otherwise assess their mitigation and adjustment efforts. URISA is uniquely positioned as a result of its history, expertise, and membership to play a lead role in identifying the information systems applications that are needed for climate change mitigation and adjustment programs involving urban and regional governments.

SLIDE 21. New Education Initiatives. Only limited work has been done to date linking interdependent infrastructures and climate change mitigation and adjustment at the urban and regional level. Further, even less effort has gone into demonstrating how this new order of complexity is, could be, or should be accommodated by urban and regional information systems. URISA is uniquely positioned as a result of its history, expertise, and membership to offer workshop and conference programs on how to connect interdependent infrastructures and climate change mitigation and adjustment measures through information systems.

Further, and I credit Prof. William Garrison, University of California at Berkeley for this suggestion, it is also appropriate to suggest that URISA take the lead in promoting the investigation of "positive harm" in association with climate change mitigation and adjustment measures. These Interventions have a variety of consequences, many of them at the urban and regional scale, and regard for the positive harm aspect of climate change choices and decisions is an important information consideration that falls within URISA's purview.

It is generally agreed that a critical element of achieving informed climate change initiatives by governments, corporations, and citizens is better information. However, as the literature (learned, popular, Internet, etc.) makes clear, the climate change field is long on opinion and short on evidence when it comes to identifying, adopting, and implementing mitigation and adjustment measures at the urban and regional scale.

URISA is uniquely positioned as a result of its history, expertise, and membership to lead the effort to raise the bar on the use of pertinent information in decisions that affect the connections between interdependent infrastructures and climate change mitigation and adjustment measures. In my opinion this activity presents an exceptional challenge and opportunity for URISA to commission "White Papers", "Green Papers", etc., that are designed to advance much-needed public debate, public engagement, and public buy-in about the intimate connection between public policy decisions of consequence and high-quality information.

SLIDE 22. Support for the Quantitative Approach. Arguments in favour of using quantitative methods, techniques, and information in public policy as well as in business decisions are "as old as the hills". It appears fair to say that grudging progress has been made in that direction since the quantitative revolution was launched some 50-60 years ago. However, we are now long past the relatively simpler times, and it appears evident that in point of fact ***This is No Time for Business As Usual***, so "grudging progress" is clearly not an acceptable rate of advancement.

For such reasons as complexity, effectiveness, efficiency, clarity, and comprehensiveness, I believe it is imperative that within the next decade the quantitative approach be assigned a much-expanded role in decision processes involving interdependent infrastructures and climate change mitigation and adjustment measures. URISA should look to other groups to assist in this endeavour, and a recent paper by Wellar and Garrison given at the 2009 meeting of the Canadian Operational Research Society (CORS) and the Institute for Operations Research and Management Sciences (INFORMS) provides guidance on how to enlist others to help with the heavy lifting.

The conference presentation (PowerPoint slides) can be viewed at:

http://users.encs.concordia.ca/~awasthi/CORSINFORMS2009.html

For the CORS-INFORMS meeting, a separate paper discussing the PowerPoint slides was also prepared for those not able to attend the conference. It can be viewed at

http://repositories.cdlib.org/its/reports/UCB-ITS-2009-1, and

http://www.transport2000.ca/

To close this section, it may be useful to briefly illustrate why increased quantification is strongly promoted in these remarks.

As the reader is no doubt aware, much has been said and written on the critical topics of best practices and sustainability. A Google search using those terms on April 10, 2009 yielded 46,400,000 and 29,000,000 results respectively.

It warrants emphasizing, however, that only a scant proportion of climate change-related documents, articles, news stories, etc., using either of those very popular terms employ quantitative methodologies. The not-surprising result is that the associated discussions are frequently little more than vague statements or contentions which have limited to no operational utility.

URISA members are fully aware that vagueness is one of the sworn-at enemies of information systems. It follows, therefore, that URISA should be in the forefront of efforts to ensure that a "quantitative test" is rigorously applied to climate change concepts and terms, and is applied even more rigorously and vigorously to proposals, decisions, or actions which identify, adopt, implement, or evaluate climate change mitigation and adjustment measures.

The long story short here, to be explicit, is that purported climate change measures which are not quantified (e.g., "minimum standard") are usually a recipe for murk, and **murk is not information**. We can and must do better in the climate change mitigation and adjustment business, and embracing and promoting a quantitative approach is in URISA's interests.

SAFETY AND SECURITY SLIDES

SLIDE 23. Changes in the Safety and Security Function. Changes in global and societal circumstances over the past decade substantially changed the safety and security function previously known to urban and regional governments. And, as suggested above, the matters of interdependent infrastructures and global warming are among the forces behind the changes.

SLIDE 24. Detailing the Interdependent Infrastructures that Affect Safety and Security. The 10x10 array of infrastructures used in this presentation is sufficient for illustrative purposes. The URISA literature suggests that arrays on the order of 20x20, 25x25, or greater are required to realistically represent the infrastructures of large urban regions. Approximations of those arrays are needed to get a firm handle on the safety and security issues affecting urban and regional governments at present, and for the decade ahead. URISA conference proceedings and workshop workbooks are excellent sources of pertinent documentation that must be accessed early in the search in order to ***Seize the Decade!*** (This exhortation reappears at slide 35.)

SLIDE 25. Identifying Core Information. The process of identifying core information is an intense activity that elaborates the relationships imbedded in each cell, and considerable expertise and experience is required to identify and explain the relationships. Further, a robust methodological design needs to be prepared and followed to ensure that the core information sets meet the criteria of pertinence, timeliness, etc. This task lends itself to partnering with

federal and state/provincial agencies with policy, program, or plan interests in urban and regional infrastructures, including safety and security.

SLIDE 26. Generating and Using Core Safety and Security Information on Interdependent Infrastructures. The process of generating and using core safety and security information on interdependent infrastructures is complex, and fraught with difficulty. It is my impression that over the past five years research supported by Government of Canada agencies has only begun to outline the nature of this process, and I am not aware of evidence that U.S. federal agencies are much beyond the outline stage. In either event, due to its long record of engagement and achievement, I believe that URISA is positioned to play a lead role in deliberations over the next decade about how to meet this part of the safety and security information challenge.

This task also lends itself to partnering with federal agencies (e.g., Statistics Canada, the Census Bureau, Public Safety and Emergency Preparedness Canada, and Homeland Security), as well as with state/provincial agencies and other bodies that are responsible for data series, statistical series, situation reports, etc., that have a security and safety aspect. URISA was heavily engaged in this kind of partnering as far back as the 1960s and 1970s, so it has a long record of achievement to support its involvement.

SLIDE 27. Adopting a Tell-and-Show-How-to-Do-It Approach. The increased complexity of the safety and security aspect of interdependent infrastructures introduces a major challenge for the information systems groups in many local governments. In my experience there is a clear need for a sustained educational presence with strong conference and workshop components that explain (tell) and demonstrate (show) how to meet this new core information challenge. URISA has a running start on making the tell-and-show approach an integral part of the new thinking about the safety and security function in urban and regional governments.

SLIDE 28. Promote URISA's Lead Role on Interdependent Infrastructure Information. In the spirit of ***This is No Time for Business as Usual***, URISA needs to lead the II information parade and take on the role of champion. If it does not do so, with enthusiasm, then I believe that some other group will leap at the opportunity, and URISA will forfeit whatever edge it may have gotten from providing the forum for this presentation on interdependent infrastructures information.

SLIDE 29. Safety and Security by the Numbers. Over the years many URISA presentations have incorporated quantitative methods, techniques, and information in study inputs and outputs. However, the complexities associated with interdependent infrastructures, and climate change mitigation and adjustment measures, involve a whole new set of safety and security relationships that cannot be adequately dealt with solely by text, or by images, graphics, etc.

In a world where many people have difficulty with y=a+bx, or do not know what a statistic is, URISA may not be surrounded by cheerleaders on this initiative. However, partnering with number-oriented organizations in operations research, management sciences, engineering, computer science, geomatics, hydrology, econometrics, etc., to help with the heavy lifting is

part-and-parcel of being a champion. That is, you know or find out who to contact to help get things done, and YOU DO IT.

SLIDE 30. Use the Information Process to Gain Safety and Security Insights. There is an urgent need to achieve common ground among the many different disciplines, government agencies, and businesses engaged in examining (measuring, evaluating, testing, etc.,) the safety and security of interdependent infrastructures. Drawing on my experience on the Interdependent Infrastructures Panel, and the Strategic Safety and Security Panel, Government of Canada, I suggest that information is at the centre of this common ground.

That is, while there may be variations in approaches, when the smoke clears it turns out that all the different disciplines, government agencies, and businesses engage in an information creation process, not unlike the data-information-knowledge transform process that has characterized URISA discussions since the 1960s. It is totally appropriate, it seems to me, that URISA take the lead in making the case that more emphasis on, and discourse about how we create information is central to better communications among the diverse interests with a stake in strengthening the safety and security of all interdependent infrastructures, and especially those with an urban and regional dimension.

Further, it is apparent that an increasing number of disciplines in the natural sciences, engineering sciences, social sciences, and health sciences are conducting pure and applied research in the safety and security field. A major opportunity and challenge for URISA and its members is to demonstrate how a focus on producing information is a key means of transforming multi-disciplinary research agendas into an inter-disciplinary body of know-how and do-how that governments, corporations, and citizens can use to achieve the safety and security of people, infrastructures, and institutions.

GIS AS A SOCIETAL LEARNING TOOL

SLIDE 31. Beyond Point-and-Click. After more than 35 years of GIS R&D and applications, many decades to centuries of activity in the disciplines that comprise the field of geomatics, and several millennia of activity in the field of geography, I suggest that there is still a long way to go before any country can confidently claim that it has an informed citizenry when it comes to knowing about GIS, geomatics and geography. (Note: For the record, "informed" does not equate with mindlessly downloading stuff from the Internet, Wiki or no Wiki.) However, for reasons given above in the comments on a number of slides, there is reason to believe that the next decade could be one in which many members of society come to more fully appreciate and embrace GIS, geomatics, and geography as vital to their well-being.

One result of this awakening, I suggest, entails both a challenge and an opportunity for URISA. That is, it will not be easy to design and implement a citizen-oriented educational agenda that combines GIS with geomatics and geography. However, if the conference theme is correct that ***This is No Time for Business as Usual***, then it follows that we need to do new and different things in how URISA relates to members of society.

Which brings me back to the partnering comments made in slides 13, 29, and 30.

Indications are that a change in how we think about and represent GIS, geomatics, and geography in combinations, and as a set, is a step in the right direction. However, that is no easy task, and prudence suggests that it would be wise to look for help with the heavy lifting. And, as luck would have it, there is some help is at hand.

For those members of URISA who have posted geoskills materials that they want to share with the general public, there is already a venue in place for your work. I am referring to the GeoSkills Showcase Sampler, which is part of Geography Awareness Week, Canadian Association of Geographers (CAG).

In my role as Director of the Program, I can assure you that we would be delighted to have materials from URISA members to bring to the attention to visitors to our website. To learn more about this window of opportunity, please visit:

http://www.cag-acg.ca/files/pdf/GAW/GAW2009_GeoSkills.pdf

SLIDE 32. Civic Engagement Via GIS. It has long been known that citizens who are properly equipped to fully participate in civic affairs are more likely to be eager, informed players in the civic engagement process. Towards that end, it is recalled that the idea of using information technology to promote civic dialogue received considerable attention in the late 1970s and early 1980s. Now, 30 years later, the idea appears to be getting serious traction. URISA has a key role to play in the movement to enable citizens to use GIS technology as a proactive learning tool in analyses of interdependent infrastructures, climate change mitigation and adjustment measures, and safety and security issues and initiatives.

SLIDE 33. Achieving Civic Buy-In. For many years URISA's flagship workshop, *Introduction to GIS*, induced many people from numerous disciplines, and with diverse academic, public sector, and business interests, to become engaged in the GIS field.

It is my reading of the civic situation that the timing is ripe for a similar innovative offering, this time to ordinary citizens who are interested in becoming more knowledgeable about the spatial aspects of interdependent infrastructures, climate change mitigation and adjustment measures, or safety and security issues.

I suggest that URISA has a key role to play in demonstrating how GIS can enable citizens and citizen groups to actively engage in the emerging discourse. Regard for the phrase "challenges and opportunities", and a focus on the themes of this address, are among the key elements in designing workshops and other outreach efforts that promote and serve the transformation from casual public awareness to committed, significant civic engagement.

Further, to pick up on of argument presented at least 15 years ago, the 2009 conference theme ***This Is No Time for Business As Usual*** has it right when it comes to the matter of better demonstrating how combining the qualitative, quantitative, and visualization procedures of information generation leads to better information products. It is my belief that civic buy-in can

be increased considerably in the next decade via URISA promoting itself as the *Go To* association for citizens wanting to better understand how to combine and use qualitative, quantitative and visualization procedures for GIS-based analysis, synthesis, etc., tasks.

SLIDE 34. URISA Helping Citizens Help Citizens Adopt GIS. Advances in geographic information system science and technology have improved the products and services of the GIS industry, and expanded the presence of GIS education beyond the traditional disciplines of geography, cartography, surveying, and engineering. In addition, the increased availability and use of GPS and Google Earth images has broadened the public appeal of GIS-related products and services.

However, we are still a long way from having GIS popularly perceived and used as an information-based learning tool. Through conference sessions geared to presentations by citizens and citizen groups, as well as citizen-oriented contributions to Geography Awareness Week, GIS Day, and media stories, URISA can have a significant and lasting impact on achieving increased societal regard for information, and increased societal acceptance and adoption of GIS systems, sciences, and services over the next decade.

At the risk of perplexing those who must do the organizing, this may be one of those initiatives that could be incorporated in regional meetings to build a "clientele", and to get some media attention at the same time. It is my impression that this new and different kind of initiative is consistent with URISA's history of breaking away from the pack, and is the kind of activity that will enable it to keep its place at the front of the GIS parade.

SEIZE THE DECADE!

SLIDE 35. Start NOW and Waste No Time. The decade ahead is rife with all manner of challenges and opportunities, including those in the field of urban and regional information systems. Moreover, and let us be clear, and honest, there is no magic elixir in all this, just lots of hard work led by good thinking.

In my experience URISA is the only group that can make the kinds information connections in general, and GIS connections in particular, that are outlined in this presentation in regard to interdependent infrastructures, climate change mitigation and adjustment, and safety and security. I believe that URISA can and must ***SEIZE THE DECADE!*** However, it is necessary that we **Start NOW and Waste No Time**.

ABOUT THE KEYNOTE SPEAKER

SLIDE 36. Always a Pleasure. If memory serves, I participated in my first URISA conference in 1968. And as good fortune would have it, I was able to attend many conferences over the intervening years. In addition, I had the further good fortune to serve on the URISA Board, and to become actively engaged in the workshop committee, the policy committee, the conference committee, the program committee, the site selection committee, the education committee, and most likely other committees as well. And to cap off that run of good fortune, I have had

the opportunity to interact with many URISA members, and forged a number of links, both personal and professional.

I am very pleased to have the opportunity to share some thoughts through a presentation at the 2009 URISA conference, and through these comments on the PowerPoint slides used in the Keynote Address. As noted above in the slide description, it is **Always a Pleasure** to attend the URISA conference, and to participate in shaping the URISA agenda.

AFFILIATION ACKNOWLEDGEMENTS

SLIDE 37. Giving Credit Where Credit is Due. The materials in the Keynote Address owe their origins to multiple sources, and I am pleased to acknowledge the affiliations that had a major influence on the content and direction of this presentation.

As shown in slide 37, affiliations that provided content and direction for the Keynote Address at URISA 2009 include academia, government departments and agencies, public interest groups, and professional associations. It is more of my good fortune to have had placements with these organizations, and I gratefully acknowledge the contributions that these affiliations made to my thinking about **Core Information Challenges and Opportunities, 2010-2020: Building on Strengths**.