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STANDARD OF CARE AND E-DEMOCRACY INITIATIVES: POLICY AND LEGISLATIVE IMPACTS

Abstract. This presentation summarizes the core arguments in the two standard of care papers given by Wellar (Wellar, 2010a, 2010b) at the 2010 URISA conference, and then discusses some of the policy and legislative impacts arising from and feeding into the fusion of GIS and e-democracy infrastructure and activities. The presentation should be of particular interest to: 1) elected and appointed members of the executive function responsible for incorporating standard of care obligations into the policies and legislative materials of local, provincial/state, and federal governments; and 2) managers and GISPs responsible for designing and implementing a GIS-based, e-democracy capability that achieves enterprise-wide inter-connectivity between duty of care and standard of care obligations and the modifications to policies or legislative documents and procedures that pertain to those care obligations.

INTRODUCTION

The background for this paper is provided by the Session Description which is posted on the URISA website, and is published in the conference program.

> Barry Wellar's presentation at the 2010 GIS-Pro Conference introduced the topic of governments using GIS to meet duty of care/standard of care obligations. During the 2011 GIS-Pro Conference, Sean McGrath reported on e-democracy activities designed to streamline the legislative process, reduce the paper burden, and significantly improve information exchanges between elected officials and citizens. This panel session builds on those foundations by discussing how information technology is modernizing the legislative process in different jurisdictions, how the availability of GIS is increasing the onus on governments to explicitly build GIS into their standard of care

capabilities, and how e-democracy principles and practices are emerging as a core element of enterprise-wide computer-based communications systems in governments.

The materials which follow are based on the slides used in my 2012 GIS-PRO presentation. I begin by re-visiting several tables from the 2010 papers (Wellar 2010a, 2010b), which were initial contributions to the URISA dialogue on standard of care and GIS. Then, I outline the responsibilities of the executive function (elected and appointed officials) in building a GIS capability that meets tests for achieving standard of care and, ultimately, duty of care obligations.

(NOTE: Readers wishing to know about the duty of care and standard of care distinctions and relationships are referred to the earlier papers for details and additional references. For the purposes of this paper it may suffice to state that duty of care refers to the obligations of governments towards citizens and corporate entities, and standard of care refers to the effort made to achieve those obligations and, in particular, whether the effort made is reasonable under the circumstances. As indicated by the title, emphasis in this paper is on standard of care (the means) rather than duty of care (the ends). However, since there is an intimate relationship between duty of care and standard of care, I frequently refer to both of the care aspects because changes in one can lead to changes in the other.)

With the basic parameters in place, I present an illustrative selection of policy and legislative impacts associated the policy and legislative impacts arising from and feeding into the fusion of GIS and e-democracy infrastructure and activities.

While I acknowledge that there could be other catalysts behind such a fusion process, it is my experience that standard of care is a domain which is equally important to governments, citizens, and corporations. As a result, I suggest that governments, citizens, and corporations are likely to be equally motivated to have the fusion process proceed with standard of care serving as a pre-eminent fusion driver.

However, since a generic approach is being taken in suggesting policy and legislative impacts, the domain of choice could be other than standard of care with little or no loss of generality. As for the other domains that warrant consideration as fusion drivers, dozens of them are suggested in this paper, and many more dozens are suggested in *Foundations of Urban and Regional Information Systems and Geographic Information Systems and Science* (Wellar, 2012).

And, as a final introductory remark, my session task in part is to set the table for presentations which are discussing various e-democracy R&D initiatives that are in process or under consideration. The emphasis on standard of care provides a substantive rationale or “hook” for jurisdictions already in the e-democracy design phase, as well as for those beginning to explore the operational aspects of e-democracy and/or the fusion of GIS and e-democracy infrastructure and activities.

CONNECTING DUTY OF CARE AND STANDARD OF CARE ITEMS AND GIS APPLICATIONS

In the first of two duty of care/standard of care presentations at the 2010 URISA GIS-PRO conference, I suggested a number of duty of care and standard of care materials and functions which are, could be, or should be the basis of GIS applications (Wellar, 2010a). The indicative list of materials and functions is presented in Table 1.

There are numerous other pertinent materials and functions to be added to Table 1, and I welcome seeing the present list expanded by contributions from municipal, provincial, state, and federal agencies, respectively. It is my expectation that the number of add-ons from each level of government will be large and diverse, and I suggest that URISA find a partnering association to take the lead in compiling the expanded lists of materials and functions.

TABLE 1. PUBLIC AGENCY DUTY OF CARE/STANDARD OF CARE MATERIALS AND FUNCTIONS THAT DO HAVE, COULD HAVE, OR SHOULD HAVE GIS APPLICATIONS: AN INDICATIVE LISTING

Address files
Air pollution alerts
Building demolitions
Building permits
By-laws
Censuses
Crimes against people reports
Crimes against property reports
Cyclist collision reports
Development approvals
Emergency measures
Emergency vehicle reports
Engineering reports
Environmental assessments
Fire reports
Flood reports
Forest/tree inventories
Green space inventories
Habitat inventories
Hazards reports
Health alerts
Heritage property files
Impact assessments
Infrastructure reviews
Intersection modifications
Inspection reports
Maintenance of bike path reports
Maintenance of parks reports
Maintenance of public housing reports
Maintenance of roadways reports
Maintenance of sidewalks reports
Maps/mapping
Motor vehicle collision reports
Noise studies
Pandemic alerts
Pedestrian slip-and-fall events
Pedestrian-motor vehicle collisions
Performance measure reports
Plan amendments
Plans – Comprehensive
Plans – General
Plans – Official
Plans of subdivision
Property assessment files
Public safety programs
Public safety reports
Restaurant inspection reports
Rezoning applications
Risk analyses
Road signage
Road widenings
Seismic studies
Surveys/surveying
Toxic waste facility hearings
Traffic counts
Traffic police assignments
Transit routing
Urban impact assessments
Utility corridors
Water quality reporting
Water supply analysis
Zoning approvals

CONNECTING DUTY OF CARE AND STANDARD OF CARE FAILURES AND EXECUTIVE IMPLICATIONS

Duty of care and standard of care failures come with consequences that affect the individuals and entities experiencing the failures, as well as consequences that afflict those responsible for the failures due to errors of omission or commission. Table 2 uses a number of media headlines to illustrate a variety of duty of care and standard of care failures, all of which have implications for the executives – elected and appointed – who are ultimately accountable for the failures which are named in or can be adduced from the headlines or the stories elaborating the headlines.

The headlines in Table 2 are illustrative of the 200-300 duty of care and standard of care stories that I can assemble in 3-5 hours of electronically searching media outlets. It is likely that people who are good at keyword searching, and have more tech savvy, could likely get similar results in less than an hour. I strongly encourage such searches, and look forward to being apprised of the results. Again, it is emphasized that the current listing is illustrative, and that there are numerous other pertinent headlines to be added to Table 2.

Further, and very importantly, it is timely at this point in the paper to explicitly recognize the significance of the term “democracy”, which is at the heart of e-democracy infrastructure and services. That is, and consistent with URISA’s “showing by example” over the past 50 years, e-democracy is all about sharing data, information, and knowledge, and towards that end a very instructive and perhaps invaluable service could be provided by creating and maintaining a repository of fully-sourced media items reporting on duty of care and standard of care failures and any associated actions.

TABLE 2. DEATHS, INJURIES AND OTHER COSTS OF STANDARD OF CARE FAILURES? CHECK YOUR NEWS SOURCES!

“New cap for leaky well – Torrent of oil released as smaller cap is removed”
“Oil giant changes face – Next BP head says he’ll put safety first
“Heavy trucks need side mirrors to prevent more deaths”
“Chemical plant does not belong in residential area”
"Roads scholar takes stand for pedestrian safety"
“Board faces lawsuit over bullying”
“Mayor: Flood fix priority for city”
“Flood victims want solution”
“Taxpayers want answers for sewage spill”
“Death of elderly woman puts dangerous stretch of road in context”
‘District did not post contaminated water alert”
“Police action in Toronto worrisome”
“The road to anarchy”
“Top doc gives city a heads-up on helmet use”
“Bike lanes would boost tourism, increase safety”
“Collision – Stop sign obscured by tree”

TABLE 2. DEATHS, INJURIES AND OTHER COSTS OF STANDARD OF CARE FAILURES? CHECK YOUR NEWS SOURCES! (CONTINUED)

"City health inspectors miss fast food strip"
"Drinking water safety push"
"Ice-covered road blamed for multi-vehicle crash"
"Smog warning not issued"
"Mudslide was predictable"
"Fatal crash stokes up cellphone debate"
"Wetland feud heats up at city hall"
"They tore down a heritage building – were all city staff asleep?"
"Notification missed 150 affected homes"
"Washed-out shoulder causes roll-over"
"Transport and highway designs need overhaul"
"Urban sprawl – Other cities show us the dangers of uncontrolled development"
"Gross misuse of scarce water"
"Totally wrong place for a playground"
"Protesters rip expanded landfill plan"
"Broken sidewalk causes broken leg, city sued"
"Bridge collapses, investigation begins"
"Development on flood plain big mistake"
"PG&E ignored gaps in data, engineer says"
"A life short changed: Dad of student killed in blast wants inquest, not a financial slap on the wrist for board"
'Riverside-Hunt Club No. 1 with a bang – Busy intersection remains atop list of collision sites in 2011"
"Deadly level crossings"

CONNECTING DUTY OF CARE AND STANDARD OF CARE ITEMS IN TABLE 1 AND THE MEDIA HEADLINES IN TABLE 2

The connection between Table 1 and Table 2 is likely self-evident to many readers, so brevity is in order here. Put simply, when duty of care and standard of care obligations associated with the materials and functions such as those in Table 1 are not met to a reasonable degree, then headlines such as those in Table 2 arise to afflict elected and appointed officials legally, politically, financially, professionally, criminally, and so on.

EXECUTIVE RESPONSIBILITIES FOR BUILDING A GIS CAPABILITY THAT MEETS TESTS FOR ACHIEVING DUTY OF CARE AND STANDARD OF CARE OBLIGATIONS

Numerous URISA publications over the past near-fifty years have discussed in detail the roles and responsibilities of executives (elected and appointed) in the design, development, implementation, and use of information systems in general, and a variety of sub-systems or standalone systems in particular, including:

- CJIS (Criminal Justice Information Systems)
- EDIS (Economic Development Information Systems)
- EIS (Environmental Information Systems)
- FIS (Financial Information Systems)
- HIN (Health information Network)
- HIS (Housing Information Systems)
- GIS (Geographic Information Systems)
- LIS (Land Information Systems)
- MIS (Management Information Systems)
- PAIS (Property Assessment Information Systems)
- PIS (Planning Information Systems)
- PPIS (Public Participation Information Systems)
- PSIS (Public Safety Information Systems)
- TIS (Transportation Information Systems)
- W/WIS (Water/Wastewater Information Systems)

As a result, therefore, and by way of a “heads up”, when it comes to what is known, what could be known, and what should be known about a wide range of information systems and their associated capabilities, it is the wise *expert* who knows what the URISA literature has to say on using any of the various information systems in differing duty of care and standard of care situations.

A key point to emphasize here is that while the focus of the presentation and this paper is on GIS (geographic information systems), the fact remains that when it comes to matters involving duty of care and standard of care failure, one of the other sub-systems or standalone systems could be a minor or major, partial or total, etc., contributor to that failure.

Therefore, while Table 3 is limited in scope to the GIS capability, what is said about GIS in Table 3 is largely applicable to any of the sub-systems or standalone systems that are part of e-democracy infrastructure and activities.

TABLE 3. A SHORT LIST OF EXECUTIVE RESPONSIBILITIES FOR ENSURING THAT A GIS CAPABILITY MEETS DUTY OF CARE AND STANDARD OF CARE OBLIGATIONS

1. Prepare staff in all units for an increasingly GIS-oriented work environment.
2. Prepare themselves and staff for standard of care situations in which the design, development, and application of geographic information systems (GIS) are issues in whether duty of care and standard of care obligations are met to a reasonable degree.
3. Instruct staff in terms of the geographic information and associated information needed to satisfy duty of care and standard of care obligations.
4. Approve the information content of duty of care and standard of care documents (e.g., laws, by-laws, policies, plans, programs, budgets, regulations, and manuals).

TABLE 3. A SHORT LIST OF EXECUTIVE RESPONSIBILITIES FOR ENSURING THAT A GIS CAPABILITY MEETS DUTY OF CARE AND STANDARD OF CARE OBLIGATIONS (CONTINUED)

5. Direct professional staff who provide the information (e.g., data, studies, files, records, maps, surveys, and reports) needed to ensure that legal and other duty of care and standard of care obligations can be achieved.
6. Adopt budget and work program envelopes containing the GIS technology and applications capabilities.
7. Provide the resources which are appropriate under the circumstances to enable professional staff and technical staff to specify, acquire, process, disseminate, and apply the geographic information and associated information needed to satisfy standard of care and duty of care obligations as they apply to all pertinent documents (e.g., laws, statutes, acts, by-laws, policies, plans, programs, budgets, regulations, and manuals).

DESIGNING A GIS CAPABILITY TO MEET DUTY OF CARE AND STANDARD OF CARE OBLIGATIONS WITHIN AN E-DEMOCRACY FRAMEWORK

My assignment for the session includes suggesting a selection of policy and legislative impacts involving duty of care and standard of care obligations that arise from the fusion of GIS and e-democracy (infrastructure and activities). Building on work published in URISA proceedings, and most notably papers with Britton Harris (Wellar and Harris, 1992) and Ralph Smith (Smith and Wellar, 1992) in Volume 5 of the 1992 conference proceedings, I use generic language in Table 4 and Table 5 to indicate how the fusion of GIS and e-democracy affects policy and legislative processes in governments.

Policy Impact

Stages or phases in the policy formation process have similarities and differences among municipal, provincial, state, central and federal governments. It is my experience, however, that there are core stages or phases involving a common language among many jurisdictions, and a selection of those terms is presented in Table 4. Perhaps future papers will add to the stages or phases in Table 4, leading to a more comprehensive listing of policy impacts arising from the fusion of GIS and e-democracy.

TABLE 4. A SELECTION OF POLICY IMPACTS ARISING FROM THE FUSION OF GIS AND E-DEMOCRACY INFRASTRUCTURE AND ACTIVITIES

1. Opportunity to use GIS to electronically inform and listen to the public on identifying policy options involving duty of care and standard of care obligations
2. Opportunity to use GIS to electronically inform and listen to the public on prioritizing policy options involving duty of care and standard of care obligations
3. Opportunity to use GIS to electronically inform and listen to the public on prioritizing policy choices involving duty of care and standard of care obligations
4. Opportunity to use GIS to electronically inform and listen to the public on adopting policy choices involving duty of care and standard of care obligations
5. Opportunity to use GIS to electronically inform and listen to the public on implementing policy choices involving duty of care and standard of care obligations
6. Opportunity to use GIS to electronically inform and listen to the public on evaluating policy choices involving duty of care and standard of care obligations
7. Opportunity to electronically inform and listen to the public on evaluating policy options involving duty of care and standard of care obligations

Legislative Impact

The term “legislation is used in this paper to represent all statements or documents that are officially adopted by municipal, provincial, state, federal, and central governments, as well as any other forms or levels of government known to viewers in general and URISA members in particular. Among such documents which are covered by the term legislation are laws, statutes, acts, by-laws, policies, plans, programs, budgets, regulations, and manuals), any which could directly or indirectly entail duty of care and standard of care obligations.

It is my expectation that there are significant differences between the body of legislative materials with which I am familiar, and the larger body of legislative materials known to the URISA membership and viewers of this paper. I look forward to learning about additional statements and documents which are being incorporated in e-democracy initiatives.

And, it is my further expectation that there are a number of phases or stages in the legislative process which are not included in Table 5. I look forward to learning about these additional phases or stages in the legislative process which are being incorporated in e-democracy initiatives.

TABLE 5. A SELECTION OF LEGISLATIVE IMPACTS ARISING FROM THE FUSION OF GIS AND E-DEMOCRACY INFRASTRUCTURE AND ACTIVITIES

1. Opportunity to use GIS to electronically inform and listen to the public on amending legislation duty of care and standard of care obligations
2. Opportunity to use GIS to electronically inform and listen to the public on revising legislation involving duty of care and standard of care obligations
3. Opportunity to use GIS to electronically inform and listen to the public on introducing legislation involving duty of care and standard of care obligations
4. Opportunity to use GIS to electronically inform and listen to the public on debating legislation involving duty of care and standard of care obligations
5. Opportunity to use GIS to electronically inform and listen to the public on disseminating legislation involving duty of care and standard of care obligations
6. Opportunity to use GIS to electronically inform and listen to the public on accessing legislation involving duty of care and standard of care obligations
7. Opportunity to use GIS to electronically inform and listen to the public on creating legislation involving duty of care and standard of care obligations
8. Opportunity to use GIS to electronically inform and listen to the public on evaluating legislation involving duty of care and standard of care obligations

CONCLUSION

Duty of care, standard of care, GIS, and e-democracy infrastructure and activities are topics that have been discussed at numerous URISA conferences and in numerous URISA publications over the years, but the session on Standard of Care and E-Democracy Initiatives at the 2012 URISA GIS-PRO conference is the first time that the topics are combined in one discussion.

The task of the initial paper in the session, “Standard of Care and E-Democracy Initiatives: Policy and Legislative Impacts”, therefore, is to first outline the basic connections which are in play, that is, standard of care Items and GIS applications, and standard of care failures and executive implications. With two building blocks in place, the paper then adds a third building block by summarizing the responsibilities of public sector executives (elected and appointed) for building a GIS capability that meets tests for achieving standard of care obligations.

Then, after putting the primary building blocks in place, the paper uses duty of care and standard of care concerns and obligations as the “talking points” around which to

illustrate the policy and legislative impacts arising from the fusion of GIS and e-democracy infrastructure and activities.

In closing, it is my impression that by combining duty of care and standard of care considerations with the fusion of GIS and e-democracy infrastructure and activities, this session is launching a significant course of thinking and action. I therefore suggest that preparations begin now to document a story that will warrant serious consideration for URISA's sequel to the 2012 anniversary production, *Foundations of Urban and Regional Information Systems and Geographic Information Systems and Science.*

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