

Report of the Joint Task Force on NCEES Model Law for Surveying

NCEES Annual Meeting Workshop

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Task Force Facilitator

Report and Slides: www.asprs.org

Task Force History

- 1995 - **NCEES** Modifies Model Law to Include Photogrammetry and GIS/LIS
- 1996 - Concerns Raised/Letters Written by ASPRS, MAPPS, ASCE. Discussion at Winter NCEES/POLC Meeting
- 1997 - Five Organization Summit Meeting (ACSM, NSPS, MAPPS, ASPRS, ASCE). Agree to Work Together.
- 1997 - Task Force Addresses Photogrammetric Issues
- 1997/1998 - Task Force Report Delivered to NCEES (Covering non-GIS Issues Only)

Task Force History

- 1998 - **NCEES** Modifies Model Law to Include Savings Clause (Grandfather Language) per Task Force Recommendation
- 1999 - **NCEES** Modifies Model Law to Address Issues Related to Reciprocity/Comity and Ease of Mobility
- 1999 - Three GIS Organizations Invited to Participate in Extension of Task Force to Address GIS/LIS Issues (URISA, NSGIC, UCGIS)
- 2000 - **NCEES** Modifies Policies Related to Broadening Examination Coverage

Task Force History

- 2000 - Task Force Addendum to 1997 Report (covering GIS/LIS Issues) Delivered to NCEES
- 2001 - **NCEES** Task Force on Model Law Appointed
- 2001 – Registration Boards Forum, Las Vegas
- 2001 – Workshop at NCEES Annual Meeting, Little Rock

Task Force Organizations

- American Congress on Surveying and Mapping (ACSM)
- American Society of Civil Engineers - Geomatics Division (ASCE)
- American Society for Photogrammetry and Remote Sensing (ASPRS)
- Management Association for Private Photogrammetric Surveyors (MAPPS)
- National Society of Professional Surveyors (NSPS)
- National States Geographic Information Council (NSGIC)
- Urban and Regional Information Systems Association (URISA)

Current Task Force Representatives

ACSM

John Dailey, PLS
David W. Gibson, PSM

ASCE

Robert C. Burtch, PS, CP
Steven D. Johnson, PLS

ASPRS

Karen Schuckman, LS, CP
Doug Fuller, CP, CMS

URISA

Bruce Joffe, AICP

MAPPS

George Gross, PE
G. Michael Ritchie, PLS, PE, CP

NSPS

Lee Hennes, PLS
M. Greg Johnson, PLS, PE

NSGIC

Lynda Wayne
Gene Trobia

Facilitator

James Plasker, PE

Initial Task Force Issues

- Identity of the Profession
- Education requirements
- Examinations
- Grandfathering

Initial Task Force Issues (cont.)

- **Reciprocity/Comity/Ease of Mobility**
- **Exclusion of Practice**
- **Continuing Education/Professional Development**

Additional Task Force (GIS) Issues

- **Breadth of Preamble Paragraph**
- **Licensing: Practice v. Use of Tools**
- **Regulatory Interest: High v. Low**

Recommendations - Identity of the Profession

- **Retitle Model Law to Geomatics Professional, Surveyor, or ??**
- **Reserve Term “Professional Land Surveyor”**
- **1999 NCEES Response:**
 - **Use Uniform Language throughout the Model Law**
 - **“Surveyor or Land Surveyor” Implemented**

Recommendations - Education Requirements

- Four Year Degree
- ABET Accredited Program Preferred

Recommendations - Examinations

- NCEES Exam Inclusive of **All** Covered Disciplines
- Three part examination
 - 1. Fundamentals of Measurement Science
 - 2. Principles and Practice - **Discipline-based**
 - 3. Legal and Boundary Practice - **Jurisdiction-specific**

Recommendations - Examinations (cont.)

- **Part 2 Exam Provide Choice of Disciplines**
 1. Representative of **All Practice Areas**
 2. Reflective of **Mobility Goals**
 3. Provide Similarly Experienced Individuals an **Equal Opportunity** for Success

Recommendations - Examinations (cont.)

- **Part 3 - Additional Exam Jurisdiction Specific**
- **NCEES Utilize ASPRS Exam Resources for Part 2 and (in Interim) Possibly Part 3**
 - **ASPRS Resources Have Begun to Be Used**

Recommendations - Grandfathering

- **Adopt Uniform Guidelines**
- **1998 NCEES Response:**
 - **Savings Clause Adopted**

Recommendations - Reciprocity/Comity

- Recognize **Generic** Professional Practice Areas
 - Topographic Surveys
 - Geodetic Surveys
 - Construction/Engineering Surveys
 - GIS-Related Surveys
 - Etc.
- Simplify mobility
- Responsive to NAFTA Goals
- NCEES Response in 1999
 - Sections (a) – (h) Incorporated in Definition of Surveying

Recommendations - Exclusion of Practice

- **Promulgate Guidelines**
- **Recognize Areas of Low Regulatory Interest**

Regulatory Interest Levels

	High Interest	Low Interest
Theme Displayed	Regulated resources affecting property rights, property development, value of land, and boundaries.	Items of a resource management or inventory nature done for development of management programs/plans.
Base Data or Theme	Base layers such as parcels, roads, water courses, contours, geodetic grids, geodetic control, structures.	Theme data such as botany, soils, other resources, habitats that are adjusted to base layers.

Regulatory Interest Levels

(cont.)

	High Interest	Low Interest
Use of absolute coordinates	Publishing in state plane, latitude and longitude, UTM or other officially approved coordinate systems.	No published coordinates or coordinate grids, or use of an assumed coordinate datum.
Primary Measurement vs. Secondary Mapping	Original view/original measurement (by conventional ground survey, aerial photogrammetry, image mapping (the mapping part of remote sensing), or positioning systems such as the Global Positioning System).	Mapping from archival sources, data conversion, simple cartographic and image manipulation.

Regulatory Interest Levels

(cont.)

	High Interest	Low Interest
Relative Expertise of Producer vs. Receiver of Spatial Data	Innocent funder or purchaser of spatial data from a person/firm holding themselves out as having surveying/mapping expertise.	Measurement and mapping within an agency or firm for in-house purposes where users are the measurers.
Availability of Product or Outcome	Public Domain, innocent users exist.	Private use, no direct secondary (innocent) user.

Recommendations - Continuing Education

- **Standardize Criteria**
- **Streamline Recording of Credits**
 - CEU's
 - PDH's

1999 NCEES Model Law

Generic Surveying Clauses (a – d)

(a) Determining the configuration or contour of the earth's surface or the position of fixed objects thereon by measuring lines and angles and applying the principles of mathematics or photogrammetry.

(b) Performing geodetic surveying which includes surveying for determination of the size and shape of the earth utilizing angular and linear measurements through spatially oriented spherical geometry.

1999 NCEES Model Law

Generic Surveying Clauses (a – d)

(c) Determining, by the use of principles of surveying, the position for any survey control (non-boundary) monument or reference point; or setting, resetting, or replacing any such monument or reference point.

(d) Creating, preparing, or modifying electronic or computerized data, including land information systems, and geographic information systems, relative to the performance of the activities in the above described items (a) through (c).

1999 NCEES Model Law

Boundary Surveying Clauses (e – h)

(e) Locating, relocating, establishing, reestablishing, laying out, or retracing any property line or boundary of any tract of land or any road, right of way, easement, alignment, or elevation of any of the fixed works embraced within the practice of engineering.

(f) Making any survey for the subdivision of any tract of land.

1999 NCEES Model Law

Boundary Surveying Clauses (e – h)

(g) Determining, by the use of principles of land surveying, the position for any survey monument or reference point; or setting, resetting, or replacing any such monument or reference point.

(h) Creating, preparing, or modifying electronic or computerized data, including land information systems, and geographic information systems, relative to the performance of the activities in the above described items (e) through (g).

1999 NCEES Model Law

SECTION 19. DISCIPLINARY ACTION REVOCATION, SUSPENSION, REFUSAL TO ISSUE, RESTORE OR RENEW, PROBATION, FINE, REPRIMAND (clause added)

(a) (14) Providing engineering, surveying, or land surveying services outside any of the licensee's area of competence. Licensees must demonstrate by education or experience that they are competent to practice in their field.

Additional Task Force (GIS) Issues

- **Breadth of Preamble Paragraph**
- **Licensing: Practice v. Use of Tools**
- **Regulatory Interest: High v. Low**

NCEES Model Law:

GIS Community Concern - Preamble Paragraph

Practice of Surveying or Land Surveying - The term “Practice of Surveying or Land Surveying,” within the intent of this Act shall mean providing professional services such as consultation, investigation, testimony evaluation, expert technical testimony, planning, mapping, assembling, and interpreting **reliable scientific measurements and information** relative to the location, size, shape, or **physical features of the earth**, improvements on the earth, **the space above the earth**, or **any part of the earth**, and utilization and development of these facts and interpretation into an orderly survey map, plan, report, description, or project. The practice of surveying or land surveying includes, but is not limited to, any one or more of the following:

NCEES Model Law:

Task Force Recommendation

Practice of Surveying or Land Surveying - The term “Practice of Surveying or Land Surveying” within the intent of this Act shall mean providing, **or offering to provide**, professional services involving **both** (1) the making of geometric measurements of, and gathering related information pertaining to, the physical or legal features of: the earth, improvements on the earth, the space above the earth, or any part of the earth; **and** (2) utilization and/or development of these facts into survey products such as graphics, digital data, maps, plans, reports, descriptions, and/or projects. Professional services include acts of consultation, investigation, testimony evaluation, expert technical testimony, planning, mapping, assembling, and interpreting gathered measurements and information related to any one or more of the following:

NCEES Model Law:

GIS Community Concern - Practice vs Tools

- (d) Creating, preparing, or modifying electronic or computerized data, including land information systems, and geographic information systems, relative to the performance of the activities in the above described items (a) through (c).

NCEES Model Law:

Task Force Recommendation

- (d) Creating, preparing, or modifying electronic or computerized data relative to the performance of the activities in the above described items (a) through (c).
- (h) [Same language as above]

Regulatory Interest

Task Force Recommendation - Inclusions

1. Maps and geo-referenced databases representing **authoritative locations** for boundaries, the location of fixed works, or topography by either terrestrial surveying methods, photogrammetric or GPS locations. Includes maps and geo-referenced data....provided to the public as a **survey product**

Regulatory Interest

Task Force Recommendation - Inclusions

2. Original **data acquisition** or resolution of conflicts between **multiple data sources**, when used for the **authoritative location** of features ... geodetic control, orthoimagery, elevation and bathymetry, fixed works, government boundaries and cadastral information
3. **Certification** of positional accuracy of maps or measured survey data

Regulatory Interest

Task Force Recommendation - Inclusions

4. Measurement, adjustment, and authoritative interpretation of *raw survey data*
5. GIS-based parcel or cadastral mapping used for *authoritative boundary definition* purposes wherein land title or development rights for *individual parcels* are, or may be, affected

Regulatory Interest

Task Force Recommendation - Inclusions

6. Interpretation of maps, deeds, or other land title documents to **resolve conflicting data elements** within cadastral **documents of record**
7. Acquisition of field data required to **authoritatively position** fixed works or cadastral data to geodetic control

Regulatory Interest

Task Force Recommendation - Inclusions

8. Adjustment or transformation of cadastral data to improve the positional accuracy of the parcel layer(s) with respect to the geodetic control layer within a GIS for purposes of affirming positional accuracy

Regulatory Interest

Task Force Recommendation - Exclusions

1. Creation of general maps:

- Road, water, air and pedestrian navigation maps and charts
- Gazetteer or atlas as an educational tool or reference publication
- Prepared...for use in the curriculum of any course of study
- Produced by [media] as an illustrative guide to the...location of any event
- Prepared by lay persons for conversational or illustrative purposes [including] advertising material and users guides

Regulatory Interest

Task Force Recommendation - Exclusions

2. The transcription of **previously geo-referenced data** into a GIS or LIS by manual or electronic means, and the maintenance thereof, provided the data are clearly **not intended** to indicate the **authoritative location** of property boundaries, the precise definition of the shape or contour of the earth, and/or the precise location of fixed works of humans.

Regulatory Interest

Task Force Recommendation - Exclusions

3. The transcription of public record data, **without modification except for graphical purposes**, into a GIS- or LIS-based cadastre (tax maps and associated records) by manual or electronic means, and the maintenance of that cadastre, **provided the data are clearly not intended to authoritatively represent property boundaries**. This includes tax maps and zoning maps.

Regulatory Interest

Task Force Recommendation - Exclusions

4. The preparation of any document by any Federal Government agency that **does not define real property boundaries**. This includes civilian and military versions of quadrangle topographic maps, military maps, satellite imagery, and other such documents

Regulatory Interest

Task Force Recommendation - Exclusions

5. The incorporation or use of documents or databases prepared by any Federal agency into a GIS/LIS, including but not limited to, federal census and demographic data, quadrangle topographic maps and military maps

Regulatory Interest

Task Force Recommendation - Exclusions

6. **Inventory** maps and databases created by any organization...of physical features, facilities or infrastructure that are **wholly contained within properties** to which they have **rights** or for which they have **management responsibility**. The **distribution** of these maps and/or data bases **outside the organization must contain appropriate metadata** describing, at a minimum, the accuracy, method of compilation, data source(s) and date(s), and disclaimers of use clearly indicating that the data are **not intended to be used as a survey product**

Regulatory Interest

Task Force Recommendation - Exclusions

7. Maps and data bases depicting the distribution of **natural resources** prepared by foresters, geologists, soil scientists, geophysicists, biologists, archeologists, historians, or other persons qualified to document such data
8. Maps and geo-referenced databases depicting physical features and events prepared by any government agency where the access to that data is **restricted by statute**. This includes geo-referenced data generated by law enforcement agencies involving crime statistics and criminal activities

Final Thoughts

- Task Force sought comment and input throughout the process, including public presentations, articles and web postings of materials
- Recommendations of the Task Force have been developed through a consensus process
- Email comments to:

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- All comments will be shared with the Task Force

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