



Theme Implementation Plan for Elevation Theme

National Oceanic and Atmospheric
Agency (NOAA) and United States
Geological Survey (USGS)

Federal Geographic Data Committee (FGDC)

10/31/2018



Elevation Theme FY18 Implementation Plan Report



Overview

As part of meeting the requirements under [OMB Circular A-16 Supplemental Guidance](#) and [OMB Circular A-16 Appendix E - NGDA Data Themes, Definitions, and Lead Agencies](#) for NGDA Portfolio Management and NGDA Theme Management, NGDA Themes Leads for a Theme, in coordination with associated NGDA Dataset Managers, have developed Theme Strategic Plans and corresponding implementation plans for each Theme in the NGDA Portfolio. This report provides information on implementing the goals, objectives, and actions outlined in the Theme's Strategic Plan (link below). The report includes information on Theme Personnel (Table 1), National Geospatial Data Asset (NGDA) Datasets associated with the Theme (Table 2), and the human and financial resources needed to manage the Theme (Table 3). Table 4 provides a status update on progress made in the current reporting period toward meeting Theme Strategic Plan goals and objectives. Table 5 provides details on the Theme Implementation Plan.

3D Nation: The Vision

The Elevation Theme team has adopted a vision of the U.S. as a 3D nation, where we contribute to making communities more resilient and the U.S. economy more competitive by working to build a modern, accurate elevation foundation from our highest mountains to our deepest oceans. Coordinated through the Federal Geographic Data Committee Elevation Theme, 3D Nation unites terrestrial and coastal/ocean mapping agencies in common purpose to achieve an authoritative national geospatial foundation in support of national mapping needs.

To be competitive in the 21st century, our Nation must be GPS-enabled and ready with 3D maps to capitalize on all that GPS positioning accuracies offer. The United States is GPS-enabled, but we need maps and elevation data accurate to centimeters rather than hundreds of meters. Critical decisions are made across our Nation every day that depend on elevation data, ranging from immediate safety of life and property to long term planning for infrastructure projects. The quality and timeliness of these decisions depends upon actionable information supported by accurate elevation data. The Elevation Theme recognizes that current data and resources to acquire heights and depths nationwide are inadequate or insufficient to meet the challenge. The member agencies of the FGDC 3D Nation Elevation Subcommittee have recognized and accepted this challenge and have developed programs that, if fully implemented, would result in national datasets sufficient to meet these needs.

Theme Strategic Plan

https://communities.geoplatform.gov/ngda-elevation/wp-content/uploads/2018/04/Elevation_Theme_Strategic_Plan20160926.pdf

Theme Personnel

Theme personnel play a vital role in the operation and maintenance of a Theme. They are “individuals who provide interdepartmental leadership and coordination at the NGDA Theme level. They work with component NGDA Dataset Managers to develop standards and provide guidance. The NGDA Theme Lead, or designee, chairs the NGDA Theme’s Thematic Committee and manages the annual process of providing NGDA Dataset collaboration and funding recommendations to the FGDC Steering Committee for those NGDA Datasets within their NGDA Theme. Additionally, the NGDA Theme Lead reports to the Executive NGDA Theme Champion and the FGDC Coordination Group on the NGDA Theme’s activities and investments (both current and planned).” Table 1 provides a summary of current Theme Personnel followed by Table 2 that lists the NGDA Datasets that comprise the Theme.

Theme Personnel	
Theme Lead (Co-Leads):	Ashley Chappell, Diane Eldridge
Theme Lead Agency(ies):	DOC-NOAA, DOI-USGS
Executive Theme Champion(s):	RDML Shepard M. Smith, Dr. Michael Tischler
Executive Champion Agency(ies):	DOC-NOAA, DOI-USGS

Table 1. Personnel Involved in Theme Management.

Elevation Theme NGDA Datasets	NGDA Agency
1 meter Digital Elevation Models (DEMs) - USGS National Map	DOI-USGS
1/3rd Arc-second Digital Elevation Models (DEMs) - USGS National Map	DOI-USGS
5 meter Alaska Digital Elevation Models (DEMs) - USGS National Map	DOI-USGS
Digital Elevation Models from NOAA/NCEI	DOC-NOAA
Global Multi-Resolution Terrain Elevation Data	DOI-USGS
Lidar Point Cloud - USGS National Map	DOI-USGS
MultiBeam Bathymetric Data Base (MBBDB)	DOC-NOAA
National Flood Hazard Layer (NFHL)	DHS-FEMA
NCEI Marine Trackline Geophysics Database	DOC-NOAA
NOS Hydrographic Surveys Collection	DOC-NOAA
Shuttle Radar Topography Mission (SRTM)	DOI-USGS
U.S. Coastal Lidar Elevation Data - Including the Great Lakes and Territories, 1996 – present	DOC-NOAA

Table 2. NGDA Datasets within the Theme.

Human and Financial Resources Needed for Theme Management

The following table provides an estimate of resources needed for managing this Theme. It includes different activities, the roles that support them, as well as an estimated decimal Full Time Equivalent (FTE) and FTE grade. This estimate does not include the resources required for the agency to develop and maintain the NGDA Dataset(s) that make up the Theme to meet the agency’s core mission requirements.

Reporting Period for Human and Financial Resources¹: 9/2017 – 10/2018

Description of Theme Management Activities	Role <i>(Theme Lead, co-Theme Lead, NGDA Coordinator, other as specified)</i>	FTE ²	FTE Grade
NGDA Theme management - USGS (e.g., attend meetings, review NGDA documents, develop Theme Strategic and Implementation Plans, review health of the Theme)	Theme Co-Lead	.10	14
NGDA Theme management - NOAA (e.g., attend meetings, review NGDA documents, develop Theme Strategic and Implementation Plans, review health of the Theme)	Theme Co-Lead	.10	Pay band - V
Other Theme administration activities (e.g., Lifecycle Maturity Assessments, etc.)	NGDA Managers	12@.05	11-14

Table 3. Human and Financial Resources Needed for Theme Management.

Progress against Goals and Objectives

The following table shows the progress status made toward achieving the Theme’s Strategic Plan goals and objectives since the last reporting period. Status categories include 'Not Started' for those activities that have not gotten underway in the reporting period; 'In Progress' for those activities underway which will continue into the next year; 'Complete' for the activities finished, or 'Recurring (completed for the current reporting period).

¹ Reporting period should align with October 1 – September 30 and be submitted by October 31.

² A full-time employee was available a maximum of 1952 hours during the inclusive period of October 1 – September 30; assuming a Monday-Friday schedule with 8-hour workdays and not counting Federal Holidays. The FTE was determined by taking actual number of hours worked in support of Theme Management divided by 1952 hours, rounded to the nearest 0.01.

Summary of Goals and Objectives undertaken during FY18	Status
Goal 1: Ensure that federal elevation data programs meet user needs and are robustly managed.	
Objective 1.1: Continue to evolve and improve NGDA Datasets based on documented needs from federal, state and local agencies, tribes, and private and not-for-profit organizations.	Recurring, Completed for FY18
Objective 1.2: Interact with geospatial advisory and stakeholder groups to ensure that federal elevation mapping programs support the broadest needs possible.	Recurring, Completed for FY18
Objective 1.3: Using the Elevation Theme NGDA Lifecycle Maturity Assessment (LMA) scores as a guide, work to improve the overall health of every NGDA Dataset and strengthen the NGDA management plans.	Recurring, Completed for FY18
Objective 1.4: Leverage the existing strategic plans and initiatives that support each of the NGDA Elevation Theme datasets. For example, the USGS 3D Elevation Program Initiative's <i>A Call for Action</i> and the draft National Coastal Mapping Strategy are primary strategic documents that provide guidance on elevation data acquisition, data standards, stewardship, dissemination, interagency coordination, and related topics.	In Progress
Objective 1.5: Evaluate new types of elevation data collected by federal agencies that are currently not included in the NGDA elevation dataset for addition to the NGDA portfolio to promote the managing of these important data as a capital asset.	In Progress
Goal 2: Increase the <i>quantity</i> and availability of comprehensive elevation data for the building of a 3D Nation enriched by seamless elevation data.	
Objective 2.1: Elevation mapping data programs establish and share annual acquisition, production and/or distribution goals to increase the availability of existing elevation data.	Recurring, Completed for FY18
Objective 2.2: Improve on the existing good coordination among federal agencies, states, academia, private sector and other partners by documenting requirements, planned acquisitions and data holdings, and by identifying and addressing opportunities for, and obstacles to, collaboration on elevation data acquisition.	Recurring, Completed for FY18
Goal 3: Increase the <i>quality</i> and consistency of elevation datasets incorporated into the building of a 3D Nation enriched by seamless elevation data.	
Objective 3.1: Increase awareness and use of federal geospatial standards and specifications throughout the geospatial community through FGDC standards endorsement opportunities, NGDA Elevation Theme Community webpage, education and outreach.	Recurring, Completed for FY18
Objective 3.2: Lead or facilitate the development and coordination of new geospatial specifications for elevation data.	Not Started

Table 4. Theme Implementation Plan Progress Status.

Theme Implementation Plan

The following table provides details for achieving Theme Strategic Plan goals and objectives over the multi-year planning period. These include roles and responsibilities, specific actions, milestones, performance indicators and projected completion dates.

Goal 1: Ensure that federal elevation data programs meet user needs and are robustly managed.				
Objective 1.1 Continue to evolve and improve NGDA Datasets based on documented needs from federal, state and local agencies, tribes, and private and not-for-profit organizations.				
Agency and/or Stakeholders Involved: IWG-OCM and 3DEP Agencies, all agency managers of NGDA Datasets.				
Anticipated Outcome: Federal mapping programs better meet user needs for elevation data, products and services.				
Actions <i>(Describe discrete activities)</i>	Milestones <i>(A significant change in development with associated date)</i>	Performance Indicators <i>(A metric to assess progress of the action)</i>	Action Responsibility <i>(Agency, individuals, and/or groups leading the action)</i>	Projected Completion Date <i>(FY)</i>
1.1.1 Comprehensively document user needs for elevation datasets and design the program to meet user needs and maximize return on investment.	Conduct 3D Nation Requirements and Benefits Study with expanded queries on oceans/coasts to revisit and document user needs for updated coverage and new elevation products and services	Requirements Assessment initiated	NOAA, USGS	FY17 Q4
		Survey conducted	NOAA, USGS	FY18
		Results published	NOAA, USGS	FY19
		Results incorporated into program management	NOAA, USGS	TBD pending results of assessment and resource availability
Agency and/or Stakeholder		Activity through FY18 Q4		
1.1.1 NOAA and USGS + study participants		Survey Conducted: Launched the 3D Nation Requirements and Benefits Study . Survey administered to Federal, State, Local, Non-profit, Associations and Private Sector Surveying, Mapping and Engineering Firms		

Objective 1.2 Interact with geospatial advisory and stakeholder groups to ensure that federal elevation mapping programs support the broadest needs possible.

Agency and/or Stakeholders Involved: IWG-OCM and 3DEP Agencies, All agency managers of NGDA Datasets.

Anticipated Outcome: Elevation Theme programs and datasets are designed to satisfy mission specific needs as well as the needs of the broadest stakeholder community possible. Consideration of stakeholder needs will result in partnership opportunities and minimize duplication of effort.

	Actions <i>(Describe discrete activities)</i>	Milestones <i>(A significant change in development with associated date)</i>	Performance Indicators <i>(A metric to assess progress of the action)</i>	Action Responsibility <i>(Agency, individuals, and/or groups leading the action)</i>	Projected Completion Date <i>(FY)</i>
1.2.1	Engage with National Geospatial Advisory Organizations and Committees to review policy and operational decisions of Elevation Theme programs and datasets	Annual engagement	Annual engagement results in documented suggestions and actions	IWG-OCM and 3DEP Agency Management	FY18 and annually thereafter
1.2.2	Pursue active engagement at the executive and operational levels via interagency forums focused on elevation mapping	IWG-OCM Quarterly Meetings	IWG-OCM updates and signs charter to formally recognize and commit to active participation; Active participation confirmed on an annual basis	IWG-OCM Co-chairs (NOAA, USGS, USACE),	FY18 and annually thereafter
		3DEP Executive Forum Quarterly Meetings	MOUs established with member agencies to formally recognize and commit to active participation; Active participation confirmed on an annual basis	3DEP Executive Forum Chair (USGS)	FY18 and annually thereafter

		3DEP WG Monthly Meetings	MOUs established with member agencies to formally recognize and commit to active participation in 3DEP WG; Active participation confirmed on an annual basis	3DEP WG Chair (USGS),	FY18 and annually thereafter
Agency and/or Stakeholder		Activity through FY18 Q4			
<p>Objective 1.3: Using the Elevation Theme NGDA Lifecycle Maturity Assessment (LMA) scores as a guide, work to improve the overall health of every NGDA Dataset and strengthen the NGDA management plans.</p> <p>Agency and/or Stakeholders Involved: IWG-OCM and 3DEP Agencies, Elevation Theme Dataset Managers.</p> <p>Anticipated Outcome: NGDAs are effectively managed to measure 5/5 for LMA categories, which translates into increased data accessibility to meet user needs.</p>					
	Actions <i>(Describe discrete activities)</i>	Milestones <i>(A significant change in development with associated date)</i>	Performance Indicators <i>(A metric to assess progress of the action)</i>	Action Responsibility <i>(Agency, individuals, and/or groups leading the action)</i>	Projected Completion Date <i>(FY)</i>
1.3.1	For any NGDA with LMA scores below 5/5, identify what is impacting performance and determine steps needed to improve scores	Comparison of LMA assessments generated annually (by FGDC) identifies opportunities for continued improvement	Annual updates to the NGDA LMA reflect increases in the maturity scores	ET Co-leads (USGS, NOAA) and NGDA Dataset Managers	FY18 and annually thereafter
Agency and/or Stakeholder		Activity through FY18 Q4			
<p>Objective 1.4: Leverage the existing strategic plans and initiatives that support each of the NGDA Elevation Theme datasets. For example, the USGS 3D Elevation Program Initiative’s <i>A Call for Action</i> and the draft National Coastal Mapping Strategy are primary strategic documents that provide guidance on elevation data acquisition, data standards, stewardship, dissemination, interagency coordination, and related topics.</p> <p>Agency and/or Stakeholders Involved: IWG-OCM and 3DEP Agencies, Elevation Theme Dataset Managers.</p>					

Anticipated Outcome: NGDA Datasets are supported and resourced adequately to continue meeting national needs for elevation data.					
Actions <i>(Describe discrete activities)</i>	Milestones <i>(A significant change in development with associated date)</i>	Performance Indicators <i>(A metric to assess progress of the action)</i>	Action Responsibility <i>(Agency, individuals, and/or groups leading the action)</i>	Projected Completion Date <i>(FY)</i>	
1.4.1	Existing Strategic Plans and Initiatives drive decisions and program direction			FY17 and annually thereafter	
1.4.2	NGDA-supporting strategic plans and initiatives, describing lead agency(ies), partners, goals and gaps are available to the public	Catalogue the NGDA-supporting strategic plans and initiatives	Catalogue created and published on Elevation Theme Web pages	IWG-OCM and 3DEP agencies	FY19
1.4.3	Utilize the Elevation Theme Community Page to publicize the information resulting from Action 1.4.1	Publicize 1.4.1 on Elevation Theme Community Page	Webpage updated	Elevation Theme co-chairs	FY19
Agency and/or Stakeholder		Activity through FY18 Q4			
<p>Objective 1.5: Evaluate new types of elevation data collected by federal agencies that are currently not included the NGDA elevation dataset for addition to the NGDA portfolio to promote the managing of these important data as a capital asset.</p> <p>Agency and/or Stakeholders Involved: IWG-OCM and 3DEP Agencies; All agency managers of NGDA Datasets</p> <p>Anticipated Outcome: Efficient and effective elevation data acquisition and distribution results in increased availability of elevation data to stakeholders across the nation</p>					
Actions <i>(Describe discrete activities)</i>	Milestones <i>(A significant change in development with associated date)</i>	Performance Indicators <i>(A metric to assess progress of the action)</i>	Action Responsibility <i>(Agency, individuals, and/or groups leading the action)</i>	Projected Completion Date <i>(FY)</i>	

1.5.1	Maintain the health of the Elevation Theme by broadening and or eliminating topographic and bathymetric datasets collected by federal agencies included as an NGDA elevation datasets. Datasets will be evaluated against the FGDC Steering Committee criteria for NGDA Dataset endorsement and pursue the addition or deletion process as appropriate	New datasets added; current NGDA Datasets removed that no longer meet the FGDC Steering Committee criteria for NGDA Dataset endorsement	Annual FGDC theme reports include a summary of proposed and resolution of proposed changes to the ET portfolio; Reports include relevance and impact statements	IWG-OCM and 3DEP agencies	FY18 and annually thereafter
1.5.2	Conduct an LMA on each newly added NGDA Dataset to understand whether/where gaps exist in management of that dataset for attention	Annual LMAs completed as needed	Annual LMAs completed as needed	NGDA Dataset Managers	FY18 and annually thereafter

Goal 2: Increase the *quantity* and availability of comprehensive elevation data for the building of a 3D Nation enriched by seamless elevation data.

Objective 2.1: Elevation mapping data programs establish and share annual acquisition, production and/or distribution goals to increase the availability of existing elevation data.

Agency and/or Stakeholders Involved: IWG-OCM and 3DEP Agencies; All agency managers of NGDA Datasets.

Anticipated Outcome: Efficient and effective elevation data acquisition and distribution results in increased availability of elevation data to stakeholders across the nation.

Actions <i>(Describe discrete activities)</i>	Milestones <i>(A significant change in development with associated date)</i>	Performance Indicators <i>(A metric to assess progress of the action)</i>	Action Responsibility <i>(Agency, individuals, and/or groups leading the action)</i>	Projected Completion Date <i>(FY)</i>
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2.1.1	Theme agencies and / or programs establish annual acquisition and/or production goals (not appropriate for static datasets – static datasets focus on availability 2.1.3, 2.1.5)	Annual acquisition and / or production metrics meet or exceed agency and / or program expectations	Acquisition and production accomplishments published in agency or program annual reports (to include information available through annual NGDA maturity reports)	IWG-OCM, 3DEP and agency managers of Elevation Theme NGDA Datasets	FY18 and annually thereafter
2.1.2	Theme agencies and /or programs establish annual data publication goals to increase the availability and access to data that can be incorporated into the building of a 3D Nation	Annual publication metrics meet or exceed agency and / or program expectations	Data publication accomplishments published in agency or program annual reports (to include information available through annual NGDA maturity reports)	IWG-OCM, 3DEP and agency managers of Elevation Theme NGDA Datasets	FY18 and annually thereafter
2.1.3	NGDA elevation datasets are readily available to the public through federal geospatial programs and public download sites	ET datasets discoverable through data.gov	Agencies increase the availability of data discoverable through data.gov – goal for 100% of ET datasets are discoverable through data.gov	IWG-OCM, 3DEP and agency managers of Elevation Theme NGDA Datasets	FY18 and annually thereafter

		Utilization and /or download of ET datasets are consistent with agency goals	Agencies track and report visits and downloads to their agency public download sites	IWG-OCM, 3DEP and agency managers of Elevation Theme NGDA Datasets	FY18 and annually thereafter
2.1.4	Theme agencies embrace new acquisition technologies that may result in increased capabilities or efficiencies to acquire data in support of Elevation Theme goals and objectives	Evaluation and or adoption of a new technology	Evaluation of new technologies included in agency strategic and operational plans	IWG-OCM, 3DEP and agency managers of Elevation Theme NGDA Datasets	FY18 and annually thereafter
			Evaluation and adoption of new technologies shared through published annual reports, scientific journals and publications, presented in public forums		
			Agency policies and / or operations modified to accommodate new technologies		
2.1.5	Theme agencies embrace new and evolving distribution technologies to increase the availability of elevation data across distribution platforms	Evaluation and or adoption of a new distribution technology	Evaluation of new distribution technologies included in agency strategic and operational plans	IWG-OCM, 3DEP and agency managers of Elevation Theme NGDA Datasets	FY18 and annually thereafter

			Evaluation and adoption of new distribution technologies shared through published annual reports, scientific journals and publications, presented in public forums		
			Agency policies and / or operations modified to accommodate new distribution technologies		
Agency and/or Stakeholder			Activity through FY18 Q4		
<p>Objective 2.2: Improve on the existing good coordination among federal agencies, states, academia, private sector and other partners by documenting requirements, planned acquisitions and data holdings and by identifying and addressing opportunities for, and obstacles to, collaboration on elevation data acquisition.</p> <p>Agency and/or Stakeholders Involved: IWG-OCM and 3DEP Agencies, All agency managers of NGDA Datasets, Non-federal Stakeholders.</p> <p>Anticipated Outcome: More efficient, effective elevation data acquisition with less duplication of effort.</p>					
	Actions <i>(Describe discrete activities)</i>	Milestones <i>(A significant change in development with associated date)</i>	Performance Indicators <i>(A metric to assess progress of the action)</i>	Action Responsibility <i>(Agency, individuals, and/or groups leading the action)</i>	Projected Completion Date <i>(FY)</i>
2.2.1	Elevation Theme agencies commit to using the United States Elevation Inventory (USIEI) to report and review relevant data holdings	Elevation theme agencies submit and validate their annual updates to the USIEI per established process	Number of agencies (accessed annually) submitting data holdings to USIEI	IWG-OCM, 3DEP and agency managers of Elevation Theme NGDA Datasets	FY18 and annually thereafter

2.2.2	Elevation Theme agencies commit to using the United States Elevation Inventory (USIEI) and existing agency holdings to develop acquisition strategies	Agency acquisition strategies reference and account for existing agency and USIEI holdings	Acquisition and production accomplishments published in agency or program annual reports reflect increase in % of country or defined AOI covered		
2.2.3	Elevation Theme agencies commit to using U.S. Federal Mapping Coordination (USFMC) site to report mapping requirements and plans	Elevation Theme agencies report annual mapping requirements and plans via U.S. Federal Mapping Coordination (USFMC) site (currently fedmap.seasketch.org);	Number of agencies (assessed annually) reporting mapping requirements and plans through the USFMC site	IWG-OCM Co-chairs (NOAA, USGS, USACE), 3DEP WG Chair (USGS),	FY18 and annually thereafter
2.2.4	Agencies plan their current and future acquisitions utilizing the information in the USFMC to evaluate overlapping and adjacent requirements to avoid duplication of effort	Elevation theme agencies use USFMC and other inventories of existing data to plan current/future federal mapping acquisitions	Annual reports include a summary of partnerships developed to mutually satisfy stakeholder requirements	IWG-OCM Co-chairs (NOAA, USGS, USACE), 3DEP WG Chair (USGS)	FY18 and annually thereafter
2.2.5	Elevation Theme explores option to migrate coordination from USFMC to Geoplatform.gov	Requirements document developed and reviewed with GeoPlatform Developers	Gaps in functionality are documented	IWG-OCM Co-chairs (NOAA, USGS, USACE), 3DEP WG Chair (USGS); Geospatial Platform Development Team	FY18
		Migration Plan developed	Migration plan approved by GeoPlatform Developers and	IWG-OCM Co-chairs (NOAA, USGS, USACE), 3DEP WG Chair (USGS);	FY19

			IWG-OCM and 3DEP managers	Geospatial Platform Development Team	
		Migration Plan implemented	Federal, state and local stakeholders utilize Geospatial Platform to coordinate mapping requirements	IWG-OCM Co-chairs (NOAA, USGS, USACE), 3DEP WG Chair (USGS); Geospatial Platform Development Team	FY19
2.2.6	Outreach to non-federal partners for expanded use of USIEI and USFMC site across all levels of government	Develop/incorporate slide deck to share with non-fed partners in presentations and other outreach opportunities for increased awareness/ utility of USIEI, USFMC and other inventories	Slide deck posted on ET web pages for easy access by all ET agencies	IWG-OCM Co-chairs (NOAA, USGS, USACE), 3DEP WG Chair (USGS)	FY18 and annually thereafter
		USIEI training developed and posted to public site	Video posted to youtube.com; help available through coast.noaa.gov/inventory	NOAA and USGS	FY16 Q4; updated as needed to reflect new capabilities
		3DEP USFMC training videos developed and posted to public site	Video posted to youtube.com and available through USGS.gov/media	USGS	FY16 Q4; updated as needed to reflect new capabilities

2.2.7	Refine, communicate, and implement best practices to work towards a unified National plan for elevation mapping through 3DEP, the National Coastal Mapping Strategy, and the IWG-OCM	Best practices for topographic, topobathy and acoustic elevation data acquisition updated and documented	Best Practices for agency coordination developed and posted on Elevation Theme Website	IWG-OCM Co-chairs (NOAA, USGS, USACE), 3DEP WG Chair (USGS) and ET Dataset Managers	FY18 and annually thereafter
2.2.8	Elevation Theme programs and/or datasets develop systematic multi-year acquisition strategies to facilitate interagency coordination, partnership development and funding for high quality nationwide elevation coverage	Establish the federal 3DEP multi-year acquisition plan including update cycle	Federal Multi-year plan publicly available and referenced and adopted by the stakeholder community to facilitate acquisition planning	3DEP WG chair (USGS) and 3DEP agencies	FY18
		Establish the 3DEP multi-year plan for each state and territory including update cycle	Formalize relationship with state-based consortiums to facilitate input and adoption by state/local stakeholders		FY18

			The framework and progress of 3DEP acquisition plans for each state and territory are publicly available and referenced and adopted by the stakeholder community to facilitate acquisition planning		FY19
		3DEP multi-year plans (federal and state) drive collaboration and decisions on the development of 3DEP projects	Annual reports include a summary of partnerships, federal agency leveraging rates and federal / non-federal leveraging		FY19 and annually thereafter
		IWG-OCM agencies establish multi-year plans for selected datasets	IWG-OCM multi-year plans for selected datasets available to the public and utilized by stakeholder community	IWG-OCM Co-chairs and Elevation Theme Dataset Managers	Fy18 and annually thereafter

2.2.9	Seek to improve non-federal awareness and participation in elevation data acquisition and multi-year planning	With action 2.2.6, expand outreach on elevation data acquisition and planning through briefings and agency webpages	Presentations are made to 2 or more national states organizations (such as NSGIC, AASG, ASBPA) and at multiple national / regional / state venues to include JALBTCX Workshop and Regional Coastal Mapping Summits	IWG-OCM Member Agencies 3DEP WG Member Agencies; USGS liaisons	FY17 and annually thereafter
		Regional Coastal Mapping Workshops provide forums for coordination across multiple levels of government	1 or more regional coastal mapping summits held each year (AK, SE, NE, Gulf in 2018)		
Agency and/or Stakeholder		Activity through FY18 Q4			
<p>Goal 3: Increase the <i>quality</i> and consistency of elevation datasets incorporated into the building of a 3D Nation enriched by seamless elevation data.</p> <p>Objective 3.1: Increase awareness and use of federal geospatial standards and specifications throughout the geospatial community through FGDC standards endorsement opportunities, NGDA Elevation Theme Community webpage, education and outreach.</p> <p>Agency and/or Stakeholders Involved: IWG-OCM and 3DEP Agencies</p> <p>Anticipated Outcome: Improved geospatial standards and specifications will result in more interoperable, multi-purpose data available to stakeholders.</p>					
Actions <i>(Describe discrete activities)</i>	Milestones <i>(A significant change in development with associated date)</i>	Performance Indicators <i>(A metric to assess progress of the action)</i>	Action Responsibility <i>(Agency, individuals, and/or groups leading the action)</i>	Projected Completion Date <i>(FY)</i>	

3.1.1	Review and enhance (as needed) existing standards and/or specifications	Revised standards and / or specifications released for review and / or published	Revised standards and / or specifications released for review and / or published	IWG-OCM and 3DEP agencies	FY18 and annually thereafter
3.1.2	Encourage widespread adoption of elevation standards, specifications and best practices among stakeholders	New standards and specifications adopted for operational use	New standards and specifications adopted for operational use	IWG-OCM and 3DEP agencies	FY18 and annually thereafter
Agency and/or Stakeholder		Activity through FY18 Q4			
<p>Objective 3.2: Lead or facilitate the development and coordination of new geospatial specifications for elevation data.</p> <p>Agency and/or Stakeholders Involved: IWG-OCM and 3DEP Agencies</p> <p>Anticipated Outcome: Improved geospatial standards and specifications will result in more interoperable, multi-purpose data available to stakeholders.</p>					
Actions <i>(Describe discrete activities)</i>		Milestones <i>(A significant change in development with associated date)</i>	Performance Indicators <i>(A metric to assess progress of the action)</i>	Action Responsibility <i>(Agency, individuals, and/or groups leading the action)</i>	Projected Completion Date <i>(FY)</i>
3.2.1	Facilitate the development of new standards within the Elevation Theme Community that enhance interoperability of elevation data, are national in scope, and reduce technical obstacles to sharing data for multiple uses, including web services for elevation data.	Initiation of the FGDC Standards Development Process as appropriate	New standards and specifications adopted as appropriate	IWG-OCM and 3DEP agencies	FY18 and annually thereafter
Agency and/or Stakeholder		Activity through FY18 Q4			

Table 5. Theme Implementation Plan.