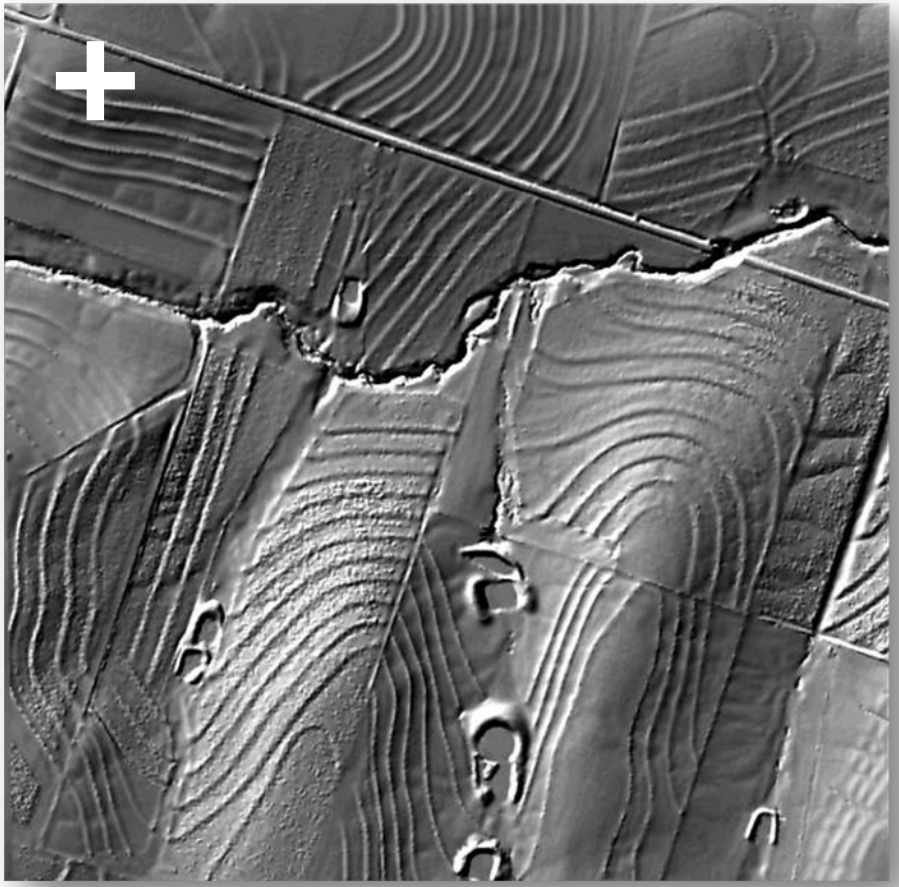

National Enhanced Elevation Assessment
Summary and Program Recommendation for NGAC Review

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USGS

National Enhanced Elevation Assessment

At a Glance

- Sponsored by the National Digital Elevation Program (NDEP) and funded by USGS, NGA,FEMA, NRCS and NOAA to:
  - Document national requirements for improved elevation data from technologies such as LiDAR and IfSAR
  - Estimate the benefits and costs of meeting these requirements
  - Evaluate multiple national enhanced program scenarios
- 602 mission-critical activities that require enhanced elevation data were identified by:
  - 34 Federal agencies
  - 50 states
  - A sampling of local governments, tribes, private and not-for profit organizations
- **A national program has the potential to generate $1.2 billion to $13 billion in new benefits each year when fully operational**

Benefits for Top Business Uses

Rank		Annual Benefits	
		Conservative	Potential
1	Flood Risk Management	$295M	$502M
2	Infrastructure and Construction Management	$206M	$942M
3	Natural Resources Conservation	$159M	$335M
4	Agriculture and Precision Farming	$122M	$2,011M
5	Water Supply and Quality	$85M	$156M
6	Wildfire Management, Planning and Response	$76M	$159M
7	Geologic Resource Assessment and Hazard Mitigation	$52M	$1,067M
8	Forest Resources Management	$44M	$62M
9	River and Stream Resource Management	$38M	$87M
10	Aviation Navigation and Safety	$35M	$56M
:			
20	Land Navigation and Safety	$0.2M	$7,125M
	Total for all Business Uses (1 – 27)	**$1.2B**	**$13B**

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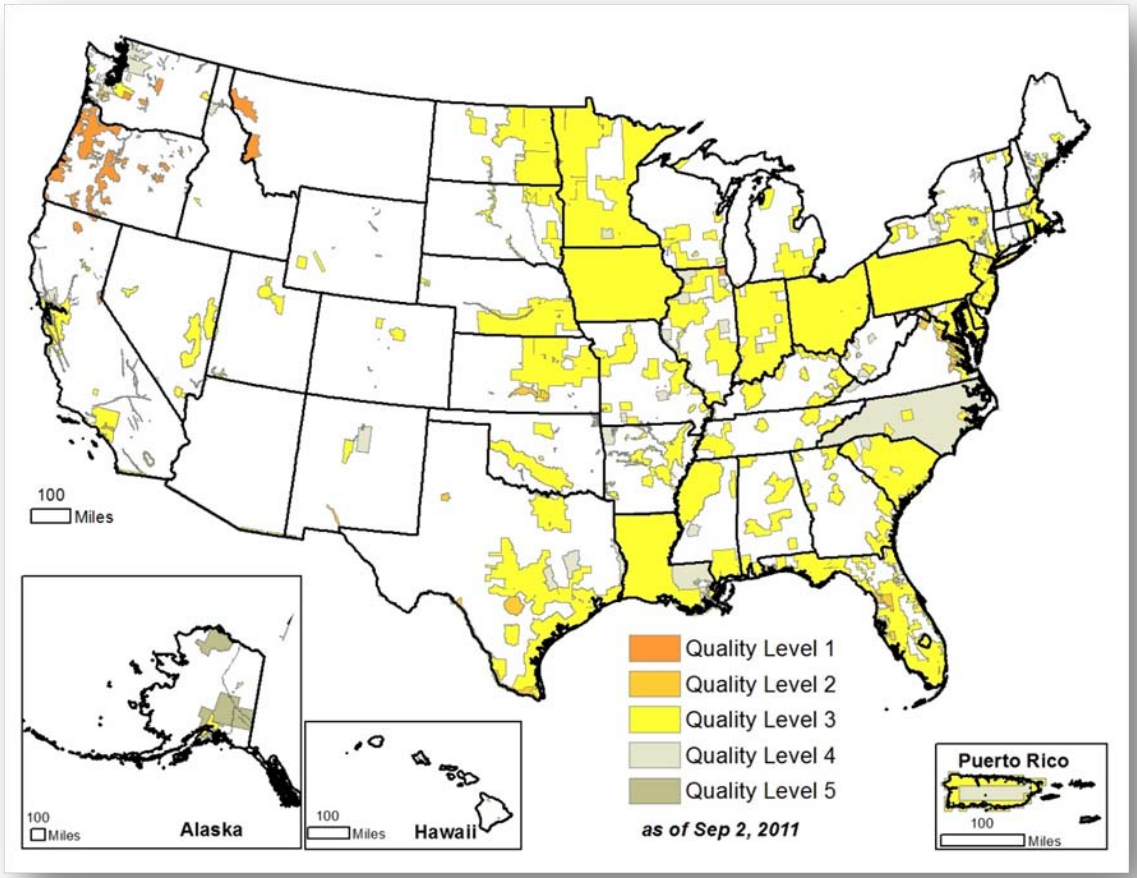
Current Status of the Nation's Elevation Data

NEEA Inventory Results

Map depicts public sources of LiDAR in all states plus IfSAR data in Alaska



1996 - 2011

- 28% coverage - 49 states
- 15% coverage – Alaska
- 30+ year replacement cycle
- Program is well coordinated – less than 10% overlap of coverage
- Data quality variable

Why is this a problem?

- Remaining 72% coverage is 30 or more years old.
- Alaska – very poor quality
- Meets 10% of reported needs
- Current and emerging needs require higher quality data

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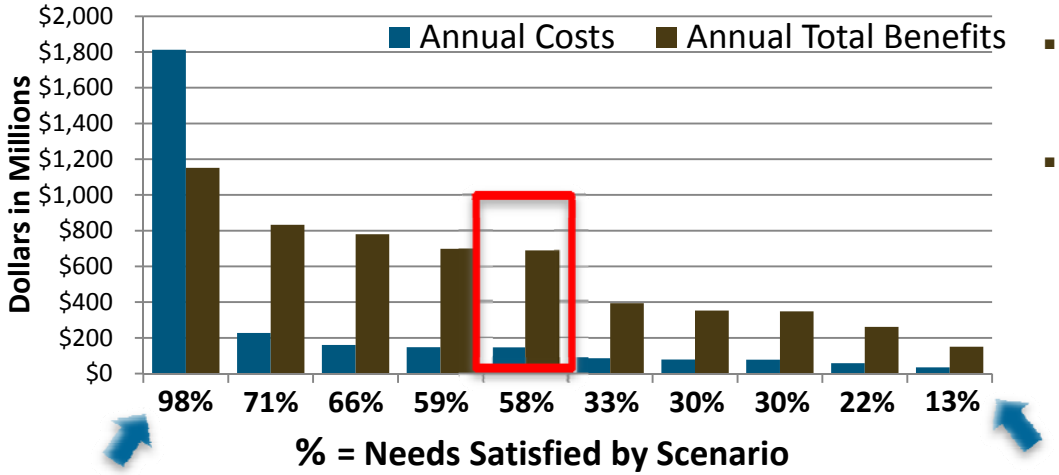
National Program Recommendation

- LiDAR, Quality Level 2 for 49 states,
  IfSAR, Quality Level 5 in Alaska
- 8 year acquisition
- Average Annual Costs: $146 M
- Average Annual Benefits: $690 M (B/C: 4.7:1)
- Total Possible Benefits Satisfied: 58%



Highest quality level (QL1) on an annual cycle

Quality level of existing program (QL3) on a 25 year cycle

- 10 scenarios were evaluated
- Needs addressed vary with data quality and replacement cycle

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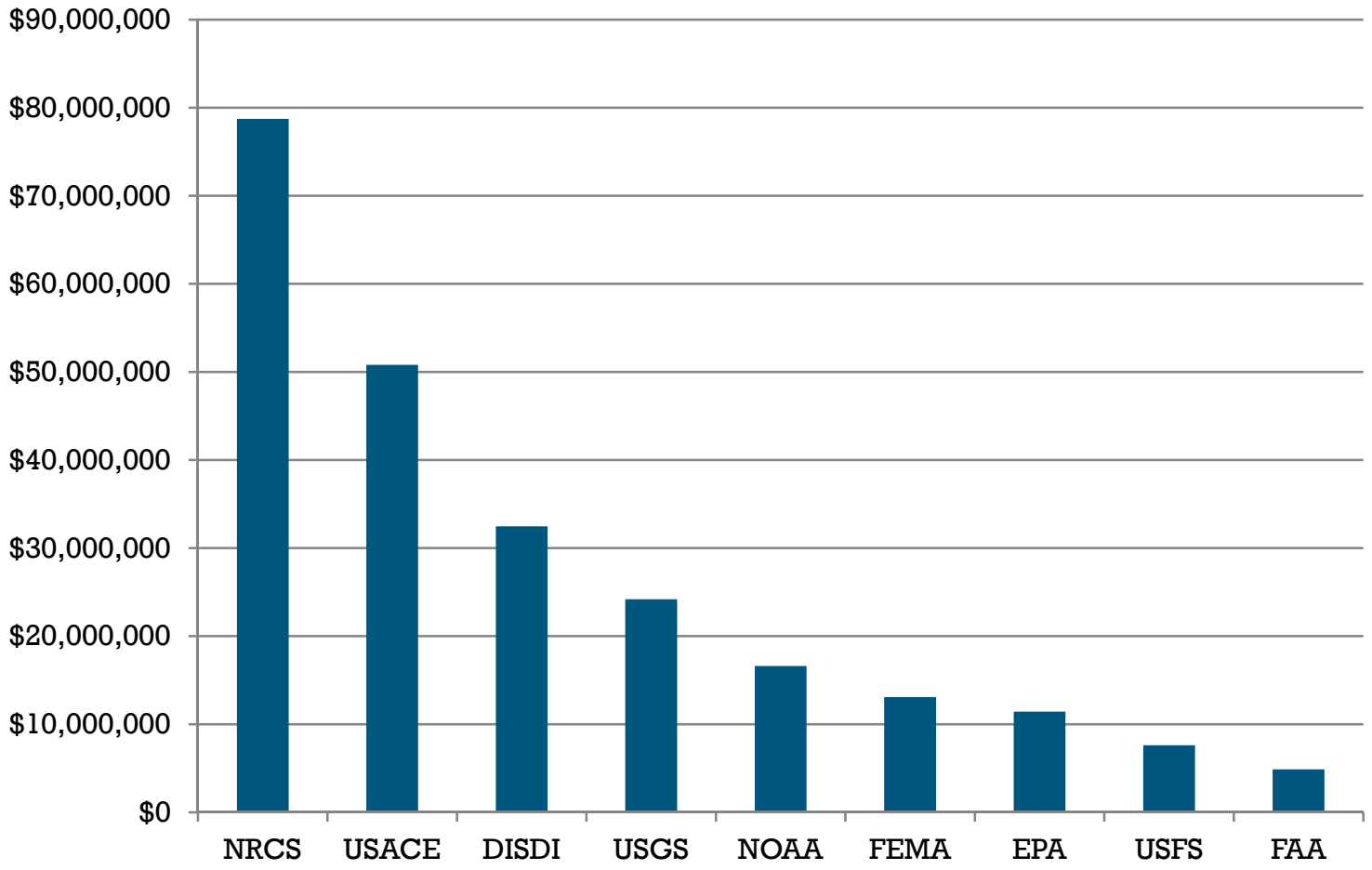
Introducing 3DEP

3D Elevation Program

- Name of proposed program being introduced today
- Purpose to communicate that the program is more than bare earth elevation – point cloud and other basic derivatives (TBD) will be distributed and archived
- Tagline under development: 3DEP gives you the perspective to see more than just what's on the surface

Annual Benefits of 3DEP

To Top Agencies



A Proposed 3DEP Funding Strategy

Cooperatively Funded Program Executed by USGS

- Coalition of Federal agencies to commit funding annually to a national program (in rank order of benefits): NRCS, USACE, DISDI, USGS, NOAA, FEMA, EPA, USFS, FAA, and NGA at $10 M each
- USGS additionally contributing existing base program of approximately $10 M
- States and other partner agencies will be invited to participate at the level of $36 M (balance of program cost)
- Collection priorities will be based on coalition partner agency needs
- Partners may buy up to higher quality level (Quality Level 1)
- Acquisition cycle scales with funding

3DEP Development

Next Steps

- Communications ongoing with potential partners and other stakeholders
- NGAC review of program recommendation and strategic advice on funding strategy
- Develop governance model for community review (June/July)
  - Flexible process to meet annual requirements of partner agencies
  - Use existing mechanism as the forum for negotiations: National Digital Elevation Program
  - Use lessons learned and model after successful partnerships: National Agriculture Imagery Program

Potential NGAC Study Questions

- Review of and feedback on 3DEP: program recommendation of Quality Level 2 data and 8 year cycle
- Feedback and strategic advice on non-federal participation in the 3DEP funding strategy
- Future review and feedback on governance recommendations