

GIS Council Elevation Workgroup Business Plan Update



NEEDS IDENTIFIED IN STRATEGIC PLAN:



Strategic Goals:

1. Facilitate the creation, maintenance, analysis, and publishing of **quality geospatial data**.
2. Provide **widespread access to data** and services and encourage data sharing
3. Facilitate **technical assistance and education outreach** opportunities for furthering the adoption of Nebraska Spatial Data Infrastructure (NESDI) data layers and geospatial applications.
4. Achieve sustainable and efficient allocation of **resources to support the implementation and wise governance of GIS** services and geospatial data.

Programmatic Goals:

- 3) Develop business plans for creation, maintenance, and distribution of NESDI layers:
 - Elevation: to improve the relatively coarse existing data and capitalize on increasing volumes of data being collected with newer LIDAR technologies.

PROJECT GOALS AND OBJECTIVES:

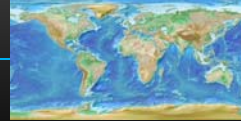
- Assess the current status and perceived adequacy of existing Nebraska surface elevation data;
- Explore and document likely costs and benefits of utilizing LiDAR technology;
- Make recommendations related to possible future Nebraska LiDAR initiatives including technical standards, possible lead agencies, funding strategies, and timelines;
- Establish guidelines for the collection and quality control of data acquired for elevation acquisition projects and its derivatives;
- Implement and share elevation data through the Nebraska Spatial Data Infrastructure.

PERCEIVED BENEFITS AND JUSTIFICATIONS: NEEA BUSINESS USES



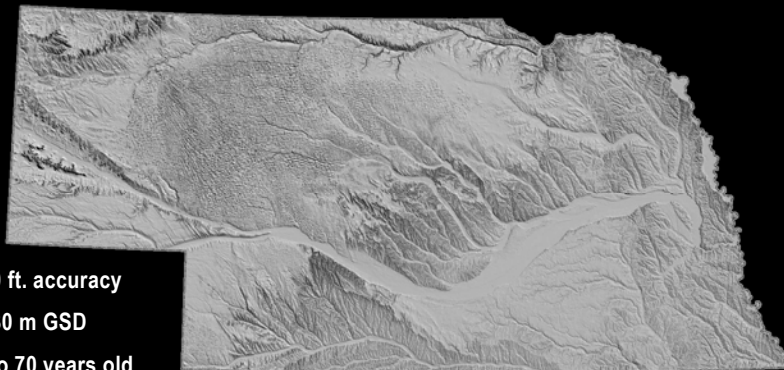
1. Natural resources conservation
2. Water supply and quality
3. River & stream resource management
4. Coastal zone management
5. Forest resources management
6. Rangeland management
7. Wildlife and habitat management
8. Agriculture and precision farming
9. Geologic resource assessment and hazard mitigation
10. Resource mining
11. Renewable energy resources
12. Oil and gas resources
13. Cultural resources preservation and management
14. Flood risk management
15. Sea level rise and subsidence
16. Wildfire management, planning and response
17. Homeland security, law enforcement, and disaster response
18. Land navigation and safety
19. Marine navigation and safety
20. Aviation navigation and safety
21. Infrastructure and construction management
22. Urban and regional planning
23. Health and human services
24. Real estate/banking/mortgage/insurance
25. Education K-12 and beyond
26. Recreation
27. Telecommunications

PERCEIVED BENEFITS AND JUSTIFICATIONS: NEBRASKA BUSINESS USES



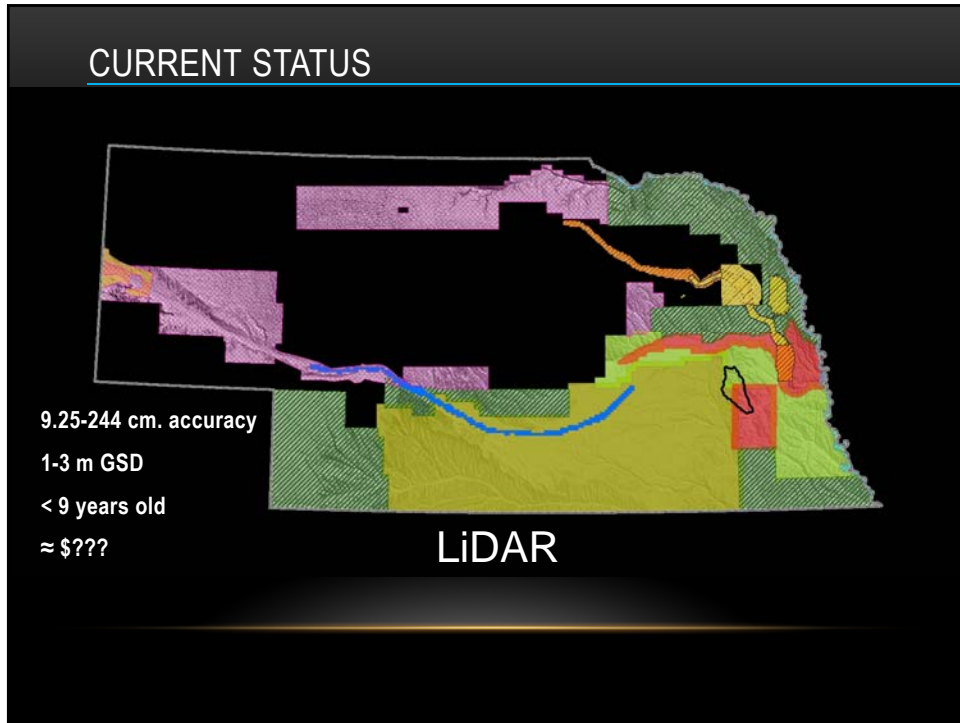
- Emergency management and response planning
- Natural Resources and Environmental Science
- Infrastructure planning - reduction of planning costs
- Evaluating alternative options for Infrastructure
- Permit Process Improvement
- Research – UNL
- Economic Development

CURRENT STATUS



5-10 ft. accuracy
10-30 m GSD
30 to 70 years old
≈ \$10-12 M

USGS 10 & 30 M DEM



PLANNED STRUCTURE ELEVATION BUSINESS PLAN

Vision - A current, high-quality, state-wide elevation dataset suitable for *the majority of needs*, available and accessible to all

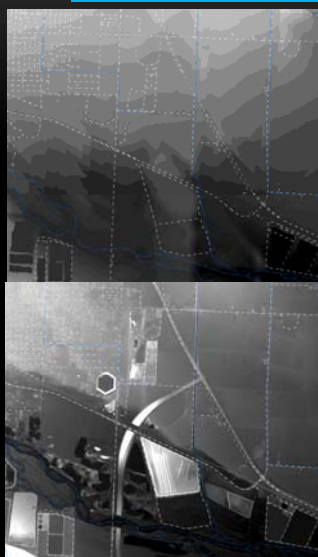
Characteristics:

- Complete
- Accurate and precise
- Uniform and well-documented
- Current and representative of a narrow window of time
- Flexible

IMPLEMENTATION PLAN:

- Gather core requirements and stakeholder expectations.
- Identify a standard state-wide product
- Define and assemble elevation program management team
- Identify elevation data steward and responsibilities including storage and management strategies.
- Develop alternative scenarios for completing "standard product" LiDAR coverage for the state.
- Request program cost estimates from solution/data providers.
- Identify and evaluate providers.
- *Identify and pursue* program funding source(s) and encumber funds.
- Select alternatives and implement
- Market Business Plan.
- Advertise and publish data
- Conduct post-project review

CORE DATA REQUIREMENTS



Nebraska Applications (NEEA QL 3)

- 1.4m NPS, 15cm RMSE, 2m DEM

USGS LiDAR Base Spec V1.0***

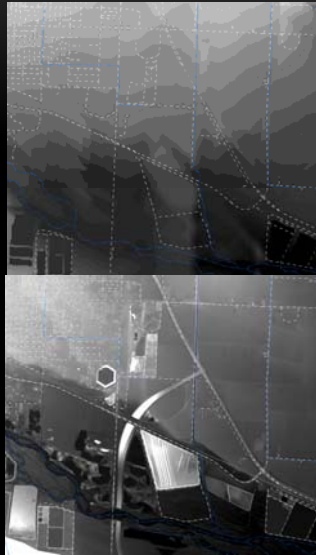
- ≤ 2m NPS, 12.5cm RMSE, DEM (HF, breaklines)

NEEA (QL 2)

- 0.7m NPS, 9.25cm RMSE, 1m DEM

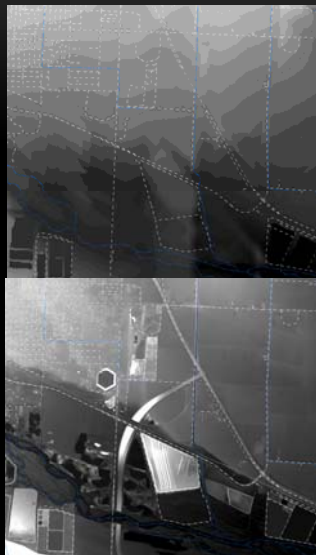
***These specifications and guidelines are applicable to lidar data and deliverables supported in whole or in part, with either financial or in-kind contributions, by the USGS NGP.

STANDARD ELEVATION DELIVERABLES:



- **Point clouds**
 - Unclassified
 - Classified
- **DEM**
 - Bare earth
 - No hydro-flattening / conditioning
- **Metadata - Complete**
- *Optional*
 - Breaklines
 - Contours
 - DEMs, DSMs, DTMs, TINs

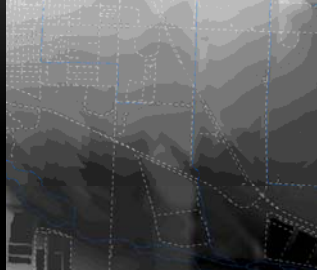
COSTS:



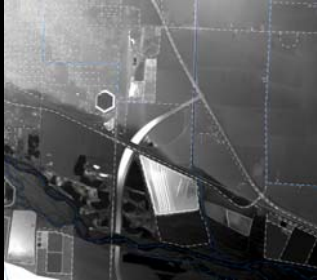
State Business Plan - \$90 / MI ²	Nebraska - \$7,000,000
Nebraska SC - \$137 / MI ²	Nebraska - \$10,595,717
NEEA QL3 - \$252.67 / MI ²	Nebraska - \$19,534,171
NEEA QL2 - \$334.48 / MI ²	Nebraska - \$25,858,984

- Acquisition and processing
- QA/QC
- Project Administration
- Data management and stewardship

QUESTIONS FOR DISCUSSION: PROJECT MANAGEMENT



- Financial
- Technical
- Administrative
- Stewardship



Elevation Project Management Team:

- Executive Sponsor – Council Chair
- Program Director
- Technical Manager and Advisory Group
- Project Administrator
- Federal Program Liaison
- Stakeholder Support