2015 Design Training Expo

Florida Permanent Reference Network

Where are we headed now?

Innovative Solutions for tomorrow's transportation needs

Florida Permanent Reference Network

- Network Realignment
- L5 Broadcast
- Height Modernization
- Gulf Coast Spatial Reference Consortium
- Future Datums
- Future Technologies

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Network Realignment

- All stations within network will offer GLONASS
- 30 new stations
- 18 stations decommissioned
- 7 stations transferred to FDOT control
- Possible Off-Shore stations

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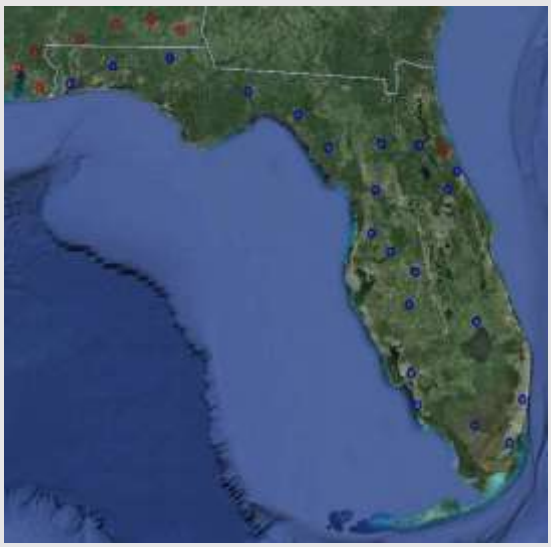

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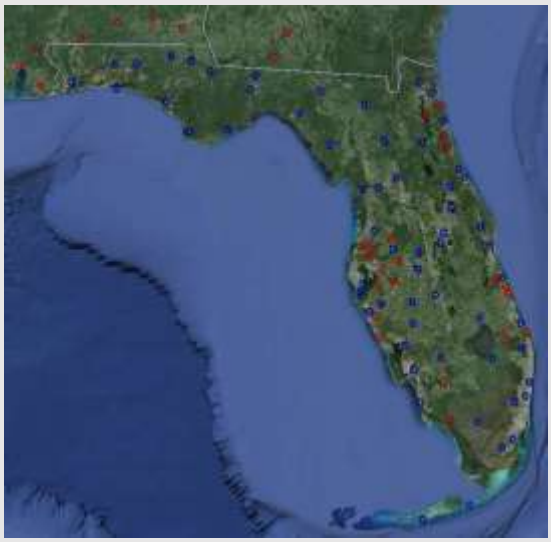

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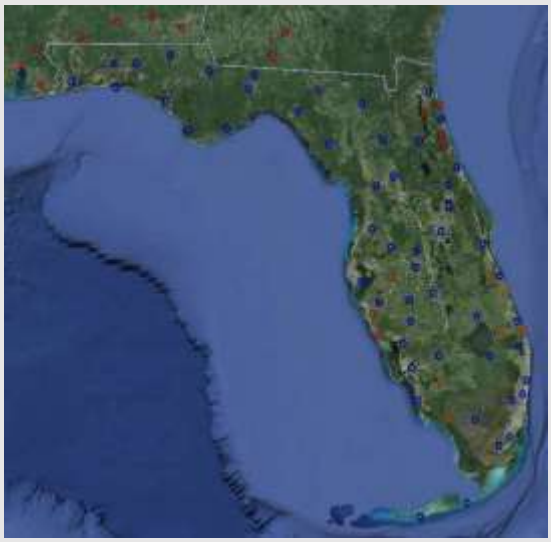

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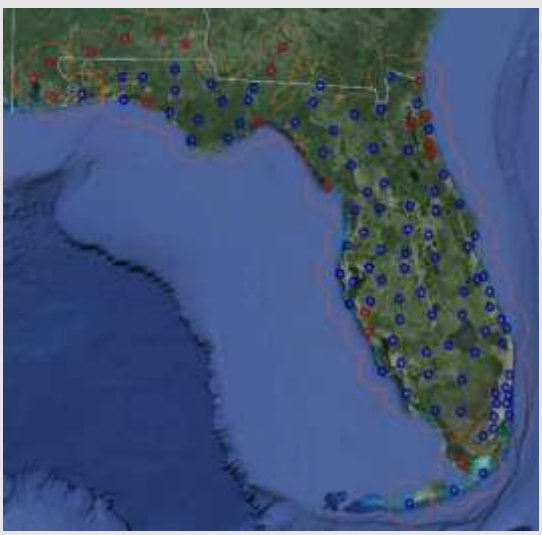

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L5 Broadcast

- Most advanced Civilian signal
  - When used in combination with L1 C/A and L2C, L5 will provide a highly robust service
- Increased multipath mitigation
- Trilaning – achieve sub-meter accuracy without augmentation
  - the use of three GPS frequencies may enable sub-meter accuracy without augmentations, and very long range operations with augmentations
- Future: No need for codeless or semi-codeless receivers

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Height Modernization

- GPS observations on 1st and 2nd order NGS Benchmarks
- Adjust ellipsoid heights to match local benchmarks
- GEOID 12A will match orthometric heights

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Future Datums

- Horizontal
  - Time dependent coordinates
- Vertical
  - Gravity based elevations

Gulf Coast Spatial Reference Consortium

Texas A&M University Corpus Christi | CONRAD BLUCHER INSTITUTE FOR SURVEYING AND SCIENCE

C G CENTER FOR GEOINFORMATICS LOUISIANA STATE UNIVERSITY

GCSRC Gulf Coast Spatial Reference Consortium

GCGC Gulf Coast Geospatial Center

ALABAMA DEPARTMENT OF TRANSPORTATION

FDOT Florida Permanent Reference Network

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Gulf Coast Spatial Reference Consortium

- Height Modernization across entire Gulf Coast
- Gulf Coast Digital Elevation Model
- Gravity measurements at GNSS Reference Stations
- Monitor subsidence along Gulf Coast
- Sedimentation monitoring

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Future Technologies

- Ultra Wide Band (UWB)
  - Uses RFID to triangulate position
- GNSS pseudolites
  - Devices are essentially a GNSS repeater
- New Operational Control System

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