



**Iowa Statewide
RTK-GPS Network
Deployment Project**

April 11, 2008

Business Model Study



Iowa DOT Statewide RTK-GPS Network Business Model Study



Prepared for:
Iowa Department of Transportation

Prepared by:

URS

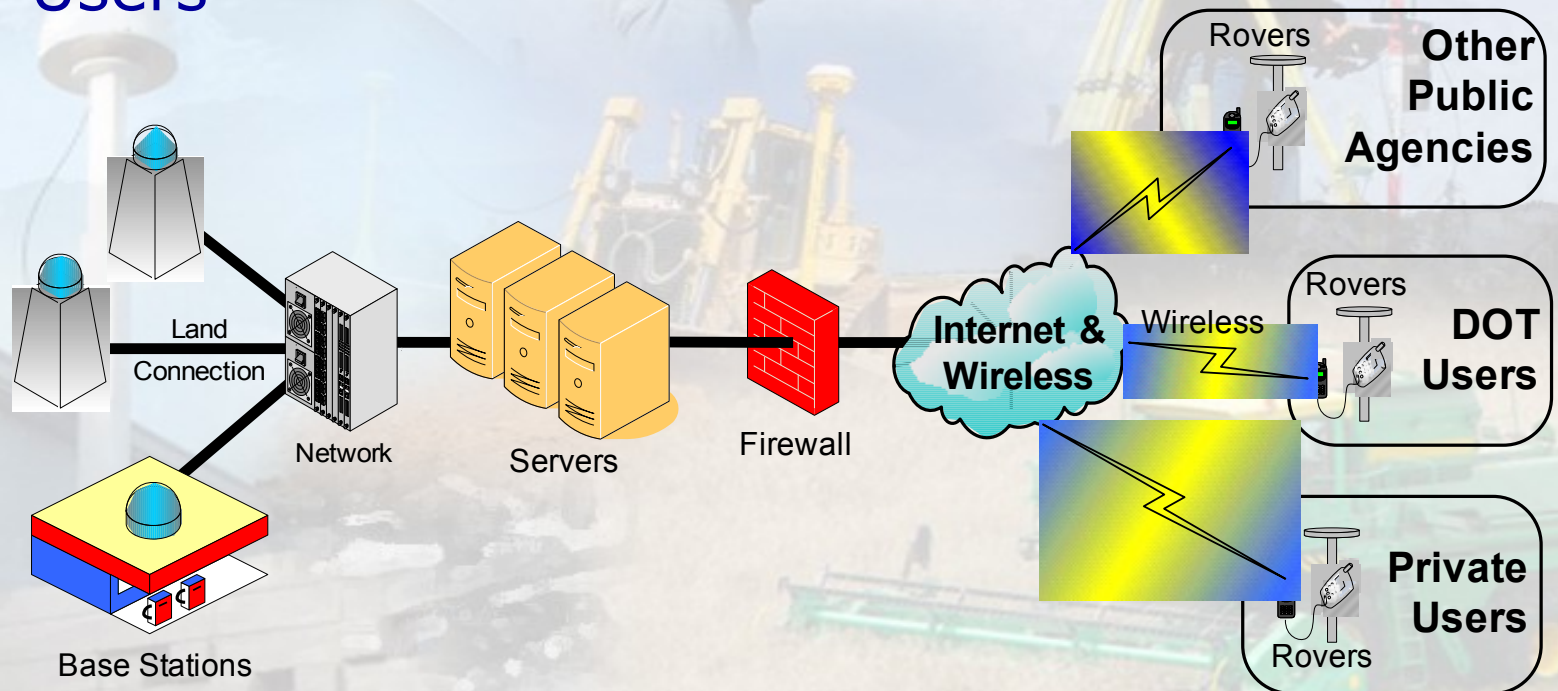
Thresher Square
700 Third Street South
Suite 600
Minneapolis, Minnesota 55415

January 26, 2007



RTK-GPS Components

- ◆ Base Stations
- ◆ Communication Network
- ◆ Servers
- ◆ Users



Statewide RTK-GPS Network Plans

- **Proceed with the Deployment of a Statewide RTK-GPS Network Utilizing DOT-owned, Vendor-managed option.**
- **Project Budget Programmed for FY 2008 & 2009**
- **Secure Consultant Services to Assist in the Development of the RFP for the Design and Deployment of the Statewide RTK-GPS Network (URS)**

Deployment Project Approach

- **DOT-Owned, Vendor-Managed**
 - **Use DOT Facilities for Base Stations**
 - **Use DOT Communications Network**
 - **Use DOT Central Server Facility**
 - **Free Access to Public
& Private Sectors**
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Deployment Project Features

- **Statewide Coverage**
 - **Expected Accuracy (1 cm Horiz., 2 cm Vert.)**
 - **Open Architecture**
 - **Available DOT Facility Sites**
 - **Available Communications Infrastructure**
 - **Use of Cellular Comms for Corrections**
 - **Deployment Time Requirements**
 - **Evaluation Criteria**
- 
- The background image is a faded, semi-transparent photograph of a construction or surveying site. In the foreground, there is a green utility vehicle, possibly a generator or power unit, with yellow accents. In the middle ground, a person wearing a red hard hat and a dark jacket is operating a surveying instrument, likely a total station or GNSS receiver, mounted on a yellow tripod. Another person is partially visible in the background, also working with equipment. The overall scene is outdoors, with a clear sky and some distant structures.

Vendor Selection Schedule

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- 1. Deployment RFP Posted** **August 3, 2007**
 - 2. Proposals Due** **September 7, 2007**
 - 3. Evaluation of Proposals & Selection of "Shortlisted" Vendors** **September 21, 2007**
 - 4. "Shortlisted" Vendor B Demonstration & Final Presentation** **2007** **October 25,**
 - 5. "Shortlisted" Vendor A Demonstration & Final Presentation** **November 15,**

Proposals Submitted

1.

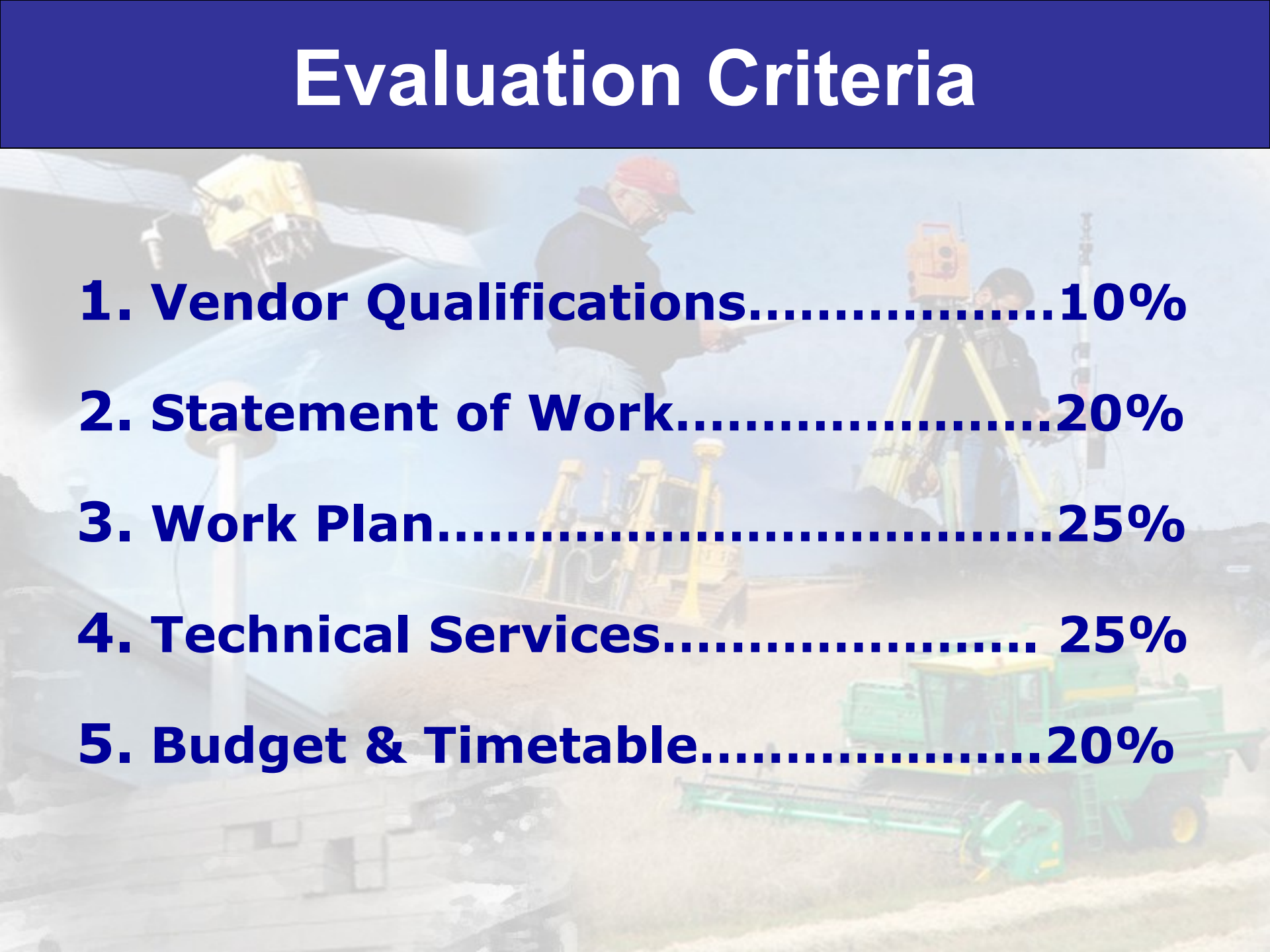
Leica Geosystems

2.

Trimble



Evaluation Criteria

- 
- 1. Vendor Qualifications.....10%**
- 2. Statement of Work.....20%**
- 3. Work Plan.....25%**
- 4. Technical Services..... 25%**
- 5. Budget & Timetable.....20%**

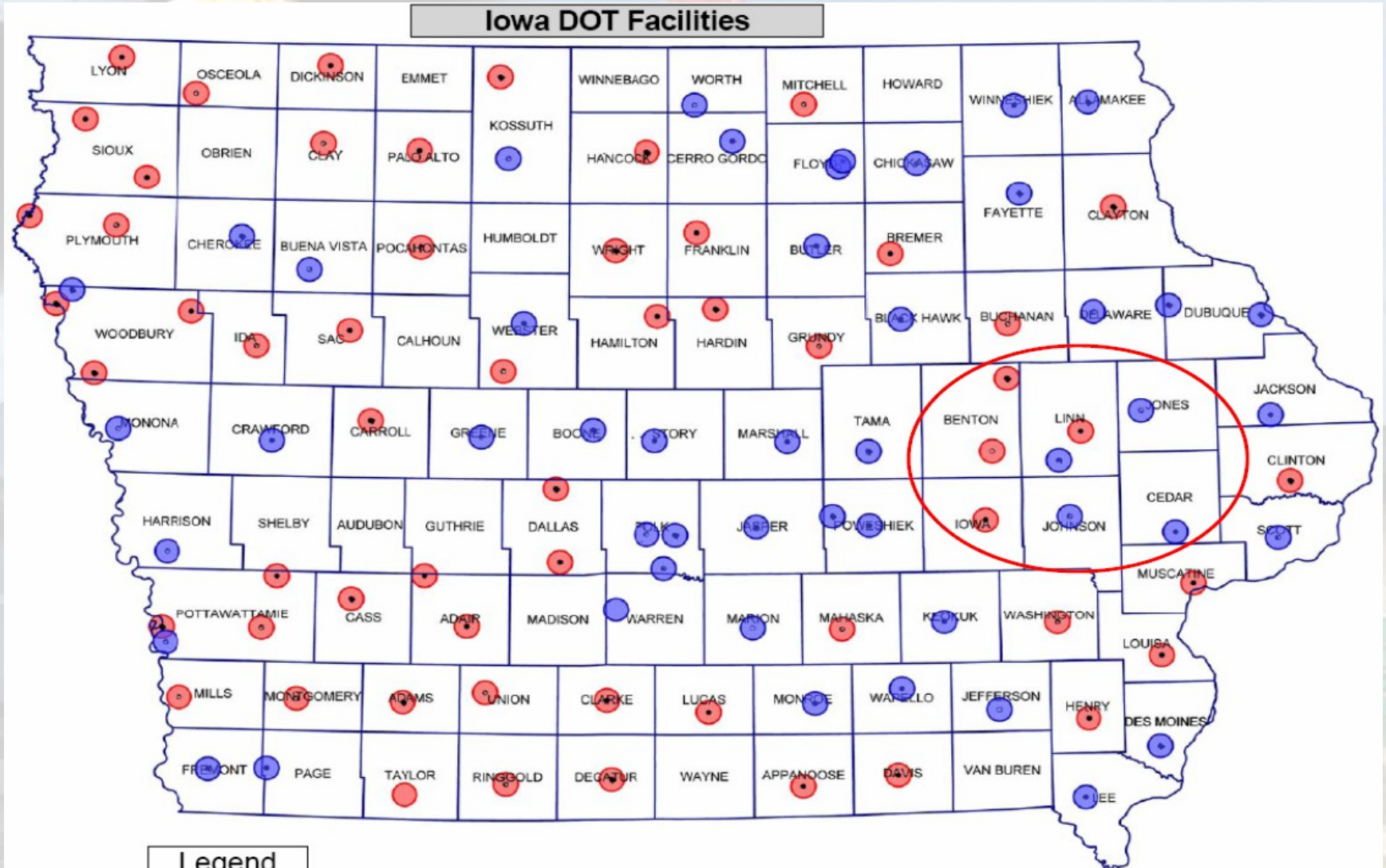
Evaluation Team

- **Seven Voting Members**
 - ◆ **Iowa DOT - Research & Technology**
 - ◆ **Iowa DOT - Office of Design**
 - ◆ **2 - IA DOT - Information Technology**
 - ◆ **Iowa DOT - District Land Survey**
 - ◆ **County Engineer**
 - ◆ **FHWA Field Engineer**

Evaluation Team

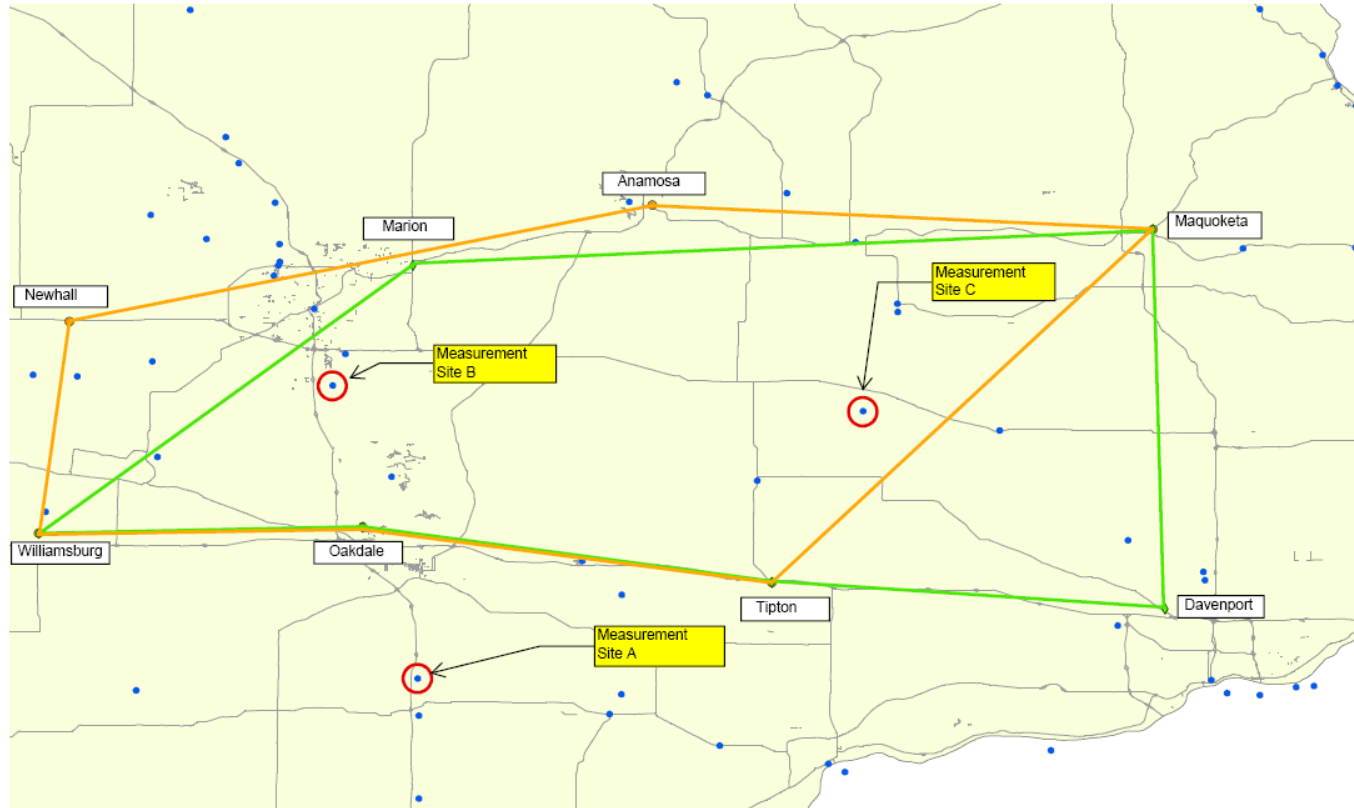
- **Seven Non-Voting Members**
 - ◆ **Iowa DOT - Research & Technology**
 - ◆ **2 - Iowa DOT – Office of Design
(Photogrammetry)**
 - ◆ **Iowa DOT – Office of Purchasing**
 - ◆ **3 - URS**

Demonstration Area Map



Demonstration Setup

Selected Facilities



Legend

- ◆ Trimble Selected Locations
- Leica Selected Locations
- Bench Locations
- Primary Roads

0 3.75 7.5 15 22.5 30 Miles

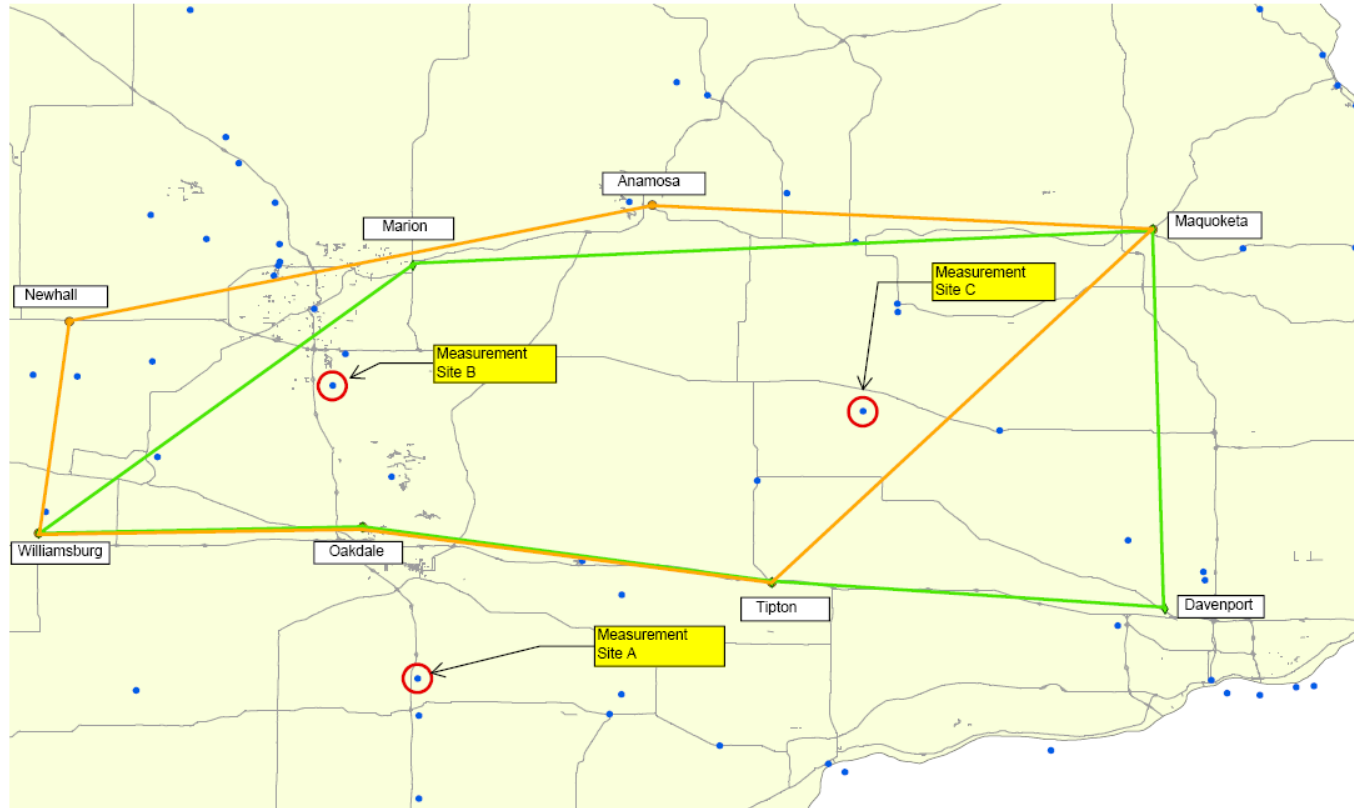
- 10 Scale -

Survey Measurement Teams

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- 1. Iowa DOT – Dist 1 Survey** NavCom
 - 2. Iowa DOT – Dist 2 Survey** Trimble
 - 3. Linn County Survey** TopCon
 - 4. Shive-Hattery** Trimble
 - 5. Snyder & Associates** Leica (New)
 - 6. Snyder & Associates** Leica (Old)

Demonstration Setup

Selected Facilities



Legend

- ◆ Trimble Selected Locations
- Leica Selected Locations
- Bench Locations
- Primary Roads

0 3.75 7.5 15 22.5 30 Miles

- 10 Scale -

Project Functional Requirements



1. Statewide Coverage

2. Accuracy (1 cm Hor.; 2 cm Vert.)

3. Precision (2 Sigma)

4. Open Architecture

(RTCM 2.3, 3.0, 3.1, CMR, CMR+)

5. Base Station Redundancy

6. Server Redundancy

Project Schedule



December 5, 2007 -

Iowa DOT Issued "Intent to Award" to:

Leica Geosystems

January, 2008 -

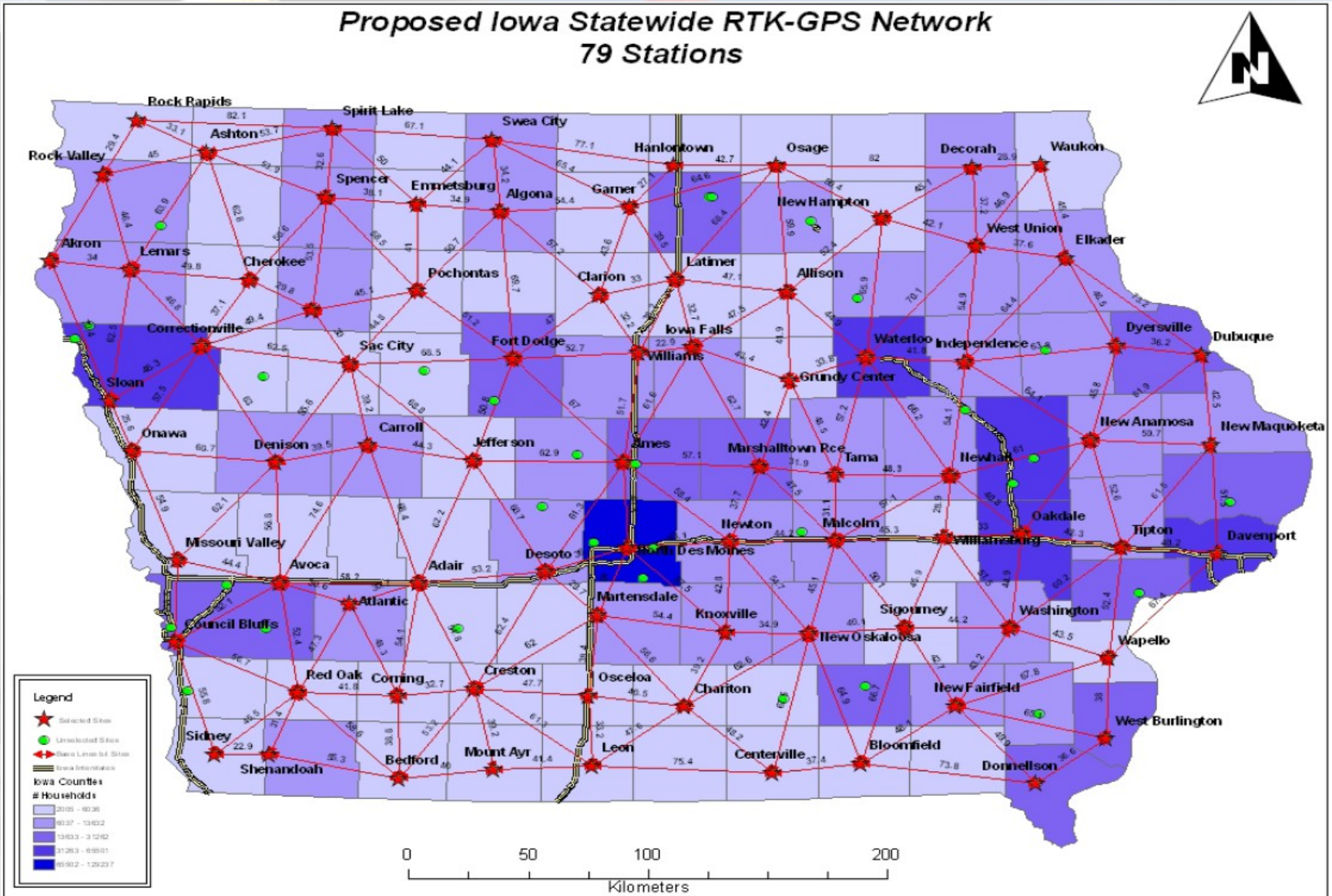
Deployment Contract Executed

August, 2008 -

Completion of Deployment Project

Leica Proposed Base Stations

Proposed Iowa Statewide RTK-GPS Network
79 Stations



Project Implementation

The background image shows a construction site with a worker in a red cap and dark jacket looking at a blueprint. To the right, another worker is operating a surveying instrument on a tripod. In the foreground, a green motorized vehicle is parked on a dirt path. The scene is set against a clear sky and a distant horizon.

1. Preliminary Engineering Phase

- a. Site Visits
- b. Design & Installation Plans
- c. Acceptance Test Plans
- d. Maintenance/Administration/Support Plans

2. Network Deployment Phase

- a. Software Installation (DOT Servers)
- b. Site Installation (Base Stations & Antennae)
- c. Communications Connectivity
- d. Inspection & Acceptance Testing
- e. Administration & Support

Leica Proposed Schedule

Preliminary Engineering.Feb/Mar, 2008

Network Deployment.....May-July, 2008

Acceptance Testing.....July, 2008



Contact Information

Steve Milligan
Statewide RTN Coordinator
515-239-1981 (office)
515-290-2831 (cell)
515-239-1873 (fax)
steven.milligan@dot.iowa.gov

Michael Jackson
Special Projects Engineer
515-239-1192 (office)
michael.jackson@dot.iowa.gov



Questions?