Tower Expansion/Simulcast

Emergency Services Communications

Why this Project?

- Improve radio coverage and reliability for field responder safety
  - Reduce existing communication gaps
  - Promote interoperability for city, county and state public safety and area governmental agencies
  - Improve radio communications reliability
  - Support first responders to increase public safety and reduce loss of human life and property

- Goal = 97% reliable radio coverage
  - Difficulties:
    - Rugged terrain
    - High environmental noise levels
    - Frequency band
  - Environmental factors:
    - Terrain variations
    - Obstructions
    - Vegetation
    - Buildings
    - Ambient noise
    - Interference

What improves?

- Mobile coverage: 98% reliability (no change)
- Portable on the street:
  - Current: 77%
  - 3-site: 91%
  - Improve by 14%
- Portable in building/heavy terrain:
  - Current: 44%
  - 3-site: 78%
  - Improve by 34%

How's that accomplished

- Expand from single tower site to 3-tower site simulcast system
- West – on Camp Rapid, near Stevens HS
- East – off Elk Vale, near low water reservoir
- Costs: $1,725,800
  - Planning/preparation: $30,000
  - Property/construction: $400,000
  - Radio equipment: $1,295,800

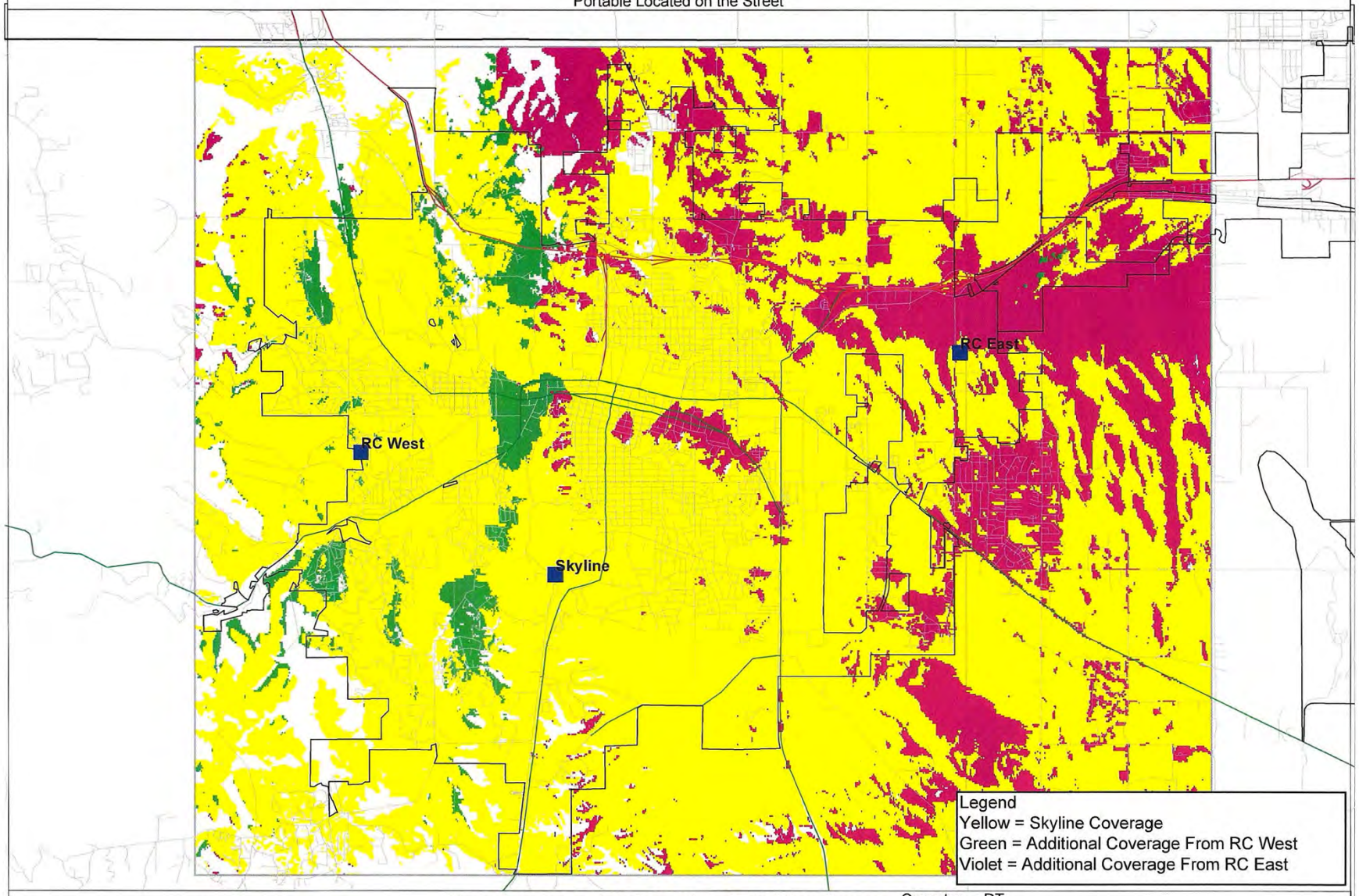
What's the Cost?

- Total Project $1,725,800
  - Grants: $ 232,000
  - 911: $ 160,000
- Remaining: $1,333,800
  - **City (60%) $ 800,280**
  - County (30%) $ 400,140
  - Others (10%) $ 133,380

What's in it for Public Safety

- Improved Portable Coverage
  - Jackson Blvd corridor
  - East of Mountain View Cemetery
  - Arrowhead/Holiday Hills
  - Springbrook/ Corral Drive
  - St. Martens/St. Elizabeth Seton School
  - Fountain Springs/Coke Plant
  - East downtown/SDSMT area
  - Elks club neighborhoods

Pennington County, South Dakota
Portable Located on the Street



0 1.42 2.84 mi
1 inch = 1.42 miles @ 1/90000

All coverage maps are based on preliminary site information and do not represent a coverage guarantee unless accompanied by a Coverage Acceptance Test procedure.

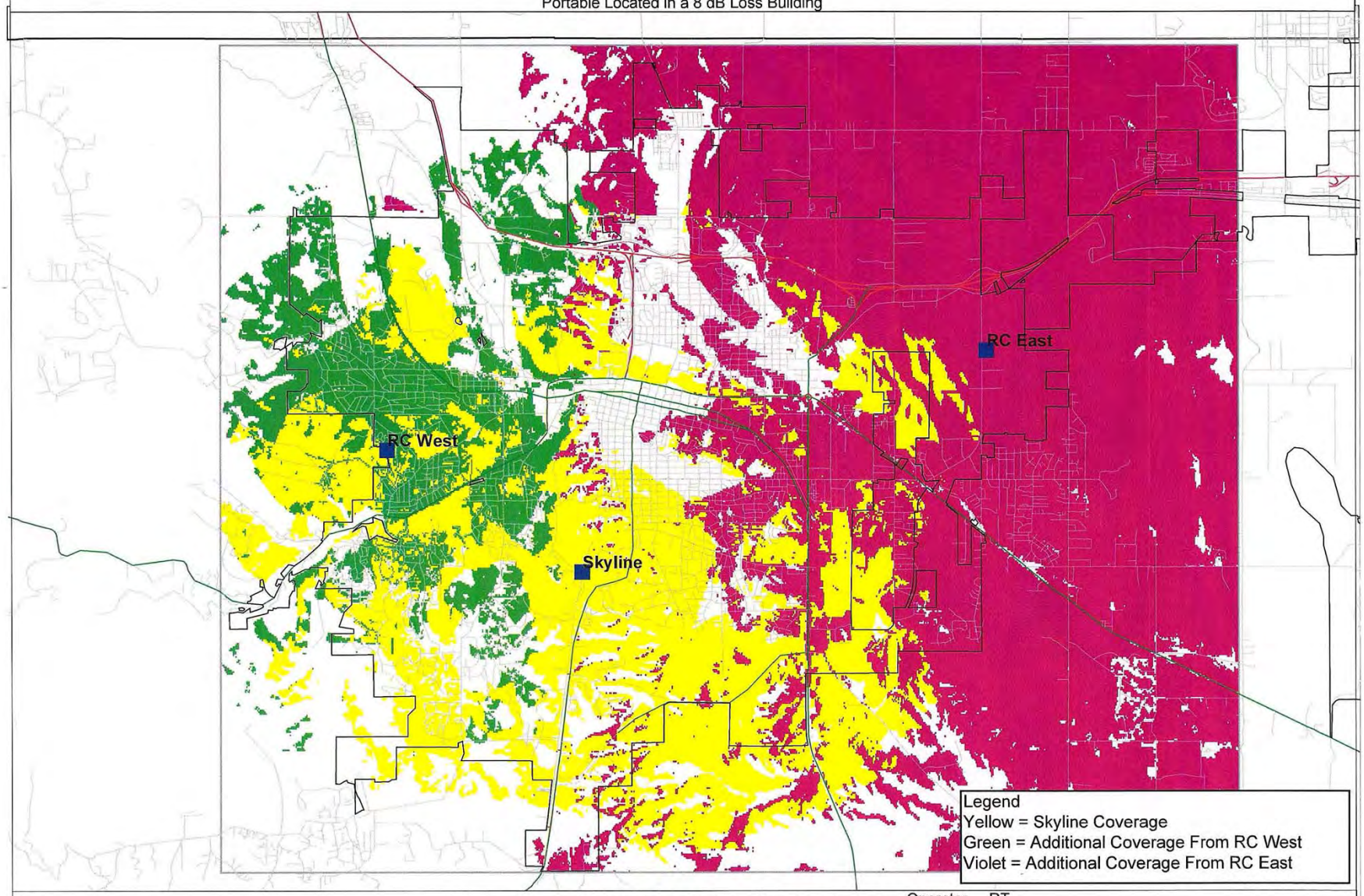
Operator RT
Projection World_Mercator
Center Point 44:4:4.87 N 103:12:54.81 W

Tuesday, August 02 2011 3.40 Build 3671

Job Id : 134823886.3.000.2.24

Portion(s) Of GIS Source Data Provided By ESRI, Inc.

Pennington County, South Dakota
Portable Located in a 8 dB Loss Building



0 1.42 2.84 mi
1 inch = 1.42 miles @ 1/90000

All coverage maps are based on preliminary site information and do not represent a coverage guarantee unless accompanied by a Coverage Acceptance Test procedure.

Operator RT
Projection World_Mercator
Center Point 44:4:3 N 103:13:13.26 W

Wednesday, August 03 2011 3.40 Build 3671

Job Id : 1622621798.3.000.2.25

Portion(s) Of GIS Source Data Provided By ESRI, Inc.

Construction 2-year plan

- 2012/ by June 2013
  - Construction Costs $400,000
    - Apply Grant $202,000
    - Remaining $198,000
    - **City $118,800**
    - County $ 59,400
    - Other $ 19,800

Equipment 5-year Plan

- 2014-2017
  - Equipment Costs $1,295,800
    - Apply 911 $ 160,000
    - Lease Purchase $1,135,800

	Total	Annual (x4)
City	$ 681,480	/170,370
County	$ 340,740	/ 85,185
Other	$ 113,580	/ 28,395

Questions