SIGN MANGEMENT
A Discussion on Inventory

IHEEP

San Antonio, TX

Iowa Department of Transportation
Research and Technology Bureau
A Driving Force of Innovation
www.iowadot.gov/research

ctre
Center for Transportation Research and Education
Iowa State University

RIMOS
roadway infrastructure management & operations systems

Motivation

Safety

-All Users
-Guidance
-Driver Expectation

FHWA

-National Standard

Minimum Maintained Retro with
Assessment or Management Methods

MUTCD Assessment or Management Methods

- ✓Visual Assessment
- ✓Measured Retroreflectivity
- ✓Expected Sign Life
- ✓Blanket Replacement
- ✓Control Signs
- ✓Future Methods
- ✓Combination of Methods

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- *Inventory*
  - Location
  - Attributes
  - Condition
  - Collection
  - Updates
  - Equipment
  - Cost/Training

• LOCATION
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- *Inventory - LOCATION*

By Reference Post

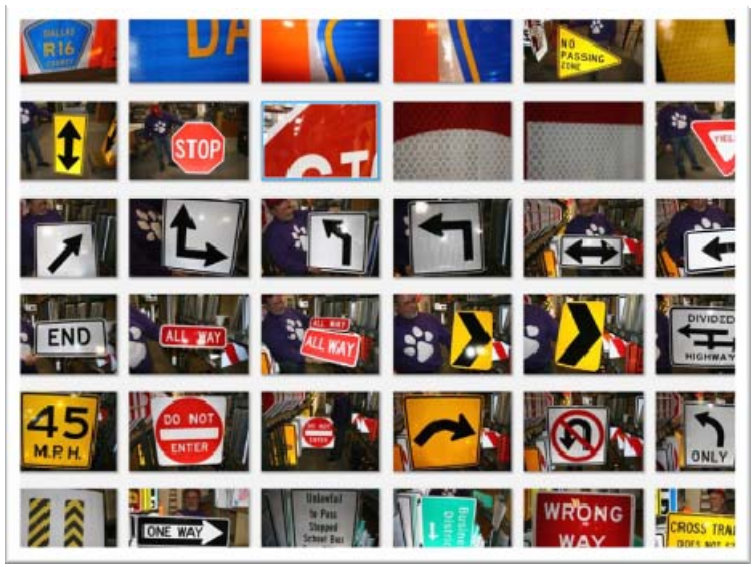
By GPS Coordinates

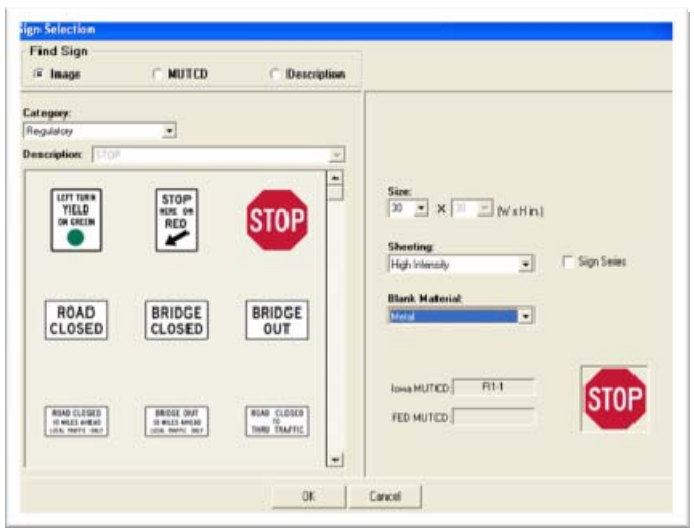
DMI combined with GPS

From www.jamar.com

- *Inventory - ATTRIBUTES*

Physical Features (Sign and Post)





• *Inventory - ATTRIBUTES*

Physical Features (Sign and Post)

POSTS:

Post Size / Type: (post lengths are optional)

- *Wood Posts*
  - *4" x 4" (lengths 10, 12, and 14 feet)*
  - *4" x 6" (lengths 16, 18, 20, 22, and 24 feet)*
- *Square Steel Tubing (all 12 feet long)*
  - *1.5" x 1.5" x 1/8"*
  - *1" x 1" x 1/8"*
  - *2" x 2" x 1/8"*
- *U-Shaped Delineator Posts*
  - *Type 1 (2 lbs/ft - Galvanized): lengths 8.5, 10, 12, and 14 feet*
  - *Type 2 (1.12 lbs/ft - Galvanized): lengths 6.5 and 8.5 feet*
  - *Type 3 (1.12 lbs/ft - Painted): length 6.5 feet*
- *I-beam Steel Breakaway Posts (from Std RD-21A-variable lengths)*
  - *W6x9, W6x12, W6x15, and W8x18 (all have a stub post length of 2.5 ft.)*
  - *W8x21, W10x22, W10x26, and W12x26 (all have a stub post length of 3 ft.)*
- *Other*
  - *Utility Pole*
  - *Truss / Cantilever*
  - *Comment*

Number of Posts:

- *choose number*

Length of Posts:

- *specify length*
- *feet only*

SIGNS:

Date Installed:

- *date*

Sign Direction:

- *choose orientation…*

Sign Condition:

- *rating system to be developed*

Daytime Check:

- *date*
- *reflectivity (if taken)*

Nighttime Check:

- *date*
- *reflectivity (if taken)*

Ownership:

- *dot along with DOT sign number*
- *other*

Inspector:

- *initials or name*

Flag/Beacon/Etc.:

- *yes, no or both*

MANUFACTURING:

Sign Information:

- *stock number* *(this entry can populate items below)*
- *sheeting*
- *message*
- *size*
- *blank material*
- *warranty information*

Option:

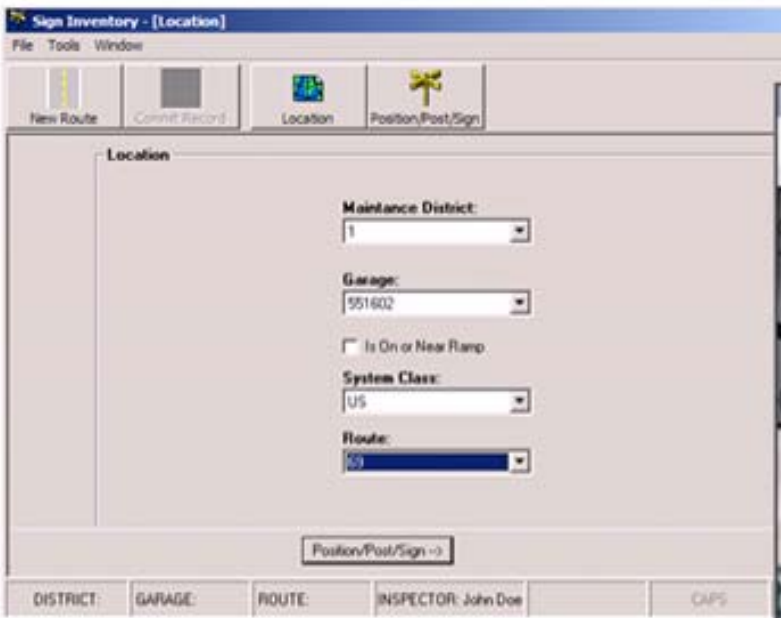
- *implement bar code for all new signs*
- *other field signs collected manually*

- *Inventory - CONDITION*

Rated Condition for Sign(s) and Post

- *Inventory – COLLECTION*

Getting information from field to database



- *Inventory – UPDATES*

Updating the inventory by:

- Adding a sign
- Moving a sign/post
- Maintaining a sign
  - Inspect sign
  - change rating/condition
- Replacing a sign/post
- Removing a sign/post

• *Inventory – EQUIPMENT*

Important Equipment:

- Retro device
- Laptop/Handheld
- GPS unit
- Digital camera

Model 922 www.roadvista.com

- *Inventory – COSTS/TRAINING*

Important Considerations:

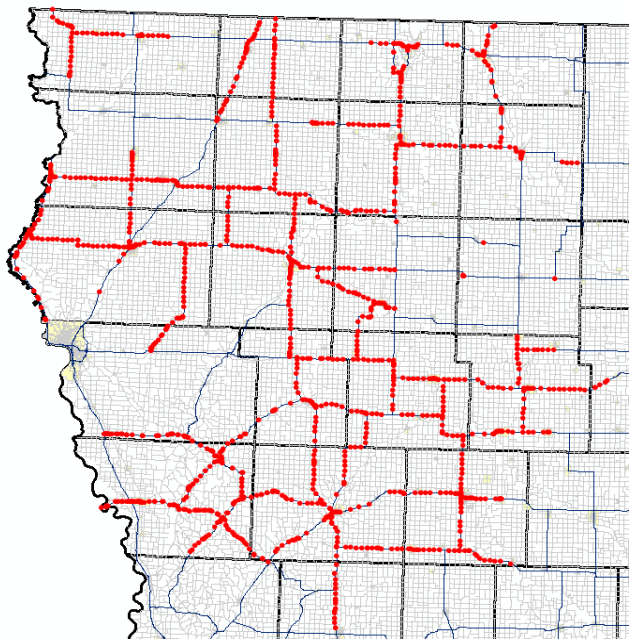
- Initial inventory cost (time)
- Training of staff on new tools
- Support
- Keeping everything up-to-date

- *GIS / SOFTWARE*

Important Considerations:

- …GIS ALONG WITH OTHER SOFTWARE OUT THERE

Location of stop signs



Location of signs

Management Functions

At all Levels (Field/Garage/District/Central Office):

a. History of the sign

b. Queries by location, post, and sign feature

Field/Garage Operations Capabilities:

a. Collect inventory data

b. Update existing sign inventory data: (on an existing post)
   i. Add a sign
   ii. Modify a sign
   iii. Remove a sign
   iv. Update sign condition (day or night)
   v. Other sign maintenance actions

c. Update post inventory data:
   i. Add a post (requires adding signs)
   ii. Modify post information (requires location confirmation)
   iii. Remove a post (also eliminates signs)
   iv. Other post maintenance actions

d. Locate a post in the field (using GIS, GPS, or paper print-out)

District / Central Office Capabilities:

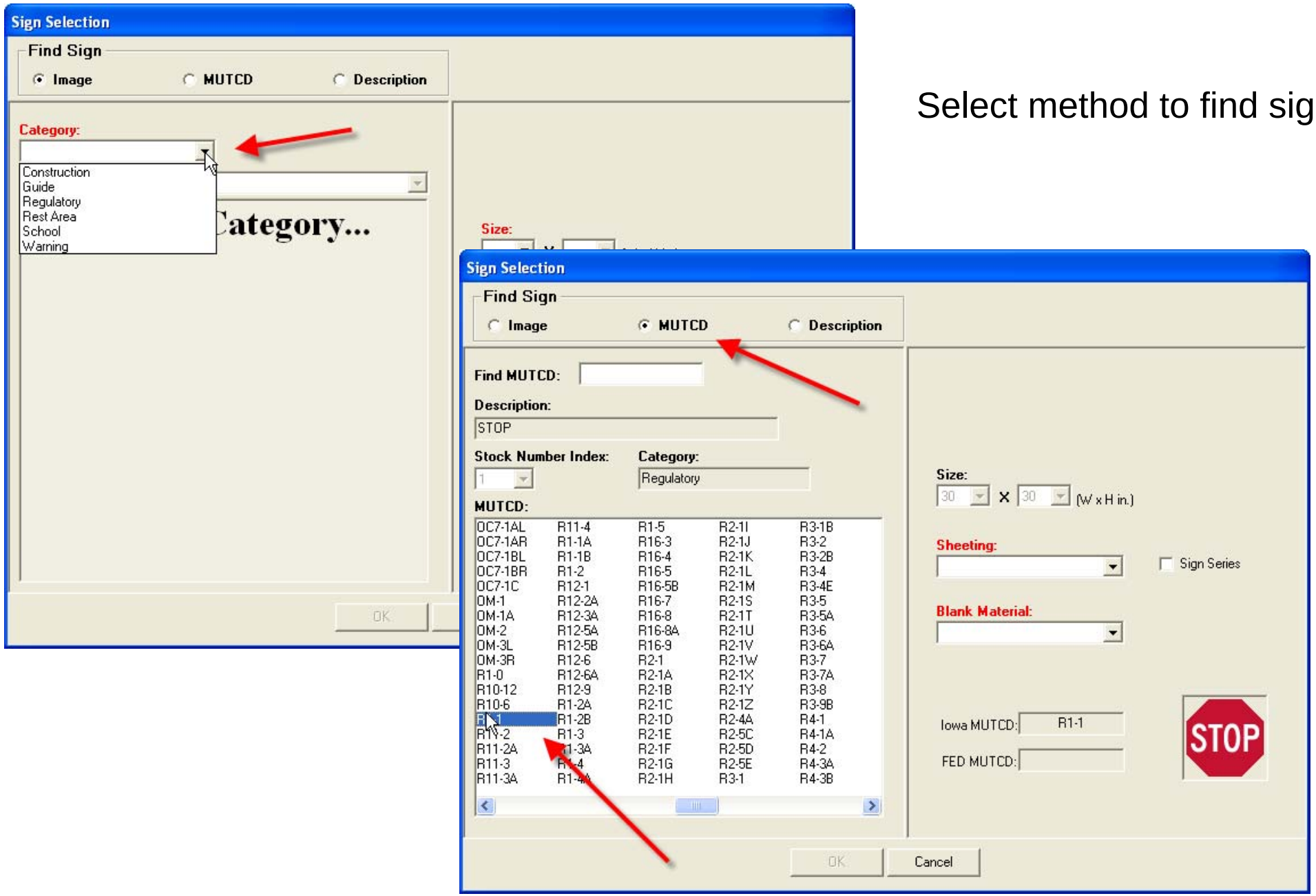
a. Report showing query results in graphical or tabular format:
   i. Example – Sign condition by type/route/etc.
   ii. Example – Number of signs by type

b. Cost and Needs Estimates

Software Requirements

- User driven
- Easily customizable
- Linkages to current AM systems
- Location Referencing
- No proprietary software
- Be wary of the bells and whistles

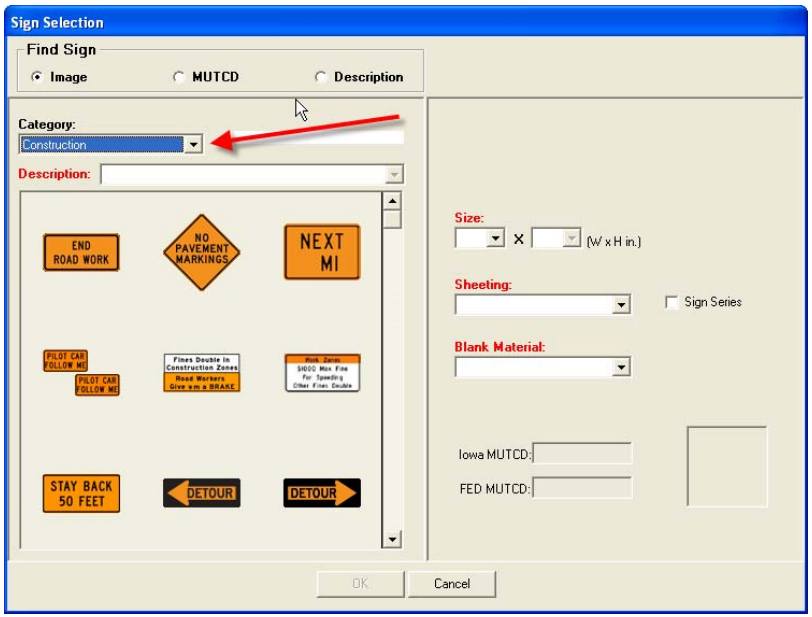
Iowa DOT Sign Inventory Tool



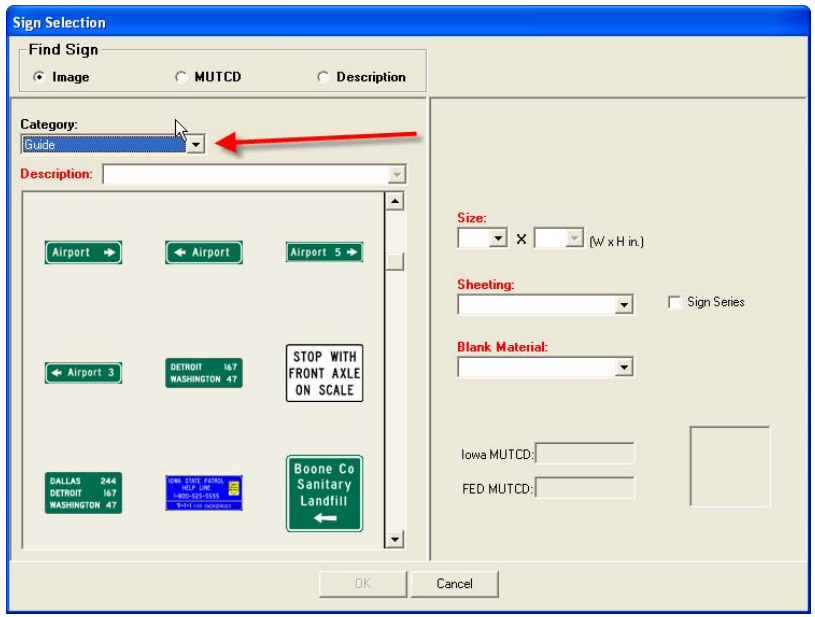
Select method to find sign

Category

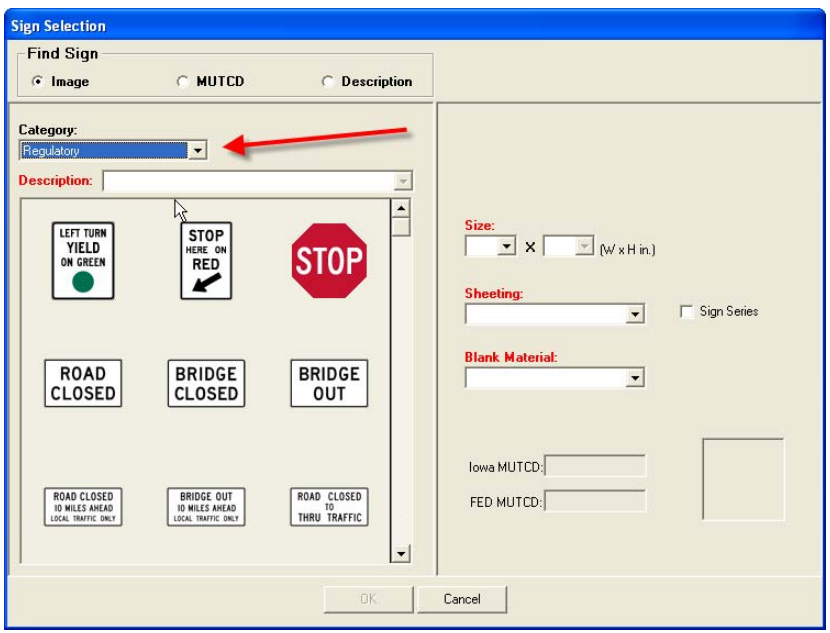
Construction



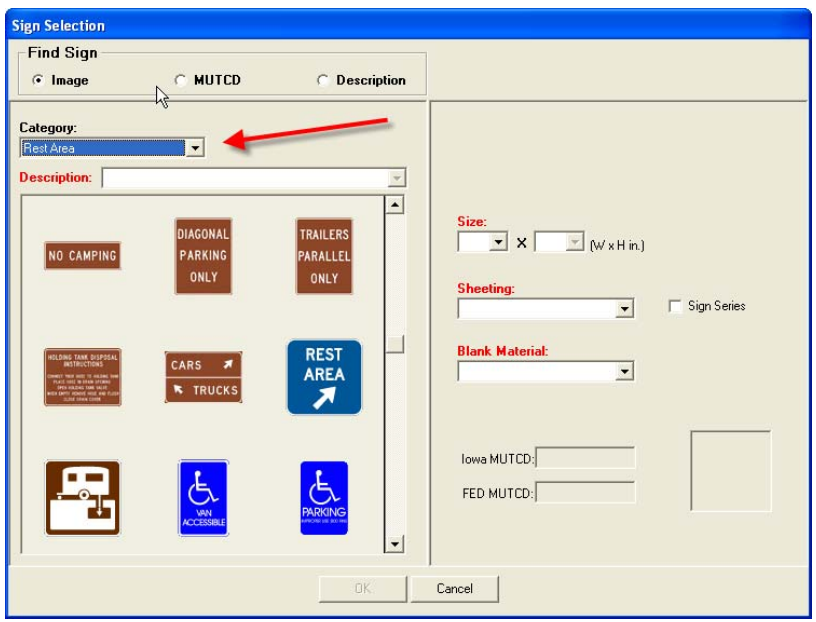
Guide



Regulatory

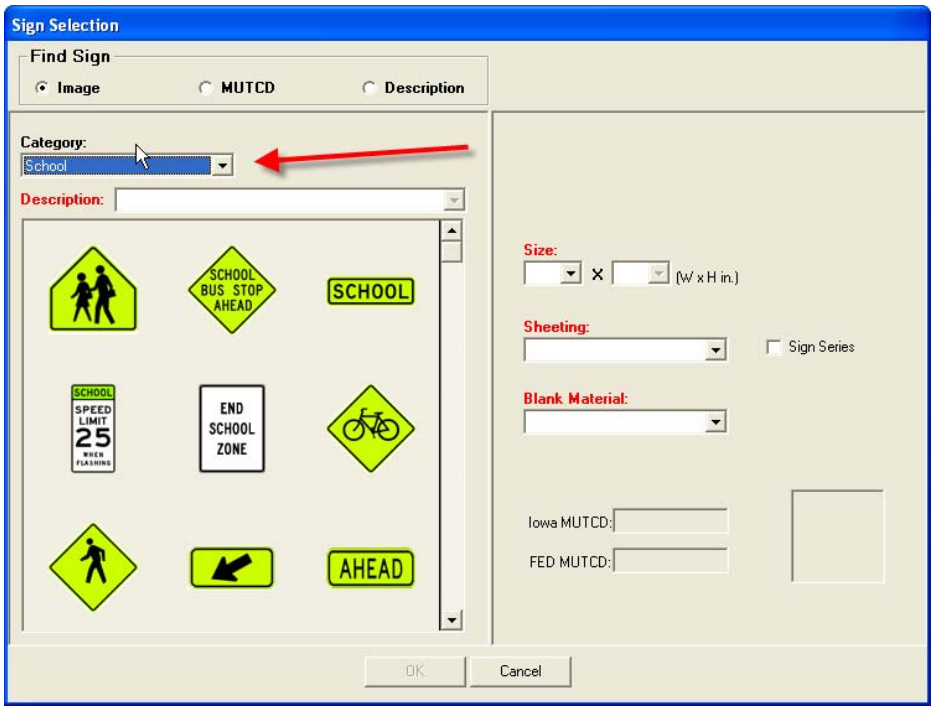


Rest Area

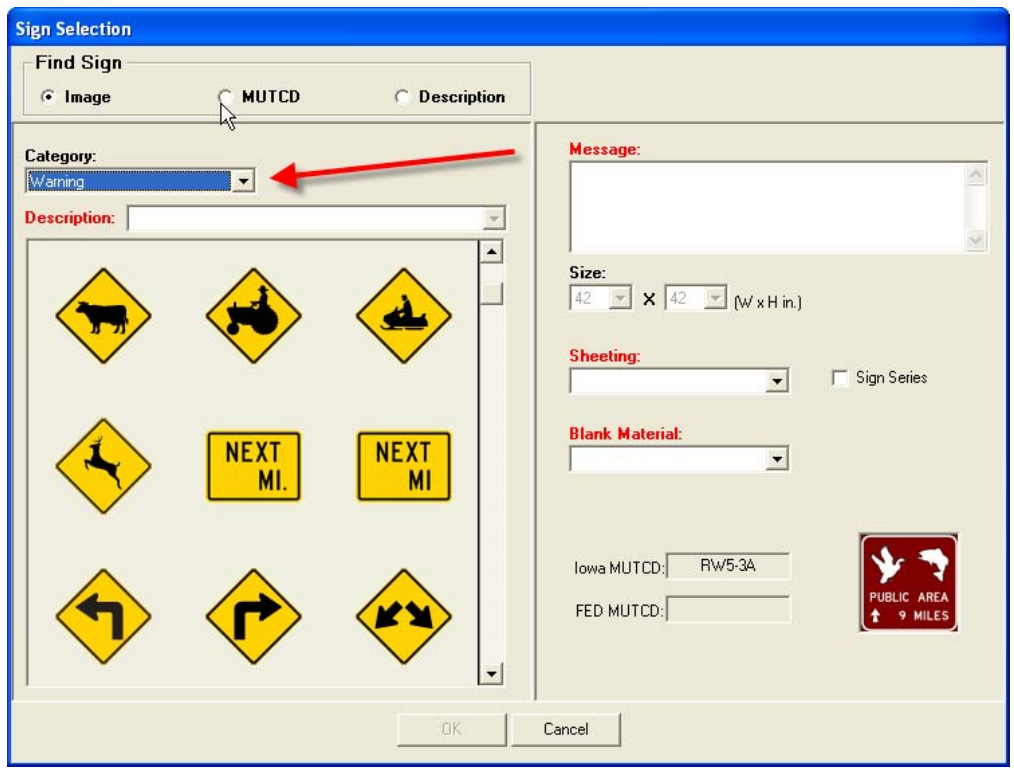


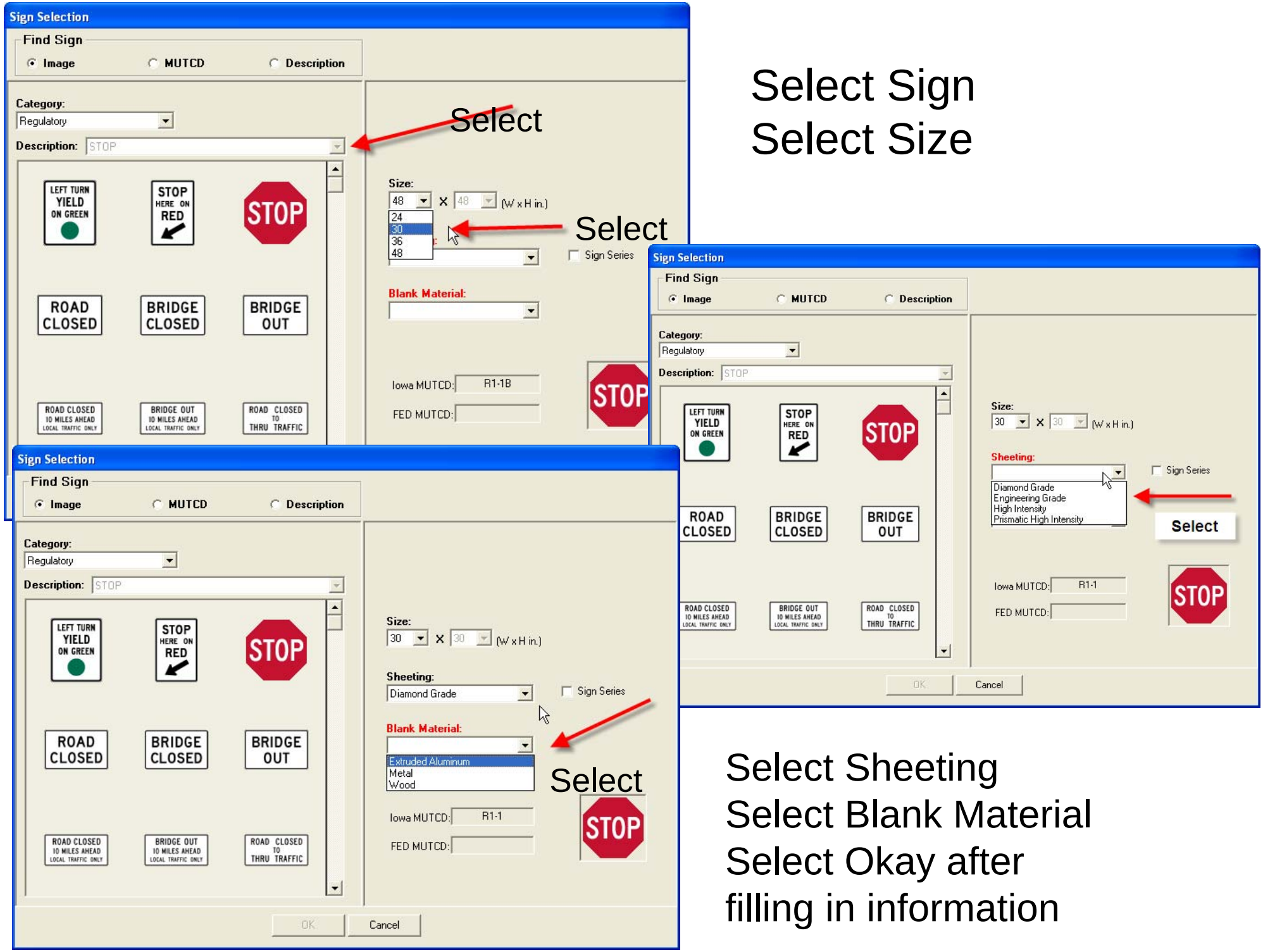
Category

School



Warning

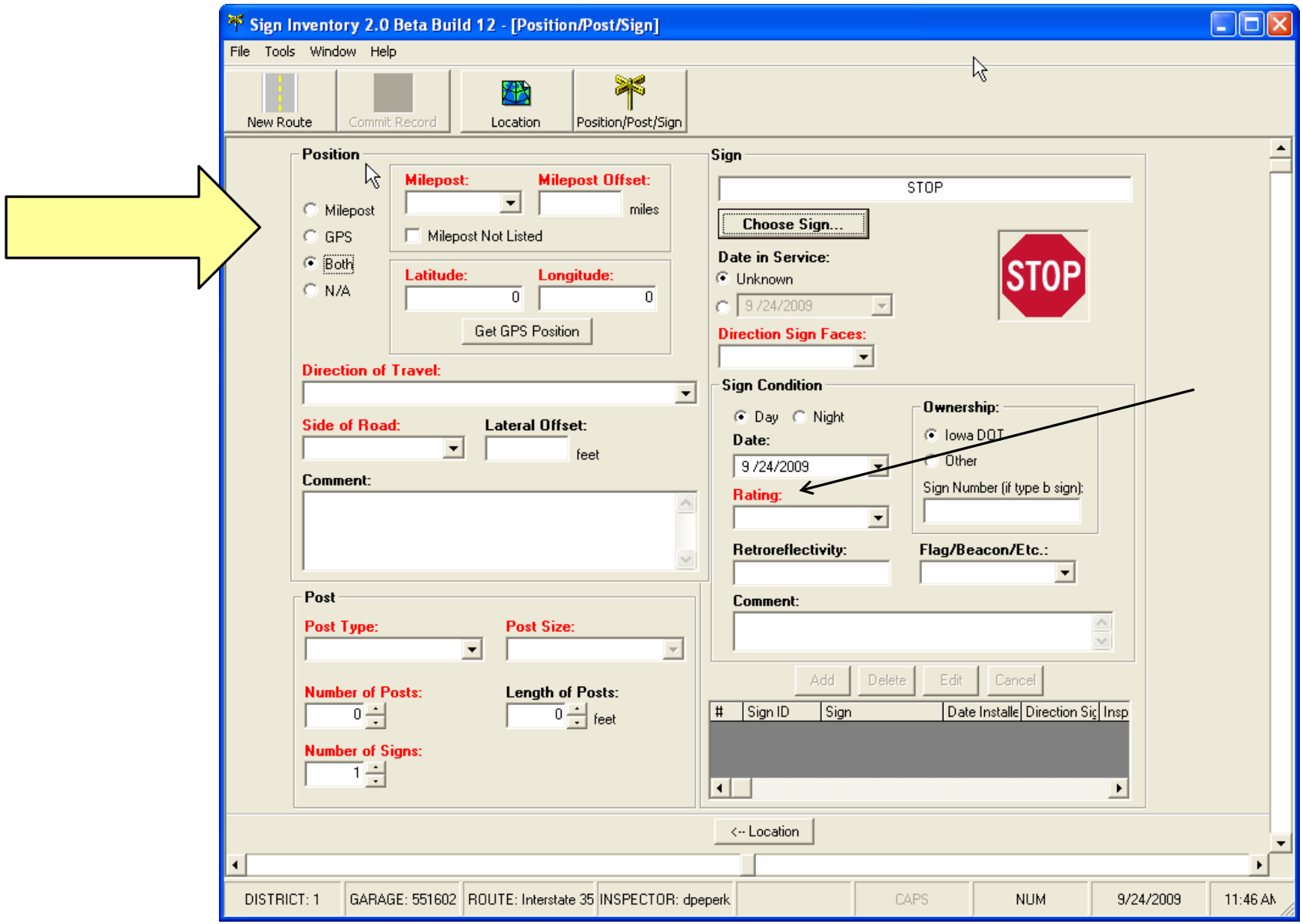




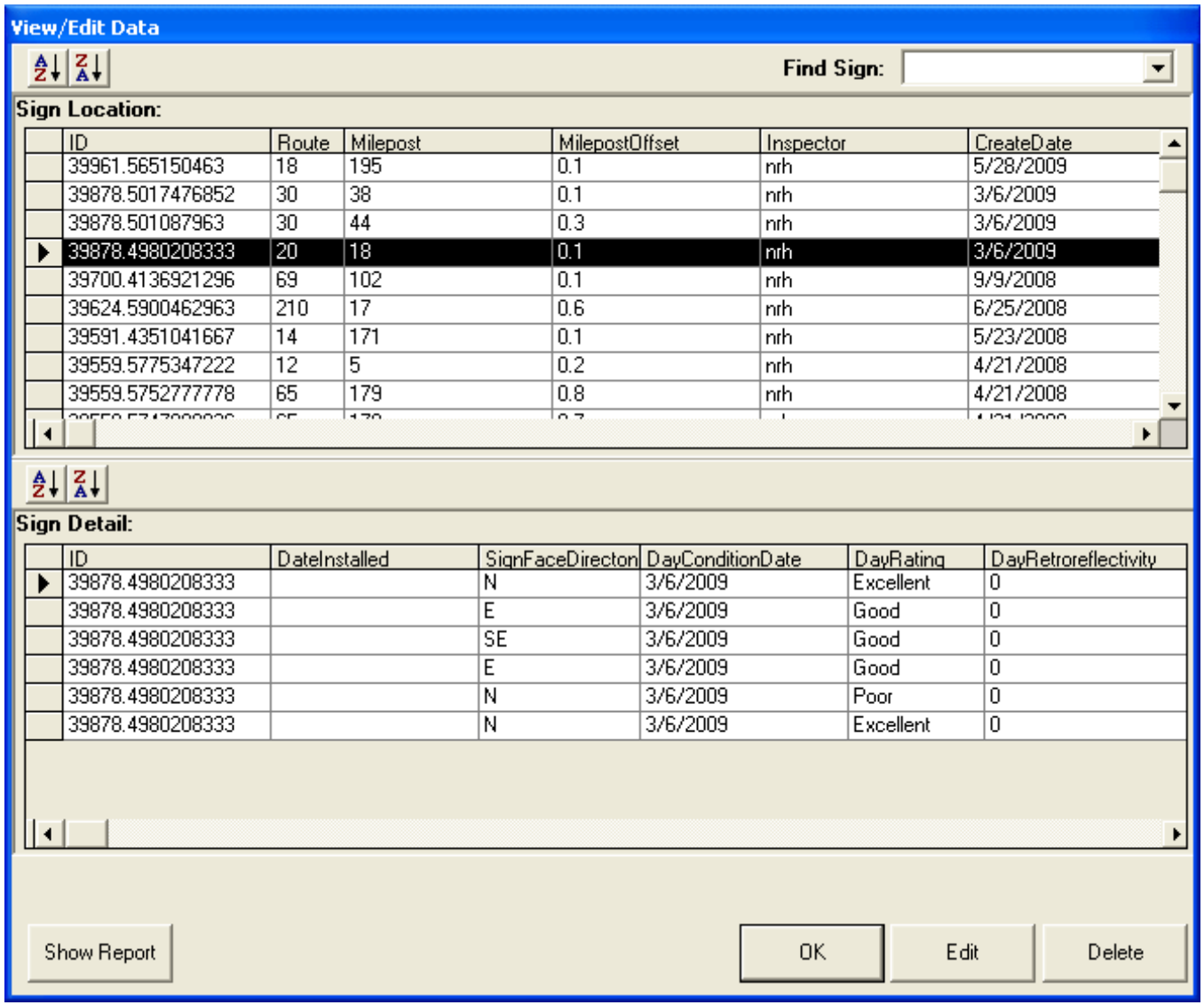
Select Sign
Select Size

Select Sheeting
Select Blank Material
Select Okay after
filling in information

Complete Description & Location

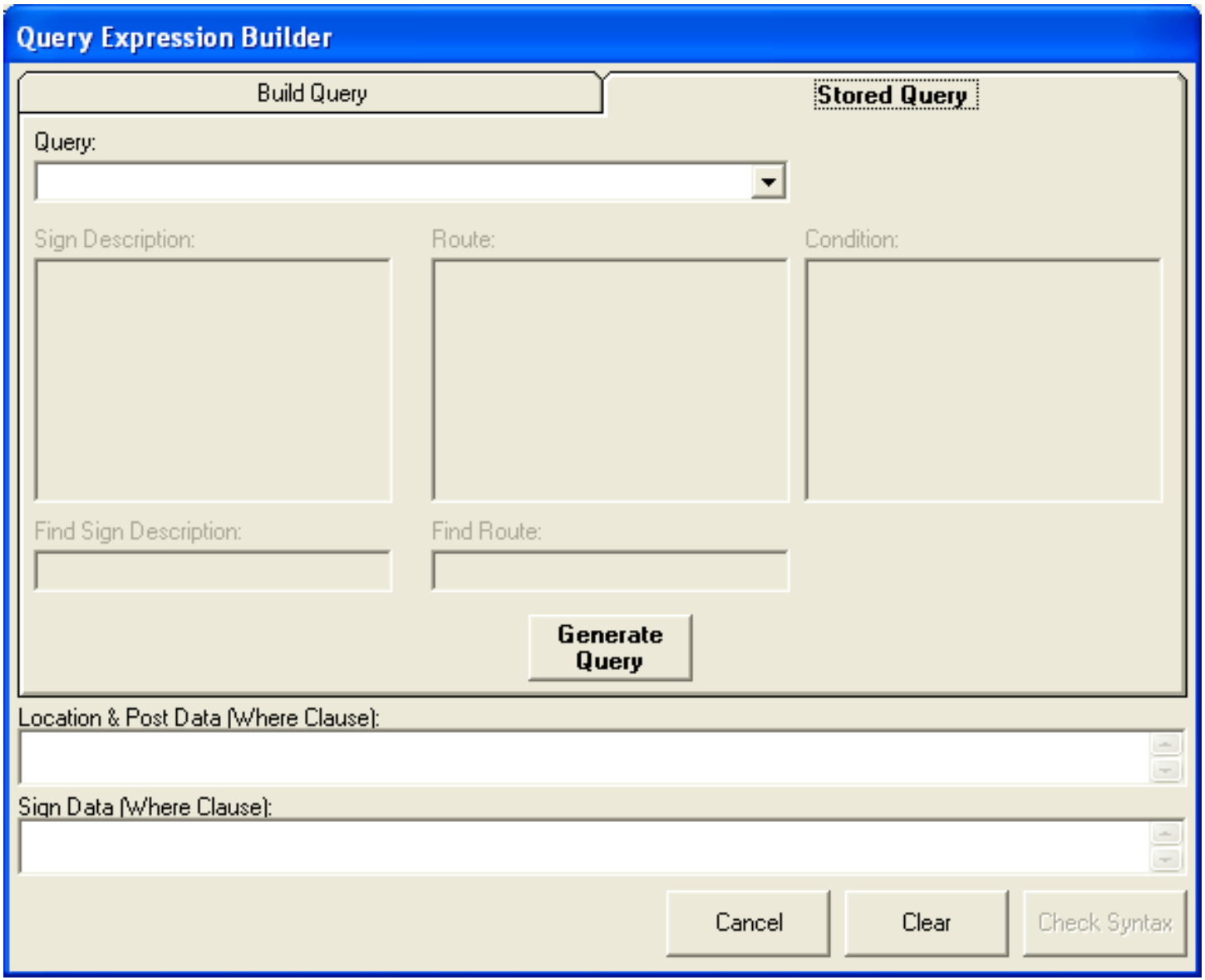


Iowa DOT Sign Inventory Tool



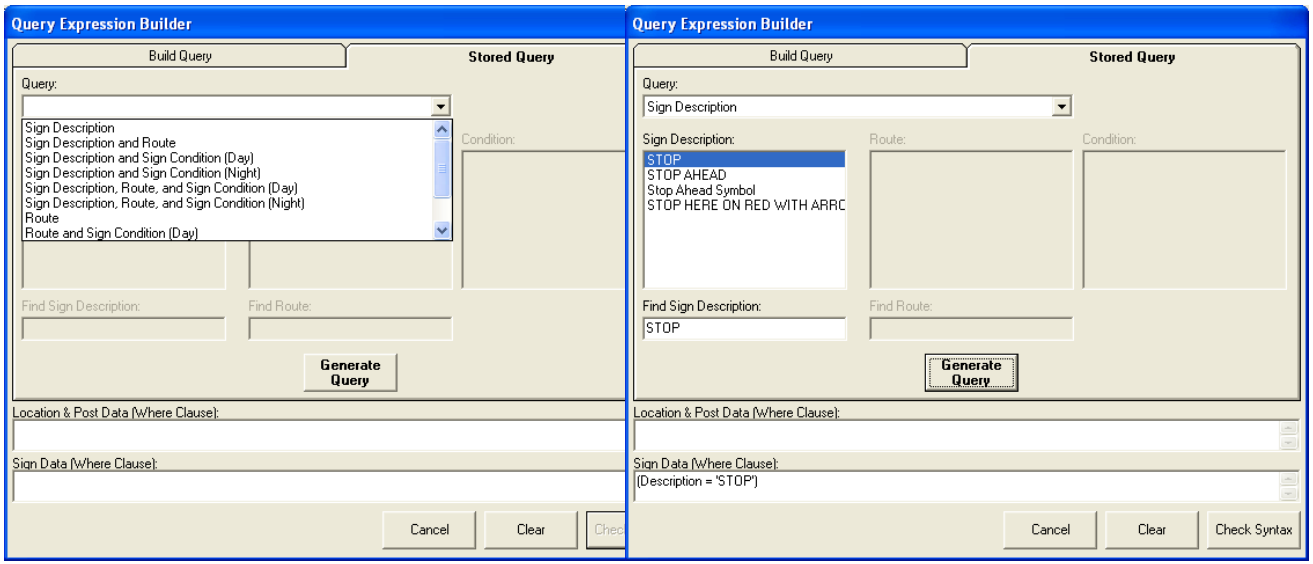
View/Edit and Reporting

Iowa DOT Sign Inventory Tool

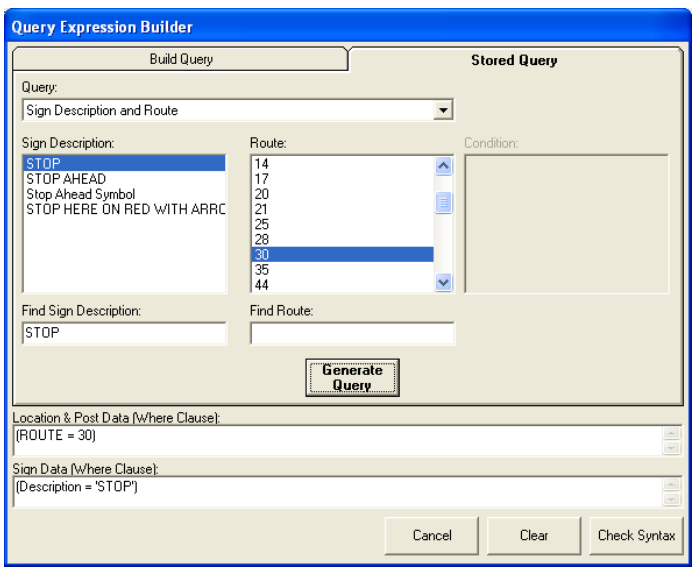


Query and Reports

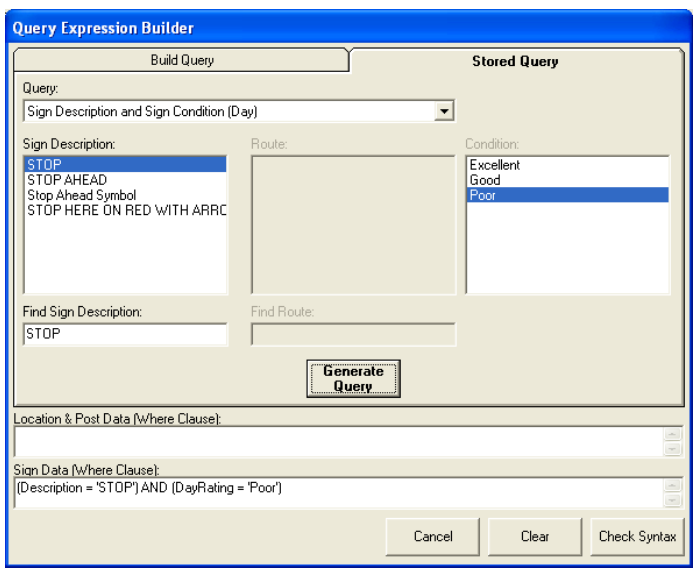
Iowa DOT Sign Inventory Tool



Query by Sign Type

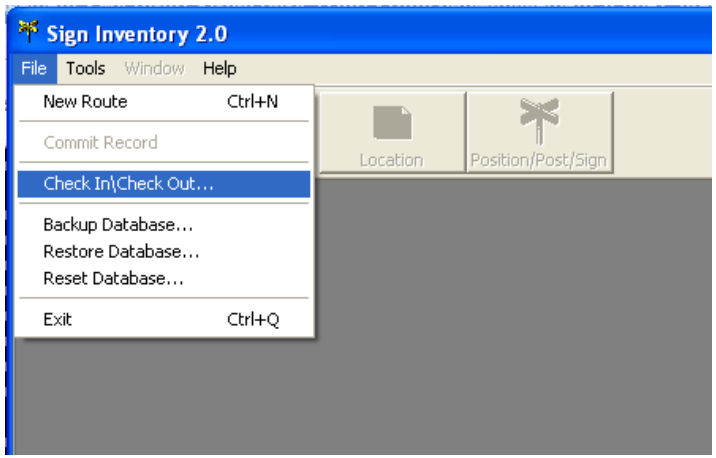


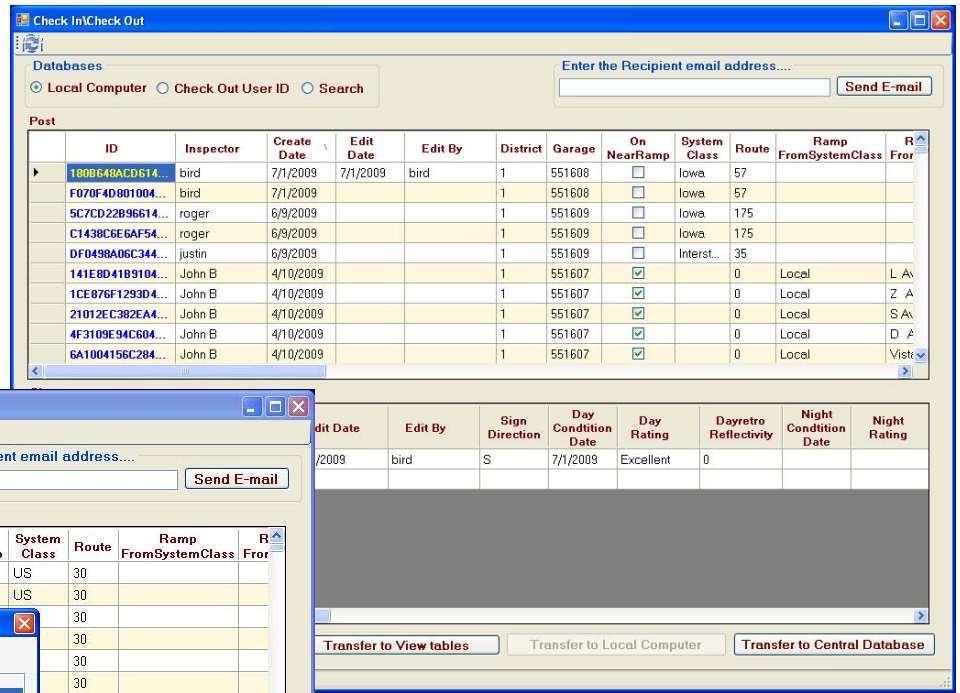
Query by Sign Type and Route

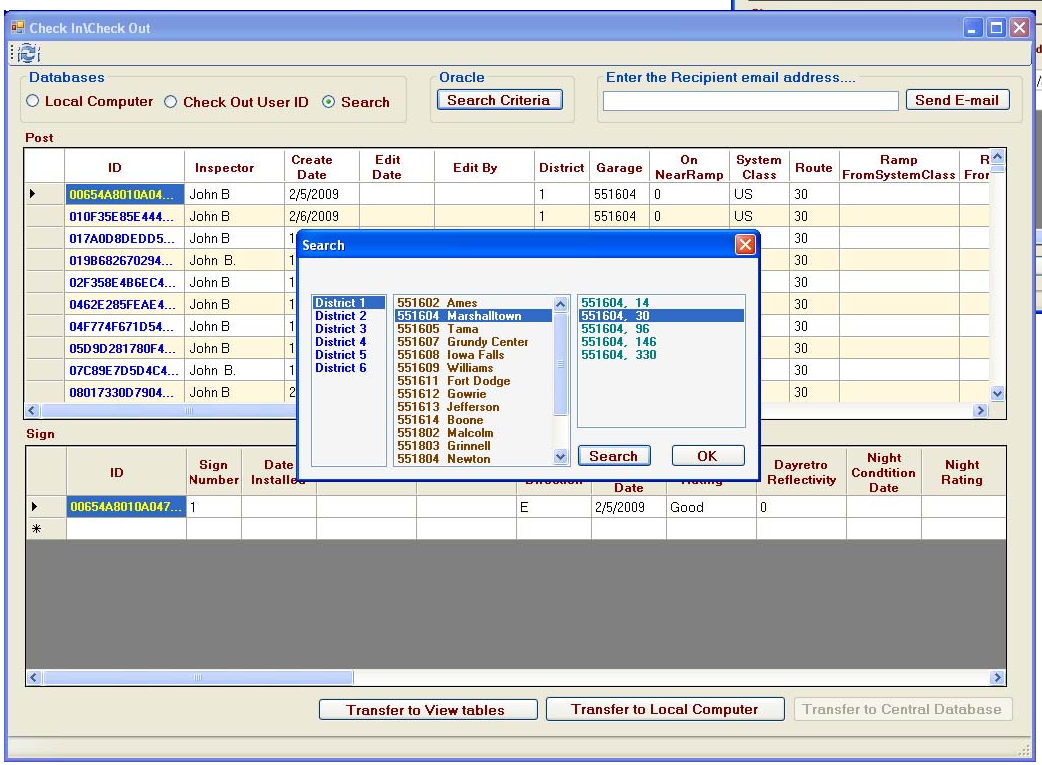


Query by Sign Type and Condition

Iowa DOT Sign Inventory Tool







Check In/Check Out
Maintenance and Update

Current Status

- Sign Inventory Collection tool completed
- Testing Beta version
- Training to follow
- Add the spatial component

References

- dennis.peperkorn@dot.iowa.gov 515-239-1188
  - Research & Technology Bureau
- tim.crouch@dot.iowa.gov 515-239-1513
  - Office of Traffic & Safety
- david.matulac@dot.iowa.gov 515-239-1545
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