Improved Data Consistency through WMX and Training

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DILBERT, I WANT YOU TO AUDIT THE SOFTWARE WE HAVE ON OUR SYSTEMS.

WHY?

SO WE KNOW WHAT WE HAVE.

WHO WILL USE THE INFORMATION?

IT'S JUST IMPORTANT TO HAVE.

IT WILL BE OUT OF DATE BEFORE I'M EVEN DONE.

DO YOUR BEST.

THE BEST WAY TO COMPILE INACCURATE INFORMATION THAT NO ONE WANTS IS TO MAKE IT UP.

I HOPE NO ONE EVER COMES HERE TO LEARN OUR BEST PRACTICES.
Goals for session

1. Learn MnDOT’s method’s for improving data entry and best practices
2. Training (mainframe vs. LRS)
3. Business Process development (mainframe vs. LRS)
4. Using Workflow Manager (WMX)
5. QA/QC processes
Mainframe era – (old training process)

- No formal training
- Learned by 1 on 1 training
- Past down from employees
- Jump right into production environment
- Developed a 3 day hands-on formal training for new employees
- Created 4 VMs for testing area for new employees
- Test to prove they understand concepts & business processes!
- **Must** pass test in order to edit in Production!
Mainframe era – (old business process)

- No formal written business processes
- Tabular data and map updated in separate systems > hard to sync!
- Each user created own version; lots of room for error!
- No common template for editors
- Handwritten processes
Developed 9 basic business processes

- Create a route
- Extend a route
- Realign a route
- Reassign a route
- Retire a route
- Reversing a route
- Data Reviewer
- RCE viewer/editor
Developed 14 advance business processes

- Cartographic realignment
- Add to existing route and reversing mileage
- Complex reassign and reverse
- Fixing self-intersecting routes
- Non-Monotonic reassign route
- Realigning a gapped route
- Reassigning the middle of a route
- Retiring a route that starts with a gap
- Roundabouts
- Create a lollipop route
- Reassign the middle of a route and reverse
- Re-calibrate and reverse route
R&H LRS – Other Business Processes

- 28 total business processes!
- Weekly QC and Reconcile & Post process
  - Oracle spatial and table checks
  - Master Data Reviewer batch checks
- General business processes for R & H and RCE environments
- On-boarding process for new R&H/RCE editors
- General tips and workaround procedures
Workflow Manager @ MnDOT

Gather Job Documentation

Define AOI

Create Version

James - Create Reviewer Session

Launch ArcMap with DR Session

Save Edits & Apply Updates

Do Not Reconcile and Post

mndot.gov/
Workflow Manager - Queries

- Groups (LRS Editors, LRS Admin, Traffic, Speed Limit, HPMS)
- Privileges
Old way – QA/QC

- Errors often fixed after data was made public
- Time delay between table and map updates
- Oracle back-end scripts
- Errors sent out by email
- Rare comparison of tabular and map data
New Way – QA/QC

- Combination **Data Reviewer** & **Oracle scripts**
- Why **Data Reviewer** didn’t work best for us
  - DR’s Geometry on Geometry checks were not compatible with Roads and Highways LRS @ (10.3.1 patch 4)
  - Timeliness - Table to table checks took several hours to run
New Way – What worked for us

- **Limited Data Reviewer**
  - Network Table Checks
  - Simple batch job to check for null records
  - Difficult set-up (each person has own .gdb and workflow)

- **Oracle Back-End Scripts (Oldie but goodie!)**
  - Event to Event comparison
  - Event to Network comparison
  - Validating individual event tables
New Way – What worked for us

- Oracle Spatial Checks
  - Geometric Route Length comparison
  - Opposite Route Measure Direction
  - Flipped Segment Measures
  - Non-zero Beginning measures
  - False coincident events
  - Reference Posts greater than 25’ apart
  - Measure errors (Negative/null measures, duplicates, etc.)
Lessons Learned at MnDOT

- WMX good for business process
- Takes time to create good business process docs, but very helpful!
- Job Tracking
- Notifications Limitations
- Data Reviewer Limitations

Future steps:
- Use DR/WMX for Server
- Test out new DR capabilities at 10.5
Wrap up & Questions?

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