2020 NRFU Field Operational Control System and Quality

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2020 FOCS, Hermes, Optimizer

FOCS and its companion applications MOJO Hermes and MOJO Route Optimizer were used to manage field operations

- FOCS
 - Control system used to communicate assignments to the device, manage staff, approve time and expense, generate and resolve alerts
- MOJO Hermes
 - Field reporting system
 - Pre-computes reports every 10 minutes
- MOJO Route Optimizer
 - Generate optimized assignments
 - Generate alerts that are more computational





FOCS

- Built in Pega Framework
- Clustered by ACO (248 FOCS clusters for peak operations)
- Staff management
 - Time and expense approval by managers
 - Alert resolution
 - Work availability review
- Case management
 - Assign cases to people
 - Generate on-demand optimizer assignments
 - Supervisor review



MOJO Hermes

- Reporting system built as a companion to FOCS
- Python/Java based
- Reports pre-determined by field
 - Report definitions largely stored in parameterized tables to allow for simple changes to parameters
 - Reports stored in database for fast retrieval by staff
 - Downloadable to CSV



MOJO Route Optimizer

- Used to both generate assignments and to generate alerts
- Python/Java based with ESRI network analyst
- Generated assignments based on work availability each night
 - Goal to optimize work across an entire CFM zone, not for an individual enumerator
 - Uses location of enumerators, cases, work availability, language of case/enumerator, weights on cases for priority
- Generated some of the alerts
 - Using the same ESRI framework, reconstructed the enumerator's day





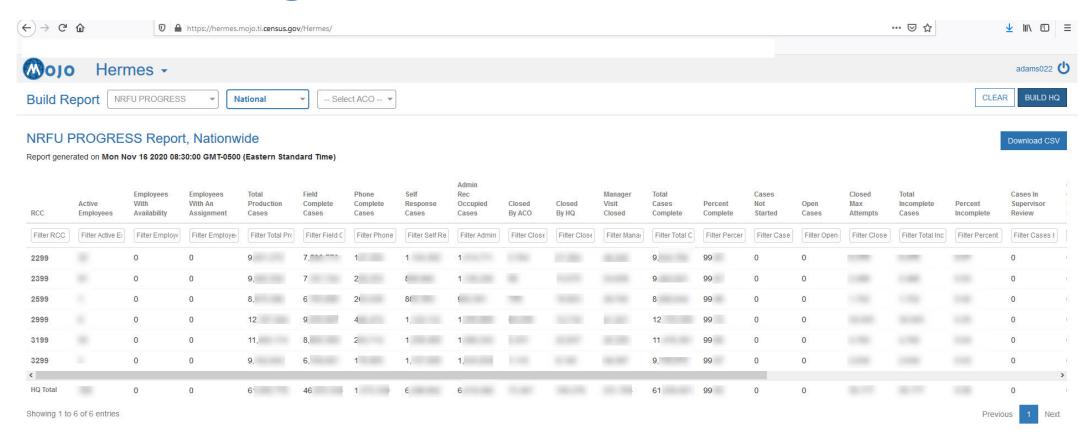
Optimization Steps

- Generated assignments based on work availability each night
- Regular Assignments
 - Geocoding to the road network
 - Cache OD Matrix
 - Clustering
 - Assign Field Workers to Partition
 - Vehicle Routing Problem (ESRI)
- Phase 2 / Closeout
 - Clustering of cases into n groups, where n is number of roughly evenly created groups
 - Assign one group per enumerator





Reporting in Hermes



Management by Alerts

- Supervisors and Managers were served alerts about their employees
- Alerts focused on both management of staff and management of work
- Overlap with QC program alerts on purpose start the quality review during production and continue into the QC program



Management by Alerts

Staff Management

No Timesheet
Potential Overcharge Miles
Potential Overcharge Hours
Lookahead Availability
Payroll Not Approved
No Work
Work Not Started
Working Before Assigned
Hard Fail
Stale Alert

Case Management

Short Interview
High Refusal Rate
Low/High Completed Cases
Unconfirmed Vacant/Delete
by Observation
High Pop 1 Rate
Low/High Attempts per Hour
No Proxy Attempts
Unable to Assign
Ready for Phase 2/Closeout





END



