

Vegetation Options to Speed up Restoration

- Feeder Trigger (implemented 7/16/14!)
 - From Jan – June, 30 Fdr Tickets Referred to VEG.
 - Any Fdr Ticket, by default, will have 2 veg crews assigned
 - Assuming 2nd half of year looks similar, we expect to save between 0.09 to 0.19 SAIDI
- Lateral Triggers
 - Evaluated 4 distinct increased crew size scenarios:

Criteria (Mutually exclusive)	Referred Tickets Jan – July 6	New Response	Expected SU min/max pickup	Est. Cost hi/lo <small>Assuming similar counts in 2nd half of year</small>
Lat's where >210 min's of total VM Support Time	428 tickets Median Min's:259	Min 3 crews / ticket	0.06 - 0.13	\$670K - \$750K
Lat's where >180 min's of total VM Support Time	509 tickets Median Min's:225	Min 3 crews / ticket	0.07 - 0.13	\$690K - \$773K
Lat's where CI >=100	86 tickets Median Min's:137	Min 3 crews / ticket	0.09 - 0.17	\$116K - \$130K
Lat's where CI >=75	175 tickets Median Min's:129	Min 3 crews / ticket	0.06 – 0.12	\$236K - \$265K

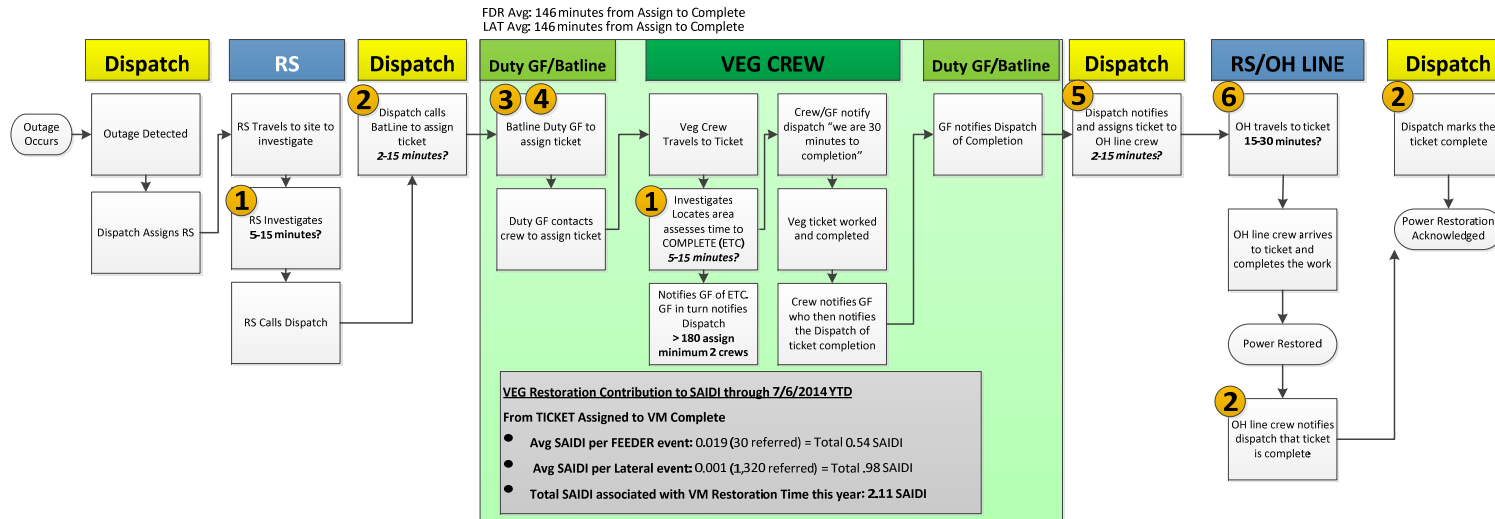
Recommend Feeder Trigger & “Lat’s >100 CI” Trigger for total incremental spend of roughly \$130K and between 0.18 – 0.36 SAIDI

Other Options Related to Process Hand-offs the should be reviewed further in detail with Control Center, Veg, Technology, and Area Operations

- Reduce duplicated VEG investigation time *(5 - 15 min's/ticket saved?)*
 - Can RS tag the tree right in RSV?
 - Can RS hang some CAUTION TAPE that signals where it on the block VMRPC staffing
- Reduce Dispatch Ticket IDLE time to Veg Resources with standard use of VMRPC *(5 - 15 min's/ticket saved?)*
 - Short-term:
 - IF yard is open – staff at VMRPC
 - IF yard is NOT open – staff VMRPC at the Control Center
 - Mid-term: IF we had access to systems or RSV, we could eliminate that body

A cursory value stream maps and basic assumptions suggests that an additional 0.11 – 0.45 SAIDI can be saved by streamlining process hand-offs to VEG.

Other Options Related to Process Hand-offs the should be reviewed further in detail with Control Center, Veg, Technology, and Area Operations



1 Reduce/Eliminate Redundant Investigation Time - LAT (5 - 15 min per ticket)
Enable RS, in RSV, to circle vegetation area of concern, and automatically (a) adds address/GPS detail to TCMS ticket and/or (b) Send an txt/email with the referred work

2 Reduce Veg Tick Queue Time (2- 15 min per ticket)
• IF yard is open – staff VMRPC
• IF yard is NOT open – staff VMRPC at the Control Center

Barg unit?

CONSIDERATION
Area of Responsibility (AOR)
Barg Unit Function (???)
Safety

2* RS flags ticket to VEG
In RSV and it updates TCMS – routed directly to Veg GF/Batline

3 By default, Fdr ticket receive 2 VEG crews minimum
Fdr's median Veg restoration time is 133 minutes per referred feeder ticket. If we assume the additional crew may make these tickets 10% to 20% more productive – we may save 13 to 27 minutes on each feeder ticket.

4 Outlier Lateral tickets that exceed 210 minutes receive minimum 3 crews
Lat's median Veg restoration time of tickets exceeding 210 minutes in total VM Restoration is 259 minutes. If we assume the additional crews may make these tickets 10% to 20% more productive – we may save 26 to 52 minutes on each of these lateral tickets

5 Reduce Veg Tick Queue Time (2 - 15 min per ticket)
• IF yard is open – staff VMRPC
• IF yard is NOT open – staff VMRPC at the Control Center

Barg Unit?

CONSIDERATION
Area of Responsibility (AOR)
Barg Unit Function (???)
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6 Parallel vs. Sequence the RS/OH Line Crew arrival
• 81% of VEG Lat Tickets are completed with 210 mins.
• 68% of VEG lat Tickets are completed with 180 mins

Give OH/RS line crew a rule of thumb " At the latest, return to lateral within 2.5 hours of initial assignment to veg unless advised sooner than that."

Note: This opportunity can also be partially reaped by staffing idea #2 – VMRPC can be making sure VM estimated complete times are updated timely so that OH/RS can be vigilant of when to return to lessen the hand-off time.

Assume 5 to 15 minutes can be "Paralleled" on laterals

Note: Items in red are in the process of being vetted with the Control Center, Tech, Veg, and Area Operations

Levers to speed up VEG restoration

- **Resources:** More resources on key tickets
- **Time:** Quicker hand-off/responsiveness
- **Scope:** ensure we are only trimming to restore

