PROCESS MAPPING OF SAFETY APPLICATIONS IN TRANSPORTATION ORGANIZATIONS

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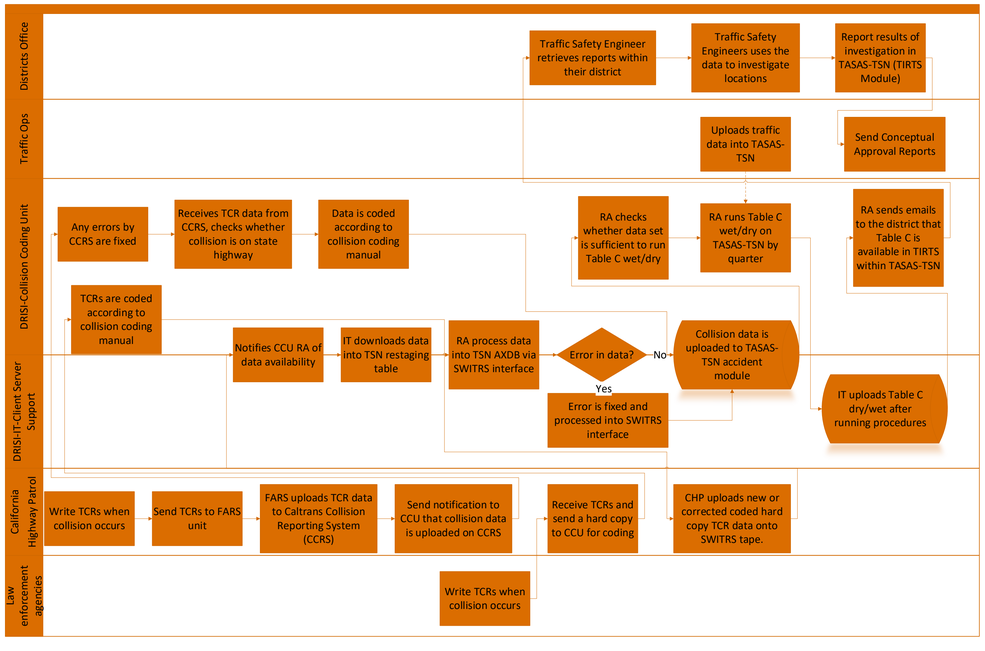
OVERVIEW

- Documentation of processes is instrumental in defining work responsibilities, quality assurance procedures, evaluating lead time, eliminating inefficiencies, and developing training requirements.
- Operational reality that dominates organizations can inhibit their ability to systematically and appropriately document recurring work processes. This becomes aggravated over time, due to natural employment turnover.
- Although the knowledge of the individuals involved in the current network screening method is available, there was no consistent and comprehensive documentation of the multi-layered production process.
- The agency's desire to evaluate the value of transitioning to other network screening methods, resulted in an effort to identify the entities that are contributing to, or are a part of, the process
- This study presents an effort to document a process to identify high collision concentration locations (HCCLs) across the California three types of process maps.

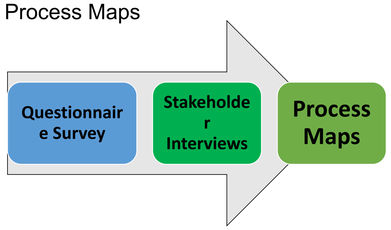
CROSS-FUNCTIONAL MAP

- Also known as Swim-line map - each entity in the map is represented by a horizontal band stacked on top of other bands similar to a swimming pool viewed from above
- Focus is on one entity at a time - full set of activities for which an individual entity is responsible for
- Within each band, the activities performed by that entity are placed in order from left to right and final activity performed by that entity is connected to the starting activity to be performed by another entity in another band
- Top horizontal band in the map was used to show the entity responsible for the final output
  - Pros: Detailed level of information
  - Cons: Individual entity at a time



METHODOLOGY

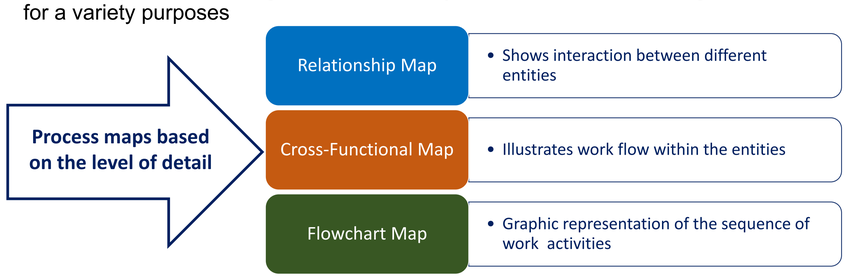
- Steps involved in the development of Process Maps



- Questionnaire Survey
  - Two components
  - First: Services/deliverables each entities provides and receives
  - Second: Understand the role and responsibility of each entity and key personnel involved
    - Qualtrics – 80 questionnaires
- Stakeholder Interview
  - Based on the survey response
  - Individuals – iterative process
  - Pieces of information

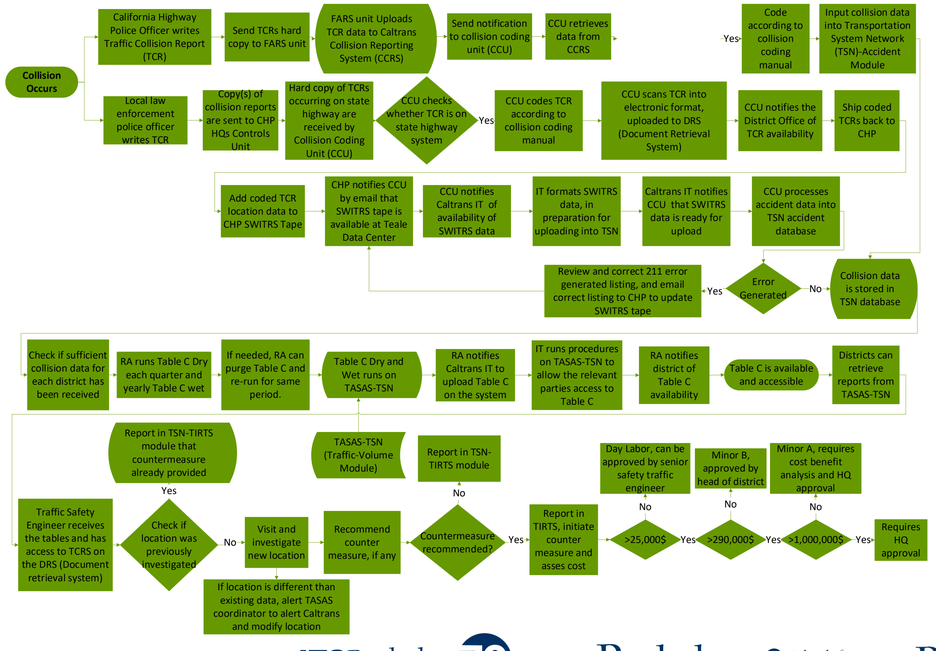
PROCESS MAPPING

- Used to facilitate the required documentation by identified the boundaries, responsibilities, and components involved in a process
- These maps are used to generate necessary information across a range of industries for a variety purposes



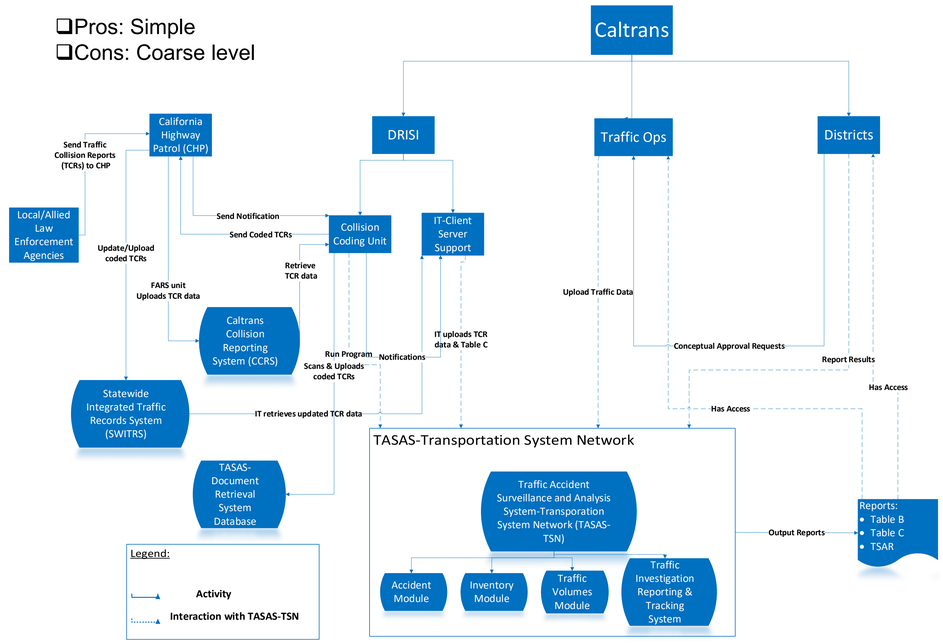
FLOWCHART MAP

- Flowchart map provides Finest level of information of work flow
- Divide up the activities from the cross-functional map into more detailed work tasks and collected the additional data via correspondence to identify the steps comprising each activity
- Work comprising all the activities was placed in order from left to right (beginning to end)
  - Pros: Granular level
  - Cons: Length of process



RELATIONSHIP MAP

- Responsibilities and expectations between organizations or between different entities within the same organization
- Mapping starts with gradually placing entities from left to right, with the left side being entities involved early on, and on the right side the entities involved in the end of the process.
- Arrows connecting these entities represent deliverables generated by one entity and received by another as indicated by the direction of the arrows
  - Pros: Simple
  - Cons: Coarse level



CONCLUSIONS

- All three maps are necessary to document the process adequately
- Relationship map
  - ✓ Identify key stakeholders current network screening process (Table C)
  - ✓ The map identified 16 interactions across various stages of the process. This will help one to understand the inter-relationship and the importance of crash database.
- Cross-functional map
  - ✓ Boundaries of the Table C process (start/end)
  - ✓ Where in the organization specific work takes place
  - ✓ Point of handoff between different offices and divisions.
- Flowchart map
  - ✓ Information about the two processes that occur once a collision occurs: (i) identification of high crash concentration locations, and (ii) identify procedures taken by traffic safety engineers.

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