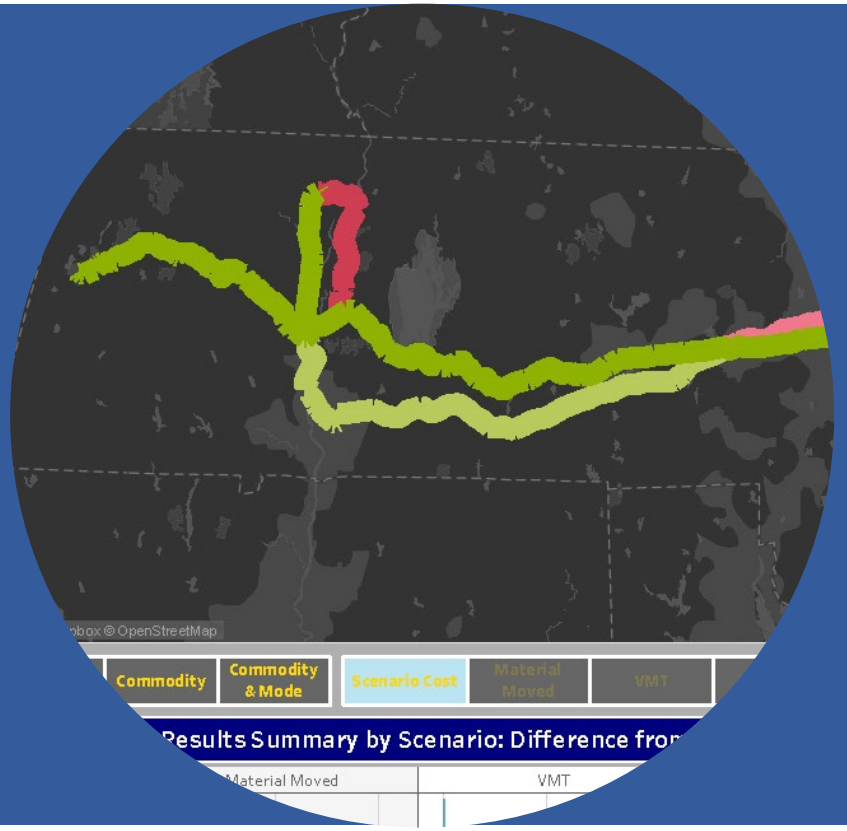
FTOT Link Removal Resiliency Testing Use Case



Question: How resilient is my solution to disruptions?

https://github.com/dflynn-volpe/FTOT-Public-Link_Removal

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Overview

Process

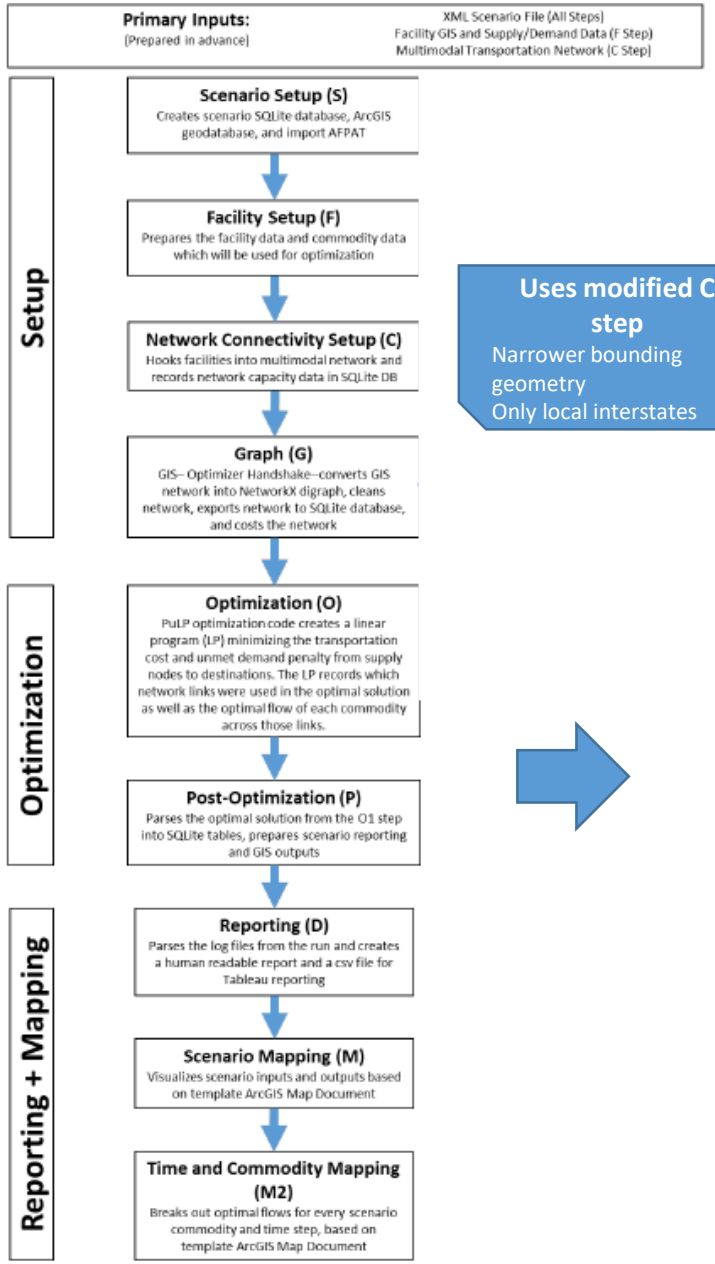
- Complete baseline run in FTOT
- Rank edges by 'importance'
- Disruptions applied by removing edges from optimal solution
- Re-calculate new optimal solution and calculate total scenario cost

Assumptions

- Importance calculations are for road network only
- Use as a screening tool to assess resiliency of network to disruption
- Most useful for comparing multiple scenarios
- Uses Jupyter Notebooks in addition to standard FTOT setup (based off 2020.3 currently)

Link Removal Resiliency Testing Code

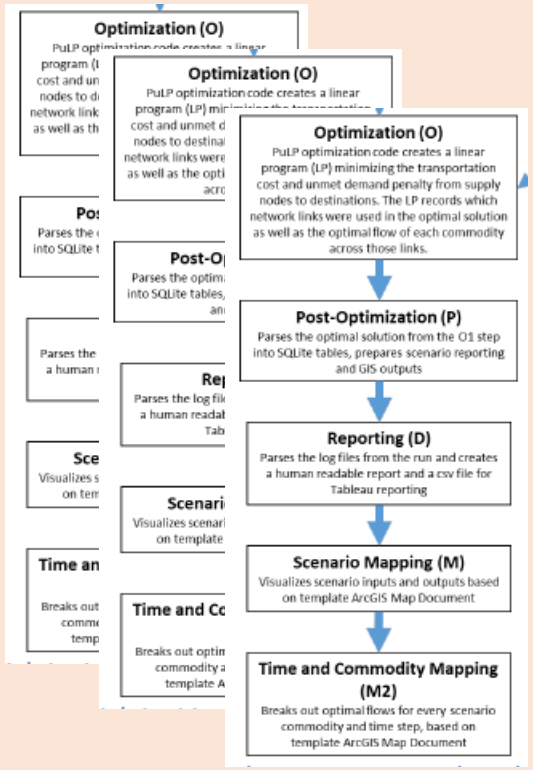
Complete FTOT run for base scenario



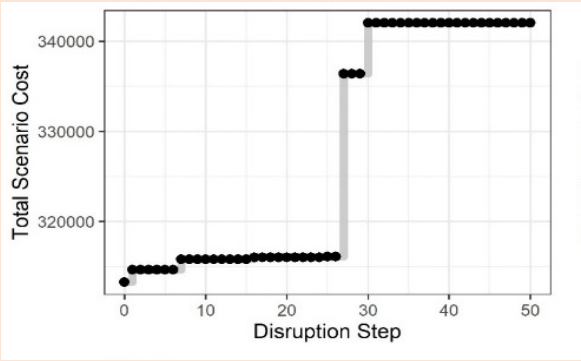
Uses modified C step
Narrower bounding geometry
Only local interstates

Figure 3 - Analytical tool data flow schematic showing the key components/roles of each component of the FTOT

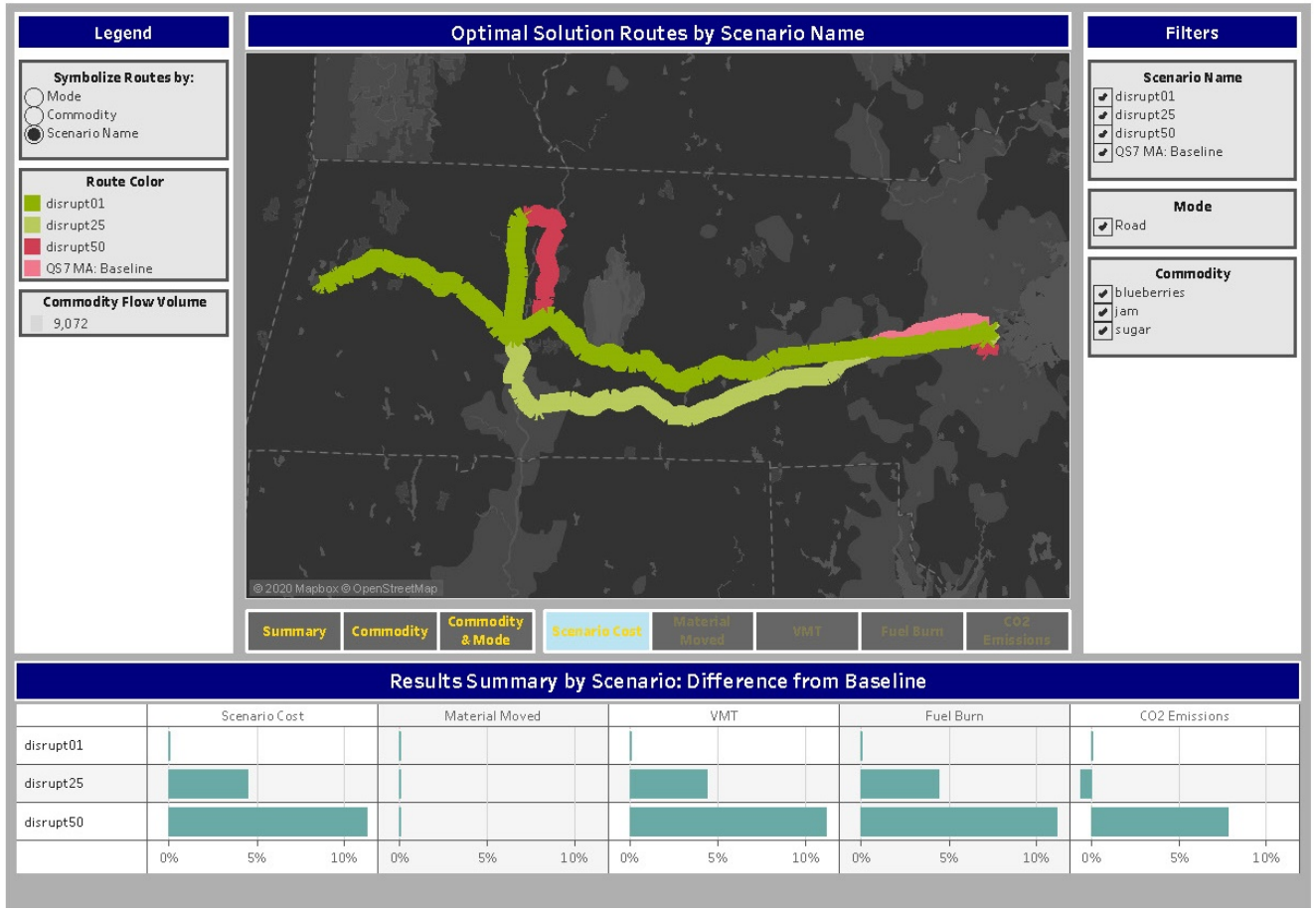
Apply Disruption and Optimize *n* times

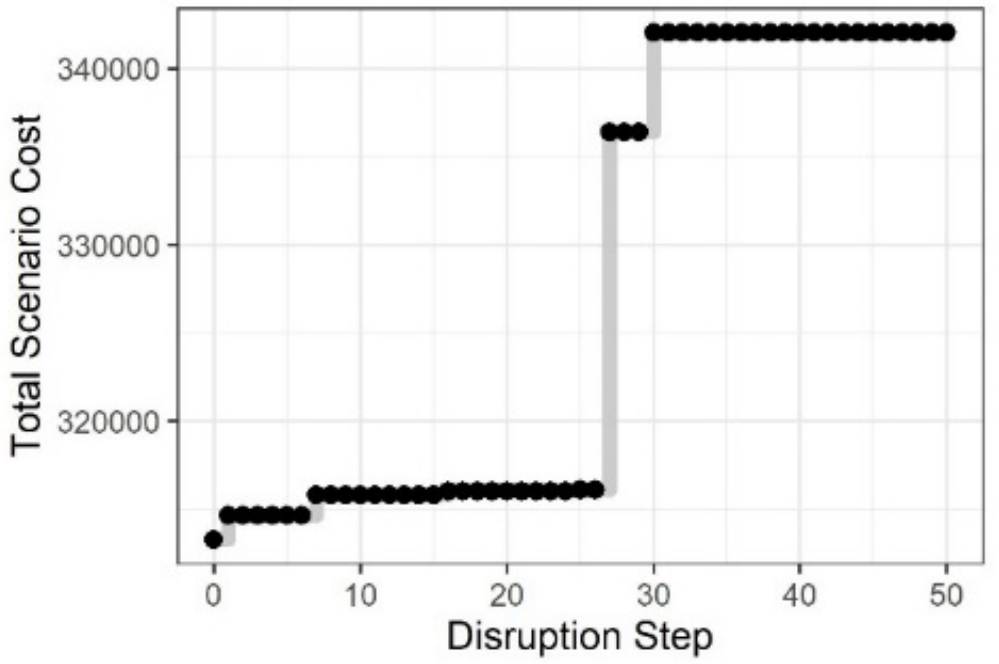


Compile results and visualize



Example outputs





See Quick Start 9 for Scenario Comparison Tool usage

Development scenarios

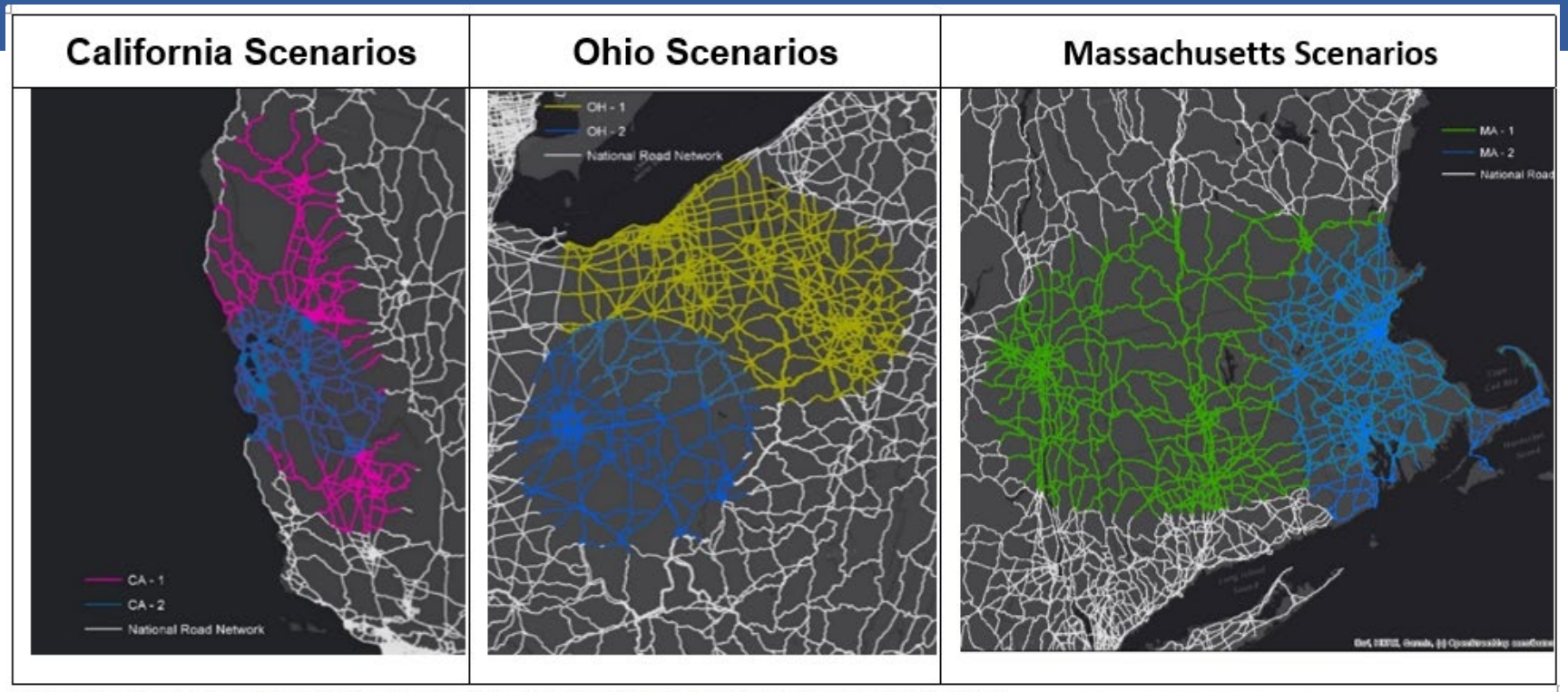
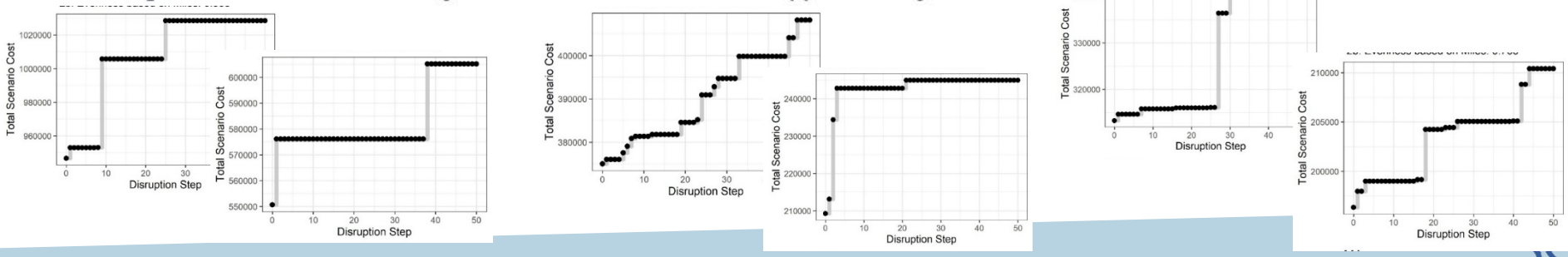
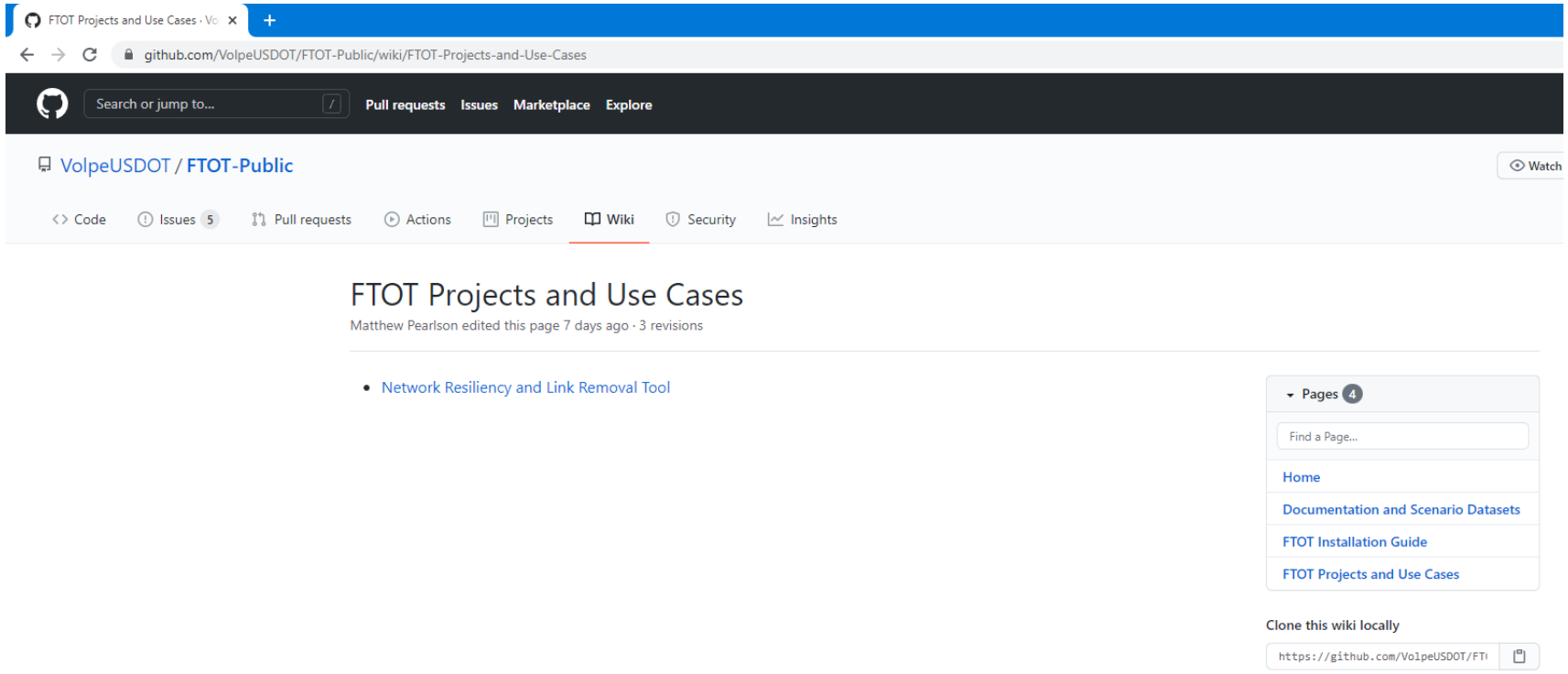


Figure 1: Test networks used for evenness calculations and application of scenarios.



Demo

- To FTOT-Public Wiki



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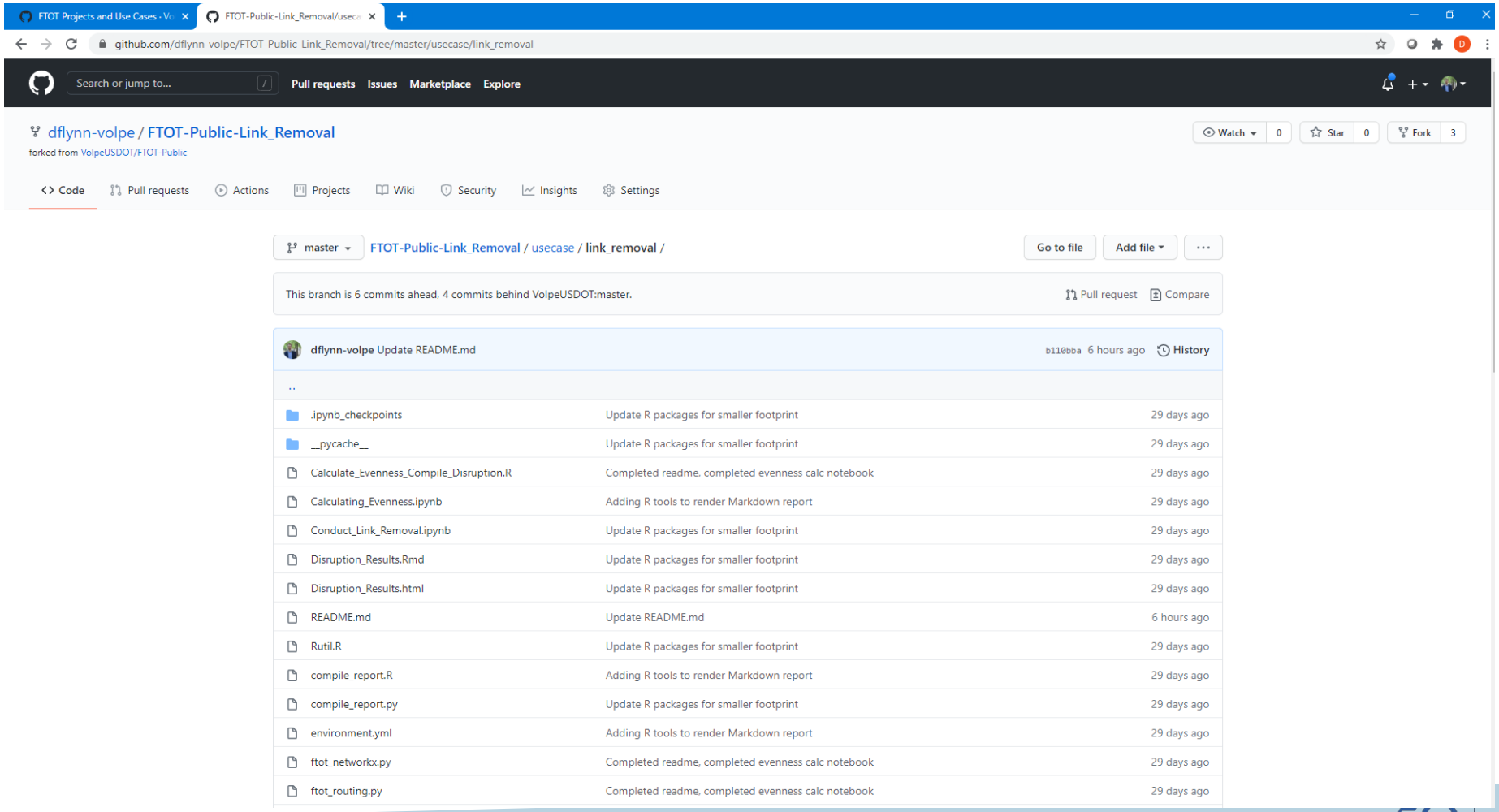
Demo



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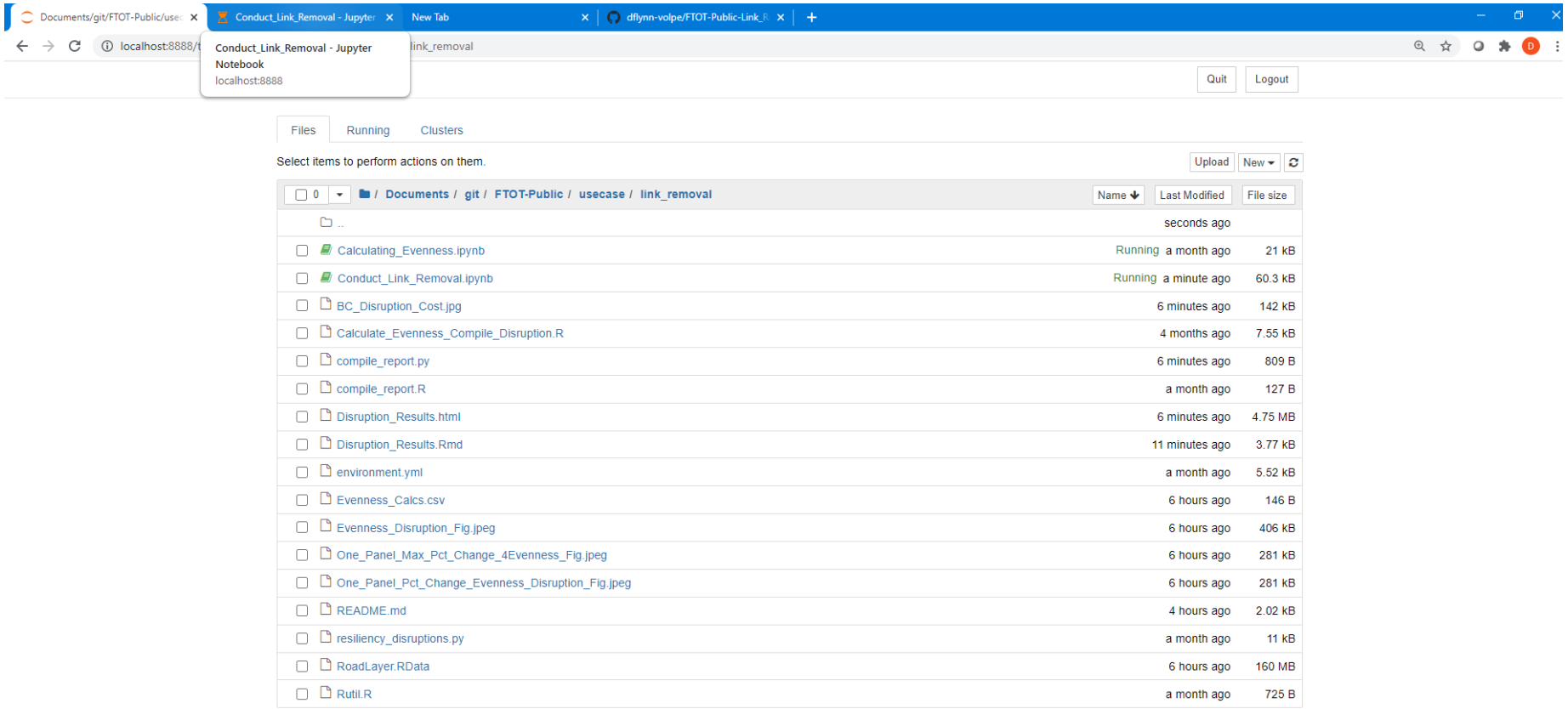
Demo



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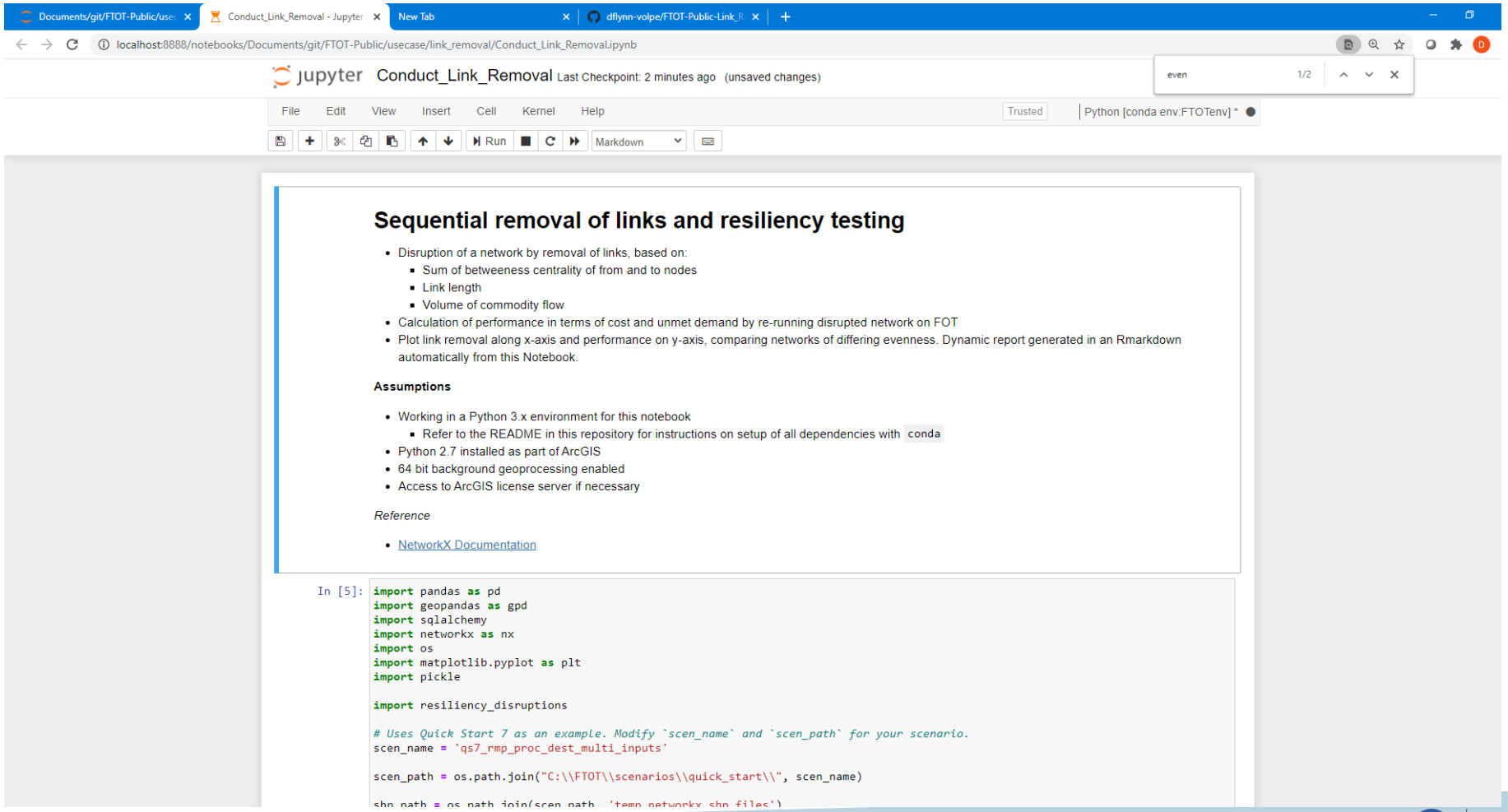
Demo



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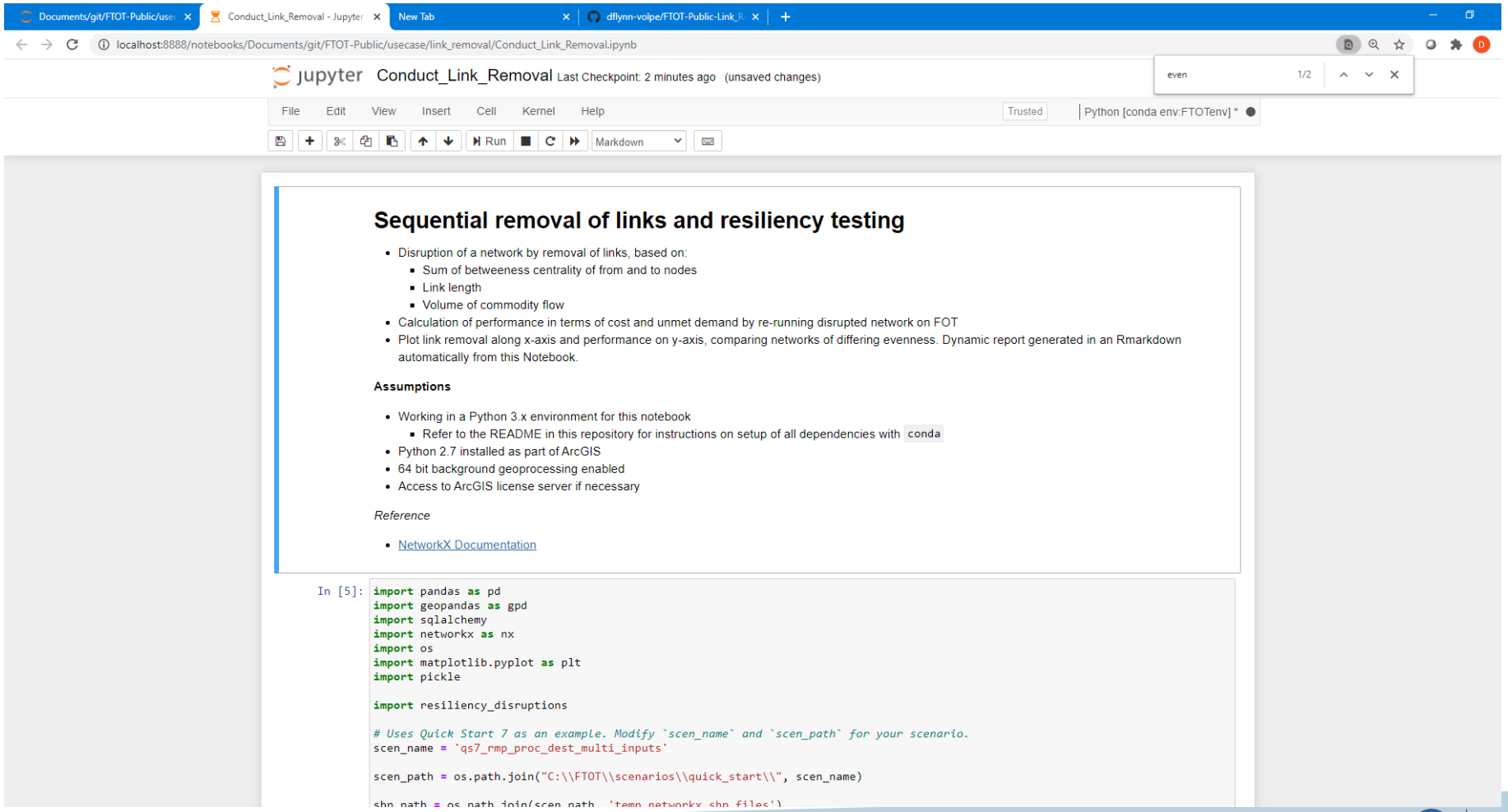
Demo



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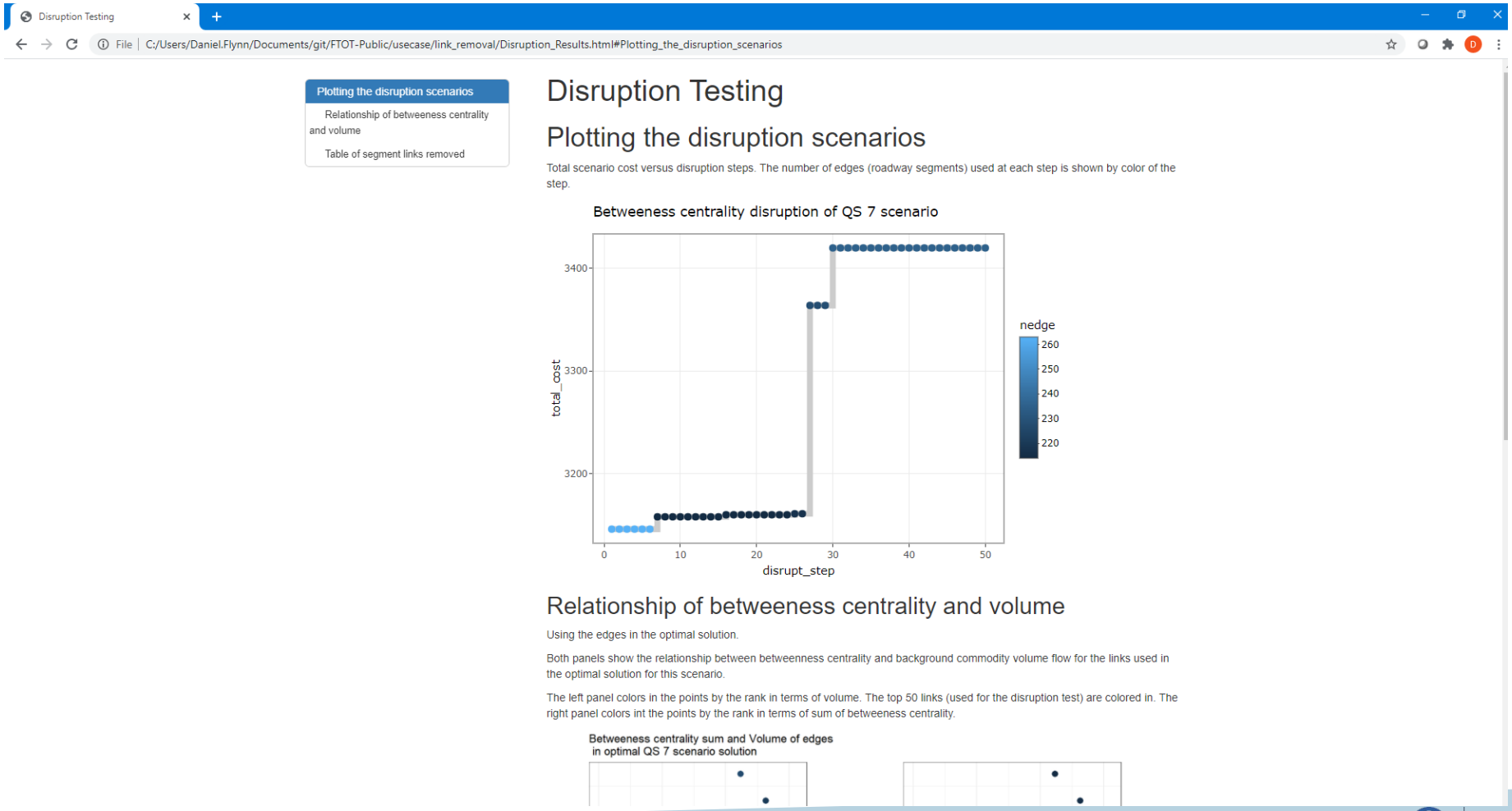

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