New transects proposed for RSMGL

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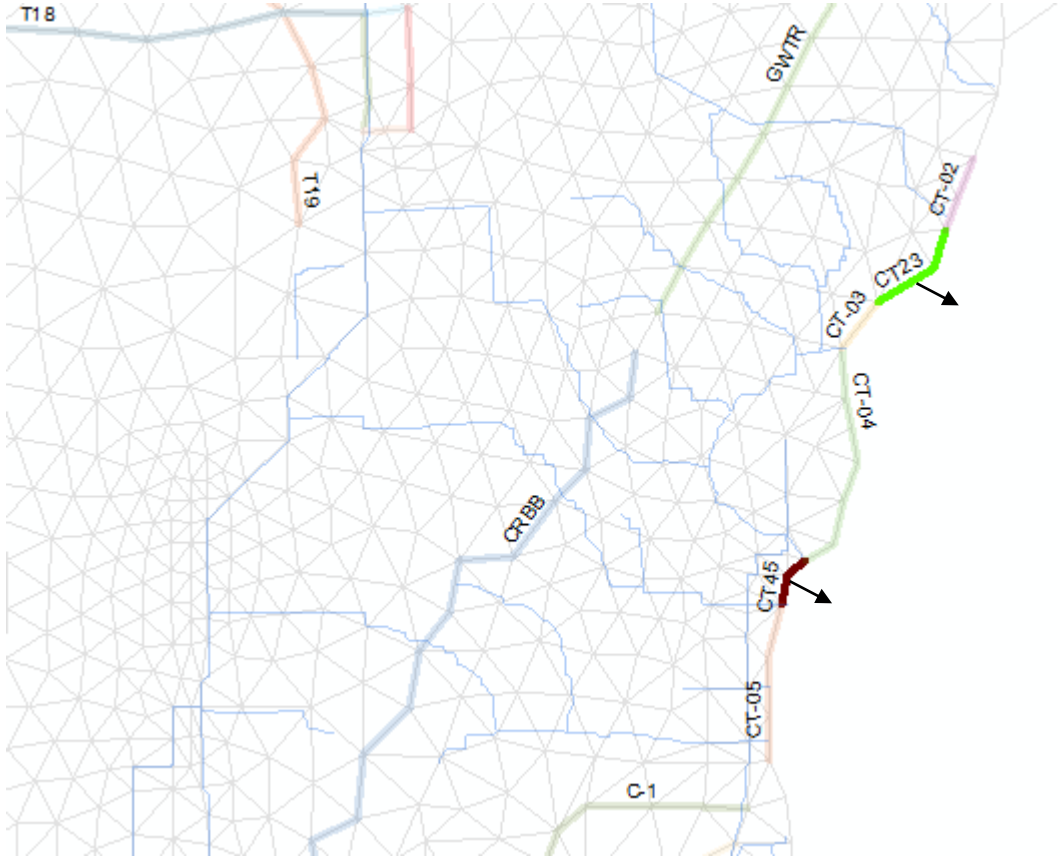
* Updated 2/16/2023

Add transects CT23 and CT45

CT23 (green) fills in the gap between CT-02 and CT-03

CT45 (brown) fills in the gap between CT-04 and CT-05




```
<!-- Between Transects CT02 and CT03 -->
<flowgage section="ol" label="CT23_ol">
  <nodelist> 2771 4508 4512 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/CT23_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="CT23_gw">
  <nodelist> 2771 4508 4512  </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/CT23_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>

<!-- Between Transects CT04 and CT05 -->
<flowgage section="ol" label="CT45_ol">
  <nodelist> 3098 3001 3003 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/CT45_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="CT45_gw">
  <nodelist> 3098 3001 3003  </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/CT45_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>
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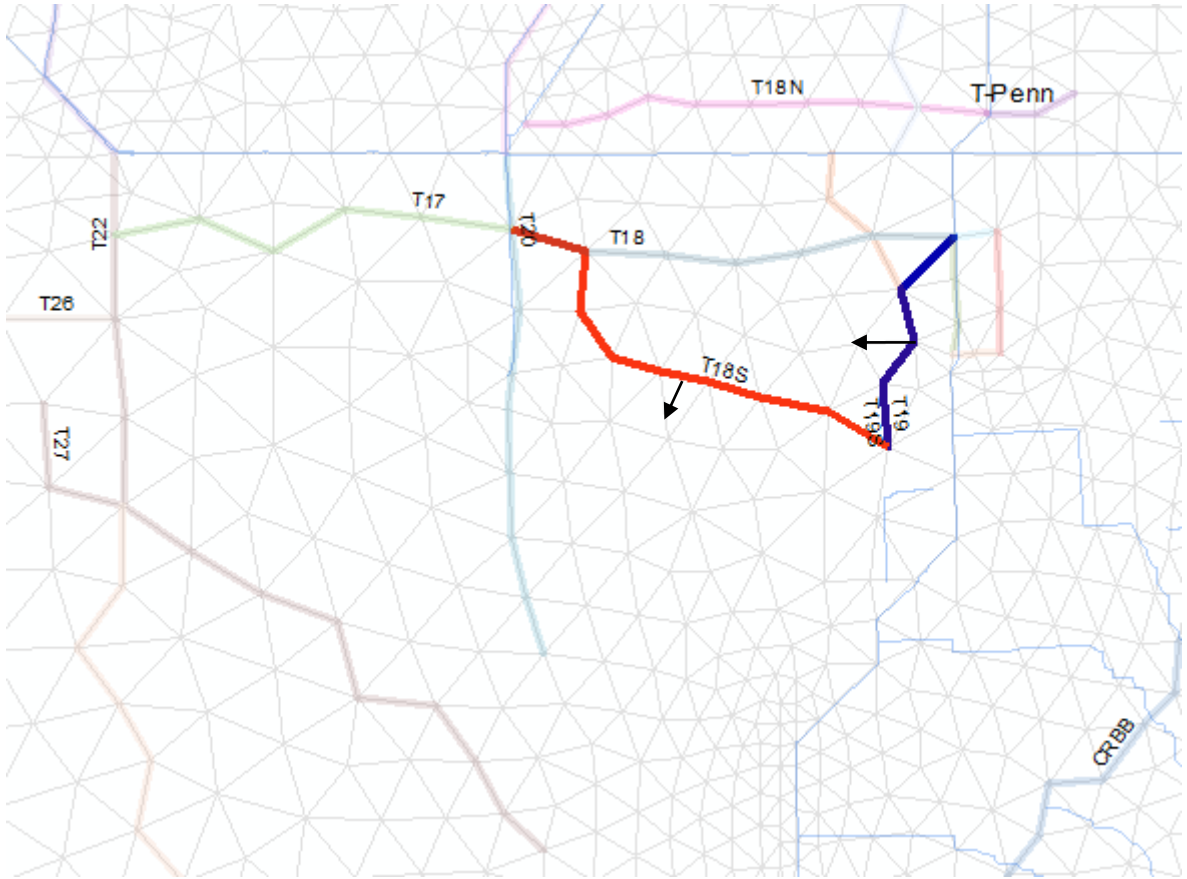
Add transects T18S and T19S

T18S (orange) allows for better quantification of flows moving down Shark River Slough

T19S (purple) connects between T18 and T18S to allow for water budget calculations for this area

T19S is a southerly variation of T19

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<!-- Transect T18S (T18 South) -->
<flowgage section="ol" label="T18S_ol">
  <nodelist> 904 967 966 1035 1107 1184 1275 1371 1476 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T18S_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="T18S_gw">
  <nodelist> 904 967 966 1035 1107 1184 1275 1371 1476 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T18S_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>

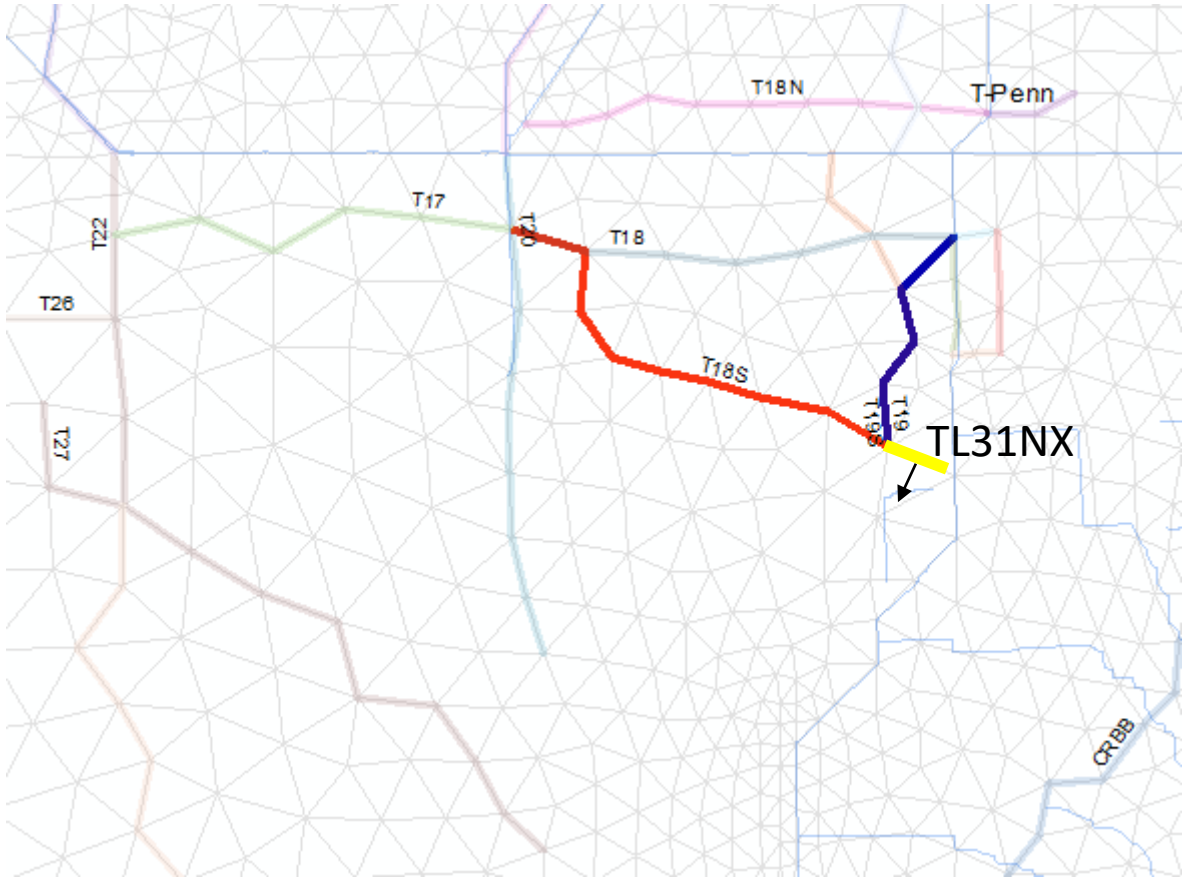
<!-- Transect T19S (T19 South)-->
<flowgage section="ol" label="T19S_ol">
  <nodelist> 1374 1373 1478 1477 1476 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T19S_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="T19S_gw">
  <nodelist> 1374 1373 1478 1477 1476 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T19S_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>
```

* NEW *

Add transect TL31NX

TL31NX connects other transects to L31N.

This will allow for water budget calculations for the Detention Areas, because it connects with L31N at the junction of levee seepage transects.



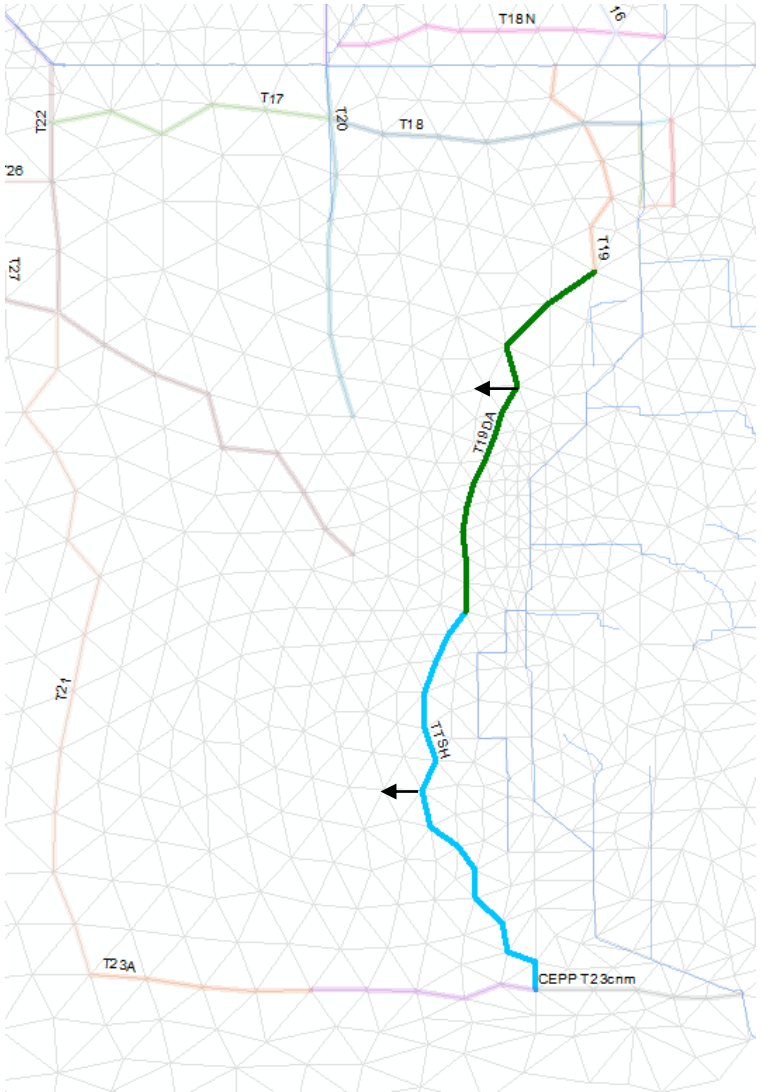

```
<!-- Transect TL31NX (Transect to extend other transects to L31N) -->
<flowgage section="ol" label="TL31NX_ol">
  <nodelist> 1476 1586 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/TL31NX_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="TL31NX_gw">
  <nodelist> 1476 1586 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/TL31NX_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>
```

Add transects T19DA and TTSH

T19DA (green) and TTSH (blue) allow for quantification of flow between the Detention Areas and ENP

T19DA and TTSH connect to other transects to allow for other water budget calculations

They also can be used to calculate water budgets for the detention area separate form ENP, minimizing the counting of recirculated flows down the ‘corkscrew’ of the detention areas.




```
<!-- Transect T19DA (West of Detention Areas) -->
<flowgage section="ol" label="T19DA_ol">
  <nodelist> 1476 1370 1272 1368 1471 1470 1577 1576 1575 1574 1573 1678 1677 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T19DA_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="T19DA_gw">
  <nodelist> 1476 1370 1272 1368 1471 1470 1577 1576 1575 1574 1573 1678 1677 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T19DA_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>

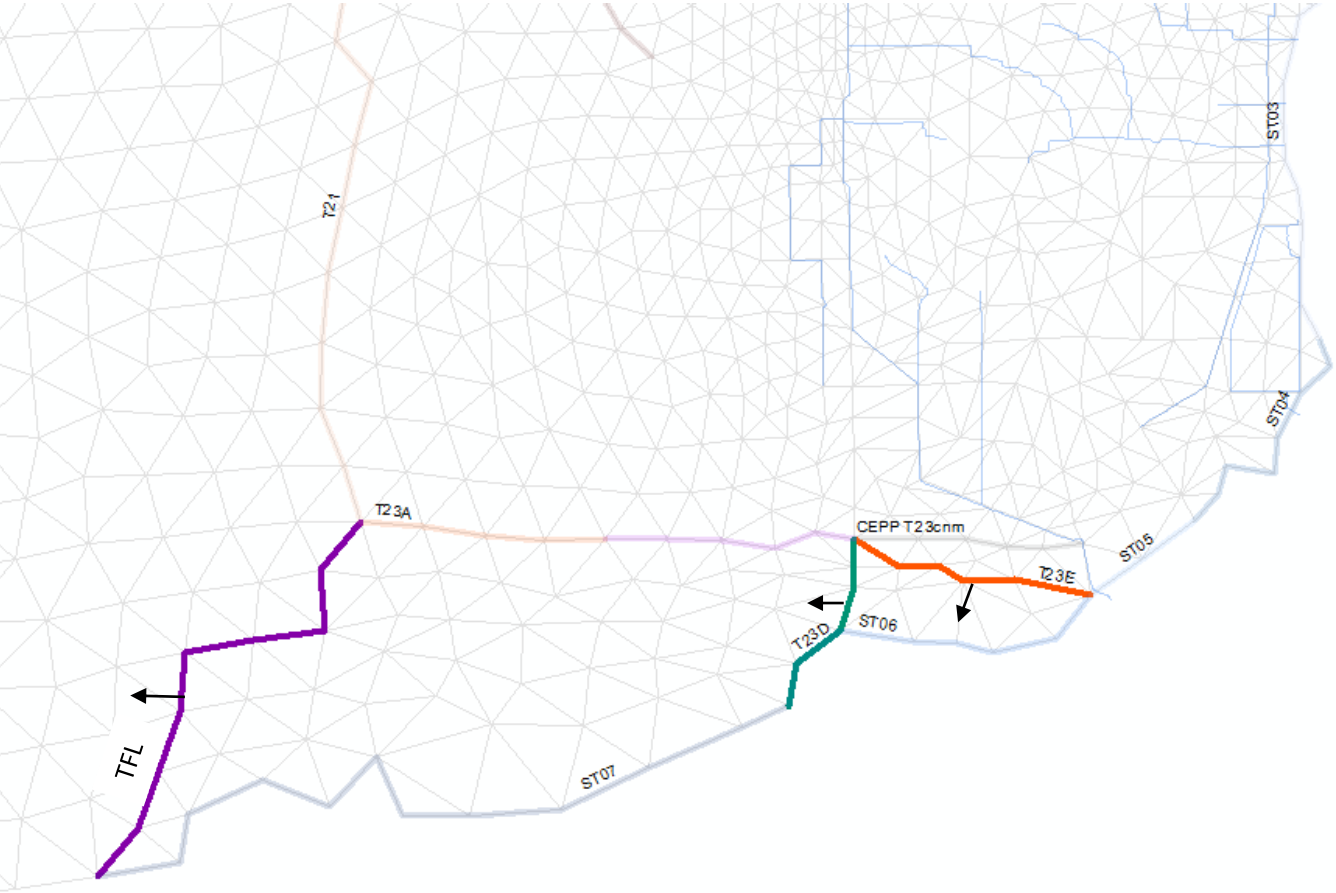
<!-- Transect TTSH (West of S332D and Frog Pond) -->
<flowgage section="ol" label="TTSH_ol">
  <nodelist> 1677 1676 1675 1674 1786 1903 1902 2014 2140 2270 2138 2267 2266 2387 2386 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/TTSH_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="TTSH_gw">
  <nodelist> 1677 1676 1675 1674 1786 1903 1902 2014 2140 2270 2138 2267 2266 2387 2386 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/TTSH_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>
```

Add transects TFL, T23D, and T23E

TFL (purple) connects between T23A and ST07 to quantify flows in southern Taylor Slough

T23E (orange) connects between T23B, ST05, and ST06

T23D (green) connects between T23B, ST06, and ST07 to complete southern Tayylor Slough budget

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<!-- Transect TFL (T23A south to Flamingo area) -->
<flowgage section="ol" label="TWZ_ol">
  <nodelist> 1447 1556 1661 1554 1443 1552 1657 1768 1767 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/TWZ_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="TWZ_gw">
  <nodelist> 1447 1556 1661 1554 1443 1552 1657 1768 1767 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/TWZ_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>

<!-- Transect T23D -->
<flowgage section="ol" label="T23D_ol">
  <nodelist> 2386 2264 2384 2383 2261 2381 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T23D_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="T23D_gw">
  <nodelist> 2386 2264 2384 2383 2261 2381 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T23D_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>

<!-- Transect T23E -->
<flowgage section="ol" label="T23E_ol">
  <nodelist> 2386 2385 2503 2617 2744 4418 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T23E_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="T23E_gw">
  <nodelist> 2386 2385 2503 2617 2744 4418 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T23E_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>
```

Add transects T20S, T22S, T27W, and T27E

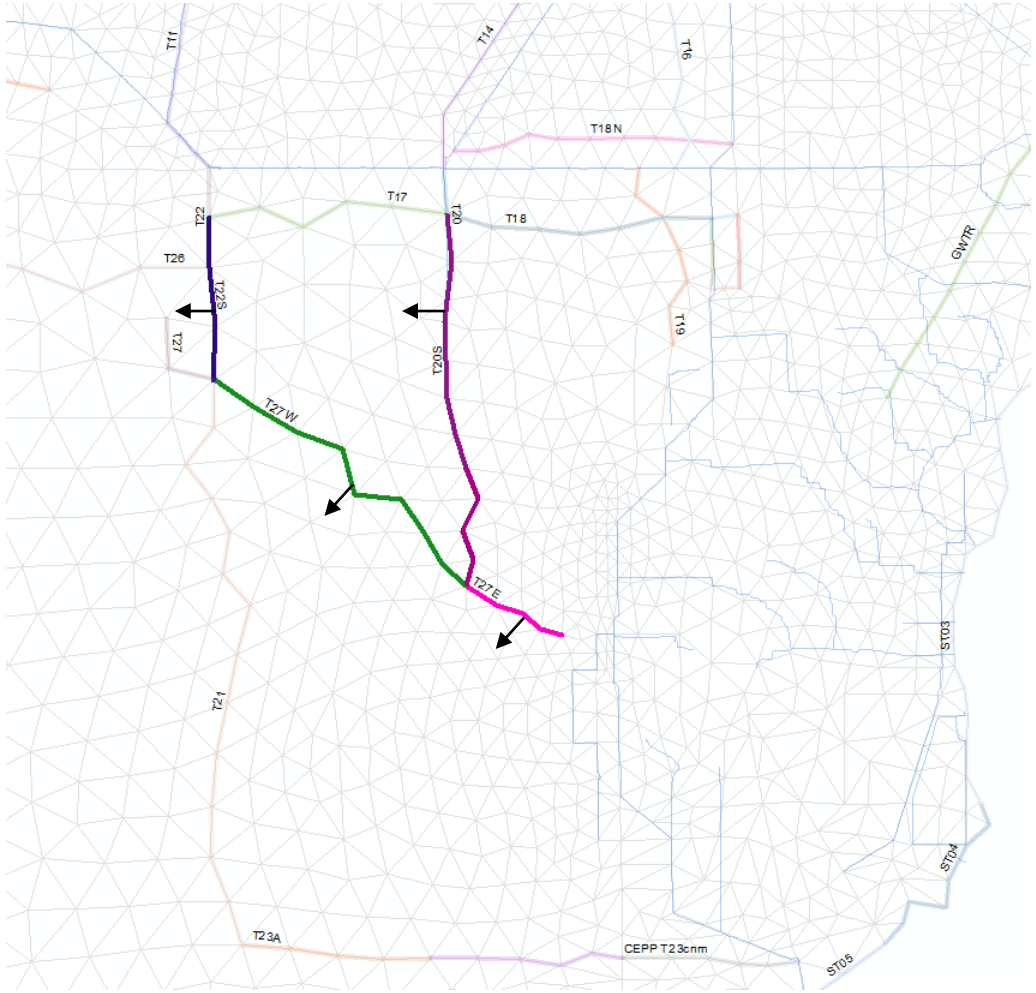
All transects are variations on existing RECOVER transects, modified to join with other transects

T20S (magenta) is a (southerly) variation of T20

T22S (purple) is a (southerly) variation of T22

T27W (green) is a (westerly) variation on T27

T27E (pink) extends to the east to join other transects




```
<!-- Transect T20S (South of L-67 Extension) -->
<flowgage section="ol" label="T20S_ol">
  <nodelist> 904 903 964 963 962 961 1030 1102 1178 1177 1265 1264 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T20S_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="T20S_gw">
  <nodelist> 904 903 964 963 962 961 1030 1102 1178 1177 1265 1264 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T20S_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>

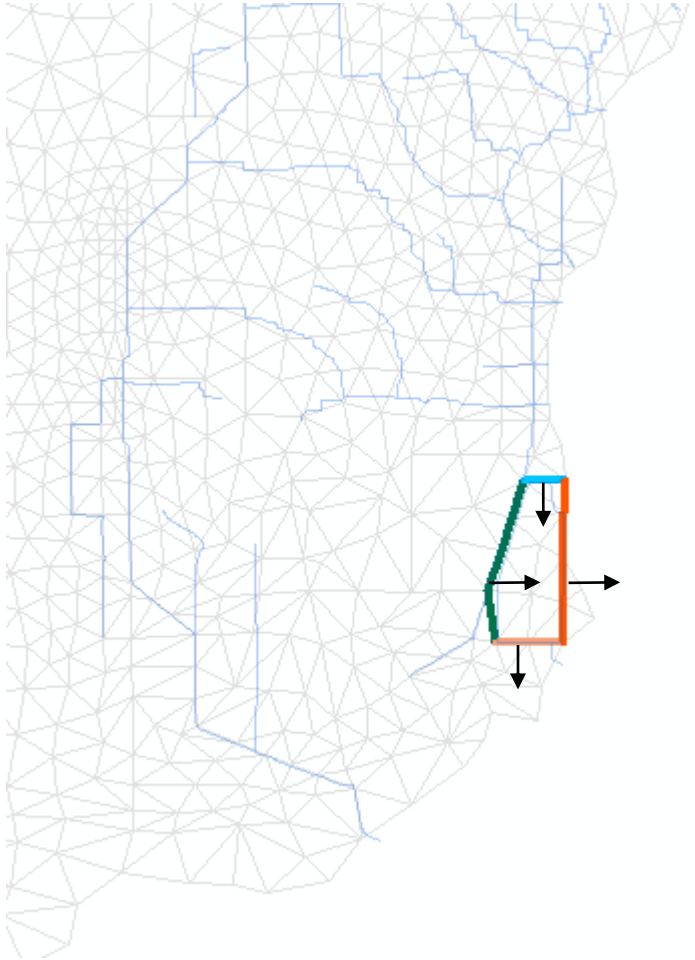
<!-- Transect T22S (T22 South) -->
<flowgage section="ol" label="T22S_ol">
  <nodelist> 623 670 720 777 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T22S_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="T22S_gw">
  <nodelist> 623 670 720 777 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T22S_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>

<!-- Transect T27W (T27 West)-->
<flowgage section="ol" label="T27W_ol">
  <nodelist> 777 835 896 897 958 1028 1100 1176 1264 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T27W_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="T27W_gw">
  <nodelist> 777 835 896 897 958 1028 1100 1176 1264 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T27W_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>

<!-- Transect T27E (T27 East)-->
<flowgage section="ol" label="T27E_ol">
  <nodelist> 1264 1360 1463 1571 1677 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T27E_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="T27E_gw">
  <nodelist> 1264 1360 1463 1571 1677 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/T27E_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>
```

Add transects around Cooling Canals: TCCW, TCCN, TCCE, and TCCS

Canals are named for each side of the FPL cooling canals



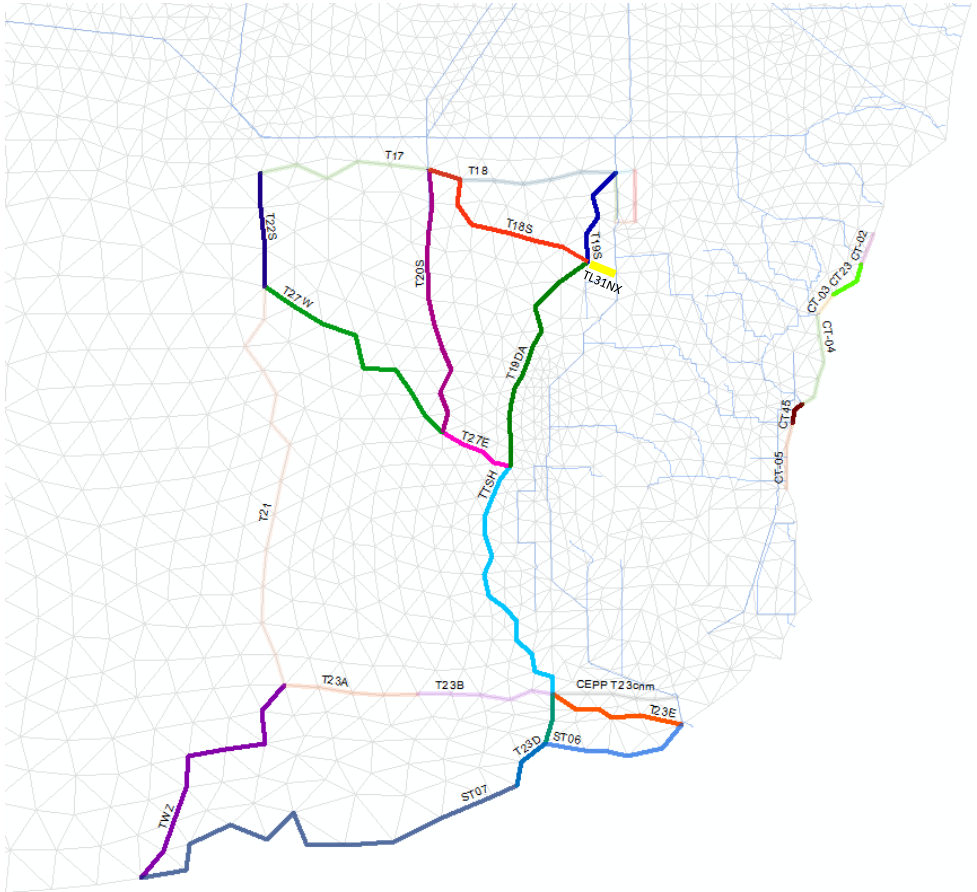
```
<!-- FPL Cooling Canal Transects -->
<!-- Transect TCCW (West Side of Cooling Canals)-->
<flowgage section="ol" label="TCCW_ol">
  <nodelist> 3091 2988 2989 2990 2991 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/TCCW_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="TCCW_gw">
  <nodelist> 3091 2988 2989 2990 2991 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/TCCW_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>

<!-- Transect TCCN (North side of Cooling Canals) -->
<flowgage section="ol" label="TCCN_ol">
  <nodelist> 2991 4457 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/TCCN_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="TCCN_gw">
  <nodelist> 2991 4457 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/TCCN_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>

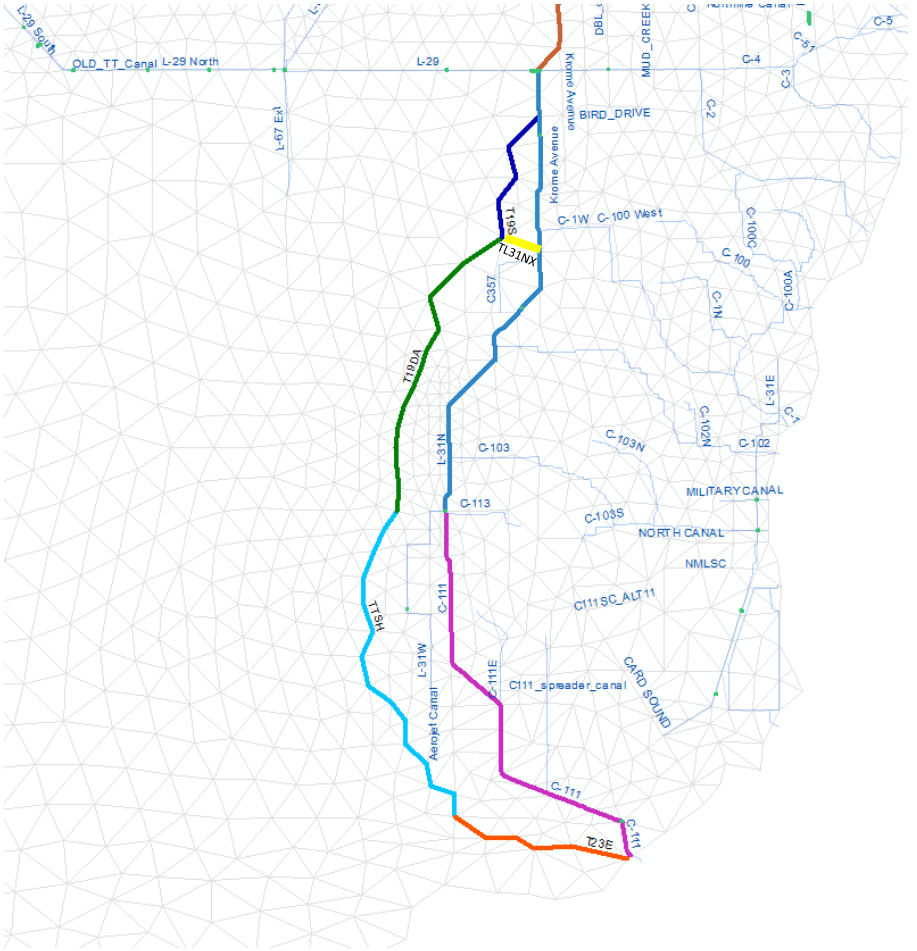
<!-- Transect TCCE (East Side of Cooling Canals) -->
<flowgage section="ol" label="TCCE_ol">
  <nodelist> 4454 4453 4452 4455 4457 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/TCCE_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="TCCE_gw">
  <nodelist> 4454 4453 4452 4455 4457 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/TCCE_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>

<!-- Transect TCCS (South Side of Cooling Canals) -->
<flowgage section="ol" label="TCCS_ol">
  <nodelist> 3091 4445 4454 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/TCCS_transect/OLFLOW//1DAY/SIMULATED/"/>
</flowgage>
<flowgage section="gw" label="TCCS_gw">
  <nodelist> 3091 4445 4454 </nodelist>
  <dss file="./output/transect_flows.dss" pn="/RSMGL/TCCS_transect/GWFLOW//1DAY/SIMULATED/"/>
</flowgage>
```

The new transects can be combined with selected older transects to create several sub-basins in ENP



The new transects can be combined with Western Project Boundary Canals to isolate the water budget for the detention areas, and potentially define a new basin for ENP.
(to do this the issue of flows at the northernmost part of L31N needs to be refined)



Notes:

- I attempted to avoid all cells that might have a connection to canals. This should be verified.
- Direction of positive flow is indicated by the black arrows in the plots. Node numbers in the .xml are arranged accordingly.
- The transect names are suggestions, and if they need hyphens added or renamed, that is OK.
- Any advice on changes or modifications is welcome.
- It is not my intent to have these new transects added to the whole postprocessing output for BBSEER, but to just be added to the model files so the transect output is saved in the dss files.
- (If you are willing to add these to the postprocessing routines, that would be welcome too)
- If possible, I would like to add the basins as well, and can provide those files