

Review of New Zone System: 3722 Transportation Analysis Zones (TAZs)

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Travel Forecasting Subcommittee

Background

- The new 3722 TAZ system was developed in cooperation with the region's local jurisdictions and MPOs.
 - Influenced by local land use plans
 - Region Activity Centers/Corridors map adopted by TPB and COG Board
- The development of the 3722 TAZs is completed and was presented at the July 17, 2009 TFS meeting.
- It is comprised of 3,675 internal and 47 external zones (“external stations”).
- These TAZS will be used for the Round 8.0 Cooperative Forecast of land activity.

Review of 3722 TAZ system

- Boundaries of the new TAZs were reviewed.
- 99% of these TAZs are acceptable for regional transportation purposes.
- The remaining 1% TAZs have boundaries that are problematic for regional transportation network coding.
- Examples of the problematic TAZs include TAZs that are:
 - are entirely water bodies
 - peninsula with no road access
 - irregularly shaped polygons created because of land ownership issues.
- Results of Review: A small number of refinements to TAZ boundaries were deemed necessary to meet the needs of transportation modeling.
- The changes will not affect the original 3722 TAZ system developed.

TAZs with NO centroid connector/ “Unused”

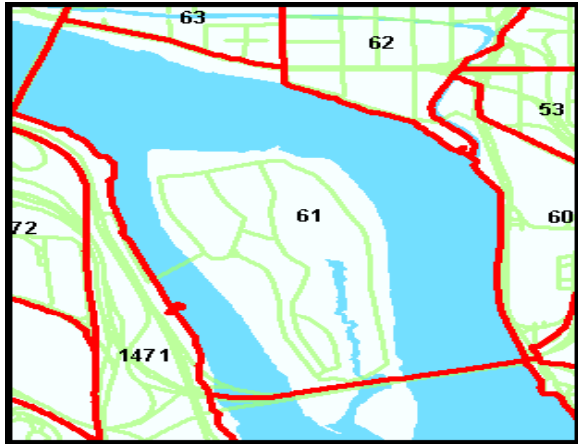
- TAZs that are entirely water/ island/ peninsula are handled by not connecting them to the transportation network.

| Jurisdiction | TAZ | Description |
|-----------------|------|---------------------------|
| DC | 61 | Roosevelt Island (Fig. 1) |
| | 382 | Water body (Fig. 2) |
| Prince George's | 770 | Water body (Fig. 3) |
| | 777 | Water body (Fig. 4) |
| Carroll | 3266 | Peninsula (Fig. 5) |
| | 3267 | Water body (Fig. 6) |
| Spotsylvania | 3544 | Water body (Fig. 7) |

“Unused” TAZs

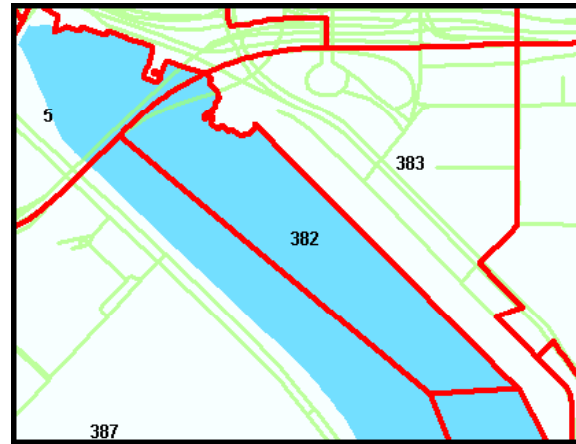
District of Columbia

Figure 1:TAZ 61 (Roosevelt Island)



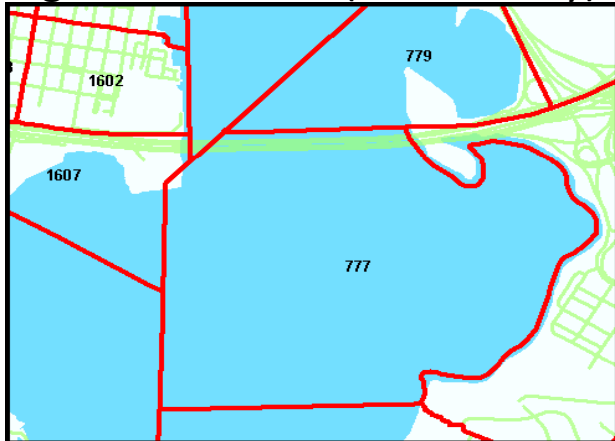
District of Columbia

Figure 2:TAZ 382 (Water body)



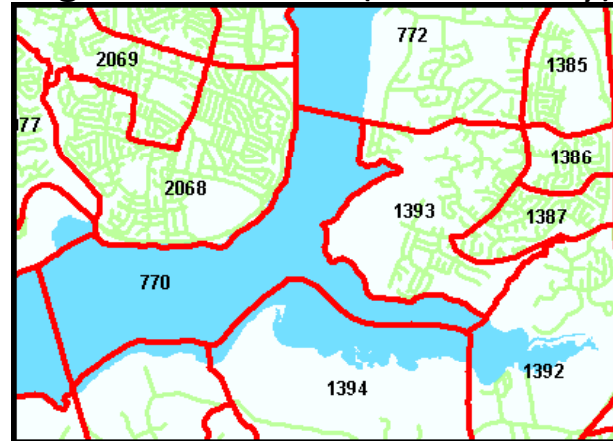
Prince George’s County

Figure 3:TAZ 777 (Water body)



Prince George’s County

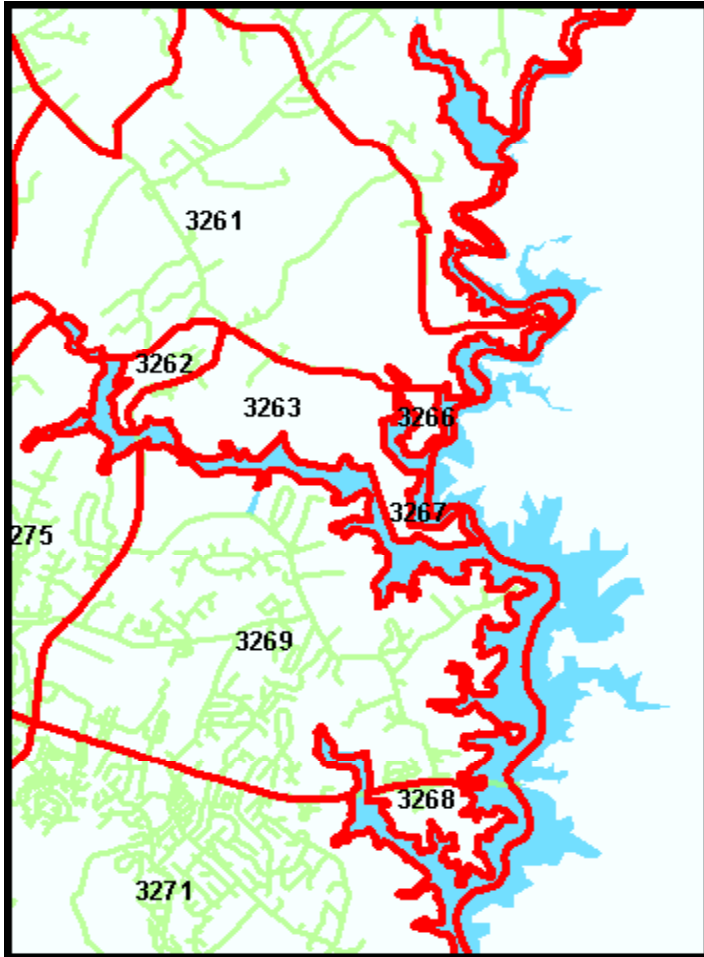
Figure 4:TAZ 770 (Water body)



“Unused” TAZs (continued)

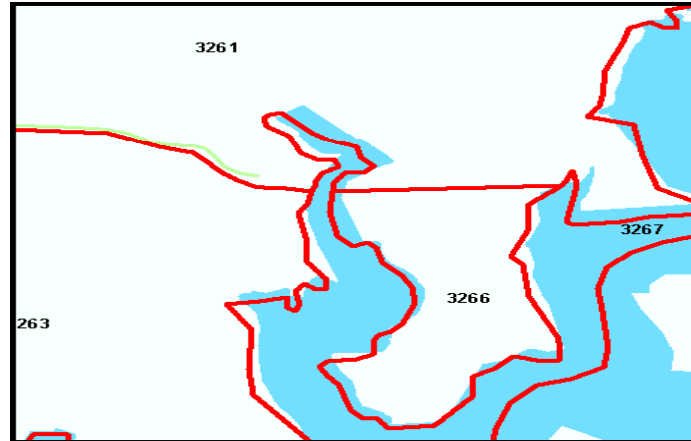
Carroll County

Figure 5: TAZ 3267 (Water body)



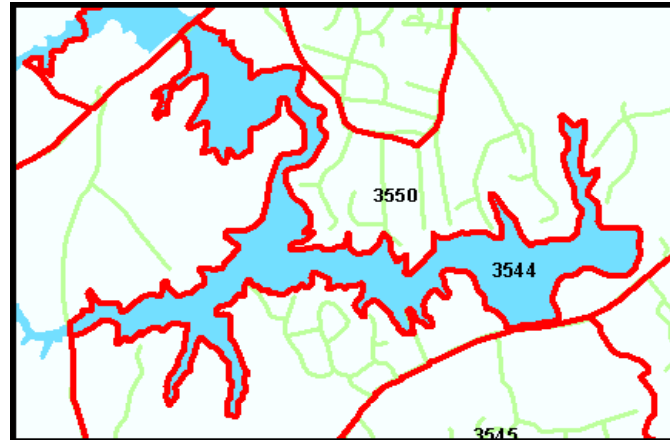
Carroll County

Figure 6: TAZ 3266 (Peninsula)



Spotsylvania County

Figure 7: TAZ 3544 (Water body)



TAZs with Redefined Boundaries

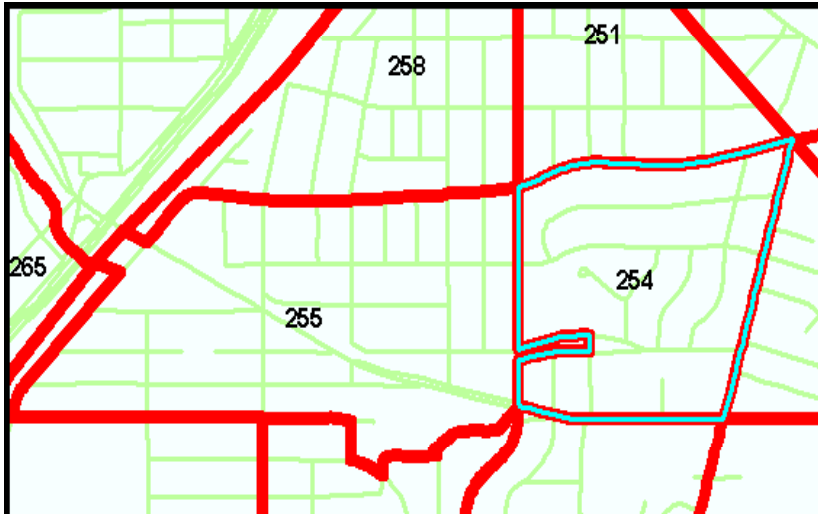
- COG/TPB staff had contacted local jurisdictions to determine if there is any land activity in the land ownership “slivers”.
- Based on the findings, Irregular shaped polygons caused by land ownership slivers were modified.
- Two sets of TAZ boundaries are now available, one for land activity forecasts (COGTAZ3722_TPBMOD) as presented at the July 17, 2009 TFS meeting, and one for the regional transportation planning purposes (TPBTAZ3722_TPBMOD).

| Jurisdiction | TAZ | Changes Made |
|-------------------------|------|---------------------------------------|
| DC | 255 | sliver merged with TAZ 254 (Fig. 8) |
| Montgomery Co., Md. | 726 | sliver merged with TAZ 725 (Fig. 9) |
| | 2636 | sliver merged with TAZ 2644 (Fig. 10) |
| Prince William Co., Va. | 2551 | sliver merged with TAZ 2549 (Fig. 11) |
| | 2555 | sliver merged with TAZ 2553 (Fig. 12) |
| Spotsylvania | 3558 | sliver merged with TAZ 3555 (Fig. 13) |
| | 3568 | sliver merged with TAZ 3569 (Fig. 14) |

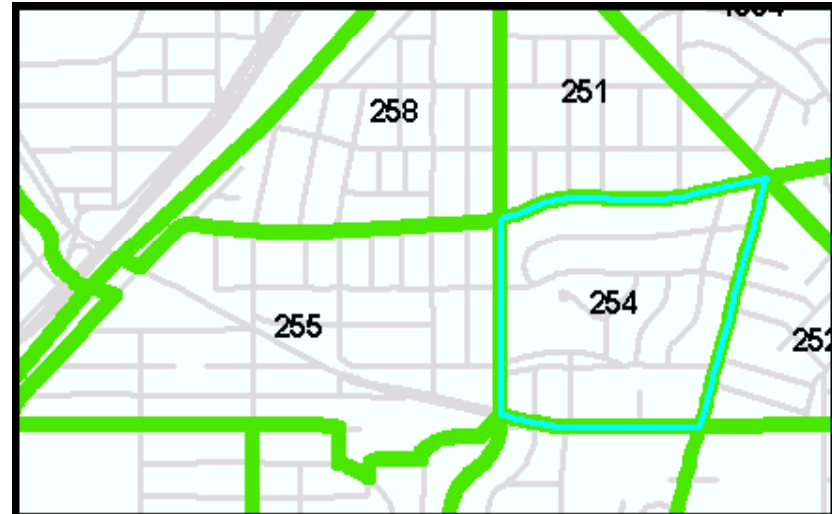
TAZs with Redefined Boundaries (Continued)

District of Columbia

Figure 8: TAZ 254 Before Modification



After Modification

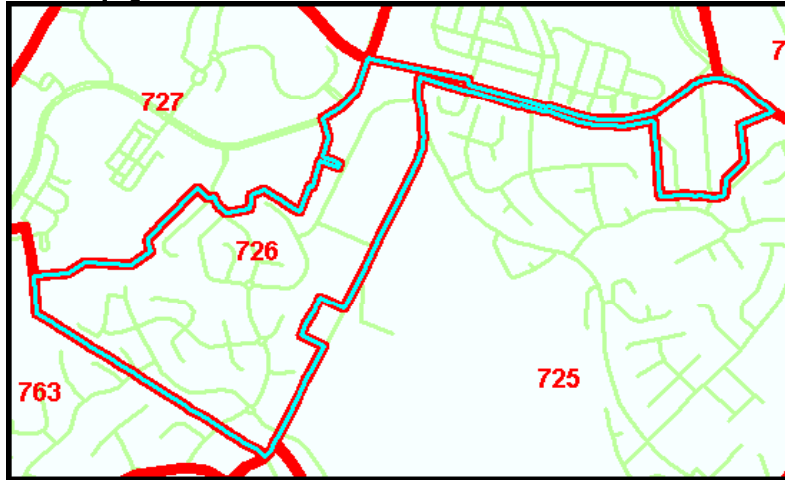


Hayes Street, N.E.

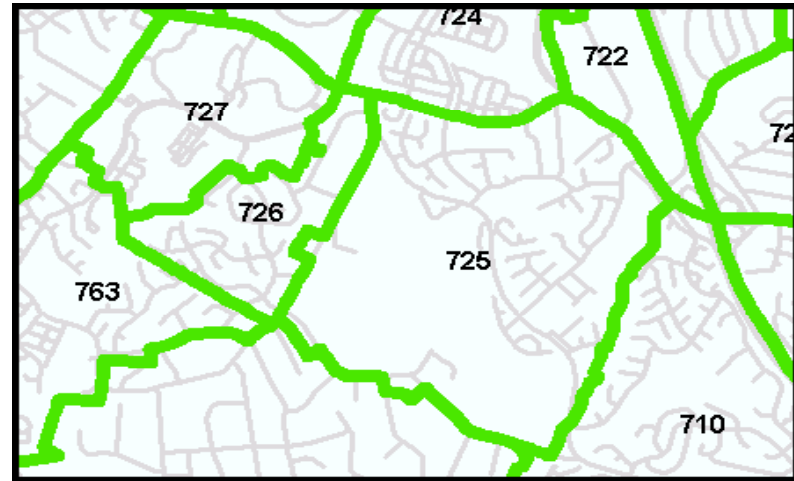
TAZs with Redefined Boundaries (Continued)

Montgomery County, MD

Figure 9: TAZ 726 Before



After Modification

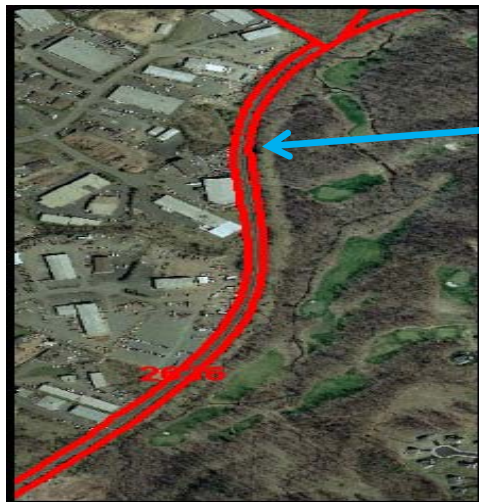
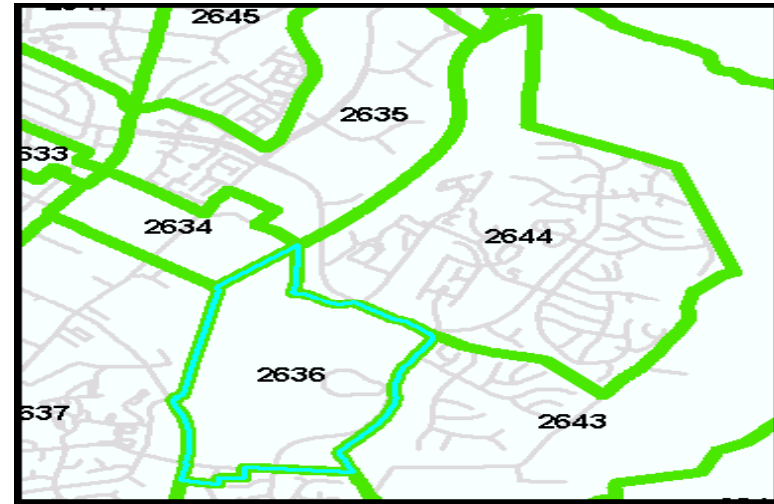
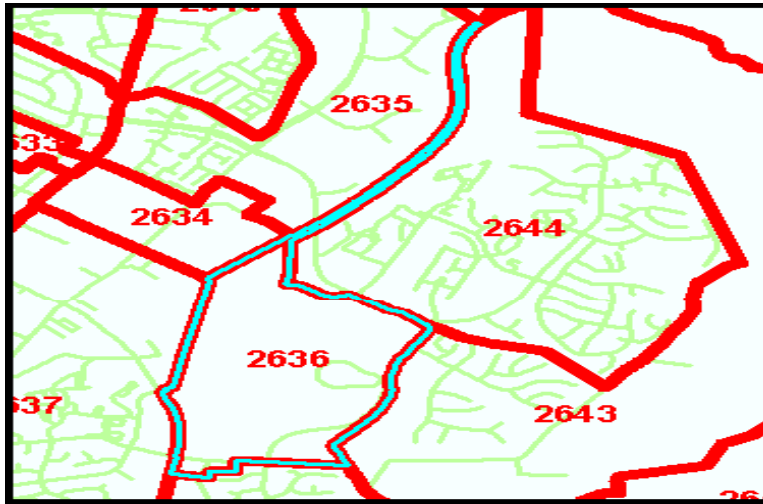


Glenn Mill Road

TAZs with Redefined Boundaries (Continued)

Prince William County, VA

Figure 10: TAZ 2636 Before Modification After Modification

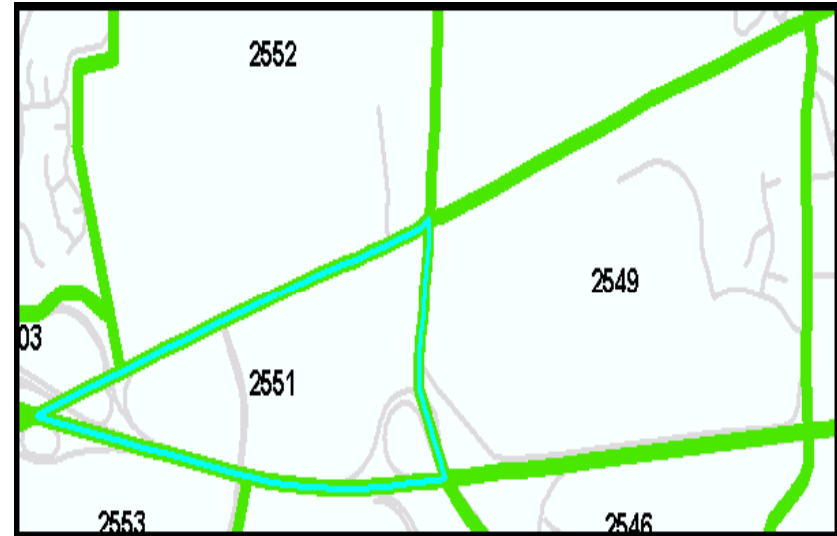


Centreville Rd (Rt. 28)

TAZs with Redefined Boundaries (Continued)

Prince William County, VA

Figure 11: TAZ 2551 Before Modification After Modification

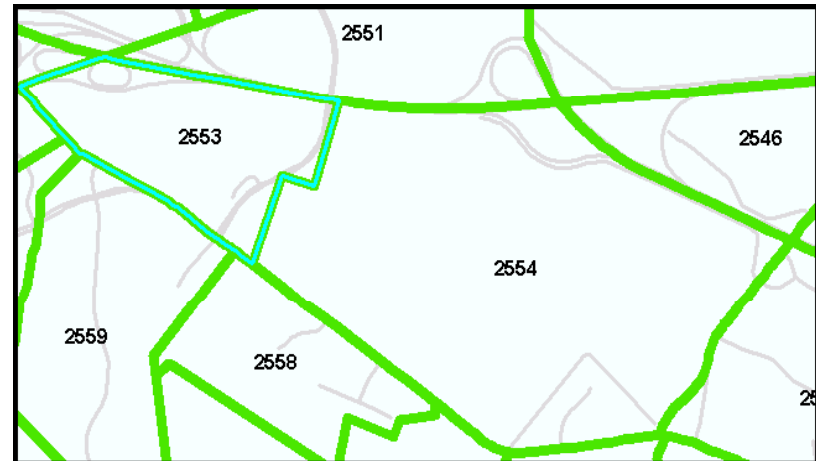
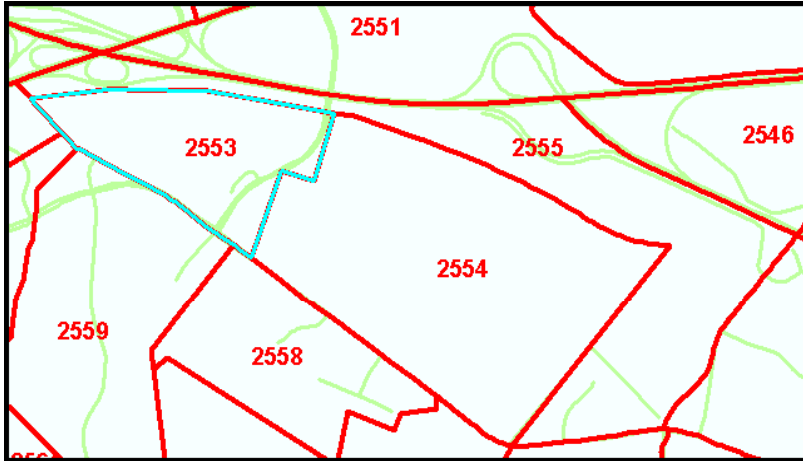


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TAZs with Redefined Boundaries (Continued)

Prince William County, VA

Figure 12: TAZ 2553 Before Modification After Modification

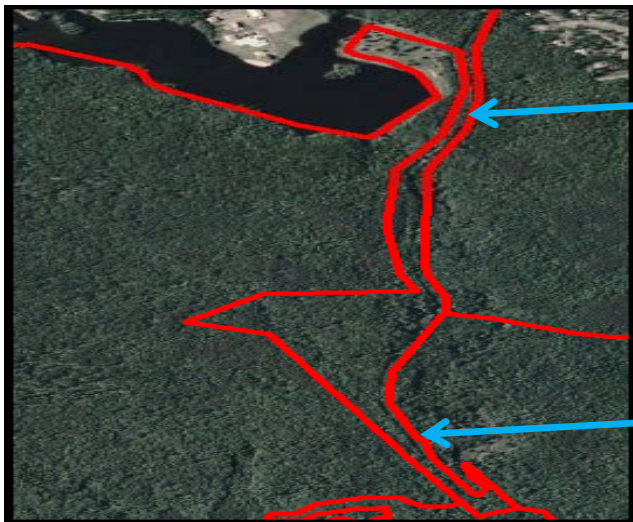
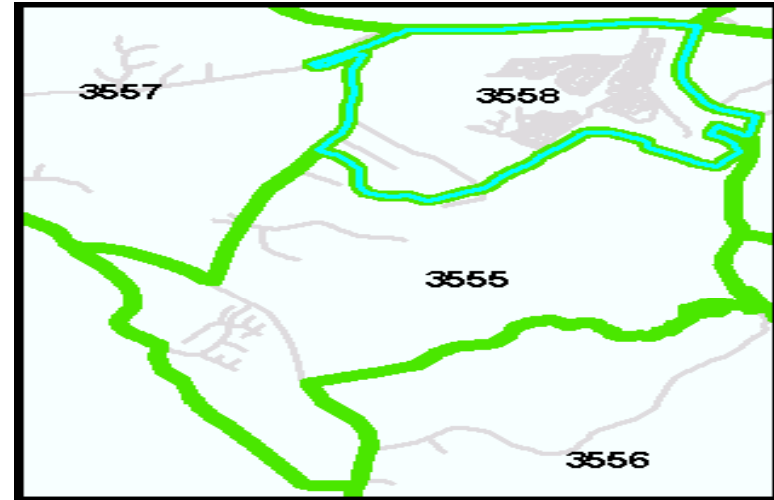
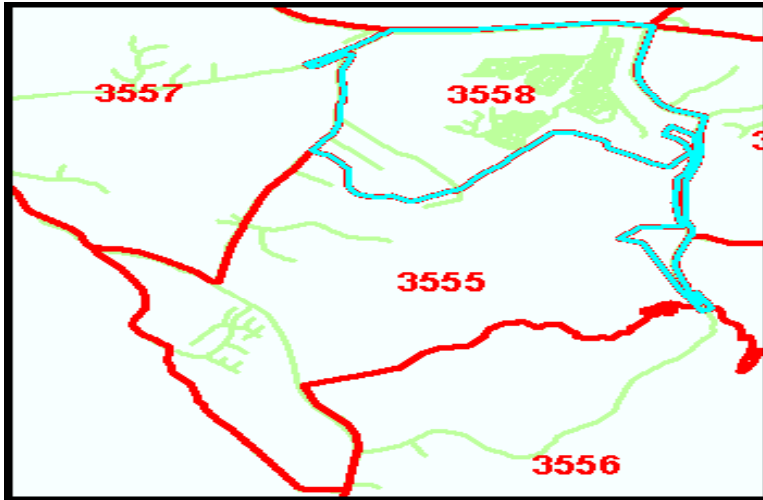


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TAZs with Redefined Boundaries (Continued)

Spotsylvania County, VA

Figure 13: TAZ 3558 Before Modification After Modification



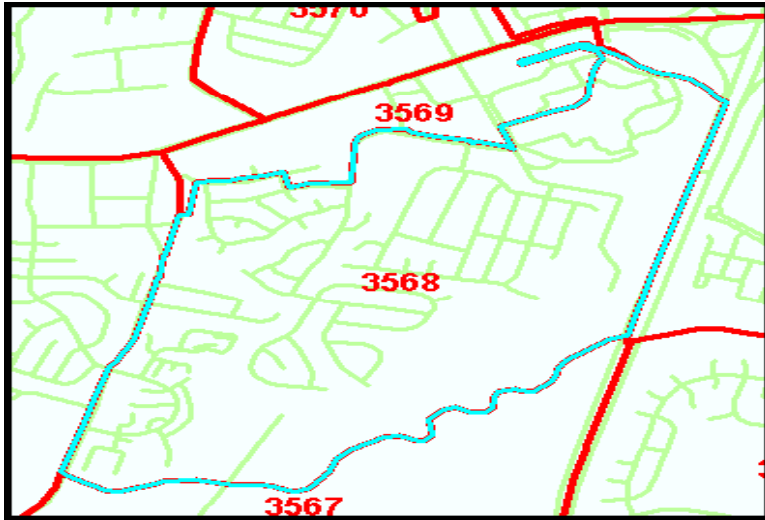
Sickles Dr.

Jackson Trail, E.

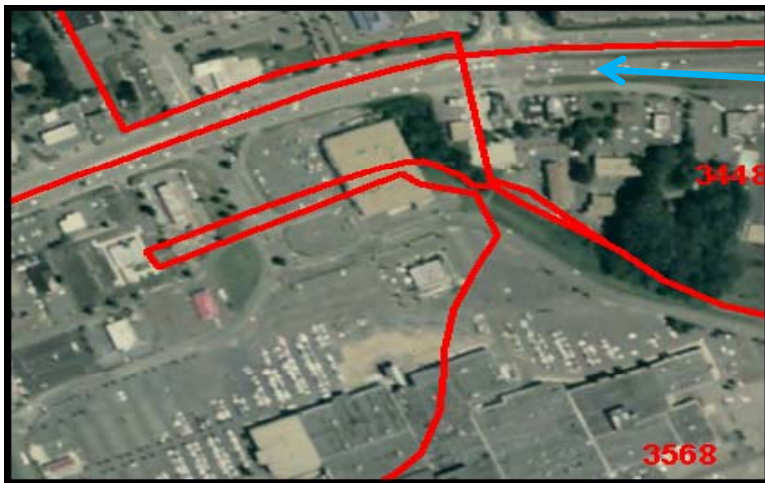
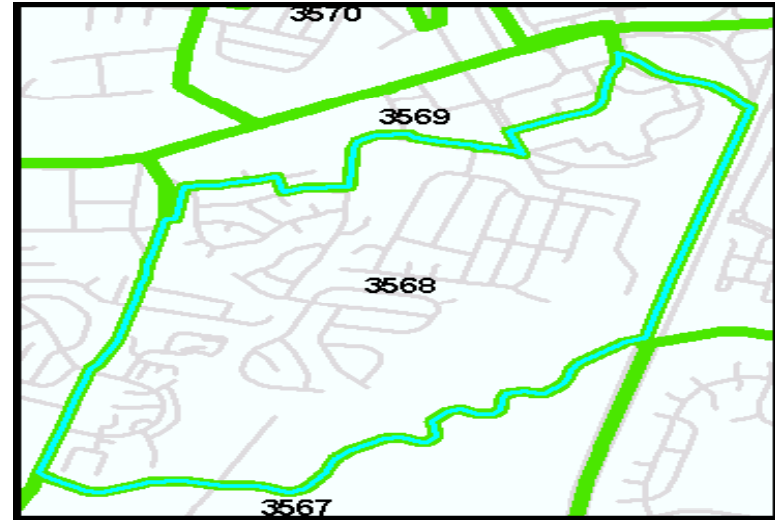
TAZs with Redefined Boundaries (Continued)

Spotsylvania County, VA

Figure 14: TAZs 3568 Before Modification



After Modification



Germanna Hwy

Merged TAZs

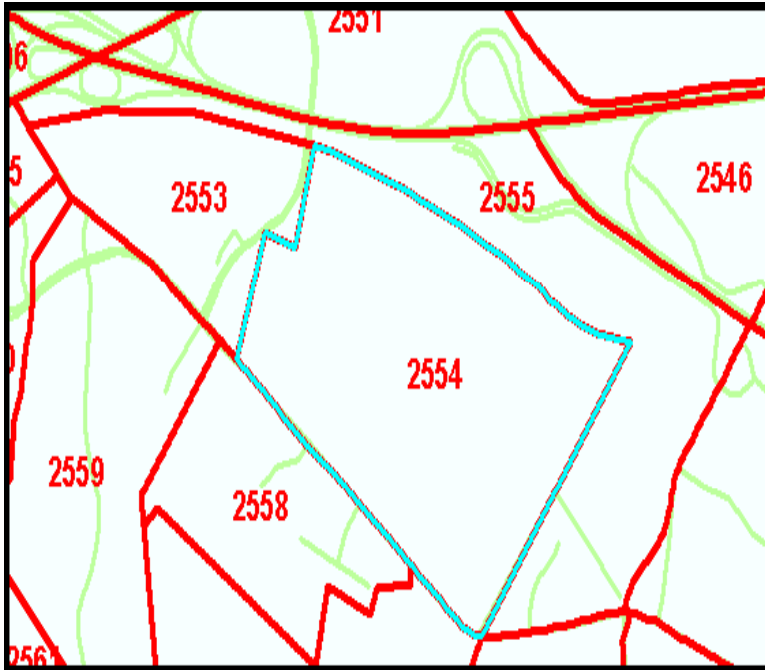
- Some TAZs were merged because they were well below the grain of the highway system.

| Jurisdiction | TAZ | Description |
|------------------------|------------|----------------------------------|
| Prince William Co., VA | 2555 | Aggregated to TAZ 2554 (Fig. 15) |
| | 2629 | Aggregated to TAZ 2630 (Fig. 16) |
| Stafford Co., VA | 3482/3478 | Aggregated to TAZ 3489 (Fig. 17) |
| | 3495 | Aggregated to TAZ 3494 (Fig. 18) |

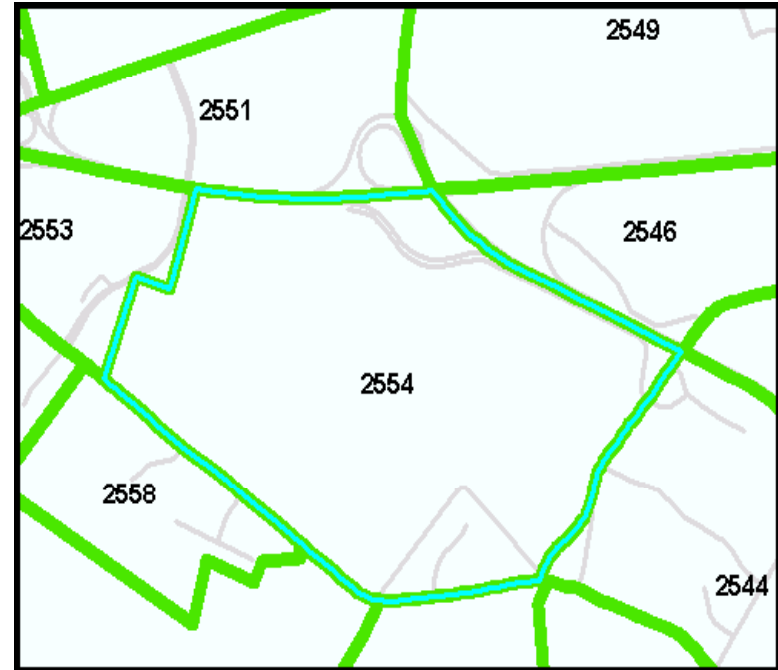
Merged TAZs (Continued)

Prince William County, VA

Figure 15: TAZ 2554 Before Merge



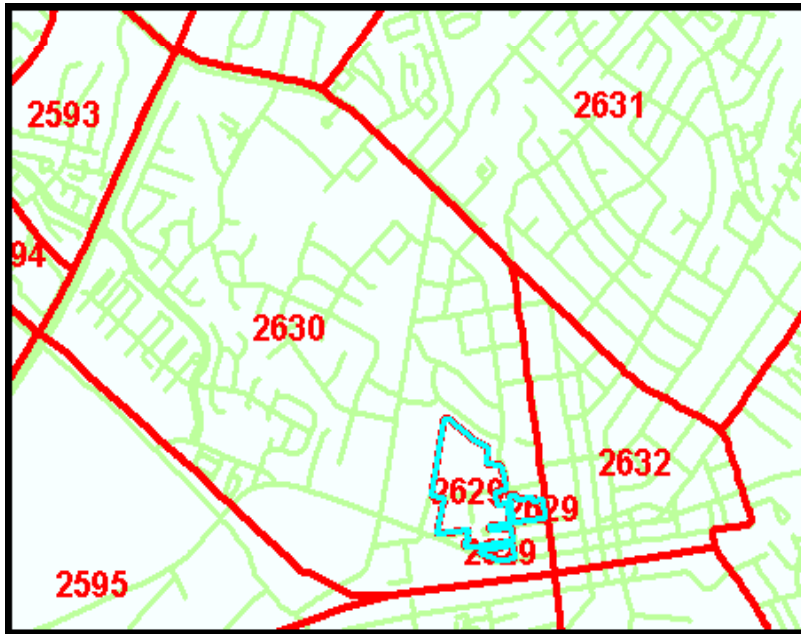
After Merge



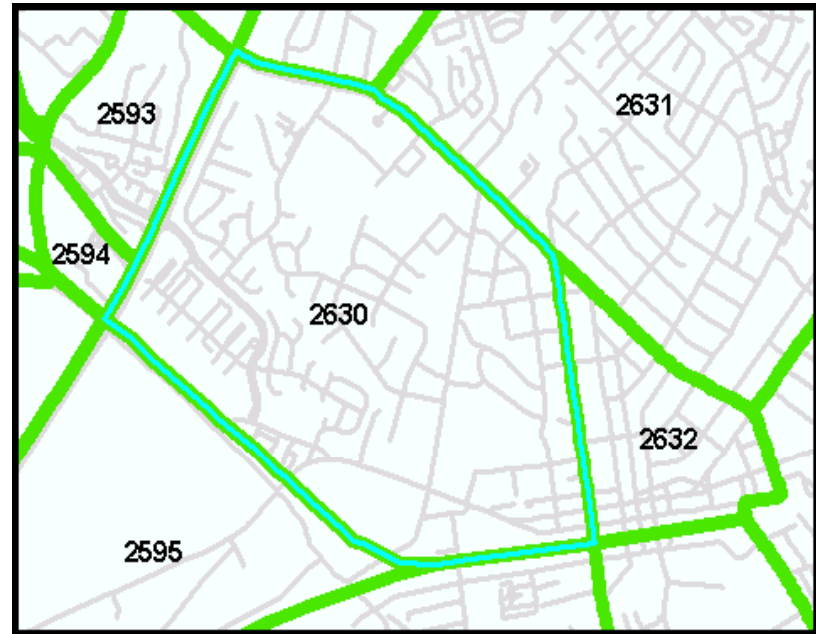
Merged TAZs (Continued)

Prince William County, VA

Figure 16: TAZ 2629 Before Merge



After Merge

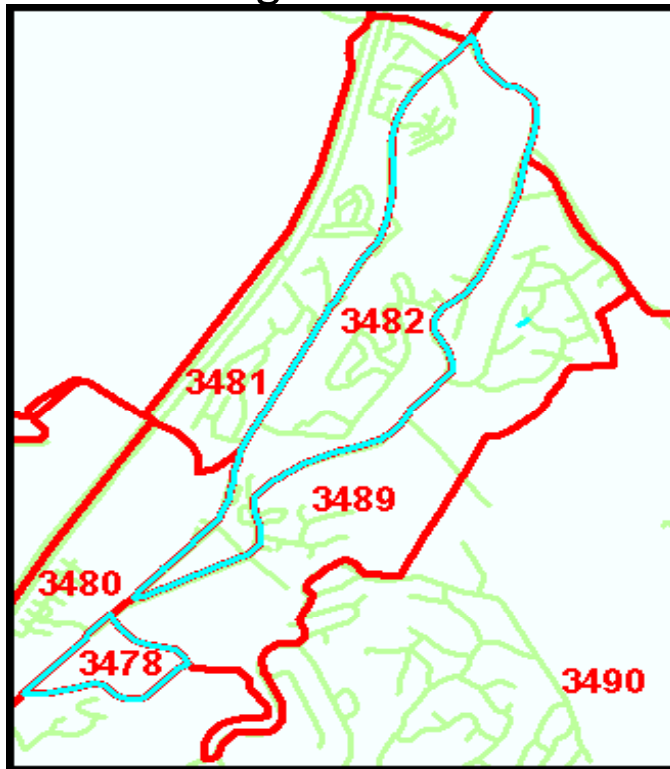


Merged TAZs (Continued)

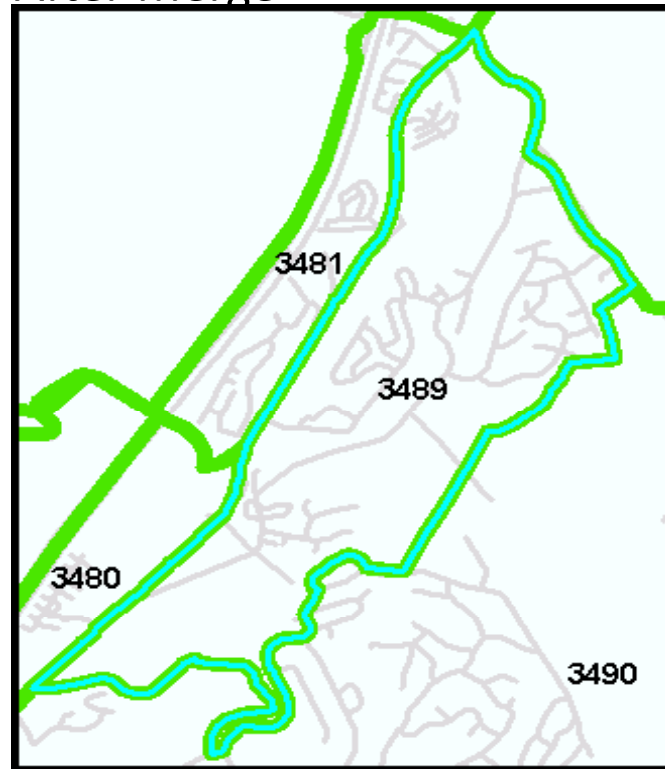
Stafford County, VA

Figure 17: TAZs 3478, 3482, & 3489

Before Merge



After Merge

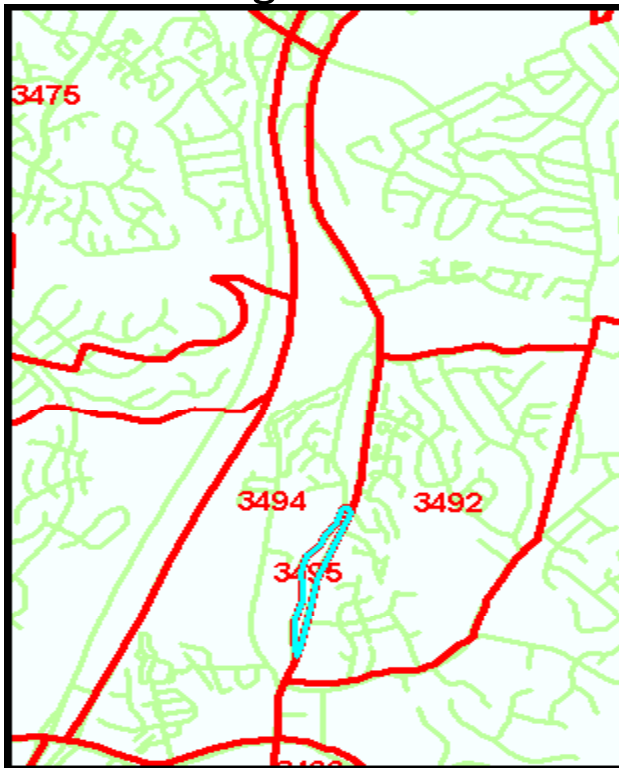


Merged TAZs (Continued)

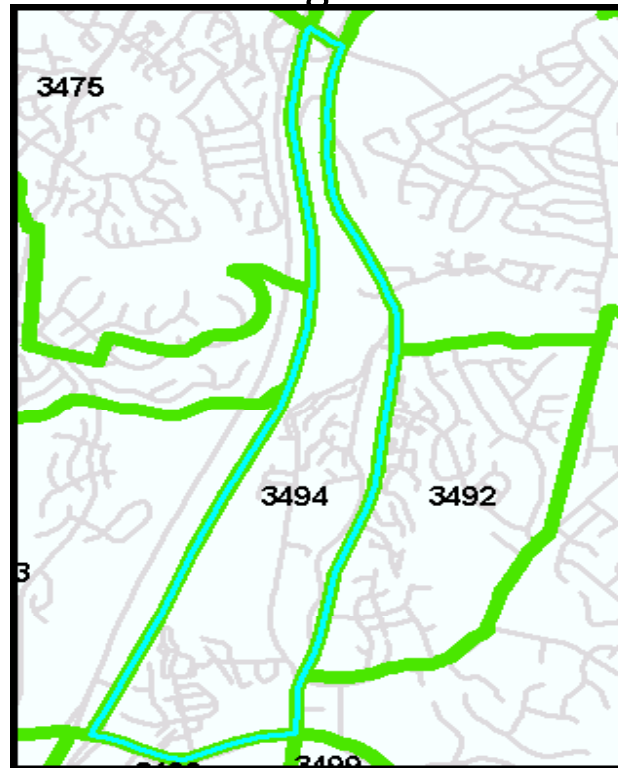
Stafford County, VA

Figure 18: TAZs 3494 & 3495

Before Merge



After Merge



Listing of Unused TAZs by Jurisdiction

| Jurisdiction | 3722_TAZ_No. | Description |
|-------------------------|---------------------|---------------------------------|
| District of Columbia | 61 | Roosevelt Island |
| | 382 | Water body |
| Prince George's Co., MD | 770 | Water body |
| | 777 | Water body |
| Prince William Co., VA | 2555 | Aggregated to TAZ 2554 |
| | 2629 | Aggregated to TAZ 2630 |
| Anne Arundel Co., MD | 3103 | Polygon never existed |
| Carroll Co., MD | 3266 | A peninsula with no road access |
| | 3267 | Water body |
| Stafford Co., VA | 3482 | Aggregated to TAZ 3489 |
| | 3478 | Aggregated to TAZ 3489 |
| | 3495 | Aggregated to TAZ 3494 |
| Spotsylvania, Co., VA | 3544 | Water body |

TAZ Number Ranges by Jurisdiction

| | TAZ / Node | Beginning | Ending | Unused |
|-----------------------------|------------|------------|------------|--------|
| Jurisdiction | Count | TAZ / Node | TAZ / Node | TAZs |
| District of Columbia | 393 | 1 | 393 | 2 |
| Montgomery Co., Md. | 376 | 394 | 769 | |
| Prince George's Co., Md. | 635 | 770 | 1404 | 2 |
| Arlington Co., Va. | 141 | 1405 | 1545 | |
| City of Alexandria, Va. | 65 | 1546 | 1610 | |
| Fairfax Co., Va. | 549 | 1611 | 2159 | |
| Loudoun Co., Va. | 282 | 2160 | 2441 | 2 |
| Prince William Co., Va. | 378 | 2442 | 2819 | |
| Frederick Co., Md. | 130 | 2820 | 2949 | |
| Howard Co., Md. | 68 | 2950 | 3017 | |
| Anne Arundel Co., Md. | 99 | 3018 | 3116 | 1 |
| Charles Co., Md. | 113 | 3117 | 3229 | |
| Carroll Co., Md. | 58 | 3230 | 3287 | 2 |
| Calvert Co., Md | 47 | 3288 | 3334 | |
| St. Mary's Co., Md. | 75 | 3335 | 3409 | |
| King George Co., Va. | 25 | 3410 | 3434 | |
| City of Fredericksburg, Va. | 14 | 3435 | 3448 | |
| Stafford Co., Va. | 93 | 3449 | 3541 | 3 |
| Spotsylvania Co., Va. | 62 | 3542 | 3603 | 1 |
| Fauquier Co., Va. | 50 | 3604 | 3653 | |
| Clarke Co., Va. | 9 | 3654 | 3662 | |
| Jefferson Co., WV. | 13 | 3663 | 3675 | |
| External Stations: | 47 | 3676 | 3722 | 13 |

Conclusions

- A review of the newly released 3722 TAZ area system has uncovered a need to refine TAZ boundaries for the purpose of transportation modeling.
- Some TAZs will be unused, a few others underwent boundary alterations.
- Two sets of TAZ area systems are now established:
 - one for land activity forecasts (COGTAZ3722_TPBMOD)
 - another for transportation modeling (TPBTAZ3722_TPBMOD)
- The Round 8.0 land activity forecasts will be released of the COGTAZ system.
- Post processing will be necessary to convert land activity from the COGTAZ system to the TPBTAZ system.