**Documentation for Map #8:**

John F Nagle, 1/6/2018

Courts have enforced the insane rule that congressional districts must have equal population with deviations not to exceed one person, and this has been the accepted rule for PA congressional districting. This shows how this final step would be accomplished for a typical plan which has population deviations that are close to the average precinct population as drawn using Dave’s DRA software.

**Executive Summary**

Equalizing Congressional District (CD) population in map #8 requires newly splitting 16 precincts, although most of the previously split precincts for Congressional elections could be made whole again. It splits 8 counties with population less than the CD population, maintaining 56 of the 67 counties whole. It also splits 12 smaller political subdivisions. The following guide gives details of how to do this.

**Guide to obtain population deviations of one from plan 8.**

CD2 is kept fixed as a VRA district from the present map. It has 705689 people. With that constraint, there must be 6 districts with 705687 people and 11 with 705688 people in order for the numbers to add up to the PA population of 12702379. Changes in the existing precincts are required to obtain population equality. In order to minimize county splits, precincts on boundaries that already split a county have been preferred for splitting, with one necessary exception. This document guides one to the boundaries and suggests which precincts could be split in order to minimize additional splits in counties, as well as in municipalities, boros, and townships. The use of census blocks could facilitate the assignment of voters in split precincts. According to the expert report in the LWV court case of J. J. Kennedy (p. 5), the current map splits 19 census blocks.

Abbreviations:

MBTs – Muni, Boro, and Township splits

VTD – voter tabulation districts aka precincts.

ZERO – to achieve zero deviations (exactly 705688) in a CD

ONE – to achieve -1 deviation (705687) in a CD

Step by step guide:

1. The boundary between CD3 and CD5 has no MBTs. ZERO CD3 by transferring 195 people from Salem Township VTD to CD5 which now has 216 too few people.

2. The boundary between CD18 and CD14 splits Pittsburgh and South Fayette. ZERO CD18 by transferring 326 people from one of the many Pittsburgh boundary VTDs assigned to CD14. CD14 now has 28 too many people.

3. The boundary between CD14 and CD12 splits Pittsburgh and Monroeville. ZERO CD14 by transferring 28 people from one of the many Pittsburgh and Monroeville boundary VTDs assigned to CD14. CD12 now has 245 too few people.

4. The boundary between CD12 and CD9 splits Mt Pleasant. ZERO CD12 by transferring 245 people to it from a boundary Mt Pleasant VTD assigned to CD9.

5. The boundary between CD4 and CD9 splits Carlisle. ZERO CD4 by transferring 493 people to it from a boundary Carlisle VTD assigned to CD9.

6. The boundary between CD5 and CD9 splits Upper Yoder. . ZERO CD5 by transferring 216 people to it from a boundary Upper Yoder VTD assigned to CD9.

7. As a result of items 4-6 above CD9 now has 597 too many people. . ZERO CD9 by transferring 597 people to Halfmoon VTD in CD10. CD10 now has 949 too many people.

8. ZERO CD11 by transferring 491 people from CD10 in Lehigh Twp in Wayne County. This is the only new county split required by population equality.

9. ONE (see abbreviations) CD10 by transferring 450 people to an Upper Augusta VTD in CD17 on the boundary with CD10. CD17 now has 859 too many people.

10. ONE CD 17 by transferring 859 people to N.Heidelberg in CD16.

11. ONE CD16 by transferring 483 people from Cumru #3 in CD6.

12. ONE CD15 by transferring 181 people from Douglas Twp#1 to CD6.

13. As a result of 11 and 12, ZERO CD6 by transferring 472 people to any one of a number of precints in CD7.

14. ONE CD7 by transferring 381 people to CD1 with many choices of Philadelphia VTDs.

15. ONE CD1 by transferring 700 people to CD8 from any one of a number of Philadelphia VTD.

16. ZERO CD13 by transferring 31 people from an Upper Moreland Twp VTD in CD8.

17. CD8 is now ZERO.

The political subdivisions that are split before splitting precincts are Pittsburgh, Monroeville, South Fayette, Mt Pleasant, Upper Yoder, Carlisle, Upper Augusta, Douglas Twp, and Upper Moreland for a total of 9. Of course Philadelphia has to be split. Splitting precincts adds three more, N.Heidelberg, Cumru #1, and LehighTwp . The latter adds one to the number of counties clearly split.

12 Split municipalities and townships, compared to 68 split in the current PA Act131 plan.

16 Split precincts. Of course, some of the previously split precincts for Congressional elections could be made whole again.

8 Split counties, not counting Philadelphia, Allegheny and Montgomery which have to be split. Each of these three counties contains one full CD. The 8 clearly split counties are Cambria, Chester, Berks, Cumberland, Northumberland, Centre, Clarion, and Westmoreland. Wayne also has one split precinct, not evident in the pdf image map.