IN THE COMMONWEALTH COURT OF PENNSYLVANIA

LEAGUE OF WOMEN VOTERS OF PENNSYLVANIA, ET AL.,	:	CIVIL DIVISION
	:	
	:	
Petitioners,	:	
	:	
vs.	:	CASE NO. 261 MD 2017
	:	
THE COMMONWEALTH OF PENNSYLVANIA, ET AL.,	:	
	:	
	:	
Respondents.	:	

PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW SUBMITTED BY RESPONDENT MICHAEL J. STACK III, IN HIS CAPACITY AS LIEUTENANT GOVERNOR OF PENNSYLVANIA AND PRESIDENT OF THE PENNSYLVANIA SENATE

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On behalf of Respondent Michael J. Stack III, in his Capacity as Lieutenant Governor of Pennsylvania and President of the Pennsylvania Senate

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I.   INTRODUCTION

Michael J. Stack III, in his Capacity as Lieutenant Governor of Pennsylvania and President of the Pennsylvania Senate, Respondent, joins in the proposed findings of fact, conclusions of law, and arguments of the Petitioners in this matter. He offers the following proposed findings of fact, conclusions of law, and argument to supplement Petitioners' filing.

II.   PROPOSED FINDINGS OF FACT

Respondent Stack adopts all of Petitioners' findings of fact, and submits the following additional findings of fact:

ENACTMENT OF THE 2011 PLAN

1.   The joint Pennsylvania House and Senate State Government Committees held hearings on May 11, June 9 and June 14, 2011 to receive testimony and public comment on redistricting. No congressional district map or draft of a congressional map was presented at the hearings. (Joint Stipulation ¶ 38).

2.   On September 14, 2011, SB 1249 was introduced in the Pennsylvania Senate. (Joint Stipulation ¶ 39).

3.   The bill's primary sponsors were Majority Floor Leader Dominic F. Pileggi, President Pro Tempore Joseph B. Scarnati III, and Senator Charles T. McIlhenney Jr. Each of those individuals is a Republican. (Joint Stipulation ¶ 40).

4.   The Senate's first consideration of SB 1249 took place on December 7, 2011. (Joint Stipulation ¶ 41).

5.   The original version of SB 1249, Printer's Number ("PN") 1520, did not provide any information about the boundaries of the districts; rather, for each district, it stated: "The [Number] District is composed of a portion of this Commonwealth." (Joint Stipulation ¶ 42).

6. The Senate's second consideration of SB 1249 took place on December 12, 2011. (Joint Stipulation ¶ 43).

7. During the second reading of the bill, SB 1249 contained no map showing the proposed congressional districts. Each congressional district was described as follows: "The [Number] District is composed of a portion of this Commonwealth." (Joint Stipulation ¶ 44).

8. SB 1249 was amended on December 14, 2011 in the Senate State Government Committee, and was reported out as PN 1862. (Joint Stipulation ¶ 45).

9. On December 14, 2011, SB 1249 was referred to the Appropriations Committee, where it was rewritten and was reported out as PN 1869. (Joint Stipulation ¶ 46).

10. PNs 1862 and 1869 were the only versions of SB 1249 that contained details of the boundaries of each district. (Joint Stipulation ¶ 47).

11. Democratic Senator Jay Costa introduced an amendment to SB 1249 that he stated would create 8 districts favorable to Republicans, 4 districts favorable to Democrats, and 6 swing districts. The amendment did not pass. (Joint Stipulation ¶ 49).

12.   On December 14, 2011, the same day versions of SB 1249 that included district detail were actually released, SB 1249 passed in the Senate by a vote of 26-24. (Joint Stipulation ¶¶ 45-47, 50).

13.   No Democrats voted for SB 1249 (Joint Stipulation ¶ 51).

14.   Lt. Gov. Stack served in the Pennsylvania Senate in 2011 and voted against SB 1249 (Joint Stipulation ¶¶ 157-58).

15.   Until the morning of December 14, 2011, Democratic members of the Pennsylvania Senate did not have a copy of SB 1249 that showed any details regarding Pennsylvania's congressional districts. (Pet. Ex. 178, p. 27).

16.   On December 20, 2011, SB 1249 passed in the Pennsylvania House of Representatives. (Joint Stipulation ¶ 57).

17.   On December 22, 2011, the Senate signed SB 1249, after it was passed in the House, and then Governor Tom Corbett signed it into law. (Joint Stipulation ¶ 60).

18.   When SB 1249 was enacted into law, it became Act 131 of 2011. (Joint Stipulation ¶ 61).

19.   Act 131 of 2011 (the "2011 Plan") officially establishes the boundaries of Pennsylvania's Congressional districts. (Joint Stipulation ¶ 63).

NATURE OF THE 2011 PLAN

20.   The 2011 Plan splits 28 counties and 68 municipalities between at least two different districts. (Joint Stipulation ¶¶ 90-91).

21.   The 2011 Plan creates a total of 67 county splits. (Joint Stipulation ¶ 90).

22.   Under the 2011 Plan, 11 of Pennsylvania's 18 congressional districts contain more than three counties that are divided into separate districts. (Joint Stipulation ¶ 92).

23.   The 2011 Plan splits Montgomery County (pop. 799, 814) into five congressional districts. (Joint Stipulation ¶ 93).

24.   The 2011 Plan splits Berks County (pop. 411, 442) into four congressional districts. (Joint Stipulation ¶ 94).

25.   The 2011 Plan splits Westmoreland County (pop. 365,169) into four congressional districts. (Joint Stipulation ¶ 95).

26.   The 2011 splits the City of Monroeville into three different congressional districts: the 12th, 14th and 18th. (Joint Stipulation ¶ 96).

27.   The 2011 Plan splits the municipality of Caln Township into three different congressional districts: the 6th, 7th, and 16th. (Joint Stipulation ¶ 97).

28.   The 2011 Plan splits the municipality of Cumru Township into three different congressional districts: the 6th, 7th, and 16th. Cumru Township is a naturally non-contiguous municipality. (Joint Stipulation ¶ 98).

29.   The 2011 Plan splits the municipality of Spring Township into three different congressional districts: the 6th, 7th and 16th. (Joint Stipulation ¶ 99).

30.   In the three election cycles that have taken place under the 2011 Plan, Democrats have won the same 5 of 18 seats; specifically, the 1st, 2nd, 13th, 14th and 17th districts. (Joint Stipulation ¶¶ 73, 78, 82, 100).

31.   In the three election cycles that have taken place under the 2011 Plan, Republicans have won the same 13 of 18 seats; specifically, the 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 15th, 16th and 18th districts. (Joint Stipulation ¶¶ 73, 78, 82, 101).

32.   The table below depicts the partisan distribution of seats in Pennsylvania's congressional delegation from 2012–2016. The vote percentages depicted are based on the two-party share of the votes cast:

Year	Districts	Democratic Seats	Republican Seats	Democratic Vote Percentage	Republican Vote Percentage
2012	18	5	13	50.8%	49.2%
2014	18	5	13	44.5%	55.5%
2016	18	5	13	45.9%	54.1%

(Joint Stipulation of Fact ¶ 102).

33.   In the 2012 congressional elections, Democrats won an average of 76.4% of the two-party vote share in the five districts they won, while Republicans won an average of 59.5% of the two-party vote share in the thirteen districts they won. (Joint Stipulation of Fact ¶ 73).

34.   In the 2014 congressional elections, Democrats won an average of 73.6% of the two-party vote share in the districts they won, while Republicans won an average of 63.4% of the two-party vote share in the districts they won. One Democrat and two Republicans ran in uncontested elections (Joint Stipulation of Fact ¶ 78).

35.   In the 2016 congressional elections, Democrats won an average of 75.2% of the two-party vote share in the districts they won, while Republicans won an average of 61.8% of the two-party vote share in the districts they won. One Democrat and two Republicans ran in uncontested elections (Joint Stipulation of Fact ¶ 82).

LEGISLATIVE RESPONDENTS' TESTIMONY ON THE MAPS

36.   Legislative Respondents offered no testimony on the process of generating the 2011 Plan and/or the criteria used therein. (Tr. Trans. 1106-1724).

37.   Legislative Respondents relied upon the Speech and Debate Clause of the Pennsylvania Constitution (art. II, sec. 15) to prevent the examination of any

legislators, legislative staff or legislative consultants who participated in the development and enactment of the 2011 Plan. (Tr. Trans. 21).

38.   Legislative Respondents failed to offer the testimony of any expert witness who had analyzed the 2011 Plan through any rigorous analytical or statistical framework. (*See generally* Tr. Trans. 1106-1724, *and see* Tr. Trans 1328-1329; 1464-1465, 1536).

REDISTRICTING CRITERIA

39.   Experts for Petitioners and Legislative Respondents agreed that the traditional redistricting criteria are: (1) equality of population; (2) contiguity; (3) avoiding county splits; (4) avoiding municipal splits; and (5) compactness. (Tr. Trans. 166-167; 170; 1177-1178)

40.   Dr. Chen, Petitioner's expert, asserted that incumbency protection is not a traditional redistricting criteria. (Tr. Trans. 206).

41.   Dr. Cho, Legislative Respondent's expert, agreed that incumbency protection is an improper redistricting criteria when the current map is arguably a gerrymandered map itself. (Tr. Trans. 1265).

42.   Dr. Kennedy, Petitioner's expert, opined on Pennsylvania's community of interests and how accounting for those communities of interest is important in redistricting. (Tr. Trans. 583-584).

43.   Experts for Petitioners and Legislative Respondents both acknowledged that compliance with the Voting Rights Act plays a role in the redistricting process. (Tr. Trans. 243; 245; 1177).

44.   56.8% of the voting age population in District 2 of the 2011 Plan is African American. (Tr. Trans. 239).

THE IMPORTANCE OF AVOIDING COUNTY AND MUNICIPAL SPLITS

45.   Government services throughout Pennsylvania are frequently provided at the local level through county government. Government offices are typically located in the county seat. (Stack Ex. 11, ¶ 5).

46.   In addressing local governmental issues, officials frequently interact with their local Congressional representatives, particularly where federal services or funding is involved. (Stack Ex. 11, ¶ 6).

47.   Placing counties in multiple congressional districts can create challenges for the effective delivery of services, as a single county government must interact with multiple members of Congress, some of whom are based many miles away and represent only a fraction of the constituents within the county. (Stack Ex. 11, ¶ 7).

48.   Communities of interest within Pennsylvania have been historically important to the identities of Pennsylvanians. (Tr. Trans. 583-585).

ANALYSIS OF DR. CHEN

49.   Dr. Jowei Chen, an expert in districting and political geography, testified for Petitioners. (Tr. Trans. 164).

50.   Dr. Chen examined the 2011 Plan by conducting a large number of computer-simulated districting plans for Pennsylvania's congressional districts while following traditional districting criteria and then comparing those simulations to the 2011 Plan. (Tr. Trans. 165-166).

51.   Dr. Chen's examination led him to conclude that the 2011 Plan "was drawn with a partisan intent to create a 13-5 Republican advantage and that this partisan intent subordinated traditional districting principles" in favor of the 2011 Plan. (Tr. Trans. 166).

52.   In his Simulation Set 1, Dr. Chen provided 500 simulated redistricting plans for Pennsylvania's eighteen congressional districts that his computer algorithm randomly generated respecting the five traditional redistricting principles: (1) absolute population equality; (2) geographic contiguity; (3) avoiding the splitting of counties; (4) avoiding the splitting of municipalities; and (5) compactness. (Tr. Trans. 166-167; 170)

53.   Dr. Chen measured compactness by two metrics that redistricting experts generally accept: (1) Reock Compactness Score, which takes the ratio of the area of the district to the area of the smallest bounding circle that can be drawn

around the district; and (2) Popper-Polsby Compactness Score, which takes the ratio of the area of the district to the area of the circle having a circumference equal to the perimeter of the district. For both metrics, a number closer to 1 indicates a higher degree of compactness, while a number closer to 0 indicates a lower degree of compactness.   (Tr. Trans. 174-175; 175-177).

54.   In his Simulation Set 2, Dr. Chen also provided 500 simulated redistricting plans for Pennsylvania's 18 congressional districts that his computer algorithm randomly generated respecting the same criteria as in Set 1, but also placing 17 of the 19 incumbent Pennsylvania congressmen in 2011 into 17 separate districts, with the remaining two incumbent Pennsylvania congressmen placed into the remaining district. (Tr. Trans. 205-206).

55.   Incumbent protection is not a traditional districting criteria, particularly where the incumbent map was drawn with a partisan purpose. (Tr. Trans. 206-09; 1265).

56.   Because incumbent protection is not a traditional districting criteria, Dr. Chen determined that Simulation Set 2 is not more valid that Simulation Set 1. (Tr. Trans. 207).

57.   All congressional districts created in Dr. Chen's 1000 computer simulations had absolute equality of population. (Tr. Trans. 167).

58. All congressional districts created in Dr. Chen's 1000 computer simulations were contiguous. (Tr. Trans. 167).

59. All of Dr. Chen's 1000 computer simulations made fewer county and municipal splits than the 2011 Plan. (Pet. Exs. 4, 8).

60. All of Dr. Chen's 1000 computer simulations generated more compact districts, on average, under both the Reock and Popper-Polsby measures for district compactness than the 2011 Plan. (Pet. Exs. 5, 9).

61. Dr. Chen also calculated partisan performance for all districts in both the 2011 Plan and all 1000 of his simulated plans, using precinct by precinct vote totals for the six statewide contested elections (non-judicial) in Pennsylvania from 2008 to 2010. (Tr. Trans. 189-190).

62. Using precinct by precinct vote totals, Dr. Chen was able to identify across Pennsylvania the locations for the group of people who consistently vote for Democratic candidates. (Tr. Trans. 314-316; Pet. Ex. 1, p. 12).

63. For the 2011 Plan, Dr. Chen used all Pennsylvania statewide election results in non-judicial contested elections in 2008-2010 and calculated that the 2011 Plan resulted in a partisan bias, specifically resulting in a 13-5 Republican advantage across Pennsylvania's 18 congressional districts. (Tr. Trans. 200-202).

64. Dr. Chen also performed a robustness check against his partisan bias calculation. Using all Pennsylvania statewide election results in non-judicial

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contested elections for 2012-2016, he again calculated that the 2011 Plan resulted

in a partisan bias, specifically resulting in the same 13-5 Republican advantage

across Pennsylvania's 18 congressional districts. (Tr. Trans. 282-285).

65.   Dr. Chen's findings that the 2011 Plan resulted in an expected 13-5

partisan Republican advantage reflected the actual election results exactly,

accurately tracking all 54 congressional elections occurring under the 2011 Plan to

date. (Tr. Trans. 200-202; 285).

66.   In Simulation Set 1, 55.4% of Dr. Chen's simulated maps had an

estimated partisan performance of 9-9 Democrats to Republicans across

Pennsylvania's 18 congressional districts. Across the entire set, the outcomes

ranged from 11-7 in favor of the Democrats to 10-8 in favor of Republicans. (Pet.

Ex. 6).

67.   In Simulation Set 2, 41.2% of Dr. Chen's simulated maps (a plurality)

had an estimated partisan performance of 10-8 in favor of Republicans across

Pennsylvania's 18 congressional districts. Across the entire set, the outcomes

ranged from 11-7 in favor of the Democrats to 12-6 in favor of the Republicans

(Pet. Ex. 10).

68.   None of Dr. Chen's 1000 simulations produced a partisan

performance of 13-5 in favor of Republicans across Pennsylvania's 18

congressional districts. (Pet. Exs. 6, 10).

69.   Dr. Chen's analysis demonstrated that, although Republicans enjoy some natural advantage in redistricting due to some Democratic clustering, that natural advantage in no way explains the marked Republican advantage in the 2011 Plan. (Tr. Trans. 255-256).

70.   In his 1000 simulations, Dr. Chen did not direct his computer simulations to consider or respect any requirements of the Voting Rights Act. (Tr. Trans. 166-167; 170; 205-206).

71.   Dr. Chen recognized that the voting age population of District 2 in the 2011 Plan is 56.8% African American. (Tr. Trans. 239).

72.   Despite not including in his algorithm a requirement that the simulations establish VRA-compliant districts, 259 of Dr. Chen's simulations created at least one district that met or exceeded a percentage of voting age African Americans equal to 56.8%. (Tr. Trans. 245).

73.   The 259 of Dr. Chen's simulations that contained at least one district with a voting age African American population greater than or equal to 56.8% still met or exceeded 2011 Plan on all traditional redistricting criteria that Dr. Chen studied. (Tr. Trans. 245).

74.   Based on the comparison of his 1000 simulations to the 2011 Plan on each of the traditional districting criteria and the comparative partisan performance of the 2011 Plan to his 1000 simulations, Dr. Chen concluded that Pennsylvania's

2011 redistricting subordinated traditional redistricting criteria and instead used

Republican partisan advantage as the key redistricting criteria. (Tr. Trans. 166).

CHEN FIGURE 1

75.   In his expert report, Dr. Chen used one of his simulated maps as an

illustrative figure, identified as "Chen Figure 1." (Pet. Ex. 3).

76.   Chen Figure 1 was one of Dr. Chen's 500 simulations in his first set

of simulations, which was identified as Simulation 308. (Tr. Trans. 518).

77.   The available data for each simulation in Dr. Chen's files, which were

made available to all parties, included the identification of municipalities within

each simulated district; performance data for each congressional district in the

simulation including 2008-2010 and 2012-2016; and an analysis of compactness.

(Pet. Ex. 1, page 15; *see also* Tr. Trans. 228-229; 238-244; 371).

78.   Chen Figure 1 created districts that would likely result in a 9-9 split

between Democrats and Republicans across Pennsylvania based upon partisan

performance in the contested (non-judicial) statewide elections from 2008 through

2010. (Pet. Ex. 3).

79.   Chen Figure 1 splits 14 counties, as compared to the 2011 Plan which

splits 28 counties and contains a total of 67 county splits, dividing Montgomery

County five times, Westmoreland County four times, and Berks County four times.

(Pet. Ex. 3; Stipulation of Fact ¶¶ 90, 93-95).

80.   In contrast to the 2011 Plan, Chen Figure 1 places an entire congressional district within Montgomery County and splits Montgomery County only once. The single split is necessary because Montgomery County's population is 799,814, which exceeds the congressional district size of 705,687 (or 705,688). (Stack Ex. 9; Stipulation of Fact ¶ 93; Tr. Trans. 383).

81.   In contrast to the 2011 Plan, Chen Figure 1 keeps Berks County Intact. (*Compare* Joint Ex. 5 *with* Stack Ex. 9).

82.   In contrast to the 2011 Plan, Chen Figure 1 splits Westmoreland County only once. (*Compare* Joint Ex. 5 *with* Stack Ex. 9).

83.   In contrast to the 2011 Plan, Chen Figure 1 keeps Delaware County intact. (*Compare* Joint Ex. 5 *with* Stack Ex. 9).

84.   In contrast to the 2011 Plan, Chen Figure 1 keeps Erie County intact. (*Compare* Joint Ex. 5 *with* Stack Ex. 9).

85.   In contrast to the 2011 Plan, Chen Figure 1 keeps Dauphin County intact. (*Compare* Joint Ex. 5 *with* Stack Ex. 9).

86.   In contrast to the 2011 Plan, Chen Figure 1 keeps Lackawanna County intact. (*Compare* Joint Ex. 5 *with* Stack Ex. 9).

87.   In contrast to the 2011 Plan, Chen Figure 1 keeps Monroe County intact. (*Compare* Joint Ex. 5 *with* Stack Ex. 9).

88.   Chen Figure 1 has an average Reock Compactness Score of 0.442 whereas the 2011 Plan as an average Reock Compactness Score of 0.278, demonstrating that the map in Chen Figure 1 has significantly more compact districts. (Pet. Ex. 3).

89.   Chen Figure 1 has an average Popper-Polsby Compactness Score of 0.310 whereas the 2011 Plan has an average Popper-Polsby Compactness Score of 0.164, demonstrating, by another measure, that the map in Chen Figure 1 has significantly more compact districts. (Pet. Ex. 3).

DR. KENNEDY

90.   Dr. Kennedy, an expert in political science with a specialty in the political geography and political history of Pennsylvania, testified to Pennsylvania's various communities of interest. (Tr. Trans. 578).

91.   Dr. Kennedy concluded that the 2011 Plan "negatively impacts Pennsylvania's communities of interest to an unprecedented degree and contains more anomalies than ever before." (Tr. Trans. 579).

92.   Dr. Kennedy quoted historian Philip Kline who said "ask a Texan where they're from, they'll undoubtedly say they are a Texan. If you ask a Pennsylvanian where they're from, they're much more likely to respond as their hometown. Pennsylvanians identify with their own hometown, with their community." (Tr. Trans. 583-584).

93.   Dr. Kennedy identified multiple communities of interest across Pennsylvania, including: the Lehigh Valley, the Monongahela Valley, Easton, Harrisburg, Erie, Reading, Delaware County and Montgomery County. Dr. Kennedy further noted that communities of interest can occur even within municipalities, identifying in Philadelphia Great Northeast, South Philly, Manayunk, and Roxborough and in Pittsburgh Shadyside, the Hill District and Lawrenceville. (Tr. Trans. 584).

94.   Dr. Kennedy identified Erie County as a community of interest and concluded that District 3 of the 2011 Plan split Erie County "for no apparent nonpartisan reason." (Tr. Trans. 590-591).

95.   Dr. Kennedy identified Montgomery and Delaware Counties as communities of interest and further concluded that District 7 of the 2011 Plan splits those communities in a way that again has no apparent nonpartisan reason. (Tr. Trans. 598-615)

96.   Dr. Kennedy identified Reading and surrounding Berks County as a community of interest and further concluded that Districts 6 and 16 of the 2011 Plan break up that community of interest in a way that has no apparent nonpartisan reason. (Tr. Trans. 615-622).

97.   Dr. Kennedy identified Lehigh Valley as a community of interest and concluded that Districts 15 and 17 of the 2011 Plan crack that community of interest with apparent partisan intent. (Tr. Trans. 623-627).

98.   Dr. Kennedy identified Harrisburg and Dauphin County as a community of interest and concluded that District 4 breaks up that community by pulling the City of Harrisburg into a district with York County with apparent partisan intent. (Tr. Trans. 631-633).

99.   A review of Chen Figure 1 demonstrates that the communities Dr. Kennedy identified in his testimony remain largely intact when compared to the 2011 Plan. For example, in Chen Figure 1, Berks, Erie, Dauphin, Delaware, Lackawanna, and Berks Counties are all in single districts, compared to splits in each of those counties in the 2011 Plan (*Compare* Joint Ex. 5 *with* Pet. Ex. 3; Tr. Trans. 579-644).

DR. WARSHAW

100.   Dr. Warshaw, an expert in American politics, opined on partisan bias and polarization and their effects as a result of 2011 Plan. (Tr. Trans. 835).

101.   Dr. Warshaw testified as to the number of Republican members of Congress in Pennsylvania and stated that there are "a much larger number of Republicans in Pennsylvania than you would expect based on the votes in Pennsylvania." (Tr. Trans. 837).

102. Dr. Warshaw further testified that, with the increase in polarization between Democrats and Republicans "Democrats from Pennsylvania whose votes are wasted have little or no voice in Washington in their … representatives." (Tr. Trans. 837-838).

103. In contrast to the 2011 Plan, Chen Figure 1 produces a 9-9 breakdown across Pennsylvania's congressional under normal statewide voting considerations. (Pet. Ex. 3; Tr. Trans. 254).

IMPACT OF THE 2011 PLAN AS TO PARTISANSHIP

104. If an individual is given one chance to pick a particular outcome in a coin flip, that individual has a 50% chance of winning. If that individual is given two chances to pick a particular outcome, in a coin flip, that individual has a 75% chance of winning. If that individual is given three chances to pick a particular outcome in a coin flip, that individual has an 87.5% chance of winning. (Tr. Trans. 804-805).

105. According to Dr. McCarty's PVI calculation, if a congressional district is a Plus 0 (neutral), there is a 51.9% chance a Democrat will win the election, based on all similarly situated congressional districts throughout the country. According to Dr. McCarty's PVI calculation, if a congressional district is a Plus 2 (favoring Republicans), there is a 27.7% chance a Democrat will win the

election based on all similarly situated congressional districts throughout the country. (Leg. Resp. Ex 17, Appendix).

106.   Dr. Chen measured partisan performance using a median district minus mean district analysis, using all 2008-2010 Pennsylvania statewide elections. (Tr. Trans. 501-506; Pet. Ex. 16).

107.   Dr. Chen measured all 500 of his map simulations in Set 1 (no consideration of incumbent protection) and concluded that virtually all of the simulations fell within a range of Plus 1 (favoring Republican) to Plus 3 (favoring Republican). According to Dr. Chen, this reflected the geographic bias against Democrats, who have a slightly higher tendency than Republicans to concentrate in urban areas. (Tr. Trans. 503-505). Dr. Chen also measured the 2011 Plan and concluded that it was a Plus 6 (favoring Republicans) (Tr. Trans. 501-506; Pet. Ex. 16).

108.   Dr. Chen concluded that, at the very least, the disparity in the partisanship measure between the simulated maps in the general range of Plus 1 (favoring Republican) and Plus 3 (favoring Republican) compared to the 2011 Plan at Plus 6 (favoring Republicans), reflected that the 2011 Plan was created with a districting process that did not prioritize traditional districting principles (Tr. Trans. 506).

109.   Dr. Chen concluded that, using data from all 2012-2016 statewide elections, 67.4% of the 500 simulated maps produced in Set 1, would have resulted in the election of 9 Democrats and 9 Republicans. (Pet. Ex. 19). In contrast, using that same data, Dr. Chen's data confirms that under the 2011 Plan, Republicans were expected to win 13 of the 18 congressional seats. (Pet. Ex. 19).

110.   The partisan design of the 2011 Plan is reflected in the fact that in 2012, when Barack Obama was re-elected as President and carried Pennsylvania, the total congressional vote throughout Pennsylvania for Democrats was 50.8% and for Republicans, 49.2%. 13 Republicans were elected to Congress and only 5 Democrats were elected. (Tr. Trans. 509-510; Stipulation of Fact ¶¶ 73, 78, 82).

111.   The efficiency gap in Pennsylvania moved sharply in a pro-Republican direction when the 2011 Plan went into place; a change that was far larger than anything that had been observed in previous Congressional elections. (Tr. Trans. 878-879).

112.   The change in the efficiency gap created by the 2011 Plan cannot be attributed to political geography or some other aspect of voting behavior. The change was due to the districts that were put in place. (Tr. Trans. 878-879).

113.   Although Democrats won approximately 51% of the statewide Congressional vote in 2012, Democrats only won 5 of 18 seats. Even if Democrats had won 57% of the vote statewide in 2012 – six percentage points more in each

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district – Democrats would have won only 6 of the 18 Congressional seats (Pet. Ex. 41; Tr. Trans. 896-898).

DR. CHO

114. The Legislative Respondents proffered Dr. Cho as an expert witness. (Tr. Trans. 1124).

115. In a peer reviewed publication, published in 2016, Dr. Cho asserted that an analytical framework for determining partisan gerrymandering needs to be able to separate natural consequences arising from particular population concentrations from state-imposed disparate effects that bestow an unnecessary political advantage in favor of one group over another. (Tr. Trans. 1332).

116. Dr. Cho identified a set of core factors appropriate to consider whether a state legislature has engaged in state-imposed disparate effects that bestow an unnecessary political advantage in favor of one group over another. (Tr. Trans. 1332-1334).

117. Dr. Cho indicated that evaluating partisan gerrymandering, through simulations against a set of core factors that included population equality, contiguity, compactness, preserving communities of interest, cities and counties, was not controversial and was generally accepted. (Tr. Trans. 1332-1334).

118. In her 2016 peer reviewed paper, Dr. Cho described an analysis she had undertaken to evaluate whether the congressional map of Maryland reflected

partisan gerrymandering and concluded that it did, based on the fact that 94.79% of the generated maps using her algorithm generated maps that were more responsive to changes in the vote proportion than the existing map, and that 87.5% of the generated simulated maps resulted in more competitive elections. (Tr. Trans. 1333-1335).

119.   Based on her analysis of the Maryland congressional map, which was the subject of her 2016 peer reviewed article, Dr. Cho concluded that by using simulated maps, one could determine the existence of motivations associated with that map that indicated a partisan bias. (Tr. Trans. 1136).

120.   In her analysis of the Maryland congressional map, which was the subject of her 2016 peer reviewed article, Dr. Chen concluded that a comparison of the histograms created using her simulated maps provided evidence that under a First Amendment framework, the Maryland congressional map has encroached one party in favor of the other. (Tr. Trans. 1337).

121.   In conducting her analysis of the Maryland congressional map for her 2016 peer reviewed article, Dr. Cho did not include incumbency in her algorithm or as part of her analysis. (Tr. Trans. 1339).

122.   In conducting her analysis of the Maryland congressional map for her 2016 peer reviewed article, Dr. Cho did not consider the Voting Rights Act in her algorithm or as part of her analysis. (Tr. Trans. 1339).

123. Dr. Cho indicated that the preservation of incumbency for partisan purposes only is inappropriate. (Tr. Trans. 1260- 1264).

124. Dr. Cho did not undertake any independent evaluation as to whether the 2011 Plan reflected partisan gerrymandering. (Tr. Trans. 1326-1329).

DR. MCCARTY

125. Dr. McCarty offered an analysis of the 2011 Plan based on the Cook Voter Partisan Index (VPI). (Leg. Resp. Ex. 17)

126. Dr. McCarty used data from the 2004 and 2008 Presidential elections only. (Leg. Resp. Ex. 17)

127. The VPI index establishes a baseline national popular vote for President and measures each congressional district throughout the country to determine whether the particular district voted in a greater or lesser percentage than the national average. If a district voted 3 percentage points higher than the Democratic candidate's national percentage, it would be measured as a plus 3 Democratic district. If it measured 3 percentage points lower than the Democratic district, it would be measured as a minus 3 Democratic district. (Leg. Resp. Ex. 17)

128. Dr. McCarty reviewed each of the 18 congressional districts under the 2011 Plan and accepted the PVI index establishing partisan values (e.g. plus or minus 3) for a particular party. He used this information to establish a probability

index for each partisan value. Thus, for instance, he concluded that in a Republican plus 3 district, a Democrat would have a 21.2% probability of winning that election. (Leg. Resp. Ex. 17, p. 5)

129. Dr. McCarty assigned a probability to each of the 18 congressional districts under the 2011 Plan, based on the partisan index, and set out those probabilities in Table 1 of his report. (Leg. Resp. Ex. 17, p. 9).

130. Dr. McCarty then added each of the probability values for each of the 18 congressional districts under the 2011 Plan and established an average probability for the state. He concluded that the expected Democratic share of the statewide congressional districts would be 45.3%. He then multiplied that probability by the 18 available seats and concluded that the expected Democratic share of seats under the 2011 Plan would equal 8.150 seats. (Leg. Resp. Ex. 17, p. 9).

131. Although he concluded that the expected Democratic share of seats under the 2011 Plan would equal 8.150 seats, only 6 seats (CD 1,2,8,13,14 and 17) had positive Democratic probability values. (Leg. Resp. Ex. 17, p. 9).

132. Dr. McCarty then ran 1000 simulations assuming that the statewide probability of a Democratic winning each seat was 45.3%, notwithstanding the specific probability that he had assigned to each of the 18 congressional districts. (Leg. Resp. Ex. 17, pp. 9-10).

133.   Dr. McCarty summarized his simulations in Figure 3 of his report, and indicated that, according to his simulations, there was only a 3% chance that the Republicans would win 13 of the 18 congressional seats under the 2011 Plan. (Leg. Resp. Ex. 17, p. 10; Tr. Trans. 1613- 1615).

134.   Dr. McCarty indicated that, under his assumptions and consistent with his simulations, he would expect a 6% probability that the Republicans would win 7 of the 18 congressional seats under the 2011 Plan; a 14% chance that the Republicans would win 8 seats; a 20% probability that the Republicans would win 9 of 18 seats; and a 25% probability that the Republicans would win 10 of 18 seats. (Leg. Resp. Ex. 17, p. 10; Tr. Trans. 1613- 1615).

135.   Dr. McCarty acknowledged that in each of the 3 congressional elections under the 2011 Plan – the elections of 2012, 2014 and 2016 – the Republicans had won 13 of the 18 congressional districts; and that the Democrats had won the same 5 seats (CDs 1, 2, 13, 14 and 17). (Tr. Trans. 1569).

136.   Dr. McCarty indicated that, in his view, any district that had a probability over 20% for a particular party was competitive and that 10 of the 18 congressional districts under the 2011 Plan were competitive. He also conceded that Republicans had won each of the so-called "competitive" 10 races over all three congressional cycles (2012, 2014, 2016) and that the Republicans were 30 for 30 in terms of winning those particular seats. (Tr. Trans. 1604).

137. Dr. McCarty also agreed that Republicans had won those 10 seats that he had described as competitive in a substantial manner, generally with a 57% or 58% margin. (Tr. Trans. 1604; Stipulations of Fact ¶¶73, 78, 82)

138. Dr. McCarty was questioned about Table 1 of his report, specifically his methodology of using an average performance variable for the entire state, instead of applying a partisan performance variable for each district. (Tr. Trans. 1605-1613).

139. Dr. McCarty was presented with a hypothetical example where the Democrats, based on a partisan performance index, had a 60% probability of winning each of 8 congressional districts. Dr. McCarty calculated 60% of 18 and concluded that the expected Democratic seats statewide, would equal 4.8 seats out of a total of 8. (Tr. Trans. 1605-1613; Stack Ex 12).

140. Dr. McCarty was presented with a second set of data, under a hypothetical that assumed partisan gerrymandering, where the Democrats has a 100% chance of winning 3 of the 8 districts, and only a 36% chance of winning 5 of the 8 districts. Dr. McCarty indicated that, as in the first hypothetical set, he would average all 8 districts, which equaled a probability that Democrats would win 60% of the seats. Dr. McCarty calculated 60% of 18 and concluded that the expected Democratic seats statewide would equal 4.8 seats out of a total of 8. (Tr. Trans. 1605-1613; Stack Ex 12).

141. Dr. McCarty's methodology, in averaging the probability of each of the 18 Pennsylvania Congressional Districts, does not differentiate between a map with a distribution of equal performance probability favoring one party (Democrats) in all 8 districts with a second map that is the subject of partisan gerrymandering, creating a minority of 3 packed districts favoring one party (Democrats) and a majority of 5 districts favoring the opposite party (Republicans). (Tr. Trans. 1605-1613; Stack Ex. 12).

142. Under Dr. McCarty's model, there was a 3% chance that the Republicans would win 13 of 18 seats. Thus, the odds of the Republicans winning that amount in three consecutive elections would equal 1 in 37,037 (.03*.03*.03 = .000027 or 27/one million or 1/37,037). (Tr. Trans. 1613-15; calculation methodologies at Tr. Trans. 254).

143. Dr. McCarty's predictive model for the 2012, 2014 and 2016 elections has been shown to be highly inaccurate and is unreliable as an assessment of Dr. Chen's analysis. (Tr. Trans. 1613-1615).

EVIDENCE OF PARTISAN INTENT THROUGH PACKING AND CRACKING

144. A partisan gerrymandered map can be achieved in several different ways, most notably by using the methods known as "cracking" and "packing." (Tr. Trans. 586.)

145. "Cracking" is where the mapmakers separate, or divide, the opposite party's loyalists so that they cannot form a larger, cohesive political voice. (Tr. Trans. 586).

146. "Packing" is where the mapmakers take individual groups who reside in different communities and pack them together simply based upon their partisan performance, thus lessening their impact over a broader area, (Tr. Trans. 586).

147. Cracking and packing reveal situations that do not reflect normal geographic concentrations of voters or alignments of communities that form traditional common regions, such as metropolitan areas. (Tr. Trans. 586-651).

148. County government offices are typically located in county seats and thus splitting counties in multiple congressional districts, and severing county seats from a government, would reflect cracks or splits that are inconsistent with normal communities of interests. (Stack Ex. 11).

149. Philadelphia County is large enough to include two entire congressional districts of 705,687 people. (Pet. Ex. 3; Tr. Trans. 167).

150. Montgomery County, with a population of 799,814 is large enough to include an entire congressional district within its boundaries. (Stipulation of Fact ¶ 93; Tr. Trans. 167)

151. The five largest counties by population in Pennsylvania are Philadelphia, Allegheny, Montgomery, Bucks and Delaware. The Democratic

candidate for President carried each of these five counties in the 2008 election

(Obama), the 2012 election (Obama) and the 2016 election (Clinton). (Stipulation

of Fact ¶ 68).

152. The 6th and 7th congressional districts in the 2011 Plan have contorted

geographic boundaries and each includes portions of Montgomery and Delaware

Counties, as well as portions of other neighboring counties. (Joint Ex. 5).

153. Lancaster County is the sixth largest county, by population, in

Pennsylvania. The Republican candidate for President carried Lancaster County in

the 2008 (McCain), the 2012 (Romney) election and the 2016 (Trump) election.

(Stipulation of Fact ¶ 68).

154. District 1 of the 2011 Plan includes significant portions of

Philadelphia County, which contains a majority of Democratic voters. The

mapmakers included in District 1 the municipality of Swarthmore and the City of

Chester, two municipalities in Delaware County that contain a majority of

Democratic voters. The mapmakers also included in the District 1 portions of

Montgomery County which included a majority of Democratic voters. (Pet Ex 70;

Tr. Trans. 607-609).

155. District 1 is an example of how the mapmakers of the 2011 Plan used

packing Democratic voters in a single district to create an overwhelming

Democratic District. (Pet. Ex. 70; Tr. Trans. 607-609).

156.   District 1 is an example of how the mapmakers of the 2011 Plan used cracking Montgomery and Delaware County to remove Democratic voters from what could have been a unified seat that could have encompassed all of Montgomery or Delaware County. (*Compare* Pet. Ex. 70 to Pet. Ex. 83).

157.   Although Philadelphia County is large enough to include two congressional districts, the mapmakers of the 2011 Plan combined significant portions of Montgomery County with portions of the City of Philadelphia to create District 2 of the 2011 Plan. (Pet. Ex. 3; Pet. Ex. 53; Pet. Ex. 71).

158.   District 2 is an example of how the mapmakers of the 2011 Plan used packing Democratic voters in a single district to create an overwhelming Democratic District. (*Compare* Pet Ex. 71 to Pet. Ex. 83).

159.   District 2 is an example of how the mapmakers of the 2011 Plan used cracking Montgomery County to remove Democratic voters from what could have been a unified seat that could have encompassed all of Montgomery County. (*Compare* Pet. Ex. 53, Pet. Ex. 71, and Pet. Ex. 83).

160.   District 7 of the 2011 Plan includes an eastern portion and a western portion. The western portion takes in parts of Chester County, parts of Berks County and parts of Lancaster County. The eastern portion takes in parts of Delaware County and Montgomery County. (Trial Tr. 599-600; Ex 53; Ex. 79).

161.   The eastern and western portions of District 7 are connected at one point by a single property, on which a seafood restaurant is located. (Pet Ex. 83; Trial Tr. 600-603).

162.   The western portion of District 7 includes more Republican leaning voters than the eastern portion of District 7 (Pet. Ex. 83).

163.   District 7 is an example of how the mapmakers of the 2011 Plan used cracking five counties – Montgomery, Delaware, Chester, Bucks and Lancaster – to create a district that would provide a partisan advantage to Republican voters. (Pet. Ex 83)

164.   District 6 of the 2011 Plan includes portions of four counties – Chester, Montgomery, Berks (excluding Reading) and Lebanon – and splits 15 municipalities. (Pet. Ex. 53, Pet. Ex 77 and 78; Tr. Trans. 615-17).

165.   The western portion of District 6 of the 2011 Plan reaches into Lebanon County and has the effect of adding more Republican voters to that district. (Pet. Ex. 78).

166.   District 6 is an example of how the mapmakers of the 2011 Plan used cracking four counties – Chester, Montgomery, Berks and Lebanon – and splitting 15 municipalities to create a district that would provide a partisan advantage to Republican voters. (Pet. Ex. 53, 78).

167.   District 16 of the 2011 Plan is primarily based in Lancaster County, but reaches into Berks County to include through a narrow geographic link, the city of Reading. Reading is the county seat of Berks County and its residents tend to vote heavily Democratic. (Pet. Ex. 53; Tr. Trans. 618-19; 622)

168.   District 16 is an example of how the mapmakers of the 2011 Plan used cracking Berks County to link the City of Reading, with a district primarily based in Lancaster County so as to provide a partisan advantage to Republican voters. (Pet. Ex. 53; Tr. Trans. 618-619; 622).

169.   Dauphin County is the fifteenth largest county, by population, in Pennsylvania. The Democratic candidate for President carried Dauphin County in the 2008 (Obama), the 2012 (Obama) election and the 2016 (Clinton) election. (Stipulation of Fact ¶ 68).

170.   The mapmakers chose to split Dauphin County into three congressional districts – the 4th, 11th and 15th Districts – and further chose to crack Harrisburg, placing a portion in the 4th Congressional District and another portion in the 15th Congressional District. (Pet. Ex. 53; Tr. Trans. 631-32).

171.   The effect of splitting Harrisburg into two districts and of splitting Dauphin County into three districts was to dilute the Democratic voters located in Dauphin County. (Pet. Ex. 53; Tr. Trans. 631-32).

172.   The mapmakers' treatment of Dauphin County indicates that the mapmakers of the 2011 Plan intended to crack a county where voters have exhibited a tendency to vote Democratic to provide partisan advantage to Republican voters. (Pet. Ex. 53; Tr. Trans. 631-32).

173.   The area of Pennsylvania known as the Lehigh Valley is generally based in Lehigh and Northampton Counties. (Trial Tr. 623).

174.   Lehigh County is the eleventh largest county, by population, in Pennsylvania. The Democratic candidate for President carried Lehigh County in the 2008 (Obama) election, the 2012 (Obama) election and the 2016 (Clinton) election. (Stipulation of Fact ¶ 68).

175.   Northampton County is the thirteenth largest county, by population, in Pennsylvania. The Democratic candidate for President carried Northampton County in the 2008 (Obama) election and the 2012 (Obama) election. (Stipulation of Fact ¶ 68).

176.   In creating District 15 of the 2011 Plan, the mapmakers split Northampton County by placing the county seat, heavily Democratic Easton in District 17. In addition, the City of Bethlehem, which is located in both Lehigh and Northampton Counties, was split and only a portion was placed into District 15. (Pet. Ex. 53, Tr. Trans. 623-626).

177. In creating District 15 of the 2011 Plan, the mapmakers extended the district in a westward direction to include Hershey. The western portion of the district includes voters who exhibit a Republican voting preference. (Pet. Ex 53; Trial Tr. 623-626).

178. The mapmakers' treatment of District 15 of the 2011 Plan indicates that the mapmakers of the 2011 Plan intended to crack counties where voters have exhibited a tendency to vote Democratic so as to provide partisan advantage to Republican voters. (Pet. Ex. 53).

179. District 17 of the 2011 Plan combines a number of municipalities that tend to vote Democratic into a single district. These municipalities include a part of Bethlehem, Easton, Wilkes-Barre and Scranton. (Pet. Ex 53; Trial Tr. 627-631).

180. District 17 is an example of how the mapmakers of the 2011 Plan used packing Democratic voters in a single district to create an overwhelming Democratic District. (Pet Ex. 53; Trial Tr. 627-631)

181. Erie County is the fourteenth largest county, by population, in Pennsylvania. The Democratic candidate for President carried Erie County in 2008 (Obama) and 2012 (Obama). (Stipulation of Fact ¶ 68).

182. In creating District 3 of the 2011 Plan, the mapmakers split Erie County. The mapmakers also excluded Edinboro, the site of a state college, and

extended the district southward to Butler County. Butler County's residents have exhibited strong Republican voting tendencies. (Pet. Ex 53, 73; Trial Tr. 597-598).

183. District 3 is an example of how the mapmakers of the 2011 Plan used cracking Erie County so as to provide a partisan advantage to Republican voters. (Pet. Ex. 53; Trial Tr. 597-598).

184. In creating District 14 of the 2011 Plan, the mapmakers extended the district in a northeastern direction to include Democratic voters in a portion of Westmoreland County, along the Allegheny River. (Pet. Ex 53; Trial Tr. 633-636).

185. Allegheny County is the second largest county, by population, in Pennsylvania. The Democratic candidate for President carried Allegheny County in the 2008 (Obama) election, the 2012 (Obama) election and the 2016 (Clinton) election. (Stipulation of Fact ¶ 68).

186. Westmoreland County is the tenth largest county, by population, in Pennsylvania. The Republican candidate for President carried Westmoreland County in the 2008 (McCain), the 2012 (Romney) election and the 2016 (Trump) election. (Stipulation of Fact ¶ 68).

187. In creating District 14 of the 2011 Plan, the mapmakers packed Westmoreland communities that voted heavily Democratic and combined them in a district that included the City of Pittsburgh, which is located in Allegheny

County. The voters of Pittsburgh tend to vote very Democratic. (Pet. Ex. 92; Tr. Trans. 633-36).

188. District 14 is an example of how the mapmakers of the 2011 Plan used packing Democratic voters in a single district to create an overwhelming Democratic District. (Pet Ex. 53; Tr. Trans. 633-36).

189. "Hijacking" is a concept in the study of gerrymandering that involves the combination of two disparate communities of interest to force incumbents from the same party to run against one another. (Pet. Ex. 53; Tr. Trans. 634).

190. In creating District 12 of the 2011 Plan, the mapmakers created a district that is 120 miles wide. (Pet. Ex. 53; Tr. Trans. 633-636).

191. In creating District 12 of the 2011 Plan, the mapmakers were able to combine portions of the districts of two Democratic incumbents, Jason Altmire and Mark Critz. (Pet. Ex. 53; Tr. Trans. 633-636).

192. In creating District 12 of the 2011 Plan, the mapmakers combined two geographically disparate regions to force two Democratic incumbents to run against one another. (Pet. Ex. 53; Tr. Trans. 633-636).

CHEN FIGURE 1

193.   Chen Figure 1 splits 14 counties, as compared to the 2011 Plan, which splits 28 counties and further, splits Montgomery, Westmoreland and Berks Counties more than once each. (Pet. Ex. 3; Stipulation of Fact ¶¶ 93-95).

194.   A review of Chen Figure 1 demonstrates that the communities Dr. Kennedy identified in his testimony remain largely intact as compared to the 2011 Plan. (*Compare* Joint Ex. 5 *with* Pet. Ex. 3; Tr. Trans. 579-644).

195.   Chen Figure 1 produces a 9-9 breakdown across Pennsylvania's congressional districts under normal statewide voting patterns. (Pet. Ex. 3; Tr. Trans. 254).

196.   Chen Figure 1 has an average Reock Compactness Score of 0.442 whereas the 2011 Plan as an average Reock Compactness Score of 0.278, demonstrating that the map in Chen Figure 1 has significantly more compact districts. (Pet. Ex. 3).

197.   Chen Figure 1 has an average Popper-Polsby Compactness Score of 0.310 whereas the 2011 Plan has an average Popper-Polsby Compactness Score of 0.164, demonstrating, by another measure, that the map in Chen Figure 1 has significantly more compact districts. (Pet. Ex. 3).

198.   Chen Figure 1 has absolute equality of population across its eighteen districts and is contiguous. (Tr. Trans. 167-168).

199. Dr. Chen provided extremely detailed data for each of his 1000 simulations. (Tr. Trans. 365).

200. Dr. Chen provided .shp ("shape") files of each of his 1000 simulations, which include the latitude and longitude points for the district borders. (Tr. Trans. 429; 439-440).

201. The data that Dr. Chen provided permits any individual to redraw Dr. Chen's maps and to evaluate them in detail, including into which district each of Pennsylvania's approximately 420,000 census blocks falls. (Tr. Trans. 375).

202. An individual using standard mapping software can geo-locate any real address onto any of Dr. Chen's simulated maps to determine in which generated congressional district the address would lie. (Tr. Trans. 526-527).

203. A geolocation of Pennsylvania's current congressional delegation onto Chen Figure 1 indicates that most incumbent congressmen in 2016 would be sorted into individual districts, with only two districts pairing two incumbent congressmen together (Lou Barletta and Matt Cartwright in one district and Brendan Boyle and Brian Fitzpatrick in another district) . (*See* Stack Exhibit 9 showing current congressmen placed on Chen Figure 1 in detail).

204. The the incumbent congressmen paired in Chen Figure 1 are located along the borders of the district and thus could be placed into different districts

with minor edits to that map. (*Compare* Pet. Ex. 3 and Stipulation of Fact ¶¶ 155-56).

205.   The underlying data for Chen Figure 1 provides sufficient data to evaluate the demographic components used in a Voting Rights Analysis for the Philadelphia area. (Tr. Trans. 245).

206.   Given Philadelphia's significant African American population and the creation in Chen Figure 1 of two congressional districts located entirely within Philadelphia, it would not be difficult to create a majority minority district in Philadelphia. (*See* Stack 9; Pet. Ex. 3; Tr. Trans. 1279-80).

207.   The underlying data for Chen Figure 1 also provides sufficient data to evaluate whether or not any changes to Chen Figure 1 at the census block level would still results in districts that comply with equality of population and contiguity. (Tr. Trans. 375; 429; 439-400).

208.   Chen Figure 1 developed a hypothetical congressional map that incorporates the core values of district mapmaking: (1) population equality; (2) contiguity; (3) compactness; (4) preservation of county borders wherever possible; and (5) preservation of municipal boundaries where possible. Further, it creates a partisan balance where the Democrats and Republicans each have a reasonable probability of winning 9 of 18 seats. (Pet. Ex. 3; Tr. Trans. 172-77).

III.   PROPOSED CONCLUSIONS OF LAW

Respondent Stack adopts Petitioners' conclusions of law, and submits the following additional conclusions of law:

1.   The Pennsylvania Constitution guarantees free and equal elections. (Pa. Const. art. I, sec. 5).

2.   The Pennsylvania Constitution guarantees freedom of speech, assembly and petition to a greater degree than the United States Constitution. (Pa. Const. art, I, secs. 7, 20; *Pap's A.M. v. City of Erie*, 812 A.2d 591, 605 (Pa. 2002)).

3.   The Pennsylvania Constitution recognizes the equality of the citizens of Pennsylvania and guarantees the right to be free from discrimination in the exercise of any civil right. (Pa. Const. art. I, secs. 1, 26).

4.   The 2011 Plan is a legislative act of the General Assembly, and must be struck down if it violates the Pennsylvania Constitution. *DePaul v. Commonwealth*, 969 A.2d 536, 538 (Pa. 2009).

5.   The Pennsylvania Supreme Court has not defined the standard analysis for determining whether a redistricting plan's partisanship violates the Pennsylvania Constitution's speech, assembly and petition clauses. *Erfer v. Commonwealth*, 794 A.2d 325, 328 n.2 (Pa. 2002).

6.   The Pennsylvania Supreme Court has held that a redistricting plan is unconstitutional under the Pennsylvania Constitution's equal protection clauses if

it: (1) intentionally discriminates against an identifiable political group; and (2) effectively shuts out that group from the political process. *Erfer v. Commonwealth*, 794 A.2d 325, 332-34 (Pa. 2002).

7.   Party registration is not required for a political group to be identified. *Erfer v. Commonwealth*, 794 A.2d 325, 333 (Pa. 2002).

8.   Petitioners' expert testimony demonstrates that the 2011 Plan intentionally discriminates against an identifiable political group: namely, individuals and communities who tend to vote for Democratic candidates, in a manner inconsistent with traditional redistricting principles. (Stack Findings of Fact 62-69, 143-192).

9.   Petitioners' expert testimony further demonstrates that this intentional discrimination had a significant discriminatory effect on communities of interest in Pennsylvania that tend to vote for Democratic candidates. (Stack Findings of Fact 94-98, 143-192).

10.   As a result of the discriminatory intention behind the 2011 Plan and its actual discriminatory effect, the 2011 Plan violates the Pennsylvania Constitution's equal protection guarantees. *See Erfer v. Commonwealth*, 794 A.2d 325, 332-34 (Pa. 2002).

11.   The 2011 Plan's partisan bias is also invalid as a form of viewpoint discrimination and impermissible retaliation for protected speech against voters

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who tend to vote Democratic. *See Shapiro v. McManus*, 203 F. Supp.3d 579, 596-97 (D. Md. 2016) (Stack Findings of Fact 143-192).

12.   When a redistricting map is held to be unconstitutional, a new map must be drawn. *See, e.g., Holt v. Legislative Reapportionment Comm'n*, 38 A.3d 711 (Pa. 2012); *Mellow v. Mitchell*, 607 A.2d 204 (Pa. 1992).

13.   Pennsylvania courts have previously retained special masters to produce congressional maps when the General Assembly, the constitutionally responsible party, has failed to produce a legally permissible map. *Mellow v. Mitchell*, 607 A.2d 204, 206 (Pa. 1992).

14.   The General Assembly has failed to produce a legally permissible map. (Stack Conclusions of Law 10-11).

15.   Under the current election schedule, the first day to circulate and file nomination petitions for the 2018 congressional primary is February 13, 2018, and thus a valid districting map needs to be in place by that time. (Joint Stipulation ¶¶ 130-131); *see also* 25 P.S. §§ 2753(a), 2868.

16.   Because Chen Figure 1 meets or exceeds 2011 Plan on all traditional redistricting criteria, and because its expected partisan performance mirrors partisan performance statewide, a special master could use Chen Figure 1 as a starting point to rather quickly produce a new map. (Stack Findings of Fact 75-89, 193-198; Stack Conclusions of Law 10-11, 14-15).

17.   A special master could review Chen Figure 1's accompanying data in detail to confirm whether it complies with the Voting Rights Act, equality of population, and contiguity requirements. (Stack Findings of Fact 199-207; Stack Conclusions of Law 10-11, 14-15).

18.   A special master could also make minor adjustments to Chen Figure 1 if the map is found to require some alteration. (Stack Findings of Fact 199-207; Stack Conclusions of Law 10-11, 14-15).

19.   Additionally, a special master could present Chen Figure 1, or a slightly modified Chen Figure 1, to the General Assembly and the Governor for input and approval for a period of time brief enough to ensure that a new map is ready in time for the 2018 congressional primaries. (Stack Findings of Fact 189-207; Stack Conclusions of Law 10-11, 14-15).

20.   If the General Assembly cannot agree to a new map during that brief time period, the Supreme Court should adopt Chen Figure 1 as reviewed and/or modified by a special master.   (Stack Findings of Fact 189-207; Stack Conclusions of Law 10-11, 14-15).

IV. ARGUMENT

Respondent Stack joins with Petitioners in their legal arguments.

Respondent Stack here seeks to briefly demonstrate how: (1) the 2011 Plan fails

even a rational basis standard, let alone the strict scrutiny standard required of it;

and (2) the courts may provide as a remedy the appointment of a special master to

draw a new map if the General Assembly cannot draw one in time for the 2018

Congressional primaries.

A. The 2011 Plan Lacks A Rational Basis.

Respondent Stack agrees and joins with the Petitioners in asserting that strict

scrutiny should apply to the 2011 Plan and that the 2011 Plan fails strict scrutiny.[1]

Alternatively, this Court may still invalidate this map. It may do so for the simple

reason that the 2011 Plan violates the Pennsylvania Constitution because it lacks

any rational basis under ordinary Equal Protection analysis.

A law implicates Equal Protection if a class of individuals receives different

treatment than other similarly-situated individuals, and the disparate treatment is

because of membership in that class. *See Applewhite v. Commonwealth*, No. 330

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[1] Respondent Stack is aware of the test enunciated in *Erfer v. Commonwealth*, 794 A.2d 325, 332-34 (Pa. 2002) regarding partisan gerrymandering but notes that the *Erfer* court was not presented with an argument under Pennsylvania's free speech assembly and petition clauses. 794 A.2d 325, 328n.2. Further, to the extent the retrospective analysis of a redistricting plan in this matter conflicts with the prospective analysis of a redistricting plan in *Erfer*, Respondent Stack asserts that any inconsistencies found in *Erfer* should be modified or overruled in favor of the analysis herein.

M.D. 2012, 2014 WL 184988, at *24 (Pa. Commw. Ct. Jan. 17, 2014), *on remand from Applewhite v. Commonwealth*, 54 A.3d 1 (Pa. 2012) (applying analysis to a Voter ID law). If the law is neutral on its face, a challenger must also demonstrate that it was adopted, at least in part, based upon its adverse effects on an identifiable group. *See id.* at *25.

A law fails rational basis if it is not reasonably related to a legitimate state interest. *See Muscarella v. Commonwealth*, 87 A.3d 966, 973 (Pa. Commw. Ct. 2014); *cf. In re Nomination Papers of Marakay Rogers*, 908 A.2d 948 (Pa. Commw. Ct. 2006) (election statute violates the Free and Equal Elections Clause if the legislature abuses its discretion in pursuing a *valid state interest*). This is a two-part test—the legislature must have a valid state purpose for its actions, and the law must be rationally related to that purpose. Here, the 2011 Plan is a law which treats Democratic and Republican voters differently, and disproportionately burdens Democrat voters. As Petitioners have demonstrated, the 2011 Plan was adopted, at least in part, to discriminate against Democratic voters.

An examination of district after district of the 2011 Plan confirms that partisan gerrymandering played an inappropriate role in defining the boundaries that the mapmakers ultimately selected. (Stack Findings of Fact 143-192). In many situations, Democratic voters were packed into districts that were often stretched or twisted to place Democratic voters in the same district. (*Id.*).

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Similarly, the record reflects the many instances where counties and communities were split to ensure that Democratic voters would be in a minority, thus greatly reducing the changes that Pennsylvania's congressional delegation would reflect the overall parity throughout the state between Democratic and Republican voters. (*Id.*). Even under a rational basis analysis (which again, would be insufficient under the proper strict scrutiny standard), the 2011 Plan still fails.

The 2011 Plan lacks a legitimate state interest, and instead advances the impermissible interest of achieving partisan advantage. *See Vieth v. Jubelirer*, 541 U.S. 267, 293 (2004) ("excessive injection of politics" into districting decisions is unlawful); Richard Briffault, *Defining the Constitutional Question in Partisan Gerrymandering*, 14 Cornell J. L. & Pub. Pol'y 398, 414–15 (2005) ("Districting decisions that can be explained only by pure partisanship, or pure pursuit of the self-interest of the individual members of the legislature, fail to serve a legitimate governmental objective and are thus arbitrary, irrational and unconstitutional."); *cf. Muscarella*, 87 A.3d at 974 (invalidating a law that lacked a legitimate state interest). Here, Legislative Respondents' own expert, Dr. Wendy Cho, conceded that pure partisan interest is not a valid interest in redistricting. Petitioners have demonstrated that exact type of pure partisan interest here. (Tr. Trans. 1252 (noting that one cannot use incumbency protection "so that the – the legislature can go crazy with partisanship")).

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The concept that partisanship is not a legitimate state interest can further be illustrated by analogy. For example, in the event of a tie vote in an election, Pennsylvania provides that the candidates shall cast lots to determine the winner. *See* 25 P.S. § 3168. If the legislature amended the statute to provide that a Republican candidate should cast two lots while a Democratic candidate casts only one lot in the event of a tie election, all would agree that this is fundamentally unfair. This type of legislation would alter the probability that the Republican would prevail in such a tie-breaker from a 50% probability to a 75% probability. Under the Pennsylvania Constitution, this hypothetical statute cannot withstand an Equal Protection challenge because it has no purpose other than to favor Republican candidates and make it more likely that they will win elections.

Here, in creating the 2011 Plan, the Republican leadership of the General Assembly, unchecked by a Republican Governor, purposefully and deliberately designed districts that twisted and turned throughout the Commonwealth for no other purpose than to maximize partisan advantage. (Stack Findings of Fact 143-192). No other explanation exists as to why districts like District 6 or District 7 could look as they do. Statewide election results and expert testimony clearly indicate that Pennsylvania should have a congressional delegation that is more or less 50% Democratic and 50% Republican. (Stack Finding of Fact 113). Instead, despite who shows up to vote, the 2011 Plan produces a delegation that is

comprised of 13 Republicans and 5 Democrats; by the careful design of the map,

nearly 75% of all Congressional seats to Republicans. (Stack Finding of Fact 51).

The map itself exhibits the heavy hand of state action that is as offensive as

allowing one party to have two opportunities to win a coin flip.

Placing a thumb on the scale to artificially increase the voting power of

Republicans is not a legitimate state interest. To the contrary, the state has a duty

to ensure that it governs impartially and provides free and equal elections. *See* Pa.

Const. art. I, § 5 ("Elections shall be free and equal."); *Vieth*, 541 U.S. at 317

(Stevens, J., dissenting) ("The concept of equal justice under law requires the state

to govern impartially."); *cf. In re Jones*, 505 Pa. 50, 70 (1984) ("It is well

recognized that the preservation of the integrity of the electoral process is a

legitimate and valid state goal."). The 2011 Plan operates in much the same way

as the hypothetical tie-breaker law—to make it more likely that Republican

candidates will be elected. Where a redistricting map cannot be explained other

than by an improper purpose of increasing Republican voting power, it must fail

rational basis review. Petitioners demonstrated repeatedly that the 2011 Plan is a

statistical outlier for all traditional redistricting criteria (Stack Findings of Fact 57-

61). It is invalid.

Moreover, though the Legislative Respondents proffer hypothetical state

interests in redrawing the district maps to conform to the results of the census, the

map they drew is not rationally related to those interests. *See Nixon v.*

Commonwealth, 576 Pa. 385, 400 (2003) (rational basis review requires that "the

means which [a law] employs must have a real and substantial relation to the

objects sought to be attained"). The 2011 Plan does not advance that purported

goal. Indeed, the testimony of Petitioners' experts demonstrate that all traditional

redistricting criteria were subordinated to the interest of drawing an extremely

favorable map to Republican candidates at the expense of Democratic candidates.

Further the Legislative Respondents' own expert, Dr. Cho, conceded that her

additional proffered redistricting criterion, the preservation of the previous decades

congressional districts, was inapplicable here, where Pennsylvania courts had

determined that the previous map had also been drawn with significant partisan

bias. (Stack Finding of Fact 41; *Erfer*, 794 A.2d at 333).

Pennsylvania courts have repeatedly invalidated laws under a rational basis

review that lack a reasonable relationship to the alleged state interest. *See Mixon v.*

Commonwealth, 759 A.2d 442, 451 (Pa. Commw. Ct. 2000) (finding that a law

which allowed felons who were registered to vote prior to their incarceration to

vote upon release, but preventing those who were not previously registered from

voting until five years after release was not rationally related to the state's interest

in having qualified electors); *see also Nixon*, 576 Pa. at 403–04; *Muscarella*, 87

A.3d at 974; *Ctr. for Student Learning Charter Sch. at Pennsbury v. Pa. Dep't of*

Educ., No. 1746 C.D. 2010, 2011 WL 10846016, at *7 (Pa. Commw. Ct. Sept. 13, 2011); *Warren Cty. Human Servs. v. State Civil Serv. Comm'n (Roberts)*, 844 A.2d 70, 74 (Pa. Commw. Ct. 2004); *Wings Field Pres. Assocs., L.P. v. Com., Dep't of Transp.*, 776 A.2d 311, 320–21 (Pa. Commw. Ct. 2001). Therefore, this Court should strike down the 2011 Plan as not reasonably related to any legitimate population-based redistricting goals.

Although rational basis review is a deferential standard, this Court is not required to simply rubber-stamp the redistricting decisions of the legislature. Indeed, Pennsylvania courts have invalidated maps as irrational or unlawful in other contexts. In *Holt v. 2011 Legislative Reapportionment Commission*, 614 Pa. 364 (2012), the Pennsylvania Supreme Court struck down a redistricting plan under the "contrary to law" standard. *See id.* at 375.

Likewise, Pennsylvania courts have also rejected zoning maps as arbitrary and capricious where they failed to serve any legitimate government interest. Like a redistricting plan, a zoning map is adopted, as legislation, by a municipality and is presumed to be valid. In rejecting zoning maps that result in "spot zoning," the Pennsylvania Supreme Court has consistently recognized that, the legislative judgment "is never sacrosanct, and certainly not fairly debatable, when the legislative body ignores reality." *Appeal of Glorioso*, 196 A.2d 668, 671 (Pa.

1964).[2] Although the Court has recognized the commendable goals of land use

planning, it has cautioned that "neither zeal nor worthwhile objectives can impinge

upon or abolish" the rights of property owners, as "ordained, protected and

preserved" in the Pennsylvania Constitution." *In Re Realen Valley Forge Greenes*

Associates, 838 A.2d 718, 728 (Pa. 2003), (quoting *Cleaver v. Bd. of Adj. of*

Tredyffrin Twp., 200 A.2d 408, 413 n. 4 (Pa. 1964)).

The test of constitutionality of a zoning map is whether it can be shown to be

arbitrary and unreasonable, with no substantial relation to a legitimate public

interest. If a "spot" of land is singled out for different treatment than accorded to

similar surrounding property that "is indistinguishable from it in character," it is an

unreasonable and arbitrary exercise of the legislative power and is invalid "spot

zoning." *Appeal of Glorioso*, 196 A.2d 668 at 672, citing *Putney v. Abington Twp.*,

108 A.2d 134, 140 (Pa. Super. 1954); *see also Appeal of Mulac*, 210 A.2d 275 (Pa.

1965) (most relevant questions in spot zoning challenge is whether an area with no

relevant differences from neighboring property is singled out for different

treatment). Similarly, a zoning ordinance that unduly restricts or excludes a use is

constitutionally invalid. *C&M Developers, Inc. v. Bedminster Twp. Zoning*

Hearing Bd., 820 A.2d 143, 150 (Pa. 2002) (Supreme Court held that a zoning

ordinance is arbitrary where it results in "disparate treatment of similar landowners

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[2] A zoning ordinance is presumed to be constitutionally valid unless a challenger shows that it is
unreasonable, arbitrary or not substantially related to the public interest.

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without a reasonable basis for such disparate treatment."); *National Land and Investment Co. v. Easttown Twp. Bd. of Adj.*, 215 A.2d 597 (Pa. 1966) (an ordinance that has an exclusionary purpose or result cannot be substantially related to a legitimate public interest).

Having seen the irrational boundaries of the 2011 Plan districts and having heard from expert witnesses who identified the improbability of that map being developed without partisan motivation, the Court need not end its inquiry simply because the legislators invoked privilege to avoid any testimony as to their intent.

In the same way, this Court can look at a map that creates different districts and determine whether the design of those districts is rationally related to legitimate state purposes. The contorted districts of the 2011 Plan are as irrationally constructed as the illogical spot zones that Pennsylvania courts have consistently rejected.

Thus, this Court can provide meaningful review of the 2011 Plan under the rational basis standard and strike it down as unconstitutional. Although it obviously fails under the proper strict scrutiny standard, this may also conclude that the 2011 Plan fails the rational basis test.

B. This Court May Adopt a New Map to Correct the Constitutional Infirmities.

This Court may select a new redistricting plan, and need not wait for legislative action to remedy the constitutional infirmities. The Pennsylvania

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Supreme Court, in *Mellow v. Mitchell*, 530 Pa. 44 (1992), has set a precedent for this Court to do just that. *See id.* (judicially adopting a new redistricting plan where it struck down a legislative plan as unconstitutional). As in *Mellow*, no time can be wasted waiting for prolonged legislative action. February 13, 2018 is the first day to circulate and file nomination petitions (25 P.S. §§ 2753(a), 2868), and candidates cannot adequately circulate such petitions until they know the boundaries of their districts (*Id.*).[3] Thus, the Supreme Court can and should adopt a new redistricting map if the General Assembly cannot produce a map in time for the 2018 congressional primaries.

As described in Respondent Stack's Findings of Fact and Conclusions of Law, Chen Figure 1 is accompanied by extremely detailed census-block-level data about its parameters. This Court can retain a special master now to determine whether any modifications need to be made to Chen Figure 1 to comply with any districting requirements and to obtain input from the General Assembly or other interested parties in a compressed schedule, and have that refined map available if the General Assembly cannot quickly produce a map in time for the 2018 congressional primaries.

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[3] At trial, Respondents Wolf and Torres indicated that there would be some minor flexibility with deadlines for the scheduled 2018 primary. (EBD Ex. 1). Nonetheless, significant time constraints remain.

V. **CONCLUSION**

For all of the reasons cited herein, Petitioners have shown that the 2011 Plan

violates the Pennsylvania Constitution, and relief should be granted to ensure that a

new map is in place for the relevant deadlines of the 2018 congressional elections.

Respectfully submitted,

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Dated: December 17, 2017

CERTIFICATE OF SERVICE

The undersigned does hereby certify that on December 17, 2017, a true and correct copy of Respondent Stack's Proposed Findings of Fact and Conclusions of Law was served via the PACFile system or via email upon the following:

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