Single-Member Districts in Austin
An Analysis of Proposed Single-Member District Scenarios

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Executive summary

In approximately 2005, the City of Austin became a Majority-Minority city in that no demographic group exists as a majority of the city’s population. In order to more formally comply with federal minority voting rights protection, the City of Austin is considering implementing a single-member district (SMD) electoral structure in place of its existing at-large electoral structure. The purpose of the SMD structure is to ensure minority representation in local government by consciously creating districts in which minority representation is concentrated. In support of the Charter Revision Committee commission in 2007, the City of Austin’s Spatial Analyst Group for demographic analysis proposed a variety of SMD scenarios ranging from four to 14 districts, focusing on five, eight-member district scenarios.

This report provides a spatial analysis of these five SMD scenarios based on overall minority representation, Hispanic representation, and Black representation. In order to compare the results of this analysis, I developed an evaluation process and scoring structure. The evaluation process assesses the five SMD scenarios based on two criteria: the number of Majority-Minority districts created for each minority type and the level of minority concentration for each minority type. Based on a relative ranking system, the five SMD scenarios are scored for each evaluation criteria using a relative ranking system. The resulting scores are summed to achieve an overall evaluation score. In accordance with the evaluation process and scoring structure, I found that, of the five SMD scenario(s), Scenario C will maximize minority representation in the City of Austin, the primary objective of implementing a SMD electoral structure.

This report provides an introduction to the background and theory of SMDs, describes the method of analysis, illustrates the findings using geographic information system (GIS) mapping techniques, and assesses and evaluates the results using a defined evaluation and scoring framework.

Introduction

It is important to understand the background, context, and impetus for an analysis of potential SMDs in Austin. This section defines the SMD electoral system, establishes general background and theory surrounding SMDs, and provides a context for analyzing SMDs in Austin.

Background

Prior to the Civil War, there was no constitutional protection for voting and electoral participation in the United States. After the Civil War, in 1968, Congress ratified the 14th Amendment, conferring citizenship to all persons born or naturalized in the United States, and the 15th amendment, affirming that the right to vote should not be denied or abridged based on race, color, or previous status of servitude. The Enforcement Act of 1870 and Force Act of 1971 introduced federal oversight of elections resulting in the enlargement of electoral franchise to minorities, particularly the Black population. However, many of these measures were effectively
reversed with increased indirect voting discrimination, particularly in the South, that led to increased minority disenfranchisement.¹

Following the Civil Rights Act in 1964, the Voting Rights Act (VRA) was passed in 1965. The goal of the VRA is to remove strong obstacles to voting registration procedures for racial minorities. The implementation of the VRA resulted in the doubling and even tripling of registered minority voters in the United States. In light of some continuing racial polarization in the 1970s and 1980s, Congress extended obstacles to voting procedures to include “structural changes” that prevent minorities from voting through electoral dilution.² These obstacles include gerrymandering, annexations, at-large elections, and multi-member districts. Electoral dilution, or vote dilution, occurs when an individual is able to vote, but his or her vote does not count equally relative to the votes of others. Minority-vote dilution refers to the use of voting practices that corrode the voting strength of a minority population preventing votes from being aggregated in such a way that would lead to the election of the minority-preferred candidate.³ This is particularly relevant in a Majority-Minority city or state.

**Single-Member Districts (SMDs)**

This tumultuous electoral history has given rise to the SMD electoral system. A single-member district (SMD) is the most common electoral system in the United States used to elect many federal, state, and local representatives to office. Under the SMD system, each district votes on one person to represent them in a legislative body, meaning that this elected representative represents a geographically defined area. For example, a U.S. House Representative is elected through the SMD system in that he or she represents a district within a particular state. Applied at the city-level, SMDs mean that an individual would reside, run, and serve in a geographically defined area.

Advocates of SMDs argue that the at-large system not only promotes minority dilution, but diffuses responsibility, in that council members do not represent any particular group or set of political interests. Advocates contend that SMDs would provide neighborhoods with greater accountability and deliver more equitable representation to minority populations. Alternatively, opponents of the of SMD system warn of old, Chicago-style “ward politics”, in which an elected representative becomes a political agent for his or her district at the expense of the well-being of the entire city.

**City of Austin Government**

Currently, the City of Austin uses an at-large electoral system and practices a Council-Manager form of government. In a Council-Manager form of government, the Mayor and City Council establish policies and ordinances and develop an overall vision of the city, and the City Manager, appointed by the City Council, oversees the daily operations of government and implements the policies and directives established by the Mayor and City Council. City Council is composed of seven members: one Mayor and six City Council members. Each of Austin’s City Council

¹ (Aghion, Alesina and Trebbi 2005)
² (Aghion, Alesina and Trebbi 2005)
³ (Southern Poverty Law Center 2008)
members serves a staggered three-year term. Although Council members are elected to individual “places,” each represents the entire City.\(^4\)

The racial composition of Austin’s City Council is pre-determined according to a “gentleman’s agreement”, under which one seat, Place 6, is reserved for an African-American member and one, Place 2, for a Latino/a member. There has been some public pressure to remove this restriction, viewed by many as an unfair and even racist arrangement that leads to unequal representation for some areas of the city, east Austin in particular.\(^5\) The City of Austin has been considering moving from its current at-large voting system and “gentleman’s agreement” to SMDs to provide more equitable representation in city government. Although a movement toward SMDs has failed six times since 1973, efforts were renewed in 2007 when the City convened the Charter Revision Committee to re-explore the feasibility of SMDs in Austin. During this process, the City of Austin’s Spatial Analyst Group for demographic analysis proposed a variety of SMD scenarios ranging from four to 14 districts, focusing on five, eight-member district scenarios. However, a city charter amendment was not proposed for the November 2008 ballot. Given the changing demographics of the City, Mayor Will Wynn postponed any potential charter amendment until after the 2010 Census.

**City of Austin Demographics**

In approximately 2005, the City of Austin crossed the threshold of becoming a Majority-Minority city, meaning no demographic group exists as a majority of the City’s population. Although there has been absolute growth in the number of Anglos in Austin, the growth of other ethnic groups has outpaced the growth of the Anglo population. Now the Anglo share of the total population dropped below 50%. The Latino and Asian growth rates, in particular, greatly exceed the growth rate of Anglos in Austin.\(^6\) The following graph illustrates the City of Austin’s ethnicity shares from 1960 through 2020.

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\(^4\) (The City of Austin 2008)  
\(^5\) (Dunbar 2008)  
\(^6\) (Robinson 2008)
Though Austin’s demographics and spatial organization have changed considerably from the 2000 Census, it is relevant to conduct a preliminary analysis to establish a framework for the structure of SMDs in Austin. The City of Austin’s traditional at-large voting structure has fostered a local governing system that is incongruent with the demographics dispersion of Austin that has led to underrepresentation of particular regions and/or groups throughout the city. Representation in city government currently comes largely, if not solely, from communities west of I-35. In addition, West Austin voters are three times more likely to vote than voters residing east of I-35. Now that the city has becomes Majority-Minority, it has become increasingly apparent for these issues to be addressed.

**Problem statement**

Given the changing demographics in the City of Austin, movement toward an SMD electoral system is likely. In a Majority-Minority city, the case for minority-vote dilution is more pronounced. My central research question is what are the potential impacts of the five, eight-member SMD scenarios, developed by the City, on minority representation? Will these scenarios create a more representative City? Or, does the existing “gentleman’s agreement” provide more of a safeguard with respect to minority representation? In this analysis, I will consider which of the five, eight-member SMD scenarios would be the most equitable based on overall minority representation, Hispanic representation, and Black representation. Based on this analysis, I will decide which SMD scenario(s) will maximize minority representation in the City of Austin.
Methodology

In order to conduct an analysis of the five, eight-member SMD scenarios, I obtained data from a variety of sources. This section summarizes how I identified the necessary data, how I acquired the data, and what steps I took to conduct this analysis using GIS mapping techniques.

Problem Identification

As a native Austinite and student at the LBJ School of Public Affairs, I am particularly interested in the role of local government in urban management. I had been following the discussion and progression of the argument for SMDs in Austin, primarily through local news coverage. In an urban management class with the former City Manager, Toby Futrell, I acquired further insight into the current debate for SMDs as well as some of the key obstacles regarding SMD implementation in the City of Austin. These obstacles focused on how to create SMDs in such a way as to maximize minority representation. How can one ensure a comparable level of minority representation with the movement from the “gentleman’s agreement” to SMDs in Austin? Then, in a subsequent GIS class, the City of Austin Demographer, Ryan Robinson, gave a presentation on using GIS to analyze the spatial demography of the City of Austin. One of the examples he provided was the development of SMD Scenarios to support the efforts of the City in assessing the structure and feasibility of switching to a SMD electoral system.

In getting a glimpse of potential SMD scenarios, I became interested in analyzing and comparing the how well minorities were actually represented in these scenarios. The idea behind SMDs in this case is to create high concentrations of minority populations to ensure political representation that does not dilute the minority preference. Based on the existing structure of the City’s electoral system and “gentleman’s agreement”, I decided it was also important to include an individual analysis of Hispanic and Black populations. In sum, I set out to analyze the five, eight-member SMD scenarios based on overall minority representation, Hispanic representation, and Black representation.

Defining Minority Representation

Defining minority representation is difficult, even for the U.S. Census Bureau. In this analysis of SMD scenarios, the definition of minority groups is of particular importance to the overall results of the analysis. The following table provides a reference for the data available from Census Table P8, Hispanic or Latino by Race. Using this table, I will walk through my basic calculations.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Total:</td>
</tr>
<tr>
<td>Not Hispanic or Latino:</td>
</tr>
<tr>
<td>White alone</td>
</tr>
<tr>
<td>Black or African American alone</td>
</tr>
<tr>
<td>American Indian and Alaska Native alone</td>
</tr>
<tr>
<td>Asian alone</td>
</tr>
<tr>
<td>Native Hawaiian and Other Pacific Islander alone</td>
</tr>
</tbody>
</table>
Using Census categories, I defined overall minority representation to mean anyone who is non-White according to the Census. Therefore, I subtracted the total population of my study area from the Non-Hispanic or Latino, White alone category. This calculation defines all other races (one, two, or more) as minorities. I defined the Hispanic population as simply the total Hispanic or Latino category. I then defined the Black population by adding the non-Hispanic or Latino category, Black or African American alone to the Hispanic or Latino, Black or African American alone category. These three definitions of minority representation are key underlying assumptions when interpreting the results of this analysis.

Data acquisition

Using this background as a platform, I began to gather the necessary data required to analyze overall minority representation, Hispanic representation, and Black representation for each of the five SMD scenarios. To perform this analysis, I needed to establish my study area and associate Census data block group level data with the proposed SMDs for the five different scenarios. This section provides a brief data description and identifies each method of acquisition. Detailed information as well as contact information for data sources can be found in Appendix A – Data Sources.

- **Census Data.** The Census 2000 Block Group shapefiles and demographic data for both Travis and Williamson Counties were obtained from the Census Bureau. The Census Tiger/Line shapefiles were obtained indirectly through ESRI and the demographic data was obtained through the Census website. In terms of demographic data, I focused on the use of the Census Table P8, containing data on race, for this analysis.

- **City of Austin Data.** Data from the City of Austin was obtained through their general FTP site in addition to project-specific information provided by Ryan Robinson from the City of Austin. I had a brief phone interview with Ryan Robinson to discuss the scope of the project, and he later provided me with the SMD scenario documents I requested through an FTP site. This was the primary data used in this analysis to define and analyze the SMDs for each scenario.

- **Capital Area Council of Governments.** Data from the Capital Area Council of Governments was obtained from the information clearinghouse on their main website. This data was used to provide a contextual reference for this analysis.
• **Travis County Tax Office.** To obtain voter precinct data, I contacted the Travis County Tax Office and requested the current Travis County precinct data from a GIS contact by phone and received the data via email. This data was used to assess voter turn-out rates for the City of Austin City Council elections. Due to time limitations, this analysis was not included in this report.

**Data Process**

Upon obtaining all the necessary data, I was ready to begin my analysis. The following section provides a summary of the steps I took in conducting this analysis. Detailed information regarding specific data procedures can be found in Appendix B – Data Procedures.

• **Defining and Projecting.** Following best practices, before beginning GIS analysis, all necessary shapefiles were defined and projected in ArcCatalog. Any data not already defined or projected was defined using the North American Datum (1983) and projected in Texas Central State Plane, 1983 (feet). This geographic coordinate system and projection is the most accurate for a City of Austin analysis.

• **Joining Census Data and Shape Files.** After adding the Census shapefiles and demographic data for Travis and Williamson County, it is necessary to join this data together so that the individual block groups within the map retain the necessary block group data characteristics. Using the Travis and Williamson County data as a starting point, the next step is to establish the study area.

• **Establishing the Study Area.** Using the available SMD scenarios as a guide, I affirmed that the City of Austin’s full-purpose jurisdictional boundary most accurately matched the SMD study area. As such, I clipped the joined Travis and Williamson County block group data to the City of Austin full-purpose jurisdictional boundary. For ease of analysis, I also merged the remaining Travis and Williamson County block groups together. This merged block group data for the City of Austin’s full purpose jurisdictional boundary is the established study area from which I conducted my analysis.

• **Digitizing the SMD Scenarios.** In order to analyze the Census 2000 Block Group data associated with each SMD scenario, it was necessary to digitize each of the scenarios. First, I converted the SMD Scenarios from pdf format to .jpeg format using Adobe Photoshop. Then, I geo-referenced these jpeg files to my established study area. After aligning these files, I selected the Census block groups that fell within each of eight districts for five separate scenarios. Each scenario and district were assigned a letter and number identifier corresponding to the actual scenario and district (SMD scenario A-E, district 1-8).

• **Calculating Minority Representation Values.** Obtaining data for overall minority representation, Hispanic representation, and Black representation, required some basic calculations within GIS. Using my pre-defined definitions, I calculated new categories, if necessary, and converted the data to percentages.
• **Averaging Minority Representation Values by District.** In order to compare minority representations across scenarios, I needed to calculate a district average for overall minority representation, Hispanic representation, and Black representation. Using the dissolve function, I dissolved each scenario by district and calculated an average for each minority type. This process resulted in district-level averages for each minority type.

• **Ranking and Symbolizing Minority Type.** Using these district level averages, I ranked the districts based on the level of minority concentration, from the highest to lowest percentage. I symbolized this ranking using a graduated color scheme; the darker the gradient referring to higher levels of minority concentrations. This enables the reader to compare minority representation type across the five SMD scenarios.

• **Adding Spatial References.** To understand the geographical context of the map, I added several spatial references to the study area including major roads, lakes, and county boundaries. These spatial references help the map reader to identify the study area and better understand the map analysis.

**Findings**

The principal findings are attached as a series of maps.
This map illustrates Single-Member District Scenario A. I have highlighted the three minority representation types I am using to evaluate five different SMD scenarios including overall minority representation, Hispanic representation, and Black representation using the corresponding maps to the right. December 15, 2008.

Sources: City of Austin, U.S. Census Bureau, Capital Area Council of Governments

Created by: Katherine Samuels, LBJ School of Public Affairs, The University of Texas at Austin.
This map illustrates Single-Member District Scenario B. I have highlighted the three minority representation types I am using to evaluate five different SMD scenarios including overall minority representation, Hispanic representation, and Black representation using the corresponding maps to the right. December 15, 2008.
Sources: City of Austin, U.S. Census Bureau, Capital Area Council of Governments
Created by: Katherine Samuels, LBJ School of Public Affairs, The University of Texas at Austin.
This map illustrates Single-Member District Scenario C. I have highlighted the three minority representation types I am using to evaluate five different SMD scenarios including overall minority representation, Hispanic representation, and Black representation using the corresponding maps to the right. December 15, 2008.

Sources: City of Austin, U.S. Census Bureau, Capital Area Council of Governments.

Created by: Katherine Samuels, LBJ School of Public Affairs, The University of Texas at Austin.
City of Austin Electoral Districts
Single-Member Districts: Scenario D (8 Districts)

This map illustrates Single-Member District Scenario D. I have highlighted the three minority representation types I am using to evaluate five different SMD scenarios including overall minority representation, Hispanic representation, and Black representation using the corresponding maps to the right. December 15, 2008.

Created by: Katherine Samuels, LBJ School of Public Affairs, The University of Texas at Austin.
This map illustrates Single-Member District Scenario E. I have highlighted the three minority representation types I am using to evaluate five different SMD scenarios including overall minority representation, Hispanic representation, and Black representation using the corresponding maps to the right. December 15, 2008.

Sources: City of Austin, U.S. Census Bureau, Capital Area Council of Governments

Created by: Katherine Samuels, LBJ School of Public Affairs, The University of Texas at Austin.
Analysis

The results of these findings will be used to compare the potential impacts of the five, eight-member SMD scenarios on minority representation in city government. Before conducting the analysis, I will establish a general evaluation process and scoring mechanism to compare and rank SMD scenarios. In conducting this analysis, I will provide an analysis of each individual SMD scenario and then compare results across all five scenarios to assess the overall potential impacts of the SMD scenarios on minority representation in the City of Austin.

Evaluation Process

In analyzing SMD scenarios, the object is to create high concentrations of minority populations to ensure political representation that does not dilute the minority preference. The following figure illustrates the SMD scenario evaluation process.

Each map will be assessed based on the three minority representation types, using the following two evaluation criteria:

1) Evaluation Criteria 1 - Number of Majority-Minority districts

The number of Majority-Minority districts is measured by the number of districts within each scenario that represent more than 50% of the minority population.

2) Evaluation Criteria 2 - Level of concentration of minority districts

The number of Majority-Minority districts is measured by the number of districts within each scenario that represent more than 50% of the minority population. The level of
concentration measurement will vary for each type of minority representation taking into account the total population and spatial dispersion of a particular minority group. The level of concentration for overall minority representation will be defined as the top four highest concentrated districts, the level of concentration for Hispanics will be defined as the top three highest concentrated districts, and the level of concentration for Blacks will be defined as the top two highest concentrated districts.

**Scoring Mechanism**

Using the established evaluation process and criteria, a scoring mechanism will be applied to measure and weight the evaluation criteria. For evaluation criteria one, the number of Majority-Minority districts, each scenario will receive one point for each majority-district for the three minority representation types. Each SMD scenario score will be summed and normalized relative to sum of the total number of points for evaluation criteria one.

For evaluation criteria two, the level of concentration of minority districts, I will average the top two, three, or four minority districts with the highest concentrations, depending on minority type. The averages resulting from each scenario will be ranked relative to one another from 1 to 5—“1” being the scenario with the highest level of minority concentration and “5” being the scenario with the lowest level of minority concentration. The scores for each minority representation type will be summed for a total score. Each SMD scenario will then be normalized relative to sum of the total number of points for evaluation criteria two.

The final scores for both evaluation criteria will then be summed for an overall evaluation criteria score. Based on this evaluation process and relative ranking scoring technique, the SMD scenario with the highest overall evaluation criteria score will maximize minority representation in the City of Austin.

**Map Analysis**

- **Map 1: Single-Member District: Scenario A (8 Districts).** Map 1 illustrates SMD Scenario A. The large map illustrates the district divisions and the three smaller tabbed maps illustrate the results of the minority representation analysis by minority type including overall minority representation, Hispanic representation, and Black representation. These maps rank each district in Scenario A by the level of minority concentration for each minority type. The rankings are categorized from the highest to lowest percentage and symbolized using a graduated color scheme; the darker the gradient referring to higher levels of minority concentrations. Scenario A has four Majority-Minority districts for overall minority representation, one Majority-Minority district for Hispanic representations, and no Majority-Minority districts for Black representation. Scenario-specific calculations are provided in the overall evaluation results.

- **Map 2: Single-Member District: Scenario B (8 Districts).** Map 2 illustrates SMD Scenario B. The large map illustrates the district divisions and the three smaller tabbed maps illustrate the results of the minority representation analysis by minority type.
including overall minority representation, Hispanic representation, and Black representation. These maps rank each district in Scenario B by the level of minority concentration for each minority type. The rankings are categorized from the highest to lowest percentage and symbolized using a graduated color scheme; the darker the gradient referring to higher levels of minority concentrations. Scenario B has three Majority-Minority districts for overall minority representation, one Majority-Minority district for Hispanic representations, and no Majority-Minority districts for Black representation. Scenario-specific calculations are provided in the overall evaluation results.

- **Map 3: Single-Member District: Scenario C (8 Districts).** Map 3 illustrates SMD Scenario C. The large map illustrates the district divisions and the three smaller tabbed maps illustrate the results of the minority representation analysis by minority type including overall minority representation, Hispanic representation, and Black representation. These maps rank each district in Scenario C by the level of minority concentration for each minority type. The rankings are categorized from the highest to lowest percentage and symbolized using a graduated color scheme; the darker the gradient referring to higher levels of minority concentrations. Scenario C has four Majority-Minority districts for overall minority representation, one Majority-Minority district for Hispanic representations, and no Majority-Minority districts for Black representation. Scenario-specific calculations are provided in the overall evaluation results.

- **Map 4: Single-Member District: Scenario D (8 Districts).** Map 4 illustrates SMD Scenario D. The large map illustrates the district divisions and the three smaller tabbed maps illustrate the results of the minority representation analysis by minority type including overall minority representation, Hispanic representation, and Black representation. These maps rank each district in Scenario D by the level of minority concentration for each minority type. The rankings are categorized from the highest to lowest percentage and symbolized using a graduated color scheme; the darker the gradient referring to higher levels of minority concentrations. Scenario D has four Majority-Minority districts for overall minority representation, one Majority-Minority district for Hispanic representations, and no Majority-Minority districts for Black representation. Scenario-specific calculations are provided in the overall evaluation results.

- **Map 5: Single-Member District: Scenario E (8 Districts).** Map 5 illustrates SMD Scenario E. The large map illustrates the district divisions and the three smaller tabbed maps illustrate the results of the minority representation analysis by minority type including overall minority representation, Hispanic representation, and Black representation. These maps rank each district in Scenario E by the level of minority concentration for each minority type. The rankings are categorized from the highest to lowest percentage and symbolized using a graduated color scheme; the darker the gradient referring to higher levels of minority concentrations. Scenario E has four Majority-Minority districts for overall minority representation, one Majority-Minority district for Hispanic representations, and no Majority-Minority districts for Black representation.
representation. Scenario-specific calculations are provided in the overall evaluation results.

**Overall Evaluation Results**

The following table illustrates the results of the SMD scenario scoring process for evaluation criteria one, evaluation criteria two, and the total evaluation criteria score. This section provides a summary of these results. It is important to note that the number score is only a relative measure of minority representation comparable between scenarios; the number score does not have any external significance.

- **Evaluation Criteria 1:** For evaluation criteria one, the number of Majority-Minority district rankings, SMD Scenarios A, C, D, and E all receive the highest score of 21. Scenario B, one Majority-Minority district short, receives a score of 17. This score is not particularly differentiated because four of the five scenarios have the same number of Majority-Minority districts. However, the concentration of these districts does vary between scenarios.

- **Evaluation Criteria 2:** For evaluation criteria two, the results, ranked from highest to lowest scores, are as follows: Scenario C – 31, Scenario D – 20, Scenario A and E – 18, and Scenario B – 13. Though the levels of minority concentration did not necessarily vary by wide margins, a distinct ranking was apparent from the data. Considering the number of Majority-Minority districts was relatively homogeneous across the scenarios, the level of minority concentration is the driving evaluation factor in the overall evaluation result.

- **Overall Evaluation Results:** These evaluation results involved summing the results from both evaluation criteria. Overall, according to the results of the five, eight-member SMD Scenarios, SMD Scenario C receives the highest evaluation score of 52. Based on this analysis and evaluation and scoring process, SMD Scenario C maximizes minority representation in the City of Austin.
## Evaluation Criteria 1: Number of Majority-Minority District Rankings

<table>
<thead>
<tr>
<th>Minority Representation</th>
<th>Scenario A</th>
<th>Scenario B</th>
<th>Scenario C</th>
<th>Scenario D</th>
<th>Scenario E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minority Representation</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Hispanic Representation</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Black Representation</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Total Ranking Score</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
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| Normalized Ranking Score | 21 | 17 | 21 | 21 | 21 |

## Evaluation Criteria 2: Level of Concentration Rankings

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<tr>
<th>Minority Representation_1</th>
<th>Scenario A</th>
<th>Scenario B</th>
<th>Scenario C</th>
<th>Scenario D</th>
<th>Scenario E</th>
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<td>81</td>
<td>81.3</td>
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<td>Average Minority Concentration (Top 4 Districts)</td>
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<td>61.875</td>
<td>65.825</td>
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<td>63.75</td>
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<th>Scenario C</th>
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<td>Average Hispanic Concentration (Top 3 Districts)</td>
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<td>48.5</td>
<td>49.3</td>
<td>48.4</td>
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<th>Scenario B</th>
<th>Scenario C</th>
<th>Scenario D</th>
<th>Scenario E</th>
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<td>37.4</td>
<td>37.8</td>
<td>37.6</td>
<td>38.3</td>
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<tr>
<td>Black Representation_2</td>
<td>12.2</td>
<td>7.7</td>
<td>12.3</td>
<td>12.4</td>
<td>12.7</td>
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<tr>
<td>Average Black Concentration (Top 2 Districts)</td>
<td>24.8</td>
<td>22.55</td>
<td>25.05</td>
<td>25</td>
<td>25.5</td>
</tr>
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<th>Scenario B</th>
<th>Scenario C</th>
<th>Scenario D</th>
<th>Scenario E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranking Minority Representation</td>
<td>3</td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Ranking Hispanic Representation</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Ranking Black Representation</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Total Ranking Score</td>
<td>8</td>
<td>6</td>
<td>14</td>
<td>9</td>
<td>8</td>
</tr>
</tbody>
</table>

| Normalized Ranking Score | 18 | 13 | 31 | 20 | 18 |

## Final Evaluation Ranking

| Total Evaluation Criteria Score | 39 | 30 | 52 | 41 | 39 |
Conclusion

An analysis of these five, eight-member SMD scenarios developed by the City of Austin, provides a structure for evaluating and comparing the potential impacts SMDs will have on minority representation in the City of Austin. Of these five Scenarios, SMD Scenario C is the most equitable based on overall minority representation, Hispanic representation, and Black representation. According to the outlined evaluation process and scoring structure, Scenario C maximizes minority representation in the City of Austin, which is the primary objective of implementing an SMD electoral structure. However, there are additional issues and policy implications to take into account when considering implementing SMDs in Austin.

Additional Considerations

- **Changing Demographics.** With the potential implementation of SMDs in Austin, it is important to consider recent and forecasted demographic trends. First, the City of Austin is experiencing a declining Black population who are increasingly relocating to surrounding suburbs. Second, in addition to the strong spatial concentration associated with the Hispanic population, the Hispanic share of the total population rivals the Anglo share. And finally, little or no focus is given to the Asian minority group when considering the creation of SMDs in Austin although the Asian population is increasingly on the rise. By 2020, the Asian share of the population is estimated to surpass the Black share of the population.7 If this is the case, will SMDs need to be re-evaluated? In any case, it will be relevant to conduct this analysis with updated block group information from the upcoming 2010 Census.

- **SMDs or the “Gentleman’s Agreement?”** Considering the existing “gentleman’s agreement,” which secures two Council Member Places for both Hispanic and Black representatives, moving to a SMD electoral structure could introduce an increased risk to minority representation. SMD proponents argue that despite this risk, SMDs provide for a more equitable and accountable political structure.

- **Varying the Number of Districts.** Considering there are currently seven City Council Members (including the Mayor), who decided there should be eight-member districts? In addition to eight-member SMDs, the City of Austin has explored districts vary from four to fourteen members in an effort to capture higher minority concentrations. However, it was relatively subjectively decided that four members were too few, 14 were too many, and eight members would increase the minority concentration without inciting too much change at once into the local governing structure.

- **District polarization.** Creating more homogenous districts facilitates the potential for greater competition and less cooperation between districts. In other words, this polarization could lead to Chicago-style “ward politics.” At what point, if any, is there a

7 (Robinson 2008)
threat of a high degree of polarization? In addition to minority representation, should other factors be taken into account when creating SMDs? One could argue for more heterogeneous districts to facilitate a more cooperation and tolerance in a community; or, alternatively, one could argue for more homogenous districts to ensure representation of minority perspectives.

This analysis was primarily conducted to provide a framework for analyzing the issue of implementing SMD Scenarios in Austin. While the results of this particular analysis are definitive, it is difficult to account for all the issues and obstacles involved in moving to a SMD electoral system. However, I hope this analysis and evaluation framework contribute to the continued discussion of implementing SMDs in Austin.
References


Appendix
Appendix A – Data Sources

Data referenced in this map was obtained from the following data sources. All data was referenced using the North American Datum (1983) and projected in Texas Central State Plane, 1983 (feet). Full data sources are cited below.

Census Data

The Census 2000 Block Group shapefiles and demographic data for both Travis and Williamson counties were obtained from the Census Bureau.


City of Austin Data

Data from the City of Austin was obtained through their general FTP site in addition to project-specific information provided by a contact at the City of Austin.


SMD scenario contact information:

Ryan Robinson
Demographer, City of Austin
Phone: (512) 974-6443
Ryan.Robinson@ci.austin.tx.us
Capital Area Council of Governments

Data from the Capital Area Council of Governments was obtained from the information clearinghouse on their main website.


Travis County Tax Office

To obtain voter precinct data, I contacted the Travis County Tax Office and requested the current Travis County precinct data from a GIS contact by phone and received the data via email.

- Travis County Voter Precincts [computer file]. 2008. Austin, TX: Travis County Tax Office [November, 14, 2008].

Voter precinct contact information:

Melinda Avey, CERA
GIS Coordinator, Voter Registration Division
Travis County Tax Office
Phone: 854-4454
Email: melinda.avey@co.travis.tx.us
Appendix B – Data Procedures

This section contains detailed information regarding specific data procedures and metadata. Each of the five maps used the same data procedures and metadata, as such I will provide one detailed set of procedures.

Data Procedures

Data Preparation

- First, I downloaded all data from data sources including the following:
  - Census 2000 Block Groups shapefiles for Williamson and Travis County
  - Census 2000 Block Group data tables for Williamson and Travis County
  - The City of Austin Major/Minor Arterials
  - The City of Austin Lakes and Ponds
  - The City of Austin Jurisdictional Boundaries
  - Single Member District Scenario pdfs
  - Capital Area Council of Governments County Boundaries
  - Travis County Tax Office Voting Precinct Data.
- In ArcCatalog, if not already defined and/or project, I defined and projected all shapefiles using the North American Datum (1983) and projected in Texas Central State Plane, 1983 (feet) including:
  - Census 2000 Block Groups shapefiles for Williamson and Travis County
  - The City of Austin Major/Minor Arterials
  - The City of Austin Lakes and Ponds
  - The City of Austin Jurisdictional Boundaries
  - Capital Area Council of Governments County Boundaries
  - Travis County Tax Office Voting Precinct Data

Joining Census block groups and Shapefiles

- Then I added the following files to a new map document:
  - Census 2000 Block Group shapefiles for Williamson and Travis County
  - Census 2000 Block Group data tables for Williamson and Travis County
- I joined the following shapefiles to its corresponding table:
  - Census 2000 Block Group shapefiles for Williamson and Travis County
  - Census 2000 Block Group data tables for Williamson and Travis County

Defining the Study Area

- I added the following file to the map document:
  - The City of Austin Jurisdictional Boundary
- Using the select by attribute feature for jurisdiction type, I selected the two records representing the City of Austin all-purpose jurisdictional boundaries.
- I created a layer from this selected features and export the data layer renaming it Austin City limits.
• Then, returned to the two joined Census Block Group tables for Travis and Williamson County.
• I clipped the two joined files for Travis and Williamson to the City of Austin full-purpose jurisdictional boundary.
• Then, using the merge feature, I combined the remaining Travis and Williamson County block groups together creating one cohesive study area.

Digitizing the SMD Scenarios

• Using Adobe Photoshop, I converted the SMD Scenarios from .pdf format to .jpeg format.
• I added the first SMD Scenario .jpeg file to the map document.
  o SMD Scenario A-E
• Then, using the georeferencing toolbar, I created three control points matching the City of Austin jurisdictional boundaries to the .jpeg city boundaries.
• In the attribute table of the merged Census block groups, I added a field for each scenario (Scenario A-E).
• Next, I selected the Census block groups that fell within each of eight districts for each SMD scenario.
• Then using the field calculator I set the Scenario number field equal to the district number I was selecting and calculated the values for the selected features.
• I assigned each district was assigned a number identifier corresponding to the district block group it fell under (District 1-8).
• I then symbolized each district using a random color band scheme.

Calculating Minority Representation Values

• In the attribute table I added three new fields to calculate the following statistics:
  o Overall minority representation (percent)
  o Hispanic representation (percent)
  o Black representation (percent)
• I used the field calculator to calculate the new field categories
  o Overall Minority Representation (Percent)
    ▪ I subtracted the Non-Hispanic or Latino, White only category from the Total Population category.
    ▪ I then divided the resulting value by the total population category and multiplied by 100.
  o Hispanic Representation (Percent)
    ▪ I divided the total Hispanic or Latino category by the total population and divided by 100.
  o Black Representation (Percent)
    ▪ I added the Non-Hispanic or Latino, Black only category to the Hispanic or Latino, Black only category.
    ▪ I then divided the resulting value by the total population and divided by 100 to get a percent value.
Averaging Minority Representation Values by District

- Using the dissolve function, I dissolved each scenario by district and calculated an average for each minority type (overall minority representation, Hispanic representation, and Black representation). This process resulted in district-level averages for each minority type.

Ranking and Symbolizing Minority type

- Using these district level averages, I ranked the districts based on the level of minority concentration, from the highest to lowest percentage.
- I symbolized this ranking using a graduated color scheme; the darker the gradient referring to higher levels of minority concentrations.

Adding Spatial References

- I added the following layers to the map document:
  - The City of Austin Major/Minor Arterials
  - The City of Austin Lakes and Ponds
  - Capital Area Council of Governments County Boundaries
- I clipped the following layers to the City of Austin all-purpose jurisdictional boundary shapefile I created.
- For the City of Austin Major/Minor Arterials files, I used the select by attribute function to select by road type (major roads).
- I created a layer from the selected features and removed the previous layer from the map document.
- Using the City of Austin Lakes and Ponds shapefile, I sorted the attribute table by name and selected the three primary lakes in the Austin area (Lake Travis, Town Lake, and Ladybird Lake).
- I created a layer from the selected features and removed the previous layer from the map document.
- For the Capital Area Council of Governments County Boundary layer, I used the select by attribute features to select Travis County.
- I created a layer from the selected features and removed the previous layer from the map document.
- I then added the surrounding County names (Williamson, Burnet, and Hays Counties) as text on each main SMD Scenario map.

This concludes my data procedures for one SMD Scenario. I repeated this process for each of the five SMD scenarios.

Summary of Metadata

All data was defined using the North American Datum (1983) geographic coordinate system and projected in Texas Central State Plane, 1983 (feet). This geographic coordinate system and projection is the most accurate for a City of Austin analysis.