Rethinking the Public School System: through the Lens of Norman Public Schools

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INTRODUCTION

Students spend a lot of time inside their school communities, up to 11,700 hours from kindergarten to 12th grade (Hull & Newport, 2011, in Cheryan et al., 2014). These spaces should be ones that connect students to their community and encourage positive learning. Many schools in Oklahoma are overcrowded and are not easily accessible when it comes to parking and safe walking routes (LaVictoire, 2019; Carter, 2021). The issues listed apply to many schools in the Norman Public School district. An analysis of the current school locations and populations was conducted to measure diversity and community.

The goal of this analysis is to identify potential satellite and nucleus school locations. Satellite schools are defined in this study as small school locations that feed into larger nucleus locations. Satellite schools would not be separated by grade, rather separated by community and walkability. Walkability is determined by how many homes have walking access to the satellite school, what other facilities surrounded the building, and how busy nearby streets are on a daily basis. Satellite locations are explored within the research portion of this study. Nucleus schools are separated by grade and will be determined based on existing public schools in Norman and other locations that need a nucleus school. Satellite schools have a goal of fostering a sense of community among K-12 students while nucleus schools will encourage peer bonding and diversity.

Analyzing existing school culture is important so that our current school model is kept up to date with the society of today. Community and walkability are important for wellbeing and can be achieved through Satellite schools. Additionally, peer bonding and diversity are also important to learn and grow from each other. These goals can be achieved through Nucleus schools.

LITERATURE REVIEW

The six indicators used for this study were school location, physical boundaries, racial densities, financial densities, K-12 student location, and areas of potential growth. The indicators were influenced by the article written by Caro et al. (2004), “School redistricting: embedding GIS tools with integer programming”. It describes many factors that currently go into districting and factors that should be considered. School location is important for contiguous districts, which is the first geographic constraint identified by Caro et al. (2004). The second is physical obstacles, which were renamed physical boundaries for this study. Physical obstacles included roads, rails, and bodies of water, with an emphasis on heavy traffic areas (Caro et al., 2004).

Racial densities were mentioned because “some local governments mandate or recommend that schools achieve a certain racial balance to eliminate potential educational disadvantages particular racial groups might have” (Caro et al., 2004, p. 836). With the heavy emphasis on racial inclusion, financial inclusion should also be considered in an Oklahoman town as Oklahoma is one of the poorer states and Norman has a lot of variation among income levels (U.S. Census Bureau, 2019).

Kindergarten through 12th grade student location is important to identify to keep neighborhoods from being split into multiple districts (Caro et al., 2004). Splitting up neighborhood districts decreases sense of community and can upset those living in the neighborhoods. Knowing where these students are located can help create smarter district boundaries. Lastly, areas of potential growth are important to locate to know where future schools will need to be built. (Caro et al., 2004). Focusing on these six indicators will help give a picture of what Norman looks like and can give potential directions for satellite and nucleus school locations.

METHODOLOGY

The Norman Public School district was chosen as the focus of this study because it has importance to the researcher. Norman is also overcrowded and has issues with walkability and fostering a sense of community. Steps are being taken to increase wellbeing in Norman Public Schools, like the School Climate and Culture Task Force created by the superintendent (District exploring expanded support services; 2021). This shows the district is open to change and to bettering itself.

Limitations to this study include time, accessibility to statistics, previous knowledge of software, and the inability to share my idea with others. For time, this study was conducted over the course of one school semester. A study without a time limit could gather a lot more useful data. Second, statistics used were ones that were found available online either through the census data, the Norman information database, or through Google Earth. Knowledge of software included limited interaction with Google Earth and knowing of the website called Snazzy Maps. All knowledge of ArcGIS was gathered during the course of the semester. Lastly, sharing this idea with others would allow me to see if this idea is good and to brainstorm more directions of research.

DISCUSSION

Norman Public schools currently has 16 elementary schools, 4 middle schools, and 2 high schools. These locations have been added throughout the course of Norman history in response to the growth seen in Norman. The schools are spread throughout Norman, but cluster in the center of the city. Current sites are not walkable for the majority of Norman K-12 students. Currently, these schools vary in student population.

Physical barriers in Norman were determined to be busy streets with a speed limit of 40

or above, the railroad tracks, commercial zones, industrial zones, and bodies of water. Busy streets were determined by speed limit because parents would not want their children crossing these roads every day. These restrictions created many square shaped zones throughout the edges of Norman. Norman is also cut in half by the railroad tracks. There were a few bodies of water, but not many to be concerned about as far as physical barriers go. Future satellite school districts should avoid crossing over any physical barriers when possible.

While data was not gathered for many Data on the density of African American population was not available for many blocks in Norman; however, there is clearly a higher density in this population in the Southeastern corner of Norman. Racial diversity is sometimes required by school districts and can broaden the perspective of students from different cultures, as mentioned previously (Caro et al., 2004). The map that shows the current residences of students within the K-12 age range highlighted areas that should have a larger concentration of school locations to accommodate all of the students. Patterns can be assumed for blocks with no data based on previous knowledge of the researcher. Some areas in the final solution map lacked school locations. This was because those areas are largely commercial or will remain underdeveloped. Lastly, a map was created that showed income levels for different parts of Norman. It is clear that the northern areas of Norman have more money per household which can create an effect of richer verses poorer schools. This would suggest a need to district schools more north to south rather than east to west.

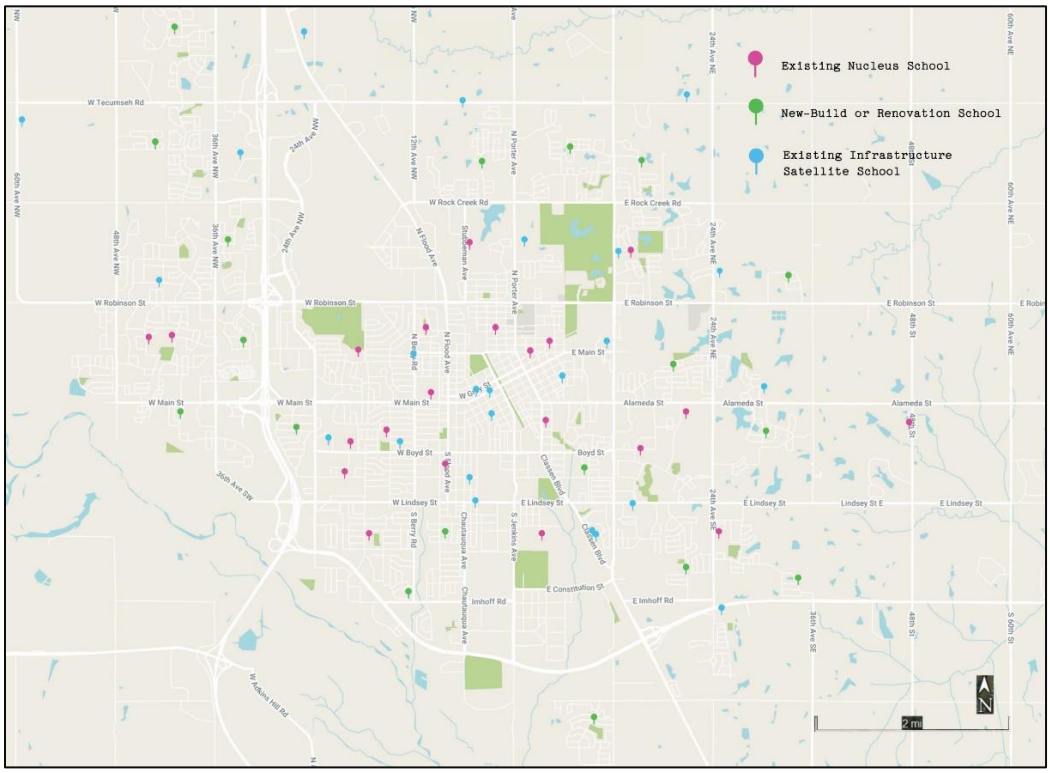
Norman is a growing town. Identifying the neighborhoods that are accommodating this growth also helps identifying where future school locations will need to be. In the timelapse maps created by the researcher, it was clear that the Northeastern section of Norman is growing rapidly as new neighborhoods spring up in this short span of 15 years, which is just long enough

for a single student to cycle through the education system.

The solution for this short study was a map that displays all possible locations of satellite schools and nucleus schools based on existing infrastructure and where extra locations are needed. Physical boundaries and commercial zones were also taken into consideration when adding places for potential school sites. Satellite schools that feed into the Nucleus schools would be diverse in racial and financial background to create a wider understanding of community for the students. This map can be seen in Figure 1.

Figure 1

Possible Satellite and Nucleus School Locations



This map displays all potential school locations in Norman. The pink locations are preexisting schools; the blue locations are existing community spaces or churches that could house satellite schools; the green locations are needed locations based off the research conducted in the study. Green spaces would either be new builds or would retrofit existing infrastructure in the location.

CONCLUSION

All in all, Norman is a growing area that is in desperate need of new schools. However, this need created a great opportunity to analyze the structure of public school systems and to brainstorm a new way of thinking. This new way involved small community satellite schools mixed in with larger nucleus schools that provided different solutions to the problems faced in nearly all communities.

Considering all the information gathered during the research portion of this study, a small area of Norman is displayed to show a potential route in the day of a K-12 student. Students would start out walking to a satellite school location where they could foster a sense of community and connect with their close neighbors. Then, buses would take students to nucleus school locations where the students could engage in diversity and interact with students their own age. Nucleus school locations would be preexisting Norman Public Schools as well as existing infrastructure large enough to hold a greater amount of students of different grade levels. Here, students would have classes based on a block schedule. A block schedule allows some classes to be taught a few days, and then other classes taught on the opposite days. This lets classes have more time and allows community building time at the new satellite schools. At the end of class 3, students would be bussed back to the satellite location. Having buses move the students also saves on gas and reduces carbon emissions around the city. At the end of the day, students would engage in a community building project that helps better their immediate community in some way. The satellite schools would have all school ages and lends itself to establishing some sort of mentor-ship program within the school system. At the end of the day, most students could walk back home. Those who would be part of an after school program are located close to home allowing parents or guardians less travel time after work.

In the future, a focus group could be done with the current plan to see how Norman citizens react to the proposal. Also, more data could be gathered for analysis. A thorough implementation plan could also be executed. This would include plans for future schools in which a thorough ideation of interior design could be executed, which is my field of expertise.

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