



**Winnetka Public Schools
District 36, Illinois**

**Capacity
and
Utilization Study**

Revised October 24, 2016

INTRODUCTION

In the summer of 2016, **Cropper GIS Consulting (Cropper)** were contracted to perform a capacity study for the Winnetka Public Schools, District 36 (district). The intent of this study is to calculate the total number of students that each individual school can hold, both in terms of optimal and maximum.

The way school capacity is calculated is actually pretty simple. The root formula for calculating capacity is to take the number of classrooms, and multiply by a total number of students per classroom (Capacity = Classrooms * Class Size). So, if you have a building with 20 classrooms, and you apply 20 students per classroom, the total capacity would be 400. The key is to develop a good inventory of rooms and how they are being used. It is important to set aside special use rooms and not to count them into the total building capacity. These special use rooms are defined further in the report. In terms of class size, the district identifies their class size goals in a range to be able to account for different class sizes that move through the system. The class size guidelines are targets that the district uses to try to manage the number of students each teacher and school is in charge of. These factors will be taken into account as the building capacities are developed.

DATA AND METHODOLOGY

Winnetka District 36 - Class Size Guidelines	
Grade	Class Size
KG-2	17-20
3-4	17-21
5-6	18-23
7-8	18-24

Class size guidelines were collected from the district, which reflect the range of class sizes that the district targets for each classroom in the schools. The table to the left reflects the class size ranges for the various grade cohorts within the district. For the purpose of this study, the bottom of the range was used to develop an 'optimal' capacity, where the top number of the range was used to calculate a 'maximum' capacity.

The table to the right shows the class sizes that were used to create optimal and maximum capacity figures.

Floor plans for each school were provided by the district. The floor plans detailed the room layouts, square footage, and most updated room use. These floor plans were studied and used in preparation for meetings with the district to visit schools.

Cropper visited the district in July to meet with each building's principal and discuss their school. During these meetings, the principal or district staff provided valuable information regarding historical uses of the buildings. **Cropper** walked through each building with the principal to get an understanding of the building layout, various room sizes, uses, and limitations.

Grade Cohort	Optimal Class Sizes	Maximum Class Sizes
KG-2	17	20
3-4	17	21
5-6	18	23
7-8	18	24
Sp. Ed*	10	10

*Note: Special Ed rooms for elementary schools were not included in capacity totals.

This part of the process is critical because it helps to confirm and validate the use of classroom spaces. It is not uncommon to see space that could be used as classroom but may currently not be utilized as a classroom because there isn't a demand for the room. These spaces could be included in the total capacity for the building, as long as there are still adequate spaces available for special uses.

Cropper made sure to set aside special use rooms, which are not included in the capacity. Rooms not included in the capacity at the elementary level include Special Education (Pull-out/Resource rooms), Music, Art, Science, Spanish, Library, and Computer Labs. Computer labs are commonly housed inside of the libraries, but there were some computer lab rooms within the schools where principals indicated that it could serve as a regular classroom. Notes for each school and assumed changes to any room have been noted in later sections of the report.

Washburne's School capacity was calculated differently than the lower grade schools, because of the nature of how education is delivered at the upper grades. In elementary school, students mostly stay in their homeroom and the majority of classes are taught in homeroom. At the middle school levels (grades 7-8), students migrate from room to room based on their class schedule. For Washburne, rooms were allocated and given the appropriate class size ratios as mentioned previously. Rooms that were used primarily for Special Education were given a smaller class size ratio of 10 students per classroom. There were two rooms within the Washburne building that were very small (less than 500 square feet), and these were not included in the capacity. Again, detailed notes for each building can be found later in the report.

The floor plans were evaluated for each building and capacities were calculated based on the number of rooms counted. Principals often indicated rooms that were either used differently than the floor plans, or some rooms were not in use at all during the prior school year. If there was a room on the floor plan that was designated as a special use room but the principal expressed that it could technically serve as a classroom, it was included in the capacity. These rooms were included in capacity only if it was specified by the principal, or if there was adequate space to relocate the room's program elsewhere in the building. Any specific notes or assumptions were documented and are listed in the following section.

BUILDING NOTES AND ASSUMPTIONS

The following tables detail the specific room use assumptions and building notes that were taken during the school visits. These indicate if rooms that were assumed to be removed and/or added into the capacity based on observations and discussions with the principal and/or district administrators.

Some rooms were added back into the regular classroom counts if the principal had indicated that it could serve as a classroom, or if there were a still an adequate number of specialty rooms if the school had less than what is in use. All three elementary schools still have 6-7 specialty rooms with the following building assumptions.

Crow Island Elementary School
Portable units not included in capacity
Room 18a not counted in capacity, because of very low ceiling
Room 014 (Pioneer Room) not included in capacity, nor is it counted as a specialty room.
Room 115 is counted as Music room (used in 2016-17 as a 3rd grade room).
Specialty rooms include 1 Science, 2 Art/Music, 1 Spanish, 3 Special Ed/Resource

Crow Island has 7 specialty rooms but this does not include the use of room 18a, which is currently used for instructional use and could be used if needed. The Pioneer room, which is a room that is built to look like a historic log cabin, is not counted as a specialty or a classroom. Also, room 115 is the Music room, but is being used for 3rd grade in 2016-17. This room is not counted in the capacity but is assumed to serve as a specialty room.

Greeley Elementary School
Room 220 is undersized room, and not counted in capacity. It is used as resource/pull out room, but not included in the room allocation
One specialty room on 1st floor counted as KG classroom, but could be used for any grade.
Specialty rooms include 1 Music, 1 Art, 3 Special Ed/Resource, 1 Spanish, 1 Literacy Library/ELL

Greeley has 7 specialty rooms counted. There are currently 4 resource rooms at Greeley, but the school could operate with 1 less resource room (3 Special Ed / Resource) without any adverse effects on the educational programming.

Hubbard Woods Elementary School
Room 141 is a classroom that is used as a conference room. This room was included as a 3rd grade classroom, but it could serve any grade level needed
Room 112 counted as 1st grade room (currently Special Ed)
Music counted in room 007 (currently indoor project / play space)
Room 130 counted as 1st grade room (currently Music)
Specialty rooms include 1 Science, 1 Music, 1 Art, 2 Special Ed/Resource, 1 Spanish

Hubbard Woods has 6 total specialty rooms counted. Some of the room uses have been assumed to change per conversations with the principal and administration.

Skokie School
10 Rooms each allocated for 5th and 6th grades
Room 164 is standard sized room and is counted as classroom (used as resource currently)
Room 130 is unused computer lab, which is counted as classroom
Room 132e is undersized, and was not counted in the capacity. Could be used for Resource / Pull-Out.
Room 136 is used for French but counted as standard classroom, with space still available in building for French program

Skokie School had 3 rooms, which are currently used as resource, added back as classrooms. This was per conversations with the principal during building walk-throughs.

Washburne School
38 regular sized classrooms included in counts
Room E233 (Dance Studio) counted as classroom
Room 211A (computer lab) counted as classroom
Rooms 301 and 303 are unused TV studio space, and are counted as one classroom
6 total Special Ed rooms in counts @ 10 per room
Total rooms included in capacity count are 41 total full size rooms and 6 Special Ed rooms
2 rooms (S208 and S212) are too small for classrooms, and were not counted.

Washburne has a few spaces that were counted in the classroom capacity. Three formerly specialty rooms were added back into the capacity. Per conversations with the building administrators, these rooms were either not in use or rarely used.

OPTIMAL CAPACITY CALCULATIONS

As mentioned before, the low end of the District 36 class size guidelines were referenced to create the optimal capacities of the buildings. Keep in mind that, as students enroll in schools, class sizes do not come in perfectly even packages. Each class size varies from year to year, and it is not uncommon to have a few grade levels with larger class sizes than the others. This is often referred to as a ‘bubble’ in enrollment. School administrators need to adjust staffing and room uses to account for the variations in class sizes from year to year. The optimal capacity calculation assumes the smaller class size, which allows for the school to handle larger class sizes if/when they move through a school.

Optimal Class Sizes	
KG-2	17
3-4	17
5-6	18
7-8	18
Sp. Ed*	10

The table to the right shows the class sizes referenced to create the optimal capacities for the schools. Special Education spaces were not counted in elementary schools because of the way special education services are delivered. Students who require additional help are given individual instruction outside of the classroom, and teachers need spaces to work with either a smaller group of students or individual students (often called Resource/Pull-out). These rooms are not counted in the classroom capacity of elementary schools.

*Note: Special Ed rooms for elementary schools were not included in capacity totals.

Washburne does have 6 rooms that are used for Special Education, but these students are higher grade levels (7-8 grades) and are in the rooms on a more continual basis. Therefore, Washburne’s Special Education rooms were given a count of 10 students per classroom.

The table below depicts the classroom count per building along with the total calculated optimal capacity.

Winnetka School District 36, Illinois : Optimal Capacity Calculations									
School	Classrooms							Total Classroom Capacity	Music / Art / Labs
	Grades Served	Grade KG-2 Classrooms	Grade 3-4 Classrooms	Grade 5-6 Classrooms	Grade 7-8 Classrooms	Special Education	Total Classrooms		
Crow Island	K-4	10	8			3	21	306	3
Greeley	K-4	9	7			3	19	272	4
Hubbard Woods	K-4	9	7			2	18	272	4
Skokie	5-6			23			23	414	15
Washburne	7-8				41	6	47	798	
Total		28	22	23	41	14	128	2,062	26

Note: Special Education spaces not included in capacity total for any school except Washburne.

As indicated previously, these capacity calculations set aside special use rooms such as Special Education (Resource / Pull-Out), Music, Art, Library, and Computer Labs. These rooms are not counted in the capacity (with the exception of self-contained Special Ed at Washburne, which factors 10 per room). Any assumption for a building that falls outside of these rules are stated in the building notes on the prior page.

During interviews with the principals, one of the questions asked is “How many students do you think can fit in this building?” After calculating the capacities and reviewing the results, it appears that the capacity totals only vary slightly from what the principals estimated the capacity of their buildings to be.

MAXIMUM CAPACITY CALCULATIONS

In order to calculate a 'maximum' capacity for each school, the high end of the District 36 class size guidelines were referenced. If the school is filled to the maximum capacity, the district should not assume that the school buildings will be able to operate in the same way as they currently do. As mentioned in the optimal capacity section, each class size varies from year to year, and it is not uncommon to have a few grade levels with larger class sizes than the others. If a school is at maximum capacity, it is very likely that some grade cohorts could be larger than the maximum class size guideline. This could result in the need to take measures to relieve overcrowding.

Maximum Class Sizes	
KG-2	20
3-4	21
5-6	23
7-8	24
Sp. Ed*	10

The table to the right shows the class sizes referenced to create the maximum capacities for the schools. For the maximum capacity figures, special education spaces are still not counted in elementary schools because of the way Special Education services are delivered. Students who require additional help are given individual instruction outside of the classroom, and teachers need spaces to work with either a smaller group of students or individual students. These rooms are not counted in the maximum classroom capacity of elementary schools.

*Note: Special Ed rooms for elementary schools were not included in capacity totals.

Washburne does have 6 rooms that are used for Special Education, but these students are higher grade levels (7-8 grades) and are in the rooms on a more continual basis. Therefore, Washburne's Special Education rooms were given a count of 10 students per classroom. The Special Ed class size assumptions do not change between the optimal and maximum capacity figures.

The table below depicts the classroom count per building along with the total calculated maximum capacity.

Winnetka School District 36, Illinois : Maximum Capacity Calculations									
School	Classrooms							Total Classroom Capacity	Music/ Art / Labs
	Grades Served	Grade KG-2 Classrooms	Grade 3-4 Classrooms	Grade 5-6 Classrooms	Grade 7-8 Classrooms	Special Education	Total Classrooms		
Crow Island	K-4	10	8			3	21	368	3
Greeley	K-4	9	7			3	19	327	4
Hubbard Woods	K-4	9	7			2	18	327	4
Skokie	5-6			23			23	529	15
Washburne	7-8				41	6	47	1044	
Total		28	22	23	41	14	128	2,595	26

Note: Special Education spaces not included in capacity total for any school except Washburne.

As indicated previously, these maximum capacity calculations still set aside special use rooms such as Special Education, Music, Art, Library, and Computer Labs. These rooms are not counted in the capacity (with the exception of self-contained Special Education at Washburne, which factors 10 students per room). Any assumption for a building that falls outside of these rules are stated in the building notes on the prior page.

CAPACITY STUDY SUMMARY

The table below provides a summary of the optimal and maximum capacity for the Winnetka District 36 schools. In order to continue to provide the quality of education that the district serves, it is recommended that the district reference the optimal capacity as much as possible. The optimal capacity figure allows for more flexibility as uneven class sizes move through the system. The building could hold more than the optimal capacity states because it is using the low end of the class size goals set by the district.

On the other hand, the district should be mindful of a school that is approaching the maximum capacity figure. If a school is at the maximum capacity, class sizes would be maxed. As more students are placed in a building, it requires more attention by administration to manage facility utilization.

The district should focus on operating the schools somewhere between the optimal and maximum capacity range, and attempt to stay closer to the optimal figures.

Winnetka School District 36, Illinois : Capacity Summary					
School	Grades Served	Total Classrooms	Pull-Out / Music / Art / Labs	Optimal Capacity	Maximum Capacity
Crow Island	K-4	18	6	306	368
Greeley	K-4	16	7	272	327
Hubbard Woods	K-4	16	6	272	327
Skokie	5-6	23	15	414	529
Washburne	7-8	47		798	1044
Total		120	34	2,062	2,595

MAXIMUM CAPACITY UTILIZATION ASSESSMENT (USING MAXIMUM CLASS SIZE)

The utilization percentage of a school can be found by dividing the enrollment by the capacity, or the formula is:

Utilization = Enrollment / Capacity

An assessment of the Winnetka District 36 school's utilization has been performed using the calculated capacities along with the forecasted enrollment per the 2016 Demographic Study. The 2016 forecast results by grade cohort are as follows:

Winnetka District 36: Total District Forecasted Enrollment

	Maximum Capacity	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Total: K-4	1022	913	906	926	894	867	849	851	847	816	815	819	812	802	786	774
Total: 5-6	529	404	440	430	439	418	395	382	363	390	386	360	367	370	372	370
Total: 7-8	1044	462	455	423	441	437	450	427	402	389	370	401	400	373	381	385
Total: K-8	2595	1779	1801	1779	1774	1722	1694	1660	1612	1595	1571	1580	1579	1545	1539	1529

Note: Green cells (2016-17 and earlier) are historic data. Blue cells (2017-18 and later) are forecasted years

The table below shows the utilization, or percent full, of spaces based on the existing school grade cohorts. There is a utilization factored for the entire K-4 cohort (elementary schools), 5-6 grades (Skokie School), and 7-8 grades (Washburne School).

The table's cells are color coded based on utilization in terms of maximum capacity, and a color key can be seen to the right. Anything below 70% is shaded blue, between 70-89% is yellow, 90-99% is orange, and over 100% is red.

Below 70% utilization
Between 70-89% utilization
Between 90-99% utilization
100% utilization or higher

This table shows that, as a whole, schools used to educate K-4 grade students have been utilizing over 80% of the space in the schools historically (in terms of maximum capacity). The K-4 school utilization is forecasted to decline to the high-70% range at the end of the forecast, which will provide overall capacity relief in time. The Skokie School, serving 5-6 grades, is forecasted to mostly operate in the 70% range of utilization through the life of the forecast, and utilization will decrease as forecasted enrollment declines. Washburne School, serving 7-8 grades, has historically operated under capacity, and will continue to operate in the low 40% to high 30% utilization range through the life of the forecast. Again, these utilization rates are in relation to maximum capacity of the schools.

Winnetka District 36: Forecasted Utilization

Config	Maximum Capacity	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Total: K-4	1022	89%	89%	91%	87%	85%	83%	83%	83%	80%	80%	80%	79%	78%	77%	76%
Total: 5-6	529	76%	83%	81%	83%	79%	75%	72%	69%	74%	73%	68%	69%	70%	70%	70%
Total: 7-8	1044	44%	44%	41%	42%	42%	43%	41%	39%	37%	35%	38%	38%	36%	36%	37%
Total: K-8	2595	69%	69%	69%	68%	66%	65%	64%	62%	63%	61%	61%	61%	60%	60%	59%

The table below depicts the individual school level utilization forecast (using the Final 2016 Demographic Study results and maximum capacity figures). The same color code schema was used on this table as the prior table. Crow Island Elementary School is the only K-4 school over 100% maximum utilization, and this school is forecasted to remain above 100% until 2020-21. Greeley Elementary is operating at 69% utilization (2016-17) and is forecasted to go down to 63% utilization range at the end of the forecast. Hubbard Woods is operating at 75% in 2016-17, and is forecasted to go up to 80% before it levels back to 73% by 2025-26. Skokie is operating at 75% of maximum capacity in 2016-17, and forecasted to be 70% at the end of the forecast. Washburne remains in the low 40% to high 30% maximum capacity range through the forecast.

Utilization Forecast by School (2016-17 grade cohorts)

School Name	Maximum Capacity	Grade Config		2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Crow Island Elementary	368	K-4	Enrollment	342	348	370	385	385	381	375	368	345	346	347	344	340	335	331
			Utilization	93%	95%	101%	105%	105%	104%	104%	102%	100%	94%	94%	94%	93%	92%	91%
Greeley Elementary	327	K-4	Enrollment	279	271	279	266	241	224	228	227	211	213	215	213	211	207	205
			Utilization	85%	83%	85%	81%	74%	69%	69%	70%	69%	65%	65%	66%	65%	65%	63%
Hubbard Woods Elementary	327	K-4	Enrollment	292	287	277	243	241	244	248	252	260	256	257	255	251	244	238
			Utilization	89%	88%	85%	74%	74%	75%	76%	77%	80%	78%	79%	78%	77%	75%	73%
Skokie School	529	5-6	Enrollment	404	440	430	439	418	395	382	363	390	386	360	367	370	372	370
			Utilization	76%	83%	81%	83%	79%	75%	72%	69%	74%	73%	68%	69%	70%	70%	70%
Washburne School	1044	7-8	Enrollment	462	455	423	441	437	450	427	402	389	370	401	400	373	381	385
			Utilization	44%	44%	41%	42%	42%	43%	41%	39%	37%	35%	38%	38%	36%	36%	37%

OPTIMAL CAPACITY UTILIZATION ASSESSMENT (USING MINIMUM CLASS SIZE)

This document is intended to serve as a supplement to the 'Capacity and Utilization Study' report, which was presented to the School Board on August 16, 2016. This supplement examines utilization in terms of 'optimal capacity', where the primary document provided analysis in terms of maximum capacity.

An assessment of the Winnetka District 36 school's utilization (optimal) has been performed using the calculated optimal capacities along with the forecasted enrollment per the 2016 Demographic Study. The 2016 forecast results by grade cohort are as follows:

Winnetka District 36: Total District Forecasted Enrollment

	Optimal Capacity	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Total: K-4	850	913	906	926	894	867	849	851	847	816	815	819	812	802	786	774
Total: 5-6	414	404	440	430	439	418	395	382	363	390	386	360	367	370	372	370
Total: 7-8	798	462	455	423	441	437	450	427	402	389	370	401	400	373	381	385
Total: K-8	2062	1779	1801	1779	1774	1722	1694	1660	1612	1595	1571	1580	1579	1545	1539	1529

Note: Green cells (2016-17 and earlier) are historic data. Blue cells (2017-18 and later) are forecasted years

The table below shows the utilization, or percent full, of spaces based on the existing school grade cohorts. There is a utilization factored for the entire K-4 cohort (elementary schools), 5-6 grades (Skokie School), and 7-8 grades (Washburne School).

Below 70% utilization
Between 70-89% utilization
Between 90-99% utilization
Between 100-109% utilization
110% utilization or higher

The table's cells are color-coded differently than the maximum utilization assessment. The reason is that near 100% of the optimal means the school is at the optimal rate. Because of this, the color scale was set around having near 100% be the target (i.e. yellow). The color key for the optimal utilization tables can be seen to the right. Anything below 70% is shaded blue, between 70-89% is green, 90-99% is yellow, between 100-109% is orange, and over 110% utilization is shown as red.

This table shows that, as a whole, schools used to educate K-4 grade students have been operating close to the optimal utilization in the schools historically (in terms of optimal capacity). The Skokie School, serving 5-6 grades, is forecasted to operate near the optimal range of utilization (i.e. yellow/green) through the life of the forecast. Washburne School, serving 7-8 grades, has historically operated under capacity, and will continue to operate at the lower end of the utilization range through the life of the forecast.

Winnetka District 36: Forecasted Utilization

Config	Optimal Capacity	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Total: K-4	850	107%	107%	109%	105%	102%	100%	100%	100%	96%	96%	96%	96%	94%	92%	91%
Total: 5-6	414	98%	106%	104%	106%	101%	95%	92%	88%	94%	93%	87%	89%	89%	90%	89%
Total: 7-8	798	58%	57%	53%	55%	55%	56%	54%	50%	49%	46%	50%	50%	47%	48%	48%
Total: K-8	2062	86%	87%	86%	86%	84%	82%	81%	78%	77%	76%	76%	77%	75%	75%	74%

The table below depicts the individual school level utilization forecast (using the Final 2016 Demographic Study results and optimal capacity figures). The same color code schema was used on this table as the prior table. Crow Island Elementary School is the only K-4 school over 110% of the optimal utilization, and this school is forecasted to remain above 110% until the last two years of the forecast. Greeley Elementary School is mostly forecasted to operate in the high to mid-70% utilization range (optimal), and Hubbard Woods Elementary School is operating in the low 90% range of optimal utilization for most of the forecast. The Skokie School, serving 5-6 grades, is forecasted to operate within the optimal range of utilization (i.e. yellow/green) through the life of the forecast. Washburne School, serving 7-8 grades, has historically operated under capacity, and will continue to operate at the lower end of the utilization range through the life of the forecast.

Utilization Forecast by School (2016-17 grade cohorts)

School Name	Optimal Capacity	Grade Config		2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Crow Island Elementary	306	K-4	Enrollment	342	348	370	385	385	381	375	368	345	346	347	344	340	335	331
			Utilization	112%	114%	121%	126%	126%	125%	123%	120%	113%	113%	113%	113%	112%	111%	109%
Greeley Elementary	272	K-4	Enrollment	279	271	279	266	241	224	228	227	211	213	215	213	211	207	205
			Utilization	103%	100%	103%	98%	89%	82%	84%	83%	78%	78%	79%	78%	78%	76%	75%
Hubbard Woods Elementary	272	K-4	Enrollment	292	287	277	243	241	244	248	252	260	256	257	255	251	244	238
			Utilization	107%	106%	102%	89%	89%	90%	91%	93%	96%	94%	94%	94%	92%	90%	88%
Skokie School	414	5-6	Enrollment	404	440	430	439	418	395	382	363	390	386	360	367	370	372	370
			Utilization	98%	106%	104%	106%	101%	95%	92%	88%	94%	93%	87%	89%	89%	90%	89%
Washburne School	798	7-8	Enrollment	462	455	423	441	437	450	427	402	389	370	401	400	373	381	385
			Utilization	58%	57%	53%	55%	55%	56%	54%	50%	49%	46%	50%	50%	47%	48%	48%