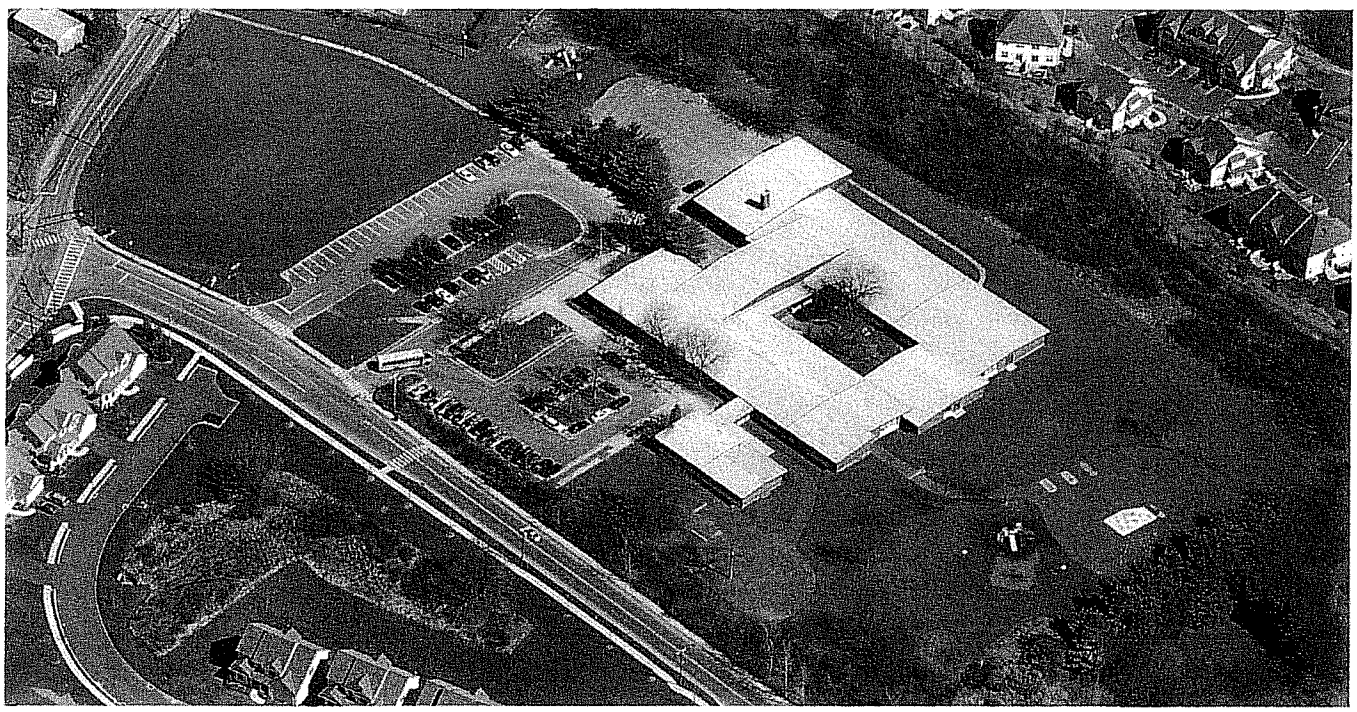
FULLER
D'ANGELO
P.C.

ARCHITECTS
PLANNERS

CITY OF DANBURY
FACILITY PLANNING STUDY FOR
ELEMENTARY SCHOOL ADDITION

SHELTER ROCK ELEMENTARY SCHOOL
2 CROW'S NEST LANE, DANBURY, CT 06810



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City Engineer: Farid Khouri, PE
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SECTION 1. PROJECT OVERVIEW
EXECUTIVE SUMMARY

INTRODUCTION:

Shelter Rock Elementary School is located on 2 Crow's Nest Lane on the south east side of downtown Danbury. The school sits in a suburban setting.

Shelter Rock Elementary School is located at the intersections of Shelter Rock Road and Crow's Nest Lane. The main drive entrance is on 2 Crow's Next Lane. The property sits just south east of downtown Danbury. The site totals 11.42 acres and the school property has two larger field areas, one to the north-west and one to the south east of the school building.

Shelter Rock Elementary School was originally constructed in 1964. It consists of a one story building of square shape with a central courtyard. The gymnasium structure sits to the north and a kindergarten wing sits to the south-west of the main building. All structures are attached.

The school had an addition in 1972 namely the Kindergarten Wing.

The Cafeteria is to the north-west of the square and the Media Center to the south-east of the courtyard opening. Further modifications were made to this school providing new ceilings and lighting upgrades over the years.

The building consists of 47,490 square feet, and the exterior overhang area at the front entrance of the school increases its footprint size to 47,890 sq. ft.

Our firm is not aware of any prior feasibility studies for other additional construction.

Mission Statement:

Our Mission at Shelter Rock Elementary School, a partnership of school, family and community, is to foster a safe, positive and supportive learning environment that will empower our students to become responsible lifelong learners in an ever-changing global society.

School Strengths:

- ✓ *Collaborative and Supportive Team Effort*
- ✓ *Excellent Parental Involvement*
- ✓ *Involved and Committed Students*
- ✓ *On-Going Professional Learning for Staff to Implement Best Practices*

Challenges:

Meeting NCLB A YP Yearly Targets. This year 89% in Reading; 91% in Math. Implementing Effective Strategies to help the 20% of our student population who are not achieving at proficiency levels. Many of the 20% seem to be complacent, lack motivation, have poor study habits and some do not envision themselves to be successful.

Shelter Rock Elementary Schools has two sister schools and since Shelter Rock has more land than the other sister schools and an easier logistically correct building areas and a capacity to expand parking , it has been chosen by Danbury for an addition.

The overall enrollment will include some students from sister school increased counts.

The two sister Elementary Schools are South Street and Ellsworth.

Current Student Enrollment is 431 and the Danbury anticipated enrollment is 550, requiring an addition of five classrooms and supporting facilities, including but not limited to toilets, janitor closets, mechanical spaces and other standard support areas for proper educational facilities.

It does not appear that setbacks on the property will impede any building additions, as the building sits towards the center of the site, however, project constraints are topographical as the southern side of the site raises approximately twelve feet in elevation and a tarmac playground and play-sets sit atop this site knoll. Other project restraints include existing site storm water and neighborhood storm water lines.

Our understanding of the Danbury program is that five classrooms are required in order to fulfill a proper classroom balance for the necessary student increase in population. As per the attached plans in Section **2** of this report, you can find the existing classroom plan and current space program names. The selected proposed classroom placement is to the south side of the existing building and allows for another courtyard to be attained along with a circular student flow corridor for ease of access to adjacent spaces.

In the attached Minutes in the appendix portion of the report can be found the comparison of enrollment data. The student enrollment data calls for the increase of 119 students.

Development of the Educational Program in the recommended solution is being enhanced in several ways.

Firstly the adjacencies of the lower grades are being consolidated into the new addition and adjacent classrooms on the south side of the site. The Kindergarten K rooms shall have an inner secured playground area accessible from many K rooms directly. Also, a Cafeteria expansion is required for the building in order to maintain its current three-periods of lunch. A fourth lunch period is an option to an expansion of same, and the Cafeteria is being listed as an Alternate. The existing combination Media Center and Computer Room will be maintained as-is.

Site Selection for the addition included two different site areas, Area A and Area B. Area A has more positive attributes in that the area is adjacent to the current Kindergarten wing and allows for better Kindergarten adjacencies along with expansion of lower grades, per the Shelter Rock existing program and new program chart. Being a single story addition, no handicapped accessible issues are encountered for the need of an elevator or a lift. Also, the land in area A is flatter in topography than that in Area B.

Our understanding of the schedule from Danbury Engineering and the Board of Education is that it will take approximately one year to obtain City/State approvals, one year for design and City/State approvals, and another year for construction. The first step are for EDO-49's to be approved and submitted by the City and filed with the State to allow the Bureau of School Facilities (BSF) to register the proposed expenditure with the State.

The budget for this Concept C addition and other expansions and improvements is based on the following design parameters:

A new classroom wing	9,450 sq. ft.
A new Cafeteria addition (ALT)	900 sq. ft.
Re-distribution of classrooms	
Revised site work improvements and playground adjustments	
A revised bus and car traffic pattern and circulation on the site (ALT)	
Roadway reconfiguration and additional parking (ALT)	

(ALT)= A bidding Alternate to the project to assist in controlling overall project costs.

Additionally the cost estimate includes hard and soft costs, alternates are included under the base costs.

The Hard Costs include material and labor escalations to mid-point of construction duration dates and project contingencies.

The contingency figure includes fees, project development costs, surveys, borings, bonding costs, FFE, IT, Legal and other standard items.

The soft costs include A/E/Hazmat fees, special consultants, project development costs, escalation, and a contingency figure.

Conceptual Base Project Budget:

Hard Cost Total:	$ 3,394,966
Soft Cost Total:	$ 950,590
Project Total:	$ 4,345,556

This project will be submitted for BSF reimbursement at the City of Danbury rate of approximately 53%. If the State reimbursement is attained in full, the base work cost to the City of Danbury for this project alone should be $2,042,411.

Land Use Approvals for the City of Danbury will be as per their standards. This project will be filed with the Bureau of School Facilities in Hartford.

Community use of the fields to the north-west is heavy after school hours and mostly on weekends. Parking in this area shall be expanded in order to better facilitate community ease of use of these fields. A slight intrusion into the fields will be required in order to expand the parking count to its requirements. The addition placement and its construction logistics will provide some impact on the existing building, however, will be contained in Concept A with a lesser impact than in Concept B.

Currently Information Technology (IT) in the building includes various Smart Board technologies and a Computer Room as part of the Media Center. We understand that this Smart Board technology will continue to move through and be incorporated into the new building. This is of course the same with the PA and telephone systems.

Security in schools is also very important. This building placement in Area C creates another inner courtyard for the lowest grade students to play an exercise during the day.

Flexibility of Design has also been considered and it should be noted that, with the expansion being provided in Area A, in the future the Area B plan can be attached to area A and further increase the capacity by an additional three classrooms. The corridors being placed are not dead-ended by classroom structures, however, can simply be extended and further create another student circulation loop and another courtyard to the south-east of the building. See Concept B.

Furniture, Fixtures and Equipment (FF&E) for the Kindergarten and the standard new classrooms are anticipated to be included in the interior build-out of the addition. Existing furniture would be used in the remainder of the School.

The Architects' main thrust for the site circulation is to separate bus and car traffic as much as possible. In the current configuration, a perimeter road around the entire school is not being proposed. It should be noted that the main loop in front of the Kindergarten and main entrance area would be for busses and the longer circulation drive on the north-west side of the school ending near the Cafeteria would be for parent drop-off and pick-up. The parking lot could be used for parent pick-up queuing.

The Shelter Rock Elementary School addition was programmed along with the City of Danbury and Danbury Board of Education. The classroom counts and adjacencies of new spaces have been agreed to by the parties. The Administration and also a building school Principal reviewed and confirmation of spaces, size of additions to be completed. Initial conceptual cost estimates have been reviewed by the City. Final estimates are attached to this report.

DESIGN PROCESS AND SCHOOL PROFILE:

In the design process, our firm reviewed site, utility and building constraints of the project. The enrollment increase, logistics of construction and adjacencies were a controlling factor in the proper design of the school addition. The addition requires to be constructed while school is in session as it cannot be completed in one summer. Various meetings were held with various City personnel, the Board of Education (BOE) Assistant Superintendent, Board of Education personnel, the school Principal and others. All understand this impact. Again, the logistics of the site selection attempts to keep the disruption to the educational process to a minimum. Minutes of these meetings can be found in the Appendix of this report, and all discussions were open to one another so in order to create a positive and streamlined creative and inclusive concept design process.

The below parties have conceived, reviewed and compared various new building areas, enrollment and project size, and a consensus was reached to construct the new five classroom building in area "A". The resulting design concept can be found in plan format after this section.

PROJECT TEAM:

City:	
Director of Public Works	Antonio Iadarola
City Engineer	Farid Khouri
City Construction Engineer	Thomas Hughes
Public Buildings Superintendent	Richard Palanzo
Danbury Public Schools:	
Assistant Superintendent	Dr. Bill Glass
Shelter Rock ES Principal	Ms. Julia Horne
Design Team – Fuller and D'Angelo, PC:	
Lead Architectural Principal	Joseph Fuller AIA
Chief Designer	Said Zomorrodian
Project Architect	Frank DiFato RA
Engineers	
Lead Engineering Principal	Ryan Malin PE
Mechanical Engineer	Joseph Macaluso, PE
Electrical Engineer	Fred Michelson, PE

CREATING THE CONCEPT DESIGN:

The programming and planning of the project started with the site containing an existing school building. The positioning and fabric of the facility as it stands is the fundamental element in the design of a school addition. The process of design from this point involves Danbury's sister school concept with a projection of increased enrollment as noted by the Administration. This was derived from enrollment projections with then sister school facility enrollments factored into the addition sizes and numbers of classes requested. A net to gross factor was added.

The process included enrollment discussions; planning concepts, student flow criteria, and size of the addition agreements between all parties were made. Economy costs were factors.

The resultant solution marries all of the above factors of concept design to meet the District's goals and budgets, while also planning for the future with an expandable building concept.

A. The design team reviewed the school sites and then met with the educators and City to confirm information and gather proper data, which can be found in the appendix. Data as a summary is included within this section, including existing and new program requirements. Objectives were determined and discussed as was the survey as provided by the City for the property.

The spaces include basic Danbury Elementary School required classes, along with a dedicated Art Room and Music spaces agreed to continue in the Cafeteria/ Auditorium.

B. The planning criteria were analyzed and evaluated by the Architectural team and a concept for the Shelter Rock Elementary School addition was constructed in two different areas. These concept areas create talking points with the stakeholders. The input received pointed all parties to the most proper design solution in Area A.

SUMMARY OF DISCUSSIONS:

C. The program, as reflected in the Shelter Rock Elementary School chart conveys the existing requirements and also the proposed requirements for each additional space identified. This is the basis of design of the addition. The discussions can be found in detail in the Appendix in the Minutes of Meetings.

Adjacencies were closely discussed particularly as to how they can better the educational program and also deliver an environment for the children, administrators and staff within the facility to better respond to educational issues.

SPACE PROGRAM REQUIREMENTS:

D. Space program requirements were discussed again with the Administration and the City with regard to required new spaces. This is based on the City and Administration review of the demographic studies, their sister school enrollment increases, and the City's plan as to which students from sister schools that shall also attend Shelter Rock ES.

Educational Facility design guidelines need to be considered during the schematic, design development and construction document phases of this upcoming project. The current final program, as received from Danbury, includes twenty-five students per classroom occupancy and conforms to an educational specification with separate Art Rooms and Music Space in the Cafeteria/Auditorium within the school. This is a maximum style program design, as was noted to Danbury by the Architect.

E. The final program and design concepts derived several different build areas. With the City of Danbury input, the design team was able to evaluate the best building area with regard to site logistics, ease of construction and least disruption of the educational program while also addressing site restrictions, zoning, circulation, increase of parking count and utilities which shall be required with the new building addition. All items noted were considered in the concept design.

The Architects reviewed each of the options with the Administrators and the City for their review and comment, and one option came to the forefront.

F. The next step was costing and budgeting for the design solution. Concept plans were derived for the building addition in Area A and submitted to Construction Program Solutions (CPS) for professional cost estimating of educational facilities.

Stuart Schiller then provided take-offs and analyzed with the Architect's items including the quality of materials for construction, and provided final budget estimates based on the scope of work reflected for the addition. Also, the Cafeteria Extension and Parking/ new Drop offs with related site work was included in the cost estimates, however as an alternate, due to overall costs of the project.

G. Danbury and Board of Education seeking budget approval after a PowerPoint slide presentation is made by the Architects.

H. The Board of Education shall be required to approve this feasibility report and authorize the Superintendent's office to submit the Grant Application to the State of Connecticut Bureau of School Facilities in Hartford to commence this project.

MISSION STATEMENT:

Our Mission at Shelter Rock Elementary School, a partnership of school, family and community, is to foster a safe, positive and supportive learning environment that will empower our students to become responsible lifelong learners in an ever-changing global society.

School Strengths:

- ✓ *Collaborative and Supportive Team Efforts*
- ✓ *Excellent Parental involvement;*
- ✓ *Involved and Committed Students*
- ✓ *On-Going Professional Learning for Staff to Implement best practices"*

Challenges:

Meeting NCLB A YP Yearly Targets. This year 89% in Reading; 91% in Math.

Implementing Effective Strategies to help the 20% of our student population who are not achieving at proficiency levels. Many of the 20% seem to be complacent, lack motivation, have poor study habits and some do not envision themselves to be successful.

From School Website

SECTION 2: EXISTING BUILDING AND PROGRAM

Shelter Rock Elementary School was constructed in 1964 and received a building addition, planned in 1971 and constructed in 1972.

The school building faces Crow's Nest Lane to the south-west and Shelter Rock Road to the north-west. The north-east border is wooded and beyond is a condominium complex. Likewise, to the south-east there are also numerous trees and the condominium complex and a single family residence comprise the adjacency to the south-east property line boundary. Please see aerial photographs.

There is vehicular accessibility to the site from Crow's Next Lane, both an entrance and exit with two different wide curb cuts.

The building site on the south-east side is approximately twelve feet higher than the remainder of the site, which appears quite level. There are two athletic areas, one to the north-west and a playground area to the south-east of the current building. The parking area sits is located between the school and the athletic field to the north-western most part of the site. Also, an outdoor tarmac play area is adjacent to the gymnasium.

The original building was designed for educational use and the school's main entrance faces Crow's Nest Lane where a square-drive drop-off exists, which per Danbury shall be maintained.

The overall building area is currently 47,490 sq ft with 400 sq ft being a covered exterior entrance Portico near the main entrance of the building.

The building does not appear to have received any major project since its initial construction.

The school building currently has a Cafetorium including a stage and consists of 47,890 sq ft on the north-west side of the school. This area shall require expansion in order to maintain a three-classroom period lunch program.

The school appears fully handicapped accessible as it is maintained on a single level.

The most significant issues at Shelter Rock ES are the adequacies of the current program space, especially with the increase in enrollment. It has become necessary to creatively utilize many small existing spaces within the building including some rooms where there is current overlapping of program.

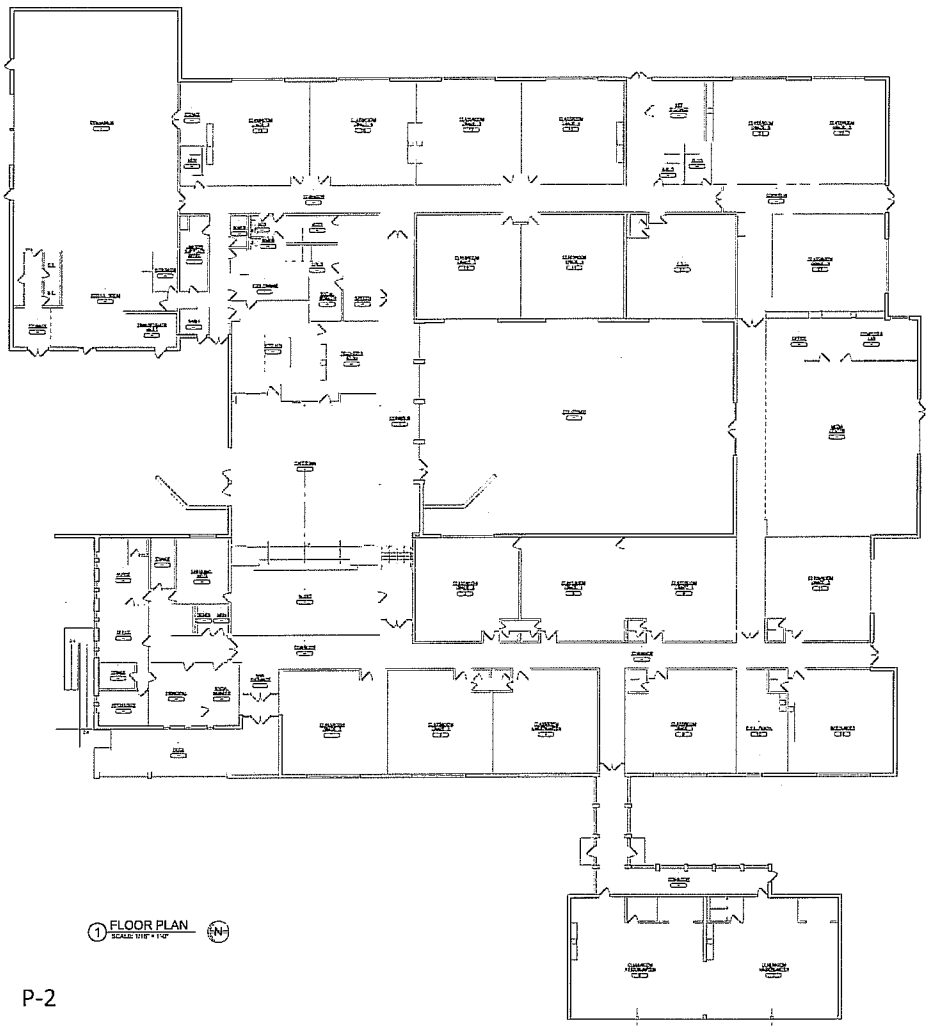
The existing program currently further lacks an Art Room and Music is held on the Auditorium stage.

It should be noted that all classrooms do have natural light. With an addition, the increase of student enrollment can be overcome and related program goals can be met, also with the new classrooms also having natural light. The existing Shelter Rock Elementary School program can be found below in Table P-1. Further, in order to relate the program to the existing plans, please find the existing Architectural floor plans in Table P-2.

Shelter Rock Elementary School

Existing Classroom Chart per grad	Existing
Grade	
K	3
1	3
2	4
3	3
4	3
5	3
Music	stage
Art	0
Lang. Art	1
Computer	1
Media	1
Gym	1
Cafeteria/ Auditorium	1
	24

P-1



1 FLOOR PLAN

P-2

BUILDING INFRASTRUCTURE OVERVIEW

Mechanical/Electrical/Plumbing for the Shelter Rock Elementary School were reviewed with the Architect and also AKF Engineers. As part of the conceptual feasibility requirement, AKF was asked to visually review the school's existing spaces and comment on the Mechanical/Electrical/Plumbing systems of the school to determine the impact of a proposed building addition of the school complex.

Information of the systems can be found below as well as a brief description of a conceptual scope of work for new Mechanical/Electrical/Plumbing systems for the addition.

1. Mechanical

Heating Plant: Two gas-fired steam boilers of 1709 MBH each. Boilers are in good condition. The capacity of each boiler with the proposed building addition is 74% of estimated full load and is sufficient for the planned addition. Heating is provided by perimeter hot water radiation. Hot water created by heat exchanger and pumps. Recommend new hot water loop including heat exchanger and pumps for proposed addition with piping to be run underground outside building to facilitate installation and minimize disruption.

Existing classroom ventilation is provided by exhaust. New classrooms should be provided with ventilation supply systems; recommend heat recovery type rooftop systems.

Currently there are no centrally air conditioned spaces. No additional air conditioning is planned.

Automatic control system is pneumatic and can be extended into the proposed addition.

2. Electrical

Electric Service: 800Amp rated at 208/120Volt, 3Phase, 4Wire, 60Hertz from an interior transformer vault on utility meter #89038387. Square-D service switchboard appears original consisting of a main circuit breaker, metering compartment, and circuit breaker distribution.

Electric Upgrade: The peak KW power demand over a 2year period will be required from Utility Company to determine available capacity in the service for the approximate 80KW of diversified load by the planned addition. Due to

age of switchboard, replacement is recommended. Subject to available service capacity, a 800 or 1200Amp service size is anticipated and a new exterior pad mount transformer typically is required by the Utility Company.

Intercom/Public Address: Bogen switch rack interfaced to the building telephone system with administrative desktop phones as the primary means for communications. Rack is an older generation, appears serviceable, and capable to support the planned addition with some upgrade to switching.

Clock: Lathem programmable master clock controller with synchronous or impulse signaling to hard-wired clocks. Controller is an older generation, system appears serviceable, and capable to support the planned addition with the aid of booster power supplies.

Fire Alarm: Simplex control panel with zoned peripheral smoke detectors, pull stations, audible/visual signals, and auxiliary devices for other systems. Panel is current, peripherals are old, system appears serviceable, and capable to support the planned addition with the aid of booster power supplies and additional controls. ADA compliance of the visual signals requires further evaluation with potential replacement and additions.

3. Plumbing

Water and sanitary Service: City water supply and sewer connection.

Domestic Hot Water: Primary; Storage tank with heat exchanger fed from boilers. Summer: Gas-fired independent water heater.

Gas service: Yankee Gas; meter outside of boiler room.

These services are sufficient to support the planned addition with no expansion of the kitchen.

SECTION 3. ENROLLMENT REVIEW
SHELTER ROCK ES ENROLLMENT PROJECTIONS

City of Danbury received a report dated November 21, 2011 from Peter M. Prowda, PhD, for Danbury Public Schools enrollments projected through 2021. After their review, they quickly reacted to the projections by requesting the Board of Education and other City personnel to come agreement on how the projected increase of students would be handled throughout. Our understanding is that a sister school concept was created and that three main elementary schools, all of which have more buildable areas and land than others, were selected as the primary sister, namely Park Avenue, Shelter Rock and Stadley Rough Elementary schools.

Shelter ES sister schools are South Street and Ellsworth.

The Figure 1 Chart below depicts Danbury enrollment and the State pattern.

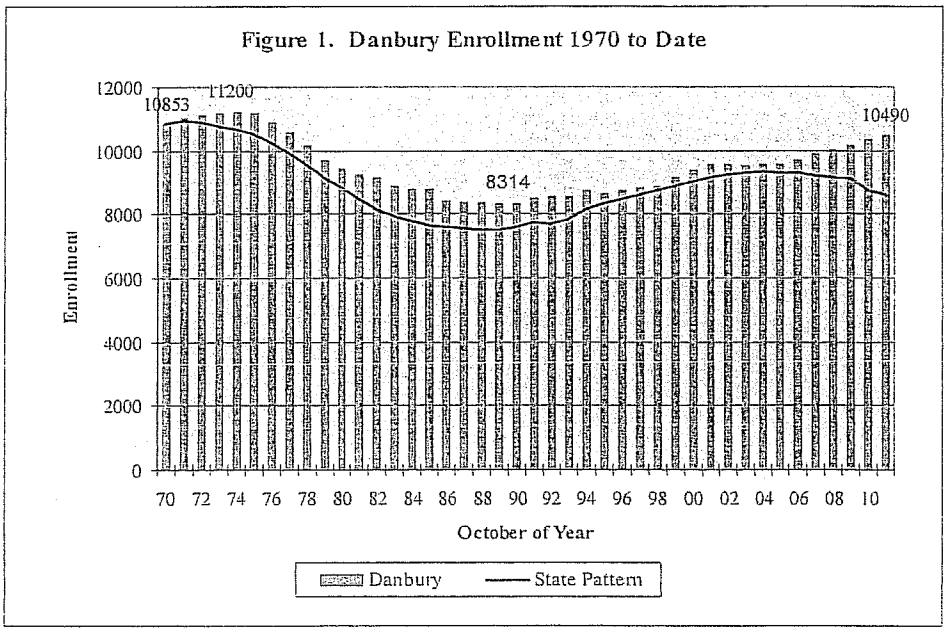


Figure 1

It is apparent as one views towards the right-hand side of the chart, that Danbury is exceeding State patterns. This is most probably due to the fair business and housing environment within Danbury during current economic times, with the tax base being

lower than adjacent towns and cities. Also with a higher rental property distribution, this increased enrollment conclusion appears easily evident.

Please see Figure 1 chart below which was extracted from the report. The report notes that the Danbury School Organization of K-5, 6-8 and 9-12 should be self-explanatory and the report includes 41 years of enrollment for a wide historical perspective. The report also includes its projection methods, total district enrollment, enrollment by Grade and other such valuable planning information.

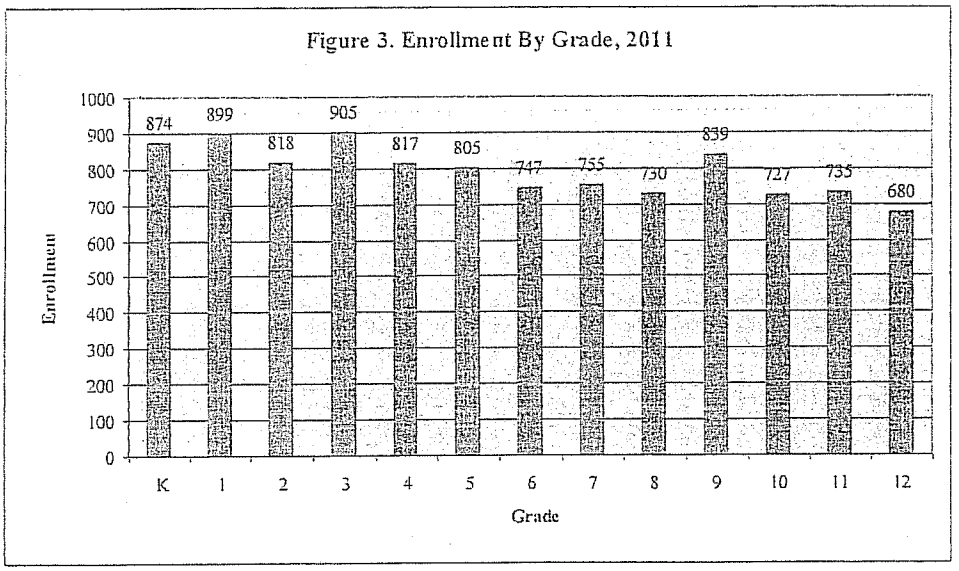


Figure 1

The City of Danbury, after analyzing this report, as well as the Board of Education, have slated Shelter Rock ES and the two sister, South Street and Ellsworth population increase of 119 students.

This is from the existing pupil enrollment of 431 to a projected pupil enrollment of 550.

In order to accomplish this, five new classrooms are being added, all within the new single building addition.

The existing student enrollment provides 111.11 sq ft per child and with the new concept building in place, the total area shall re-calculate and provide for 104 sq ft per student, all within the Pre-K and K, and Grades 1-4 of 120 student per sq ft maximum allowable square footage and in Grades 5 and 6, a 152 maximum allowable square

footage per person. One can find the construction space requirements below and in full in the Appendix of this report.

It appears with the above figure, the District should be allotted full reimbursement for its State Grant compilation purposes. Please see Chart 1 below.

State Space Specification for Reimbursement Purposes

Projected Enrollment	Grades				
	Pre-K and K	1 to 4	5 to 6	7 to 9	10 to 12
	Maximum Allowable Square Footage per Pupil				
0-350	124	124	156	180	194
351-750	120	120	152	176	190
751-1500	116	116	148	170	184
Over 1500	112	112	142	164	178

Chart 1

The full enrollment report can be found in the Appendix.

Shelter Rock ES

NOTES

1 - UNIT COST IN 2012 DOLLARS
2 - ESCALATION FACTOR OF 4% TO MIDPOINT OF CONSTRUCTION (APRIL 2014)
3 - ESTIMATING CONTINGENCY OF 15% TO BE REDUCED UPON DEVELOPMENT OF FINAL PROGRAM AND SCOPE
4 - SOFT COSTS OF 28% INCLUDES PROFESSIONAL FEES, INVESTIGATIONS AND TESTING, OWNER COSTS, FFE, CONTINGENCY, ETC.
5 - ELEMENTARY SCHOOL ROOF REPLACEMENT NOT INCLUDED.
6 - TRASNFORMER TO BE REMOVED FROM INTERIOR AND NEW TRANSFORMER INSTALLED AT EXTERIOR. ASSUMES ELECTRICAL SERVICE FEEDER AND CONDUITS TO BE RE-USED.

CONDITIONS AND QUALIFICATIONS

- THIS COST ESTIMATE IS BASED ON CONCEPTUAL SKETCHES PREPARED BY FULLER & D'ANGELO, P.C.
- BIDDING IS ASSUMED TO OCCUR IN SPRING 2013.
- CONSTRUCTION PERIOD IS ASSUMED TO BE JULY 2013 THROUGH DECEMBER 2014.
- PROJECT TO BE PUBLICLY BID WITH AT LEAST 5 BIDS RECEIVED FOR EACH PRIME CONTRACT.
- PREVAILING WAGE RATES APPLY
- NO COSTS ARE INCLUDED FOR OVERTIME/PREMIUM LABOR EXCEPT WHERE REQUIRED FOR "SWITCHOVER" OF MECHANICAL AND ELECTRICAL SYSTEMS.
- NO COSTS ARE INCLUDED FOR CONSTRUCTION OF TEMPORARY CLASSROOMS OR OTHER SPACES FOR PHASING.
- THE ESTIMATE DOES NOT ACCOUNT FOR UNUSUAL MARKET CONDITIONS SUCH AS LABOR AND/OR MATERIAL SHORTAGES, AVAILABILITY OF BIDDERS, INFLATION, AND O

SECTION 4. CONCEPTUAL DESIGN SOLUTION

Fuller and D'Angelo reviewed the existing Educational Program and after meetings and discussions with the City of Danbury, agreed to the size of the new building addition. See attached Existing/New Program Chart.

Shelter Rock Elementary School

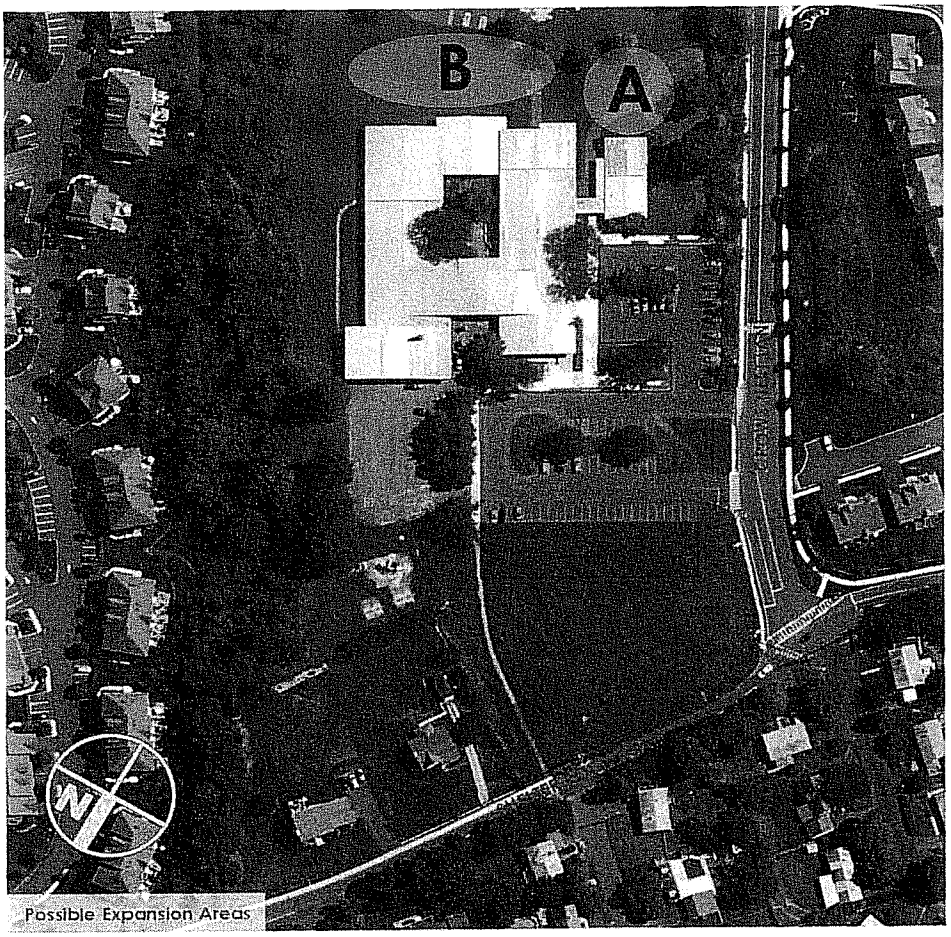
Classroom Chart per grade — Other School spaces remain the same.

Grade	Existing	New
K	3	4
1	3	4
2	4	4
3	3	4
4	3	4
5	3	4
Music	stage	stage
Art	0	0
Lang. Art	1	1
Computer	1	1
Media	1	1
Gym	1	1
Cafeteria/ Auditorium	1	1
	24	29

Final Program Chart

Once agreed upon, site selection became the next critical element in the design process. There are no notable wetlands areas on City maps and drainage around the current school appears satisfactory.

Various areas for the addition placement were reviewed, as can be seen on the possible expansion areas aerial photograph, namely area A and B. Both A and B version of this plan is attached.



The full size version is attached.

The project constraints at this site include a shorter distance from the existing building to the north-east property line; along the north-west, current tarmac areas, gymnasium recreation functions, and other vehicular needs, all of which do not allow for easy expansion of the assets; to the south-west project constraints include an existing square drop-off driveway adjacent to the main entrance, this prohibits expansion in this direction. This leaves only room to the south and south-east of the existing building structure for additions.

As previously discussed, also an upper playground exists, approximately twelve feet above the building grade. The selected area is between the upper playground and the existing building. This area seems to have the least constraints as far as new building addition areas are concerned.

Our understanding of the Danbury program is that five classrooms are required in order to fulfill a proper classroom balance for the necessary student increase.

Attached please find plans for the proposed building expansion floor plan, with classrooms labeled and revised adjacencies acquired.

The current entrance is adjacent to the main office can remain as-is, with the increase to a 550 student count. The proposed alternate new parent drop off is located close to the main entrance as is the current bus drop off.

In selecting a site to extend the current building two spaces were reviewed, the first addition reviewed was, in area "B" and was first eliminated as it would require even with one in twelve pitch ramps from the existing building to be slightly embedded into the upper topography to the south-east of the site. It therefore requires more soil excavation and a retaining wall on the lower portion of the concept B addition on the south-east side of the existing school building, both of these items adding greatly to construction costs.

Concept location "A", after investigation and analysis, became the prominent site selected area for the Shelter Rock ES addition as this portion of the site is more level and also its construction logistics further away from the upper current playground areas, again on the south-east side of the site. This area can be more easily isolated for the construction duration of approximately one year.

Concept A has a basic classroom arrangement of a single-loaded corridor, which houses Kindergarten and 1st Grades, in the south west most portion of the site. This will allow for the other two classroom wings to remain mostly as-is with slight adjacency adjustments.

The existing Kindergarten wing corridor would be attached to and circumnavigate a new courtyard back to the lower grade corridor wing of the building. This minimizes travel distances and allows for dual sided adjacencies.

Further, for the partially new Kindergarten wing a new secure inner playground for outside activities would be available. The adjacent playground outside of this inner courtyard would still be maintained as this courtyard is smaller in nature.

With the requirement of Kindergartens in CT. is to have direct accessibility to an individual toilet, thereby the building of a new Kindergarten class is less costly, than retro -fitting a current classroom, this concept accomplishes same.

The placement of "A" allows for a covered corridor and extended walkway to reach close to the upper playground.

An Art Room would be added and placed towards the upper grade classrooms for closer adjacency and would allow for two-sides of the Art Room façade to be windows.

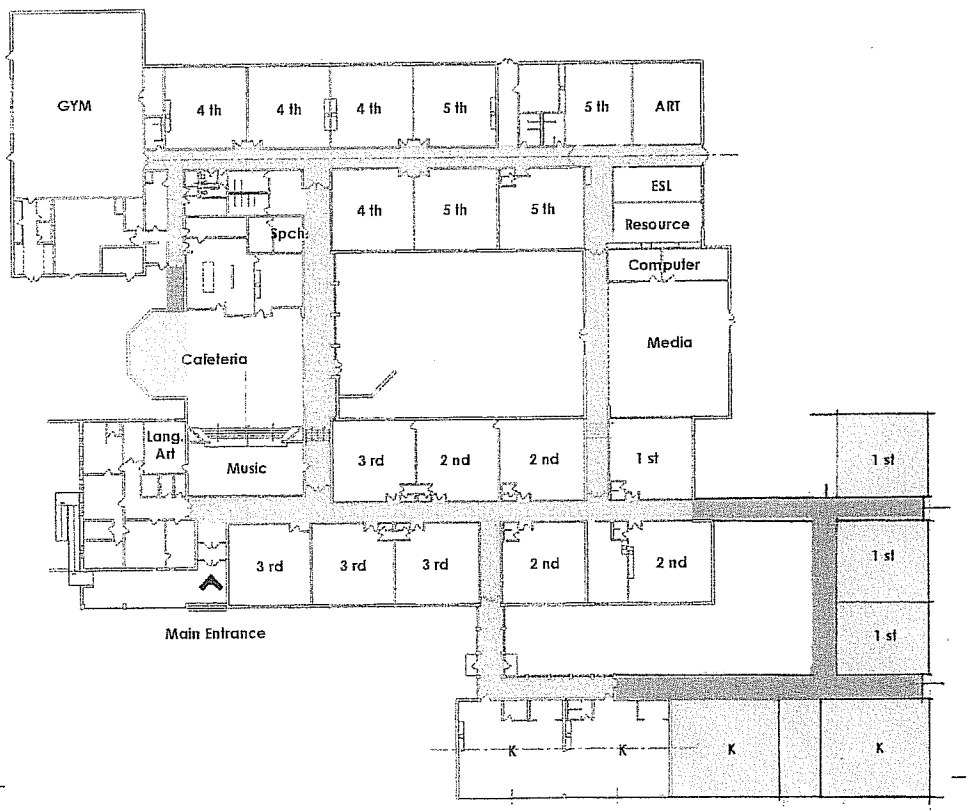
A Cafeteria expansion is included to house an additional four to five tables so that the three-period lunch can be maintained.

The Mechanical Room stays in its existing location for the building and appears to be adequate for the five classroom addition.

Further as an alternate additional parking shall be provided in order to allow for additional staff and current overflow, as parking is limited on this site.

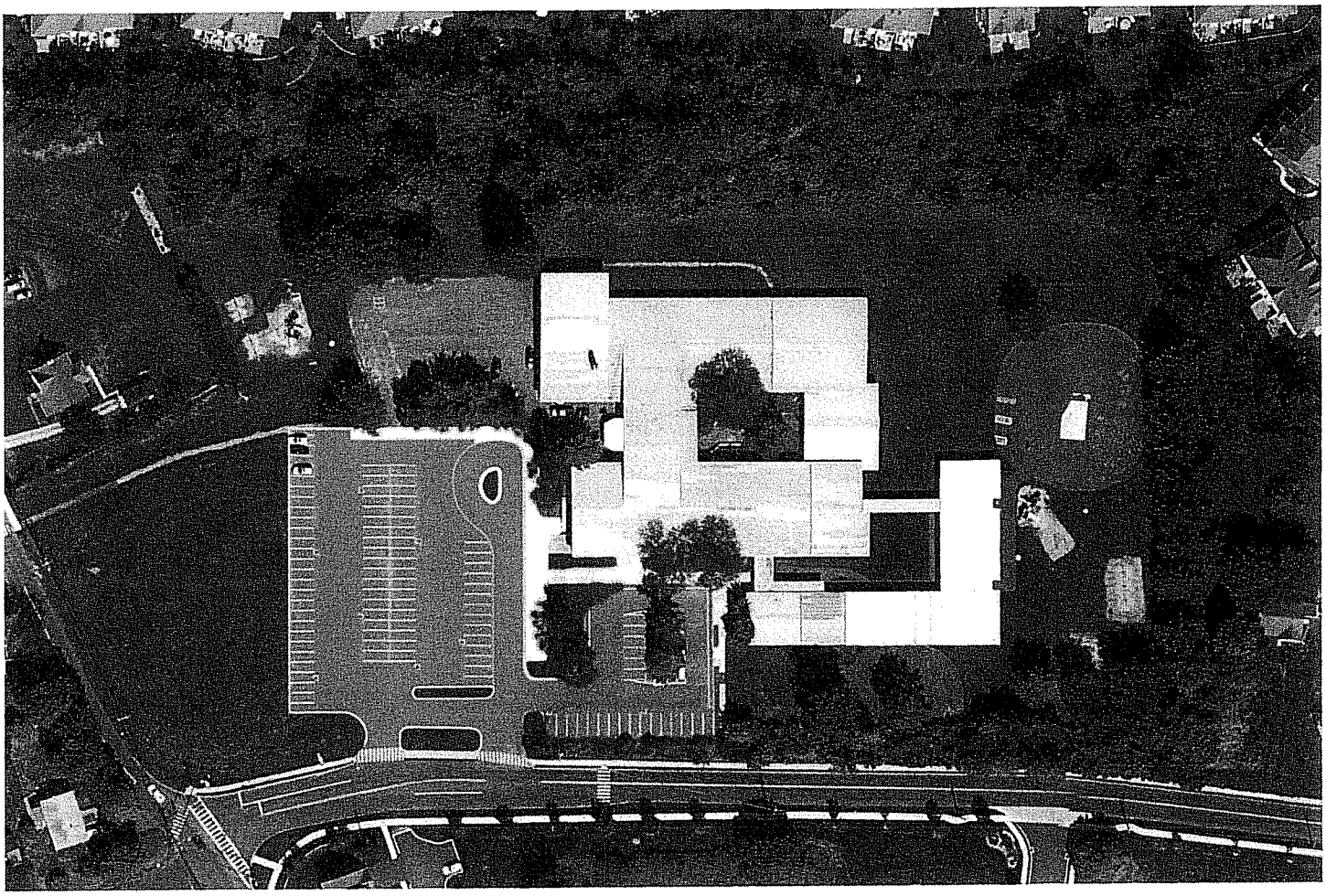
The existing parking would be condensed and also slightly expanded into the field area to the north-west. This can be viewed in the aerial rendering below.

Lastly in the future the Concept B solution can be easily added to Concept A, to provide three more regular classroom size spaces and support room. The two solutions synchronize corridor location and adjacency. The two together forming another courtyard and better circulation flow to the school.



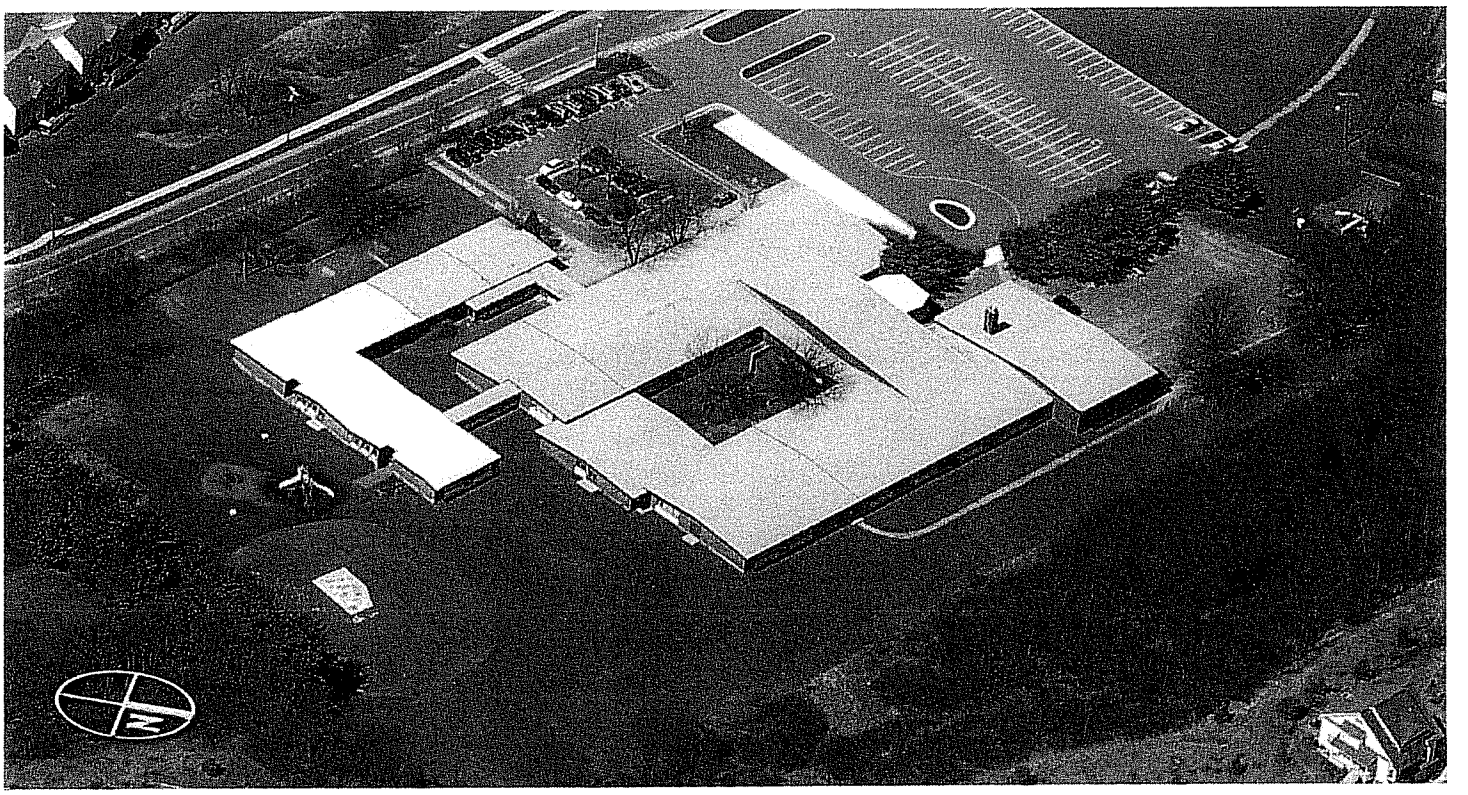
CITY OF DANBURY
SHELTER ROCK ELEMENTARY SCHOOL

Submitted by: Fuller and D'Angelo, PC
Architects and Planners
45 Knollwood Road
Elmsford, NY 10523
914.592.4444
914.592.1717
Date: May 29, 2012



Overall site Plan
Larger scale attached

Attached also please find an overhead view of the addition facility, which depicts the building as described above and also an aerial rendering looking from the east to west on the site.



Aerial view

For further detailed plan information see attached.

COST ESTIMATING AND DESIGN, APPROVALS and CONSTRUCTION SCHEDULE

Professional Cost Estimating has been completed for the selected design solution, as performed by CPS Construction Program solutions, Inc. Mr. Stuart Schiller has been providing this service to Architects, CM's and Owners for numerous years and is close to many School building industry contractors being able to gauge current pricing levels of school construction.

The estimates include the hard cost subtotal of construction. In addition to this figure, material and labor escalation is added. The escalation is to the midpoint of construction duration. This is an estimated percentage of 4%. Also, a contingency at this early stage of the project at 15% is added. All of these items total the hard cost figure.

Costs were reviewed with the City and alternates selected to add to the projects should the budgets allow for same, alternates were selected to define specific work areas or groups of projects, i.e. parking is estimated including new curbs, walks, drainage, site lighting and landscaping items of work.

Soft costs are then added including, A/E/Hazmat fees, borings, FFE, IT, surveys, legal, bonding costs, etc. This amount is estimated at 28%.

Please refer to the attached "Notes" and "Conditions and Qualifications" for additional information.

A preliminary schedule is added at the end of the Appendix which reflects the known timeline at this stage of the project.

SECTION 5. APPENDIX:

MINUTES OF MEETINGS
ENROLLMENT STUDY DOCUMENT
AERIAL VIEWS EXISTING SITE
SITE PLANS & BUILDING PLANS
MAPS
COST ESTIMATE
SURVEY
SCHEDULE
SOIL BORINGS SUMMARY AND DATA SHEETS

FULLER D'ANGELO P.C.
ARCHITECTS PLANNERS

45 KNOLLWOOD ROAD, ELMSFORD, NEW YORK 10523

NICHOLAS A D'ANGELO, FAR
PRE

JOSEPH FULLER J
EXECUTIVE VICE PRE

JOHN D'ANGELO
EXECUTIVE VICE PRE

APRIL 10, 2012

MINUTES OF MEETING NO. 1

DATE:	APRIL 5, 2012		
RE:	CITY OF DANBURY		
	ARCHITECTURAL/ENGINEERING SERVICES		
	CITY OF DANBURY		
	FEASIBILITY STUDIES:		
	MILL RIDGE MS AND 3 ELEMENTARY SCHOOLS		
	F&D PROJECT NO: 12083.00		
PLACE:	CITY OF DANBURY		
PRESENT:	A. IADAROLA	-	CITY OF DANBURY
	F. KHOURI	-	CITY OF DANBURY
	R. PALANZO	-	CITY OF DANBURY
	D. STASNY	-	CITY OF DANBURY
	S. ZOMORRODIAN	-	FULLER AND D'ANGELO, PC, ARCHITECTS
	J. FULLER, JR.	-	FULLER AND D'ANGELO, PC, ARCHITECTS

THE FOLLOWING WAS REVIEWED:

1. A. Iadarola opened the meeting and noted, that, per the architect's proposals, the various schools should be reviewed, reflecting the district's discussions between the Board of Education and the City of Danbury as to the expansion capacities at each of the buildings. A. Iadarola noted that the enrollment increases at the various elementary schools and Mill Ridge ms are not direct enrollment figures, however, also include student capacities from "sister schools" in order to relieve some of the enrollment capacity overruns at other schools. Sister school references are to be included in the feasibility report.

2. The architects noted that as well as student enrollment, they need to review the number of buses for both current and future capacities of the schools and sites.

3. Danbury has determined the school capacities along with other studies i.e. The Savin report with John Chardavoyne figures.

4. A. Iadarola reviewed various files for each of the projects including Park Avenue, Great Plain and Shelter Rock ES and also Mill Ridge MS.

5. Each school had figures, square footages, additions, enrollments and basic programming discussed.

6. A. Iadarola noted the architects should contact Bill Glass in order to further discuss various programming issues.

7. The architects noted that in some cases it may be more prudent in a school, as an example, to take an existing 2,700 sq ft library and turn it in to three (3) 900 sq ft classrooms and build a new media center for the school versus providing an addition of three

classrooms. This is dependent on proper school function, space adjacencies and flexibility of program in regard to the existing layouts.

8. A. Iadarola noted that he met with all of the principals – Bill Glass and others on 1/17/12 and reviewed the various schools that should obtain an addition.

9. The first school is Park Elementary School which is slated for an addition of three k-2 spaces and five 3-5 classroom spaces as well as other ancillary and support space increases.

10. It was noted that the cafeteria can have a maximum of five shifts.

11. It was noted that the net to gross ratio should be 1.52 for pre-design purposes.

12. It was noted that the square footage addition should be approximately 11,0000 sq. ft.

13. It was noted that the two sister schools for Park are Morris Road and Mill Ridge ES.

14. The above figures were noted by Danbury and the totals for this school should be 13 classrooms of 22, grades K-2, 8 classrooms at 25 for 3-4, and 5 classrooms for the 5th grade at 25. Of course, grades 3, 4 and 5 should be flexible and interchangeable dependent upon total grade enrollment for any particular year.

15. All parties noted that there is some large storm drainage piping on the south side of the school.

16. It was noted that the Park Avenue fields are heavily used on the weekends and after hours by the community.

17. Discussions took place with regard to two possible locations for an addition.

18. It was noted that there is no cooking at any elementary schools. Kitchens are to be warming and serving kitchens only. At Rogers Park Middle School, all of the cooking is performed.

19. The Architects were given various plans for the building, the enrollment figures and other Danbury capacity paperwork. The Architects were asked to provide conceptual designs for each of the elementary schools and also look at bus and vehicle circulation within the sites.

20. Architects were given direction with regard to including at Park ES separate art rooms, music rooms, language rooms, and ESL, at each of the elementary schools.

21. The Architects were forwarded existing classrooms usage drawings from each of the principals, to use for current space identification.

22. Great Plains ES: It was noted that currently there is an art room, music room and computer room, within the school.

23. It was noted that the sister schools to Great Plains School are Stadley Rough and Hayestown.

24. It was noted that existing student enrollment is current 372, an addition of 97 students along with sister school overflow is anticipated for a new grand total of 469 students.

25. It was noted that it is possible within the existing school to reclaim one classroom.

26. It was noted that an addition should be planned to include one classroom of 22 students and three classrooms of 25 students.

27. It was noted that currently there are only 314 students in this school building and/or the school is only at 84% capacity.

28. It was discussed that schools should be design to full capacity. The Architects shall further review.

29. It was noted that this school also houses three special education classrooms for district-wide use at approximately six students per classroom, Room numbers 15, 16, and 4.

30. Various further data information was forwarded from Danbury for this building.

31. Shelter Rock ES: Shelter Rock School was noted to have two sister schools, South Street and Ellsworth (the downtown school).

32. It was noted that existing enrollment is 431 and it is anticipated that 199 student increase in population will take place.

33. Danbury noted that two classrooms at 22 and three classrooms at 25 have been confirmed to handle the increase with support spaces.

34. The Architect questioned how many kindergarten classrooms. Danbury noted that the Architect should speak with Bill Glass.

35. It was noted that the addition should include approximately 6,900 sq. ft.

36. It was noted that currently an art room is being used as a classroom and should be reconverted to art, however, there is currently no music room, which should also be added.

37. General Information: The Architect noted that as well as the addition of classrooms and increasing student populations, school plumbing counts need to be confirmed in order to analyze whether additional toilets will be need for these facilities.

38. The Architects also noted that further planning meetings with Bill Glass and Marg are needed to review spaces and busses. This should take place as soon as possible. **Thursdays at 2:30 has been proposed – starting this Thursday. This still has to be confirmed.**

39. The Architect noted that weekly meetings should be held for the next three weeks in order to progress smoothly through the feasibility study process, attain confirmed results and prudently expedite the project.

40. The Architect noted that, per their discussions with Danbury, all of the additions need to be handicapped accessible, however, this may not affect the handicapped accessibility in the entire remainder of the school buildings as they exist.

41. Danbury did note that many ADA improvements have been made to many of the schools in past projects.

42. Mill Ridge Intermediate School: It was noted that Mill Ridge Intermediate School will turn into two academic schools - STEM and AIS.

43. The Mill Ridge school cluster will include Rogers Park and Broadview.

44. The current capacity noted by different ratings is 550 and in the Savin Report, 570. After discussion, it was agreed to use a 560 student count enrollment for the current school.

45. It was discussed that after various programs, including head start. The Mill Ridge School as a building has a current enrollment of 278 students.

46. This school should be designed for 6, 7 and 8th Grade levels meaning that some of the existing rooms which were previously kindergartens will have toilets required to be removed.

47. Danbury asked the Architects to clarify will Bill Glass the function ability of each of the academic wings to see whether separate Art and Science better fit the educational program or whether these specialty educational rooms should be clustered.

48. The Architects further need to review for each school the ESL, Administration and other functions.

49. The Architects were requested to upgrade the main entrance and overall appearance of the front of the Mill Ridge Intermediate School.

50. It was stated that most of the work at Mill Ridge Intermediate School is internal and not an external project having additions.

51. The Architects were requested to review the bus and pick up and drop off situation.

52. A. Iadarola requested Fuller and D'Angelo review the lowest floor area which currently exists at Stadley Rough. It was noted that there may be space available to create two classrooms, however, if not, these two classrooms would be required to be moved to Stadley Rough's sister school and be added the current proposed enrollment and addition.

53. The Architects were forwarded various plans for schools, which they shall scan and return to the City.

54. A meeting should be scheduled for April 12 at 2:30 with Rick Palanzo. Danbury to request W. Glass to be present.

It is assumed that these minutes are a true summary of the meeting. Any corrections or omissions should be brought to the attention of the writer. If not, they will be considered substantially correct.

SUBMITTED BY: _____
JOSEPH FULLER, JR., AIA

JFF/CLS

CC: W. Glass (via City of Danbury)

FULLER D'ANGELO P.C.
ARCHITECTS PLANNERS

45 KNOLLWOOD ROAD, ELMSFORD, NEW YORK 10523

NICHOLAS A D'ANGELO, FARA, CSI
PRESIDENT

JOSEPH FULLER JR.,AIA
EXECUTIVE VICE PRESIDENT

JOHN D'ANGELO, ARA
EXECUTIVE VICE PRESIDENT

MAY 14, 2012 (VIA E-MAIL)

MINUTES OF MEETING NO. 5

DATE: MAY 10, 2012

RE: CITY OF DANBURY
ARCHITECTURAL/ENGINEERING SERVICES
CITY OF DANBURY – ELEMENTARY AND MIDDLE SCHOOL FEASIBILITY STUDIES
F&D PROJECT NO: 12083.00

PLACE: CITY OF DANBURY

PRESENT:			
	A. IADAROLA	-	CITY OF DANBURY
	F. KHOURI	-	CITY OF DANBURY
	T. HUGHES	-	CITY OF DANBURY
	R. PALANZO	-	CITY OF DANBURY
	H. ROSVALLY, JR.	-	DANBURY PUBLIC SCHOOLS
	P. JOAQUIM	-	DANBURY PUBLIC SCHOOLS
	W. GLASS	-	DANBURY PUBLIC SCHOOLS
	K. ZALETA	-	DANBURY PUBLIC SCHOOLS
	S. ZOMORRODIAN	-	FULLER AND D'ANGELO, PC, ARCHITECTS
	J. FULLER, JR.	-	FULLER AND D'ANGELO, PC, ARCHITECTS

THE FOLLOWING WAS REVIEWED:

MILL RIDGE ES:

1. A. Iadarola opened up the meeting to review, with all present, the improvements and expansion to Mill Ridge Intermediate School. A. Iadarola suggested that Mill Ridge Intermediate be reviewed with all parties, including the current Principal of STEM, Administrators and other Greenwich Public Schools personnel at the meeting.

2. The Architect and Chief Designer of Fuller and D'Angelo presented their concept design, which includes taking over of the CRC space for engineering labs, re-working most of the southern half of the current building, providing a new media center and cafeteria extension, and grouping and grades with other adjacencies. It was noted that a new curtain wall would also be included.

3. The Architects presented an exterior site plan, separating buses and car traffic, and making the site more navigable, including additional queuing and other such features.

4. It was confirmed that site work would be performed with all bituminous materials, including curbs and sidewalks.

5. A. Iadarola noted that there is a limited Danbury budget with regard to providing improvements at all of the schools.

6. It was noted that the CRC building does have a roof top unit and a small boiler in the basement areas.

CITY OF DANBURY
FEASIBILITY STUDIES:
MILL RIDGE MS – AND ELEMENTARY FEASIBILITY STUDY REVIEWS
MINUTES OF MEETING 5/10/12

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7. After further discussion and review of various spaces, all parties agreed on the concept.

8. The Architects noted that lockers will need to be reviewed in later phases as they are not necessarily part of the concept design, but could be included either in alcoves and/or perhaps single-sided in the corridors, should existing clearances be Code-conforming.

9. It was noted that small locker rooms and small toilets need to be included in the Middle School space study.

10. It was noted that the existing playground shall be relocated by Danbury.

11. It was noted that the existing roof is currently at its end of life span, and should be estimated as an Alternate.

12. It was noted that the planned school should fit just fewer than 600 children.

13. The Architects noted designing at 100% capacity is not standard procedure. The Architects commented that the Danbury educational planning schedule is somewhat aggressive.

14. It was agreed that Science Rooms could be only typical classroom size for 6th and 7th Grades, for spaces to fit within the existing footprint.

15. Science Rooms are to include a couple of sinks, as the Science Room curriculum does not require chemicals or excessive cleaning of beakers and other instruments used.

16. All parties agreed to the proposed concept design for the Mill Ridge Intermediate School.

17. The Architects noted that all costing and square footages need to be reviewed, refined and provided to Danbury.

18. Next three Elementary Schools, namely, Park Avenue, Shelter Rock and Great Plain, for planned expansions at those campuses was discussed after Ms. Joaqium, Ms. Zaleta and H. Rosvally departed.

<u>PARK AVENUE ES:</u>

19. The Architects proposed to provide a new addition to the rear of the current Park Avenue School allowing for a triangular set up and proper student flow on the first floor level.

20. It was noted that a lower level addition, creating a new media center, would align with the proposed 5th Grade wing, located in the existing building.

21. It was noted that the current Media Center would be turned into an Art Room and Language Arts.

22. It was noted that the current office would be slightly moved to the west, encompassing the current Language Arts space, enabling the lobby area and egress areas to increase.

23. The Architects noted that the Cafeteria should be expanded in order to create more tables, however, that the existing serving line appears satisfactory and is larger than in some other elementary schools.

24. Park Avenue ES shall be receiving eight new classrooms. The adjacencies were reviewed and of course are being left flexible with regard to one grade being slightly larger or smaller, based on any particular year's enrollment.

25. The Architects noted that toilets, janitor closets, mechanical rooms, electrical closets and other such support spaces are mandatory items to be included within the 8 standard classroom addition.

Shelter Rock ES:

26. Shelter Rock ES was presented similarly to Park Avenue ES with Option 1 and Option 2. Option 1 connected to the second and third, and fourth and fifth grade wings, and Option 2 connected to the Kindergarten and second/third grade wings.

27. All parties, after reviewing same, agreed that connecting to the Kindergarten wing and Option 2 was more logistically feasible for construction, and created slightly less hardship on the educational program while being constructed.

28. The Architects suggested also providing more windows for the current Media Center.

29. The Architects provided an improved site plan with separated car and bus traffic. After further discussions it was noted that the current parking lot and circle area in front of the main office and Kindergarten area would remain as-is. Provision of final costing for same was approved by Danbury.

Great Plain ES:

30. Great Plain ES was reviewed and it was noted that a three-classroom addition should be built towards the rear of the school.

31. There is a 50' setback in this area, which can either be adhered to with irregular shaped classrooms or a variance can be requested to provide standard rectangular shaped classrooms.

32. The Architects noted that the Cafeteria would also require an expansion due to an additional six tables of ten needing to be placed within same.

33. The Architects noted that the serving line in this school is too small.

CITY OF DANBURY
FEASIBILITY STUDIES:
MILL RIDGE MS – AND ELEMENTARY FEASIBILITY STUDY REVIEWS
MINUTES OF MEETING 5/10/12

34. After some discussion, it was noted that site is still on septic and this would require to be modified to a sewer system in order to properly add classrooms and make modification to toilet areas for the additional students.

35. After further discussion, Danbury requested the Architects to abandon the addition concept at Great Plain and concentrate on the Stadley Rough School, a "sister" school to Great Plain, along with Hayestown School. Stadley Rough having more land and perhaps an easier building area appears a more logical space for an addition.

36. The Architects shall expand their Scope of Work to include Stadley Rough School, as additional services to Danbury.

Stadley Rough ES:

37. Stadley Rough ES was reviewed. The Architect noted that a retaining wall and a large window could be placed in the lower level area and would represent 8% of the total area allowed to be built, i.e. a glass to floor area ratio. It was noted that this space would need to be made accessible if used as a school, via a new elevator.

38. The Architects, per the previous Minutes, reviewed the concepts of moving the music room to the lower level allowing the Art Room to go to the Music Room and a new classroom to be placed where the current Art Room is, on an outside wall with exterior glass facing east. However, after some review and a short cost analysis, it was noted that placing students in the lower level area of Stadley Rough School does not appear cost-effective on a dollar per student cost basis. An elevator would be mandatory, per Code.

39. Danbury and the Architects reviewed the Stadley Rough School briefly and noted that a three classroom addition could be placed at Stadley Rough School in lieu of Great Plain School.

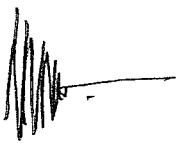
40. Various areas were reviewed briefly and the Architects stated that they would "go back to the drafting board" in order to review the best design possible, taking into account adjacencies, location of support facilities, circulation, cost of building with regard to grade and topographies, and other such design criteria.

41. The Architects noted they would forward a Change Order request for this additional service to the City of Danbury.

42. The Architects requested Danbury to review, on a cost per square foot basis, a preliminary estimate.

CITY OF DANBURY
FEASIBILITY STUDIES:
MILL RIDGE MS – AND ELEMENTARY FEASIBILITY STUDY REVIEWS
MINUTES OF MEETING 5/10/12

It is assumed that these minutes are a true summary of the meeting. Any corrections or omissions should be brought to the attention of the writer. If not, they will be considered substantially correct.



Submitted by: _____
Joseph Fuller, Jr., AIA

JFF/cm

cc: D. Petrovich
P. Ellsworth
D. Stasny

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FULLER D'ANGELO P.C.
ARCHITECTS PLANNERS

45 KNOLLWOOD ROAD, ELMSFORD, NEW YORK 10523

NICHOLAS A D'ANGELO, FARA, CSI
PRESIDENT

JOSEPH FULLER JR.,AIA
EXECUTIVE VICE PRESIDENT

JOHN D'ANGELO, ARA
EXECUTIVE VICE PRESIDENT

FIELD VISIT 4/16/12 – PRELIMINARY NOTES

Shelter Rock ES, 2 Crow's Nest Lane, Danbury, CT 06810

Principal : Julia Horne

203.797.4778

- The Architect met with the Head Custodian and did a tour of the interior of the building, including the cafeteria, which is limited to eight tables of sixteen and two tables of twenty for a total count of 176.
- Further, the Architect reviewed the Library Media Center, which also has a built-in computer room within same.
- The Architect reviewed the Gymnasium with its VCT flooring, however, the space appeared appropriately sized.
- The Architect reviewed the Kindergarten wing of the school, which is towards the west.
- The Architect noted that the school complex currently has a courtyard area.
- The Architect reviewed an area towards the back where the grade slightly goes up and noted that logistically this appeared to be the most appropriate place for construction.
- The Architect walked the grounds around the entire perimeter of the school and noted that expansion of the kindergarten wing and looping of the double corridors in the back would seem most appropriate placement on the site for additions.
- This school has an improper serving area space.

FULLER D'ANGELO P.C.
ARCHITECTS PLANNERS

45 KNOLLWOOD ROAD, ELMSFORD, NEW YORK 10523

NICHOLAS A D'ANGELO, FARA, CSI
PRESIDENT

JOSEPH FULLER JR.,AIA
EXECUTIVE VICE PRESIDENT

JOHN D'ANGELO, ARA
EXECUTIVE VICE PRESIDENT

FIELD VISIT 5/1/12 – PRELIMINARY NOTES
SHELTER ROCK ES, 2 CROW'S NEST LANE, DANBURY, CT 06810
203.797.4778

Principal: Julia Horne

- A Better separation of buses and cars is suggested to be incorporated into the design solution.
- Need of an Art Room and Music Room is required.
- Cafeteria is in need of expansion.
- Expansion to the rear of the school along with one kindergarten expansion is a satisfactory concept.
- The Architect and Designer toured the building.
- The Architects should look towards the east-side of the existing cafeteria for expansion into the faculty lounge and speech. Speech is currently being held in an old storage room, another concept is to go outwards.
- Music is currently on the stage.
- The wall at end of kindergarten wing is able to be punched through.
- School has a lot of carpets.

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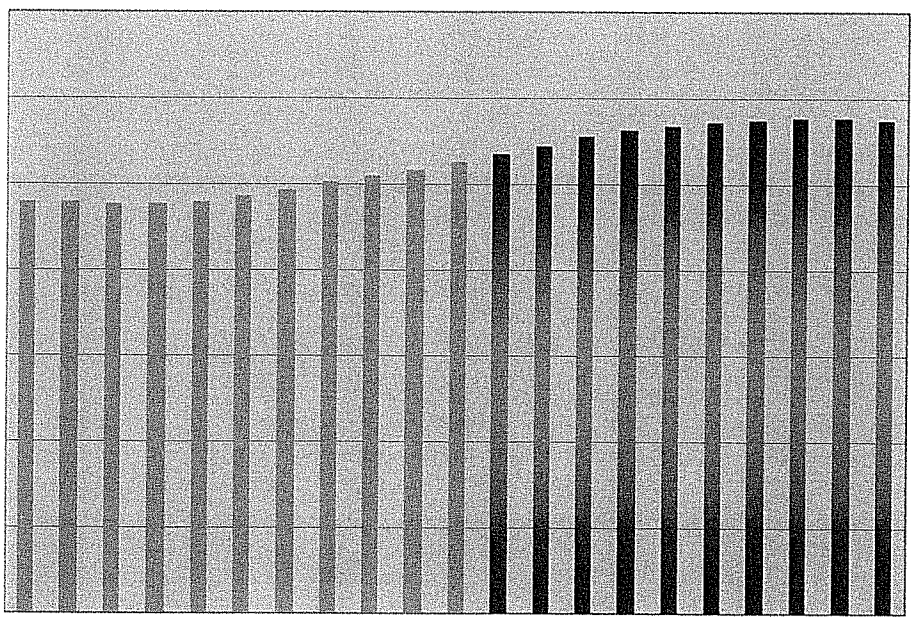
DANBURY PUBLIC SCHOOLS
ENROLLMENT PROJECTED TO 2021



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November 21, 2011

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Introduction

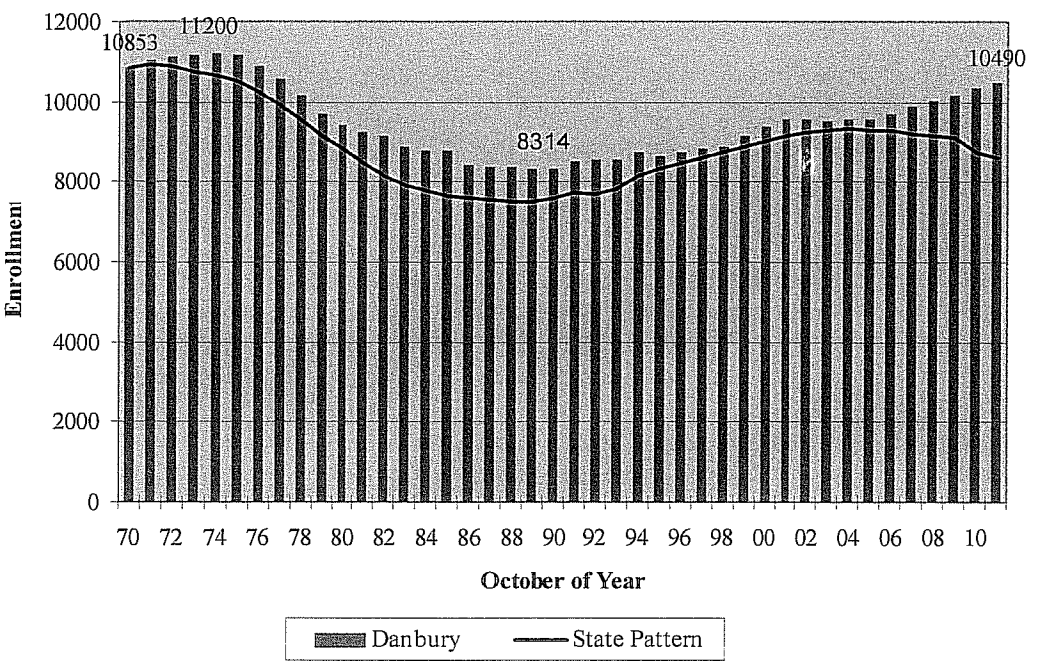
This report presents a ten-year projection of enrollment for the Danbury Public Schools. It is based on students enrolled in Danbury schools. The projection is divided into the three grade levels that represent how the Danbury schools are organized: K-5, 6-8 and 9-12. The report includes 41 years of enrollment to place the projection into a wider historical perspective. One of the primary drivers of future enrollment is births to residents. The report examines births and their relationship to kindergarten enrollment. Several factors that influence school enrollment - city population, women of child-bearing age, the workforce, housing, non-public enrollment, non-resident enrollment in Danbury schools, resident enrollment in other public schools, retention in Grade 9 and migration - are presented. Finally, the accuracy of earlier projections is examined.

Enrollment projections are a valuable planning tool. For budgeting, the numbers can place requested expenditures into a per pupil context. This can inform the public about which expenditures represent continuing expenditures to support on-going programs and expenditures for school improvement and program expansion. They are an essential step in determining the staffing that will be needed in the future. This may facilitate the transfer of teachers from one grade to another or allow the hiring process to start earlier, which can increase the likelihood of attracting the best teachers in the marketplace. Projections are a critical and required step in planning for school facilities. The State of Connecticut requires eight-year projections as a critical component of determining the size of the project for which reimbursement is eligible. In some communities the projection can determine the number of places they can make available to urban students as part of a regional desegregation effort.

Perspective

Enrollment projections typically use the most recent five years of data. While the most recent past is viewed as the best predictor of the near future, it is informative to look at a broader perspective. Figure 1 shows the enrollment in Danbury from 1970 to date.

Figure 1. Danbury Enrollment 1970 to Date



Enrollment in the Danbury Public Schools grew from 10,853 students in 1970 to 11,200 in 1974. Between then and 1990, enrollment moved downward to 8,314 students. In those 16 years, enrollment declined by 2,886 students or 25.8 percent. Between 1990 and 2011 enrollment grew by 2,176 students or 26.2 percent. The 2011 enrollment of 10,490 was last at this level in 1977.

Danbury's enrollment pattern is different than that of the state's public schools. Between its 1971 peak and 1988, Connecticut public school enrollment declined by 31.5 percent. State enrollment hit a secondary peak in 2004. It grew 24.5 percent between the 1988 low and 2004. State enrollment declined by 2.8 percent between 2004 and 2010. The 1974 to 1990 decline in Danbury was about the same duration but less deep than the state's. The subsequent enrollment gain in Danbury has yet to abate and has been more robust than the state's. While the state entered a second cycle of decline in 2005, Danbury has yet to do so. Had Danbury followed the state pattern of enrollment since 1970, it would have had 8,629 students in October of 2011 instead of the 10,490 that were enrolled on that date.

Current Enrollment

Table 1 and Figure 2 provide a picture of where Danbury residents attended school in October of 2011. The non-public enrollment is projected and the home schooled count is from 2010. They show that 86.2 percent of Danbury's school-age residents attended the Danbury Public Schools in 2011. An estimated 10.5 percent of the school-age residents attended non-public schools in state. The number attending private schools out-of-state is not known. Other school-age residents attended Henry Abbott Technical High School (2.8 percent) or public schools in other districts (0.3 percent). Few (24 children or 0.2 percent) were reported as being home schooled. There were 181 non-residents enrolled in the Danbury Public Schools in 2011. The projections in this report are based upon the 10,163 residents and 181 non-residents who attend the Danbury Public Schools in 2011.

Table 1. 2011 Enrollment

	Number	Percent
Residents		
A. Danbury Public	10,163	86.2%
B. Tech	335	2.8%
C. Other Public	30	0.3%
D. Non-Public	1,233	10.5%
E. Home Schooled	24	0.2%
Total (A+B+C+D+E)	11,785	
F. Non-Residents	181	
Total Enrollment (A+F)	10,344	

Figure 2. Schools Attended by Town Residents, 2011

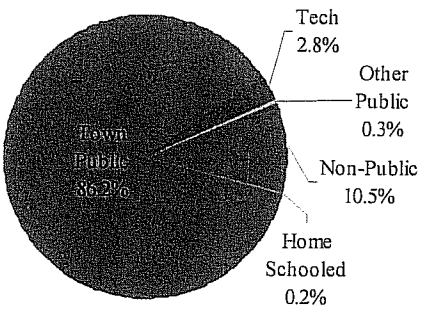
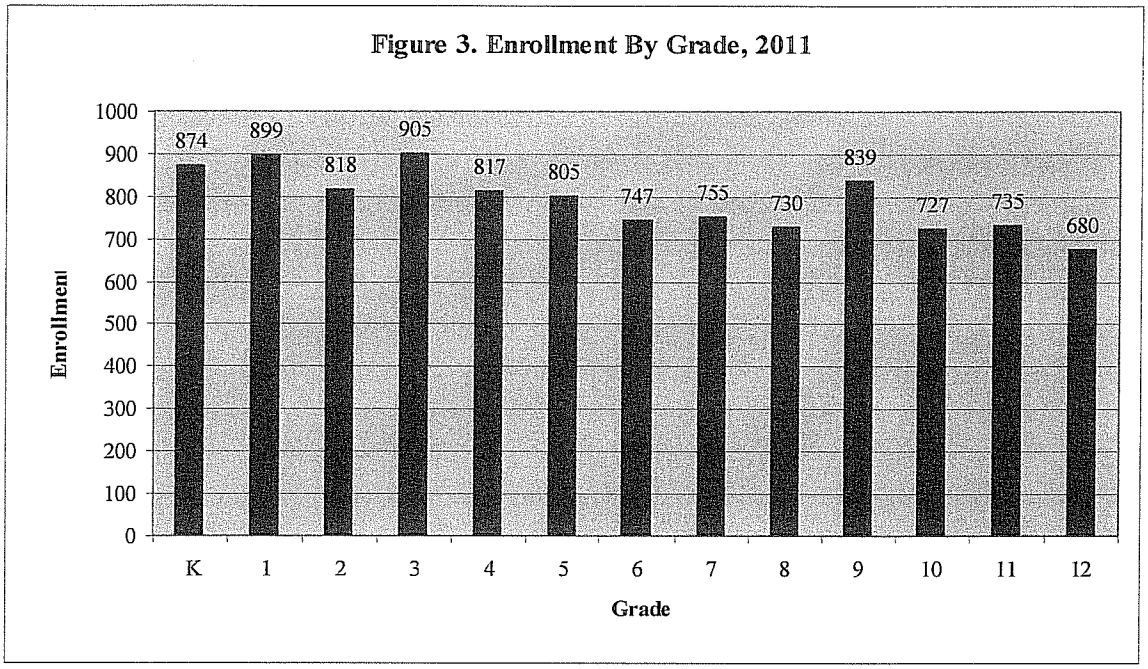


Figure 3 shows the October 2011 grade-by-grade enrollment by of students in the Danbury Public Schools. The children in pre-kindergarten programs are not shown. Grade 3 had the largest enrollment with 905 students. This was followed by Grade 1 with 899 students and Kindergarten with 874 students enrolled. Grade 12 was the smallest class with only 680 students followed by Grade 8 with 730 students and Grade 10 with 727 students. If current conditions continue, this year's Kindergarten class of 874 students will have 874 students when it enters Grade 6 in middle school in 2017 and 1,036 students when it enters Grade 9 in 2020. Both these figures are above the current enrollment in each of those grades. The current year enrollment by grade is the starting point for this projection. How it moves forward is discussed below.



Projection Method

The projections in this report were generated primarily using the cohort survival method. This is the standard method used by people running enrollment projections. For the grades above kindergarten, I compute grade-to-grade growth rates for ten years (see Appendices A and B). For example, if the number of fourth graders this year is 795 and the number of third graders last year was 800, then the growth rate is 0.994. Growth rates above 1.000 indicate that students moved in, transferred from non-pubic schools or other public schools or were retained. Growth rates below one mean that students moved out, transferred to private or other public schools, dropped out, or were not promoted from the prior grade. For each grade I calculate four different averages of the year-to-year growth rates: a ten-year median, a 3-year average, a five-year average and a weighted five year average. I choose the average that seems to best fit the data. The average growth rate for a grade is applied to the current enrollment from the prior grade. The projection builds grade by grade and year by year.

To project enrollment of students in Danbury schools, I utilized, in most cases, a five-year weighted average of the annual growth rates. This usually responds more rapidly to recent trends. In Danbury's case, however all four of the averages I computed were very close. I broke kindergarten into five year olds, six year olds entering kindergarten for the first time. and repeaters. I used the five-year weighted average of each component in the projection. I assumed that the Western Connecticut Academy of International Studies would accept 30 non-residents annually in Kindergarten. This figure should keep non-resident enrollment in the school at or above 40 percent of the enrollment. In 2011, 3.3 percent of the Danbury Public School kindergarten enrollment was students who entered late and 2.5 percent was students who had been retained. I believe that this approach will improve the kindergarten projection modestly.

In Grade 6 I had to make an adjustment for the magnet school students who will return to their home districts. I recalculated the Grade 6 individual growth rates based on Danbury residents in Grade 5 and then applied the weighted five-year average to the adjusted rates.

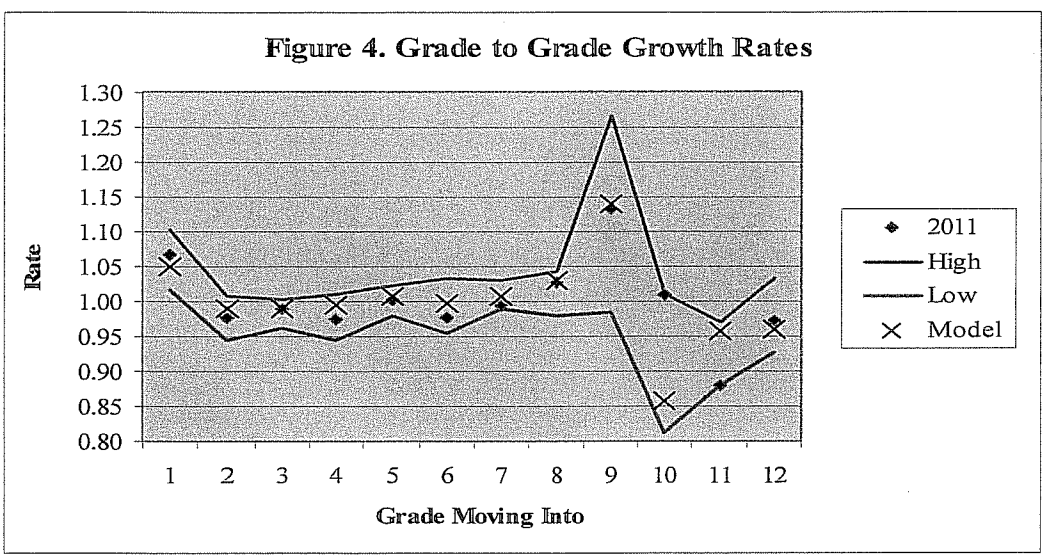
I had to make adjustments to the growth rates in high school because the policy of not retaining students in Grade 9 that was introduced in 2010 was abandoned in 2011. I based the Grade 9 growth rate on the

average of the 2011, 2009 and 2008 growth rates. I based the grade 10-12 growth rates on the average of 2007, 2008 and 2009 growth rates.

To extend the projections beyond four years, I needed to estimate births for the years 2011 to 2016. The Connecticut State Department of Public Health recorded 1,176 births to Danbury residents as their preliminary count for 2009. To estimate births in 2010, I used the 1,088 that were recorded in state in 2010 plus 52 that occurred out-of-state in 2010 plus four that were recorded in New York City in 2009 (the most recent data available). There were 758 in-state births through September of 2011 compared to 843 through September of 2010. I added to the 2011 count the average number of births in 2009 and 2010 that occurred in October to December and the estimated births that occurred out-of-state in 2010. To estimate births in 2012 to 2016, I utilized the Connecticut State Data Center's (CtSDC) projection of children ages 0-4 in 2010, 2015 and 2020. I calculated the projected growth in this interval, annualized it and applied it to the running two-year average of births starting with 2010 and 2011 to get an estimate for 2012 and beyond.

Figure 4 gives a perspective of the grade-to-grade growth rates for students attending the Danbury schools. An "x" indicates the average growth rate used in this projection. The diamond is the growth observed between last year and this year. The upper line indicates the largest growth rate observed over the past ten years and the lower line, the lowest. In general, the narrower the gap between the two lines is, the greater the accuracy of the projection. The growth rates used in the projection were based on a weighted five-year average of the observed grade-to-grade growth.

The elementary growth rates have been in a fairly narrow band for the past 10 years. The wide bands in high school reflect to some extent the recent policy change. The wide bands introduce some uncertainty into the high school projection. The growth rates in grades 2 to 7 are all right around 1.000 which indicates a balance between students entering and leaving the system. The high rate at Grade 1 is fairly typical for systems that do not offer universal full-day kindergarten. The high rate in Grade 9 is a reflection of retention in that grade. The lower rates in grades 10-12 are usually an indicator of drop-outs.



Enrollment data from 2001 to 2010 were taken from the files of the Connecticut State Department of Education. The public school data are available on the Department's website at www.sde.ct.gov under the Grants Management section. Data for 2011 were provided by the Department's Bureau of Data Collection, Research and Evaluation. All enrollment data after 2009 are subject to minor changes as they are reviewed and audited. Births from 1980 to 2011 were provided by the Healthcare Quality, Statistics, Analysis and Reporting Unit of the State Department of Public Health.

Total Enrollment

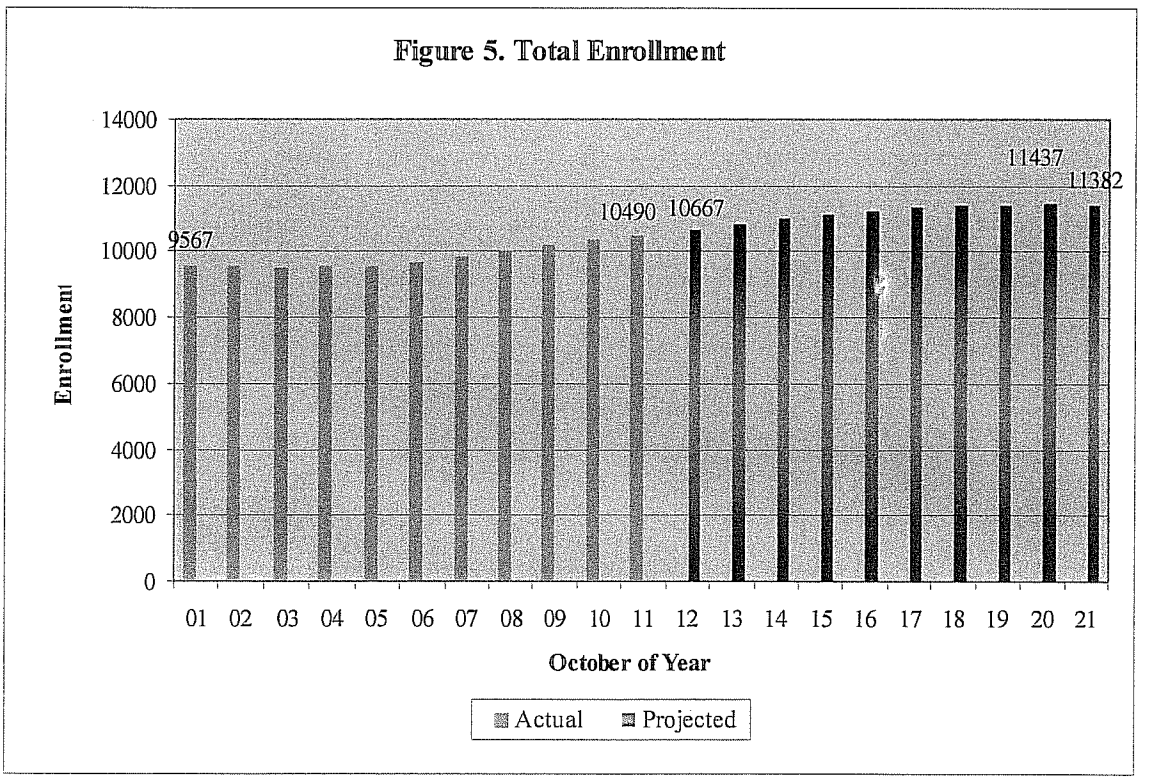
Table 2 and Figure 5 present the observed total enrollment in Danbury schools from 2001 to 2011 and projected enrollment through 2021. Detailed grade-by-grade data may be found in Appendices A and B. Total enrollment in Danbury increased from 9,567 students in 2001 to 10,490 in 2011. That was an increase of 923 students or 9.6 percent. Without the addition of non-residents at the magnet school, the increase would have been 751 students or 7.8 percent. Statewide public school enrollment declined 2.8 percent in that period. Between 2001 and 2011, the enrollment gain in Danbury was greater than similar towns in the area. Stamford enrollment grew by 3.0 percent and Norwalk's by 0.2 percent. Meriden's enrollment declined by 5.0 percent and West Haven's declined by 17.7 percent.

I project that your enrollment will continue to grow through 2020. Next year, I anticipate that total enrollment will increase by 170-185 students. Danbury should surpass its current peak enrollment of 11,200 in 2016. At its peak, I expect an enrollment of about 11,400 students. By the year 2021, enrollment should be about 11,380 students. The projected 10-year growth is over 890 students or between 8 and 9 percent. In the state's public schools, I am projecting an 8.6 percent decline between 2011 and 2021. Total enrollment in Danbury should average about 11,180 students over the ten-year projection period compared to an average total enrollment of 9,883 students over the past ten years.

Table 2. Total Enrollment

Year	Students	Percent Change
2001	9567	
2002	9559	-0.1%
2003	9521	-0.4%
2004	9556	0.4%
2005	9586	0.3%
2006	9707	1.3%
2007	9875	1.7%
2008	10040	1.7%
2009	10179	1.4%
2010	10344	1.6%
2011	10490	1.4%
2012	10667	1.7%
2013	10837	1.6%
2014	10996	1.5%
2015	11146	1.4%
2016	11250	0.9%
2017	11327	0.7%
2018	11379	0.5%
2019	11418	0.3%
2020	11437	0.2%
2021	11382	-0.5%

Figure 5. Total Enrollment



K-5 Enrollment

Table 3 and Figure 6 present actual enrollment in grades K-5 in 2001 to 2011 and projected enrollment to 2021 at your 13 elementary schools. Enrollment by grade may be found in Appendix A. Enrollment in grades K-5 rose from 4,360 students in 2001 to 5,118 students in 2011. This was a gain of 758 students and represented 17.4 percent of the enrollment in 2001. Some of the gain can be attributed to 172 non-residents in your magnet school. Without them, the gain would have been 13.4 percent. Public school enrollment statewide in grades K-5 declined by 8.2 percent in that period.

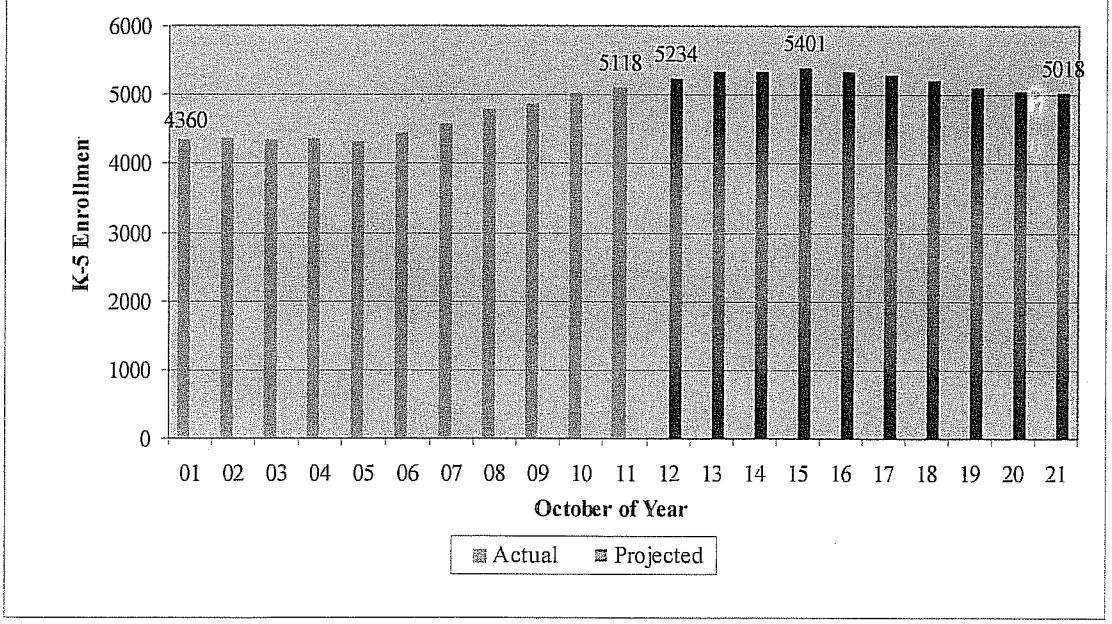
Table 3. Grade K-5 Enrollment

Year	Students	Percent Change
2001	4360	
2002	4379	0.4%
2003	4355	-0.5%
2004	4369	0.3%
2005	4336	-0.8%
2006	4444	2.5%
2007	4578	3.0%
2008	4794	4.7%
2009	4876	1.7%
2010	5019	2.9%
2011	5118	2.0%
2012	5234	2.3%
2013	5348	2.2%
2014	5340	-0.1%
2015	5401	1.1%
2016	5347	-1.0%
2017	5288	-1.1%
2018	5206	-1.6%
2019	5111	-1.8%
2020	5051	-1.2%
2021	5018	-0.7%

I expect that enrollment will continue to move upward for four more years, but end the projection fairly close to the current enrollment. Next year, I anticipate that enrollment in these grades will increase by 110-120 students. The peak enrollment should come in 2015 when I anticipate that enrollment will be about 5,400 students. By 2021 I project that grade K-5 enrollment will fall to about 5,020 students. That is roughly the number enrolled in 2010. This will be about 100 students less than 2011, a loss of about two percent. In grades K-5 in the state's public schools, I am projecting a 9.3 percent enrollment decline. Over the ten-year projection period, I believe enrollment in grades K-5 will average about 5,230 students compared to the average of 4,627 students observed over the past ten years.

These figures do not include the children in your pre-kindergarten programs. I the past ten years, pre-kindergarten enrollment ranged from 106 to 323 children. There were 159 children in these programs in 2011. My projection model keeps pre-kindergarten enrollment at 159 children for the next ten years.

Figure 6. Elementary Enrollment



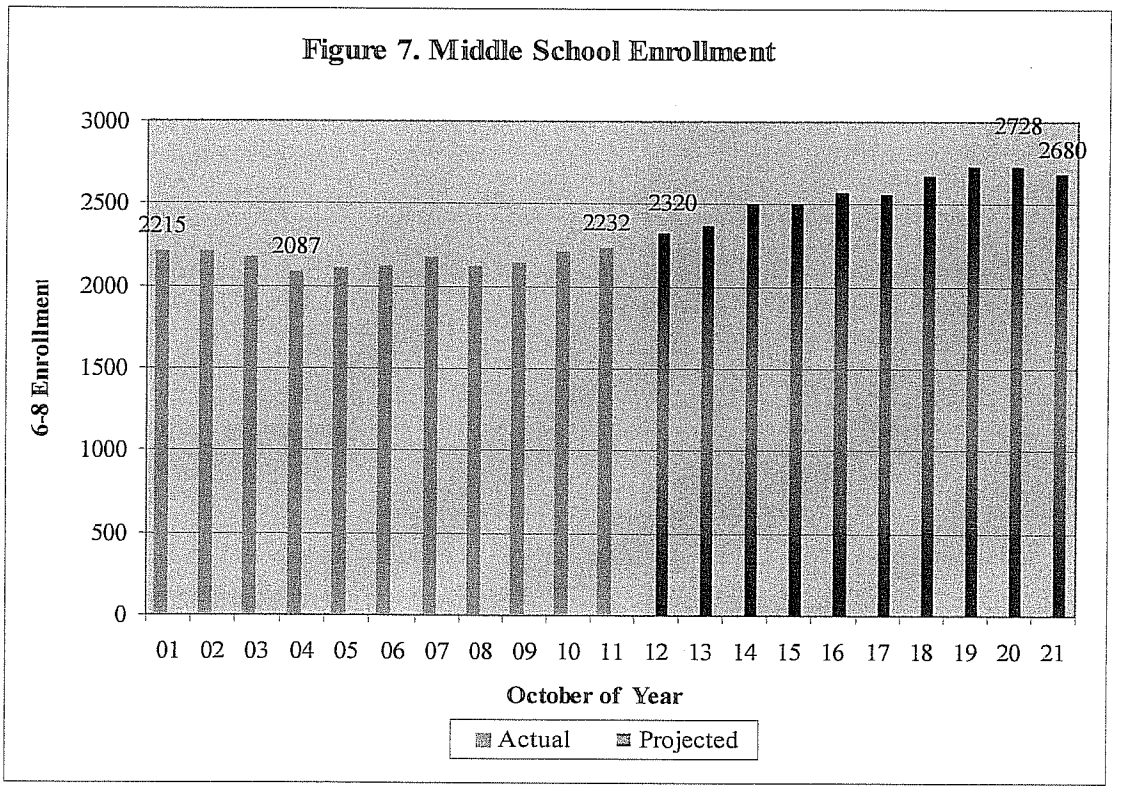
Middle School Enrollment

Table 4 and Figure 7 present actual enrollment in middle school in grades 6-8 in 2001 to 2011 and projected enrollment at Broadview and Rogers Park middle schools to 2021. Enrollment by grade may be found in Appendix B. Middle school enrollment declined from 2,215 students in 2001 to 2,087 students in 2004 and then rebounded to 2,232 students in 2011. Between 2001 and 2011 enrollment at the schools grew by 17 students or 0.8 percent. Enrollment in grades 6-8 declined by 6.9 percent in that period in the state's public schools.

I believe that future enrollment at Broadview and Rogers Park middle schools will move upward through 2019 or 2020. Next year I anticipate an increase of almost 90 students. I expect the peak enrollment will come in 2019 or 2020 at almost 2,730 students. At the projection's end, I believe enrollment will be about 2,680 students. Over the ten-years, I project a net increase of almost 450 students or 20 percent. Over the ten-year projection period, I believe enrollment at the schools will average about 2,560 students compared to the average of 2,159 students observed over the past ten years. You have reported the combined capacity of the two schools as 2,451 students. It appears that you will be operating the schools above capacity starting in 2014. In the state's public schools, I project that enrollment in grades 6-8 will decline by 12.0 percent in that period.

Table 4. Middle School Enrollment

Year	Students	Percent Change
2001	2215	
2002	2208	-0.3%
2003	2178	-1.4%
2004	2087	-4.2%
2005	2114	1.3%
2006	2121	0.3%
2007	2176	2.6%
2008	2125	-2.3%
2009	2144	0.9%
2010	2209	3.0%
2011	2232	1.0%
2012	2320	3.9%
2013	2370	2.2%
2014	2504	5.7%
2015	2505	0.0%
2016	2568	2.5%
2017	2560	-0.3%
2018	2669	4.3%
2019	2725	2.1%
2020	2728	0.1%
2021	2680	-1.8%



High School Enrollment

In most districts, Grade 9 is the time when the opportunity to attend state technical high schools and agriculture science and technology centers first becomes available. In October 2011, 85.8 percent of Danbury residents enrolled in Grade 9 were enrolled in the district. An estimated 4.5 percent were enrolled in non-public schools in state. 9.5 percent were enrolled in a state technical high school. Only two students (0.5 percent) were enrolled in other public schools.

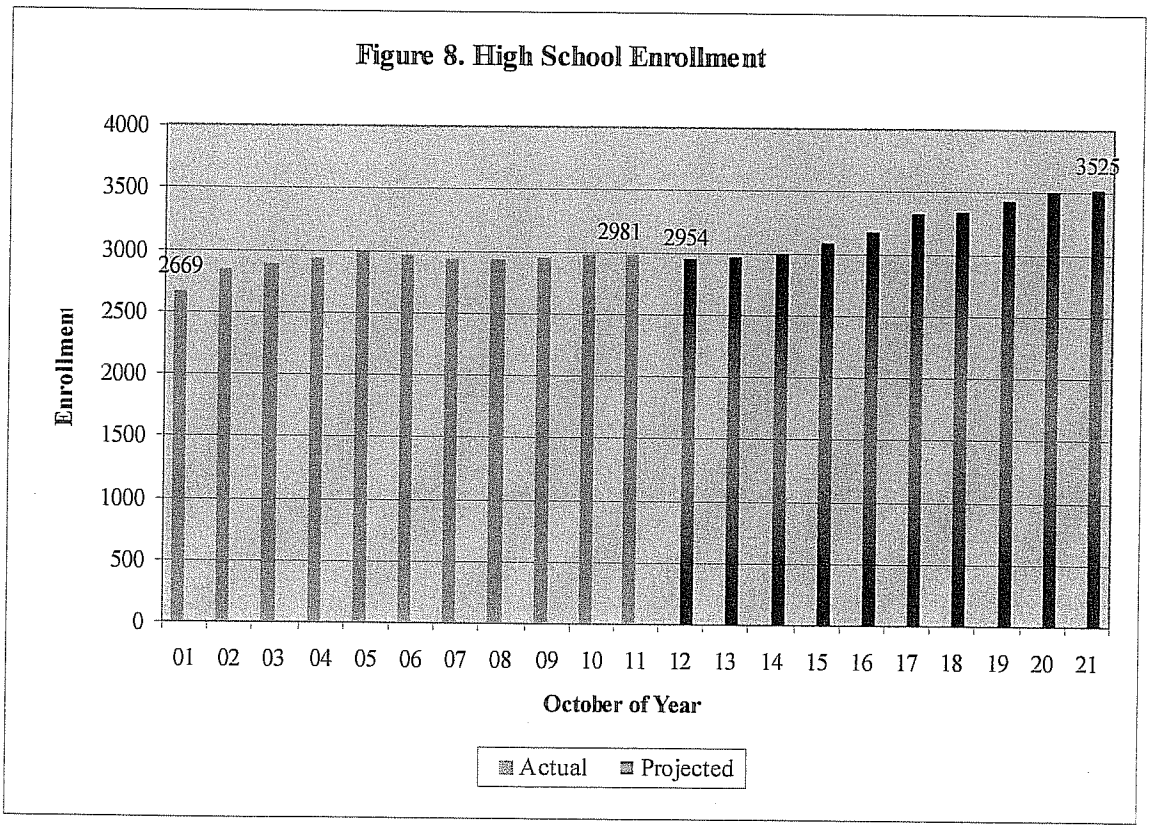
Table 5 and Figure 8 present enrollment at the Danbury High School and the Alternative Center for Excellence. Grade-by-grade enrollment may be found in Appendix B. Enrollment grew from 2,669 students in 2001 to 2,981 in 2011. In that 10-year span, grade 9-12 enrollment increased by 312 students or 11.7 percent. Statewide, enrollment in grades 9-12 grew 6.9 percent in that period.

I expect that next year's high school enrollment will be 25-30 students less than this year. I then anticipate that enrollment will grow to 3,525 students by 2021. That will be almost 550 students (18.2 percent) more than the October 2011 count. Statewide, I have projected a 9.2 percent decline in public school grade 9-12 enrollment between 2011 and 2021. I believe enrollment in grades 9-12 will average about 3,225 students over the next ten years compared to the average of 2,937 students observed over the past ten years.

Table 5. High School Enrollment

Year	Students	Percent Change
2001	2669	
2002	2848	6.7%
2003	2882	1.2%
2004	2932	1.7%
2005	2986	1.8%
2006	2966	-0.7%
2007	2933	-1.1%
2008	2925	-0.3%
2009	2942	0.6%
2010	2978	1.2%
2011	2981	0.1%
2012	2954	-0.9%
2013	2960	0.2%
2014	2993	1.1%
2015	3081	2.9%
2016	3176	3.1%
2017	3320	4.5%
2018	3345	0.8%
2019	3423	2.3%
2020	3499	2.2%
2021	3525	0.7%

Figure 8. High School Enrollment



Factors Affecting the Elementary Projection

The primary reasons for elementary enrollment change lie in the births and yield from the birth cohort. Figure 9 presents the births from 1980 to 2009 and estimated births through 2016. Births ranged from a low of 848 in 1981 to a high of 1,223 in 1990. There were 1,176 births in 2009. From recorded births in-state and out-of-state births less New York City through December, I estimate there will be 1,144 births in calendar year 2010. Based on in-state births through September of 2011, I estimate there will be 1,081 births in 2011. In the 1990s there was an average of 1,099 births annually. In the five years from 2002 to 2006 (this fall's kindergarten through 4th graders) births averaged 1,140. Births in the 2007 through 2011 period will likely average 1,169. The projection in years 2017 to 2021 assumes an average of 1,102 births annually between 2012 and 2016. This is based in part upon the Connecticut State Data Center projection of Danbury children ages 0-4.

Figure 9. Births Since 1980

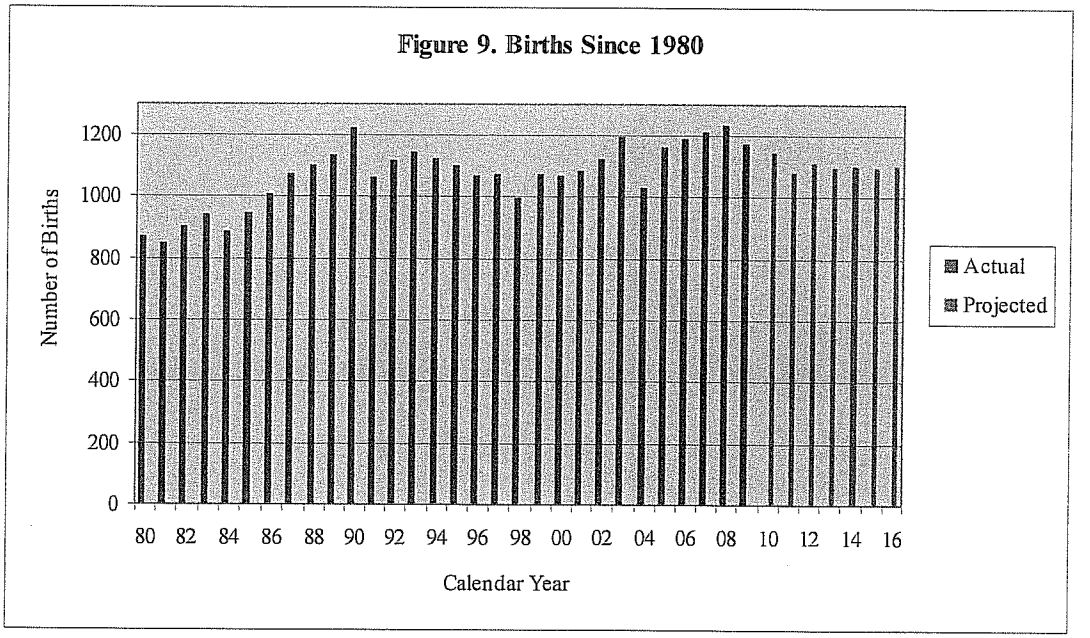
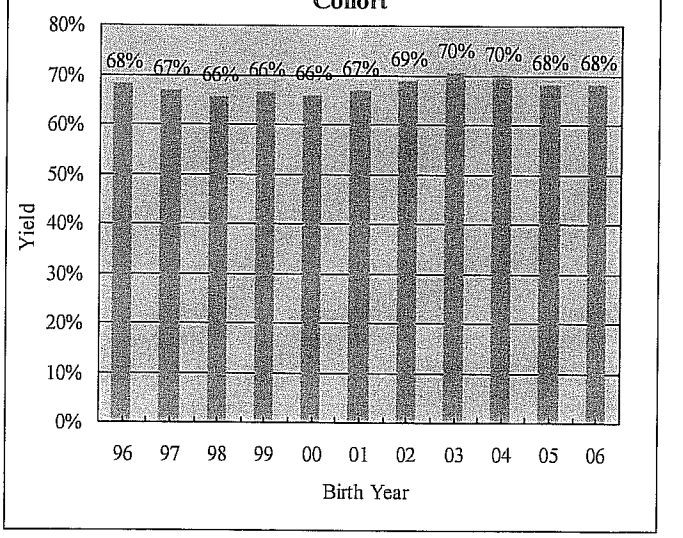


Figure 10 depicts the kindergarten yield five and six years later from the birth cohorts of 1996 to 2006 for Danbury residents attending kindergarten in Danbury. For example, there were 1,165 births in 2005 and 767 children enrolled in Danbury kindergarten at age five in 2010 and an additional 29 who first enrolled in kindergarten at age six in 2011. That is a yield of 68.3 percent. The yield from the birth cohort ranged from a low 66 percent in 1998 to a high of 70 percent in 2003 and 2004. The estimated yield for births in 2006 is 68 percent. Note that 2006 yield is an estimate because we will not know the actual number of children who will enter kindergarten for the first time as six-year olds until October 2012. Yields below 100 percent generally mean that parents

Figure 10. Kindergarten Yield From Birth Cohort



move out of town after giving birth in town or choose another school system for their child. In the five-year look-back period for the projection, the yield was 69 percent with three percent retentions.

Table 6 gives a history of enrollment in kindergarten since 2001 and relates the components of kindergarten enrollment back to the appropriate birth cohort. Retention is tied to the prior year's kindergarten enrollment. To estimate kindergarten enrollment, I used the five-year weighted average of retentions, and yields from births five and six years ago. I estimated kindergarten from 66.7 percent of births five years ago, 2.3 percent of births six years ago, and 3.0 percent of current kindergarten students retained.

Table 6. Analysis of Kindergarten Enrollment

Year	Birth Year	Births	K	Retained From Prior Year	Non-Retained Born 5-Years Prior Resident	Non-Retained Born 5-Years Prior Non-Resident	Non-Retained Born 6 Years Prior	Percent Retained	Yield From Births 5-Years Prior	Yield From Births 6-Years Prior	Total Yield From Birth Cohort
2001	1996	1067	747	11	700	0	36	1.6%	65.6%	3.3%	68.2%
2002	1997	1076	720	12	680	0	28	1.6%	63.2%	2.6%	67.0%
2003	1998	991	661	13	607	0	41	1.8%	61.3%	3.8%	65.7%
2004	1999	1076	754	22	688	0	44	3.3%	63.9%	4.4%	66.4%
2005	2000	1070	743	28	688	0	27	3.7%	64.3%	2.5%	66.0%
2006	2001	1086	763	28	700	17	18	3.8%	64.5%	1.7%	67.0%
2007	2002	1122	825	17	753	27	28	2.2%	67.1%	2.6%	69.0%
2008	2003	1196	898	27	814	36	21	3.3%	68.1%	1.9%	70.4%
2009	2004	1028	787	33	698	28	28	3.7%	67.9%	2.3%	69.9%
2010	2005	1165	842	26	767	28	21	3.3%	65.8%	2.0%	68.3%
2011	2006	1190	874	21	786	38	29	2.5%	66.1%	2.5%	*68.3%*
3-Year Average								3.2%	66.5%	2.3%	68.9%
Weighted 3-Year Average								3.0%	66.3%	2.3%	68.6%
5-Year Average								3.0%	67.0%	2.3%	69.2%
Weighted 5-Year Average								**3.0%**	**66.7%**	**2.3%**	**69.0%**

The correlation between births and kindergarten enrollment five-year later was a moderate 0.63 over the 1990 to 2011 period. If this relationship were used to predict kindergarten enrollment, the estimate would have been off by an average of 46 children annually over the past ten years. The cohort survival method, even with my breakout into five-year olds, six-year old delayed entrants and children retained, cannot overcome the underlying unpredictability of kindergarten enrollment from earlier births.

Context of the Projection

The cohort-survival method typically needs only births and a few years of recent enrollment data to generate a projection. Mathematically, nothing else matters. But enrollment changes do not occur in a vacuum. Events and policies in the district, community and region all have some bearing on enrollment. Remember that a basic assumption of the cohort-survival method is that the recent past can be a good predictor of the near future. It is incumbent for every receiver of a projection to determine what events happened in the past five years and whether they are likely to change.

To assist in this endeavor, this report examines ten factors that could affect enrollment: city population, women of child-bearing age; the size of the work force, new home construction; sales of existing homes; Grade 9 repeaters, non-public enrollment; non-resident enrollment in your magnet school, resident enrollment in other public schools and student migration.

Figure 11 presents the US Census Bureau estimate of Danbury population since July of 2000. Between 2000 and 2009, the city population is estimated to have grown from 75,139 to 79,748 people. The population growth of 6.1 percent ranked it 58th in the state. In contrast, Fairfield County grew by 1.9 percent, the state grew by 3.1 percent and communities with similar economic and need characteristics grew by 2.0 percent. The 2010 census population data show that from April 2000 to April 2010 Danbury's population grew from 74,848 people to 80,893. The 6,045 person growth was the second smallest in the past six decades. The 8.1 percent increase between 2000 and 2010 was the 55th ranked in the state. If you exclude people residing in group quarters such as dorms, prisons or nursing homes, the growth was 7.3 percent.

Figure 11. Estimated City Population 2000 to 2009

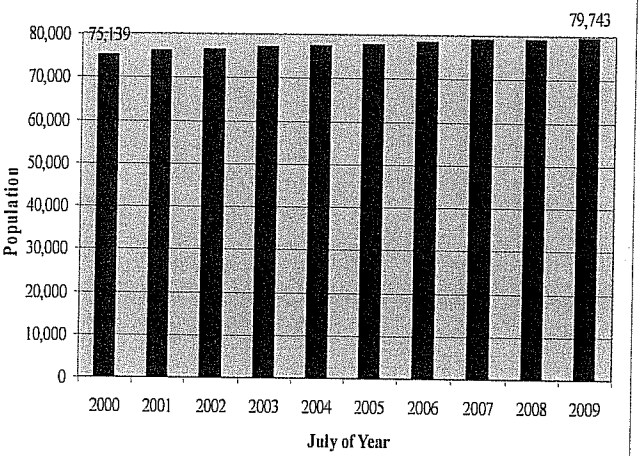


Figure 12 presents the number of women of child-bearing age from the 2000 and 2010 censuses. There were 1,070 births to Danbury residents in 2000 and an estimated 1,144 in 2010. In communities like yours, women in the 25-29 age-group have the highest rate of births. The number in this group rose 6.9 percent from 2,874 in 2000 to 3,073 in 2010. The second highest birth rate in communities like yours is women ages 30-34. The number in that age range fell 7.0 percent from 3,248 in 2000 to 3,022 in 2010. The only other age range that decreased significantly was 35-39.

Figure 12. Women of Child-Bearing Age

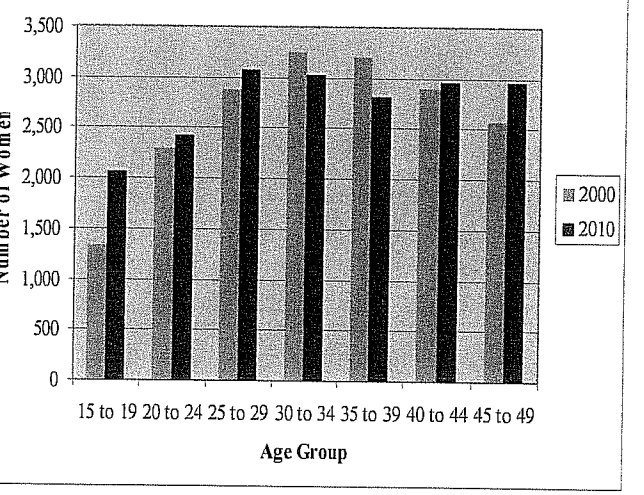


Figure 13 examines the number of people in the labor market from the US Department of Labor, Bureau of Labor Statistics. These are people 16 years of age or older who were working or actively seeking employment. Since it excludes most students and the elderly, I find it a very rough proxy of the number of school-age families. The Danbury labor force increased 2.6 percent between 2006 and 2010. This was lower than the state (3.9 percent) and Fairfield County (3.1 percent). The 2010 unemployment level of 7.9 percent was up 0.4 percentage points over 2009. It is worse than the state rate of 9.1 percent and the Fairfield County rate of 8.3 percent.

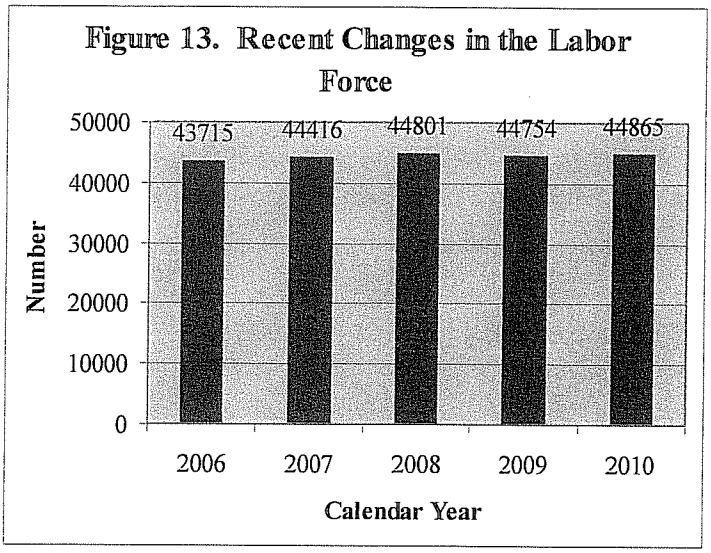


Figure 14 presents the net new housing units constructed from 2000 to 2010 from the State Department of Economic and Community Development. In the past ten years the number of net (of demolitions) new housing units constructed in Danbury ranged from a high 598 in 2005 down to a low of 81 in 2008. There were permits for 116 new housing units issued in 2010. In the five-year look-back period for this projection, there was an average of 175 net new housing units constructed. The 2010 census indicated that Danbury had 31,154 housing units of which 7.2 percent were unoccupied in April 2010. Permits issued through August indicate there will be no rebound in 2011.

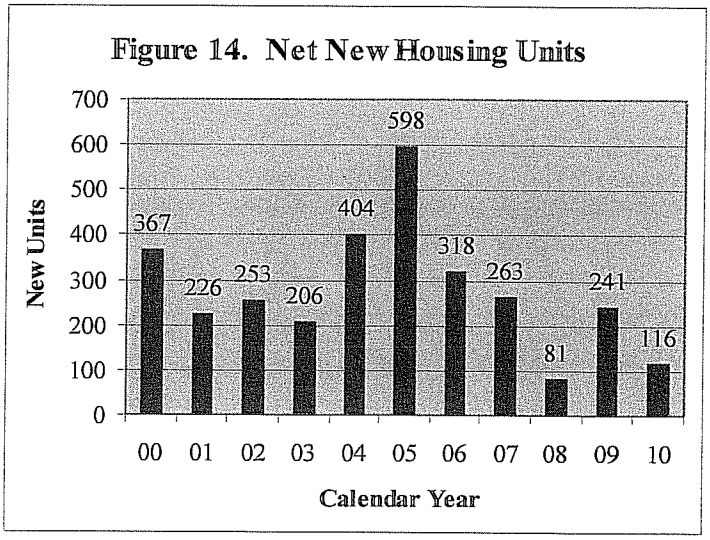


Figure 15 presents my estimate of the number of sales of existing homes. I derived it by taking the number of real estate transactions from The Warren Group/Commercial Record and subtracting the number of new single-family housing units authorized. This is an estimate because of the lag between the time a new house is authorized and it is sold. The estimated number of sales of existing homes ranged from a low of 622 in 2011 to a high of 1,568 in 2003. In the five-year look back period for the projection, there were 741 sales annually. Based on sales through July, I anticipate there will be about 575 sales of existing houses in 2011.

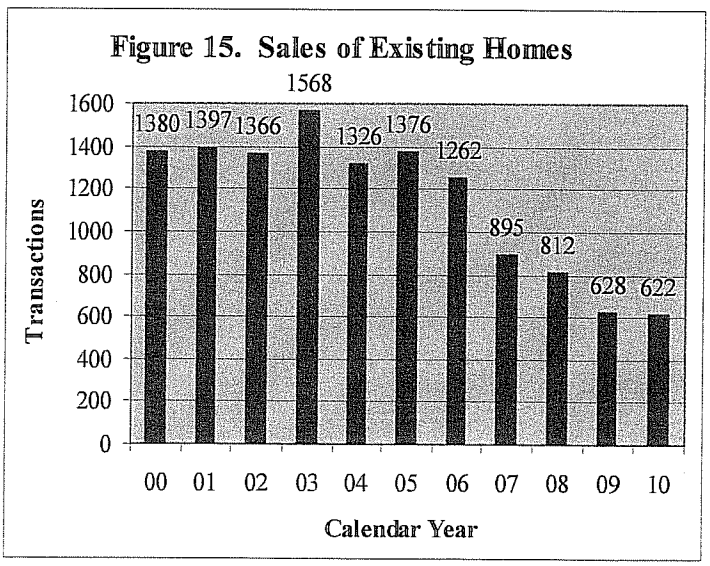


Figure 16 presents the percentage of Grade 9 students who were reported as being in that grade last year. Between 2005 and 2009 an average of 14.2 percent of the students enrolled in Grade 9 were repeating the grade. In 2010, the policy was changed and the percentage repeating plunged to 1.4 percent. In 2011, the former policy was restored and the percentage repeating was 13.2 percent. The projection used enrollment from 2008, 2009 and 2011 to project Grade 9 enrollment. The percentage repeating the grade in that period was 13.6 percent.

Figure 17 presents the non-public enrollment over the past ten years for students from the city of Danbury. The data are from the records of the Connecticut State Department of Education. Non-public enrollment ranged from a high of 1,741 students in 2000 to a low of 1,290 students in 2010, the latest data available. In the past ten years, enrollment in the non-public schools decreased by 451 students or 25.9 percent. The 2010 enrollment represented 10.9 percent of all students from Danbury. That is down from 12.6 percent in 2009 and the 13.6 percent recent high set in 2007. I expect the non-public enrollment from Danbury will be down 60 students in 2011.

Figure 18 presents the non-resident enrollment in the Western Connecticut Academy of International Studies Magnet. The magnet school opened in 2006 with grades K-4 with an initial non-resident enrollment of 85 students. They represented 33.1 percent of the school's 257-student enrollment. In 2011 there were 172 students enrolled in grades K-5 from 12 surrounding communities. That represented 44.2 percent of the school's 389-student enrollment. The projection assumed the school will enroll 30 non-resident students annually in kindergarten.

Figure 16. Repeaters of Grade 9

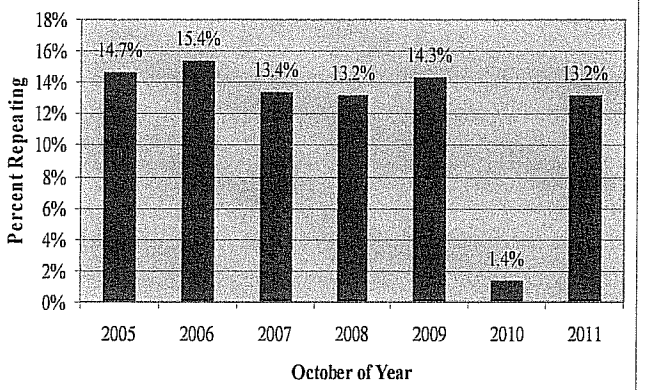


Figure 17. Non-Public School Enrollment

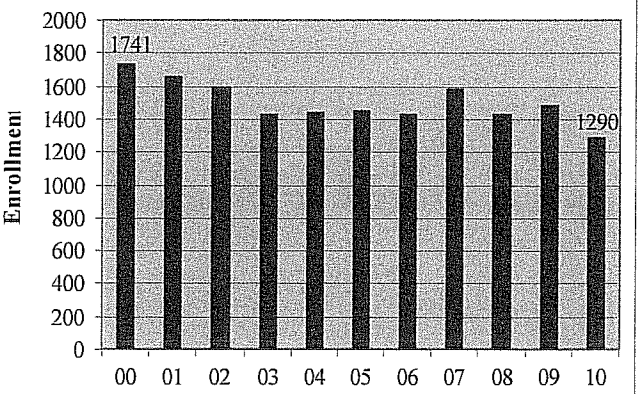


Figure 18. Non-Residents in the Academy of International Studies Magnet

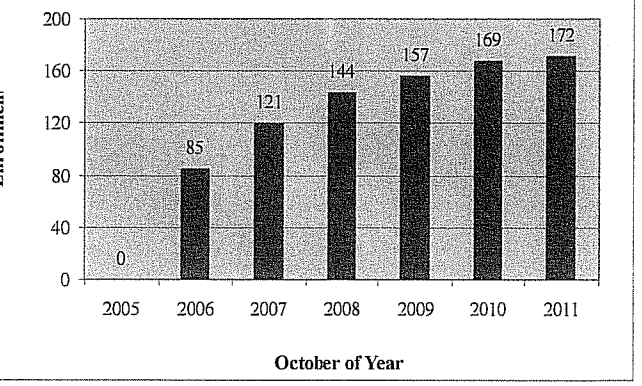


Figure 19 presents the enrollment of Danbury residents in other public schools in Connecticut from 2002 to 2011. The number educated out-of-district went from 373 in 2002 to 289 in 2006 and then recovered to 365 in 2011. Most of the students attended Henry Abbott State Technical High School. In 2011, 18 students attended a special education program run by a regional educational service center, 11 attended another public school, 335 attended Abbott Tech and one attended the agriculture science program at Nonnewaug High School.

Figure 20 presents the estimated migration of students from Danbury. The estimate takes into account non-residents in Danbury and Danbury residents attending other public schools. Estimated migration ranged from a low of -1.9 percent in 2004 to a high of +1.7 percent in 2000. The estimated migration was +1.0 percent in 2011. The data behind these figures may be found in Appendices A and B. The average migration in the projection's five-year look-back period was +0.59 percent.

Figure 19. Residents Enrolled in Other Public Schools

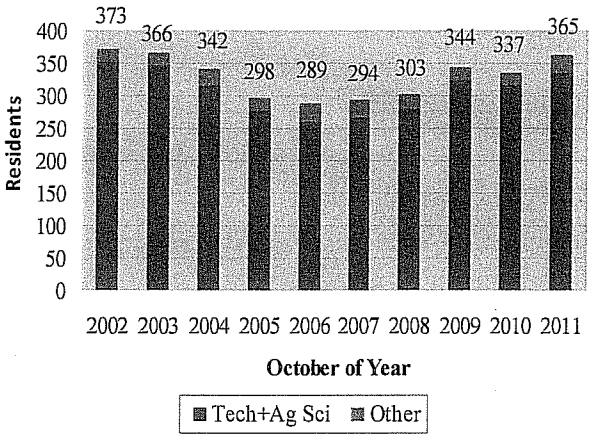
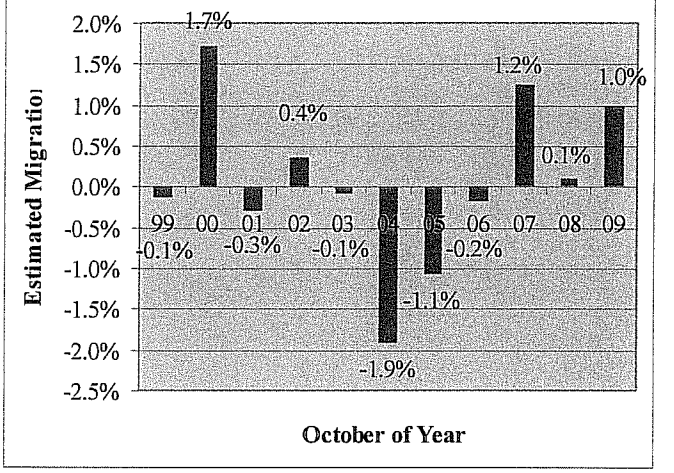


Figure 20. Estimated Student Migration

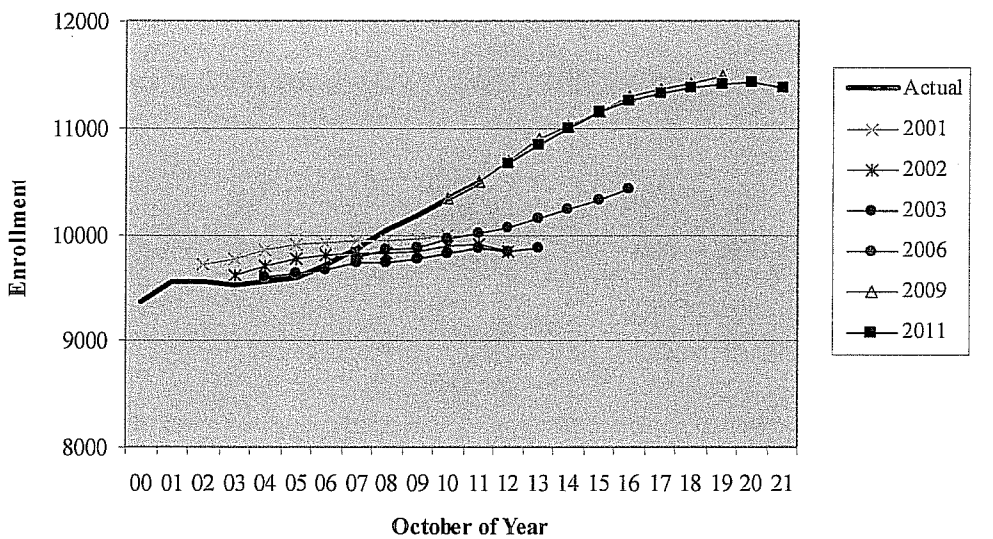


Prior Projections of Enrollment

The cohort-survival projection method works by moving forward the pattern of recent events that are subsumed within the grade-by-grade enrollment. This works very well when communities are stable. That includes places that are growing or declining at a steady rate. One way to know if that assumption is valid is to examine how past projections have fared. Figure 21 presents the enrollment projections that I have run for Danbury since 2001. The five enrollment projections that I did between 2001 and 2009 had one-year error rates that averaged 0.8 percent. The four projections done between 2001 and 2006 had an average five-year error rate of 2.6 percent, which is 0.51 percent annualized.

My 2009 projection for Danbury is running 0.01 percent high after two years. In that analysis, I projected that K-5 enrollment would be 5,068 students in 2011. The actual enrollment of 5,118 was 50 students more than projected. The projection was low by 1.0 percent over two years. I projected that enrollment in grades 6-8 would be 2,273 students in 2011. The actual enrollment of 2,232 was 41 students less than projected. The projection was high by 1.85 percent. I projected that high school enrollment would be 2,942 students in 2011. The actual enrollment of 2,981 was 39 students more than projected. The projection was low by 1.31 percent over two years. The 2011 projection kept pre-kindergarten enrollment constant at 208 children. The actual enrollment in 2011 was 159 children.

Figure 21. Prior Projections of Enrollment



In my work I have found the cohort-survival method provides estimates that are sufficiently accurate for intermediate-range policy planning. The eight-year planning horizon for school construction grants is at the limit of the useful accuracy of the method. I analyzed the eight-year accuracy of the district projections from across the state that I ran in 1999. I found for the 66 district-level projections, the 1999 projection had a 7.5 percent error rate in predicting 2007 enrollment. The error was less than five percent in 38 percent of the projections and more than 15 percent in 11 percent of the projections. The projections run in 1999 under-estimated the 2007 enrollment by an average of 1.7 percent.

Summary

I project that total enrollment will increase 8-9 percent percent, going from 10,490 students in 2011 to about 11,380 students in 2021. The system should establish a new peak enrollment in 2016 and continue to expand through 2020. I project that K-5 enrollment will move upward from 5,118 in 2011 to about 5,400 students in 2015 and then fall back to about 5,020 students in 2021. This will be about a 100 student loss, a decline of about two percent. I believe that future middle school enrollment will move upward from 2,232 in 2011 to about 2,730 in 2019 or 2020 and then fall off to about 2,680 students at the end of the projection. The net increase between 2011 and 2021 will be about 450 students or about 20 percent. Between 2011 and 2021, I project that high school enrollment will grow from 2,981 students to about 3,525 students. That is a projected increase of 550 students, representing more than an 18 percent increase.

This 2011 projection is projecting the same basic pattern of enrollment in the future as my 2009 projection. The most the two projections vary in any year is 71 students. Births in 2010 to 2016 are lower in this projection than in 2009. The kindergarten yield from births is virtually identical in the two projections. Pre-kindergarten classes were cut in 2010 and although they grew a little in 2011, they still are about 60 children less than carried forward in 2009. The yield from Grade 8 was 1.141 percent in this projection and 1.169 percent in the 2009 projection. The underlying migration rate over the past five years was +0.59 percent in this projection and +0.45 percent in my 2009 projection.

These projections are based upon several other assumptions revolving around the notion that the recent past is a good predictor of the near future. The projection assumes that the following school policies will continue: kindergarten will remain a mixture of half- and full-day; retention policies will not change; no expansion of area magnet schools and no change in the drop-out rate. The projection assumes the following population growth factors will not change appreciably: births will average 1,102 over the 2012 to 2016 period; a 31 percent decrease between the number of births and subsequent kindergarten enrollment; and a student migration of +0.59 percent. Additionally, there will be a slight decline in non-public school enrollment; 175 new housing units will be constructed annually; there will be an average of 741 sales of existing homes and a slowly increasing labor force.

This remains a difficult time to predict future enrollment. A high unemployment rate, a sputtering economic recovery and mortgage foreclosures all make conditions today different than a couple of years ago. Danbury's 7.9 percent unemployment rate for 2010 is the highest since these data were reported in the Local Area Unemployment Statistics of the US Department of Labor starting in 1990. The economy likely played a role in the decline of non-public school enrollment. These conditions are only a part of the five-year enrollment history that is used to look forward to the next ten years. We cannot know today how long these conditions will continue. The cohort survival method relies on observed data from the recent past. The method is somewhat unresponsive to change. However, I know of no alternative data-based model that is responsive and produces grade-level data.

This projection should be used as a starting point for local planning. Examine the factors and assumptions underlying the method. You know your community best. Apply your knowledge of the specific conditions in Danbury and then make adjustments as necessary.

Appendix A. Danbury Enrollment Projected by Grade to 2021: Grades PK-5

School Year	Birth Year	Births[1]	K	1	2	3	4	5	PK	Total K-5	Total PK-5
2001-02	1996	1067	747	734	774	704	688	713	323	4360	4683
2002-03	1997	1076	720	777	721	769	688	704	124	4379	4503
2003-04	1998	991	660	781	743	721	756	694	106	4355	4461
2004-05	1999	1076	754	728	738	715	682	752	168	4369	4537
2005-06	2000	1070	743	776	699	725	711	682	150	4336	4486
2006-07	2001	1086	763	791	774	703	717	696	176	4444	4620
2007-08	2002	1122	825	802	767	763	700	721	188	4578	4766
2008-09	2003	1196	898	855	808	769	756	708	196	4794	4990
2009-10	2004	1028	787	914	845	796	773	761	217	4876	5093
2010-11	2005	1165	842	836	915	837	803	786	138	5019	5157
2011-12	2006	1190	874	899	818	905	817	805	159	5118	5277
Projected											
2012-13	2007	1212	892	919	890	810	899	824	159	5234	5393
2013-14	2008	1234	908	937	910	881	805	907	159	5348	5507
2014-15	2009	1176	870	954	927	901	876	812	159	5340	5499
2015-16	2010	1144	846	914	944	918	896	883	159	5401	5560
2016-17	2011	1081	802	889	905	935	912	904	159	5347	5506
2017-18	2012	1112	820	843	880	896	929	920	159	5288	5447
2018-19	2013	1095	811	862	834	871	891	937	159	5206	5365
2019-20	2014	1103	815	852	853	826	866	899	159	5111	5270
2020-21	2015	1099	812	857	843	845	821	873	159	5051	5210
2021-22	2016	1101	814	853	848	835	840	828	159	5018	5177
Projection Growth[2]			[3]	1.051	0.990	0.990	0.994	1.009			
Annual Growth Rates											**Estimated Migration[4]**
2002			0.669	1.040	0.982	0.994	0.977	1.023			0.37%
2003			0.666	1.085	0.956	1.000	0.983	1.009			-0.09%
2004			0.701	1.103	0.945	0.962	0.946	0.995			-1.92%
2005			0.694	1.029	0.960	0.982	0.994	1.000			-1.07%
2006			0.703	1.043	0.973	0.980	0.968	0.979			-0.19%
2007			0.735	1.051	0.970	0.986	0.996	1.006			1.24%
2008			0.751	1.036	1.007	1.003	0.991	1.011			0.09%
2009			0.766	1.018	0.988	0.985	1.005	1.007			0.98%
2010			0.723	1.062	1.001	0.991	1.009	1.017			1.47%
2011			0.734	1.068	0.978	0.989	0.976	1.002			-0.28%
5 Year Ave.			0.742	1.047	0.989	0.991	0.995	1.009			
3 Year Ave.			0.741	1.049	0.989	0.988	0.997	1.009			
Weighted 5-Year Ave.			0.740	1.051	0.990	0.990	0.994	1.009			
Median, Past 10 Years			0.713	1.047	0.976	0.987	0.987	1.006			

[1] The 2010 births were based upon in-state births and out-of-state births less New York City through December.
2011 births were based on in-state births through September.
2012 - 2016 births were derived, in part, from the Connecticut State Data Center projection of children 0-4 years old.

[2] Grades 1-5 based on 5-year weighted averages of annual growth rates by grade.

[3] Kindergarten based on five-year weighted averages of estimated yield from births five- and six-years ago and retention at each of the elementary schools.

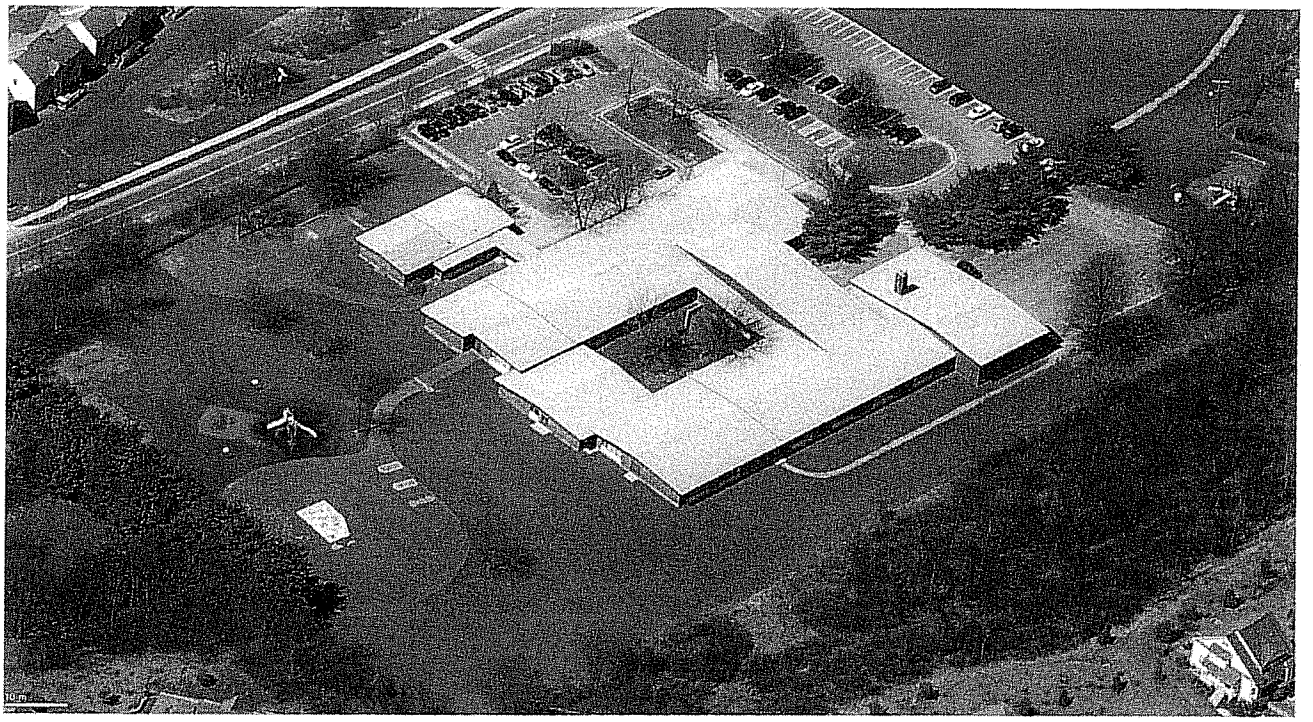
[4] Estimated by comparing the enrollment in grades 3-8 one year with the enrollment in grades 2-7 the prior year with an adjustment for residents out and non-residents in.

Appendix B. Danbury Enrollment Projected by Grade to 2021: Grades 6-12

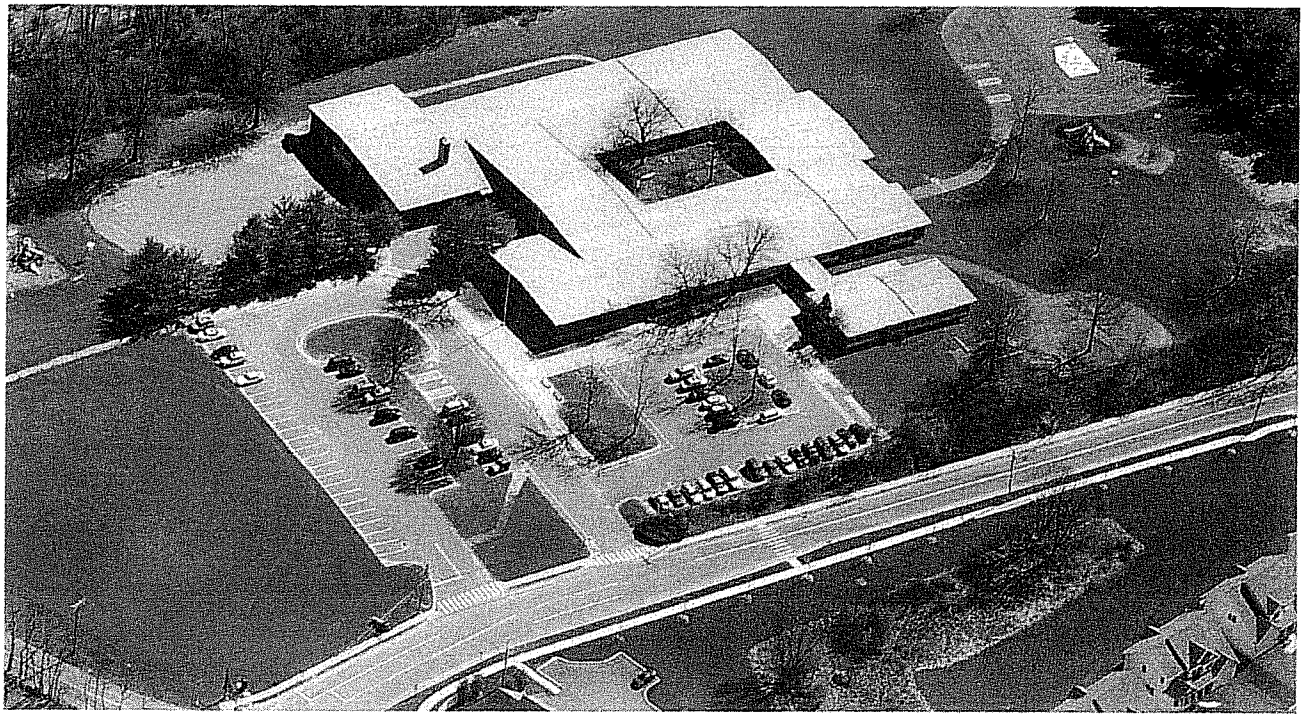
School Year	6	7	8	9	10	11	12	6-8 Total	9-12 Total	PK-12 Total
2001-02	753	721	741	813	679	615	562	2215	2669	9567
2002-03	708	762	738	885	692	657	614	2208	2848	9559
2003-04	697	711	770	847	719	666	650	2178	2882	9521
2004-05	685	706	696	906	726	660	640	2087	2932	9556
2005-06	719	679	716	880	770	676	660	2114	2986	9586
2006-07	691	725	705	852	724	728	662	2121	2966	9707
2007-08	719	701	756	837	722	699	675	2176	2933	9875
2008-09	693	713	719	843	729	680	673	2125	2925	10040
2009-10	700	714	730	845	721	701	675	2144	2942	10179
2010-11	758	710	741	719	835	700	724	2209	2978	10344
2011-12	747	755	730	839	727	735	680	2232	2981	10490
Projected										
2012-13	789	753	778	833	720	695	706	2320	2954	10667
2013-14	798	796	776	888	715	689	668	2370	2960	10837
2014-15	879	805	820	885	762	684	662	2504	2993	10996
2015-16	789	886	830	936	759	729	657	2505	3081	11146
2016-17	859	796	913	947	803	726	700	2568	3176	11250
2017-18	874	866	820	1042	812	768	698	2560	3320	11327
2018-19	896	881	892	936	894	777	738	2669	3345	11379
2019-20	913	904	908	1018	803	855	747	2725	3423	11418
2020-21	875	921	932	1036	873	768	822	2728	3499	11437
2021-22	849	882	949	1063	889	835	738	2680	3525	11382
Projection Growth Rates[1]	0.999	1.008	1.031	1.141	0.858	0.956	0.961			
Annual Growth Rates										**Migration**[2]
2002	0.993	1.012	1.024	1.194	0.851	0.968	0.998			0.37%
2003	0.990	1.004	1.010	1.148	0.812	0.962	0.989			-0.09%
2004	0.987	1.013	0.979	1.177	0.857	0.918	0.961			-1.92%
2005	0.956	0.991	1.014	1.264	0.850	0.931	1.000			-1.07%
2006	1.013	1.008	1.038	1.190	0.823	0.945	0.979			-0.19%
2007	1.033	1.014	1.043	1.187	0.847	0.965	0.927			1.24%
2008	0.982	0.992	1.026	1.115	0.871	0.942	0.963			0.09%
2009	1.010	1.030	1.024	1.175	0.855	0.962	0.993			0.98%
2010	1.016	1.014	1.038	0.985	0.988	0.971	1.033			1.47%
2011	0.978	0.996	1.028	1.132	1.011	0.880	0.971			-0.28%
5 Year Ave.	1.004	1.009	1.032	1.119	0.915	0.944	0.977			
3 Year Ave.	1.001	1.014	1.030	1.097	0.952	0.938	0.999			
Weighted 5-Year	0.999	1.008	1.031	1.103	0.944	0.935	0.988			
Median, Past 10	0.992	1.010	1.025	1.176	0.853	0.954	0.984			

[1] Grades 7and 8 based on 5-year weighted averages of annual growth rates. Grade 6 based on resident enrollment in Grade 5. Grade 9 based on average of 2008, 2009 and 2011 to reflect change in promotion policy in 2010. Grades 10-12 based on average of 2007 to 2009 to reflect change in policy in 2010 and return to the former promotion policy in 2011.

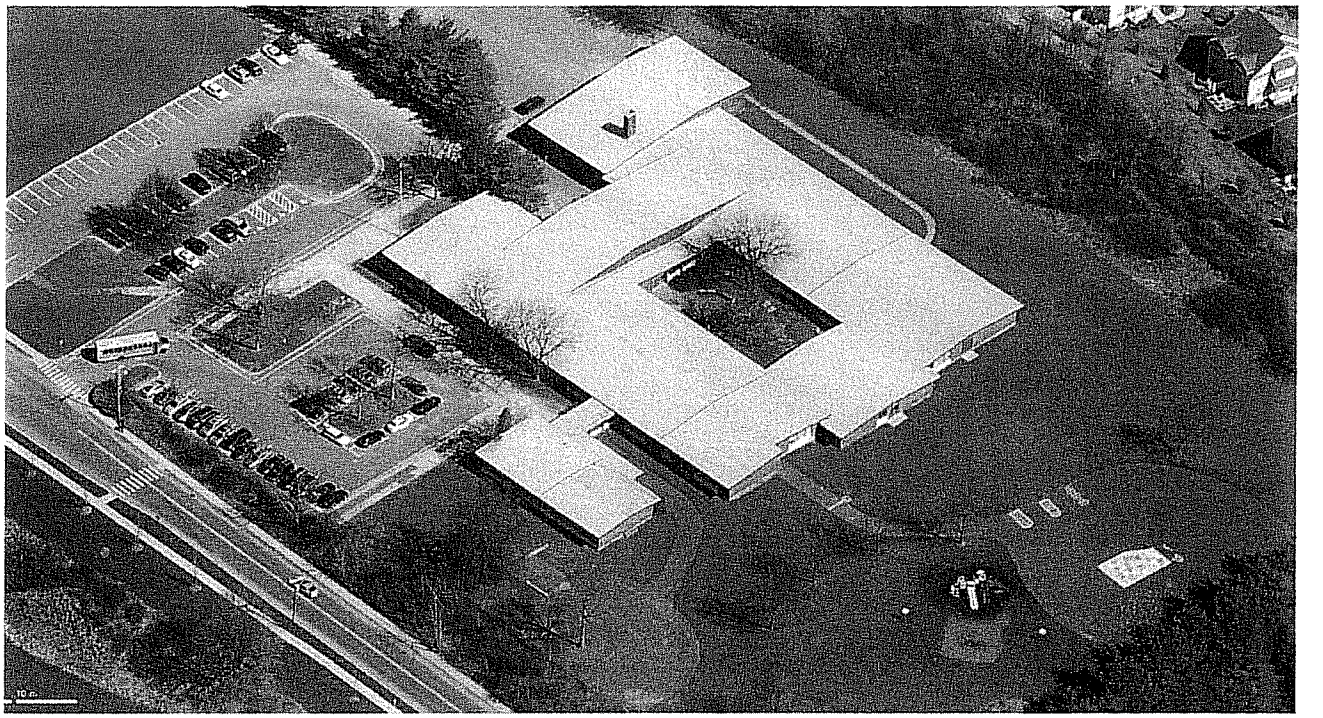
[2] Estimated by comparing the enrollment in grades 38 one year with the enrollment in grades 2-7 the prior year with an adjustment for residents out to public schools and non-residents in to the Danbury magnet.



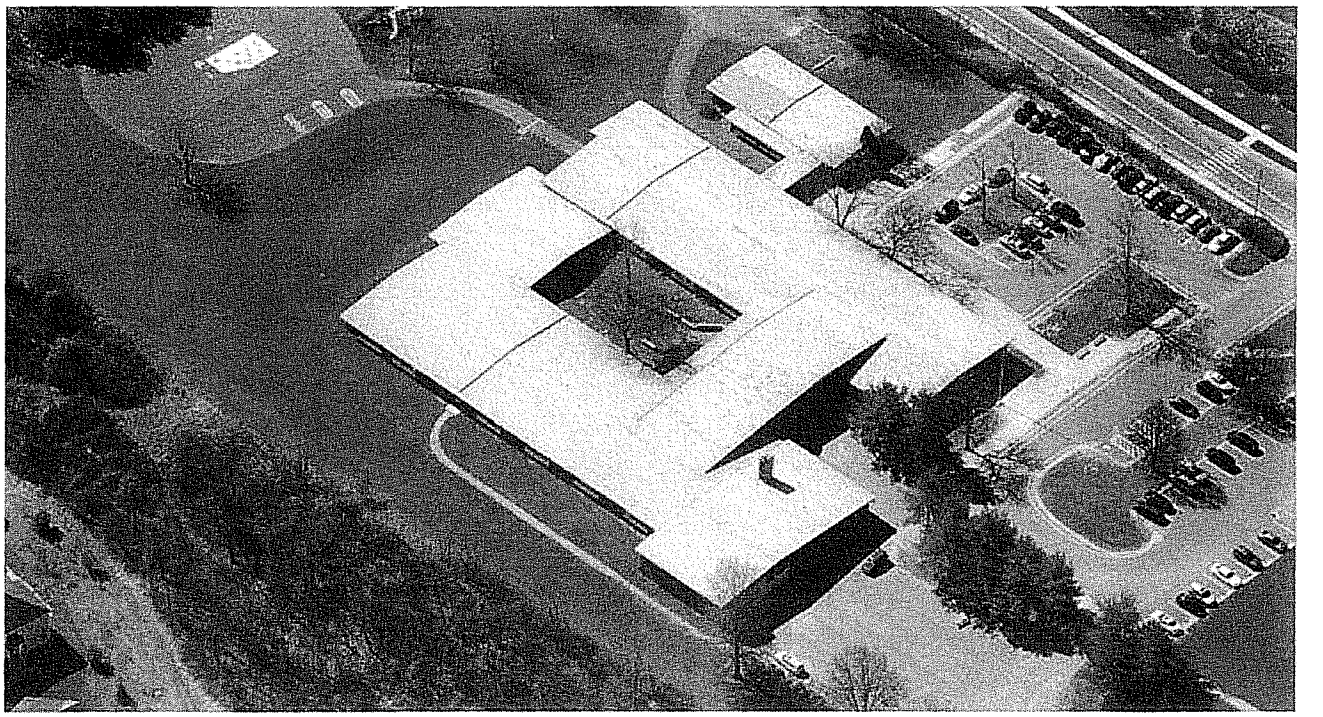
EXISTING AERIAL EAST TO WEST VIEW



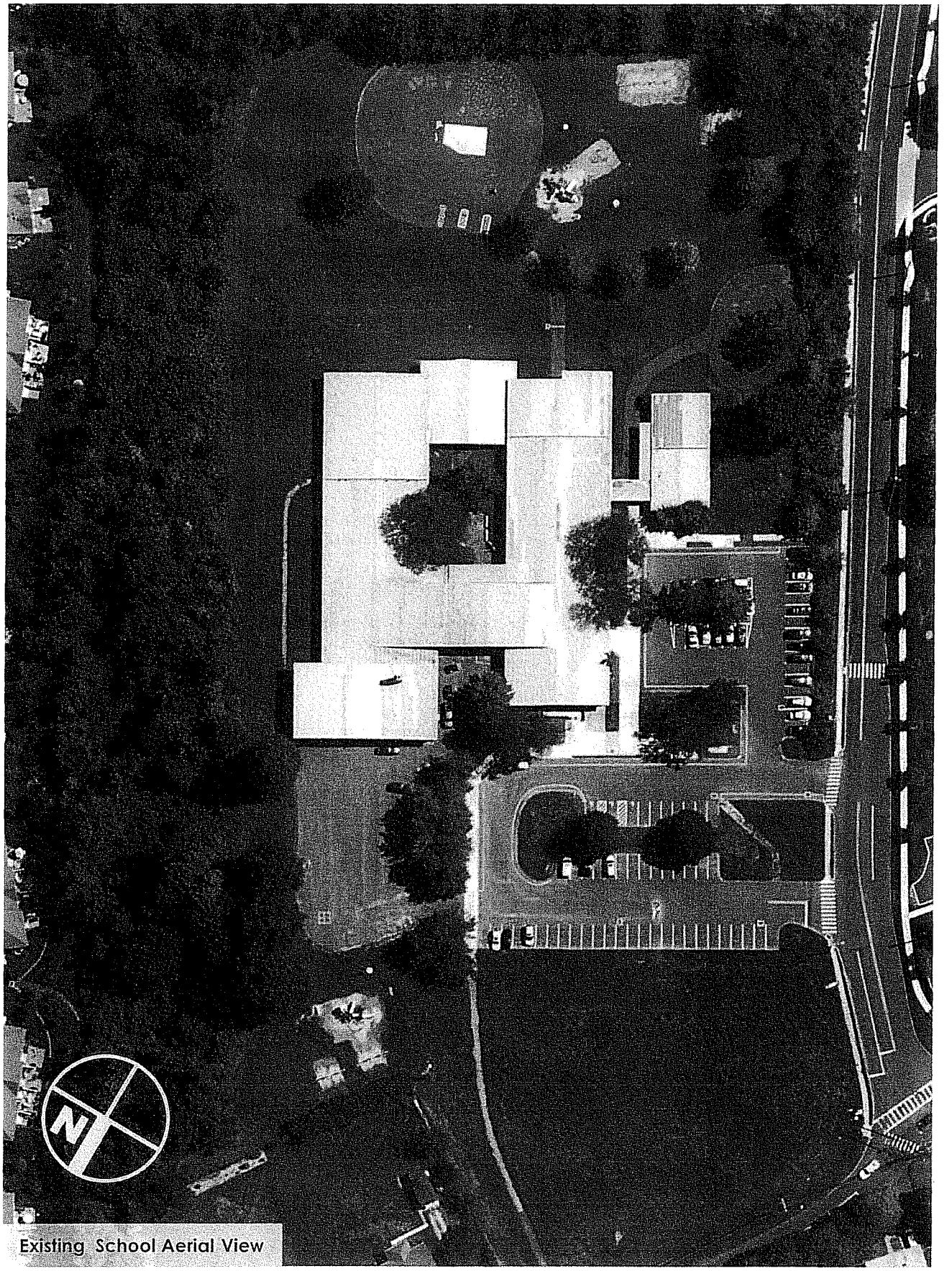
EXISTING AERIAL WEST TO EAST VIEW



EXISTING AERIAL SOUTH TO NORTH VIEW



EXISTING AERIAL NORTH TO SOUTH VIEW



Existing School Aerial View

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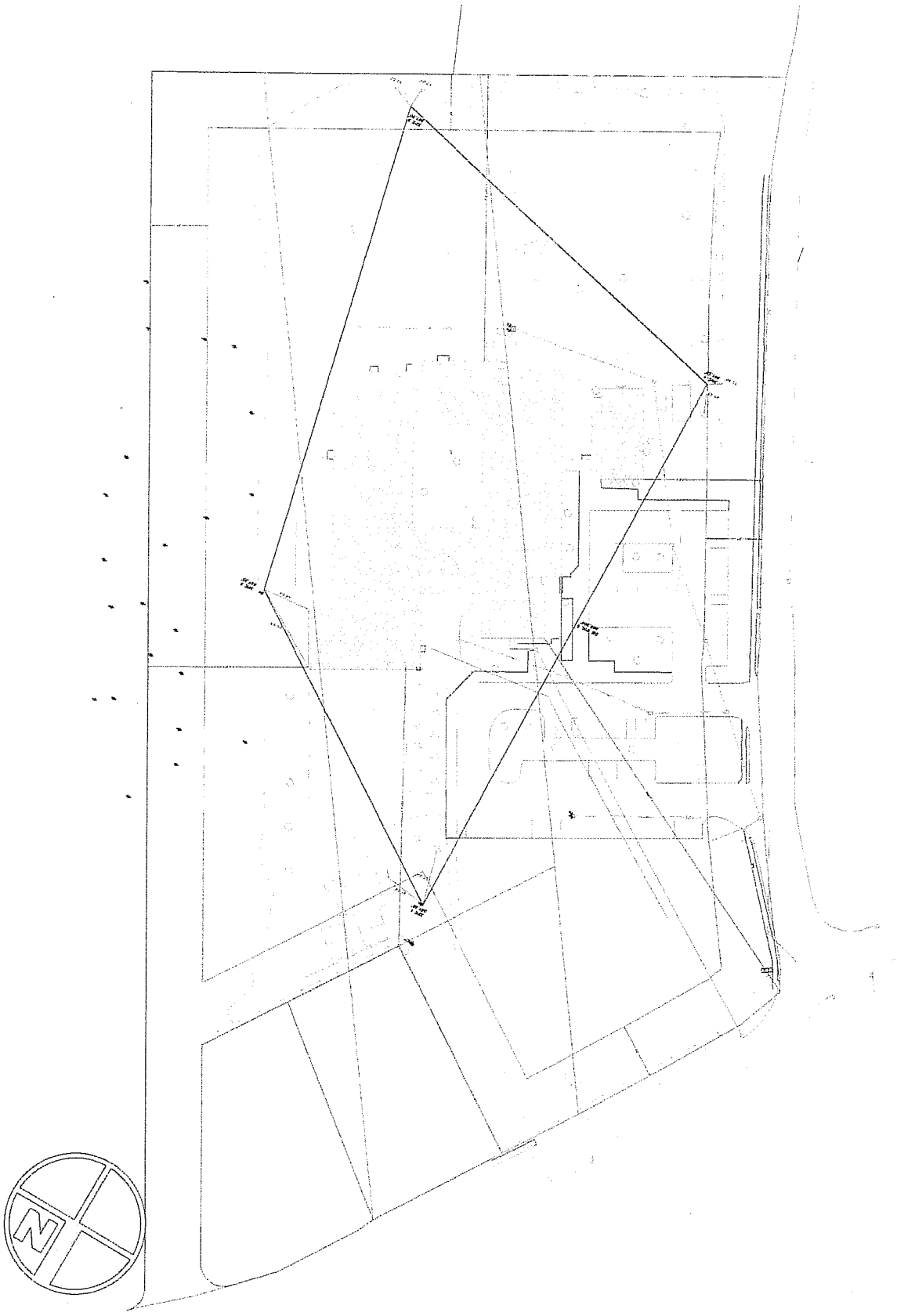
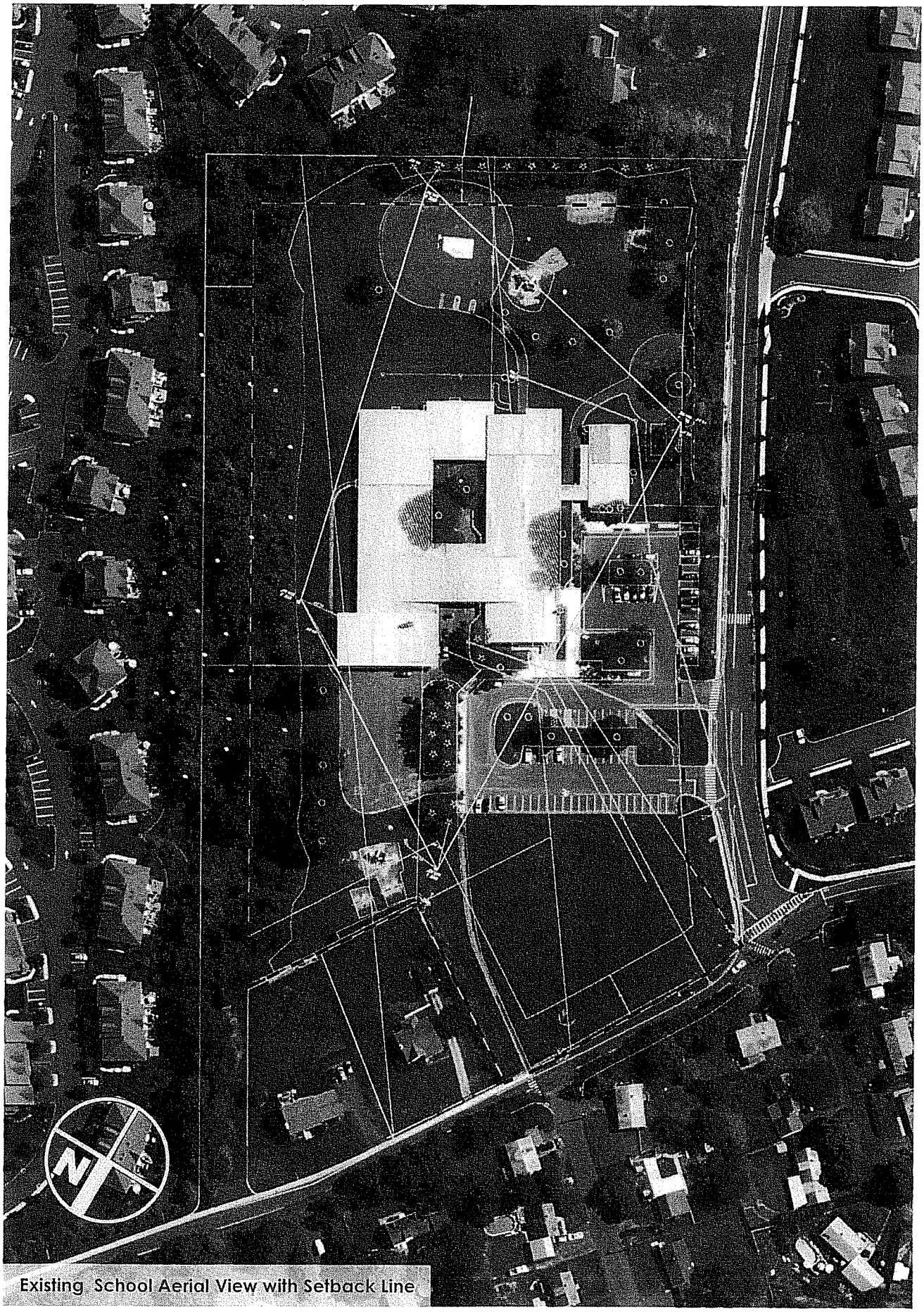


Existing School Site Drawing



Existing School Aerial View with Setback Line

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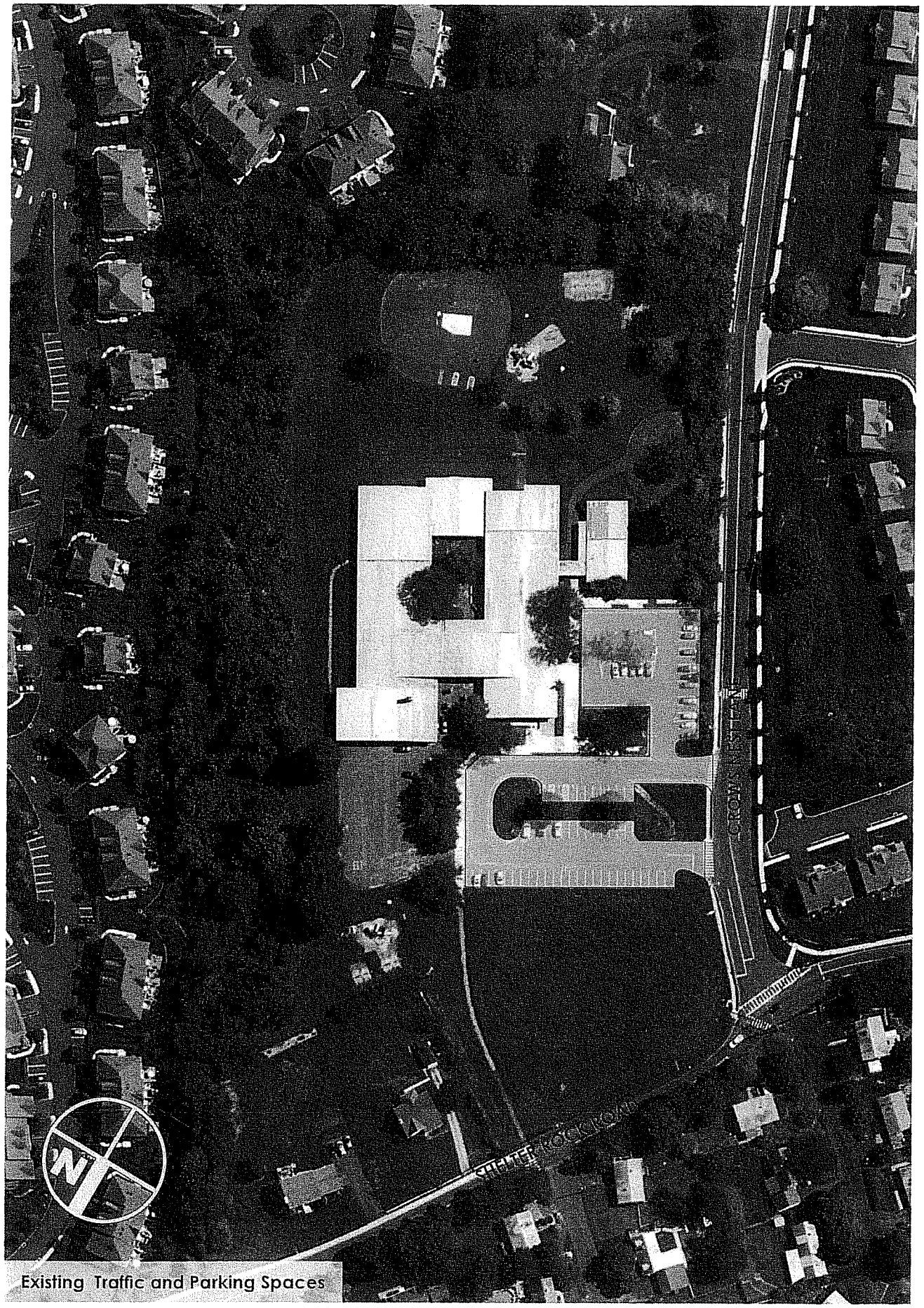

Existing Traffic and Parking Spaces

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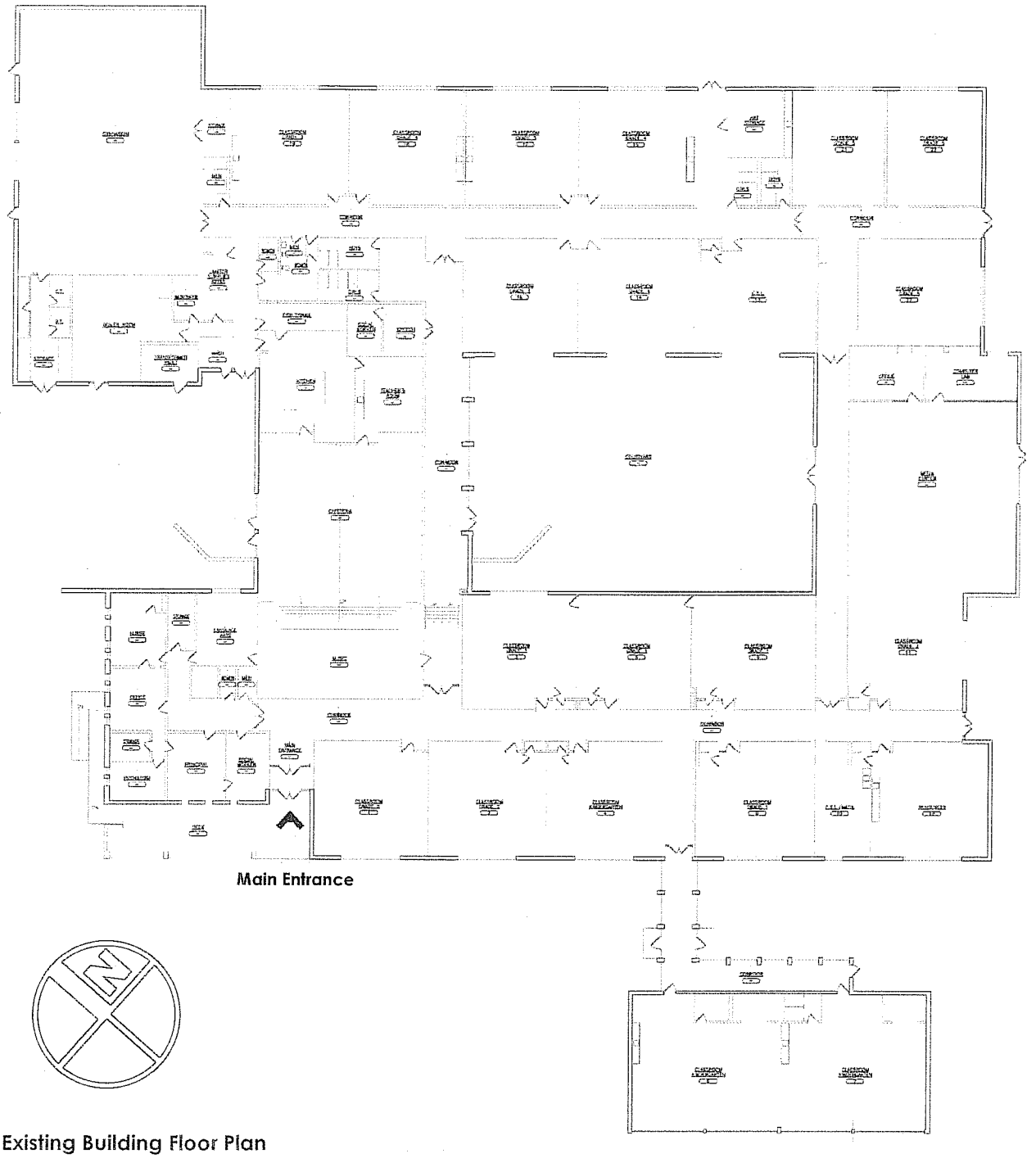
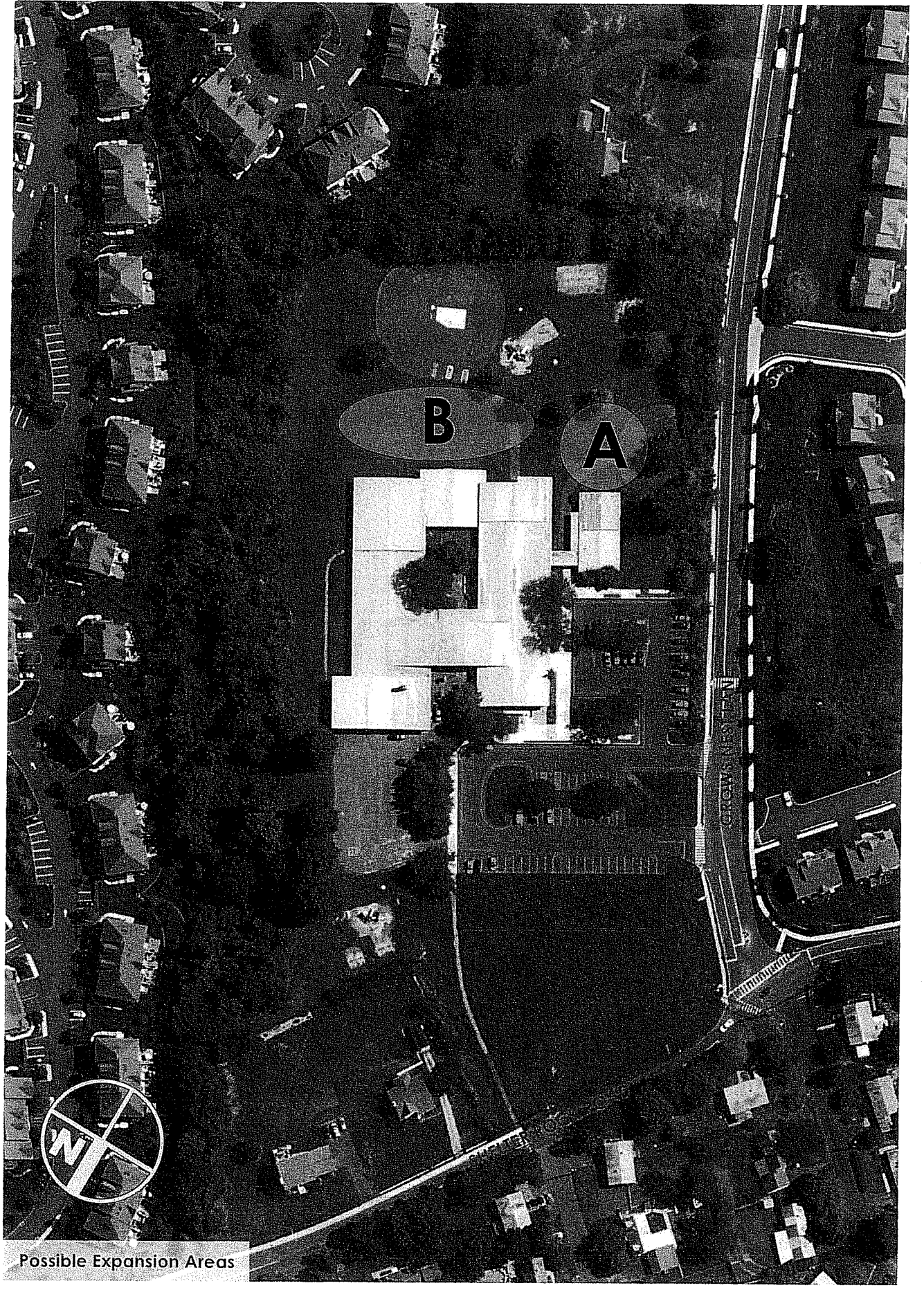


Existing Building Floor Plan



Possible Expansion Areas

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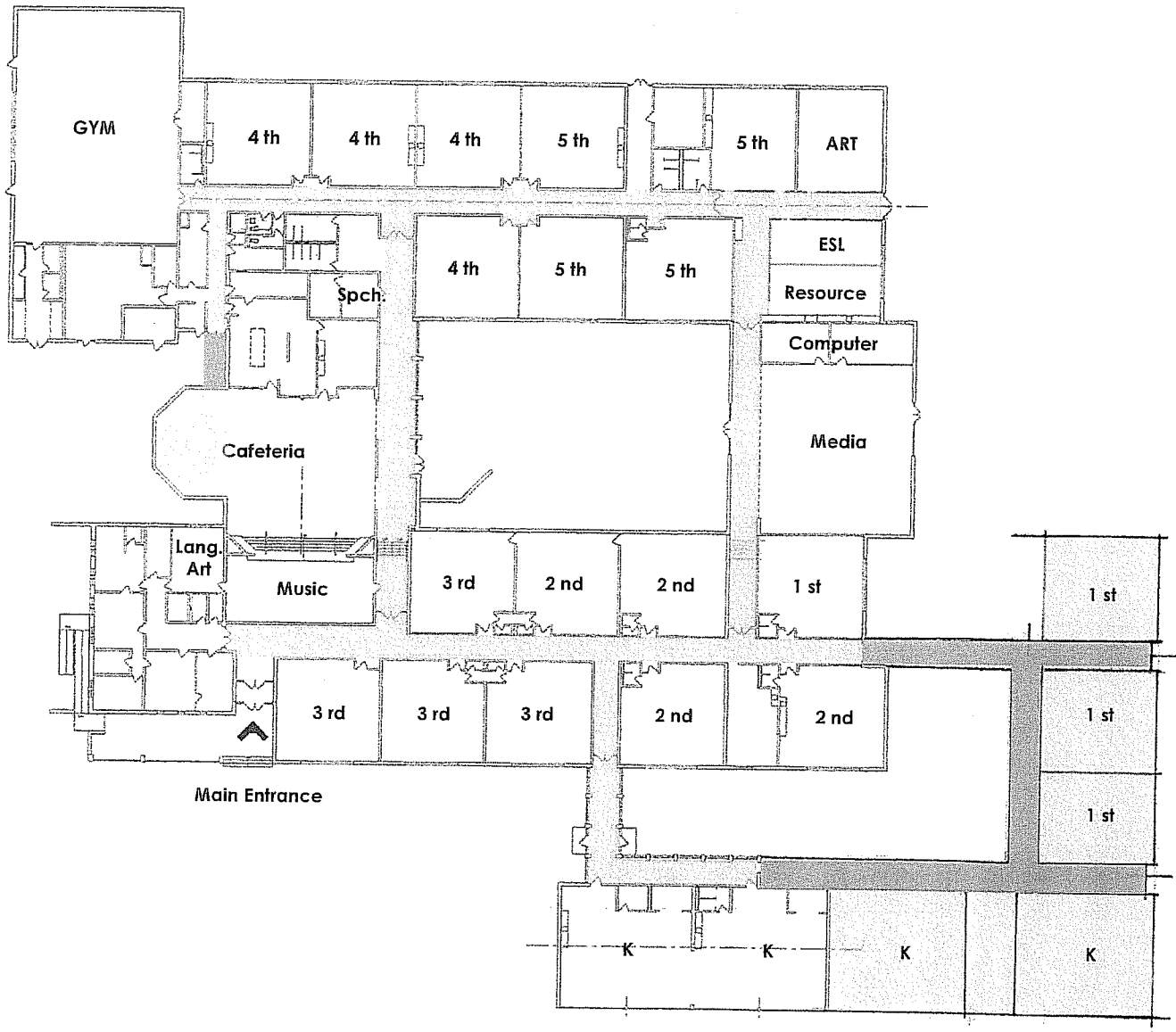
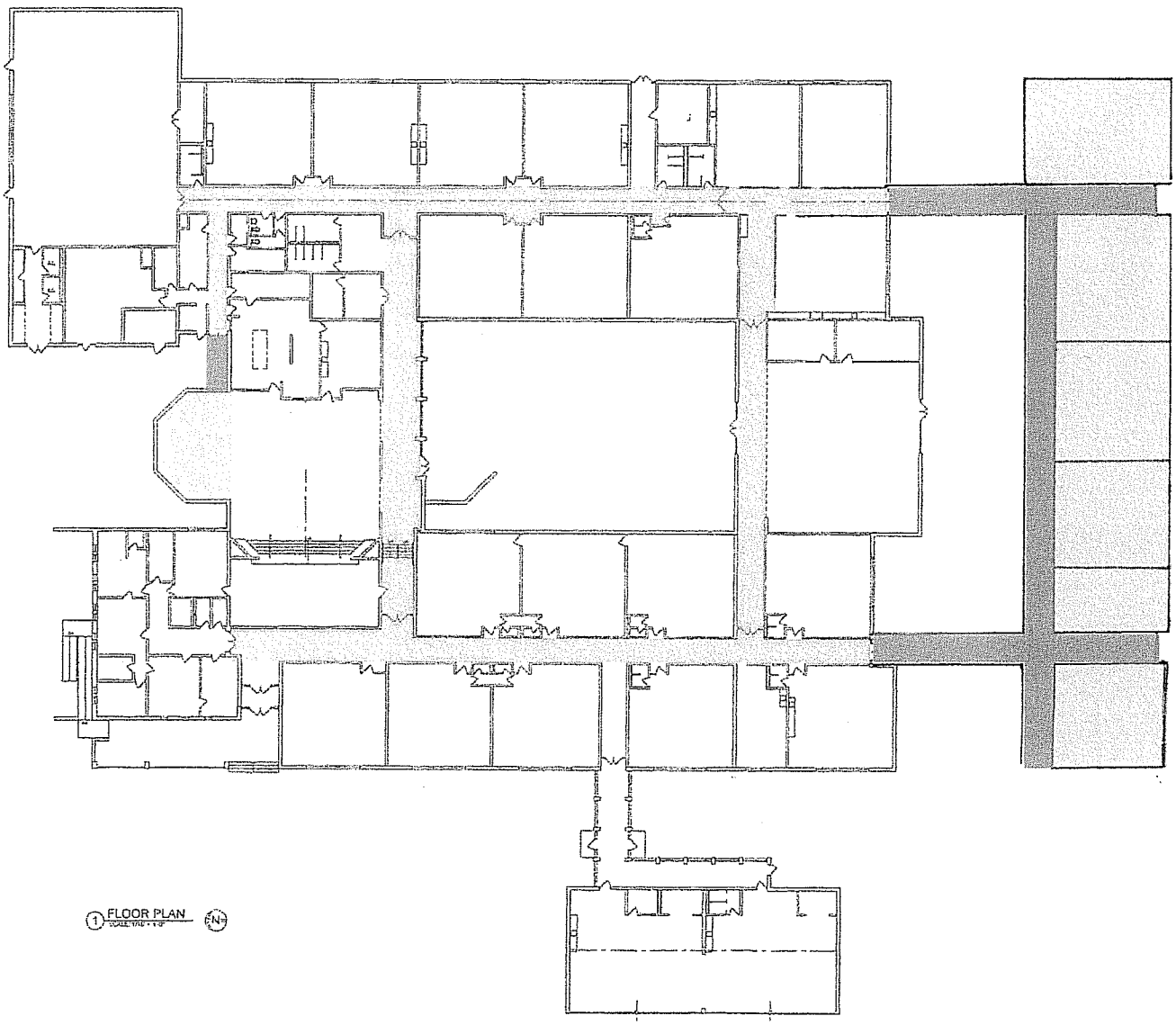
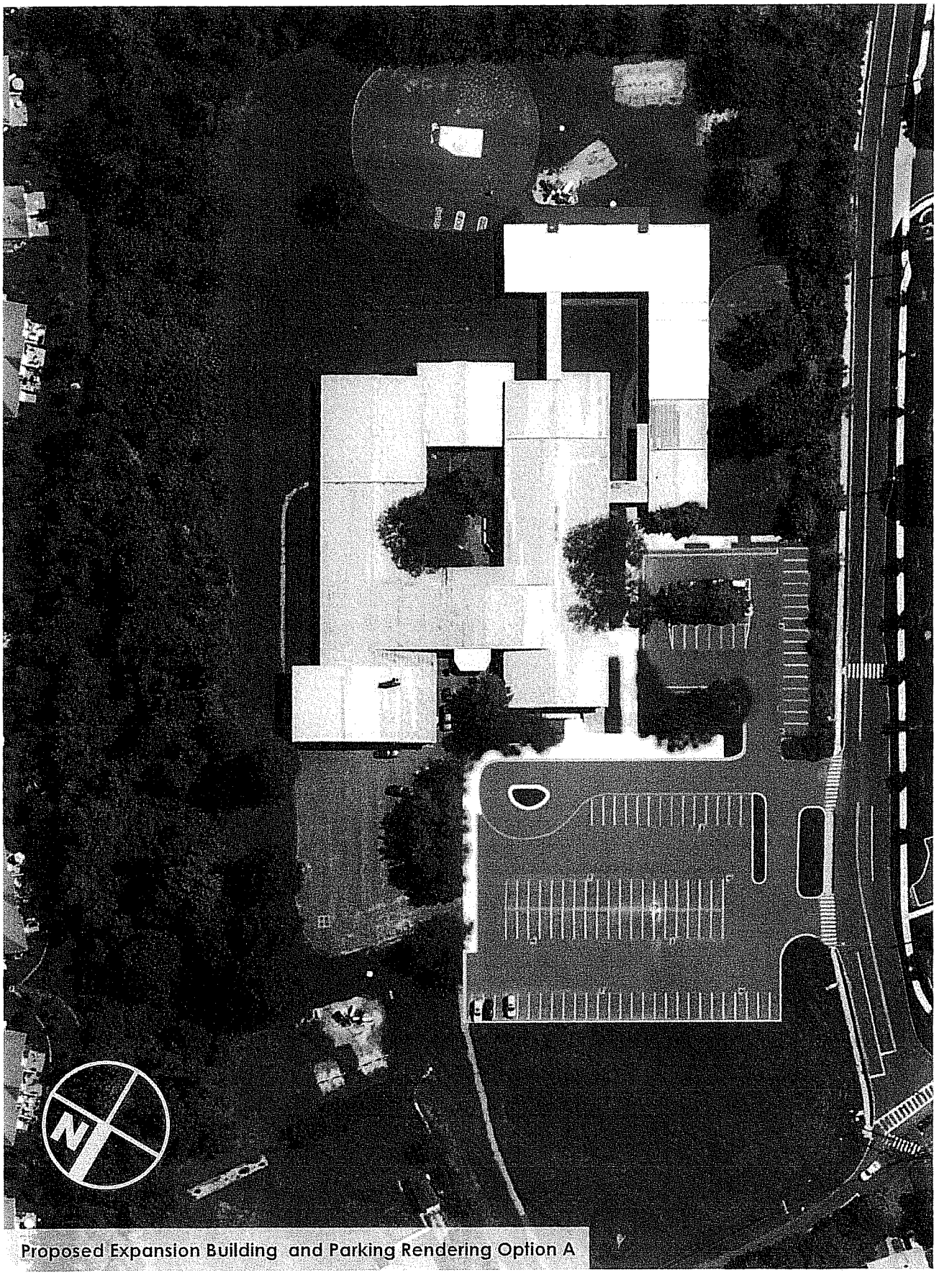


Proposed Expansion Building Floor Plan Option A



Proposed Expansion Building Floor Plan Option B



Proposed Expansion Building and Parking Rendering Option A

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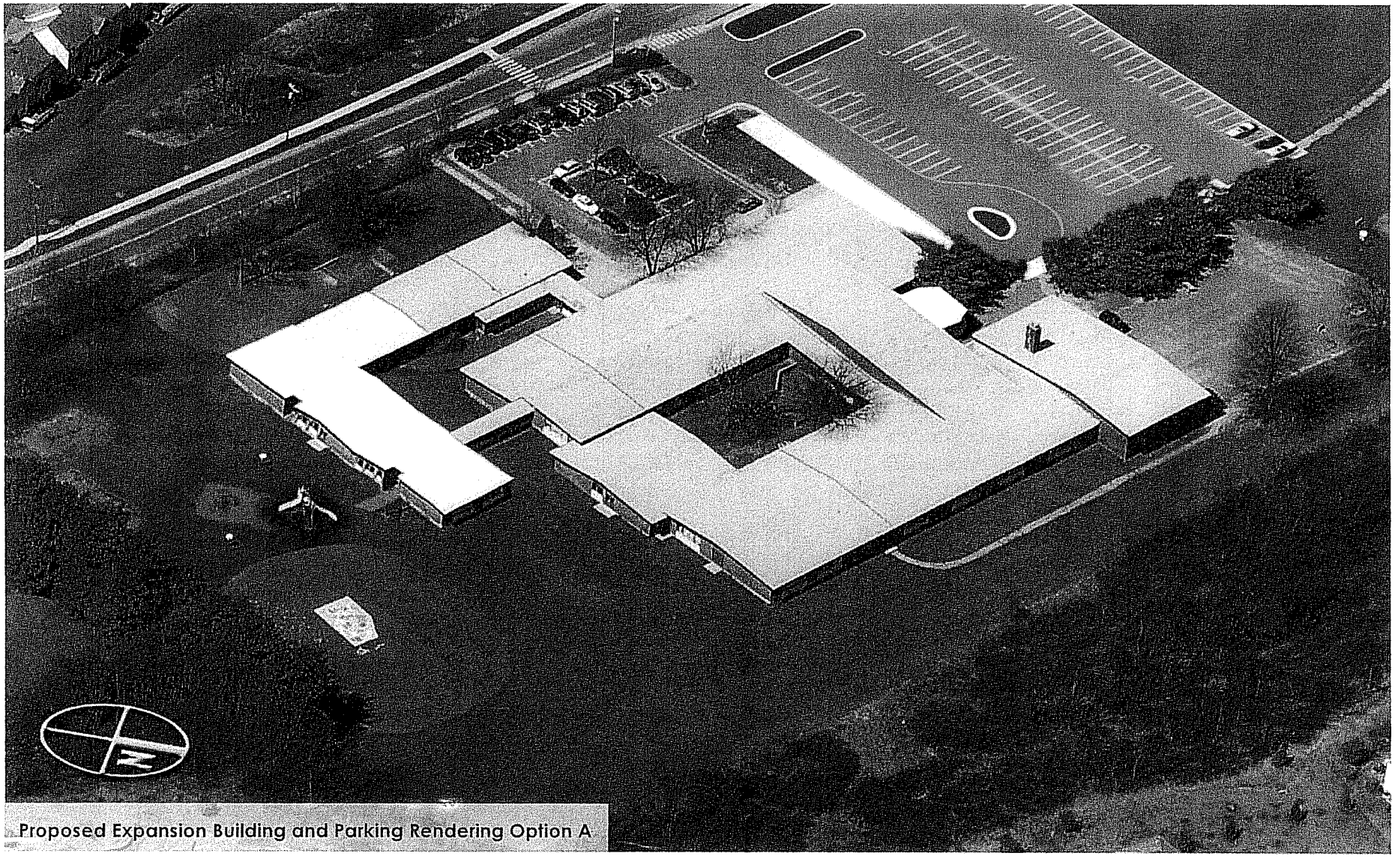

Proposed Expansion Building and Parking Rendering Option A

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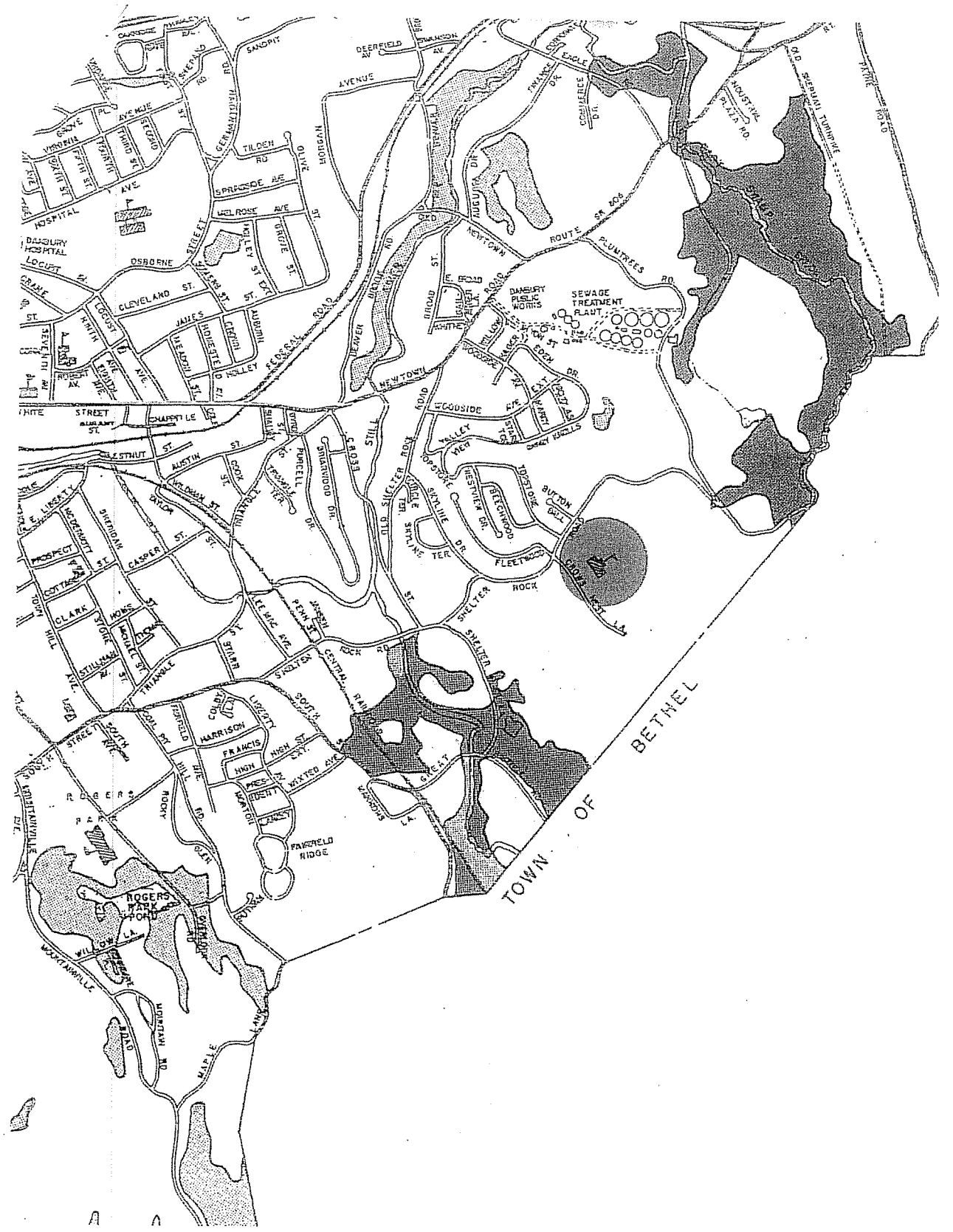

Wetland Areas

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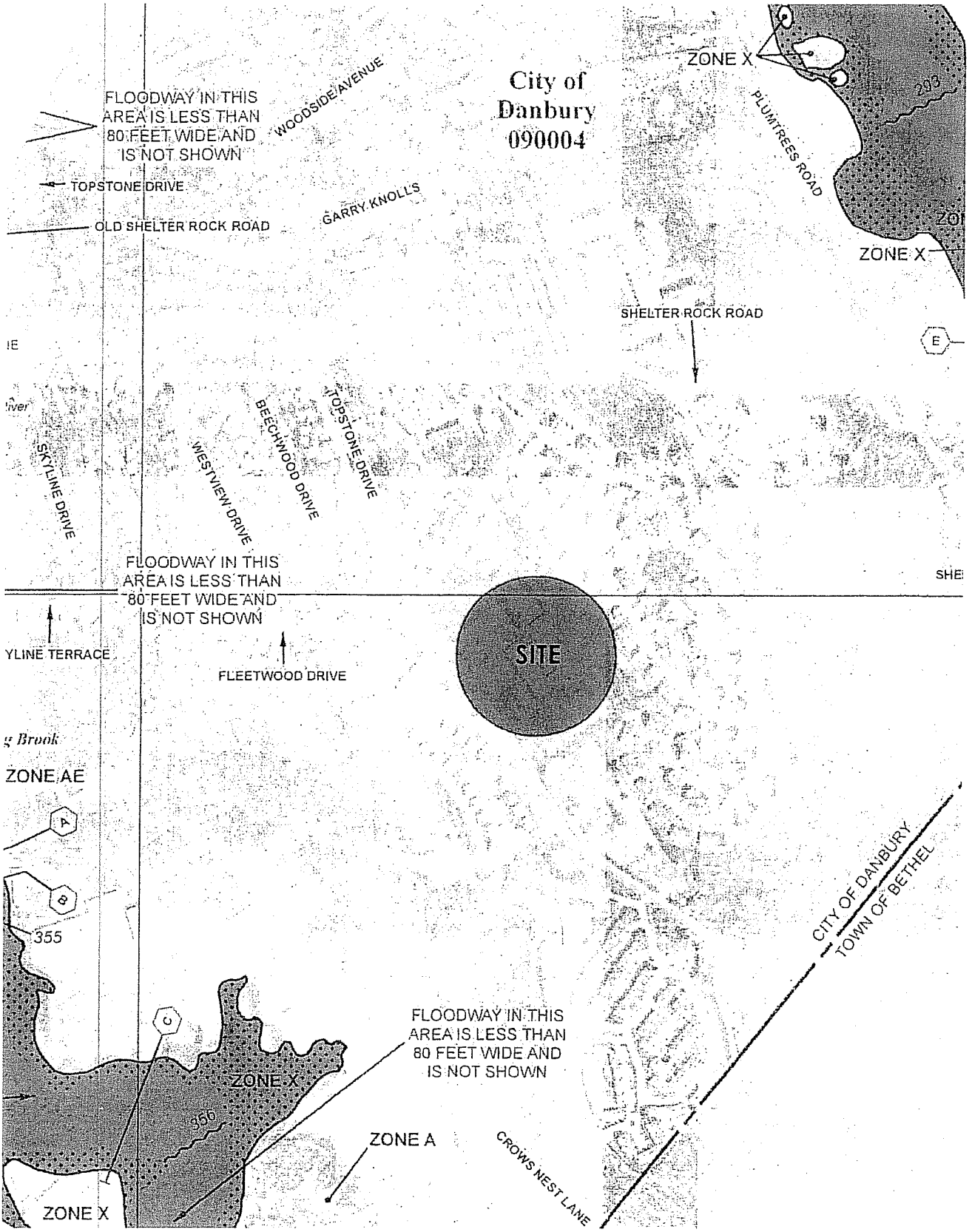
SHELTER ROCK ELEMENTARY SCHOOL

FACILITIES PLANNING STUDY AND MASTER PLAN FOR ADDITIONS AND ALTERATIONS



Flood Plain Areas Details

CONCEPTUAL COST ESTIMATE
DETAIL

OWNER: DANBURY PUBLIC SCHOOLS
PROJECT: ADDITIONS AND RENOVATIONS

ARCHITECT: FULLER & D'ANGELO, P.C.

DESCRIPTION	QUANTITY		UNIT COST [1]	HARD COST SUBTOTAL	MAT AND LAB ESCALATION [2] 4%	ESTIMATE CONTINGENCY [3] 15%	HARD COST TOTAL	SOFT COST TOTAL [4] 28%	PROJECT TOTAL	NOTES
SHELTER ROCK ELEMENTARY SCHOOL										
NEW CONSTRUCTION AND ASSOCIATED ALTERATIONS										
CLASSROOM ADDITION	9,450	SF	248.00	2,343,600	93,744	365,602	2,802,946	784,825	3,587,770	
MODIFICATIONS AT CONNECTION TO EXISTING	1	LS	50,000.00	50,000	2,000	7,800	59,800	16,744	76,544	
ELECTRIC SWITCHGEAR UPGRADE	1	LS	140,000.00	140,000	5,600	21,840	167,440	46,883	214,323	
ELECTRIC FEEDER TO ADDITION	1	LS	25,000.00	25,000	1,000	3,900	29,900	8,372	38,272	
SITEWORK AT ADDITION	1	LS	200,000.00	200,000	8,000	31,200	239,200	66,976	306,176	
RENOVATIONS [5]										
ELECTRIC TRANSFORMER REPLACEMENT [6]	1	LS	80,000.00	80,000	3,200	12,480	95,680	26,790	122,470	
SHELTER ROCK ELEMENTARY SCHOOL TOTAL				2,838,600	113,544	442,822	3,394,966	950,590	4,345,556	
ALTERNATE: CAFETERIA ADDITION - SEATING ONLY	900	SF	275.00	247,500	9,900	38,610	296,010	82,883	378,893	
ALTERNATE: PARKING AND DROP-OFF	1	LS	604,600.00	604,600	24,184	94,318	723,102	202,468	925,570	

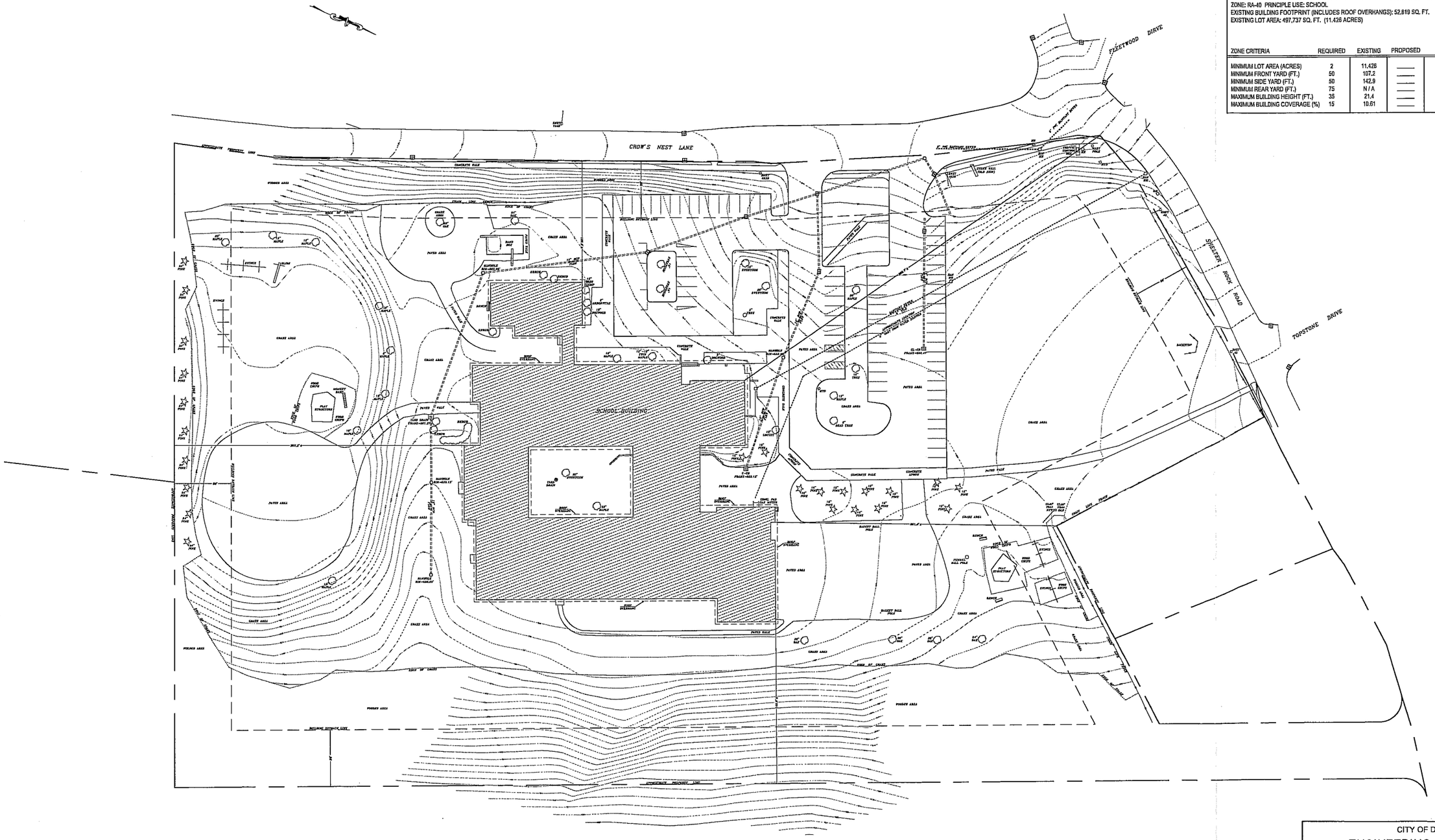
NOTES
1 - UNIT COST IN 2012 DOLLARS
2 - ESCALATION FACTOR OF 4% TO MIDPOINT OF CONSTRUCTION (APRIL 2014)
3 - ESTIMATING CONTINGENCY OF 15% TO BE REDUCED UPON DEVELOPMENT OF FINAL PROGRAM AND SCOPE
4 - SOFT COSTS OF 28% INCLUDES PROFESSIONAL FEES, INVESTIGATIONS AND TESTING, OWNER COSTS, FFE, CONTINGENCY, ETC.
5 - ELEMENTARY SCHOOL ROOF REPLACEMENT NOT INCLUDED.
6 - TRANSFORMER TO BE REMOVED FROM INTERIOR AND NEW TRANSFORMER INSTALLED AT EXTERIOR. ASSUMES ELECTRICAL SERVICE FEEDER AND CONDUITS TO BE RE-USED.

CONDITIONS AND QUALIFICATIONS

- THIS COST ESTIMATE IS BASED ON CONCEPTUAL SKETCHES PREPARED BY FULLER & D'ANGELO, P.C.
- BIDDING IS ASSUMED TO OCCUR IN SPRING 2013.
- CONSTRUCTION PERIOD IS ASSUMED TO BE JULY 2013 THROUGH DECEMBER 2014.
- PROJECT TO BE PUBLICLY BID WITH AT LEAST 5 BIDS RECEIVED FOR EACH PRIME CONTRACT.
- PREVAILING WAGE RATES APPLY
- NO COSTS ARE INCLUDED FOR OVERTIME/PREMIUM LABOR EXCEPT WHERE REQUIRED FOR "SWITCHOVER" OF MECHANICAL AND ELECTRICAL SYSTEMS.
- NO COSTS ARE INCLUDED FOR CONSTRUCTION OF TEMPORARY CLASSROOMS OR OTHER SPACES FOR PHASING.
- THE ESTIMATE DOES NOT ACCOUNT FOR UNUSUAL MARKET CONDITIONS SUCH AS LABOR AND/OR MATERIAL SHORTAGES, AVAILABILITY OF BIDDERS, INFLATION, AND OTHER FACTORS.

ZONING INFORMATION TABLE: SHELTER ROCK SCHOOL ASSESSORS LOT: L14020
ZONE: RA-40 PRINCIPLE USE: SCHOOL
EXISTING BUILDING FOOTPRINT (INCLUDES ROOF OVERHANGS): 52,819 SQ. FT.
EXISTING LOT AREA: 497,737 SQ. FT. (11.426 ACRES)

ZONE CRITERIA	REQUIRED	EXISTING	PROPOSED	
MINIMUM LOT AREA (ACRES)	2	11.426	____	
MINIMUM FRONT YARD (FT.)	50	107.2	____	
MINIMUM SIDE YARD (FT.)	50	142.9	____	
MINIMUM REAR YARD (FT.)	75	N / A	____	
MAXIMUM BUILDING HEIGHT (FT.)	35	21.4	____	
MAXIMUM BUILDING COVERAGE (%)	15	10.61	____	



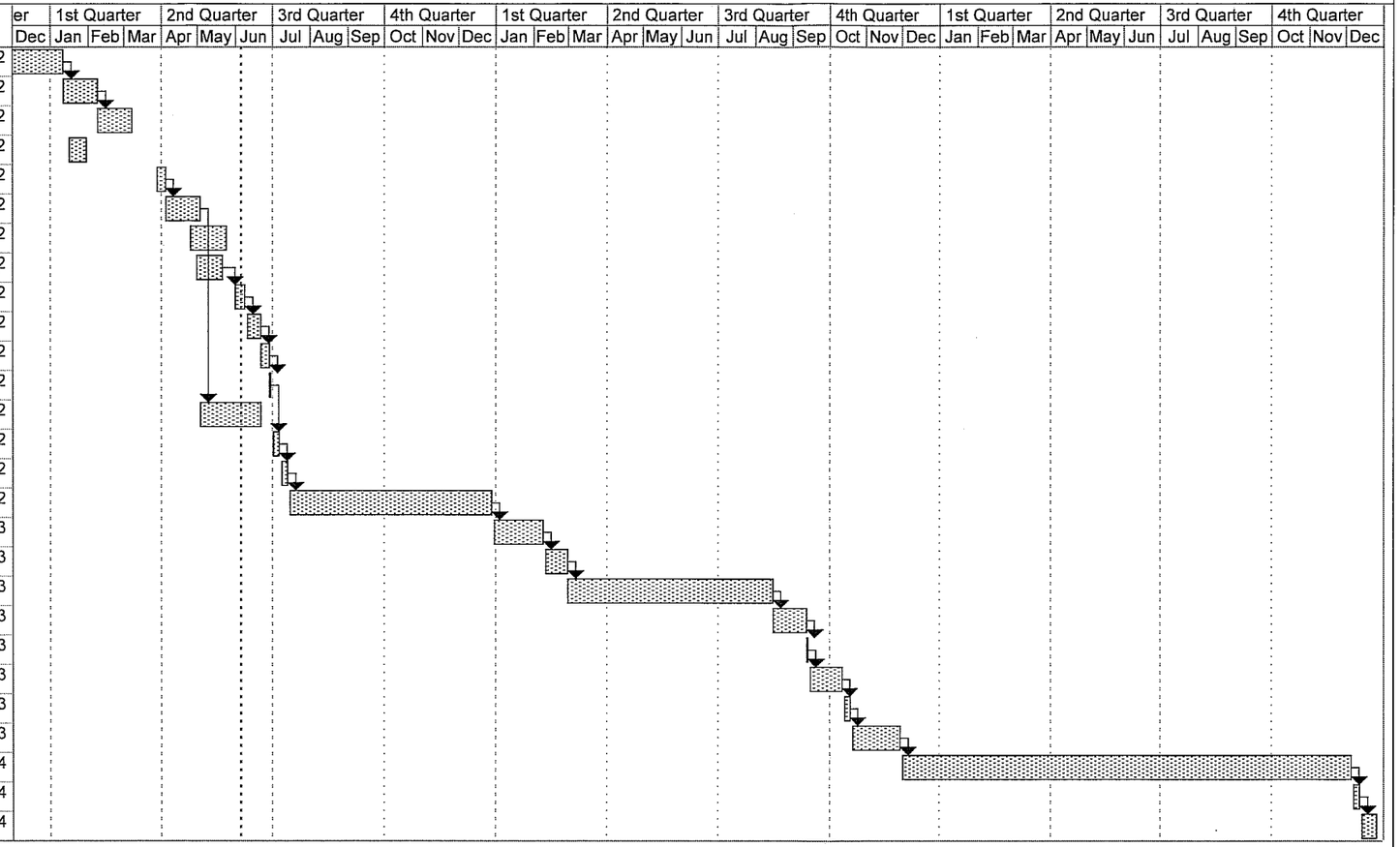
CITY OF DANBURY
ENGINEERING DEPARTMENT
FARID L. KHOURI, P.E. CITY ENGINEER

MAP SHOWING THE LAND OF
THE CITY OF DANBURY
SHELTER ROCK SCHOOL
SHELTER ROCK ROAD DANBURY, CONNECTICUT
ZONE: RA-40 AREA: 11.426 ACRES
SCALE: 1" = 40' MARCH 1, 2012

40' 20' 0 40' 80' 120' 160'

DANBURY PUBLIC SCHOOLS SCHOOL
FACILITY PLANNING STUDY FOR ELEMENTARY SCHOOL ADDITIONS
MAY 25, 2012

ID	Task Name	Duration	Start	Finish
1	ENROLLMENT STUDY	30 days	Thu 12/1/11	Wed 1/11/12
2	CITY ENROLLMENT STUDY REVIEW AND PLANNING	20 days	Thu 1/12/12	Wed 2/8/12
3	BOE AND CITY MEETINGS	20 days	Thu 2/9/12	Wed 3/7/12
4	EXISITNG CLASSROOM AREA DOCUMENTATION	10 days	Tue 1/17/12	Mon 1/30/12
5	PROFFESIONAL SERVICES START OF WORK	5 days	Thu 3/29/12	Wed 4/4/12
6	BACKGROUND DRAWINGS BY ARCHITECT	21 days	Thu 4/5/12	Thu 5/3/12
7	CITY SITE SURVEYS	21 days	Thu 4/26/12	Thu 5/24/12
8	BORING PROPOSAL APPROVAL	15 days	Tue 5/1/12	Mon 5/21/12
9	BORINGS, WETLANDS AND FLOODPLAIN MAPS	6 days	Fri 6/1/12	Fri 6/8/12
10	CONCEPT DRAFT	9 days	Mon 6/11/12	Thu 6/21/12
11	PRELIMINARY COST ESTIMATING	5 days	Fri 6/22/12	Thu 6/28/12
12	REPORT DELIVERY	1 day?	Fri 6/29/12	Fri 6/29/12
13	FACILTIY PLANNING BY ARCHITECT/ ENGINEERS	35 days	Fri 5/4/12	Thu 6/21/12
14	CITY AND BOE APPROVALS	5 days	Mon 7/2/12	Fri 7/6/12
15	EDO-49	5 days	Mon 7/9/12	Fri 7/13/12
16	STATE FUNDING APPROVALS	120 days	Mon 7/16/12	Fri 12/28/12
17	CITY RFP FOR A/E SERVICES	30 days	Mon 12/31/12	Fri 2/8/13
18	A/E CONTRACT AWARD	14 days	Mon 2/11/13	Thu 2/28/13
19	A/E SERVICES FOR CONSTRCUTION DOCUMENTS	120 days	Fri 3/1/13	Thu 8/15/13
20	LAND USE APPROVALS	20 days	Fri 8/16/13	Thu 9/12/13
21	PCT MEETING BSF	1 day?	Fri 9/13/13	Fri 9/13/13
22	LOCAL REVIEW	20 days	Mon 9/16/13	Fri 10/11/13
23	BSF APPROVAL TO BID	5 days	Mon 10/14/13	Fri 10/18/13
24	BIDS AND AWARD	30 days	Mon 10/21/13	Fri 11/29/13
25	CONSTRUCTION START AND DURATION	265 days	Mon 12/2/13	Fri 12/5/14
26	CLOSE OUT AND PUNCH LIST	5 days	Mon 12/8/14	Fri 12/12/14
27	OCCUPANCY	10 days	Mon 12/15/14	Fri 12/26/14



Project: SCHEDULE 5.28.12
Date: Tue 6/5/12

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

BORING REPORT SUMMARY

One of the requirements per the proposal for schools feasibility reports services was to obtain, via a third party soil testing company, a soil borings report for the Shelter Rock Elementary School. The attached findings of these bore probes and the soil boring company analysis for same are attached.

The City requested, in areas of the additions, to find information on existing soils. Although we are not engineers, we were requested to confirm soil analysis consistency and a ground water level reading. Soil collection of the top twelve feet was also performed and delivered to the City's On- Call Environmental Consultants for analysis and review of any possible soil contaminates.

The soil boring engineers' basic findings showed various soil types. One boring was completed due to the limited size of the addition in one area of the site. The boring did not show rock in the areas of purposed construction. This is important knowledge which would relate to increased construction costs for the project.

It should be noted further borings shall be required during the future construction document design phases of this project.

The soils as they appear are suitable for bearing a structure this was confirmed with the soil boring consultant. The Shelter Rock ES soil material findings are comprised of the below:

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12- 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
		1	ss	24"	16"	2'0"	3	4			dry	0'4"	TOPSOIL
							6	7			compact		brn SILT,sm FM sand,lit F gravel,C sand,tr clay
		2	ss	24"	21"	4'0"	6	9			dry/moist		olv brn SILT,sm clay,FMC sand,lit F gravel
							24	16			dense		
5		3	ss	24"	22"	6'0"	9	18			dry		SAME
							22	19			dense		
		4	ss	24"	21"	8'0"	24	20			dry		SAME
							31	27			v dense		
		5	ss	22"	1"	9'10"	35	37			dry		SAME,lit C gravel
10							40	50/4"			v dense		
		6	ss	24"	6"	12'0"	25	24			dry		olv brn SILT,sm clay,lil FMC sand,lit F gravel
							29	28			v dense		

CITY OF DANBURY
SHELTER ROCK ELEMENTARY SCHOOL
Submitted by: Fuller and D'Angelo, PC
Architects and Planners
45 Knollwood Road
Elmsford, NY 10523
914.592.4444
914.592.1717

Date: May 29, 2012

Further review to access current below grade water levels at the test hole SRB-1 were found at a level of 17'-9" below grade on June 14th, 2012, 7 days after the probe was drilled.

Water level findings noted ground water below the addition not close to proposed footing and foundation heights.

After consolation with the soil boring engineer it is thought this water is run off and can be managed through perimeter foundation drainage systems.

With regard to environmental aspects of the project and any related issues we believe the city shall receive a report under separate cover from there On-Call Environmental engineers. We would appreciate a copy of this report when forwarded.

This environmental report should be added to the Appendix of the feasibility study in order to attain a complete feasibility report. It should become the last document in the Appendix directly after the schedule.

SOILTESTING, INC.	CLIENT: Fuller & D'Angelo Architects	SHEET 1 OF 1
90 DONOVAN RD.		HOLE NO. SRB-1
OXFORD, CT 06478	PROJECT NO. G88-9119-12	
CT (203) 262-9328	PROJECT NAME Shelter Rock Elementary School	BORING LOCATIONS per Plan
NY (914) 946-4850	LOCATION 2 Crows Nest Lane, Danbury, CT	
FOREMAN - DRILLER TP/tb		
INSPECTOR		OFFSET

	CASING	SAMPLER	CORE BAR
TYPE	HSA	SS	
SIZE I.D.	3 ¾"	1 3/8"	
HAMMER WT.		140#	BIT
HAMMER FALL		30"	

DATE START 6/7/12
DATE FINISH 6/7/12
SURFACE ELEV.
GROUND WATER ELEV.

GROUND WATER OBSERVATIONS
AT 26 FT AFTER 0 HOURS
AT 17'9" FT on 6/14/12

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18			CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
		1	ss	24"	16"	2'0"	3	4			dry	0'4"	TOPSOIL
							6	7			compact		brn SILT,sm FM sand,lit F gravel,C sand,tr clay
		2	ss	24"	21"	4'0"	6	9			dry/moist		olv brn SILT,sm clay,FMC sand,lit F gravel
							24	16			dense		
5		3	ss	24"	22"	6'0"	9	18			dry		SAME
							22	19			dense		
		4	ss	24"	21"	8'0"	24	20			dry		SAME
							31	27			v dense		
		5	ss	22"	1"	9'10"	35	37			dry		SAME,lit C gravel
10							40	50/4"			v dense		
		6	ss	24"	6"	12'0"	25	24			dry		olv brn SILT,sm clay,lit FMC sand,lit F gravel
							29	28			v dense		
											dry		
		7	ss	1"	1"	15'1	50/1"				v dense		BOULDERS 14 - 16'
20													
		8	ss	24"	21"	22'0"	13	21			moist		olv gry CLAYEY SILT,lit F-C sand,gravel
							20	22			dense		
25													
		9	ss	18"	18"	26'6"	18	28			l moist/wet		SAME
							34				v dense	26'3"	
													gry brn VF SAND & SILT
30													
		10	ss	18"	18"	31'6"	21	28			dry		gry SILT & F-C SAND,lit F-C gravel
							29				v dense	31'6"	
35													E.O.B. 31'6"
													Installed 1" SCH 40 PVC Observation Well w/10' screen to 20' depth
40													

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO. SRB-1

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST
WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE
SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM
PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: Fuller & D'Angelo Architects	SHEET 1 OF 1 HOLE NO. SRB-2
	PROJECT NO. G88-9119-12	
	PROJECT NAME Shelter Rock Elementary School	BORING LOCATIONS per Plan
FOREMAN - DRILLER TP/tb	LOCATION 2 Crows Nest Lane, Danbury, CT	
INSPECTOR		

	CASING	SAMPLER	CORE BAR
TYPE	HSA	SS	
SIZE I.D.	3 ¾"	1 3/8"	
HAMMER WT.		140#	BIT
HAMMER FALL		30"	

OFFSET	
DATE START	6/7/12
DATE FINISH	6/7/12
SURFACE ELEV.	
GROUND WATER ELEV.	

GROUND WATER OBSERVATIONS
AT none FT AFTER 0 HOURS
AT __FT AFTER __HOURS

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC.	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12- 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
		1	ss	24"	17"	2'0"	1	3			l moist	0'4"	TOPSOIL
							7	13			compact		brn SILT,sm FM sand,lit F gravel,tr clay,roots
		2	ss	24"	18"	4'0"	10	13			dry		olv brn SILT,sm clay,FMC sand,lit F gravel
							16	19			compact		olv brn SILT,sm clay,lit FMC sand,F gravel
5		3	ss	24"	21"	6'0"	8	16			dry		
							24	20			dense		
		4	ss	24"	20"	8'0"	18	19			dry		
							28	28			dense		
		5	ss	24"	18"	10'0"	20	15			dry		SAME
10							18	19			dense		
		6	ss	24"	20"	12'0"	20	21			dry		
							23	29			dense		
		7	ss	24"	21"	17'0"	8	13			dry		SAME
							19	24			dense		
20		8	ss	24"	22"	22'0"	18	19			dry		SAME
							24	27			dense		
25		9	ss	18"	18"	26'6"	17	24			dry		SAME
							35				v dense		
30		10	ss	18"	18"	31'6"	21	27			dry		SAME
							41				v dense	31'6"	
35													E.O.B. 31'6"
40													

NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO. SRB-2

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST
WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS
SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER
PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%
C = COARSE
M = MEDIUM
F = FINE

G88-9119-12

SOILTESTING, INC.

90 Donovan Road

Oxford, CT 06478