List of Exhibits

Exhibit A - Policy of Affirmative Action Letter

Exhibit A

Policy of Affirmative Action Letter

Dear Outreach and Placement Professional:

This letter is to inform you that EMG is committed to the principles of equal employment opportunity. Moreover, as a government contractor bound by Executive Order 11246, EMG takes its affirmative action obligations very seriously. EMG states as its Policy of Affirmative Action the following:

1. It will be the policy of EMG to recruit, hire, train, and promote persons in all job titles without regard to race, color, religion, sex, age, disability, veteran status, national origin, or any other characteristic protected by applicable law.

2. All employment decisions shall be consistent with the principle of equal employment opportunity, and only job-related qualifications will be required.

3. All personnel actions, such as compensation, benefits, transfers, tuition assistance, social and recreational programs, etc. will be administered without regard to race, color, religion, sex, age, disability, veteran status, national origin, or any other characteristic protected by applicable law.

To assure compliance with the Company's AAP, Keri E. Webb, Affirmative Action Officer, has been designated to administer and monitor the Plan and make reports to Senior Management. Members of our Human Resources Department will contact you when positions are available. We request that you refer to us all qualified candidates, including women and individuals of color.

F. Fee Proposals

The **Fee Proposal** is included with this submittal in a **separate sealed envelope** in the format provided as **Exhibit C.**

G. Management Plan

Project Supervision & Management

- **Project Executive, Jeffrey Fox** will oversee all contractual components of the project and will be available to the Town of Monroe as needed. He will also ensure that all schedule and budget goals are met.
- **Program Manager, Bill Champion, PE, CEM,** will manage the Project Team for the full duration of the project, will serve as the main point of contact for the Town of Monroe, and will communicate with the Town of Monroe on a regular basis.
- **Quality Assurance Manager, Gregory Bailey** will provide general oversight to the project from the perspective of assuring technical, process, and content quality.

Project Understanding

EMG understands that, should EMG be awarded the contract, we would be responsible for performing a facilities condition assessment, plant capital renewal, and demographic analysis for five (5) school buildings totaling 569,117 SF, and nineteen (19) Town buildings totaling 236,911 SF (including the Chalk Hill School now operated by the Town of Newton).

The goal of the assessment is to ascertain the present condition of the facilities, whether the physical plants and systems meet the needs of the District's demographic and programmatic needs, what future funding and management programs are required to maintain the functional operations of the facilities, and based upon demographic and facilities study, determine what buildings are needed for future use and/or whether or not redistricting/repurposing can achieve the desired ends.

EMG will conduct a detailed condition assessment, perform a capital renewal analysis of its facilities, perform a demographic analysis for school enrollment, provide a full hard copy report, and potentially install either program software or a web-based facility management system for use by the District's facilities and management personnel.

The project will be done in the following phases: **Assessment** (Facility Condition Survey, Demographic Study, Integration of Client-supplied Facility Condition Data), **Data Analysis** (Prioritization/Categorization/ Classification of Audit Data), **Future Planning** (Correction – Deficient Facility Conditions, Targeting and Benchmarking, Facility Renewal or Decommission Calculations, Project Planning), and **Data**.

Facility Condition Assessment Project Approach

EMG will compile an inspection report in an electronic spreadsheet and a summary report of each building. The deliverables will consist of a detailed narrative report for each building and a web-accessible database with a summary report of all of the buildings listed above.

The Facility Condition Assessment for the Town of Monroe will consist of the following:

- Determination of the present condition and estimated life expectancy of various building systems and components.
- Establishment of anticipated maintenance and replacement costs for the various systems and components.
- Identification and documentation of present condition of all physical assets including grounds, facilities, and infrastructure.
- Recommendations for corrections for all deficiencies and cost estimates for corrections.
- Identification of resources needed to routinely maintain the operability, sustainability and value of the physical assets given their current function.
- Prioritization, categorization, and classification of deficient conditions, associated corrective actions, and information concerning building systems and deficiency categories.

The study will be a guide for future replacement, repairs, and improvements for the Town of Monroe to keep facilities, grounds, and infrastructure in proper working condition.

Our Assessment Team will thoroughly survey and assess all building systems and components to identify deficient conditions and accurately estimate the cost to correct each deficiency. At project implementation, EMG will conduct a **Kick-off Meeting** to introduce key team members and present key activities. Within this meeting, the following will be addressed:

- Availability, condition, and location of existing drawings and documentation.
- Review of any available descriptive building information, such as year built, history, and major renovations.
- Interview with those familiar with the property, such as building engineers, to collect pertinent data (building problems, operating difficulties, equipment characteristics) for integration into the assessment.
- Review of the work plan and schedule for the contract with key milestones.
- Presentation for approval of a comprehensive field inspection form.
- Confirmation of the final scope of work.

During the term of the project, EMG will conduct weekly **Progress Meetings** to maintain open communication with the entire Project Team and the Town of Monroe. EMG will lead with an agenda that includes a focus on work plan, schedule, and project needs. This will permit the opportunity to proactively address challenges encountered so that course adjustments may be made. Each meeting will conclude with task assignments, schedules, and goals to be met. EMG will provide the Town of Monroe with a

weekly written status report that tracks and monitors the progress of the assessments against the schedule submitted.

The Town of Monroe Staff will have a dedicated Program Manager, Bill Champion, PE, CEM, as the single point of contact. The Assessment Team will be comprised of a combination of architects and mechanical/ electrical engineers having direct experience in conducting Facility Condition Assessments.

In summary, EMG's Project Approach has been developed to address the specific requirements of the Town of Monroe. EMG has demonstrated experience in the assessment of buildings and facilities similar to the Town of Monroe and understands the special implementation, sensitivities, management, and communication associated with each.

Facility Condition Assessment Methodology

The Assessment Team will visit each identified facility to evaluate the general condition of the building and site, and review available construction documents in order to become familiar with, and comment on, the in-place construction systems, life safety, mechanical, electrical and plumbing systems, and general built environment. The Assessment Team will conduct a walk-through survey of the buildings in order to observe building systems and components, identify physical deficiencies, and formulate recommendations to remedy the physical deficiencies.

As a part of the walk-through survey, the Assessment Team will survey 100% of each facility's interior and common areas. In addition, EMG will survey the exterior and grounds, including building exterior, roofs, sidewalk/pavement, and playfields (if applicable).

The Assessment Team will interview building maintenance about the subject property's historical repairs and replacements, costs, level of preventive maintenance exercised, pending repairs and improvements, and frequency of repairs and replacements.

The Assessment Team will develop opinions based on their site assessment, interviews with the Town of Monroe's Building Maintenance Staff and relevant maintenance contractors, and municipal authorities, and experience gained on similar properties previously evaluated. The Assessment Team may also question others knowledgeable of the subject property's physical condition, ongoing maintenance policies and procedures, and operation, or knowledgeable of similar systems to gain comparative information to use in the evaluation of the subject property.

The Assessment Team may review documents and information provided by the Town of Monroe's Building Maintenance Staff that could aid in the knowledge of the subject property's physical improvements, extent, and type of use, and/or assist in identifying material discrepancies between reported information and observed conditions.

The facility condition assessment will focus on the following prime building system components:

Site

Topography: Observation of general topography and note of any unusual or problematic features or conditions observed or reported.

Ingress and Egress: Identification of major means of access and egress at the subject property; and note of locations of major means of access and egress, and any unusual or restraining conditions observed or reported.

Paving, Curbing, and Parking: Identification of material types of paving and curbing systems at the subject property; and observation of general conditions and note of any physical deficiencies identified or unusual items or conditions observed.

Flatwork: Identification of material flatwork at the subject property (sidewalks, plazas, patios); and observation of general conditions and note of any physical deficiencies identified or unusual items or conditions observed or reported.

Landscaping and Appurtenances: Identification of material landscaping features, material types of landscaping (fences, retaining walls), and site appurtenances (irrigation systems, fountains, lighting, signage, ponds); and observation of general conditions and note of any physical deficiencies identified or unusual conditions observed or reported.

Utilities: Identification of the type and provider of material utilities provided to the property (water, electricity, natural gas); and observation of general conditions and note of any physical deficiencies observed or material problems or system inadequacies reported.

Structural Frame and Building Envelope

EMG will identify material elements of the structural frame and building envelope, including the foundation system, floor framing system, roof framing system, facade or curtain-wall system, glazing system, exterior sealant, exterior balconies, doors, and stairways, etc.

We will observe general conditions and note any physical deficiencies identified or unusual items or conditions observed. Observations may be subject to grade, accessible balconies, and rooftop vantage points.

EMG will conduct a visual inspection of observable areas for cracking and moisture infiltration as well as areas of apparent foundation settlement and displacement.

In the event more information or exploratory testing is required, in order to provide remedial measures, the report may include recommendation for investigative testing such as soil borings, excavation of test pits, and sampling of backfill materials, or engagement of a Geotechnical Engineer or Structural Engineer with specific expertise in the field of the determined failure. Recommendations of this nature will include a determination of appropriate scope and a general estimate of cost for budgetary purposes.

Wall Evaluation

EMG will photograph elevations and details both from internal and external vantage points, as well as from adjacent structures where possible.

We will observe representative operable and fixed panels on all facades, operating a representative sample of units to assess hardware, and visually inspect exterior conditions and the condition of waterproofing seals.

We will also assess curtain wall condition to determine water infiltration, damage, caulk degradation, metal panel degradation, stone degradation and anchoring, and other related curtain wall issues.

Roofing (Non-Invasive Visual)

Roofing evaluations to be performed for all buildings identified in the RFQ&P.

EMG will identify the material roof systems including roof type, reported age, slope, drainage, etc. We will also identify any unusual roofing conditions or rooftop equipment. We will observe general conditions of the roof system such as membranes, attachment methods, flashings, counter flashings, pitch pans, gravel stops, parapets, miscellaneous appurtenances, insulation, etc.

We will observe for evidence of material repairs, significant ponding, or evidence of material roof leaks, and will note if a roof warranty is in effect. We will also note any physical deficiencies identified or unusual items observed or reported.

EMG will identify material rooftop equipment or accessories including antennas, lightning protection, HVAC equipment, or solar equipment, and will include any material problems reported.

Plumbing

EMG will identify material plumbing systems at the subject property including domestic water supply, domestic hot water production, sanitary sewer, or any special or unusual plumbing systems (water features, grease traps, fuel systems, gas systems).

We will identify the type and condition of restroom fixtures, drinking fountains, and/or other miscellaneous plumbing equipment. We will observe general conditions and note any physical deficiencies identified or unusual items or conditions observed, including reported material system inadequacies.

Heating

EMG will identify material heat generating systems at the subject property. We will observe general conditions, identify reported age of the equipment, note past material component replacements/ upgrades, note apparent level of maintenance, and identify whether a maintenance contract is in place. If heating equipment is not operational at the time of the walk-through survey, we will provide an opinion of the condition to the extent reasonably possible.

EMG will observe general conditions and note any physical deficiencies identified or unusual items or conditions observed or reported. Additionally, we will include any reported material system inadequacies or operating deficiencies.

We will identify and observe any special or unusual heating systems or equipment present (fireplaces, solar heat) and note any reported material problems or inadequacies.

Air Conditioning and Ventilation

EMG will identify the material air-conditioning and ventilation systems at the subject property. This will include material equipment such as cooling towers, chillers (include type of refrigerant used), package units, split systems, air handlers, thermal storage equipment, etc.

We will identify material distribution systems (supply and return, make-up air, exhaust) at the subject property, and will note reported tenant-owned equipment/systems not included in this review.

EMG will observe general conditions, identify reported age of the equipment, note past material component upgrades/replacements, note apparent level of maintenance, and identify whether a maintenance contract is in place (name of the contractor). If air-conditioning and ventilation systems are not operational at the time of the walk-through survey, we will provide an opinion of the condition to the extent reasonably possible.

We will observe general conditions and note any physical deficiencies identified or unusual items or conditions observed. Additionally, we will include any material reported system inadequacies or operating deficiencies.

We will identify and observe any special or unusual air-conditioning and ventilation systems or equipment (ice skating rinks, cold storage systems, special computer cooling equipment) and note any material reported problems or system inadequacies.

Electrical

EMG will identify the electrical service provided and distribution system at the subject property. This will include material switchgear disconnects, circuit breakers, transformers, meters, emergency generators, general lighting systems, and other such equipment or systems.

We will observe general electrical items such as distribution panels, type of wiring, energy management systems, emergency power, lightning protection, etc.

We will observe general conditions and note any physical deficiencies identified or unusual items or conditions observed. We will also note the presence of special or unusual electrical equipment, systems, or devices at the subject property, and will include reported material problems or system inadequacies.

Vertical Transportation

EMG will identify the vertical transportation systems at the subject property. This will include the equipment manufacturer, equipment type, location, number, capacity, etc. We will observe elevator cabs, finishes, call and communication equipment, etc. We will identify the company that provides elevator/ escalator maintenance at the subject property, and will observe general conditions and note any physical deficiencies identified or unusual items or conditions observed or reported including any reported material system inadequacies. Inspection, testing and calibration data, maintenance, and repair histories will be reviewed and facility personnel will be interviewed.

EMG will identify the condition of the traveling cables, controllers, control systems, hydraulic jack units, pump units, guiderails, operating devices, independent and fire service functions, car frame, car platform, and handicap accessibility.

Life Safety/Fire Protection
EMG will identify the material life safety/fire protection systems at the subject property, including sprinklers and stand pipes (wet or dry), fire hydrants, fire alarm systems, water storage, smoke detectors, fire extinguishers, emergency lighting, stairwell pressurization, smoke evacuation, etc. We will observe general conditions and note any material physical deficiencies identified or unusual items or conditions observed or reported including any reported system inadequacies.

Interior Elements
EMG will identify common areas, classrooms, labs, offices, special use areas, and building standard finishes, including flooring, ceilings, walls, etc. We will identify material building amenities or special features (cafeteria, theater, athletic facilities); and will observe general conditions and note any physical deficiencies identified or unusual items or conditions observed or reported.

Accessibility Compliance
EMG will identify physical barriers in each facility and will categorize these repairs as accessibility/code compliance issues. EMG will identify the required changes to the site or facility and will note required cost for the repair.

Code Compliance
EMG will make appropriate inquiries of municipal officials regarding the existence of pending unresolved building, zoning, or fire code violations on file to determine the current zoning category, flood plain zone, and seismic zone.

Mold
EMG will perform a limited assessment of accessible areas of the buildings for the presence of mold, conditions conducive to mold growth, and/or evidence of moisture. We will interview project personnel regarding the presence of any known or suspected mold, elevated relative humidity, water intrusion, or mildew-like odors. Potentially affected areas will be photographed.

Facility Condition Assessment Information Analysis

Based upon our observations, research, and judgment, along with consulting commonly accepted empirical expected useful life (EUL) tables, EMG will render our opinion as to when a system or component will most probably necessitate replacement. Accurate historical replacement records provided by the Facility Manager are typically the best source for this data. Exposure to the weather elements, initial system quality and installation, extent of use, quality, and amount of preventive maintenance exercised are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual age. The remaining useful life (RUL) of a component or system equals the EUL less its effective age.

In addition to determining the EUL and the RUL for each major prime system and building component, EMG will categorize each cited deficiency within one of the following **Five Priorities**:

Priority 1: Currently Critical (Immediate)
Items in this category require immediate action and include a cited safety hazard and areas of accelerated deterioration, and return a building component to normal operation.

Priority 2: Potentially Critical (Year 1)
Items in this category require action in the next year and include components experiencing intermittent operations, potential life safety issues, and rapid deterioration, and return a building component to normal operation.

Priority 3: Necessary – Not Yet Critical (Years 2-3)
Items in this category require appropriate attention to preclude predictable deterioration, potential downtime, additional damage, and higher costs to remediation if deferred further.

Priority 4: Recommended (Years 4-5)
Items in this category represent a sensible improvement to the existing conditions. These are not required for the most basic function of the facility; however, Priority 4 projects will improve overall usability and/or reduce long-term maintenance costs.

Priority 5: Does Not Meet Current Code but "Grandfathered"
No Action required at this time but should substantial work be undertaken, correction would be required.

Classification
The deficiencies observed will be classified into categories such as those listed below using the Uniformat System:

- Site
- Architectural
- Exterior Systems
- Exterior Finishes
- Life Safety Systems
- Heating, Ventilation and AC Systems
- Plumbing Systems
- Electrical and Service Distribution Systems
- Special Electrical Systems
- Fire Suppression Systems
- Special Construction
- Interior Systems
- Interior Finishes
- Vertical Transportation
- Telephone Infrastructure and Systems
- Data Infrastructure and Server Rooms

Cost Estimating

Each report will include a capital needs analysis with an estimated cost for each system or component repair or replacement anticipated during the evaluation term. The report narrative will discuss options for repair of the deficiency, and the capital needs analysis will be presented as an Excel-based cost table that includes a summary of the description of each component, age and estimated RUL, anticipated year of repair or replacement, quantity, unit cost, and total cost for the repair of each line item. A consolidated capital needs analysis will be presented that includes all anticipated capital needs for all buildings.

In addition to the detailed description of the deficiencies, EMG will provide cost estimates for the deficiencies noted. The cost estimate for capital deficiencies will be based on the estimate for maintenance and repair, but may, at the Town of Monroe's option, also include project management, construction, and design fees derived using actual costs from previous projects. After determining these costs, we will confirm them with Town of Monroe Staff.

EMG uses the Uniformat system and the RS Means model for the baseline of cost estimating. **EMG maintains and updates this cost estimating system** with information received from the field. Through our construction monitoring work, we have current cost data from hundreds of in-progress construction and rehabilitation projects. This allows us to project costs based on local conditions and maintain a cost database that, in most cases, is more current than published RS Means' models.

Facility Condition Assessment Report Deliverable

EMG will provide a written analysis including a detailed description of each of the building components and systems. Each report will generally be organized by building system and will include a narrative description of all building systems and components. Each report will include color digital photos of all major systems and components and all deficiencies identified.

In addition to the narrative description of each building component and system, each report will include a discussion of current, anticipated repairs, deficiencies, and discussion of applicable options for repair or maintenance of building components. These deficiencies will be summarized in a capital needs analysis table included throughout each report.
All EMG reports are submitted as drafts. Once each individual assessment is finalized, a program summary report will be provided to include a roll-up of all prioritized capital needs across all facilities. The program summary report will reflect a 10-year capital plan based upon EMG's 20-year building system evaluation.

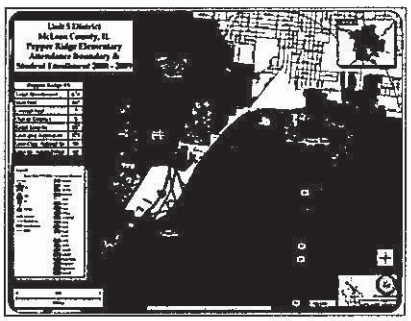
The capital needs analysis will include a cost table sorted by building and system and ranked by priority for repair. The format of the table will allow for the customization of reporting by building, system, or priority for repair, and a year-by-year analysis of capital needs.

GIS Mapping of Demographics Methodology

Geographic Information Systems (GIS) will be used extensively to depict trends at the District and small area level. Mapping of historical and current students will help to understand demographic trends throughout the District at the address level. The GIS will be used to map other demographic factors such as type of housing (Single-Family, Multi-Family, Condos), year built for housing, ethnicity, value of housing, and many other factors. The GIS mapping will occur simultaneously with the demographic study, and results of GIS analysis will be used to aid in the population/enrollment forecasts.

Mapping for the project will be completed in two phases – data collection and data development/aggregation.

Phase 1: Data Collection



For the GIS mapping, a series of data will need to be collected to perform GIS analysis. This data come from sources such as:

1. **Public Schools Data**
    - Current and Historical (as far back as 2003 if possible) Student Enrollment Databases with Student Attributes including (Shapefile Preferred):

    - Student ID
    - Student Address
    - City
    - State
    - Zip
    - Grade Level
    - School Name/Number
    - ESL/LEP Information
    - Ethnicity
    - Free/Reduced Lunch attributes
    - Special Education information
    - X,Y Coordinates
  - 10-Year Historical Enrollment (by school, by grade)
  - Elementary, Middle, and High School Attendance Area Maps
  - Table or GIS File of School Locations (school name, type (ES, MS, etc), address).
  - District Parochial, Private, and Charter Enrollment Databases. (If the District currently transports these students, data can be collected from the transportation department.) Although this might not give a complete depiction of the non-public enrollment, it is very helpful to determine percentages based on private, parochial, and charter schools.
2. **County GIS Data**
  - Planimetric layers (streets, rivers, railroads, water bodies, rivers, other major geographic identifiers)
  - Parcels/Property lines, subdivisions, neighborhoods, planned developments, other layers helpful for analysis
3. **City/Municipality GIS Data**: Data from municipalities maintained separately from the County GIS System (i.e. zoning, future land use).
4. **Federal Census Bureau** (2010 Census): Block polygons with population and housing attributes.

With the exception of the school enrollment data, most of the data is maintained by City and County sources. Existing and planned land use/zoning data are typically maintained by local planning offices. All data will need to be incorporated into a GIS for analysis of historical development activity and future plans and trends for development. Before analysis can take place, some data needs to be joined to GIS layers and/or converted into GIS format.

Phase 2: Data Development / Aggregation

Cropper GIS will need to develop and aggregate data for mapping. This includes:

- Geocoding of historical and current student enrollment files into ESRI Shapefile format. Cropper GIS will focus on providing a minimum of 99% match of student enrollment.
- Zone geography (maps of attendance areas) converted into ESRI Shapefile format.
- Aggregation of all school, city, county, and federal GIS data into a geodatabase for analysis. This includes projecting data into a common coordinate system so that data analysis can be performed in an efficient manner.

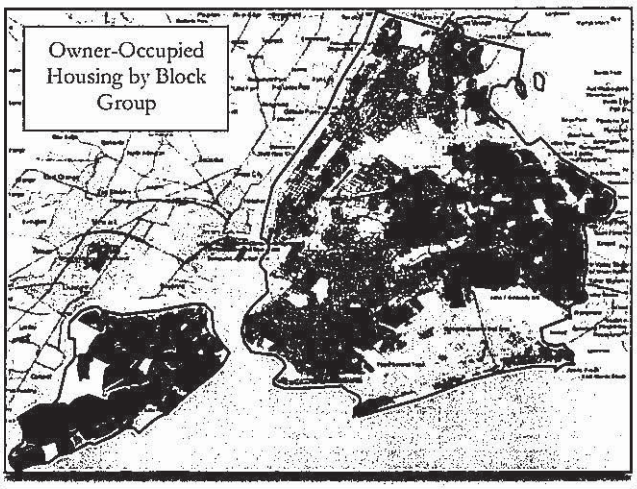
- Collecting Census demographic variables and joining data to census block or block group Shapefiles. Demographic variables will include attributes that pertain to race/ethnicity, average/ median family income, education level, industry/occupation, number of renters versus owners, and many other variables that indicate socioeconomic attributes.

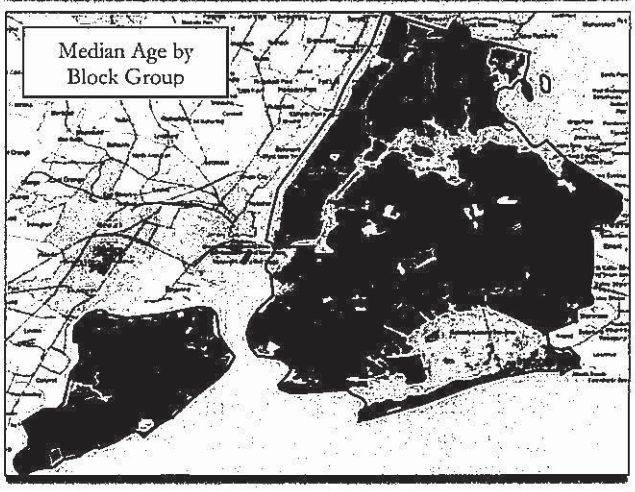
Methodology: Demographic Analysis and Enrollment Forecasts

To truly understand the complex enrollment patterns of any school district, an examination of the past, present and future demographic trends of the area is required. This does not mean just examining the school district in question, but also all of the surrounding area. In demographic terms, (as well as economic terms) no geographic area stands alone. Each area's demographic trends are interwoven with the trends in all of its neighboring areas.

Furthermore, the historical trends of the number of children in each school grade have little or no effect on the future trends of a district's enrollment. The only way to accurately ascertain what the future enrollment patterns of a district be is to be able the projection the trends of the total population. Consequently, our projection method is a three step procedure that examines the demographic trends of both the district under study and all of its geographical areas under study.

The first step is to overlay the district's geographical boundaries (i.e. constituent districts, attendance zones) **with Census Bureau's 2010 TIGER maps**. This allows us to identify which census tracts and blocks make up each geographical area. Once this is established, the detailed 2010 Census information from file SF1 can be downloaded, creating a demographic and economic profile of each individual area. This data, which can be attained at the block or block group level, forms the base information that will be used later in the construction of the population projection models. The variables obtained from the Census Bureau include, but are not limited to, age, gender, race, ethnicity, median family and household income, household composition, home value, median rent, age of householder, number of owner and renter households and group quarters populations.





The second step is to calculate a total population forecast for all geographic areas

under study (in this case constituent districts and school attendance areas). This forecast allows us to find how differences and changes in each area's fertility, mortality and migration rates will affect the composition of the area's future population. Issues examined include but are not limited to the following:

1. **The number of women in child bearing age in both the district and the surrounding area.** Changes in the number of women 20-29 years old in an area have a far greater impact on the number of births than changes in the overall fertility rate.

2. **Changes in the area's Mortality rates**. Significant moves up or down in the mortality rate indicate that much of the local population change is due to factors relating to the elderly population and not to young families that would have school age children.

3. **The magnitude and prevalence of out migration patterns by age.** Typically, most school districts have a large amount of out migration in the 18-21 age groups as these students leave their parent's home and go to college. Other major out migration patterns that need to be identified is young college graduates moving to cities to start their careers (ages 22-26), young families go to the suburbs (25-35), people buy "move up" houses (33-50), and the "down sizing" movers (ages 50-85).

4. **Conversely, the magnitude and prevalence of the area's in migration patterns.** For people who change households each year, the majority of new residences are within a 30 mile radius of the old residence. Further the rate of existing home and new home sales in each area is used as a primary variable to establish both the magnitude and population composition of the in and out migration flow. This is especially key given that the current national average of existing homes to new homes sold is 8 to 1.

State	Migration to Champaign County 2005 to 2006 From	Number of Households	Number of People	Persons Per Household
IL	Champaign Count Tot Mig-US	5,669	8,994	1.58
IL	Champaign Count Tot Mig-US	4,973	8,211	1.65
IL	Champaign Count Tot Mig-Sam	2,635	4,198	1.59
IL	Champaign Count Tot Mig-Dif	2,338	4,013	1.72
IL	Champaign Count Tot Mig-For	716	783	1.09
IL	Champaign Count Non-Migrant	61,554	126,763	2.06
IL	Cook County	472	692	1.47
IL	Vermilion County	268	489	1.82
IL	Piatt County	154	256	1.66
IL	Mclean County	150	233	1.55
IL	Douglas County	129	222	1.72
IL	Ford County	129	215	1.67
IL	Du Page County	102	140	1.37
IL	Coles County	94	158	1.68
IL	Sangamon County	87	135	1.55
IL	Macon County	80	133	1.66
IL	Will County	74	118	1.59
IL	Peoria County	62	104	1.68
IL	Iroquois County	59	89	1.51
IL	Kankakee County	53	96	1.81
IL	Lake County			.42
IL	Kane County			.45
CA	Los Angeles County			.82
IL	Jackson County			1.65
MO	St Louis County	33	47	1.42

Sample IRS Migration Data used for study

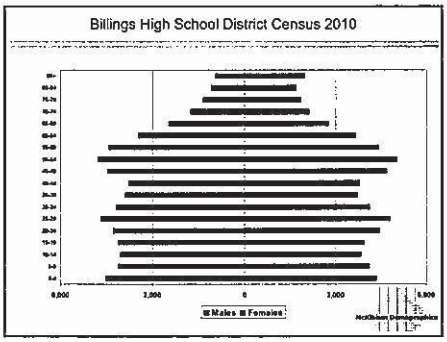
5. **All geographic areas within the District have their own unique characteristics and demographic trends.** To ensure that as many neighborhood social, economic and demographic factors are included in the projections modeling procedure, field research will be conducted throughout the entire district to ascertain the impact of housing changes, planned construction, infrastructure status, and neighborhood dynamics.

The population forecasts are developed by using the Cohort-Component Method of population forecasting. Five data sets are required to generate population and enrollment forecasts. These data sets are as follows:

- a base-year population;
- a set of age-specific fertility rates for each small area to be used over the forecast period;
- a set of age-specific survival (mortality) rates for each small area;

- a set of age-specific migration rates for each small area;
- historical enrollment figures by grade for all facilities to be projected.

Historical enrollment databases will also be used to calculate student populations by small area regardless of where they attend.



The population forecasts are calculated using a cohort-component method with the populations divided into male and female groups by five-year age cohorts that range from 0-to-4 years of age to 85 years of age and older (85+). Age- and sex-specific fertility, mortality, and migration models were constructed to specifically reflect the demographic characteristics of the individual attendance areas and the total school district.

In the **third and final step, enrollment forecasts are calculated using a modified average survivorship method.** Average survivor rates (i.e., the proportion of students who progress from one grade level to the next given the average amount of net migration for that grade level) over the previous five years of year-to-year enrollment data are calculated for grades 2 through 12.

The survivorship rates are modified, or adjusted, to reflect the average rate of projected in-migration of 5-to-9 and 10-to-14 year olds to each of the study areas for the period 2012 to 2016. These survivorship rates then are adjusted to reflect the projected changes in age-specific migration the district should experience over the next five years. These modified survivorship rates are used to project the enrollment of grades 2 through 12 for the period 2012 to 2016. Since the method doesn't depend on historical rates change it will more accurately reflect the current and future demographic situation as it relates to school enrollment.

Birth and death data are obtained from the Connecticut State Department of Health for the years 2005 through 2010. The net migration values are calculated using Internal Revenue Service migration reports for the years 2000 through 2010. The data used for the calculation of migration models come from the United States Bureau of the Census, 2000 to 2010, and the models are assigned using an eco-demographic system.

Other locally obtained variables that will be used in the construction of the population forecast models include but are not limited to sales of existing housing units, construction of new housing units, housing price, housing tenure, household size, household composition and planned infrastructure improvements.
The forecasted enrollments for kindergarten and first grade are derived from the 5-to-9 year old population of the age-sex population projection at the small area and school district level. This procedure allows the changes in the incoming grade sizes to be factors of projected population change and not an extrapolation of previous class sizes. Given the potentially large amount of variation in kindergarten enrollment due to parental choice, changes in the state's minimum age requirement, and differing district

policies on allowing children to start kindergarten early, first grade enrollment is deemed to be a more accurate and reliable starting point for projections.

Historically, Population and Forecasts developed by Cropper GIS have been highly accurate. The level of accuracy for both the population and enrollment projections at the school district level is estimated to be +2.0% for the life of the projections.

The forecasts assume the current economic, political, social, and environmental factors of the district remain the same through the life of the forecasts. In particular, the forecasts assume the following:

- No short term economic recovery in the next 18 months and the national, state or regional economy does not go into deep recession at anytime during the 10 years of the forecasts; (deep recession is defined as four consecutive quarters where GDP contracts in excess of 1%);
- Interest rates have reached an historic low, and will not fluctuate more than one percentage point in the short term; the interest rate for a 30 year fixed home mortgage stays below 7%;
- Rate of mortgage approval stays at 1999-2002 levels and lenders do not return to "sub-prime" mortgage practices.
- Rate of housing foreclosures does not exceed 125% of the 2005-2007 average of the Public Schools for any year in the forecasts.
- Housing turnover rates (sale of existing homes in the district) will remain at their current levels;
- Private school attendance rates will remain constant; and
- No major infrastructure changes.

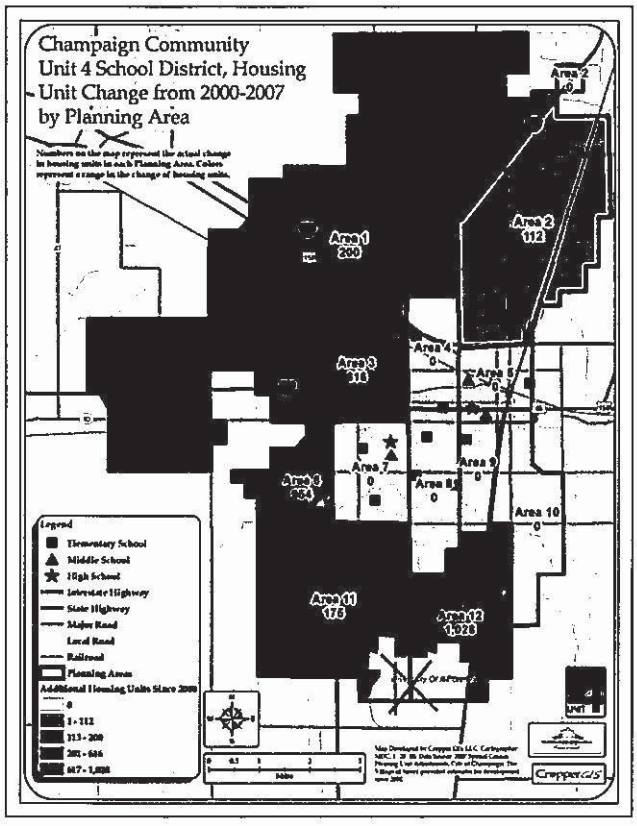
District	2006 Projections	Projection year	Actual Enrollment 2006	% Error
Cobb County, GA	103,907	2002	106,163	-2.2
Madison County, MS	10,922	2004	10,851	0.7
N.W. Allen County, IN	6,067	2004	6,035	0.5
Penn Harris Madison, IN	10,236	2003	10,240	-0.04
Savannah-Chatham, GA	34,493	2004	36,620	-0.3
Huntsville, AL	23,319	2005	23,371	-0.2

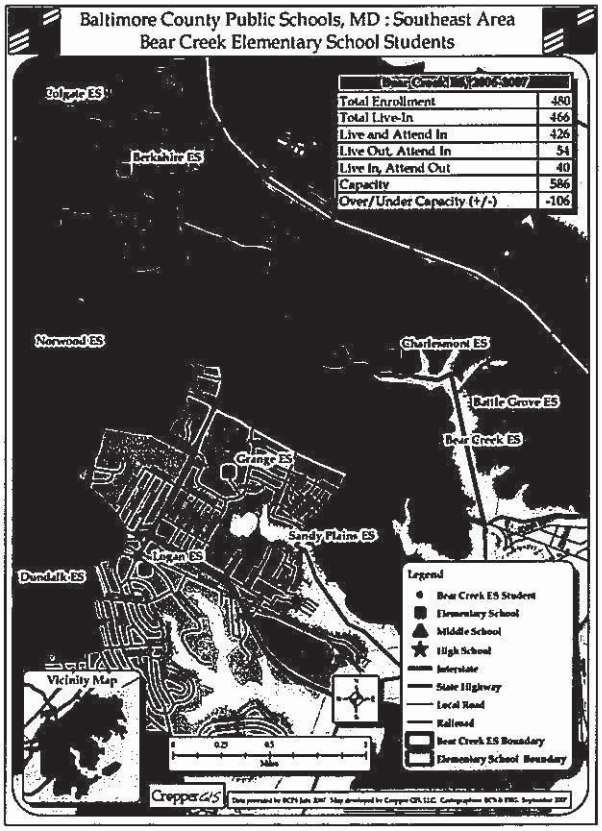
Demographic Services Deliverables

As indicated in the RFP, Cropper GIS will develop a comprehensive report that encompasses all facets of the study. The report will include the following:

- Methodology and forecast assumptions.
- Summaries of data collected and utilized.
- 10-year population and enrollment forecast by school by grade.
- Population pyramids for each school zone depicting age structure and distribution.
- Supporting maps that were used in the analysis of the district during the demographic study.

Analytical mapping of students by school to show internal migration trends (Live/Attend Mapping).



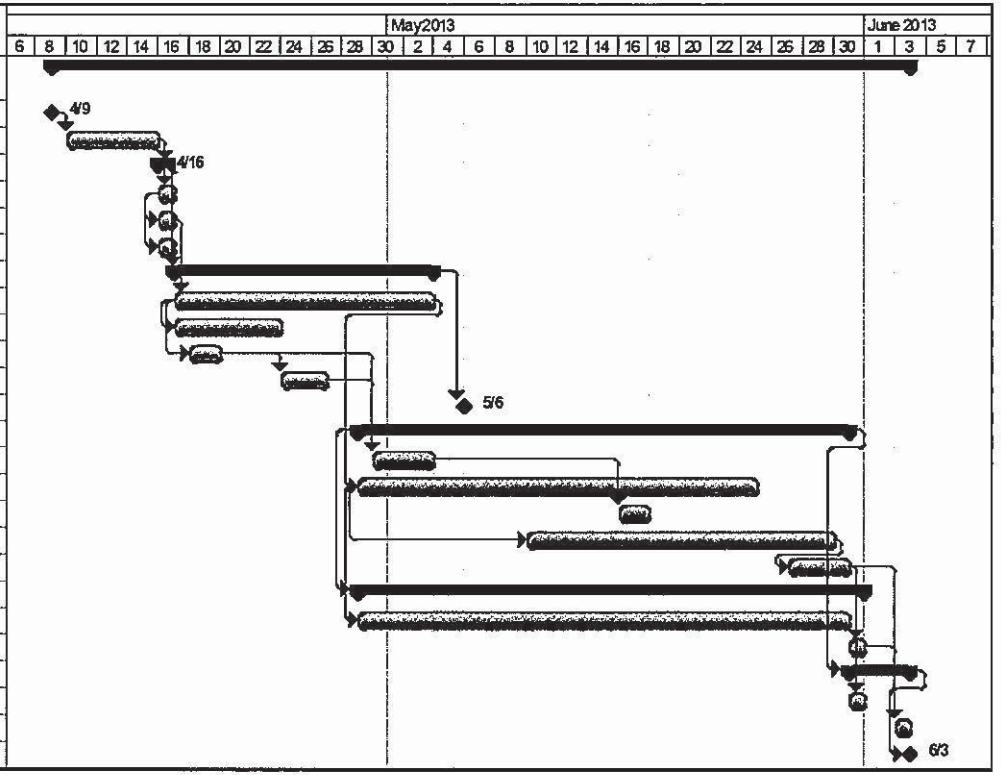


Sample Report

A sample report is included with this submittal to show an example of a deliverable done for a K-12 School project done in Connecticut.

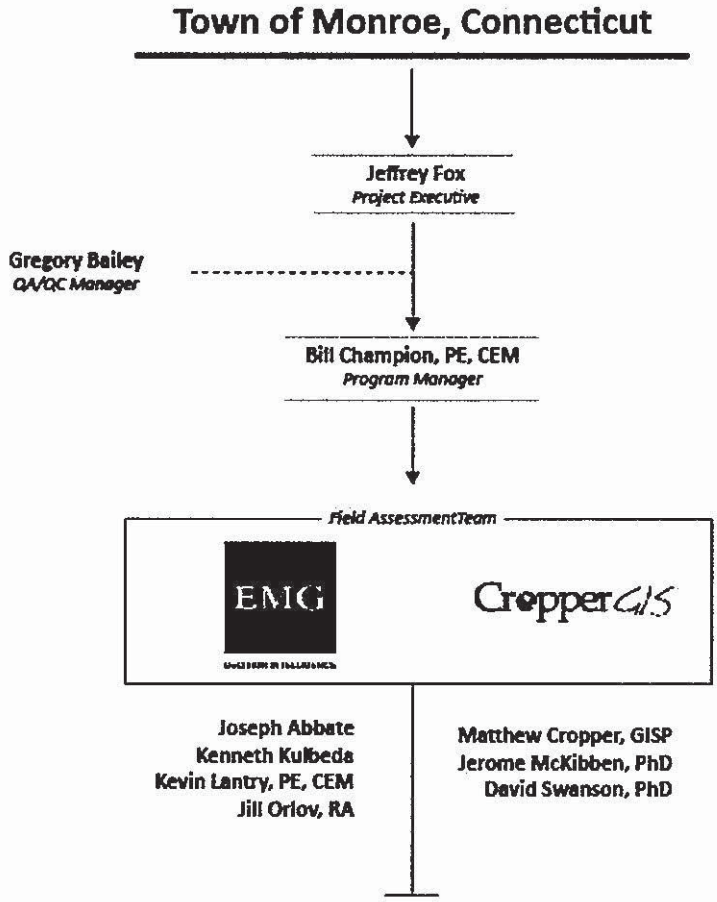
Timeline

ID	Task Name	Duration	Start	Finish
1	Town of Monroe, Facility Condition & Demographic Assessment	40 days	Tue 4/9/13	Mon 6/3/13
2	Award of Contract	1 day	Tue 4/9/13	Tue 4/9/13
3	Program Planning/Scheduling	4 days	Wed 4/10/13	Mon 4/15/13
4	Kickoff Meeting	1 day	Tue 4/16/13	Tue 4/16/13
5	Introductions	1 day	Tue 4/16/13	Tue 4/16/13
6	Scope Review	1 day	Tue 4/16/13	Tue 4/16/13
7	Format Review	1 day	Tue 4/16/13	Tue 4/16/13
8	Data Gathering	13 days	Wed 4/17/13	Fri 5/3/13
9	On-site Assessments	13 days	Wed 4/17/13	Fri 5/3/13
10	Prior Reports Review	5 days	Wed 4/17/13	Tue 4/23/13
11	5 Year Historical Enrollment	2 days	Thu 4/18/13	Fri 4/19/13
12	Acquire Local Demographic Data	3 days	Wed 4/24/13	Fri 4/26/13
13	Findings Review Meeting	1 day	Mon 5/6/13	Mon 5/6/13
14	Reporting	24 days	Mon 4/29/13	Thu 5/30/13
15	Develop Demographic Profile	4 days	Tue 4/30/13	Fri 5/3/13
16	Report Writing	20 days	Mon 4/29/13	Fri 5/24/13
17	Demographic Forecast Report	2 days	Thu 5/16/13	Fri 5/17/13
18	Town of Monroe Reviews	14 days	Fri 5/10/13	Wed 5/29/13
19	Report Revisions	4 days	Mon 5/27/13	Thu 5/30/13
20	Database	25 days	Mon 4/29/13	Fri 5/31/13
21	AssetCALC™ Population	24 days	Mon 4/29/13	Thu 5/30/13
22	AssetCALC™ Training	1 day	Fri 5/31/13	Fri 5/31/13
23	Deliverables	2 days	Fri 5/31/13	Mon 6/3/13
24	Final Report Delivery	1 day	Fri 5/31/13	Fri 5/31/13
25	AssetCALC™ Delivery	1 day	Mon 6/3/13	Mon 6/3/13
26	Project Completion	0 days	Mon 6/3/13	Mon 6/3/13



H. Resumes

Project Organizational Chart



Resumes for the proposed Project Team can be found on the following pages.

Jeffrey Fox - Project Executive

EMG

Education

Bachelor of Science, Mechanical Engineering – University of Maryland, Baltimore County, 1992.

Industry Tenure

A/E: 1988
EMG: 2007

Industry Experience

Government
K-12 Education
Higher Education
Industrial
Office
Retail
Hospitality
Housing

Project Experience

Town of Glastonbury; Glastonbury, CT

Facility Condition Assessment; 390,000 SF (including schools, parks and recreational facilities, libraries, fire and police stations, and the Town Hall). EMG provided current facility condition deficiencies, corrections for deficiencies, cost estimates for the corrections, and future facility renewal costs. The Assessment also included a general statement on the building's ADA compliance to determine whether additional review was needed. Mr. Fox oversaw all contractual components of the project.

Town of Plymouth; Plymouth, MA

Facility Condition Assessment; 15 school buildings, 1.2 million SF. The work conducted by EMG assisted the Town District in developing an infrastructure management plan. Mr. Fox oversaw all contractual components of the project.

City of Casa Grande; Casa Grande, AZ

Facility Condition Assessment and Energy Audit; 36 facilities. The goal of the assessment was to identify opportunities to decrease energy consumption, improve energy usage, and reduce energy costs. Mr. Fox defined the scope and worked with the Program Manager and Project Team to meet the needs of the client.

San Bernardino County; San Bernardino, CA

Facility Condition Assessment. The first year of the project included the assessment of 176 buildings and 1.9 million SF of County-owned and/or operated buildings, while years 2-3 included an additional 4 million SF. EMG completed an ADA review and an assessment of existing building conditions, site improvements, and mechanical systems. EMG's final report assisted the County in developing a maintenance priority plan for its facilities.

Stafford County Public Schools; Stafford, VA

Facility Condition Assessment; 16 elementary, 6 middle, and 5 high schools, including administration, academic, athletic and support service buildings. The assessment was performed to determine the present condition of the facilities, as well as the future funding and management programs required to maintain the functional operations of the buildings. Mr. Fox oversaw all contractual components of this project.

Browne Academy; Alexandria, VA

Facility Condition Assessment; 11-acre campus and 9 buildings. Mr. Fox was responsible for all contractual issues and proper allocation of resources for successful on-time completion of the project. The results of the assessment assisted in the development of an infrastructure management plan for the school.

Arlington County Department of Parks & Recreation; Arlington, VA

Facility Condition Assessment. Mr. Fox assisted in the evaluation and assessment of life cycle cost and management needs of recreation facilities within the Arlington County Department of Parks & Recreation. EMG completed an ADA/504 assessment to ensure compliance with DOJ standards and County accessibility goals. Our team of code specialists reviewed all County buildings and noted all deficiencies, solutions to the deficiencies, and the respective costs to rectify the deficiencies. Our assessment included the ADA review, field measurements, and cost estimates for deficiencies.

Bill Champion, PE, CEM – Program Manager

EMG

Industry Tenure
A/E: 1994
EMG: 2002

Industry Experience
Government
K-12 Education
Higher Education
Industrial
Office
Retail
Hospitality
Housing

Education
Master of Business Administration, University of Rochester, 2001.
Master of Science, Mechanical Engineering, State University of New York, Buffalo, 1998.
Bachelor of Science, Mechanical Engineering, State University of New York, Buffalo, 1994.

Licenses
Professional Engineer, Maryland (#40120)
Professional Engineer, District of Columbia (#PE906172)
Professional Engineer, New York (#087867)
Project Management Professional, Project Management Institute (#50241)
Certified Energy Manager (#16649)

Project Experience

Stamford Public Schools; Stamford, CT
Facility Condition Assessment. Mr. Champion oversaw the QC components of this assessment (building site, roofing, exterior, interior, plumbing, fire, security, electrical systems) and 5-year capital plan for 19 schools. EMG conducted a space analysis to determine steps to adapt the facilities to meet future building/educational specification requirements.

Cambridge Public Schools; Cambridge, MA
Facility Condition Assessment. Mr. Champion oversaw the QC components of this assessment and CAD update of school facilities on 11 campuses, 1 million SF. The study included the assessment of academic and support structures for deferred maintenance, modernization, and necessary capital improvement. Mr. Champion delivered reports and a consolidated long-range capital needs plan on AssetCALC™ which integrated with the existing SchoolDude software platform.

Montgomery County Public Schools; Montgomery County, MD
Facility Condition Assessment. Mr. Champion oversaw all quality assurance aspects of this facilities condition assessment.

Alexandria City Public Schools; Alexandria, VA
Facility Condition Assessment; 17 schools, 2 facilities. Mr. Champion provided technical expertise and oversight while EMG evaluated the facilities, identified short-term needs, and developed cost estimates and priorities. He provided a consolidated capital needs analysis to include anticipated capital needs for all buildings.

Bureau of Indian Affairs; Albuquerque, NM
Facility Condition Assessment. Mr. Champion oversees all QC aspects of this assessment of K-12 schools, including creation of a detailed tablet PC-based field data collection platform, with the goal of verifying existing conditions of 27 million SF of real estate assets in 16 states. The detailed analysis allows the BIA to make decisions on building disposition, rehabilitation, and new construction needs.

Arlington County; Arlington, VA
Facility Condition Assessment. Mr. Champion supervised the assessment of 63 government properties. EMG prepared an assessment and ADA review, surveying interior, exterior/envelope, and site to record deficiencies, coupled with a detailed life cycle analysis of prime systems/ components to complete the reserve plan.

Gregory Bailey – Quality Assurance Manager

EMG

Education

Master of Science, Engineering Project Management, Warren National University, 2000.
Bachelor of Science, Construction Management, University of Baltimore, 1988.
Associate of Arts, Architectural Engineering, Anne Arundel Community College, 1986.

Industry Tenure

A/E: 1988
EMG: 2000

Industry Experience

Government
K-12 Education
Higher Education
Housing
Office
Industrial
Healthcare
Retail
Hospitality

Project Experience

Bureau of Indian Affairs; Albuquerque, NM

Facility Condition Assessment; 27 Million SF. Mr. Bailey manages this project and is the primary contact for contract issues as well as development of scope and submission criteria both times EMG has conducted assessments and managed the Client's facility management database. This project includes creation of a detailed tablet PC-based field data collection platform. The goals of the program is to field verify existing conditions of BIA-owned real estate asset in 16 states. This detailed analysis allows BIA staff to make short/long-term decisions regarding building disposition, rehabilitation, and new construction needs. Mr. Bailey also manages the schedules, field team, and coordinates cost estimating and scheduling of deliverables.

Carlos Rosario International Public Charter School; Washington, DC

Facility Condition Assessment and Energy Audit. Mr. Bailey managed the EMG Team and worked with this leading charter school and adult-education institution in Washington, DC. He oversaw the development of the scope of work and monitored the project's scheduling.

Stamford Public Schools; Stamford, CT

Facility Condition Assessment. Mr. Bailey provided quality assurance management during the assessments of School buildings, oversaw cost estimating, and reviewed reports.

Broad Brook Schools; Broad Brook, CT

Facility Condition Assessment. Mr. Bailey served as a lead member of the assessment team and completed assessments of all of the School buildings.

Arlington Public Schools; Arlington, VA

Facility Condition Assessments. Mr. Bailey managed assessments of all buildings within the Arlington Public School System. He managed a pilot study that included creating a protocol for assessment and data collection, as well as creating the database architecture and reporting format. He was instrumental in assisting the Client in developing an assessment protocol and ranking criteria that included the condition of existing facilities and need for immediate and short-term repairs, and assessed space usage versus educational design specifications. Upon successful completion of the pilot study, EMG was awarded a contract to complete assessments of all remaining school buildings in the system. Mr. Bailey was responsible for coordinating engineering assessment teams, cost estimators, and facility planners.

Joseph Abbate - Assessment Team

EMG

Education

Bachelor of Science, Mechanical Engineering, Rutgers University, 1985.

Project Experience

Stamford Public Schools; Stamford, CT

Facility Condition Assessment. Mr. Abbate completed the assessments and developed a capital plan for 19 schools. Specifically, he assessed the building site, roofing, exterior, interior, plumbing, fire, security, and electrical systems.

Massachusetts Division of Energy Resources; Boston, MA

Energy Audit. Mr. Abbate worked with a team of consultants to perform an energy audit and related technical assistance to identify and evaluate energy conservation measures (ECMs) for Massachusetts local Government entities, including Cities, Towns, and Regional School Districts. At each facility, he discussed various energy issues with the Client including low-cost operation and maintenance measures (O&M) and potential savings, ECMs to be assessed, and all applicable programs.

County of Fairfax; Fairfax, VA

Property Condition Assessment. Mr. Abbate performed an assessment of 72 buildings, totaling more than 700,000 SF of space. He performed walk-through inspections of each development to ascertain the condition of the property, immediate critical and non-critical needs, and expected repair, replacement, and major maintenance needs.

Holyoke Housing Authority; Holyoke, MA

Physical Needs Assessment; 8 multi-family developments, 514 units. Mr. Abbate performed evaluations of each development to ascertain the condition of the properties. EMG identified immediate, critical, and non-critical needs as well as expected repair, replacement, and major maintenance needs.

CreditVest, Inc.; Pittsburgh, PA

Retrofit Rehabilitation. EMG conducted a retrofit rehab inspection consisting of field observations of a senior living facility that included 6 buildings (1 main building and 5 cottage buildings; a total of 100 units)). Document reviews were completed; and Davis-Bacon worker interviews were conducted with 5 workers on-site using HUD Form 11 to document results that were submitted in the retrofit draw inspection report. EMG also confirmed that the job site had the correct postings outside the contractor's office for Davis-Bacon requirements, and that they were made clearly visible at the property. Mr. Abbate was responsible for on-site work at the property.

Industry Tenure

A/E: 1985

EMG: 2005

Industry Experience

Government
K-12 Education
Higher Education
Housing/Multi-Family
Office
Industrial
Hospitality
Healthcare
Retail/Wholesale
Assisted Living
Hospitality
Retail

Kenneth Kulbeda - Assessment Team

EMG

Education

Bachelor of Science, Architecture, University of Illinois, 1975.

Industry Tenure

A/E: 1976
EMG: 2001

Industry Experience

Government
K-12
Higher Education
Multi-Family Housing
Assisted Living
Hospitality
Retail
Construction
Healthcare

Project Experience

Arlington County; Arlington, VA

Facility Condition Assessments; 63 Government properties. The County required capital planning, cost estimating and database services, and a complete inspection and accessibility review. Mr. Kulbeda completed assessments on office and maintenance buildings. He conducted interviews with the property manager/maintenance staff. Findings included information on existing building conditions, site improvements, mechanical/electrical systems, and code and accessibility information.

Alexandria City Public Schools; Alexandria, VA –

Facility Condition Assessment; 19 sites, 2.1 million SF. EMG provided a database solution for the Client's assessment/inventory needs. Mr. Kulbeda led the assessments.

Montgomery County Public Schools; Montgomery County, MD

Facility Condition Assessment. Mr. Kulbeda was responsible for the assessment, space analysis of school rooms, and written report for elementary/middle schools.

County of San Diego Department of General Services; San Diego, CA

Facility Condition Assessment. EMG performed a facility inventory and condition assessment for 6 million SF of buildings (libraries, courthouses, detention centers, office buildings, healthcare facilities, animal shelters, residences). Mr. Kulbeda conducted visual observations and studied as-built documents. He produced narrative reports to include a description of each building component and system.

City of Dallas; Dallas, TX

Facility Condition Assessment. EMG assessed the condition of 6.5 million SF of buildings, identifying capital needs, present/future maintenance, and repair work with associated costs. Mr. Kulbeda conducted property manager/staff interviews. Findings included information on existing building conditions, site improvements, mechanical/electrical systems, and code and accessibility.

Bureau of Indian Affairs; Albuquerque, NM

Facility Condition Assessment. Mr. Kulbeda conducted assessments and updated the BIA's facility management database. This project includes creation of a detailed tablet PC-based field data collection platform. The goals of the program is to field verify existing conditions of 27 million SF of BIA-owned real estate assets in 16 states. This detailed analysis allows BIA Staff to make short- and long-term decisions regarding building disposition, rehabilitation, and new construction needs. Mr. Kulbeda completed the assessment update and verification of previous backlog cost items. He also conducted a space analysis of rooms, measuring the rooms and written report. He also performed the space analysis and physical needs assessments of American Indian elementary, middle, and high schools.

Kevin Lantry, PE, CEM - Assessment Team

EMG

Education
Bachelor of Science, Mechanical Engineering, Purdue University, 2003.

Licenses/Certifications
Professional Engineer, Indiana (#11100318)
Certified Energy Manager (#16678)
VFA Facility Certified

Project Experience

Stafford County Public Schools; Stafford, VA
Facility Condition Assessment; 2.9 Million SF. Mr. Lantry assessed all buildings within the Stafford County Public School System. EMG's custom Report Card was an important part of this project, as this document helped the District determine whether building systems and components met current code, ADA accessibility requirements, and maintenance requirements in order to maximize Estimated Useful Life, and whether the schools' primary classroom and space functions are adequate for the District's projected student capacity.

Stamford Public Schools; Stamford, CT
Facility Condition Assessment. Mr. Lantry completed the assessment and developed a Capital Plan for 19 Stamford Public Schools. He assessed the building site, roofing, exterior, interior, plumbing, fire, security, and electrical systems.

Archdiocese of Chicago; Chicago, IL
Facility Condition Assessment. Mr. Lantry evaluated a portfolio of churches and schools for the Archdiocese of Chicago. He worked with a team of licensed architects and engineers to evaluate the buildings' physical structures, major electrical, mechanical and plumbing systems, and ADA concerns. The assessments were performed on 7 buildings, including a historic cathedral, administrative building, rectory and convent, gymnasium, school, and childcare center.

High School Athletic Center; Indianapolis, IN
Facility Condition Assessment. Mr. Lantry completed the design and construction administration for a new $4.5 million stadium and athletic center. He worked through the completion of project, including preliminary and final punch, to verify functionality of all MEP systems.

First Energy Facility Assessments; Multiple Sites, PA
Facility Condition Assessment. Mr. Lantry completed assessments on 40 sites for a large electric utility in central and eastern Pennsylvania. He evaluated a wide range of sites, including District offices, regional headquarters, and maintenance facilities. The team compiled results into individual facility condition reports and EMG's AssetCALC™ software was used for capital planning and facility investment purposes.

Industry Tenure
A/E: 2001
EMG: 2004

Industry Experience
Housing
Government
K-12 Education
Higher Education
Green Assessments
Industrial
Commercial

Jill Orlov, RA - Assessment Team

EMG

Education
Master of Science, Architecture, University of Pennsylvania, 1995.
Bachelor of Science, Architecture, University of Virginia, 1991.

License
Registered Architect, Maryland (#13740)

Project Experience

Stamford Public Schools; Stamford, CT
Facility Condition Assessment. Ms. Orlov performed an assessment and developed a capital plan for 19 schools. She assessed the building site, roofing, exterior, interior, plumbing, fire, security, and electrical systems.

Montgomery County Public Schools; Montgomery County, MD
Facility Condition Assessment. Ms. Orlov led the team as they performed on-site assessments involving modernization prioritizing for all schools based on lists of criteria based on educational specifications and physical infrastructure conditions. She also performed moisture and structural joist studies.

Carlos Rosario International Public Charter School; Washington, DC
Facility Condition Assessment and Energy Audit. Ms. Orlov conducted assessments and preliminary energy audits for this leading charter school and adult-education institution. She assessed architectural components and provided a structural review of the facility. EMG identified deficient conditions in terms of deferred maintenance, building condition, and life safety code compliance issues.

Arlington County; Arlington, VA
Facility Condition Assessment and Accessibility Assessment. Ms. Orlov conducted assessments for this 68-building, 3 million SF project that included several Government buildings (libraries, fire stations/academies, Parks & Recreation centers, offices, courthouses, detention facilities, Department of Transportation facilities, maintenance facilities). She assessed all physical components of the buildings and determined replacement costs of deficiencies and future capital needs.

Government Transit Building; Charlottesville, VA
Property Condition Assessment. Ms. Orlov completed assessments on this 2000 SF public service building. This included observations of the facility and systems, interviews with property staff, and research of municipal records. This project was a part of a large portfolio of projects EMG completed for the Client.

Industry Tenure
A/E: 1991
EMG: 2004

Industry Experience
Government
K-12 Education
Higher Education
Affordable Housing
Industrial
Hospitality
Retail

Matthew Cropper, GISP - Demographics

Cropper GIS

Education
Bachelor of Science, Geography (specialization in Geographic Information Systems and Analytical Cartography), Ohio State University.
Associate of Science, Geographic Information Systems/Global Positioning Systems, Hocking College.

Licenses
Geographic Information Systems Professional

Project Experience
Mr. Cropper is the President of Cropper GIS Consulting, LLC – a firm specializing in planning with a focused approach of using GIS mapping technology to assist in problem solving. Clients of Cropper GIS include Government, K-12 School Districts, and Private Companies.

Mr. Cropper serves as an expert witness for the US Department of Justice's Civil Rights Division where he provides consultation related to federal desegregation and K-12 school redistricting lawsuits.

Cropper GIS recently directed the largest redistricting effort that Henrico County, Virginia has ever undertaken. They are currently providing redistricting and planning consultation to the City of Atlanta, GA; Atlanta Public Schools, GA; Baltimore County Schools, MD; Charleston County Schools, SC; and Akron Public Schools, OH. Recent project experience includes:

City of Atlanta and Atlanta Public Schools; Atlanta, GA
Demographics. This project included the population and housing forecasting for the City of Atlanta along with parallel project forecasting of K-12 enrollment for the Atlanta Public Schools.

Cobb and DeKalb Counties; Various Locations, GA
Demographics. This project included the population and enrollment forecasting for the school districts in both counties, as well as a detailed analysis of facility utilization versus long-term forecasts and the development of recommendations based on population forecast results.

Henrico County; Countywide, VA
Demographics. This redistricting project involves facilitation of a 70-member committee to redraw attendance boundary lines to incorporate a new middle school and new high school, and to balance elementary enrollments. The school division has more than 80 schools and more than 48,000 students.

City of Buffalo; Buffalo, NY
Demographics. This project included a demographics study for this region that lost more than half of their population and student enrollment in the past 30 years. The project objectives included developing a 10-year population and enrollment forecast for 12 sub-areas within the City of Buffalo.

Baltimore County; Baltimore, MD
Demographics. This project included a school utilization study for Southeastern Baltimore County where Mr. Cropper led a community-based process of building consensus around potential school closings and redistricting concepts. The area of study included more than 40 schools.

Industry Tenure
A/E: 1997

Industry Experience
Government
K-12 Education
Higher Education
Affordable Housing
Industrial
Hospitality
Retail

Jerome McKibben, PhD - Demographics

Cropper GIS

Education
PhD, Applied Demography, Bowling Green State University, 1990.
Master of Arts, Sociology, Syracuse University, 1982.
Bachelor of Arts, History and Sociology, SUNY at Geneseo, 1981.

Industry Tenure
A/E: 1982

Industry Experience
Government
K-12 Education
Higher Education
Affordable Housing
Industrial
Hospitality
Retail

Dr. McKibben specializes in population forecasts and estimates, demographic methodology, small area analysis and redistricting, site selections, demographic analysis, enrollment forecasts, and migration. He has successfully completed more than 800 forecasting and estimates projects with populations ranging in size from 2,000 to 10,000,000 people

Dr. McKibben's current research projects include development of demographic methodologies for non-traditional populations, race and ethnic composition, the effect of household composition changes on small area populations, and estimates and forecasts methodology.

Dr. McKibben has published articles in such journals as Population Research and Policy Review, Journal of Economic and Social Measurement, American Demographics and Voprosy Statistiki. He is also the author of two chapters in the recently published text The Methods and Materials of Demography; Race and Ethnic Composition, and Urban/Rural Classification.

Formerly the State Demographer of Indiana, Dr. McKibben has also been a member of the Federal-State cooperative on Population Estimates and the Federal-State cooperative on Population Projections.

Project Experience
City of Atlanta and Atlanta Public Schools; Atlanta, GA
Demographics. This project included the population and housing forecasting for the City of Atlanta along with parallel project forecasting of K-12 enrollment for the Atlanta Public Schools.

Cobb and DeKalb Counties; Various Locations, GA
Demographics. This project included the population and enrollment forecasting for the school districts in both counties, as well as a detailed analysis of facility utilization versus long-term forecasts and the development of recommendations based on population forecast results.

City of Buffalo; Buffalo, NY
Demographics. This project included a demographics study for this region that lost more than half of their population and student enrollment in the past 30 years. The project objectives included developing a 10-year population and enrollment forecast for 12 sub-areas within the City of Buffalo.

David Swanson, PhD - Demographics

Cropper GIS

Education
PhD, Sociology/Population Studies, University of Hawaii, 1985.
Master of Arts, Sociology/Population Studies, University of Hawaii, 1976.
Graduate Studies, Social Sciences, University of Stockholm, 1974.
Bachelor of Science, Sociology/Mathematics, Western Washington State College, 1972.

Industry Tenure
A/E: 1982

Industry Experience
Government
K-12 Education
Higher Education
Affordable Housing
Industrial
Hospitality
Retail

Project Experience
Mr. Swanson is one of the lead demographers with Cropper GIS Consulting. He leverages his extensive experience and expertise in demographic forecasting projects. A few of Dr. Swanson's many strengths include demographic and migration forecasting.

In addition to working with Cropper GIS, Dr. Swanson is a Professor of Sociology at the University of California Riverside. He served two consecutive terms as a member of the U.S. Census Bureau's Advisory Committee for Professional Associations from 2004 to 2010, and served as its facilitator in 2009-2010. He also has served on multiple committees and boards including:

- Program Organizer, 2007 and 2010 Applied Demography Conference.
- Publications Officer, 2001-2002 Government Statistics Section, American Statistical Association.
- Applied Demography Committee, 1995-1998, 1999-2002 Population Association of America.
- Chair, 1998 and 2002 Population Association of America.
- Development Committee 2007-2010 Population Association of America.
- Secretary-Treasurer, 1995-1997 and 2003-2007 Southern Demographic Association.
- Editor, 2004-2007 *Population Research and Policy Review*.

He has authored or co-authored more than 75 refereed journal articles, mainly dealing with demography and methods for small area estimation and forecasting. He has written the following:

- *State and Local Population Projections: Methodology and Analysis* (2001, with Stan Smith and Jeff Tayman).
- *The Methods and Materials of Demography, 2nd Edition* (2004, with Jay Siegel).
- Edited *Applied Demography in the 21st Century* (2008, with Steve Murdock).

Mr. Swanson has received $3,000,000 in grants and contracts and was the Principal Investigator of a research project funded by the National Science Foundation to assess the demographic and social impacts of Hurricane Katrina on the Mississippi Gulf Coast. He also is a co-investigator on the $2.3 million grant "A Virtual Co-Laboratory for Policy Analysis in Greater Los Angeles," funded by the University of California Multi-Campus Research Program (2010-2015).

Mr. Swanson was twice selected as a Fulbright Scholar and has received awards for his work. In addition to many media interviews, he has testified before regulatory commissions, US Congress and state legislative bodies. He has also served as an expert witness in court cases.

I. Data

EMG proposes to use **AssetCALC™ Software** for this project. Specifically for the Demographics component of the project, the team will be using **Geographic Information Systems.**

Proposed Software Solution: AssetCALC™

EMG proposes utilizing AssetCALC™ as the platform for all data collected on this project. AssetCALC™ is a non-proprietary, web-based system that allows users to query information regarding specific items or across the entire asset portfolio. This streamlines the capital planning process by compiling funding requirements for deficiencies and creating budget models based on project priority, life cycle maintenance, and repair requirements. Seat Licenses and on-going hosting agreements are not required with AssetCALC™.

Prior to database population, EMG will work with the Town of Monroe to establish attributes and data points required to be associated with each asset. This will include discussion of relative priority of the asset. The first step in populating the database is to create an asset inventory, inlcuding all Town of Monroe assets and will be grouped in a hierarchy based on site location, asset group, and function.

Overview of Features:

- **Location Hierarchy** (up to four levels)
- **Deficiency Classifications** (up to two levels)
- **Deficiency Priority Codes** (described above)
- **Reporting**: Standard reports have deficiencies grouped by priority, location, replacement year, and deficiency classification. A cost summary is also included.
- **Searching:** Individual deficiencies can be searched by location, deficiency classification, and priority.
- **Deficiency Management:** Add new deficiencies; or re-prioritize and re-classify existing deficiencies.
- **Proprietary EMG Cost Database** (with adjustable inflation assumptions)
- **Facility Condition Index Calculation Report** (by building)
- **Backlog and Funding Projection Module** (recalculates FCI based on funding assumptions)

Features Specific to Asset Managers and Budget Officials

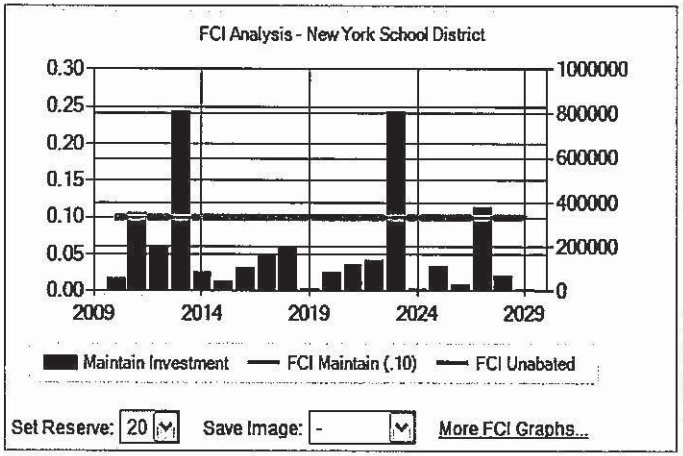
- **Capital Improvement Project Ranking and Prioritization**
- **Complete Deferred Maintenance Backlog Viewing**
- **Reporting** (by building, priority, system, or dollar deficiency amount)
- **Innovative Search Screens**: Screens allow for deficiency classifications, reporting, and management.
- **Capital Budget Planning**
- **Year-by-Year Capital Needs Analysis**
- **5, 10, and 20-Year Breakdown Reports**
- **Priority Codes**
- **Standardized Cost Database**
- **Searching Ability** (property names, age, cost, deficiency status/priority)
- **Split Project Costs** (over multiple years)

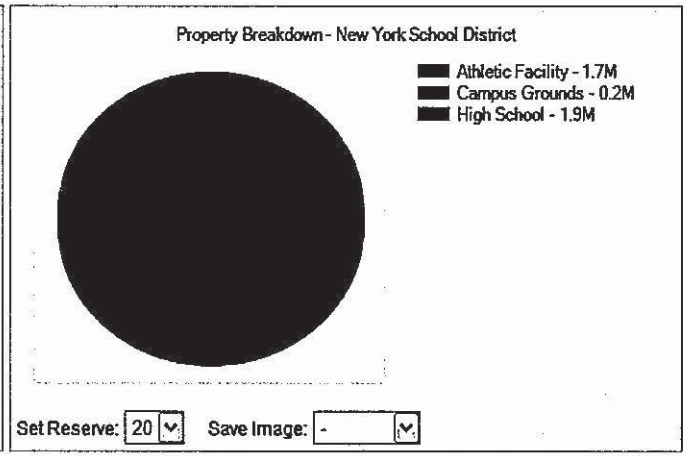
Please refer to AssetCALC™ sample screenshots on the following pages:

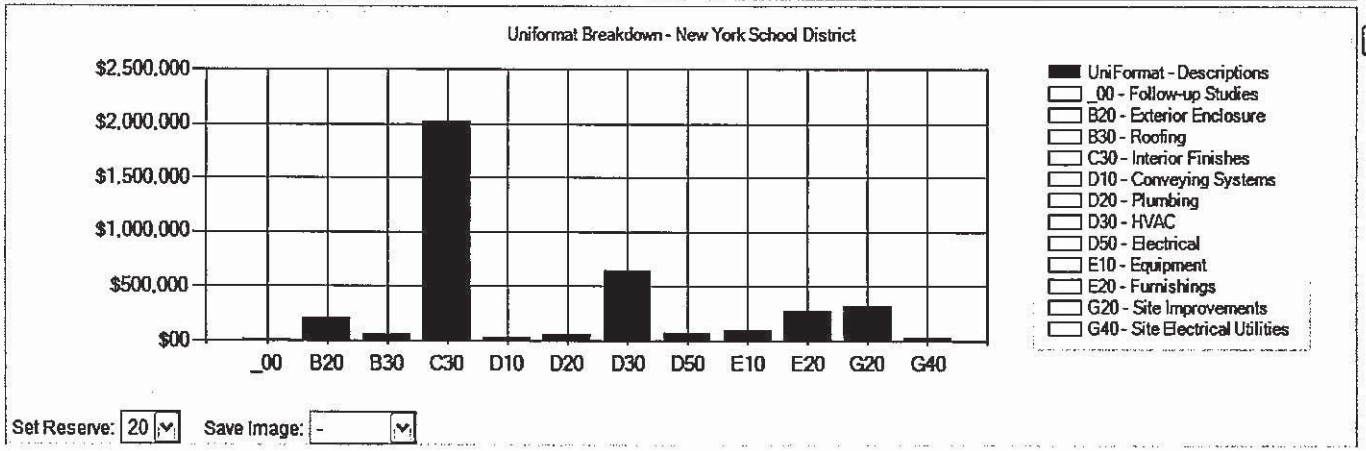
Dashboard

New York School District

Building Type	:		
City	: New York	**State**	:
Total SF	: 1	**Cost SF**	: 550.0000
Year Build	: 0	**Parking Spaces**	: 0
Comments	: Demo Only		







School Detail

Generate PHOTOLOG

Item_ID	Group Element	Building	Individual Element	EUL	eAge	RUL	Quantity	Unit	UnitCost
522	F10	Peterboro Elementary School	F1030_Special Construction Systems	25	29	0	1	1	5850
523	G20	Peterboro Elementary School	G2020_Parking Lots	5	7	0	15000	3	0.1
524	A10	Peterboro Elementary School	A1010_Standard Foundations	40	43	0	1	1	1500
525	B20	Peterboro Elementary School	B2010_Exterior Walls	40	40	0	1000	3	6
526	B20	Peterboro Elementary School	B2010_Exterior Walls	30	32	0	1	1	1500
527	B20	Peterboro Elementary School	B2010_Exterior Walls	10	12	0	1	1	1200
528	B20	Peterboro Elementary School	B2030_Exterior Doors	30	30	0	8	2	500
529	B20	Peterboro Elementary School	B2020_Exterior Windows	30	31	0	96	2	580
530	C30	Peterboro Elementary School	C3020_Floor Finishes	7	9	0	1640	3	2.89
531	C30	Peterboro Elementary School	C3010_Wall Finishes	5	7	0	2500	3	0.65
532	C30	Peterboro Elementary School	C3030_Ceiling Finishes	15	14	1	1640	3	1.5
533	D30	Peterboro Elementary School	D3050_Terminal & Package Units	15	17	0	17	5	920
534	D30	Peterboro Elementary School	D3050_Terminal & Package Units	40	39	1	5	2	3000
535	D20	Peterboro Elementary School	D2020_Domestic Water Distribution	15	15	0	3	2	1800
536	C30	Peterboro Elementary School	C3020_Floor Finishes	7	9	0	13128	3	2.89
537	C30	Peterboro Elementary School	C3010_Wall Finishes	5	7	0	25000	3	0.65
538	C30	Peterboro Elementary School	C3030_Ceiling Finishes	15	17	0	3283	3	1.5
539	E10	Peterboro Elementary School	E1090_Other Equipment	15	14	1	1	1	2000

Scroll to Top

Deficiency Cost Table

Home Locations Attachments Cost Tables Reports & Graphs More... Signec

AssetCALC.Net Powered by EMG

City Housing Authority (Demo)

Switch client...

Overview | Observations | Photos | Documents

High School : 57 Observations

Id	First Replacement	Description	Qty	Unit	Total	Photos
30775	2010	_0001 - Measured ADA Study of Property	1	EA	$5,500.00	0
30776	2010	D5037 - ADA Strobe Fire Alarm	2	EA	$500.00	0
30788	2010	B3016 - Replace aluminum gutters	780	LF	$7,706.40	1
30804	2010	D3041 - Make up air unit 3,000 CFM	1	EA	$33,252.00	1
30781	2010	D5022 - Replace wall pack 150 watt high pressure sodium	2	EA	$1,089.78	1
30809	2010	D3044 - Flanged Coil, Steam or Hot Water, 24" x 24"	1	EA	$1,827.61	1
30777	2010	E2012 - ADA - Lower Kitchen Sink and Provide Knee Space	1	EA	$600.00	1
30793	2010	B2023 - Replace 3'-0" x 7'-0" aluminum storefront doors	4	EA	$8,218.00	1
30828	2011	D2011 - Replace Resdiential Grade water closet with 1.6 GPF unit	16	EA	$3,520.00	1
30820	2011	D5092 - Install LED Exit light Retrofit Kit	18	EA	$1,234.62	1
30829	2011	D2014 - Install low flow sink aerator	64	EA	$960.00	0
30826	2011	E1094 - Refrigerator	32	EA	$11,200.00	0
30792	2011	B2021 - Replace 3' x 4' aluminum window operable	128	EA	$116,608.00	1
30830	2011	D2017 - Install low flow shower head	64	EA	$2,560.00	0
30778	2012	G2022 - Overlay asphalt	10.15	1000 SF	$7,757.65	1
30810	2012	D3067 - Capital Plan - Pneumatic Control to DDC Upgrade	47000	SF	$127,370.00	1
30799	2012	C3025 - Replace carpet - standard commercial	950	SY	$47,671.00	1
30783	2012	G2044 - Entry sign replacement allowance	1	EA	$5,000.00	1
30796	2013	C3011 - Paint interior walls, drywall	17600	SF	$14,784.00	1
30808	2014	D3044 - Circulation Pump 5 HP	2	EA	$10,198.00	1
30823	2014	C3025 - Replace carpet - residential grade	2844	EA	$74,683.44	1
30815	2014	D3044 - Replace Circulation pump 1/2 to 3/4 hp	1	EA	$2,845.00	1
30818	2015	D1011 - Replace elevator hydraulic system, 2000 lb capacity	1	EA	$14,417.00	1
30817	2015	D1011 - Replace elevator hydraulic system, 2,500 lb capacity	1	EA	$12,870.00	1
30819	2015	D1011 - Replace passenger cab finishes	2	EA	$2,912.00	1
30813	2015	D2023 - Replace Domestic water boiler, 739 MBH	1	EA	$12,100.00	1
30821	2016	C3024 - Install ceramic tile in bathroom	64	EA	$32,576.00	1
30790	2016	B2011 - Point brick wall upper floor	15	CSF	$15,495.00	1
30822	2016	C3024 - Replace Vinyl tile	570	SY	$37,050.00	1

5-Year Cost Summary Table – District Wide

Cost Summary
by Building, Year, Group Elements

Start Date: -Select- End Date: -Select- Go

Albany Elementary - Albany Elementary School Print to Excel

Group Elements	2009	2010	2011	2012	2013	2014	Total
Exterior Enclosure	$77,818.81	$3,394.22	$0.00	$0.00	$0.00	$0.00	$81,213.03
Foundations	$1,655.72	$0.00	$0.00	$0.00	$0.00	$0.00	$1,655.72
HVAC	$6,622.88	$0.00	$0.00	$0.00	$0.00	$0.00	$6,622.88
Interior Finishes	$87,774.89	$0.00	$0.00	$29,717.14	$81,150.17	$0.00	$198,642.20
Plumbing	$1,986.86	$0.00	$0.00	$0.00	$0.00	$0.00	$1,986.86
Roofing	$61,813.52	$0.00	$0.00	$0.00	$0.00	$0.00	$61,813.52
Site Improvements	$50,268.74	$0.00	$0.00	$0.00	$2,205.31	$0.00	$52,474.05
Site Mechanical Utilities	$105,966.04	$0.00	$0.00	$0.00	$0.00	$0.00	$105,966.04
Special Construction	$5,877.80	$0.00	$0.00	$0.00	$0.00	$0.00	$5,877.80
Total	$399,785.27	$3,394.22	$0.00	$29,717.14	$83,355.47	$0.00	$514,252.11

Andrews Elementary School - Andrews Elementary School Print to Excel

Group Elements	2009	2010	2011	2012	2013	2014	Total
Exterior Enclosure	$9,603.17	$0.00	$0.00	$0.00	$0.00	$0.00	$9,603.17
Foundations	$1,655.72	$0.00	$0.00	$0.00	$0.00	$0.00	$1,655.72
Interior Construction	$2,152.44	$0.00	$0.00	$0.00	$0.00	$0.00	$2,152.44
Interior Finishes	$46,663.69	$5,753.21	$0.00	$4,635.87	$0.00	$28,411.63	$85,464.41
Roofing	$1,655.72	$0.00	$0.00	$0.00	$0.00	$0.00	$1,655.72
Site Improvements	$6,865.72	$68,651.59	$0.00	$0.00	$0.00	$0.00	$75,517.30
Stairs	$1,710.91	$0.00	$0.00	$0.00	$0.00	$0.00	$1,710.91
Total	$70,307.36	$74,404.80	$0.00	$4,635.87	$0.00	$28,411.63	$177,759.67

Barringer Road Elementary - Barringer Road Elementary Print to Excel

Group Elements	2009	2010	2011	2012	2013	2014	Total
Exterior Enclosure	$99,073.94	$0.00	$1,697.11	$0.00	$0.00	$0.00	$100,771.05
Interior Finishes	$126,233.12	$0.00	$0.00	$0.00	$0.00	$9,442.62	$135,675.74
Roofing	$599,505.01	$0.00	$0.00	$0.00	$0.00	$0.00	$599,505.01
Site Improvements	$5,492.14	$0.00	$0.00	$0.00	$0.00	$4,386.25	$9,878.39
Special Construction	$3,155.29	$0.00	$0.00	$0.00	$0.00	$0.00	$3,155.29
Total	$833,459.50	$0.00	$1,697.11	$0.00	$0.00	$13,828.87	$848,985.48

Proposed Demographic Software Solution: Geographic Information Systems

As experts on Geographic Information Systems, Cropper GIS will use this foundation to develop the demographic study. Cropper GIS are authorized consultants and resellers of ESRI GIS technology – technology used by, Federal, State, and local governments.