

SECTION I - INTRODUCTION

Acknowledgements

We want to thank the Town of Weston, for the opportunity to serve the Weston Public Schools with the preparation of this study. We would also like to thank the members of the Board of Education (BOE), administrators, teachers, and staff for their enthusiasm, helpfulness, and input as well as parents and concerned citizens who participated indirectly.

Executive Summary

This report is the result of a study commissioned by the Weston Board of Education, to determine and assess the current conditions of all the occupied school facilities and specifically the four schools - Hurlbutt Elementary School, Weston Intermediate School, Weston Middle School, and Weston High School. The existing school facilities, and the site, including general traffic flow and parking needs were assessed with the understanding that the facilities would be evaluated for potential alterations and renovations. Furthermore, master planning options for the Central Office, the Annex and the Bus Garage are also explored. The goal is to evaluate the schools and the school “campus” to determine and recommend the best approach for the future, understanding there is a slow decline in school enrollment. This report utilizes the Milone and MacBroom Comprehensive School Enrollment Analysis & Projections, throughout and a complete copy is included in the appendix.

The Weston Public School is and should remain one of the highest rated school by any matrix over the next ten-years. The recommendation herein is to proceed with focused improvements to all four schools to support the vision of being the highest rated school. The pedagogy existing today is beginning to “age in place” and cannot remain stagnant or remain status quo. Routine maintenance of the school environment will result in a steady decline of the educational environment. The study clearly acknowledges the ongoing trend and gradual rise of the Town population and a slow decline in the school population over the next ten-year period. Weston is aware of this trend. The essence of this study lies in the attraction to one of Connecticut’s top rated public-school district. (If not the top rated) If Weston is going to continue to hold onto the value of “the best school district” in Connecticut, then this study should identify the educational needs related to the school facility and thus recommend the strategy needed to achieve this goal.

The issues addressed in this report include Facility Condition Assessment of the current physical plant deficiencies at each school. The conditions include a broad range from building and fire code conformance, including accessibility and the Americans with Disabilities Act guidelines for barrier-free buildings (Title II ADA), health and life safety issues, mechanical, electrical, and plumbing system conditions, civil, structural, technology, environmental hazards and on-going and long-term maintenance issues. These concerns are addressed and included in this report within the facility conditions analysis. The Conditions are assigned a priority ranking and specific conceptual cost. The Facility Condition Assessment is the first

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Master Plan tool, and is used for capital needs as well as the conceptual designs.

In addition to the physical condition assessment, a program of the educational space needs has been identified and then used for the conceptual design of the future schools. The Board of Education would like to understand the options available to address the needs identified in the RFP combined with the facility conditions analysis provided. Various options will be explored to determine the best course of action for the district. The educational program is the second key tool used in the master plan.

The utilization is the third key component of the study. WPS is utilizing the four schools exceptional well. The balance of core educational space to support space is the hallmark of the highest performing schools, and this is especially true at the WPS. Continuing to improve the optimal educational utilization is critical for the next ten years.

The first recommendation is the Middle School, proceeding next to the High School and then Hurlbutt with limited improvements to the Intermediate School. Each of the design options are envisioned as improvements that can be moved forward through the traditional project delivery method of design, bid, and build. The school campus and administration are also the subject of several specific design options.

This report was prepared by the architectural and engineering firm of Silver/Petrucci + Associates, Inc., (S/P+A) of Hamden Connecticut, a firm specializing in municipal and school programming, planning and design, feasibility analyses and building condition investigations including building envelope surveys, as well as window and roof repair and replacement.

Milone & MacBroom (MMI) of Cheshire were retained separately by BOE/WPS and based on our numerous collaborations together, the results are well integrated and considered included throughout this study.

Process

The Connecticut State Department of Education (CSDE) standard is generally referenced for this study as defined in CGA Statue Sec. 10-220. Duties of boards of education. "(a) *Each local or regional board of education shall maintain good public elementary and secondary schools... shall make a continuing study of the need for school facilities and of a long-term school building program and from time to time make recommendations based on such study to the town;*" This study will fulfill this duty, once finalized, and approved by the Weston Board of Education. The ultimate results of this study and the professional services are to arrive at a Master Plan that can be utilized over the next 5-year and then 10-year timeline.

S/P+A gathered the information in this report via meetings and interviews with school administrators, the principals, staff, and teachers at each of the schools as well as the school facilities / maintenance team for the school district, members from Central Office. Once "vetted" and organized, members of the community will be attend meetings and voice their concerns and responses to the Board of Education.

Architects, mechanical, electrical, plumbing and fire suppression engineers conducted extensive on-site facility evaluations and investigations. Town and State records were reviewed and if appropriate are referenced and included in the Appendix.

This data was organized and appears in sections of this report in the form of meeting minutes, building condition narratives, floor plans, and spreadsheets detailing the specific code, repair or maintenance issues or deficiencies, with suggested recommendations including corrective actions, prioritization and associated cost estimates. Next the options for the new school configurations are determined to create the programs for each option. Several focus groups were held with staff to determine the educational needs for each school. A school program depicted in spreadsheets and diagrams were developed. Finally, these components help to dictate the conceptual design solutions and the projected project costs. The report includes design options and a conceptual design approach to each of the four schools, as well as the school campus.

Report Findings

This report clearly identifies current and future needs which will assist the district in determining how to continue with the current school's configuration or to make the changes to the school structure. While the enrollment appears to be slowly declining, no grade reconfigurations are recommended. The four-school model is working exceptionally well for the district and the enrollment decline does not demonstrate clear evidence of a significant or concentrated amount of excess space. Therefore, consolidating a school is not recommended, nor is there a clear demarcation of a wing or section in any other four schools that can be closed, or separated. Consolidating the four-school model into three would be a "catastrophic" educational disruption, by negating the refined space utilization in place and now projected for the future. The four-school model also corresponds to a four-stage educational plan which began with the introduction of the Intermediate School. Weston should continue improving their schools' physical and programmatic needs to support this four-school educational model.

Overall, many physical needs arose out of the facility conditions analysis. Most of the school buildings need some physical improvements and upgrades. Most notably Weston Middle School and Hurlbutt Elementary School have not seen many "major" improvements in their lifetime. (see Appendix - State Grant Summary, 2 pages) Additionally, although the High School has received major renovations and additions, approximately 35,000 square feet remain unimproved. By contrast Weston Intermediate school is in an exceptional state, only being 12 years old. (The "knee wall(s)" failure notwithstanding.)

The Middle School has the greatest need based on the Facility Condition Assessment as well as the educational program developed. The building infrastructure needs significant improvements including HVAC. Additionally, the science rooms are antiquated and in need of replacement. Lockers throughout the school including gymnasiums are in disrepair. The music and art programs need renovation. All toilet rooms are out-of-date and not handicap accessible. The office space is lacking and the main entrance is problematic. Finally, the pool

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locker rooms remain somewhat dormant and should be included in the 10-year plan. Three conceptual design options and budgets are presented for the BOE's consideration and evaluation.

The Weston High School and Hurlbutt Elementary School both have some significant needs to be addressed in the 10-year master plan. The High School saw major improvements beginning in 2001, however not all spaces were improved. The unimproved educational spaces are now recommended to be renovated and a conceptual design was created to meet the recommendation. Hurlbutt has not be the subject of a major project since the central school section was constructed to link the three houses together. The potential subdivision of some spaces to refine the educational use is proposed along with continuing the air-conditioning and introducing a new fresh air system, as well as accessibility to the gymnasium. A focused and specific conceptual design and budget for both school are prepared.

The Weston Intermediate School is still effectively a new school. The wall failure at the gym has "migrated" out of the study and is now the subject of (a) separate contract(s) with the Town and Town Building Committee. The conceptual design options and facility condition assessment are very limited and specific to a condition such as pair of egress doors, a door between classroom, etc. The Intermediate school is therefore the fourth school priority.

Finally, on the WPS campus, the main entry, Bus Garage, Annex Building, and Central Administration offices are identified as the potential significant improvements needed in the 10-year Master Plan. Coincidentally the main entry has been the subject of past studies unrelated the schools and these have included in the Appendix. While complex and interrelated to a State highway and the Town, the BOE can address the first impression and traffic problem at the main entry drives as well as the core function of school district administration by proceeding with the one of the master plan design options. Moving the busses, consolidating all the school administrative staff, and demolishing the Annex are possible and recommended. The focused traffic study now needed should include the bus parking and routing as well as the on-campus parking and traffic options. Once the BOE has determined their recommendation the Town and then State can be involved. If applicable the Town may identify bus parking sites off the school campus, this study is does not.

Report Overview and Purpose

Weston Board of Education retained Silver/Petrucci + Associates, Inc. Architects, and Engineers to conduct a facilities conditions analysis for Hurlbutt Elementary School, Weston Intermediate School, Weston Middle School, and Weston High School as well as the Central office, Annex, and Bus Garage.

This report analyzes the current facilities and grounds with regard to code compliance, accessibility (ADA), on-going and future maintenance needs, and recommendations or modifications for educational programmatic needs due to the projected enrollment decline. This report includes this review and makes projections for maintenance and educational space needs 10+ years in the future, including overall master planning options for these schools.

The code compliance effort has been undertaken to determine the relative compliance of the facility and grounds and their architectural, mechanical, plumbing or electrical systems with the current building and life safety codes. The State of Connecticut's Building, Fire, and Health Codes as well as Federal OSHA and Americans with Disabilities Act (ADA) requirements are incorporated in the review of the facility. The Connecticut Fire Safety Code is the only retroactive and "immediately" enforceable code. The balance of the code conditions noted are "prescriptive" and apply to future projects with local and state authorities having jurisdiction. Should any of the code conformance or renovation work disturb existing hazardous materials or systems, the required abatement work would need to be performed.

The existing schools were also evaluated for their "renovation" potential, developing recommendations regarding the conditions of the exterior weatherproofing envelope systems, interior finishes, mechanical, plumbing and electrical systems, including site systems and traffic patterns. These recommendations are to address the need to replace aging or obsolete building systems and extending the life of the structural components that are expected to be useful for years to come. The finishes are to be evaluated not only for their usefulness and appearance, but also for their potential to be upgraded to create a new aesthetic image that will serve to benefit the children, educators, parents, community and potential new students and families.

Items in the Facility Condition Assessment that re not included within the design options presented are then added into the 5-year and 10-year master plan to create a comprehensive study.

Report Services

The following services were provided to complete the facilities analysis and on-going and long-term maintenance needs and capital and master planning:

1. The project was initiated with a kick-off meeting with a meeting with the Architects and members of the Weston Public Schools, to outline the goals and requirements during this project.
2. Subsequent meetings and interviews were held with the Superintendent, Principals of each school and Central Office.
3. The architects and engineers reviewed the existing drawing archives of the school and then field verified existing conditions and documentation of site features and building floor plans.
4. The architects reviewed any prior reports, and/or items noted at the schools by WPS or the fire marshal and/or building official.
5. Code conformance field surveys were conducted of the existing facility and grounds by architects and engineers regarding architectural, site, mechanical, electrical, and plumbing systems.

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6. Facilities condition assessments were prepared after field surveys were conducted of the existing facility and grounds by architects and engineers regarding architectural, site, structural, mechanical, electrical, and plumbing systems. These assessments are in order by priority, ranked one to four.
7. Developed Space programs of existing and future educational needs and organized for utilization with the conceptual design options.
8. Site analysis in graphic and written format.
9. Existing floor plan analysis in graphic and written format.
10. Proposed conceptual site plan design options, where applicable.
11. Proposed conceptual floor plan design options, where applicable.
12. Preparation of progress presentations and draft reports for review by the Committee.
13. Met with the WPS staff and BOE facilities committee to review the draft report to provide additional feedback and comments.
14. Preparation of the BOE draft report including revising the report including feedback and comments for final review.
15. Final editing and preparation of the final report for distribution to the BOE & Towns.
16. Attended BOE and Town meetings to present the report and answer questions posed by the community.

Interviews and Data Collection

An integral part of any master plan is the development of an understanding of the educational program as it is currently being carried out in the school system. This includes determining the educational program elements that are working well, as well as those which are not working appropriately to standards or are deficient.

Since the study is also expected to look out into the future, it is important to gather information regarding future educational programs and technology, directions in teaching and curriculum, and how technology or other teaching tools are anticipated to affect the educational programs and thus the schools and their spaces for the future.

Each of the existing floor plans were reviewed and discussed with the schools' Principals. SPA met and walked through each room on the plan. The floor plans were then updated to show the current use of each room. The Principals then discussed some of the pros and cons with of the building layout. The program was then analyzed. These meeting were critical in understanding the current building layouts, the current programs in place today and the requirements needed to modernize and expand the current buildings and their program.

Subsequently, the potential exists to create focus groups at each school to further discuss any building

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and programmatic comments with each staff. Finally, an open community focus group can be held to include feedback from parents.

Codes Governing School Construction

The following is a list of the current building codes which are applicable for the State of Connecticut, and these codes were used as the basis for the code review for this study. Please note that not all of these codes have been thoroughly reviewed for this space study, but major codes with significant cost and life safety implications were reviewed.

State and Federal Codes Governing School Construction
Current Building Codes
State of Connecticut
Effective October 1, 2016

2016 State of Connecticut Building Code
2012 International Building Code (IBC)
2012 International Fire Code
2014 National Electrical Code
2012 International Mechanical Code
2012 International Plumbing Code
2012 International Energy Conservation Code
2009 ICC/ANSI A117.1 Handicapped Accessibility Code
2010 Americans with Disabilities Act (ADA)

- Title I Employment
- Title II Government Facilities
- Title III Public Accommodations

As the codes are updated, they will affect the pertinence of the information contained in this report, and the facilities should be reviewed for the applicable changes in the codes, revising the report accordingly. Most importantly, the codes that are in effect at the time the building permit is obtained by the Contractor for any work at the school are the ultimate determinant codes, so changes in the codes and their adoption dates should be closely monitored and planned for.

The school buildings were surveyed to determine compliance with current fire safety, building and health codes and regulations. Most areas of the buildings were investigated and mechanical, plumbing and electrical violations range from inaccessible (not ADA compliant) plumbing fixtures to inadequate combustion air provisions. The violations observed are documented in the attached spreadsheets.

This report is preliminary in nature and not a Construction Document, but represents a reasonable accounting of most significant code challenges at the schools. However, the definitive determination of code compliance lies in a set of construction documents ready for permitting with the local authorities, primarily the Building Official, Fire Marshal, 504/ADA Coordinator, and Regional Health Director.

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Potential Code Modifications

The following code modifications are customarily granted by local and state building and fire officials. These modifications to the code provide reasonable life safety for a school's occupants while reducing the financial burden of a project. They are usually prepared by the Architect and presented to the local building, fire or health officials for their review and recommendation. Their positive or negative endorsement is then forwarded to the State Building and Fire Officials for their review and for final approval or rejection.

<u>Code</u>	<u>Description</u>
Fire - 11-3.6.1	Waive closer hardware requirement for classroom doors.
IBC - 114.4	Elevator exemptions for key operation of elevators.
IBC - 1019.1.2	Penetrations in a stair for video security.
IPC - 2902.1	Minimum number of required plumbing fixtures, non-simultaneous Use of assembly space with classroom.

Area Calculations

This report includes a tabulation of GROSS building areas (measured from outside face of exterior walls) for existing construction and new additions. These numbers were generated from the approved schematic design plans and the overall building plans included in the pages following this tabulation summary.

The report also includes the tabulation of the total NET building area (measured from inside face of exterior wall), which is used by the State of Connecticut Office of School Construction Grants (SCG) to determine reimbursement calculations.

See the Appendix – DAS, OSCG&R Building Areas for a more detailed and in-depth description of these two area calculations.

Grant Regulatory Requirements

The State 2017-2018 reimbursement percentage for School Construction in the Town of Weston is 21.43% and is 11.43% for new school construction. The applicability of the school grant process is a subject for the BOE and Town to consider. This process is reference in this study, however it is not specifically used in the recommendations and could be added or considered at any time.

The State Space Standards Worksheet is submitted with the grant applications for all New, Extensions, Alterations, and Renovation projects. The worksheet is used for “computing the maximum facility total square footage eligible for reimbursement for any State School Grant application.” The worksheet uses the highest projected 8-year enrollment from a “current” demographic study or Enrollment Projection report provided by the School District. On the worksheet, the Allowable Square Footage per Pupil is stated based on the total projected school enrollment in the school. The allowable square footage for each grade level is then added for a total sum and then divided by the number of grades. This average is then multiplied by the highest enrollment projection. This total is the allowable or maximum square footage eligible for reimbursement. (Note, there is an increase in the allowable area of a school facility constructed pre-1950 for this area.)

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If the proposed school area is calculated to be less than the allowable maximum Space Standard then there is no grant reduction. If the district elects to exceed the allowable Space Standards then the eligible cost will be reduced by the percentage that the allowable maximum area is exceeded. Any reduction in the eligible cost must be certified in writing by the Superintendent of Schools. There may be an option for special legislation and or to appeal the allowable Space Standards based on special circumstance, both of which are best determined in conjunction with the State School Facilities staff.

The State Space Standards are not utilized in this study. See Utilization for a more detailed description.

High Performance Building Checklist

On January 1, 2009, in the State of Connecticut, new legislation amended General Statute Section 16a-38k which requires new school building projects costing \$5 million or more and receiving \$2 million in state reimbursement or \$2 million in renovation, to be designed in compliance with or exceed the High-Performance Standards and Guidelines which were issued by the CT Department of Administrative Services and the Office of School Construction Grants & Review (OSCG&R). These guidelines are structured **similar** to the Leadership in Energy and Environmental Design - LEED® - rating system, as established by the United States Green Building Council. The LEED process may be considered at any time; however it is most affective when determined to be of value at the onset of a project. While opinions and experience vary in schools, the LEED rating system, when utilized, is an excellent tool for incorporating energy efficient design AND construction in the building process.

This new legislation requires that school construction projects seeking state reimbursement funds will be designed and constructed to meet energy conservation standards and 'green' building practices.

Other measures that contribute points to the rating system, in addition to energy efficiency, are the use of renewable energy, water conservation, environmentally sensitive site design, redevelopment of brownfields, and storm water management.

While these conceptual projects are not scheduled to be designed around a LEED standard, and if the project is large enough and seeks State funding, it will be designed using the "High Performance Building Standard" which meets the State of Connecticut's equivalent standard thus maintaining eligibility for State reimbursement.

Renovate as New Requirements

Silver Petrucelli and Associates is often requested to design the entire project to meet the "Renovate as New" or "Renovations" to modernize the school to meet the State Department of Education definition and requirement under State Statute 10-282.

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- This concept was developed by the State to encourage Towns to renovate/update their aging, but well built, existing school structures in their entirety, rather than needlessly demolishing them and rebuilding new facilities at a higher cost and greater reimbursement rate from the State.
- A professional opinion on the renovated school MUST state to 'last' 20 years from construction, which includes all systems (HVAC, electrical, plumbing), structure, equipment, finishes, etc.
- Most of these repairs, replacements and updates are reimbursed by the State at the town's reimbursement rate.

The first step in the evaluation of "Renovate as New" is this "feasibility" study prepared by S/P+A. During the course of this study and presumably continuing throughout the schematic design phase, the architectural team met with facilities and administrators that represented the four schools. Additionally, the architects and mechanical, electrical and plumbing/fire protection engineers scoured the four existing school buildings to determine the condition of the existing systems. These meetings and field surveys were important to determine the existing and future needs of the school. Many of the space needs and system upgrades that are recommended in this report, have been determined to be essential to meet the needs of the student population and the aging school. Moving forward a significant amount of deliberation and study should be devoted by staff and the BOE to formulate recommendations with both the architects and engineers to make recommendations.

Further information on the 'Renovate As New' process is below from the Connecticut General Statutes: (the most current should be accessed from the State web-site.)

GUIDELINES FOR DETERMINING ELIGIBILITY OF SCHOOL CONSTRUCTION PROJECTS FOR STATUS AS RENOVATIONS AS DEFINED IN C.G.S. 10-282

1. The applicant must submit a written application for such status.
2. The applicant must have gone through a formal process of evaluating the proposed project. Professional estimates must be available to document that significant cost savings will result.
3. The entire facility must be brought into 100 percent compliance with all applicable codes (including handicapped accessibility) when this renovation project is complete.

Partial renovations of an entire facility or complete renovations of a wing of a facility does not qualify.

4. The renovation must incorporate education technology capability throughout the facility, as recommended in the *Guidelines for Technology Infrastructure in Connecticut Schools*.

5. It must be determined by a structural engineer that the structural integrity of the original building has not been compromised and is adequate to provide for continued occupancy for a period of time comparable to that of a new facility.

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6. A detailed report on all existing building systems must be provided, including HVAC and electrical systems, water, roofing, lighting, plumbing, energy monitoring, communications and security systems. Professional opinions must be provided that all systems will have a useful life of at least 20 years following the construction project.

7. All new and replacement windows must be energy efficient.

8. The site of the existing facility must be central to the area served and adequate to provide the educational programs offered.

9. Any other analysis deemed necessary by the Department to properly evaluate the request must be provided.

Section II - Facility Conditions Analysis

The facility conditions analysis is the visual inspection of the physical building and its grounds. This analysis reviews code complianceⁱ, accessibility (ADA)ⁱⁱ, health and life safety issues, mechanical, electrical systems, plumbing systems, civil, technology, environmental hazards, and on-going and future maintenance needs. This comprehensive review evaluates the needs of each building.

A team of architects, mechanical, electrical, plumbing and fire suppression engineers conducted these extensive on-site facility evaluations and investigations. Each evaluation was conducted with a member from Weston School Facility department present. Facility condition assessments were prepared after the field surveys were conducted. The existing facility and grounds were surveyed by architects and engineers regarding site, exterior envelope, interior building, mechanical, electrical, fire protection and plumbing systems.

These field surveys generate this section and include narratives, spreadsheets and floor plans for each school. The building narratives for each school describe the conditions reviewed and call out the items that should be addressed. The spreadsheets detail each condition and are organized by category; site, exterior, interior, plumbing, fire protection, mechanical and electrical. The first column contains a tag number, then the assessment, then a possible code reference may be listed when applicable. Next these issues are ranked on a scale from 1 to 4 with 1 being the most urgent.

LEDGEND PRIORITY - RANK

1	Urgent priority - These items should be corrected as soon as possible and most likely encompass code, health and life safety issues.
2	High priority - These items should be corrected within a reasonable amount of time after the highest priorities referenced above. These may be associated with high priority maintenance issues or accessibility issues for the physically challenged. Maintenance items have a remaining useful life from 1-3 years.
3	Moderate priority - These items may be associated with aesthetic or general maintenance issues. Remaining useful life of 3-5 years.
4	Low priority - These items include maintenance and aesthetic issues that are not in current need of replacement, but should continue to be monitored on a regular basis. These items typically have a remaining useful life of 5-10 years or greater.

WESTON HIGH SCHOOL - FACILITY CONDITIONS ANALYSIS						
TAG NO.	ASSESSMENT	SYSTEM/ CODE REFERENCE	RANKING	CORRECTIVE ACTION	ITEMIZED ESTIMATED COST	REMARKS
TOTAL ESTIMATED COSTS					\$	9,474,628

Next a corrective action or suggestive recommendations to the specific code, repair, maintenance, or deficiencies are provided to address these issues. Associated cost estimates are also prepared for the applicable items. The remarks column may list any additional information such as how cost was derived or additional options.

Following the spreadsheets, there are floor plans with the associated itemized tag number located. This allows a better understanding of where and how often the actual incidence occurs.

The facility conditions analysis provides the design team with a vital understanding of these buildings and it provides the client with a better understanding of their buildings issues. It also helps to prioritize their needs and understanding of the potential costs that can be incurred moving forward. This type of analysis is truly the first step in this process.

ⁱ Code compliance is important on number of levels, first any violation from the Authorities having jurisdiction – Building, Fire marshal, and Health. Second existing conditions, the Connecticut Fire Safety code. Third, for future projects and master planning.

ⁱⁱ The American with Disability Act (ADA) is federal law and not a code. While the Connecticut codes include provisions for accessibility in new construction, renovation are less well defined, and existing conditions are even harder to classify as a project.