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The State Requirements for Educational Facilities (SREF) Should Be Retained; Some Modifications Could Be Made

at a glance

The State Requirements for Educational Facilities (SREF) are part of the Florida Building Code. SREF requirements apply to construction, renovation, and remodeling of public educational facilities owned by district school boards and Florida College System boards of trustees. This review focused on K-12 public school construction.

We did not identify a compelling reason to eliminate the SREF. The vast majority of school districts (55) believe that the SREF provides value and should be retained.

Twenty-six districts recommended modifications to specific SREF requirements that they believed would reduce construction costs without affecting student safety, although there was little consensus among the districts concerning which requirements to modify and how to do so. After evaluating the recommendations, we identified 10 that the Legislature may wish to consider. However, these modifications would result in minimal cost savings and each has potential drawbacks.

In addition, several districts expressed concern about the requirement that districts pay for upgrades necessary to have schools function as community emergency shelters and about the appropriateness of current space standards for educational facilities.

Scope

The Office of Program Policy Analysis and Government Accountability was directed by law to conduct a study of the State Requirements for Educational Facilities (SREF) to identify requirements that can be eliminated or modified in order to decrease the cost of construction of educational facilities while ensuring student safety.¹ For purposes of this review, we focused our evaluation on K-12 public school construction. This report answers three questions.

- Should the SREF be retained?
- Which SREF requirements could the Legislature consider modifying?
- Did districts raise concerns about other SREF requirements?

Our evaluation included a review and analysis of statutes, rules, the Florida Building Code, the Florida Fire Prevention Code, literature and reports related to facilities administration and building codes, and other states' educational facility building code requirements. We also conducted interviews with education officials from other states and interviews, surveys, and questionnaires to gather input from a wide variety of Florida stakeholders. Among these stakeholders were officials from the Florida Department of Education, the Department of Business and Professional Regulation (regarding the Florida Building Code), and the Department of Financial Services' State Fire Marshal (regarding the Florida Fire Prevention

¹ Section [1013.64\(6\)\(b\)4](#), F.S.

Code); school district facilities administrators; risk managers; industry experts (architects and builders that work on school district construction projects); and representatives from educational professional associations.

Background

History of the SREF. In 1939, the Legislature adopted minimum standards for new school building construction in the Florida School Code.^{2,3} Among other objectives, these minimum standards were intended to provide for the sanitary, safe, and economical construction and maintenance of public school facilities and to promote the physical welfare and safety of students.

Over time, the state has continued to require public school construction to meet a set of minimum standards. In 1974, to alleviate overcrowding and eliminate involuntary multiple daily sessions, the Legislature enacted the Educational Facilities Construction Act.^{4,5} This law expanded the state's role in planning, designing, and building schools rapidly and economically so that students could be housed adequately. The Legislature directed the State Board of Education to adopt the State of Florida Uniform Building Code for Public School Construction, a mandatory, statewide, uniform code. The Department of Education adopted Rule 6A-2, *Florida Administrative Code*, consisting of a series of regulations prescribing the standards for educational facilities. In 1994, the Department of Education consolidated its educational facility regulations for public schools into the *State Requirements for Educational Facilities, 1994*.

Establishment of the SREF in the Florida Building Code. In 2001, as required by law, the Florida Building Commission adopted a

uniform statewide building code that contains or incorporates by reference all laws and rules that pertain to and govern the design, construction, erection, alteration, modification, repair, and demolition of public and private buildings, structures, and facilities and enforcement of such laws and rules.⁶ The purpose of the Florida Building Code is to establish minimum requirements to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment and to provide safety to fire fighters and emergency responders during emergency operations.

The Florida Building Code includes the requirements relating to district school boards' planning and construction of public education and ancillary plants. Section 1013.03(6), *Florida Statutes*, requires the Department of Education to develop, review, update, revise, and recommend a mandatory portion of the Florida Building Code for district school boards' and Florida College System institutions boards' construction and capital improvement of educational facilities.⁷ The Florida Building Commission has adopted these minimum standards as the SREF in [Ch. 4](#), s. 453 of the Building volume of the Florida Building Code. The SREF applies to construction, renovation, and remodeling of educational facilities owned by district school boards and Florida College System boards of trustees.⁸

School districts have a primary role in ensuring compliance with the SREF. Statutes make each school or college board responsible for ensuring that all plans and educational and ancillary plants meet the standards of the Florida

² Section 926, Ch. 19355, *Laws of Florida*, 1939.

³ Prior to 1939, only fire safety and toilet room building requirements were established in law for educational facilities.

⁴ Chapter 74-374, *Laws of Florida*.

⁵ In 1974, Florida also adopted a state minimum building code law requiring all local governments to adopt and enforce a building code.

⁶ Section 11, Ch. [2000-141](#), *Laws of Florida*, and s. [553.73](#), *F.S.*

⁷ Section [1013.03\(6\)](#), *F.S.*

⁸ Section [1002.33\(18\)](#), *F.S.*, exempts charter schools from the SREF. However, conversion charter school facilities must comply with the SREF provided that the school district and the charter school have entered into a mutual management plan for the reasonable maintenance of such facilities.

Building Code and the Florida Fire Prevention Code.⁹ Statutes require boards to ensure compliance using several levels of review.

Statutes require boards to submit their plans for proposed new facilities or additions that meet certain criteria to their local county, municipality, or independent special fire control district for review and approval. Boards may choose from several options outlined in statute for review of construction documents, including using their own registered employees or certified fire safety inspectors; submitting construction documents to the Department of Education; and contracting for plan review services with engineers, architects, or certified fire safety inspectors.

In addition, Florida law requires boards to provide for supervision and inspection of construction work. Districts may choose to carry out this responsibility by employing a chief building official, a fire official, and other inspectors; using local building department inspectors; and/or using local county, municipal, or independent special fire control district fire safety inspectors.

The Department of Education has a limited role in ensuring district adherence to the SREF. The department primarily ensures adherence to the SREF by reviewing district educational plant surveys and related data to identify deviations from space standards, and if requested by districts, reviewing district construction documents.¹⁰ Statutes require the department to establish square footage and utilization standards for each educational facility that is to

be funded in whole or in part by the state.¹¹ The department is to provide minimum criteria, procedures, and training to boards to conduct educational plant surveys and to review and validate the surveys.¹² This review and validation process includes determining whether student station and auxiliary facility space allocations exceed the limits provided by statute and rule. Upon school board request, the department may also review and approve construction documents for remodeling, renovation, new construction, purchase, or lease-purchase of educational plants or ancillary facilities for which the cost exceeds \$200,000.¹³ In addition, the department provides training, technical assistance, and building code interpretation for the SREF.

Findings

Should the SREF Be Retained?

We did not identify a compelling reason to eliminate the SREF. Most school districts supported retaining the SREF and reported that it provides a broad range of benefits in terms of student safety, facility quality, facility longevity, and school uniformity.

The vast majority of districts that responded to our survey recommended retaining the SREF, though some suggested modifying selected requirements. In July 2016, OPPAGA conducted a survey of school district facilities administrators that included asking for their input into whether the SREF should be retained. The vast majority of district respondents (55 of 61) indicated that the SREF has value and

⁹ Sections [1013.371\(2\)](#) and [1013.38](#), *F.S.*

¹⁰ An educational plant survey is a study that aids formulating plans for housing the educational program and student population, faculty, administrators, staff, and auxiliary and ancillary services of a district or campus. Boards must conduct the surveys at least every five years, either using agency staff or an agency employed by a board. Boards must submit a copy of surveys to the Department of Education, Office of Educational Facilities, for review and validation.

¹¹ Section [1013.03](#), *F.S.*

¹² Districts submit five-year educational plant surveys electronically to the Department of Education for review and validation. Districts use the surveys as part of their annual educational facilities plans, which include long-range planning

for facility needs. According to the department, a district's educational facilities plan must recommend sufficient space and a schedule of capital outlay projects necessary to ensure the availability of satisfactory student stations for projected student enrollment. Section [1013.03\(10\)\(a\)](#), *F.S.*, requires the department to validate districts' educational plant surveys, which includes verifying that student station and auxiliary space allocations do not exceed the limits provided by statute and rule. In addition, s. [1013.35\(2\)\(a\)3](#), *F.S.*, provides that when districts prepare their annual educational facilities plans, their projections of facilities space needs may not exceed the norm space and occupant design criteria established in the SREF.

¹³ Section [1013.371\(3\)](#), *F.S.*

should be retained. Among the benefits these districts cited were that the SREF helps promote the safety and health of school occupants; provides needed guidance to districts, architects, and builders for designing and constructing educational facilities; contributes to the longevity of buildings; and helps ensure uniformity and consistency in the quality of educational facilities across the state.

Of the six districts that recommended eliminating the SREF entirely, five indicated that the codes in the Florida Building Code outside of the SREF, as well as other regulatory documents such as the Florida Fire Prevention Code, were enough to ensure student safety. However, the SREF addresses many elements that are not included in the other codes.

The SREF should be retained. Based on the broad benefits that the SREF provides and the general lack of support among school districts for eliminating SREF requirements, we recommend retaining the SREF. However, school districts identified some SREF requirements that the Legislature may wish to consider modifying or eliminating. In addition, districts expressed concern about two other SREF-related requirements. These issues are discussed in more detail below.

Which SREF requirements could the Legislature consider modifying?

We identified 10 SREF requirements that the Legislature could consider modifying. However, there are potential drawbacks to all 10 modifications and almost all would result in minimal cost savings.

Twenty-six districts made recommendations for modifications. Our survey of school district facilities administrators asked for recommendations for modifications to the SREF that would reduce district construction costs without compromising student safety.¹⁴ Twenty-six of the 61 districts that responded made recommendations for modifications.¹⁵ However, there was little consensus among the districts regarding which requirements should be modified or how they should be modified. We selected for further analysis, 34 requirements that at least six districts identified for any type of modification.¹⁶

We summarized the districts' proposals for modifying the 34 SREF codes and asked numerous stakeholders for their input on the proposed changes.¹⁷ We narrowed the initial list down to 10 code modifications, primarily by eliminating those modifications that appeared to have a higher probability of student safety or health risks based on our evaluation of concerns expressed by stakeholders. These 10 modifications, which include eliminating four requirements and modifying six others, are summarized below.

- Life cycle cost analyses—eliminate the requirement to perform life cycle cost analyses in the SREF and statutes (453.8.7) (ss. 1013.37(1)(e) and 1013.37(2)(b)13., *Florida Statutes*) (also eliminate reference in 453.4.8).
- High school parking—eliminate the requirement for the number of student parking spaces (453.10.2.8.4).
- Irrigation systems—eliminate the requirement to use moisture sensors (453.10.8).

¹⁴ The SREF consists of 27 sections, which include approximately 400 codes. These codes include definitions and cross references to other documents.

¹⁵ Modifications include any recommended change to a current SREF requirement including eliminating it entirely.

¹⁶ We counted public shelter design criteria as one code for purposes of our analysis because districts tended to select all of the subsections of code in this area.

¹⁷ We solicited input from a broad range of stakeholder groups including officials in the Department of Education's Office of

Educational Facilities, the Department of Business and Professional Regulation, and the Office of the State Fire Marshal; school districts that made any code modification proposal; school district/consortium risk managers; and architects and builders that work with school districts. The input we requested varied by stakeholder group but included any concerns about the proposals, potential construction cost savings, and remaining requirements that would exist in the absence of the SREF code requirements (such as Florida Building Code or Florida Fire Prevention Code requirements).

- Spare capacity—eliminate the requirement to build spare capacity for lighting and power panels (453.17.3).
- Routine maintenance—modify by changing the exemption from \$200,000 to \$300,000 for using district employees rather than a licensed contractor on maintenance projects (453.3.6) (Ch. 489, *Florida Statutes*).¹⁸
- Boilers—modify the definition of a boiler to mirror the definition in the Boiler Safety Act (Ch. 554, *Florida Statutes*) (453.5.3).
- Roofed courtyards—modify to allow schools to use roofed courtyards as a means of egress (453.5.5.3).
- Light shielding—modify to allow some flexibility regarding shielding of lighting from adjacent structures (453.10.3.7).
- Kindergarten play areas—modify to allow some flexibility regarding access to play areas from kindergarten classrooms (453.10.5.1).
- Custodial work areas—modify to allow districts to decide whether to include male/female lockers and restrooms for custodial work areas (453.20.2).

All of the 10 modifications have potential drawbacks and almost all would result in minimal cost savings. Based on our evaluation of feedback from school architectural and building experts, we concluded that all but 1 of the 10 modifications would result in minimal construction cost savings of 1% or less. The one exception was eliminating the requirement to build spare capacity for lighting and power panels, estimated to be up to 5% of initial construction costs. In addition, we were not able to evaluate the additive effect on cost-savings of implementing all 10 modifications; some would be negligible and the degree of cost savings would vary based on district implementation. Furthermore, although some modifications, such as eliminating life cycle cost analyses, could result in cost savings in the short-term, they would likely result in additional costs in the long-term

and, thus, might not be good business practices. In addition, for some modifications, such as roofed courtyards, the design of schools will affect whether cost savings can be achieved.

Although most of the 10 modifications pose some degree of safety concern, they did not appear to present the same level of student safety or health risks as other proposed modifications or the risks appeared to be mitigated by other factors. For instance, some stakeholders raised the concern that allowing school districts to use their own employees for larger maintenance projects (projects up to \$300,000) rather than using a licensed contractor might result in construction deficiencies due to lack of expertise or experience of district staff in completing such projects on a routine basis. However, the limit of \$200,000 has not been adjusted since 1992 when the requirement was first established in law and an increase in the ceiling might be justified to keep pace with increases over time in the cost of materials used in maintenance projects. In addition, some stakeholders raised the possibility that eliminating the requirement to build spare capacity for lighting and power panels might result in a potential fire hazard due to overloading the panels. This safety risk appears to be mitigated in the short term by the fact that schools are inspected annually by local fire officials and/or district safety officials. However, department officials stated that given the long expected life span of educational facilities, it is predictable that schools will increase their electrical demands over time, and it would be more expensive to add the capacity later.

Appendix A provides additional details about the proposed modifications, including district rationale for the changes, construction cost savings estimates, related requirements that would remain in place if the SREF code were modified or eliminated, and other relevant considerations.

¹⁸ Sections [489.103\(3\)](#) and [489.503\(2\)](#), *F.S.*, provide an exemption from licensing for authorized employees of school boards, state

university boards of trustees, and community college boards of trustees for performing routine maintenance not exceeding \$200,000 to existing installations.

Did districts raise concerns about other SREF requirements?

Districts also frequently raised concerns about two other SREF requirements—codes related to public shelters and space standards.

School districts identified funding for public shelter construction as an issue of concern

Sixteen school districts expressed concern with funding for the SREF requirements for public shelter space. Under Florida law, school districts provide the majority of the state's shelter space to help protect the general public in case of emergencies such as hurricanes. Districts are required to pay for the cost of upgrades to school facilities needed to meet public shelter standards, which they estimate increase construction costs by 3% to 7%. Thirteen of the 16 districts felt a different source of funds should be used to pay for constructing emergency shelters that serve a communitywide benefit that extends beyond the school system. District staff reported that using their funds to build public shelters can make it more difficult to address other educational priorities.

Florida law requires new schools to be built to serve as public shelters if additional shelter space is needed. According to the Florida Division of Emergency Management, school district-owned public schools are the primary source of public shelter space during tropical weather-related emergencies (about 97% of statewide hurricane evacuation shelter space). In addition, s. 1013.372, *Florida Statutes*, requires that the Department of Education

include, within the SREF, public shelter design criteria to ensure that new public educational facilities can serve as public shelters.¹⁹ Educational facilities must be built to comply with these requirements unless exempt due to factors such as location or size and with the concurrence of the applicable local emergency management agency or the Division of Emergency Management.^{20, 21} Public shelter design criteria (also known as Enhanced Hurricane Protection Area or EHPA criteria) include structural enhancements, potable water and sanitary requirements, provisions for standby emergency power, and other considerations that improve survivability and shelter management operations.²²

The public shelter requirements affect those school districts building new schools located in regions of the state with insufficient emergency space. The Division of Emergency Management's current statewide emergency shelter plan reports that, as of January 2016, 8 of 10 regions have a sufficient capacity of general population hurricane evacuation shelter space through 2021.²³ However, the central and southwest Florida regions have shelter capacity deficits.²⁴ Further, all regions except the south Florida region have insufficient capacity of special needs population shelter space through 2021. Thus, schools built in most regions of the state may need to be designed and constructed to meet the higher public shelter standards, unless exempted as described above.

Districts are required to pay for the cost of upgrades to school facilities needed to meet public shelter standards. Statutes require the Division of Emergency Management, in its

¹⁹ Section [453.25](#) within the Florida Building Code contains the public shelter design criteria.

²⁰ Section [1013.372](#), *F.S.*

²¹ Section [252.35\(2\)\(b\)](#), *F.S.*, requires the Division of Emergency Management to adopt standards and requirements for county emergency management plans. The standards and requirements must ensure that county plans are coordinated and consistent with the state comprehensive emergency management plan.

²² Fifty percent of the net square feet of a designated educational facility shall be constructed as EHPAs. The net square feet shall be determined by subtracting from the gross square feet of those spaces, such as mechanical and electrical rooms, storage rooms,

open corridors, kitchens, science rooms and labs, vocational shop areas and labs, computer rooms, and attic and crawl spaces that shall not be used as EHPAs. The board, with concurrence of the applicable local emergency management agency or Division of Emergency Management, may adjust this requirement if it is determined to be in its best interest.

²³ [2016 Statewide Emergency Shelter Plan](#). Division of Emergency Management. January 31, 2016.

²⁴ The central Florida region has a deficit of 14,397 spaces in public shelters. This region accounts for 4% of the state population. The southwest Florida region has a deficit of 122,133 spaces in public shelters. This region accounts for 8% of the state population.

statewide emergency shelter plan, to recommend an appropriate and available source of funding for the additional cost of constructing emergency shelters.²⁵ The division recommends that districts use their existing capital outlay funds for this purpose.

School districts report that the construction cost premium for incorporating public shelter design criteria is about 3% to 7%.²⁶ They use a variety of local and state funding sources to cover these additional costs, including Local Capital Improvement 1.50 millage, impact fees, and sales surtax. In addition, school districts have used PECO funds for this purpose in years when such funds were available.

District staff told us that using their funds to build schools to serve as public shelters can make it more difficult to address other educational priorities. While the school districts generally acknowledged the communitywide benefit of schools serving as emergency shelters, they would like the state to provide a separate funding source to cover the additional costs to pay for needed upgrades.

School districts also raised concerns about size and space standards

Ten districts raised concerns about size and space standards. Some of these districts said that the current standards do not meet their needs for instructional space and that the districts were in the best position to make such decisions.

The Department of Education establishes standards for the size and types of spaces in educational facilities. Section 1013.03(1), *Florida Statutes*, requires the department to establish recommended minimum and maximum square footage for different functions and areas for each educational facility funded in whole or part by the state. The department has established a Size and Space and Occupant Design Criteria Table in its SREF manual, which is incorporated by reference in rule. These

criteria are commonly referred to as the space standards.

The department implements the space standards as a requirement. The SREF in the Florida Building Code requires districts to use the space standards. According to department officials, the standards are intended to ensure the suitability of educational environments for learning, equity regarding the size of educational spaces, and sufficiency of space so that occupants can safely exit during an emergency.

Stakeholders raised concerns that the space standards do not meet current district needs. District officials and architects with whom we spoke cited several examples of ways in which they believe the size and space standards result in building facility space that districts do not need or in building insufficient space. These include that

- with increasing use of differentiated instruction and other teaching innovations, the size and space standards related to classrooms may not be appropriate for all instructional settings;
- when building Exceptional Student Education (ESE) classrooms, the standards require additional storage space, which may not be needed in all cases;
- schools need more computer labs for testing and other purposes, but the standards do not provide for a sufficient amount of computer lab space;
- standards for music-related spaces provide for a practice room for every 40 students, regardless of how the school intends to use practice rooms; and
- for art programs in grades 6 to 12, the standards require building a kiln room regardless of whether the district intends for the art program to use a kiln.

²⁵ Section [1013.372\(2\)](#), *F.S.*

²⁶ District school boards reported this information in the [2016](#)

The department might need a more formalized process to solicit input on the relevance and appropriateness of the standards. Department facilities staff validate information in the educational plant survey, which lists each district's facilities needs over the next five years, to verify that student station and auxiliary facility space allocations do not exceed the prescribed limits.²⁷ Districts also enter their facilities space needs into the Educational Facilities Information System (EFIS) data system, which automatically assigns facilities a number of student stations based on the space standards and recommends related spaces, such as storage rooms, based on the type of facility space the district enters into the system.

Department facilities staff said that they allow districts some flexibility with approval to exceed or build below the space standards if districts can justify the deviation. The department reports that it reviews any deviation from state standards on a case-by-case basis that considers the circumstances specific to the district. Sections 1013.03(10)(a)1 and 1013.31(1)(b)5, *Florida Statutes*, authorize the department to allow deviation from the standards.

However, the department's current process of allowing districts to request deviations on a case-by-case basis might not be the most efficient way to address the concerns that districts raised about the relevance and appropriateness of several of the space standards. While some districts reported that eliminating the space standards could reduce district construction costs, the department and other districts were concerned that eliminating the space standards entirely could cause potential inequity among schools regarding the size of educational spaces and might lead to

overcrowding if districts try to save on construction costs by building smaller facilities.

Department staff reported that they update the standards as needed to address issues such as legislative changes or a need for clarification. However, the department's most recent substantive changes to the standards occurred in 2005. The department is currently in the rulemaking process to revise the standards to add a code and specifications for a resource room for computer testing.

In 2014, the Commissioner of Education recommended a work group or task force to review and update the space standards. However, the department has not yet convened a task force. The commissioner's recommendation is one way to establish a more formal mechanism to solicit input to address the concerns raised by stakeholders.

Recommendations

We did not identify a compelling reason to eliminate the SREF. The SREF provides a broad range of benefits in terms of student safety, facility quality, facility longevity, and school uniformity. In addition, there is a general lack of support among school districts for eliminating SREF requirements. Therefore, we recommend that the Legislature retain the SREF.

Agency Response

In accordance with the provisions of s. 11.51(2), *Florida Statutes*, a draft of our report was submitted to the Commissioner of Education for review and response. The Commissioner's written response to this report is in Appendix B.

²⁷ As established in s. [1013.03\(10\)\(a\)](#), *F.S.*, the term "validate" as applied to surveys by school districts means to review inventory data as submitted to the department by district school boards; provide for review and inspection, where required, of student stations and aggregate square feet of inventory changed from satisfactory to unsatisfactory or changed from unsatisfactory to satisfactory; compare new school inventory to allocation limits provided by this chapter; review cost projections for conformity with cost limits set by s. [1013.64\(6\)](#), *F.S.*; compare total capital outlay full-time equivalent enrollment projections in the survey

with the department's projections; review facilities lists to verify that student station and auxiliary facility space allocations do not exceed the limits provided by this chapter and related rules; review and confirm the application of uniform facility utilization factors, where provided by this chapter or related rules; utilize the documentation of programs offered per site, as submitted by the board, to analyze facility needs; confirm that need projections for career and adult educational programs comply with needs documented by the Department of Education; and confirm the assignment of full-time student stations to all space except auxiliary facilities.

Appendix A

School District-Proposed Modifications to the State Requirements for Educational Facilities

In July 2016, OPPAGA conducted a survey of school district facilities administrators to obtain their recommendations for modifications to the State Requirements of Educational Facilities (SREF) that they believed would reduce district construction costs without compromising student safety. Sixty-one of 67 districts responded, of which 26 made recommendations for modifications. However, there was limited consensus among districts, as the SREF code requirements that districts proposed modifying varied widely. We selected 34 codes for further analysis that at least six districts identified for modification.²⁸

We summarized the districts' proposals for modifying the 34 codes and asked various stakeholders for their input on the proposed modifications. These stakeholders included the Department of Education's Office of Educational Facilities, the 26 districts that made any code modification proposal (of which 21 responded), two district risk managers and one consortium risk manager (of which one responded), and nine industry experts (architects or builders that work with school districts, of which five responded). The input we requested included any concerns about the proposals, potential construction cost savings (only requested of the industry experts), and remaining requirements that would exist in the absence of the SREF code requirements, such as Florida Building Code (FBC) or Florida Fire Prevention Code (FFPC) requirements. In addition, we asked the Department of Business and Professional Regulation (DBPR) to identify any FBC or other requirements and the State Fire Marshal to identify any FFPC or other requirements that would apply in the absence of the SREF code requirements.

We narrowed the initial list down to 10 code modifications primarily by eliminating those modifications that appeared to have a higher probability of student safety or health risks based on our evaluation of concerns expressed by stakeholders. Exhibit A-1 shows the 10 modifications and districts' rationale for the modifications, construction cost savings estimated by industry experts, remaining requirements stakeholders identified that would apply in the absence of the SREF requirements, and other relevant considerations stakeholders noted about the proposals.

We requested that the industry experts provide a rough estimate of potential construction cost savings based on their experience and professional judgement. We requested the cost savings estimates as a percentage of total building contract costs, including hurricane shelter and/or hardened cost.^{29, 30} We grouped the estimates into three categories: 1) minimal (1% or less), 2) moderate (over 1% and up to 3%), 3) and substantive (over 3%). As shown in Exhibit A-1, most of the modifications that remained after stakeholder input would result in minimal construction cost savings.

²⁸ We combined codes in two cases where eliminating a code would necessitate eliminating a reference to it in another code (SREF code 453.4.8 was combined with code 453.8.7, and code 453.16.2 was combined with code 453.25). In addition, we addressed two of the SREF requirements on which multiple districts provided comments and feedback—public shelter requirements and space standards—separately in this report.

²⁹ For reporting purposes, the Department of Education defines building contract cost as the total cost of building construction within five feet of the building, including all materials and supplies purchased by the district school board. All change order charges known at the time are also added or deducted from the contract cost. Building contract cost includes built-in cabinets, mill work and other furniture or equipment permanently fixed or attached to the building as part of building construction and does not include costs for movable school furniture, and equipment.

³⁰ Hurricane shelter and/or hardened cost refers to the additional cost incurred as a result of mandatory hurricane shelter and/or hurricane hardening requirements due to location and designation by the Division of Emergency Management.

Exhibit A-1

District-Proposed Modifications to SREF Requirements That the Legislature May Wish to Consider

SREF Requirements	District Proposed Modification and District Rationale	Construction Cost Savings Estimated by Industry Experts	Related Requirements Stakeholders Identified in the Florida Building Code, Florida Fire Prevention Code, Rules, and/or Statutes	Considerations Noted by Other Stakeholders
453.3.6 Routine maintenance	<p>Modify text: "Maintenance projects are subject to the same Florida Building Code and Florida Fire Prevention Code as adopted by the State Fire Marshal as new construction. Chapter 489, <i>Florida Statutes</i>, exempts boards from the use of a licensed general contractor for projects up to \$200,000 <u>\$300,000</u> where bona fide board employees provide the work. Maintenance projects which include construction, renovation and/or remodeling, shall be reviewed for compliance with the code."</p> <p>(Note: Also modify the exemption in Chapter 489, <i>Florida Statutes</i>, for public school construction to raise the level from \$200,000 to \$300,000.)</p> <p>District Rationale:</p> <ul style="list-style-type: none"> Can be less expensive to use district maintenance staff rather than hiring a general contractor 	<ul style="list-style-type: none"> Minimal 	<ul style="list-style-type: none"> Neither the Florida Building Code (FBC) nor the Florida Fire Prevention Code (FFPC) establish a monetary threshold for when to hire a licensed contractor to conduct maintenance projects 	<ul style="list-style-type: none"> One district and the Department of Education noted that if district personnel lack licensure, training, and/or experience, the quality of their work could result in construction deficiencies or pose a safety risk Other stakeholders noted that the cost of materials for maintenance projects alone can sometimes reach the \$200,000 limit and that this amount has not been modified to reflect increases in the cost of construction materials in 25 years
453.5.3 Boiler	<p>Modify text to be consistent with the Boiler Safety Act definition in s. 554, <i>Florida Statutes</i>: "is an fuel-fired, heat-producing appliance with a minimum input capacity of 60,000 Btu per hour and intended to supply hot water or steam <u>appliance that meets the definition in Chapter 554, <i>Florida Statutes</i>, the Boiler Safety Act.</u> Boilers and the inspection of boilers shall comply with Section 554, <i>Florida Statutes</i>, the Boiler Safety Act."</p> <p>District Rationale:</p> <ul style="list-style-type: none"> Modify the definition of a boiler to mirror the definition in the Boiler Safety Act Might reduce unnecessary inspection of these units³¹ 	<ul style="list-style-type: none"> Minimal 	<ul style="list-style-type: none"> Hot water supply boilers or lined storage water heaters that exceed a heat input of 400,000 Btu, a water temperature of 210 degrees Fahrenheit, or nominal water-containing capacity of 120 gallons would be subject to the Boiler Safety Act (Ch. 554, <i>Florida Statutes</i>), which requires boiler inspections every two years Rooms in public educational facilities that house boilers with an input capacity of 60,000 Btu per hour or more, and intended to supply hot water or steam, must have heat detectors connected to any required fire alarm system and access door openings that meet certain requirements in the Life Safety Code (FFPC) (Rule 69A-58, <i>F.A.C.</i>) The FFPC also makes boilers subject to requirements for fire rated walls and doors, unless the rooms are protected by automatic sprinkler systems (s.101:14.3.2) 	<ul style="list-style-type: none"> Although some districts believed that the modification would result in fewer boilers being subject to requirements for fire-rated enclosures, State Fire Marshal staff clarified that all boilers, no matter the size, are subject to requirements for fire-rated enclosures, unless the rooms are protected by automatic sprinkler systems The modification may result in fewer boilers being subject to safety inspections (only those that do not exceed the requirements in the Boiler Safety Act, particularly water heaters with a capacity of 120 gallons or less); this would be the sole source of cost savings³²

³¹ Section 453.7.8 of the SREF requires boiler rooms to be separated from the remainder of the building by 1-hour fire-resistance-rated construction or separated from other buildings by 60 feet and have an out-swinging door opening directly to the exterior. In addition, a boiler room must have a fire door swinging into the room for any opening into the interior of the building and no opening into any corridor or area designed for use by students.

³² According to State Fire Marshal staff, most school boilers are not inspected by the State Fire Marshal because the boilers are covered by insurance policies and thus inspected by their insurance providers.

SREF Requirements	District Proposed Modification and District Rationale	Construction Cost Savings Estimated by Industry Experts	Related Requirements Stakeholders Identified in the Florida Building Code, Florida Fire Prevention Code, Rules, and/or Statutes	Considerations Noted by Other Stakeholders
453.5.5.3 Roofed courtyard	<p>Modify text: "is a courtyard which is roofed by more than 50 percent of the courtyard area in any manner. Roofed courtyards may be used for assembly spaces and shall not be used as a component of exiting from adjacent spaces."</p> <p>District Rationale:</p> <ul style="list-style-type: none"> Prohibiting roofed courtyards as a means of egress creates a duplicative expenditure for districts by making them construct another means of egress 	<ul style="list-style-type: none"> Minimal 	<ul style="list-style-type: none"> FBC and FFPC would allow using a roofed courtyard as a means of egress if the courtyard meets all requirements for means of egress <ul style="list-style-type: none"> FBC has numerous requirements regarding means of egress (Ch. 10, Building volume) FFPC does not specifically address roofed courtyards, but provides that yards, courts, open spaces, or other portions of the exit discharge shall be of the required width and size to provide all occupants with a safe access to a public way (s. 101:7.7.1.1) FFPC requires that educational occupancy buildings exceeding 12,000 square feet be protected throughout by an approved, supervised automatic sprinkler system (s. 1:13.3.2.9.l) 	<ul style="list-style-type: none"> Schools that use a roofed courtyard for exiting in an emergency would need to ensure a clear and unobstructed path through the courtyard, and may need to install a sprinkler system for the courtyard, depending on its design <ul style="list-style-type: none"> According to State Fire Marshal staff, roofed courtyards can be used as a component of exiting as long as there is a clear and unobstructed path for occupants to safely exit the facility; also, depending on design, most roofed courtyards should be protected by automatic sprinkler systems Cost savings would depend on how districts design the roofed courtyard because certain designs would require adding an automatic sprinkler system for the courtyard The Department of Education reports that courtyards in schools often include fixed and portable furnishings and equipment, which makes it difficult for an authority having jurisdiction to effectively enforce an always-present clear exit path through a courtyard
453.8.7 Life cycle cost guidelines for materials and building systems	<p>Eliminate requirement: An analysis shall be included, as required by s. 1013.37(1), Florida Statutes, which evaluates building materials and systems, life cycle costs for maintenance, custodial, operating, and life expectancy against initial costs, as described in s. 1013.37(1)(e)4, Florida Statutes. Standards for evaluation of materials are available from the department in a publication entitled Life Cycle Cost Guidelines for Materials and Building Systems for Florida's Public Educational Facilities.</p> <p>(Note: Also eliminate ss. 1013.37(1)(e) and 1013.37(2)(b)13., F.S., and reference in SREF 453.4.8.)</p>	<ul style="list-style-type: none"> Minimal 	<ul style="list-style-type: none"> Neither the FBC nor the FFPC require a life cycle cost analysis 	<ul style="list-style-type: none"> Could result in districts using materials and systems with a shorter life span, resulting in higher maintenance and replacement costs over the long-term May reduce the life expectancy of educational facilities as a result of using less durable materials The Department of Education reports that a life cycle cost analysis includes evaluating proposed materials' resistance to fire and that reliance on industry practice is not sufficient to

SREF Requirements	District Proposed Modification and District Rationale	Construction Cost Savings Estimated by Industry Experts	Related Requirements Stakeholders Identified in the Florida Building Code, Florida Fire Prevention Code, Rules, and/or Statutes	Considerations Noted by Other Stakeholders
	District Rationale: <ul style="list-style-type: none"> This is an exercise done for compliance purposes; common sense and industry practice are more the typical practice Once completed, the analysis may be forgotten and not used over the life of the building or system The cost of preparing the analysis is not worth the information provided by the assessment 			assess new materials and systems as they are introduced
453.10.2.8.4 High schools	Eliminate as a requirement and give districts flexibility by making this a guideline: One parking space for every 10 students in grades 11 and 12. District Rationale: <ul style="list-style-type: none"> Several districts' concerns resulted from interpreting this code as a requirement for the number of parking spaces <ul style="list-style-type: none"> Limitations on the number of parking spaces has increasingly become a problem for several districts that are struggling with lack of parking, and have incurred expenses due to having to add parking at a later date One space for every 10 students in grades 11 and 12 is not always sufficient; there is a need to also provide parking spaces for some students in grade 10 as they will become of driving age before the end of the academic year Districts have also experienced a decrease in the number of students riding school buses and who are seeking alternate mode of transportation In urban areas with public transportation, fewer parking spaces may be sufficient 	<ul style="list-style-type: none"> Minimal 	<ul style="list-style-type: none"> Neither the FBC nor the FFPC require a certain number of parking spaces Parking lots would still need to meet accessibility requirements DBPR indicated that if this requirement is eliminated, districts may need to comply with applicable local requirements SREF 453.10.2.7 allows districts to reduce the parking area if sufficient justification documentation is provided and if the review authority approves the reduction based on the justification 	<ul style="list-style-type: none"> No safety concerns were raised Cost savings is dependent on whether districts build more or less parking than the SREF standard currently provides Districts may have to follow local requirements for parking, which could be more or less stringent than the SREF requirement Can result in inadequate parking for schools The department reports that many of the concerns raised by districts are the result of a misinterpretation of this requirement and that the intent of the code is to establish a minimum standard for the number of student parking spaces
453.10.3.7 Shielding	Modify text: "Exterior lighting shall be shielded from adjacent properties <u>to the greatest extent possible.</u> " District Rationale: <ul style="list-style-type: none"> It is impossible to eliminate all light wash on adjacent property Shielding should be encouraged to the greatest extent possible rather than requiring 100% shielding 	<ul style="list-style-type: none"> Minimal 	<ul style="list-style-type: none"> Neither the FBC nor the FFPC address shielding of exterior lighting DBPR indicated that districts may still need to comply with applicable local requirements 	<ul style="list-style-type: none"> No safety concerns were raised Districts may have to follow local requirements for light shielding Potential complaints from citizens regarding light pollution The modification wording of "to the extent possible" is subjective Although some districts are not interpreting the standard in this manner, the Department of Education reports that the SREF does not require 100% shielding

SREF Requirements	District Proposed Modification and District Rationale	Construction Cost Savings Estimated by Industry Experts	Related Requirements Stakeholders Identified in the Florida Building Code, Florida Fire Prevention Code, Rules, and/or Statutes	Considerations Noted by Other Stakeholders
453.10.5.1 (no title)	<p>Modify text: “Kindergarten play areas shall be <u>fenced and separated from other play areas</u>. <u>In addition, kindergarten play areas fenced, and shall be directly accessed from the kindergarten classrooms, unless other alternative safety provisions are provided and approved by the official having jurisdiction.</u>”</p> <p>District Rationale:</p> <ul style="list-style-type: none"> It is not always feasible to provide direct access from the kindergarten classrooms because of design configurations and changing needs for the location of playgrounds due to increasing student populations 	<ul style="list-style-type: none"> Minimal 	<ul style="list-style-type: none"> Neither the FBC nor the FFPC address access to play areas from classrooms 	<ul style="list-style-type: none"> Although the Department of Education reports that this requirement protects young students from moving vehicles and other hazards, the modification would require alternative provisions to be in place to address student safety Determining alternative safety provisions would be a subjective decision
453.10.8 Water irrigation systems	<p>Eliminate requirement: Water irrigation systems shall be equipped with soil moisture sensors that will override the irrigation systems cycle when soil contains sufficient moisture.</p> <p>District Rationale:</p> <ul style="list-style-type: none"> Soil moisture sensors are unreliable, not practical, costly, and do not have a long life cycle 	<ul style="list-style-type: none"> Minimal 	<ul style="list-style-type: none"> Neither the FBC nor the FFPC require soil moisture sensors Section 373.62(1), <i>F.S.</i>, requires automatic landscape irrigation systems to include technology that inhibits or interrupts operation during periods of sufficient moisture In proposed regulations for local governments to consider, the FBC states that for automatic irrigation systems, controllers shall be capable of incorporating a rain shut-off device to override the irrigation cycle when adequate rain has fallen (Appendix F, Plumbing volume) 	<ul style="list-style-type: none"> No safety concerns were raised May affect water conservation if districts do not address irrigation responsibly The Department of Education reports that the sensors are affordable and easily replaced and that green construction codes require installation of moisture sensors
453.17.3 Spare capacity	<p>Eliminate as a requirement and give districts flexibility by making this a guideline: Lighting and power panels shall be provided with a minimum of 20 percent spare breakers and a minimum of 10 percent spare capacity in all main panels and switchboards.</p> <p>District Rationale:</p> <ul style="list-style-type: none"> Although this is a good practice, this decision should be left to school district discretion In some cases, districts are building facilities to the site's maximum capacity and thus there is no chance of ever building an addition Sub panels can be added at a later time, if necessary 	<ul style="list-style-type: none"> Minimal to substantive, depending on the design of the facility 	<ul style="list-style-type: none"> Neither the FBC nor the FFPC address spare breakers and spare capacity Districts would still need to comply with electrical codes 	<ul style="list-style-type: none"> Greater risk of overloading of panelboards and switchboards, which could be a fire hazard; this safety risk appears to be mitigated by the fact that schools are inspected annually by local fire officials and/or district safety officials Could result in higher costs if a district chooses to add capacity to a school later rather than during initial construction May reduce a district's ability to keep up with expanding technology demands

SREF Requirements	District Proposed Modification and District Rationale	Construction Cost Savings Estimated by Industry Experts	Related Requirements Stakeholders Identified in the Florida Building Code, Florida Fire Prevention Code, Rules, and/or Statutes	Considerations Noted by Other Stakeholders
453.20.2 Custodial work areas and storage	<p>Modify text: "Provide custodial work areas with well supported shelving for supplies, cleaning, and sanitation materials and an office area including that, if deemed necessary by the board, includes male/female lockers and toilet facilities."</p> <p>District Rationale:</p> <ul style="list-style-type: none"> Districts should be able to determine the need for separate male/female lockers and toilet facilities Having a unisex restroom would be sufficient 	<ul style="list-style-type: none"> Minimal 	<ul style="list-style-type: none"> Neither the FBC nor the FFPC address lockers and toilet facilities in custodial work areas OSHA requires gender-segregated restrooms for employers with over 15 employees, unless the restrooms can be occupied by no more than one person and can be locked from the inside 	<ul style="list-style-type: none"> The Department of Education raised the concern that, if this requirement were eliminated, custodial workers might choose to use whichever restrooms are closest to custodial work areas, and should those restrooms be in kitchen areas, custodial staff might introduce hazardous chemical substances into areas where food is prepared and stored

Source: OPPAGA analysis of surveys and interviews with school district facilities administrators and information provided by: the Departments of Education, Business and Professional Regulation, and Financial Services (State Fire Marshal); architects and builders that work with school districts; a consortium risk manager; and the Florida Building Code, Florida Fire Prevention Code, *Florida Administrative Code*, and *Florida Statutes*.

Appendix B

State Board of Education

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January 27, 2017



FLORIDA DEPARTMENT OF
EDUCATION
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Pam Stewart
Commissioner of Education

Mr. Phillip Twogood, Coordinator
Office of Program Policy Analysis and Government Accountability
The Florida Legislature
111 West Madison Street, Room 312
Claude Pepper Building
Tallahassee, Florida 32399-1475

Re: Office of Program Policy Analysis and Government Accountability (OPPAGA) report
relating to the State Requirements for Educational Facilities (SREF)

Dear Mr. Twogood:

As you requested in your letter of January 13, 2017, I offer the following response to OPPAGA's draft report on the SREF for your consideration.

We agree with the finding and recommendation that the SREF be retained. It is the position of the Florida Department of Education (department) that the current provisions of the SREF are necessary to protect the health, safety and welfare of students and other occupants, ensure equity among educational facilities in a diverse state, promote an environment that is conducive to high academic achievement and protect taxpayers' long-term investment in community facilities. We are not surprised that your survey of school districts found that 82 percent of them agreed. Florida's public schools enjoy a reputation as safe places and are regarded as community assets.

We do not agree with the identification of 10 SREF requirements that could be modified—with the exception of the proposed modification to increase to \$300,000 the project cost threshold that requires hiring a licensed contractor. As the report notes, each of the other proposals for modification raises potential concerns related to student safety or prudent expenditure of taxpayer dollars, with eight of those resulting in cost savings of 1 percent or less. The department's comments regarding each of the modifications are as follows:

- Life cycle cost analyses – We support the continuation of this requirement as a best management practice for construction as well as operation. Without the requirement to perform a life cycle cost analysis, districts could use materials with shorter life spans, resulting in higher maintenance and replacement costs.

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- High school student parking – We support the continuation of this minimum requirement to prevent the enforcement of any local parking requirements that could be more stringent than the SREF requirement.
- Irrigation systems – We support continuation as a best management practice to conserve water and operation costs. Elimination of this requirement would not relieve the districts from providing moisture sensors because they are also required by the green construction sustainable rating systems under section 255.2575, Florida Statutes.
- Spare capacity – We support continuation of this requirement. Because an educational facility is expected to be functional for 50 years, energy needs will predictably increase over the facility's lifespan. Failing to plan for spare capacity at the time of construction would be imprudent. Also, eliminating spare capacity in power and lighting panel boards may (1) eliminate the ability to add additional equipment in classrooms, labs and shop facilities; (2) prevent renovations, additions or remodeling to update or modernize facilities; and (3) prevent the addition of upgraded heating, ventilation, and air conditioning (HVAC) systems and other support equipment to support items (1) and (2). The National Fire Protection Association (NFPA) does not allow undersized panel boards, as panel boards for HVAC equipment must comply with NFPA 70 Articles 409 and 440. These Articles require HVAC panel boards to be capable of supporting 125 percent of full load, and the SREF requirement for 10 percent spare capacity for power and lighting panel boards is much the same.
- Boilers – We support maintaining these safety requirements. Modification would not relieve the districts from providing the SREF safety requirements, because they are also required by the State Fire Marshal.
- Roofed courtyards – We support maintaining this safety requirement. Allowing schools to use roofed courtyards as a means of egress is a serious life safety hazard with furnishings and equipment that could block the exit path through the courtyard.
- Light shielding – We support maintaining this requirement. Modification would not relieve the districts from providing light shielding, because they are required by the green construction sustainable rating systems required by section 255.2575, Florida Statutes.
- Kindergarten play areas – We support maintaining this requirement. The proposed modification does not require specific and adequate protection for kindergarten play areas and would increase district liability.

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We acknowledge the concerns raised by school districts related to the costs associated with building new schools to serve as public shelter spaces in regions where additional public shelter space is needed. As school districts are working to stretch available capital outlay funding to address educational facility needs necessary to support their core mission, we can appreciate their request for funding for the cost of providing public shelters. In addition, the need for public shelter space is determined by region, so under the current requirements, the tax payers in the school district that is building a school facility may be subsidizing other counties.

With respect to the space standards, the department maintains that the space needs for educational facilities have remained largely the same since the standards were last updated in 2005. To determine whether any modifications should be made, in 2014 Commissioner Stewart recommended a work group be created to study the size of space and occupant design standards. The department would require additional resources to convene a working group to conduct such a study.

As discussed during your interviews with us, the educational facility standards included within the SREF have evolved over a nearly 80-year period from their initial inclusion as statutory standards to today's agency rules. Over time, the incremental changes to the provisions of the code were made in response to real-world needs arising from the occupancy of public school facilities and were based on expertise, experience and the input of many experts and stakeholders.

While we welcome the opportunity to consider recommendations to improve the SREF, we continue to urge great caution in considering any undertaking that would result in extensive revision without a comprehensive study of each proposed revision and documentation of the effects.

Sincerely,



Pam Stewart
Commissioner of Education

PS/mp

cc: David Summers

The Florida Legislature

Office of Program Policy Analysis and Government Accountability



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Project supervised by Becky Vickers (850/717-0515)
Project conducted by Mark Frederick, Chris Sanchez, and Tina Young
David D. Summers (850/717-0555), Staff Director, Education Policy Area
R. Philip Twogood, Coordinator