

Section 4 – Mitigation Strategy

A mitigation strategy is a set of mitigation actions meant to prevent the potential impacts of hazards. There are several types of mitigation actions with a different method of reducing vulnerability.

Cedar County and this plan's stakeholders have identified the sustained, proposed, and completed mitigation actions for each of the hazards identified as having the potential to affect the jurisdiction. For proposed mitigation actions, the planning team in each jurisdiction considered each type of mitigation action before identifying mitigation actions to include their final mitigation strategy. The mitigation strategy of each jurisdiction is included in this section of the plan.

4.1 – Mitigation Capabilities

Each type of stakeholder provides a set of capabilities, in some cases broad and in some cases narrow, by which they can increase the planning area's resiliency. The broadest form of mitigation capabilities come from the county and the municipal governments. Their inherent legal authority allows them to institute the greatest regulatory and developmental changes.

The school districts have broad authority over their campuses and although budgets may be tight, they are more far reaching than some of the smaller organizations. Additionally, the necessity to protect the planning area's children grants them greater influence and political capital to institute change.

Fiscal Capability

The planning area's municipal governments are not unique in the issues felt by small governments to retain the staff and resources necessary to accomplish the strategies necessary to mitigate hazards. However, they are aware of potential diverse funding sources available to communities for, assisting in the fiscal needs required to implement local hazard mitigation plans, including both government and private programs.

While federal and state programs carry out the bulk of disaster relief programs that provide funds for mitigation, local governments are able to search for alternative funding sources to supplement the local hazard mitigation budget. The participants in the mitigation planning process are aware that before effective mitigation strategies can be applied, stable funding sources and effective incentives must be established on a per project basis to encourage participation by the private and public sectors.

Cedar County and this plan's municipal governments should seek out FEMA grant funding from the Building Resilient Infrastructure and Communities (BRIC), Hazard Mitigation Grant Program (HMGP), and the Flood Mitigation Assistance Grant Program (FMA). Given the size of the municipalities involved in this plan and the pocketed areas of significant flood risk, municipal governments should have access to the United States Department of Housing and Urban Development's Community Development Block Grant Program (CDBG) which occasionally will award grants to assist with projects that fall under hazard mitigation.

The community school districts have the potential to receive additional funding via the PPEL and SAVE dollars to offset the local match required by FEMA grants. Additionally, the community school districts can raise additional funding to self-fund or to assist in grant marching via debt bonding.

Institutional Capability

Cedar County as a whole community is capable of implementing the strategies identified herein. In addition, they are capable of promoting the mitigation process and educating the public about the hazards prevalent to their area, as well as mitigation process necessary to mitigate those hazards.

In an emergency, the county and each municipality's response is an extraordinary extension of responsibility and action, coupled with normal day-to-day activity. Normal governmental duties will be maintained, with emergency operations carried out by those agencies assigned specific emergency functions.

Political Capability

During the process of the development of this plan, opposition to mitigation measures was not evident in any the plan's participants. The primary limiting factor is funding, which is made more difficult by the current situation in the local, state, and national economies.

The county, cities, and their partnerships with the participating agencies are well-organized and responsive to community needs. Leadership is informed and remains up-to-date on the hazards that threaten the area. Citizens who did participate in the public meetings and presentations showed an interest in doing things to promote a safer community. Therefore, the county and cities (the governing board, staff, and citizen population) appear willing to promote the economic efficiency and social utility of the mitigation measures contained in this plan, if appropriate funding can be identified.

Each of the participating municipalities and community school districts undergoes budget reviews between November and March. The timeframe varies depending on the year.

General Authority & Regulations

State of Iowa law provides the legal authority for local governments to implement regulatory measures. The basis for much of this authority is the local government power designed to protect public health, safety and welfare. This authority enables local government to enact and enforce ordinances, and to define and abate nuisances. Hazard mitigation is a form of protecting public health, safety, and welfare, and falls under the general regulatory powers of local government. This also extends to building codes and inspections, land use, acquisition, and floodplain development regulation.

Building Codes & Inspection

Building codes and inspections provide local governments with the means to maintain county structures that are resilient to natural hazards. Cedar County and every municipalities have adopted the 2012 International Building and Fire Prevention Codes. These codes prescribe minimum standards for

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building construction, which ensures that new buildings and structures are built to standards that are seismically sound, fire resistant and developed within flood-proofing measures. These codes also require appropriate hazard code updating and compliance when certain thresholds are met for remodel and renovation of existing buildings. These codes also authorize local governments to carry out building inspections to ensure local structures adhere to the minimum state building standards. Municipal officials have the primary role of enforcement of the International Building Code structural regulations. Fire departments may also take part in the inspection process for fire and general public safety inspections. They enforce the appropriate codes both at the plan approval stage and the site inspection stage. Cedar County and this plan's municipal governments are committed to the high standards of building provided through the respective codes, and requires that the same codes and the same enforcement procedures apply during routine permitting procedures as well as following a disaster.

Land Use Planning

Through land use regulatory powers granted by the state, local governments can control the location, density, type and timing of land use and development in the community. Provisions of the land use plans are implemented through regulatory tools that include zoning and subdivision ordinances, and taxation. All of the participating municipalities have established zoning ordinances and codes. Durant, Mechanicsville, Tipton, and West Branch have comprehensive plans while the other participating municipalities do not.

Taxation

Taxation can be a powerful mitigation tool by providing local governments with a way to guide development. Tax abatements may be used to encourage landowners and developers to integrate mitigation measures into the process of building new developments and retrofitting existing properties in the floodplain. These tools can be especially effective in encouraging the mitigation of existing structures. Additionally, community school districts have the ability to levy revenue through referendums for specific projects whether it is mitigation related or not.

Floodplain Programs

Floodplain management is the operation of a community program of measures for reducing flood damage. These measures take a variety of forms; and generally, include zoning plans, subdivision, or building requirements, and special-purpose floodplain ordinances. Cedar County provides floodplain administration for the municipalities within its border. Anyone building within an identified floodplain is required to submit a site plan and apply for a building permit.

The regulations place the base flood elevation at the FEMA determined Zone A measurement established per FEMA's Flood Insurance Study of Cedar County dated 2013. In order to build or modify a structure in an identified Zone A, the builder must apply for a development certificate requiring the lowest level of the structure (that includes the basement) to be built above or at the BFE. Cedar County uses FEMA Elevation Certificate Form FF-086-0-33 certify engineering and building designs. This

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document and these regulations although adopted by the county governs the floodplain regulations of all municipal governments within the planning area.

Of the 9 participating municipal governments, all are active participants in the NFIP while none are member of the CRS program. The school districts are not eligible for NFIP or CRS participation. None of the 9 NFIP participating communities have any intention of changing their status to non-participating communities. Their continued compliance is in no way in question as their floodplain enforcement and regulations are well established.

Table 4.1 – NFIP Community Status

Jurisdiction	CID	CRS Rating	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Registration Entry Date
Cedar County	090050	N/A	06/07/77	08/05/85	08/19/13	08/05/85
Bennett	190051	N/A	12/27/74	09/04/85	08/19/13	09/04/85
Clarence	090045	N/A	-	08/19/13	NSFHA	08/19/13
Durant	090922	N/A	-	08/19/13	08/19/13	06/11/76
Lowden	190054	N/A	06/28/74	08/19/85	08/19/13	08/19/85
Mechanicsville	190970	N/A	-	08/19/13	08/19/13	08/16/13
Stanwood	090056	N/A	08/09/74	08/19/13	08/19/13	11/01/79
Tipton	090057	N/A	03/29/74	09/04/85	08/19/13	09/04/85
West Branch	090058	N/A	03/01/74	03/16/83	08/19/13	03/16/83

**The data are from FEMA.*

4.2 – Mitigation Goals

The mitigation goals for Cedar County and this plan’s participating jurisdictions were established based upon results from the local and state risk assessments, stakeholder meetings, and input from an extensive public survey. These goals represent the plan’s participants’ long-term vision for the continued reduction of hazard risks and the enhancement of their mitigation capabilities.

Goal 1: Reduce the risk from natural hazard events utilizing community cooperation and an all-hazards approach.

Goal 2: Pursue additional, complete, and accurate data in support of mitigation planning, disaster preparedness, disaster response, and disaster recovery operations.

Goal 3: Integrate the hazard mitigation plan’s findings into the planning, and decision-making processes for all current and future emergency management and preparedness related activities.

Goal 4: Minimize the risk to property from droughts.

Goal 5: Minimize the risk to life and property from floods.

Goal 6: Minimize the risk to life and property from severe storms.

Goal 7: Minimize the risk to life and property from severe winter storms.

Goal 8: Minimize the risk to life and property from tornadoes.

Goal 9: Minimize the risk to life and property from wildfires.

4.3 – Mitigation Projects

This plan identifies a comprehensive range of 21 possible and unique mitigation projects and 3 possible and unique mitigation actions. The selected set carefully takes an all-hazards approach to mitigation while simultaneously addressing each of the individual eight profiled hazards.

The projects and actions were selected based upon their potential to reduce the risk to life and property with an emphasis on new and existing infrastructure, ease of implementation, community and departmental support, consistency with other relevant plans and capabilities, available funding, vulnerability, and total risk. For further information on evaluation criteria, please see Section 4.4. The full list of mitigation projects and their descriptions can be found in Appendix D.

Some projects and actions mitigate risk and vulnerability to multiple hazards. Some of these projects and actions list participating jurisdictions that are only at risk from one or a few of the mitigation hazards. For example, the project: "Backup Generators" mitigates against multiple hazards. All participating jurisdictions are interested in this project, but some will not be using it to mitigate against riverine flooding. Instead they will be using it to mitigate against severe storms and severe winter storms.

Table 4.2 – Mitigation Projects Summary

Project/Action	Jurisdictions
Backup Generators	Cedar County, All Municipal Governments, All School Districts
Bury & Secure Utility Lines, Pipes, and Tanks	Cedar County, All Municipal Governments, All School Districts
Debris & Natural Fuels Reductions	Cedar County, All Municipal Governments, All School Districts
Defensible Spaces & Buffer Zones	Cedar County, All Municipal Governments, All School Districts
Elevate Structures	Cedar County, All Municipal Governments, All School Districts
FEMA Code 361 Safe Rooms	Cedar County, All Municipal Governments, All School Districts
Floodproofing	Cedar County, All Municipal Governments, All School Districts
Flood Level Monitoring System	Cedar County, All Municipal Governments, All School Districts
Insulation & Energy Efficiency	Cedar County, All Municipal Governments, All School Districts
Irrigation Storage Tanks	Cedar County, All Municipal Governments
Looped Grid Power Systems	Cedar County, All Municipal Governments, All School Districts
Low Flow Utilities	Cedar County, All Municipal Governments
Rainwater Retention Basins	Cedar County, All Municipal Governments
Raise Transportation Infrastructure	Cedar County, All Municipal Governments, All School Districts
Relocate or Buyout Vulnerable Structures	Cedar County, All Municipal Governments, All School Districts
Snow Fences	Cedar County, All Municipal Governments, All School Districts
Storm Water Drainage System Upgrade	Cedar County, All Municipal Governments, All School Districts
Storm Water Pump Stations	Cedar County, All Municipal Governments, All School Districts
Water Line Insulation	Cedar County, All Municipal Governments, All School Districts
Wildfire Structural Retrofit	Cedar County, All Municipal Governments, All School Districts
Wind Resistance Structural Retrofit	Cedar County, All Municipal Governments, All School Districts

Table 4.3– Mitigation Actions Summary

Project/Action	Lead Agency
Public Awareness & Education	Cedar County EMA
SKYWARN Storm Spotter Training	Cedar County EMA
StormReady Accreditation	Cedar County EMA

Mitigation Project Updates

Cedar County’s prior approved mitigation plan (2016) contained a number of mitigation projects that have been completed since 2016 or are currently underway. The table below lists the mitigation projects that have been completed or initiated since the development of their last hazard mitigation plan.

Table 4.4 – Mitigation Project Updates

Mitigation Project	Jurisdictions	Status	Notes
Backup Generators	Bennett	Underway	Fire Station
Backup Generators	Bennett	Underway	Water Tower
Backup Generators	Lowden	Completed	City Hall & Fire Station
Backup Generators	West Branch	Completed	South Tower
Backup Generators	West Branch	Underway	Wastewater Facility
Backup Generators	West Branch	Underway	Water Tower (2 nd)
Flood Level Monitoring System	West Branch	Completed	
Relocate or Buyout Vulnerable Structures	Lowden	Completed	2 Floodprone Properties
Stormwater Drainage Upgrade	Durant	Underway	5 th St. Reconstruction
Stormwater Drainage Upgrade	Durant	Completed	14 th Avenue
Stormwater Drainage Upgrade	Durant	Underway	Old Highway 6
Stormwater Drainage Upgrade	Lowden	Underway	-
Stormwater Drainage Upgrade	Tipton	Completed	2019-2020 Project
Wind Resistance Structural Retrofit	Bennett CSD	Completed	Roofing Project
Wind Resistance Structural Retrofit	Durant CSD	Completed	Roofing Project

Cedar County’s prior approved mitigation plan (2016) contained suggested projects and actions that are no longer considered qualified mitigation projects or actions, rather, they classify as response, recovery, or preparedness phases of emergency management. Additionally, there are a number of actions that were proposed that are simply descriptions of the basic job and operating functions of a municipality or EMA. There is no merit or benefit to including actions and projects that are outside the scope of this plan or that are implicitly part of the job and operating function of a government service. Examples of these items include the development of basic emergency plans, risk assessments that are already part of mitigation planning, and basic municipal functions. The actions and projects that were previously listed, but do not qualify under mitigation are listed in the table below:

Table 4.5 – Removed Non-Qualifying Projects

Mitigation Project	Jurisdictions & Prior Plan ID	Reason for Non-Qualification
Civil Service Improvements	Bennett-14, Durant-14, Lowden-15, Mechanicsville-29, Stanwood-15, West Branch-15	Not mitigation
Conservation Management Plan	County-14, Stanwood-09	Outside plan participants’ scope
Cyber Security	County-24	Not mitigation
Disaster Response Plan	County-21, Bennett-15, Stanwood-16	Not mitigation

4.3 – Mitigation Projects

Drainage study	County-12, Bennett-07, Clarence-07, Durant-06, Lowden-08, Mechanicsville-18, Tipton-08, West Branch-08	Not mitigation fundable
Drought Monitoring Plan	Mechanicsville-19	Not mitigation
Establish Drainage Districts	County-15	Not reasonable or within scope
Evacuation Plan	Mechanicsville-31, Stanwood-17	Not mitigation
Fire Prevention Program	Mechanicsville-30	Not mitigation
Firewise Community	Mechanicsville-24	Unnecessary for level of risk
Floodplain Management	County-19, Bennett-11, Durant-11, Lowden-12, Stanwood-12, West Branch-12	Basic operating function
Interoperable Communications	Lowden-17, Mechanicsville-34, Stanwood-19, Tipton-16	Not mitigation
Maintain Standing with NFIP	County-17, Bennett-10, Durant-06, Lowden-11, Stanwood-11, Tipton-11, West Branch-11	Basic operating function
Mobile Trash Pump	Lowden-20	Not fixed, not fundable
Pipeline Disaster Plan	West Branch Schools-03	Not mitigation
Prepare for Earthquake	Durant-19	Not a reasonable risk
Prepare for Radiological Event	Durant-18	Not mitigation
Regulation Enforcement	County-16, Bennett-09, Clarence-09, Durant-06, Lowden-10, Mechanicsville-25, Tipton-10, West Branch-10	Basic operating function
Source Water Contingency Plan	Stanwood-10	Not mitigation
Static Detectors	County-09, Mechanicsville-13	Not mitigation
Streambank Stabilization	County-11, Bennett-06, Clarence-06, Durant-06, Lowden-07, Mechanicsville-15, Stanwood-08, Tipton-07, West Branch-07, North Cedar Schools-01	Not mitigation fundable
Tree City USA	Bennett-12, Durant-12, Lowden-13, Mechanicsville-27, Stanwood-13, Tipton-13	Description misleading, no benefit
Tree Removal	County-04, Bennett-04, Mechanicsville-07, Stanwood-03	Not mitigation fundable
Weather Radios	County-23, Bennett-19, Clarence-16, Lowden-19, Stanwood-21, Tipton-18	Not mitigation
Wildfire Protection Plan	Mechanicsville-17	Unnecessary for level of risk

4.4 – Project Evaluation, Implementation, & Administration

Situational changes will likely occur throughout the 5-year life cycle of a mitigation plan. This can happen due to any number of factors such as public influence, local and grant funding allotments, changing demographics, other developmental changes, and numerous more. These factors and many others have great influence over how activities and projects will need to be evaluated for feasibility and demand. Therefore, a flexible methodology will serve Cedar County and this plan’s participants best when determining what, when, and where to engage an activity or project.

Project Evaluation

Cedar County and this plan’s participants will utilize the STAPLE+E method of assessing mitigation actions, projects, and alternatives in conjunction with prioritization tables detailed in Appendix E. Initially, the plan participants should utilize the prioritization tables found in Appendix E to inform their decision-making processes in that they can better view which hazards pose the greatest risk to their community and which mitigation actions and projects are better at decreasing their vulnerability and thus risk.

Upon deciding to move forth with a mitigation project, according to decision-making process of the participating jurisdiction, the decision-making body will use the form on the following page to make a final determination on whether or not the action or project is feasible. Preliminary evaluations, per hazard, per project, per jurisdiction are found in Appendix E and are a composite of the STAPLE+E methodology and the composite risk for from each hazard for each jurisdiction.

The evaluations were conducted according the definitions in the table below:

Table 4.6 – STAPLE+E

Category	Concept of Analysis
Social	Mitigation actions are acceptable to the community if they do not adversely affect a particular segment of the population, do not cause relocation of lower income people, and if they are compatible with the communities’ social and cultural values.
Technical	Mitigation actions are technically most effective if they provide long-term reduction of losses and have minimal secondary adverse impacts.
Administrative	Mitigation actions are easier to implement if the jurisdiction has the necessary staffing and funding.
Political	Mitigation actions can truly be successful if all stakeholders have been offered an opportunity to participate in the planning process and if there is public support for the action.
Legal	It is critical that the jurisdiction or implementing agency have the legal authority to implement and enforce a mitigation action.
Economic	Budget constraints can significantly deter the implementation of mitigation actions. Hence, it is important to evaluate whether an action is cost-effective, as determined by a cost-benefit review, and possible to fund.
Environmental	Sustainable mitigation actions that do not have an adverse effect on the environment, that comply with Federal, State, and local environmental regulations, and that are consistent with the community’s environmental goals, have mitigation benefits while being environmentally sound.

- 1.) Fill in the name of the mitigation action or project followed by two other viable alternatives which address the same hazards.
- 2.) For each consideration, indicate a plus (+) for favorable or negative (-) for less favorable. If the consideration does not apply, leave it blank.
- 3.) Compare the total number of pluses and negatives to the alternative actions. Some considerations may carry more weight than others, so a simple tally does not necessarily indicate a more viable or feasible action or project.

Table 4.7 – STAPLE+E Sample Form

Criteria	Considerations	Action/Project	Alternative 1	Alternative 2
Social	Community Acceptance			
	Effect on Segment of the Population			
Technical	Technical Feasibility			
	Long-Term Solution			
	Secondary Impacts			
Administrative	Staffing			
	Funding Allocated			
	Maintenance/Operations			
Political	Political Support			
	Local Champion			
	Public Support			
Legal	State Authority			
	Existing Local Authority			
	Political Legal Challenge			
Economic	Benefit of Action			
	Cost of Action			
	Contributes to Economic Goals			
Environmental	Effect on Land or Water			
	Effect on Endangered Species			
	Effect on HAZMAT Waste Sites			
	Consistent with Environmental Goals			
	Consistent with Federal Laws			
Total =				

Project Implementation

Each municipal government participating in this plan has their own decision-making bodies that are free to implement the mitigation strategies found in this plan as they see fit. Each decision-making body will choose municipal departments to head up implementation efforts appropriate for that municipal department's area of responsibility.

The activity and project evaluation methodology described in this section serves as an aid for them to enhance their decision-making. It is highly suggested that the county coordinates with the other municipal governments as well as the non-municipal plan participants to work towards an organized and concentrated effort when implementing activities and projects. That is, it would better serve their implementation effectiveness to work as a whole community when deciding how to allocate staff and funding resources when implementing mitigation activities and projects.

The participating community school districts will be in complete sole control of what, when, and where to implement mitigation activities or projects. Its decision-making bodies that are free to implement as they see fit. The activity and project evaluation methodology provide earlier in this section acts as an aid for them to best apply the prescribed mitigation strategy found in this plan.

Project Administration

Cedar County will be self-administering each project through its own government departments. The department chosen to administer a project will vary depending on the characteristics of each activity or project whereas public works would be better suited for some projects while county records and risk management would be better suited for others. For each of the participating municipalities, they have the option and flexibility to administer their own activities and projects if they so choose. However, for the purpose of efficiency and governmental scale, activities and projects will default to be administered by Cedar County EMA.

Each participating community school district will administer activities and projects inhouse with individuals designated administrative responsibility on an ad-hoc, per project basis. Individual will be designated on a case-by-case basis as seen most fitting by the organization according to the specific characteristics of the project or activity as oversight and administration duties can vary wildly among these organizations.

4.5 – Planning Integration

Mitigation doesn't end at plan approval. Plan approval is only the beginning. The successful implementation of any number mitigation activities and projects requires the coordination and collaboration of a number of local agencies, departments, and organizations. Each group has varying decision-making processes and authorities governing their actions. This plan, once approved, must be integrated into their decision-making processes as a tool for improving their respective resiliencies.

This plan is not only useful for implementing mitigation activities and projects, but is also critical in making development plans and capital improvement projects. The risk assessment in this plan can prevent unmanaged and dangerous development into identified hazard areas or other portions of the planning area that decrease a community's overall resiliency.

Comprehensive Land Use Planning

As of now, Durant, Mechanicsville, Tipton, and West Branch have comprehensive plans while the other participating municipalities do not. All of the municipalities maintain a set of ordinances. These plans typically detail building codes, ordinances, zoning, and other land use measures as they relate to hazard risk reduction. Upon future updates of the Cedar County HMP, at a minimum, this mitigation plan will be considered for serving as a base guide to updating and improving hazard risk reduction measures contained within the comprehensive land use plans for each of the participating municipalities.

Democratic Governments & Boards

All the participating jurisdictions use some form of a democratic voting process. These organizations rely on agenda proposals, deliberation and discussion, and voting to solidify their decision-making.

All participating jurisdictions engage in capital improvement, infrastructure, and other various projects on an ad hoc basis. For these stakeholders, this plan should be integrated into agenda proposal's designs and cross-referenced during deliberation and discussion of proposed activities and projects. By using this plan's risk assessment, development and capital improvement projects can be appropriately implemented taking into consideration a community's resiliency.

Emergency Management Planning

Any and all emergency management related planning will at a minimum cross reference this document during its production. In some instances, this plan or portions of it will be fully integrated depending on the circumstances and nature of the planning document.

Emergency Operations Plans

Cedar County's next EOP update will reflect the most probable and dangerous hazard event scenarios from the plan's risk assessment. Additionally, the plan will be referenced in its entirety as an appendix to the EOP. This revision is the responsibility of the Cedar County EMA for all of the jurisdictions participating in this plan. Upon revision completion, all participating jurisdictions and appropriate emergency services will be notified of the revisions and sent out new copies of the EOP.

State of Iowa Homeland Security and Emergency Management

IA HSEM has a FEMA approved mitigation plan current as of June, 2018 and is updated every 5 years. The state’s mitigation plan is required by FEMA regulation to include a discussion and summary of local hazard mitigation plans. The process of integrating this plan is already an established process and is managed by IA HSEM.

Facilities Master Plans

The State of Iowa’s Department of Education requires all school districts to keep and maintain a ten-year facilities master plan. This plan is a living document that undergoes rigorous internal and public review. It is responsible for planning out a school district’s facility needs, educational needs, and future facility needs. Each school district’s master plan requires updating and review every two years.

This hazard mitigation plan will become an integral part in maintaining and developing each participating school district’s facilities master plan by acting as a guide for current facilities’ hazard risks as well as a provide analysis on future expansion of their campuses. Upon completion of the plan, any revision, review, or consultation use of the facilities master plan will be accompanied by a review of this plan as it pertains to the facility master plan’s use.

High priority mitigation projects and actions will be added to the sections of the facilities master plan that covers facility needs and future facility needs as achievable goals and objectives. Upon revision and future development, the facilities master plan will contain a risk assessment summary or building construction analysis to accompany any and all proposed construction or retrofit of a school district’s facilities.

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