

Albert E Kagel School

Conceptual Schoolyard Redevelopment Plan /
Plan Conceptual de Reurbanización del Patio Escolar

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Arts, Outdoor Education, and Community Engagement Plan

Land Acknowledgment

We acknowledge that Milwaukee lies on traditional Menominee, Potawatomi, and Ho-Chunk homeland along the southwest shores of Lake Michigan, part of North America's largest system of freshwater lakes. On this site, the Milwaukee, Menominee, and Kinnickinnic rivers meet, and the people of Wisconsin's Menominee, Ojibwe, Ho-Chunk, Oneida, and Mohican sovereign nations remain present to this day.

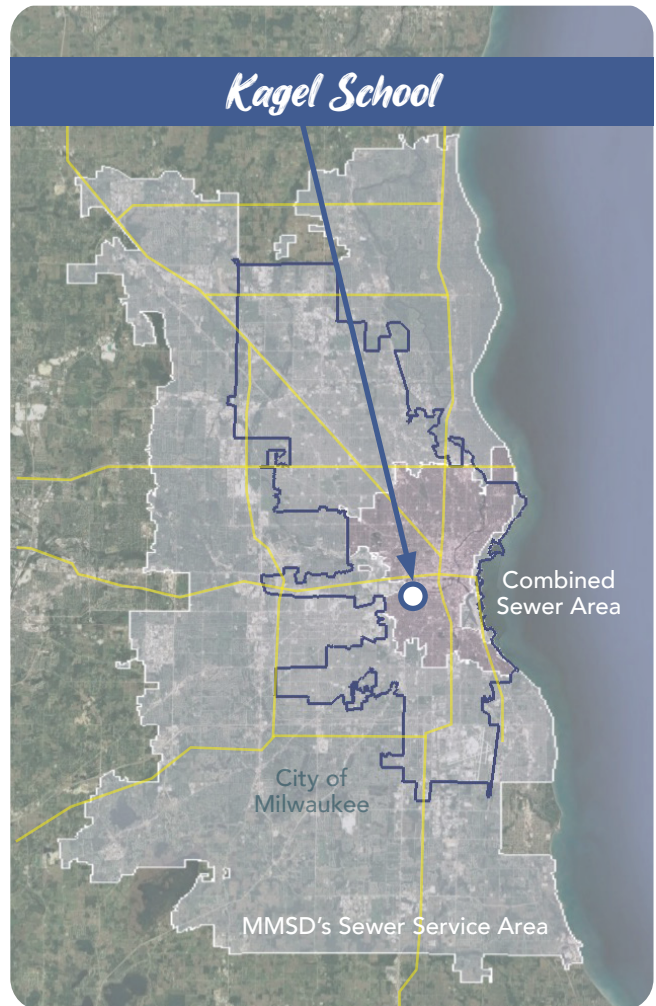


Existing schoolyard at Kagel

Introduction

Impervious surfaces (hardscapes including asphalt and concrete) characterize so much of our built environment that we no longer even notice how they shape the contours of our urban communities. Excessive imperviousness leads to sewage overflows and basement backups, degrades the quality of our rivers and lake, and costs us millions each year in economic losses and infrastructure repair, all of which deter investment and impede socioeconomic progress. Schools surrounded by seas of splintering asphalt offer opportunities to replace imperviousness with beautiful, nature-inspired landscapes that increase urban biodiversity, educate, and inspire.

Through funding provided by the Milwaukee Metropolitan Sewerage District and the Fund for Lake Michigan, the nonprofit Reflo and its partners collaborate with five schools annually to develop conceptual schoolyard redevelopment plans that holistically address the issue of each school's imperviousness. This document compiles over a year of conceptual planning in order to provide a single, feasible vision for redeveloping a greener, healthier schoolyard. These projects also provide a multitude of STEAM (science, technology, engineering, arts, and mathematics) curricular connections as well as triple-bottom-line (social, environmental, and economic) benefits for the students, school, and community.



School Story

Albert E. Kagel School is proudly located in the Walker's Point neighborhood on the south side of Milwaukee. Kagel School offers students a small, neighborhood school environment with the option of a Dual Language Program to prepare for an increasingly global society. Any student may begin their Dual Language education in K3, K4, or K5, and continue through until 8th grade, becoming biliterate and bilingual in Spanish and English, and fully prepared for a bilingual future.

We are one of 10 Milwaukee Public Schools (MPS) GE Foundation Demonstration Schools, a distinction which provides us with additional support to bolster student achievement and prepare students for college and career success through the Common Core State Standards. The Kagel mantra is **"Achieving Excellence Through Innovation!"**

All students are supported in a positive and safe school environment where staff members strive to ensure that students achieve their full academic potential through rigorous instruction and compassionate teaching. With strong parent engagement and community partnerships, collaboration is a driving force within our school culture. Families benefit from a full-day Dual Language K4 program, our after-school Boys and Girls Club partnership, and a variety of sports and extracurricular activities.

We believe that with the commitment, support, and collaboration of the school community, our students will be empowered and inspired to be lifelong learners and our next generation of leaders. The opportunity to provide our students with these green spaces will allow us to further prepare our students to be future stewards of their environment.



Kagel School

1210 W MINERAL STREET,
MILWAUKEE, WI 53204

- Milwaukee Public School
- Grades: K3 Head Start through 8th
- 289 students
- 80% economically disadvantaged
- 22% special education
- 65% English learners
- Combined sewer areas
- Kinnickinnic River watershed



Conceptual Redevelopment Plans

On an annual basis, the nonprofit Reflo and its partners, with the support of the Milwaukee Metropolitan Sewerage District (MMSD), works through the Green Schools Consortium of Milwaukee (GSCM) to select and collaborate with schools that are interested in redeveloping their schoolyards. Planning efforts incorporate creative applications of stormwater green infrastructure, outdoor educational elements, and other features that improve the social, environmental, and economic health of the school and community. With the approval of school and district administrators, schools apply for and are selected to receive conceptual planning support. The over year-long collaborative planning process has resulted in the production of this

conceptual planning document, which is intended to guide the multi-year redevelopment.

Kagel School's conceptual plan includes many stakeholder perspectives including those of students, parents, teachers, administrators, maintenance staff, neighborhood residents, and project partners. The plans are intended to be feasible and to support the school's and project stakeholders' needs and interests. Significant care was taken to consolidate project ideas and coalesce around one unified project vision. As the project progresses through the fundraising and detailed design phases, project components will be further defined and best fit to the amount of funds raised.

Kagel School's Vision and Values:

At Kagel School, we value linguistic and cultural diversity, a safe learning environment, creativity and innovation, culturally responsive and equitable practices, and collaboration among staff, students, and families. We envision all students will achieve their full academic potential to create their own pathway to success. This will occur through focused instruction, family engagement, and community partnerships.

Network of Support

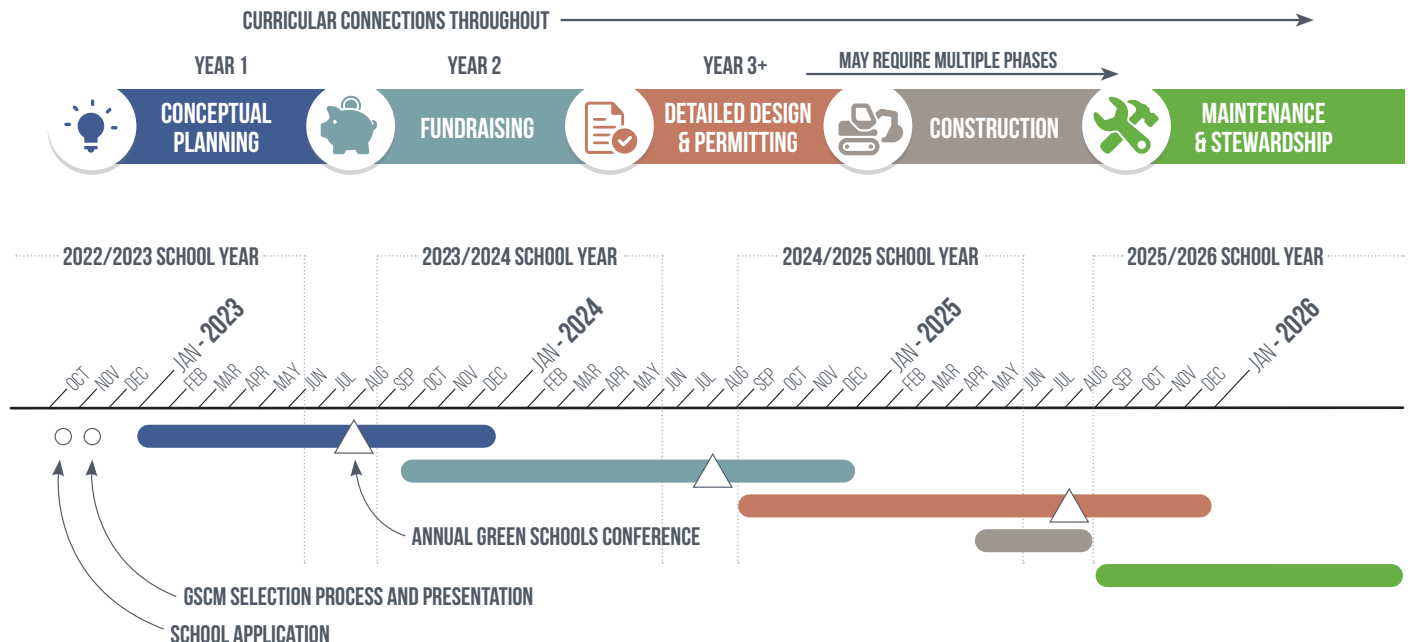
The GSCM is a local network of practitioners, agencies, and funders that are committed to supporting greener, healthier schools and ecoliteracy in the Milwaukee area. The GSCM gathers on a bimonthly and annual basis to share resources and lessons learned. The 7th Annual Green & Healthy Schools Conference hosted more than 600 participants and over 80 exhibitors. Each year the GSCM also hears from schools that are interested in schoolyard redevelopment projects and collectively decides which projects to support, in part, based on need and enthusiasm.



Project Development Process and Timeline

The following process diagram and timeline visualizes the major project development phases that a typical schoolyard redevelopment project in the Milwaukee area undertakes when supported by Reflo and the Green Schools Consortium of Milwaukee. The process begins in October with schools applying to receive a conceptual planning grant provided by Reflo and the

Milwaukee Metropolitan Sewerage District. Schools that advance to the second stage are then asked to present to the GSCM's Project Selection Committee on their need and enthusiasm. Following the selection, five schools are awarded the planning grant and begin the conceptual planning process with monthly Green Team meetings starting in January the following year.





Stormwater Green Infrastructure

Green infrastructure is a strategy that diverts stormwater runoff from entering the sewer system and **manages stormwater where it falls** through a more sustainable means, mimicking natural water systems. Green infrastructure can also provide creative opportunities to incorporate STEAM (science, technology, engineering, arts, and math) concepts in student learning and promote community engagement. The school grounds currently contribute a significant amount of stormwater runoff that can lead to area flooding and impaired water quality for our rivers and lake. The conceptual redevelopment plan includes multiple green infrastructure strategies to manage as much stormwater as feasible on the school grounds.

Kagel School's conceptual plan calls for removal of approximately **14,700 sq. ft.** of asphalt and replacing it with new green space and mixed-use recreation and educational areas. The design includes an outdoor classroom area and amphitheater, an underground cistern, and the addition of 60 stormwater trees. The inclusion of a variety of native plantings allow for unique spaces on the schoolyard that can represent natural Wisconsin ecosystems, complete with student-created signage. The vision also includes a porous, synthetic turf soccer field to further manage rainwater where it falls. The plan manages approximately **225,340 gallons** of stormwater per rain event.

Kagel School has a great education program with strong support from families and the community. However, the neighborhood currently has few green spaces. The children deserve a greener, more beautiful outdoor space for a stronger learning experience that is fun at the same time.

Rocio Rivera Herrera – Parent





Asphalt Removal

Hard surfaces like asphalt and concrete are the primary sources of stormwater runoff. Replacing hardscapes with more porous landcovers and other types of green infrastructure helps infiltrate stormwater into the ground and prevent it from running off into the sewer system. These changes promote better stormwater management, reduce the heat island effect, improve social-emotional outlook, improve urban habitats, and increase biodiversity.



Bioswales

Bioswales typically capture polluted stormwater runoff from roads and parking lots, infiltrating that water into the ground and cleaning it naturally. They are planted with vegetation that helps to soak up and clean the polluted runoff. They can be installed as meandering or straight channels depending on the land that's available, and are designed to maximize the time rainwater spends in the swale.



Porous Groundcover

Built surfaces that allow for stormwater to pass through them and infiltrate into the soil below, come in many varieties including synthetic turf, pavers, concrete, rubber, or asphalt. These surfaces allow for play or other uses while also supporting stormwater management that may otherwise be difficult to accomplish in areas that are heavily used.



Native Plantings

Vegetation native to Wisconsin has adapted to the region's climate and soils. Native plants typically have deeper root systems that help them withstand both droughts and heavy rains and also allow for greater stormwater infiltration. These native plant sensory gardens also promote biodiversity and provide habitat for pollinator species.



Rendering of Kagel School's conceptual schoolyard redevelopment by CDS



Outdoor Education and Healthy Food Access

As illustrated in the infographics produced by Children & Nature Network and Cream City Conservation Corps (found in the Planned Curricular Connections section of this document), access to outdoor classrooms on school grounds can significantly **enhance learning** outcomes and social-emotional well-being. Raised bed gardens also offer the opportunity to provide low-cost, **healthy food** options to students, their families, and the surrounding communities. Successful Green Teams use school gardens as **educational opportunities** to explore topics such as water and life cycles, ecosystems, economics, geometry, conservation, and social studies.

Kagel's schoolyard redevelopment includes multiple **outdoor classroom** areas with seating and materials to support outdoor learning. **Mindfulness gardens** and raised garden beds will provide pollinator habitat and a calm, relaxing environment to support social-emotional well-being and other curricular connections. Nearby green infrastructure including stormwater trees, bioswales, and native plantings also serve as unique learning spaces. **Interpretative signage** throughout the schoolyard will support student-curated tours and encourage learning through self-guided exploration. **Communication boards** will further support learners of all abilities.

Green schoolyards promote academic achievement through hands-on, experiential learning and by enhancing the cognitive and emotional processes important for learning.

The redevelopment of our school playground can be a dream come true and will be dedicated to all Kagel students, especially those who participate in our Soccer, Girls on the Run, and Volleyball teams. We thank our families for supporting students at practices and games, and especially our previous soccer coaches: Patrick Kenny, Alejandro Cruz, and Bryan Luis, as well as Amanda Yenter who currently coaches Girls on the Run & our volleyball team. Also, a special thanks to Mrs. Mary Saldaña (former Principal) and current Principal, Mr. Juan C. Mejia, for allowing the Green & Healthy Schoolyard Committee the freedom to dream big on behalf of our students, families, staff, and school.





School Gardens

School gardens range in scale from the typical 4-by-8-foot raised bed garden, to hoop houses, to larger-scale greenhouses. Milwaukee-area schools have successful demonstrations of each scale of school garden and are best sized based on the interest level and capacity of the school's Green Team to manage the gardening operations.



Healthy Food Access

Some communities do not have easy access to low-cost, healthy foods. On top of providing engaging outdoor learning opportunities, school gardens are excellent opportunities to provide fresh, locally grown produce. Culinary arts lesson plans and tasting programs can demonstrate how healthy food can also be tasty food.



Culturally Relevant Curricular Connections

Developing lesson plans that are culturally relevant to students can help to create a sense of inclusiveness and promote positive learning outcomes for all students. For example, school gardens can include a diversity of crops that support exploration of different cultures and can demonstrate that food production is an important component of all cultures.



Outdoor Classrooms and Interpretative Signage

Outdoor classrooms can include natural green space and/or built shade structures. Seating and shade elements are common design features to accommodate longer class periods outdoors. Interpretative signage can serve to engage local artists and support learning not only by students, but also by the surrounding community.



Arts and Community Engagement

The arts can be a simple yet profound way to address **educational equity** in our communities. Through the use of arts-enhanced and arts-integrated classroom methodologies, teachers can implement strategies that support curricular connections, maximize student engagement, and further academic success. Green and healthy themes can be explored through visual and performing art forms as students build their knowledge, investigate human impacts on the environment, analyze perceptions, and enhance personal connections to the natural world.

Green and healthy schools provide a unique opportunity to support the development of **social-emotional learning (SEL)** through the integration of the arts and environmental education. Arts @ Large and Milwaukee Public Schools are committed to designing programs that promote SEL while creating supportive learning environments that address the needs of the whole child. School staff receive training about the impacts of trauma, explore ways to meaningfully **engage families**, and support youth through experiential learning to better position them for potential future careers.

Natural areas promote child-directed free play that is imaginative, constructive, sensory rich and cooperative.

I strongly believe that with the new playground renovation, the students will have a better quality of outdoor time, families will be satisfied that their children are enjoying and learning about nature, and the whole neighborhood will have extra opportunities to exercise a little more with the many activities this new playground will provide for everyone!

Yani Arteaga – Parent Coordinator





Social-Emotional Learning

The arts can be an incredible vehicle to model best practices in Social-Emotional Learning (SEL). SEL is the process of developing fundamental skills for life success within supportive, participatory learning environments. These skills include recognizing, managing emotions, setting/achieving goals, feeling/demonstrating empathy for others, establishing/maintaining positive relationships, and making responsible decisions.



Visual Arts

The use of visual arts strategies in the classroom can lead to greater engagement and deeper learning by the student. When paired with a project such as a schoolyard redevelopment, the works of art created by the students will not only beautify the space, but also provide a sense of ownership and accomplishment to celebrate with the students and their families. With the visual arts, the invisible becomes visible!



Performing Arts

The performing arts can be an incredible tool to activate spaces within the school environment. Theatrical performances and activities are a great way to explore a space and learn how to create meaningful interactions between students and nature, develop empathy for other forms of life, and learn to embrace sustainability as a community practice.



Exhibition

Creating student-led exhibitions is a great way to build an understanding of how nature sustains life. Through research and design, students can learn from content experts and share their experiences and knowledge through docent-led exhibits.



Rendering of Kagel School's conceptual schoolyard redevelopment by CDS



Recreation and Other Site Improvements

Naturalized spaces provide opportunity for cooperative play and help children **develop resilience** skills as they navigate novel environments and encounter new challenges. Well-supported and engaging recreational opportunities can also help increase attention spans, improve social-emotional learning, and encourage team building. Creative applications of **visual arts** on walls and ground coverings can help guide students in independent and group physical fitness activities. These recreational improvements can enhance critical thinking and problem-solving skills, reduce instances of childhood obesity, and promote other **positive health outcomes**.

Kagel's conceptual plan includes a **synthetic turf soccer field**, gaga ball pits, nature play areas, and colorful asphalt markings. The plan calls for **balance logs** and stumps to support gross motor development and the addition of musical instruments to provide a variety of play experiences. To increase accessibility to the schoolyard, **artistically designed** benches are intended to help beautify the space and provide areas for rest. Significant thought was put into the flow of how students move through the various spaces with special consideration for activities such as soccer, tag, and pavement marking activities like four square and hopscotch.

Meaningful, positive experiences in nature guide children, youth and adults toward care for nature.

The new schoolyard will bring a safe, fun space for students and the community to enjoy. I am looking forward to features that promote running, exercise, and overall better well-being.



Lucina Hernandez Alavez – Parent



Nature Play

The incorporation of balance beams, loose parts, boulders, play mounds, and other nature-inspired features encourages imaginative, cooperative free play as students work together to explore their environment. These naturalized play features support the physical, social-emotional, and motor skill development of youth while promoting creativity and critical thinking.



Outdoor Recreation

Green schoolyards support a wide range of recreation activities that provide additional opportunities for student choice compared to traditional schoolyards. Youth may participate in quiet, solitary explorations or opt for organized group play. Varied recreation components allow children to build cooperation and negotiation skills and strengthen the connection between play and learning.



Game Play

Organized game play can provide students with the structure and support needed to approach challenges with confidence and build negotiation skills. Popular playground games like hopscotch and four square are often maintained while new games are also introduced through structured play activities. Youth are encouraged to experience the green schoolyard through free play and create new games led by their curiosity and imagination.



Mindfulness

Mindfulness practices encourage us to be present, attentive, and accepting. They provide an opportunity to learn how to be peaceful and kind while also reducing anxiety and promoting happiness. Areas designed for quiet play, sensory exploration, and reflection help students build self-awareness and emotional regulation by connecting with the natural world.

3



Planned Curricular Connections

It is important that the schoolyard redevelopment include plans for actively using the redeveloped space. This section provides a high level overview of how the school plans to make the most out of the new schoolyard components and connect the exciting redevelopment to the curriculum.

The envisioned outdoor spaces will help build strong classroom communities, with dedicated areas for play and exploration, while supporting a variety of curricular lessons for our students. Children will be able to experience hands-on learning in natural areas while supporting their growth and development and drawing meaningful connections to our neighborhood community.

Conexiones Curriculares Planificadas

Es importante que la remodelación del patio escolar incluya planes para como usar el espacio remodelado activamente. Esta sección proporciona una descripción general de alto nivel de cómo la escuela planea aprovechar al máximo los nuevos componentes del patio escolar y conectar la remodelación emocionante con el plan de estudios.

Los espacios al aire libre previstos ayudarán a construir comunidades de aulas fuertes, con áreas dedicadas para jugar y explorar, al tiempo que respaldan una variedad de lecciones curriculares para nuestros estudiantes. Los niños podrán experimentar el aprendizaje práctico en áreas naturales mientras apoyan su crecimiento y desarrollo y establecen conexiones significativas con la comunidad de nuestro vecindario.

“I like the sensory and peace gardens. I think they will be great to help relieve my stress.”

Kevin Ramos – 7th Grade Student



Literacy and Language

Experiences in nature will provide real-life examples of new concepts and a relaxing environment to build confidence in **speech and language skills**. Interpretive signs will help communicate scientific concepts in multiple languages to promote an inclusive school community. In addition, the natural environment will provide inspiration for creative and informational writing, read-alouds, and **journaling** for all grades.

Early childhood students (K3–K5) will be encouraged to explore realistic fiction and develop their writing skills through outdoor **alphabet and writing games**, and expand their vocabulary as they explore and observe new features of the schoolyard.

Lower elementary students (1st–3rd) will use the new schoolyard to further develop their descriptive language skills as they engage all five senses to explore nature. Children may practice their **creative writing** with inspiration from nature as they observe native plants, insects, and varied textures on the schoolyard and draw connections to nature-themed units of study.

Upper elementary students (4th–5th) will form outdoor reading groups in the calming green spaces. These experiences will support the development of complex vocabulary and **reading comprehension**.

Middle school students (6th–8th) will use the outdoor spaces as alternative environments for creative and **persuasive writing**. Students may be inspired to share about the benefits of urban biodiversity, outdoor learning, nature, and environmental stewardship.



Literatura e Idioma

Las experiencias en la naturaleza brindarán ejemplos de la vida real de nuevos conceptos y un ambiente relajante para generar confianza **en las habilidades del habla y el lenguaje**. Los carteles interpretativos ayudarán a comunicar conceptos científicos en varios idiomas para promover una comunidad escolar inclusiva. Además, el entorno natural brindará inspiración para la escritura, la lectura en voz alta y el **diario creativo e informativo** para todos los grados.

Se les alientará a los estudiantes de **primera infancia** (K3–K5) a explorar ficción realista y desarrollar sus habilidades de escritura a través del **alfabeto al aire libre y juegos de escritura**, y ampliar su vocabulario a medida que exploran y observan nuevas características del patio escolar.

Los estudiantes de **primera** (1° a 3°) utilizarán el nuevo patio escolar para desarrollar aún más sus habilidades de lenguaje descriptivo mientras involucran los cinco sentidos para explorar la naturaleza. Los niños pueden practicar su **escritura creativa** inspirándose en la naturaleza mientras observan plantas, insectos y texturas variadas nativas en el patio escolar y establecen conexiones con unidades de estudio con temas de la naturaleza.

Los estudiantes de **primaria superior** (4° y 5°) formarán grupos de lectura al aire libre en los relajantes espacios verdes. Estas experiencias apoyarán el desarrollo de vocabulario complejo y **comprensión de lectura**.

Los estudiantes de **secundaria** (6° a 8°) utilizarán los espacios al aire libre como entornos alternativos para la **escritura creativa y persuasiva**. Los estudiantes podrán sentirse inspirados a compartir sobre los beneficios de la biodiversidad urbana, el aprendizaje al aire libre, la naturaleza y la gestión ambiental.

STEM Connections

The green schoolyard offers many STEM (science, technology, engineering, math) curricular connections. Children will discover living examples of **geometry, symmetry, and patterns** that support math curriculum across grade levels. Students of all ages will explore **green infrastructure** and the water cycle using the schoolyard as their classroom. These vibrant, living classrooms will provide a variety of enrichment activities to support hands-on learning that activate the **curiosity and engagement** of our students.

Our **early childhood students** (K3–K5) will investigate science concepts through play and curiosity. Children will search for evidence of **biodiversity** such as animal tracks, pollinator species, and a variety of colors found in nature, extending their learning of **life cycles** of butterflies and gardening.



Lower elementary students (1st–3rd) will use the green spaces while studying **earth and physical science** concepts such as weather and sky observations. Children will plant, maintain, and observe a variety of species as they grow and see firsthand how they help **manage stormwater** in the area and change throughout the seasons.



Children in **upper elementary** (4th–5th) will dive into life science concepts of **ecology**, food webs, and species relationships. The new **outdoor gardens and bioswales** will support the curriculum focused on native Wisconsin plants and the water cycle. In addition, children can learn the science of **sustainability** and environmental science by studying the living aspects of the schoolyard.

Middle school students (6th–8th) will have ample opportunity to collect **real-world data** from rain gauges in the bioswales, conduct biodiversity counts of urban flora and fauna, and perform **statistics** to better understand their schoolyard. In addition, students may explore other math concepts such as graphing, **comparing and contrasting** measurements on different scales, and using shadows to determine the height of trees.



Conexiones "STEM"

El patio escolar verde ofrece muchas conexiones curriculares STEM (ciencias, tecnología, ingeniería, matemáticas). Los niños descubrirán ejemplos vivos de **geometría, simetría y patrones** que respaldan el plan de estudios de matemáticas en todos los niveles de grado. Estudiantes de todas las edades explorarán la **infraestructura verde** y el ciclo del agua utilizando el patio escolar como aula. Estas aulas vivas y vibrantes proporcionarán una variedad de actividades de enriquecimiento para apoyar el aprendizaje práctico que activa **la curiosidad y el compromiso** de nuestros estudiantes.

Nuestros estudiantes de **primera infancia** (K3–K5) investigarán conceptos científicos a través del juego y la curiosidad. Los niños buscarán evidencia de **biodiversidad**, como huellas de animales, especies de polinizadores y una variedad de colores que se encuentren en la naturaleza, ampliando su aprendizaje sobre **los ciclos de vida** de las mariposas y la jardinería.



Los estudiantes de **primera inferior** (1° a 3°) utilizarán los espacios verdes mientras estudian conceptos de **ciencias físicas y de la tierra**, como observaciones del tiempo y del cielo. Los niños plantarán, mantendrán y observarán una variedad de especies a medida que crecen y verán de primera mano cómo ayudan a **controlar las aguas pluviales** en el área y cambian a lo largo de las estaciones.



Los niños de **primaria superior** (4° y 5°) se sumergirán en los conceptos de **ecología**, redes alimentarias y relaciones entre especies de las ciencias biológicas. Los nuevos **jardines al aire libre y bioswales** respaldarán el plan de estudios centrado en las plantas nativas de Wisconsin y el ciclo del agua. Además, los niños podrán aprender la ciencia de la **sostenibilidad** y las ciencias medioambientales estudiando los aspectos vivos del patio escolar.

Los estudiantes de **secundaria** (6° a 8°) tendrán amplias oportunidades de recopilar **datos del mundo real** a partir de pluviómetros en los bioswales, realizar recuentos de biodiversidad de la flora y fauna urbana y realizar **estadísticas** para comprender mejor su patio escolar. Además, los estudiantes podrán explorar otros conceptos matemáticos como representar gráficas, **comparar y contrastar** medidas en diferentes escalas y usar sombras para determinar la altura de los árboles.





Social Studies

In social studies, students explore themes of family, home, neighborhood, and community throughout their elementary learning. Our school supports and celebrates its **bilingual, biliterate multicultural** learners through community-building activities that encourage students to consider their relationship between the environment and living things. Through these experiences, we aim to encourage a sense of pride and **stewardship** for the Earth.

Social studies introduces **early childhood** students (K3–K5) to the concept of community. Beginning in Kindergarten, students learn to embrace their unique identities while also celebrating their friends' differences. This understanding sets the foundation for their years-long exploration of the importance of being a good citizen, the value of **different cultures**, and the impact of individuals and institutions on the world around them. Children learn about **community helpers** and the role they play in keeping people, animals, and our environment safe and healthy.

Students in **lower elementary** (1st–3rd) will extend their **geography** learning by studying important landmarks in their communities and drawing connections to new features on the schoolyard. Students will investigate themes of **environmental justice**, community engagement, and discuss examples of how individuals can work together to create **positive changes** in their communities.

In the **upper elementary** (4th–5th) grades, social studies instruction expands from students' local community to their city and state, the nation, and world. As the curriculum shifts to focus on Wisconsin and **Milwaukee's history** and major waterways, children will investigate our state's **indigenous plants** and trees growing on the schoolyard as part of their First Nations units of study.

Middle school students (6th–8th) will learn to form and defend arguments about different policies, economies, and histories from all around the world. The outdoor classroom and seating areas are a perfect place for students to practice **debate**, claim testing, and critique with their classmates. Students will analyze the impacts of the schoolyard redevelopment and further explore **human impacts** the environment.



Ciencias Sociales

En los estudios sociales, los estudiantes exploran temas de familia, hogar, vecindario y comunidad a lo largo de su aprendizaje de primaria. Nuestra escuela apoya y celebra a sus estudiantes **multiculturales bilingües** a través de actividades de desarrollo comunitario que alientan a los estudiantes a considerar su relación entre el medio ambiente y los seres vivos. A través de estas experiencias, nuestro objetivo es fomentar un sentido de orgullo y **administración** de la Tierra.



Los estudios sociales introducen a los estudiantes de la **primera infancia** (K3–K5) al concepto de comunidad. Comenzando en preescolar los estudiantes aprenden a aceptar sus identidades únicas mientras celebran las diferencias de sus amigos. Esta comprensión sienta las bases para su exploración de años sobre la importancia de ser un buen ciudadano, la interdependencia de la economía, el valor de las **diferentes culturas** y el impacto de las personas y las instituciones en el mundo que los rodea. Los niños aprenden sobre los **ayudantes comunitarios** y el papel que desempeñan para mantener a las personas, los animales y nuestro medio ambiente seguros y saludables.



You must be the change you want
to see in the world.

Tú debes ser el cambio que quieres
ver en el mundo.

– Mahatma Ghandi



Los estudiantes de **primera inferior** (1° a 3°) ampliarán su aprendizaje de **geografía** estudiando puntos de referencia importantes en sus comunidades y estableciendo conexiones con nuevas características en el patio escolar. Los estudiantes investigarán temas de **justicia ambiental**, participación comunitaria y discutirán ejemplos de cómo las personas pueden trabajar juntas para crear **cambios positivos** en sus comunidades.

En los grados **primaria superior** (4° y 5°), la instrucción de estudios sociales se expande de la comunidad local de los estudiantes hasta su ciudad y estado, la nación y el mundo. A medida que el plan de estudios cambia para centrarse en la **historia** y las principales vías fluviales de Wisconsin y Milwaukee, los niños investigarán las **plantas y árboles autóctonos** de nuestro estado que crecen en el patio escolar como parte de sus unidades de estudio de las Primeras Naciones.



Los estudiantes de **secundaria** (6° a 8°) aprenderán a formular y defender argumentos sobre diferentes políticas, economías e historias de todo el mundo. El aula al aire libre y las áreas para sentarse son un lugar perfecto para que los estudiantes practiquen el **debate**, realicen pruebas y crítica con sus compañeros. Los estudiantes analizarán los impactos de la remodelación del patio escolar y explorarán más a fondo los **impactos humanos** en el medio ambiente.

Art Connections

The redeveloped schoolyard will breathe life into the arts, fostering children's creativity and honing their visual art skills. The outdoor spaces will serve as a canvas for observational drawings, allowing students to explore different **components of art** including texture, line, space, and color. Additionally, the green areas will host performing arts experiences, fostering positive community connections.

Emphasizing **experiential learning**, the revitalized schoolyard encourages movement and exploration of nature for inspiration in various artistic endeavors, from creative writing to poetry. Students may even turn natural elements into captivating **art installations**. These **immersive experiences** in nature are designed to significantly contribute to student development and connection to their community.



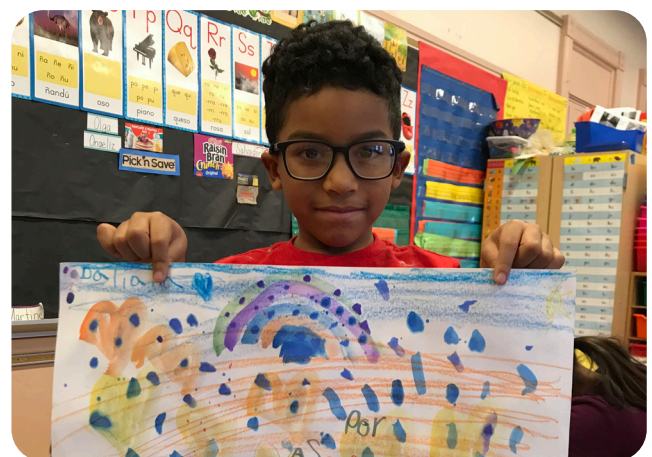
Kagel School's commitment to a **culturally responsive** environment is exemplified by the accessible public space created through the redevelopment. The expansion of creative outlets beyond the school building not only benefits students and their families but also nurtures **empathy** and understanding of the wider world. In making Kagel's public space inclusive for all, these enhancements aim to enrich students' art and cultural experiences, fostering **compassion** and meaning beyond the school day.

Conexiones de Arte

El patio escolar remodelado dará vida a las artes, fomentando la creatividad de los niños y perfeccionando sus habilidades en artes visuales. Los espacios al aire libre servirán como lienzo para dibujos de observación, lo que permitirá a los estudiantes explorar diferentes **componentes del arte**, incluidos la textura, la línea, el espacio y el color. Además, las áreas verdes albergarán experiencias de artes escénicas, fomentando conexiones comunitarias positivas.

Haciendo hincapié en el **aprendizaje experiencial**, el patio escolar revitalizado fomenta el movimiento y la exploración de la naturaleza en busca de inspiración en diversos esfuerzos artísticos, desde la escritura creativa hasta la poesía. Los estudiantes pueden incluso convertir elementos naturales en cautivadoras **instalaciones de arte**. Estas **experiencias de inmersión** en la naturaleza están diseñadas para contribuir significativamente al desarrollo de los estudiantes y la conexión con su comunidad.

El compromiso de la Escuela Kagel con un entorno **culturalmente receptivo** se ejemplifica en el espacio público accesible creado a través de la reurbanización. La expansión de las salidas creativas más allá del edificio escolar no sólo beneficia a los estudiantes y sus familias, sino que también fomenta la **empatía** y la comprensión del mundo en general. Al hacer que el espacio público de Kagel sea inclusivo para todos, estas mejoras tienen como objetivo enriquecer las experiencias artísticas y culturales de los estudiantes, fomentando la **compasión** y el significado más allá del día escolar.



Community Engagement

Kagel School works to provide family and community engagement opportunities in a safe and supportive climate. Parents participate in the school's **Parent Engagement Council**, regularly volunteer in the classroom, and are engaged in their children's learning. Collaboration with many **community partners** will enhance the opportunities to use the green spaces for events, classes, programming, and other activities. For example, programming with Wisconsin Conservatory of Music will help develop the skills and confidence in children's musical abilities that can be showcased in an **outdoor performance** in a natural setting.

Partnership with the Boys and Girls Clubs of Greater Milwaukee provides after school and summer camp experiences with **extended learning** opportunities. We envision our families experiencing the space during school events and volunteering to help with **maintenance and stewardship** activities, where everyone can enjoy a calming, natural environment.



Community members and intramural teams will be able to use the new soccer fields to support **team-building** and skill-development activities while providing a **health and wellness** destination in the community. Our hope is that through this investment in the Kagel Schoolyard, youth will feel empowered to **advocate** for their own health and access to healthy spaces in their community.

Participación de la Comunidad



La Escuela Kagel trabaja para brindar oportunidades de participación familiar y comunitaria en un clima seguro y de apoyo. Los padres participan en el **Consejo de Participación de Padres** de la escuela, son voluntarios regularmente en el aula y participan en el aprendizaje de sus hijos. La colaboración con muchos **socios comunitarios** mejorará las oportunidades de usar los espacios verdes para eventos, clases, programación y otras actividades. Por ejemplo, la programación con el Conservatorio de Música de Wisconsin ayudará a desarrollar las habilidades y la confianza en las habilidades musicales de los niños que se pueden mostrar en una **actuación al aire libre** en un entorno natural.

La asociación con Boys and Girls Clubs of Greater Milwaukee brinda experiencias de campamentos de verano y después de la escuela con oportunidades **ampliadas de aprendizaje**. Nos imaginamos a nuestras familias experimentando con el espacio durante los eventos escolares y ofreciéndose como voluntarios para ayudar con actividades de **mantenimiento y administración**, donde todos puedan disfrutar de un ambiente natural y tranquilo.

Los miembros de la comunidad y los equipos intramuros podrán utilizar los nuevos campos de fútbol para apoyar **actividades de formación de equipos** y desarrollo de habilidades, al mismo tiempo que brindan un destino de **salud y bienestar** en la comunidad. Nuestra esperanza es que a través de esta inversión en el patio de la escuela Kagel, los jóvenes se sientan capacitados para **defender** su propia salud y el acceso a espacios saludables en su comunidad.

Health & Physical Wellness

Children will learn to take turns, build patience, and follow rules as they practice **healthy risk-taking** and gain confidence through play and physical education classes on the redeveloped schoolyard. Students will acquire much-needed motor skills in the green space which will allow them to run, skip, jump, dance, and play with **fewer injuries** than they experienced before the redevelopment.

Children will be able to experience outdoor sports like soccer, basketball, and gaga ball in dedicated spaces on the schoolyard. The new facilities will support Kagel's **sports teams**, and physical activities during recess and after school as students learn game rules and procedures, practice turn-taking, and participate in **cooperative play**.



Students will participate in creative and imaginative play as they practice their balance when playing on the **agility pathways**, logs, and stumps placed throughout the schoolyard. A traffic garden will teach our learners **bike and pedestrian safety**, supporting physical education standards and building vital life skills.

Families and community members will be welcomed to enjoy the new recreation features and walking paths in effort to promote an **active and healthy community**. Ultimately, these improvements will help our students and community enjoy the beauty of nature while increasing sense of place, physical fitness, wellness, and a positive connection with the neighborhood.

Salud y Bienestar Físico



Los niños aprenderán a tomar turnos, desarrollar la paciencia y seguir las reglas mientras practican **la toma de riesgos saludables** y ganaran confianza a través de clases de juego y educación física en el patio escolar remodelado. Los estudiantes adquirirán habilidades motrices muy necesarias en el espacio verde que les permitirán correr, brincar, bailar y jugar con **menos lesiones** que las que experimentaban antes de la remodelación.

Los niños podrán experimentar deportes al aire libre como fútbol, baloncesto y gaga ball en espacios exclusivos en el patio escolar. Las nuevas instalaciones apoyarán a los **equipos deportivos** de Kagel y a las actividades físicas durante el recreo y después de la escuela mientras los estudiantes aprendan reglas y procedimientos de juego, practican los turnos y participen en **juegos cooperativos**.

Los estudiantes participarán en juegos creativos e imaginativos mientras practican su equilibrio cuando juegan en los **senderos de agilidad**, troncos y muñones colocados en todo el patio de la escuela. Un jardín de tráfico enseñará a nuestros alumnos la **seguridad de los ciclistas y peatones**, respaldará los estándares de educación física y desarrollará habilidades vitales para la vida.

Las familias y los miembros de la comunidad serán bienvenidos a disfrutar de las nuevas características recreativas y senderos para caminar en un esfuerzo por promover una **comunidad activa y saludable**. En última instancia, estas mejoras ayudarán a nuestros estudiantes y a la comunidad a disfrutar de la belleza de la naturaleza mientras aumentan el sentido de pertenencia, la aptitud física, bienestar y una conexión positiva con el vecindario.

Social-Emotional Well-Being

Our students practice **self-regulation** and mindfulness activities every day. Fresh air, green space, and native planting areas will support creative **mindfulness activities**, encouraging students to connect to their environment through sensory experiences enriched with bright colors, scents, and textures.

Tactile objects will help create a **multi-sensory learning** approach to support our students with special education needs across a range of skill development areas and a broad range of subjects. The sensory gardens and **communication boards** will provide a space where students can reflect, develop **independent skills** related to managing their feelings, **practice self-care**, and reset.



Students in all grades will benefit from taking brain breaks outdoors, exploring the schoolyard through **nature walks**, playing a variety of sports on the open grass field, and enhancing their communication skills through turn-taking, participating in cooperative play.

The holistic schoolyard redevelopment supports our goal that all students will grow and learn within a safe, respectful, and responsible environment. **Self-confidence** and self-worth will develop as each student's **cultural identity** is both recognized and valued.

Bienestar Socioemocional



Nuestros estudiantes practican actividades de **autorregulación** y mindfulness todos los días. El aire fresco, los espacios verdes y las áreas de plantación nativa respaldarán las **actividades creativas de atención plena**, animando a los estudiantes a conectarse con su entorno a través de experiencias sensoriales enriquecidas con colores, aromas y texturas brillantes.

Los objetos táctiles ayudarán a crear un enfoque de **aprendizaje multisensorial** para apoyar a nuestros estudiantes con necesidades de educación especial en una variedad de áreas de desarrollo de habilidades y una amplia gama de materias. Los jardines sensoriales y los **tableros de comunicación** brindarán un espacio donde los estudiantes podrán reflexionar, desarrollar **habilidades independientes** relacionadas con el manejo de sus sentimientos, practicar el **autocuidado** y restablecerse.

Los estudiantes de todos los grados se beneficiarán al tomar descansos mentales al aire libre, explorar el patio de la escuela a través de **caminatas por la naturaleza**, practicar una variedad de deportes en el campo de césped abierto y mejorar sus habilidades de comunicación tomando turnos y participando en juegos cooperativos.

La remodelación integral del patio escolar respalda nuestro objetivo de que todos los estudiantes crezcan y aprendan dentro de un ambiente seguro, respetuoso y responsable. La **confianza** en uno mismo y la autoestima se desarrollarán a medida que se reconozca y valore la **identidad cultural** de cada estudiante.

Benefits of Green and Healthy Schoolyards

Nature Can Improve Academic Outcomes

Spending time in nature enhances educational outcomes by improving children's academic performance, focus, behavior, and love of learning.

BETTER ACADEMIC PERFORMANCE

Learning in natural environments can:



BOOST PERFORMANCE
in reading, writing, math, science and social studies
1, 2, 3, 4, 5



ENHANCE
creativity, critical thinking and problem solving⁹

Seeing nature from school buildings can foster academic success^{6, 7, 8}

ENHANCED ATTENTION

Spending time in nature can help children focus their attention:



FOCUS AND ATTENTION
10, 11, 12, 13



ADHD SYMPTOMS
14, 15

The greener the setting, the better the focus^{14, 15}

INCREASED ENGAGEMENT & ENTHUSIASM

Exploration and discovery through outdoor experiences can promote motivation to learn:



INCREASED ENTHUSIASM FOR LEARNING
1, 16



GREATER ENGAGEMENT WITH LEARNING¹⁷



MORE IMPULSE CONTROL¹⁰



LESS DISRUPTIVE BEHAVIOR
20

Nature-based learning is associated with reduced aggression and fewer discipline problems:^{18, 19}



ADDITIONAL RESEARCH ON THE BENEFITS OF NATURE AVAILABLE AT childrenandnature.org/research

SUPPORTING RESEARCH

Lieberman & Hoody (1998). Closing the achievement gap: Using the environment as an integrating context for learning. Results of a Nationwide Study. *San Diego: SEER*.² Chawla (2015). Benefits of nature contact for children. *J Plan Lit*, 30(4), 433-452.³ Berezowitz et al. (2015). School gardens enhance academic performance and dietary outcomes in children. *J School Health*, 85(8), 508-518.⁴ Williams & Dixon (2012). Impact of garden-based learning on academic outcomes in schools: Synthesis of research between 1990 and 2010. *Rev Educ Res*, 83(2), 211-235.⁵ Wells et al. (2015). The effects of school gardens on children's science knowledge: A randomized controlled trial of low-income elementary schools. *Int J Sci Edu*, 37(17), 2858-2878.⁶ Li & Sullivan (2016). Impact of views to school landscapes on recovery from stress and mental fatigue. *Landscape Urban Plan*, 148, 149-158.⁷ Wu et al. (2014). Linking student performance in Massachusetts elementary schools with the "greenness" of school surroundings using remote sensing. *PLoS ONE* 9(10): e108548.⁸ Matsuoka, R. H. 2010. Student performance and high school landscapes. *Landscape and Urban Planning* 97 (4), 273-282.⁹ Moore & Wong (1997). Natural Learning: Rediscovering Nature's Way of Teaching. Berkeley, CA: MIG Communications.¹⁰ Faber Taylor et al. (2002). Views of nature and self-discipline: Evidence from inner-city children. *J Environ Psy*, 22, 49-63.¹¹ Mårtensson et al. (2009). Outdoor environmental assessment of attention promoting settings for preschool children. *Health Place*, 15(4), 1149-1157.¹² Wells (2000). At home with nature effects of "greenness" on children's cognitive functioning. *Environ Behav*, 32(6), 775-795.¹³ Berto et al. (2015). How does psychological restoration work in children? An exploratory study. *J Child Adolesc Behav* 3(3).¹⁴ Faber Taylor et al. (2001). Coping with ADD: The surprising connection to green play settings. *Environ Behav*, 33(1), 54-77.¹⁵ Amoly et al. (2014). Green and blue spaces and behavioral development in Barcelona schoolchildren: The BREATHE Project. *Environ Health Perspect*, 122,1351-1358.¹⁶ Blair (2009) The child in the garden: An evaluative review of the benefits of school gardening. *J Environ Educ*, 40(2), 15-38.¹⁷ Rios & Brewer (2014). Outdoor education and science achievement. *Appl Environ Educ Commu*, 13(4), 234-240.¹⁸ Bell & Dymont (2008). Grounds for health: The intersection of green school grounds and health-promoting schools. *Environ Educ Res*, 14(1), 77-90.¹⁹ Nedovic & Morrissey (2013). Calm, active and focused: Children's responses to an organic outdoor learning environment. *Learn Environ Res*, 16(2), 281-295.²⁰ Ruiz-Gallardo & Valdés (2013). Garden-based learning: An experience with "at risk" secondary education students. *J Environ Educ*, 44(4), 252-270.

Green Schoolyards Can Provide Mental Health Benefits

Green schoolyards can enhance mental health and well-being and promote social-emotional skill development.

GREEN SCHOOLYARDS HELP KIDS FEEL:

CALMER & LESS STRESSED^{2,3}

Views of green landscapes from classroom windows helped high school students recover more quickly from stressful events.⁴

POSITIVE & RESTORED³

Forest schools enhanced positive and decreased⁵ negative emotions.

RESILIENT²

Natural areas enhanced feelings of competence and increased supportive social relationships that help build resilience.²



GREEN SCHOOLYARDS PROMOTE SOCIAL-EMOTIONAL SKILLS

PRACTICE RELATIONSHIP SKILLS² *****

Children demonstrated more cooperative play, civil behavior and positive social relationships in green schoolyards.^{6,7}



DEVELOP SELF-AWARENESS & SELF-MANAGEMENT

Green schoolyards can reduce aggression and discipline problems.^{6,7}

Gardening at school helped students feel proud, responsible & confident.²



SUPPORTING RESEARCH

¹www.nlm.nih.gov/health/statistics/prevalence/any-disorder-among-children.shtml ²Chawla et al. (2014). Green schoolyards as havens from stress and resources for resilience in childhood and adolescence. *Health Place*, 28, 1-13. ³Kelz et al. (2015). The restorative effects of redesigning the schoolyard: A multi-methodological, quasi-experimental study in rural Austrian middle schools. *Environ Behav*, 47(2), 119-139. ⁴Li & Sullivan (2016). Impact of views to school landscapes on recovery from stress and mental fatigue. *Landscape Urban Plan*, 148, 149-158. ⁵Roe & Aspinall (2011). The restorative outcomes of forest school and conventional school in young people with good and poor behaviour. *Urban For Urban Gree*, 10(3), 205-212. ⁶Bell & Dymont (2008). Grounds for health: The intersection of green school grounds and health-promoting schools. *Environ Educ Res*, 14(1), 77-90. ⁷Nedovic & Morrissey (2013). Calm, active and focused: Children's responses to an organic outdoor learning environment. *Learn Environ Res*, 16(2), 281-295.

ADDITIONAL RESEARCH USED FOR THIS INFOGRAPHIC AVAILABLE AT childrenandnature.org/gsybibliographies

C&NN recognizes that not all studies support causal statements.

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INFOGRAPHICS PROVIDED BY THE CHILDREN & NATURE NETWORK

Supporting references and research on the benefits of nature can be found at childrenandnature.org/research



Green Schoolyards Encourage Beneficial Play

Natural areas promote child-directed free play that is imaginative, constructive, sensory-rich, and cooperative.



ENCOURAGING IMAGINATIVE, COOPERATIVE FREE PLAY

GREEN SCHOOLYARDS CAN:

- Accommodate different ages & abilities ^{2,3}
- Sustain children's interest ^{4,5}
- Offer a variety of options that appeal to a wide range of play interests ²
- Promote cooperation & negotiation ^{4,6}
- Strengthen links between play & learning ^{2,3,4}

GREEN SCHOOLYARDS CAN SUPPORT DIFFERENT TYPES OF PLAY ^{2,4,7,8}

DRAMATIC PLAY

Loose parts—such as sticks, stones, acorns & pinecones—engage the imagination.

EXPLORATORY PLAY

Natural areas provide opportunities for children to explore.



SOLITARY PLAY

Areas under bushes or other nooks allow children to engage in alone time and contemplation.

CONSTRUCTIVE PLAY

Building things out of natural materials helps children learn hands-on skills.

LOCOMOTOR PLAY

Natural items such as logs and rocks can be carried. Looping paths allow walking, running and biking.

SUPPORTING RESEARCH

¹Rideout et al. (2010). Generation M2: Media in the lives of 8-18 year olds. Kaiser Family Foundation <https://kaiserfamilyfoundation.files.wordpress.com/2013/01/8010.pdf> ²Dyment & Bell (2008). Grounds for movement: Green school grounds as sites for promoting physical activity. *Health Educ Res*, 23(6), 952-962. ³Stanley (2011). The place of outdoor play in a school community: A case study of recess values. *Child Youth Environ*, 21(1), 185-211. ⁴Dennis et al. (2014). A post-occupancy study of nature-based outdoor classrooms in early childhood education. *Child Youth Environ*, 24(2), 35-52. ⁵Luchs & Fikus (2013). A comparative study of active play on differently designed playgrounds. *J Adven Educ & Outd Learn*, 13(3), 206-222. ⁶Acar & Torquati (2015). The power of nature: Developing pro-social behavior towards nature and peers through nature-based activities. *Young Children*, 70(5), 62-71. ⁷Chawla (2015). Benefits of nature contact for children. *J Plan Lit*, 30(4), 433-452. ⁸Cloward Drown & Christenson (2014). Dramatic play affordances of natural and manufactured outdoor settings for preschool-aged children. *Child Youth Environ*, 24(2), 53-77.

Green Schoolyards Can Increase Physical Activity

Green schoolyards can promote physical activity by offering a variety of active play options that engage children of varying fitness levels, ages, and genders.

85%

OF EDUCATORS AND PARENTS

said green schoolyards support a wider range of play activities than other types of schoolyards.²

MORE OPTIONS, MORE ACTIVITY

PROMOTE

running
jumping
climbing
lifting²

trees
logs
shrubs
rocks

Variety in landscaping increases variety in active play.²

MEETING DIVERSE & CHANGING NEEDS

GREEN SCHOOLYARDS COMPLEMENT CONVENTIONAL PLAYGROUNDS WITH OPPORTUNITIES FOR

LIGHT & MODERATE PHYSICAL ACTIVITY

that are more appealing to some children.^{3,4}

GREEN SCHOOLYARDS CAN CONTRIBUTE TO

GIRLS' PHYSICAL FITNESS 🌸🌸🌸🌸

Physical activity decreases as children grow, especially for girls. Green schoolyards sustain activity as children age and preferences change.^{5,6,7}

SUPPORTING RESEARCH

¹www.cdc.gov/physicalactivity/data/facts.htm ²Dyment & Bell (2008). Grounds for movement: Green school grounds as sites for promoting physical activity. *Health Educ Res*, 23(6), 952-962. ³Barton et al. (2015). The effect of playground- and nature-based playtime interventions on physical activity and self-esteem in UK school children. *In J Environ Health Res*, 25(2), 196-206. ⁴Dyment et al. (2009). The relationship between school ground design and intensity of physical activity. *Child Geogr*, 7(3), 261-276. ⁵Brink et al. (2010). Influence of schoolyard renovations on children's physical activity: The Learning Landscapes Program. *Am J Public Health*, 100(9), 1672-1678. ⁶Mårtensson et al. (2014). The role of greenery for physical activity play at school grounds. *Urban For Urban Gree*, 13(1), 103-113. ⁷Pagels et al. (2014). A repeated measurement study investigating the impact of school outdoor environment upon physical activity across ages and seasons in Swedish second, fifth and eighth graders. *BMC Public Health*, 14(1), 803.

4



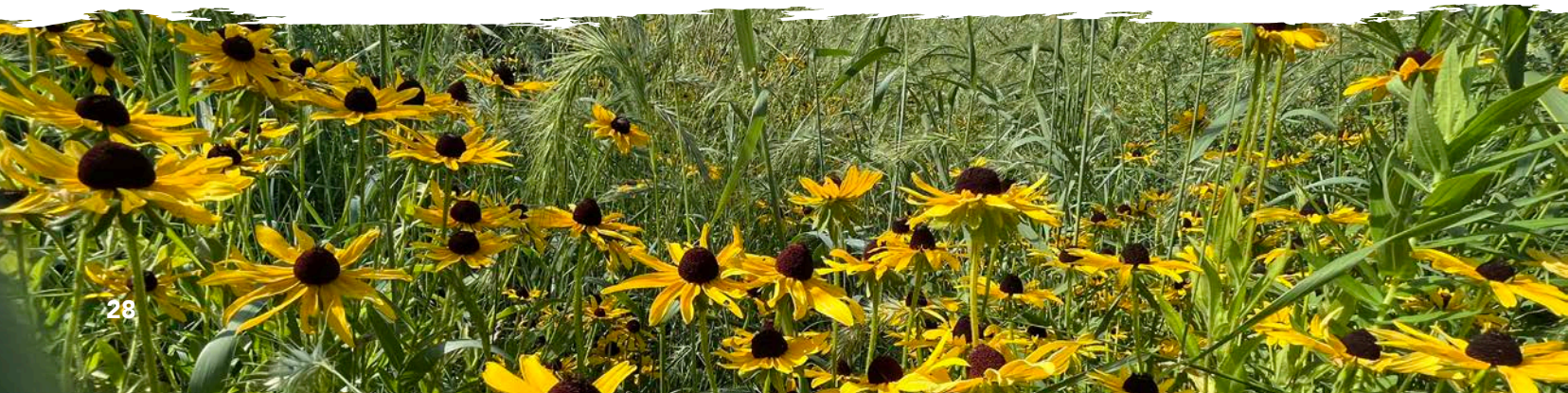
Maintenance and Stewardship

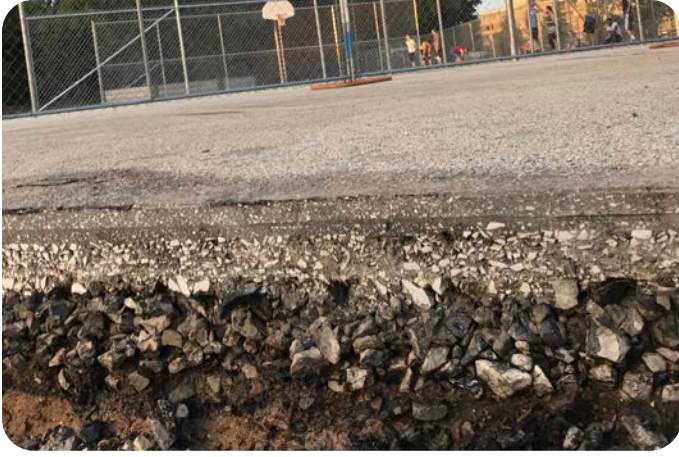
Green infrastructure features require varying levels of maintenance and offer opportunities to engage youth in active environmental stewardship, raise awareness of environmental impacts, and make meaningful curricular connections. Some maintenance activities such as weeding, debris pickup, inspection of plant health, crop harvesting, watering, etc. can further engage faculty, students, parents, and the surrounding neighborhood in school activities and outdoor learning, while also sharing the responsibility of maintaining the new green space. It should be noted that generally, the school's Green Team will be responsible for additional maintenance needs.

To promote the longevity and active use of the redeveloped schoolyard, recommendations were made to provide features that match the maintenance capacity and planned curricular connections of the school and community. The following section provides a summary of seasonal and monthly maintenance needs for the school's new green features. Comprehensive maintenance plans will need to be developed in the project's detailed design phase to fully support the new elements.



Well-maintained green infrastructure and play spaces can help reduce the potential need for costly repairs.





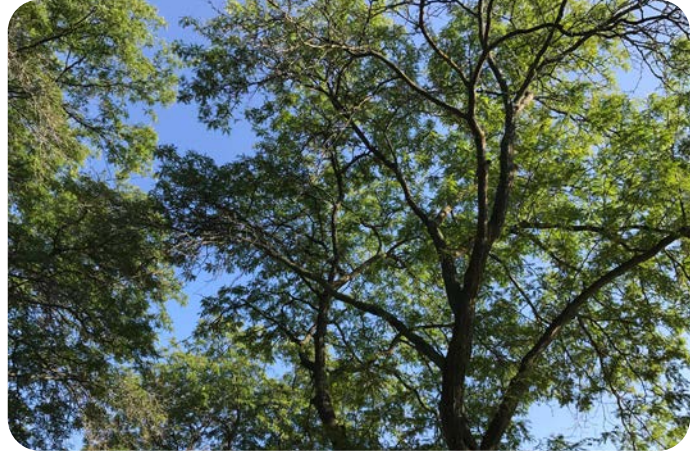
Asphalt Removal

Ongoing/Monthly Considerations:

Depending on the groundcover replacement such as grass, woodchips, permeable pavement, etc., the replacement may require additional maintenance such as grass cutting, woodchip replacement, vacuuming, etc.

Seasonal/Annual Considerations:

Some asphalt areas at schools are used in winter as snow management locations. Confirming the seasonal use of the asphalt areas can help with determining the feasibility of asphalt removal and/or ways to adjust snow management.



Tree Plantings

Ongoing/Monthly Considerations:

Newly planted trees will require protection from children wanting to play around them for the first few years. Strategies such as temporary or permanent fencing, signage, or planting boxes can help allow the trees space and time to grow.

Seasonal/Annual Considerations:

Berries, leaves, sticks, and branches often fall from trees during spring or fall. The litter may not need to be actively managed. However, large amounts may need to be composted or discarded.



Porous Groundcover

Ongoing/Monthly Considerations:

Debris and sediment washing into pavement pores can lead to clogging — monthly inspection is recommended to remove leaves, woodchips, and other debris. Also monitor for turf sections that need to be pinned down or replaced due to damage/heavy use.

Seasonal/Annual Considerations:

Reapplication or raking of the rubber pellets may be needed to keep the synthetic turf weighed down. Replacing sections of turf or re-securing to the perimeter edging by trained technicians.



Native Plantings

Ongoing/Monthly Considerations:

Similar to raised bed gardens, native plantings will require ongoing weeding (weekly) as they mature. Determining who will be responsible (ideally multiple people/groups/classrooms) beyond planting is important, especially over summer months.

Seasonal/Annual Considerations:

Native plants are more resilient and require less ongoing maintenance as they mature. One to three years of weeding is required initially, but long-term expected maintenance is minimal.



Rendering of Kagel School's conceptual schoolyard redevelopment by CDS



Fundraising Targets

An important component of the conceptual planning effort was to develop plans that are feasible. Estimates of funding requirements were discussed throughout the planning effort in order to keep the designs within reasonable cost ranges. The following table of estimated costs are presented in terms of "fundraising targets" to better represent the approximate budgetary nature of the numbers.

It should be noted that the following funding targets represent conceptual, high-level estimates with many assumptions, not consultant or contractor bids based on detailed design work, which would be more accurate.

The following estimates are expected to vary from actual incurred expenses. However, significant consideration and review of the fundraising targets were provided from engineers, contractors, and school administrators with experience in schoolyard redevelopment projects.

Although the following fundraising targets are intended to incorporate reasonable cost expectations for schoolyard redevelopment, changes to the design, contracting requirements, or amount of in-kind contributions can significantly impact the following numbers either upward or downward.



It's ideal to raise enough funds to be able to complete the schoolyard redevelopment in one pass; however, in some cases, projects can take several years to be completed due to funding constraints.

Invitation for Support

We invite your enthusiastic review of this conceptual plan document and welcome any questions you may have on the schoolyard redevelopment. Please visit Reflo's website for status updates and how to donate to the schoolyard redevelopment project:

www.RefloH2o.com



Conceptual Redevelopment Plan Fundraising Targets

	Apx. Fundraising Targets	Apx. In-kind Contribution
Stormwater Green Infrastructure		
Asphalt removal, sawcutting, mobilization, etc.	\$ 150,000	
Soil, grass, and other porous resurfacing	\$ 60,000	
Trees (and protective fencing)	\$ 60,000	
Bioswales (native plantings and protective fencing)	\$ 125,000	
Porous Pavement - Syn. Turf Soccer Field	\$ 225,000	
Underground cistern	\$ 100,000	
Engineering, surveying, and construction admin.	\$ 55,000	
Facilities project management	\$ 10,000	\$ 28,000
Continued Reflo project development support	\$ 25,000	\$ 25,000
Project signage	\$ 10,000	\$ 7,500
Demonstrations, workshops, tours		\$ 5,000
Water-focused curricular activities	\$ 10,000	\$ 10,000
Vegetation establishment	\$ 10,000	\$ 5,000
Stormwater Green Infrastructure Subtotal	\$ 840,000	\$ 80,500
School Gardens & Healthy Food Access		
Raised bed gardens	\$ 2,500	\$ 5,000
School Gardens & Healthy Food Access Subtotal	\$ 2,500	\$ 5,000
Recreational Improvements		
Gaga Ball pit (2) with ADA door	\$ 10,000	
Asphalt crackfilling and striping	\$ 45,000	
Tot lot improvements	\$ 10,000	
Nature play area (embedded logs and stumps)	\$ 50,000	
Recreational Improvements Subtotal	\$ 115,000	\$ -
Educational Elements		
Arts programming	\$ 25,000	\$ 5,000
Musical instruments and sensory boards	\$ 25,000	
Communications board	\$ 7,500	
Outdoor classroom		
Surfacing	\$ 25,000	
Seating	\$ 50,000	
Amenities	\$ 7,500	
Educational Elements Subtotal	\$ 140,000	\$ 5,000
Other Site Improvements		
Bike parking equipment	\$ 2,500	
Pathways and fencing	\$ 65,000	
Schoolyard benches and other amenities	\$ 45,000	
Schoolyard lighting	\$ 25,000	
Other Site Improvements Subtotal	\$ 137,500	\$ -
Total Estimated Fundraising Target: \$ 1,235,000 \$ 90,500		



Project Timeline and Next Steps

Although there has already been a significant amount of time and energy invested in the schoolyard redevelopment project by Kagel School and its partners, the compilation of this conceptual plan document realistically represents step one of a multi-year, major construction-focused redevelopment project.

The next phase of project development is fundraising, which is intended to conclude by the end of 2024. The scope of the construction is based on the funds obtained through budget allocations, grants, donations, and school fundraisers. Engineering, surveying, and architecture firms are typically hired in fall to support the

detailed design and permitting process. To minimize disruption to regularly scheduled school functions, it is preferred to conduct construction over a relatively short time frame in summer months.

Big changes like this project require a great deal of time, resources, and, most of all, commitment. Accomplishing this conceptual redevelopment plan is a major milestone itself. This plan shows the school's desire and ability to focus its efforts on meaningful outdoor education and healthy learning spaces for their students and community.



For information on how to support Kagel School's schoolyard redevelopment:

Please go to Reflo's website: www.RefloH2o.com or send an email to: lisa.neeb@RefloH2o.com

Supporting Organizations



The Milwaukee Metropolitan Sewerage District (MMSD) is a regional government agency that provides water reclamation and flood management services for about 1.1 million people in 28 communities in the Greater Milwaukee Area. MMSD is a strong supporter of green infrastructure, with many available resources.



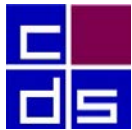
Milwaukee Public Schools is committed to accelerating student achievement, building positive relationships between youth and adults, and cultivating leadership at all levels. Many departments are engaged on an ongoing basis to support the multifaceted schoolyard redevelopment projects.



The mission of the Milwaukee Public Schools Foundation is to inspire and motivate the community, including philanthropic partners, businesses, families, and former and current staff and students in the support of Milwaukee Public Schools and the academic achievement of its students.



As a nonprofit, Reflo partners with Milwaukee-area schools, neighborhood associations, community garden groups, and local governments to promote sustainable water management such as green infrastructure through education, research, and the implementation of community-based water projects.



Community Design Solutions (CDS) is a funded design center in the UWM School of Architecture & Urban Planning (SARUP) that assists communities, agencies, civic groups, and campuses throughout Wisconsin. CDS provides preliminary design and planning services to underserved communities and agencies.



The Environmental Collaboration Office (ECO) strives to make Milwaukee a world class eco-city. ECO develops practical and racially equitable solutions that improve people's lives and the economy while working to protect and restore the natural ecosystems that support our long-term prosperity. ECO collaborates with the community, develop global partnerships, offer award-winning programs, and implement the Milwaukee Climate and Equity Plan.



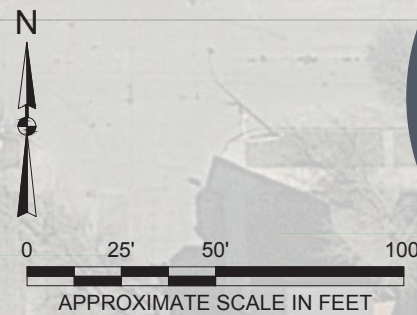
The Green Schools Consortium of Milwaukee (GSCM) is a robust local network of schools and resource providers that are motivated to promote greener, healthier schools. Through bimonthly meetings and an annual conference, hundreds of local participants have collectively shared ideas, resources, and lessons learned.



The Fund for Lake Michigan (FFLM) provides grants to support organizations and communities committed to enhancing the Lake's health through projects with both immediate and long-term benefits. The FFLM has been a longtime partner of the green and healthy schools movement and continuously promotes its expansion.

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NEED FOR STORMWATER MANAGEMENT

Stormwater flows across the playground causing asphalt erosion and icy conditions in the winter months. There is opportunity to install green infrastructure and divert stormwater from the parking lot into bioswales and an underground cistern on Kagel's schoolyard to further manage stormwater where it falls.

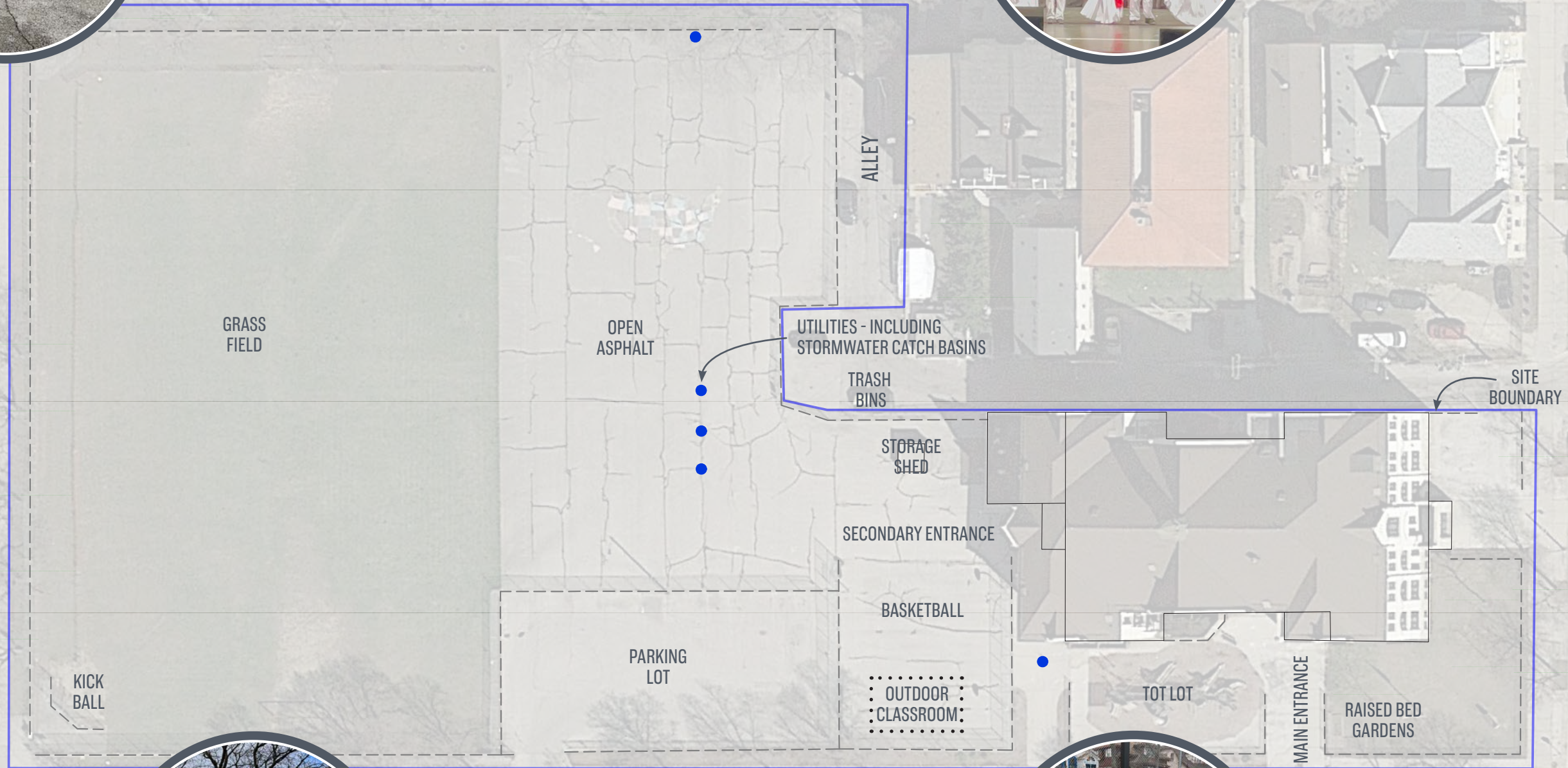
ASPHALT GAMES

Students play several asphalt games on Kagel's schoolyard. Hopscotch, four square, and other pavement markings help guide students to use a variety of spaces during recess and physical education classes.



DIVERSE LEARNING COMMUNITY

Kagel School pairs bilingual and monolingual education to support its multicultural school community. This approach honors cultural diversity, promotes positive character development, and supports active citizenship as students build problem-solving and biliteracy skills in English and Spanish.



EXISTING GREEN SPACE

Kagel School is an active community hub. The existing green space and fields are often used not only by the students during the school day but also by the community for recreation during out-of-school times. These areas provide an opportunity to optimize recreation and regular use with additional design considerations.



EXISTING OUTDOOR CLASSROOM

Kagel received an outdoor classroom pavilion in the fall of 2022. This existing structure provides an island of shade and rest area for students and surrounding community who utilize the schoolyard. However, there is opportunity to optimize its use with additional seating and design elements that support outdoor education.



Reflo

EXISTING SITE PLAN

Drawing Title:

Project:
Albert E. Kagel School
1210 W Mineral Avenue
Milwaukee, WI 53204

Project No:
C7.MPS.35

Figure No:

Designed By: Reflo, CIS, and Kagel's Green Team
Drawn By: Justin Hegarty

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NATURE PLAY ELEMENTS

Kagel School would like to incorporate natural playscape elements that nurture childhood creativity, foster wonder and imagination, and inspire healthy risk-taking.



MULTIPLE ARTS OPPORTUNITIES

There are many opportunities to include artistic elements throughout the schoolyard including art posts, murals, and educational signage to support the redevelopment project. The outdoor classrooms will also provide a setting for the performing arts.



ADDITIONAL GREEN SPACE AND RECREATIONAL IMPROVEMENTS

Reducing the amount of asphalt on the school grounds is a central component of the redevelopment plan. Along with new green space, earthen mounds, and tree plantings, Kagel would like to add a synthetic turf soccer field, colorful pavement markings, and gaga ball pits to support physical activity, team building, and cooperative play.



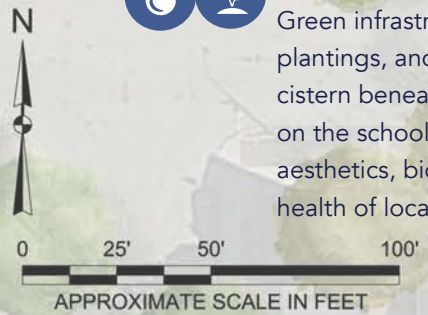
STORMWATER GREEN INFRASTRUCTURE

Green infrastructure including bioswales, native plantings, and a synthetic turf field with an underground cistern beneath it will help to better manage stormwater on the school grounds, where it falls, improving the aesthetics, biodiversity, recreational facilities, and the health of local watersheds.



OUTDOOR CLASSROOMS & INCLUSIVE LEARNING

To help facilitate ecoliteracy and all of the sensory exploration that comes with outdoor learning, Kagel would like to enhance their current outdoor learning spaces with natural seating options, build an additional outdoor classroom that can serve as an amphitheater for the performing arts and envisions sensory panels and communications boards to further promote an inclusive environment for all learners.



PROPOSED SITE PLAN

Drawing Title:

Project: Albert E. Kagel School
1210 W Mineral Street,
Milwaukee, WI 53204

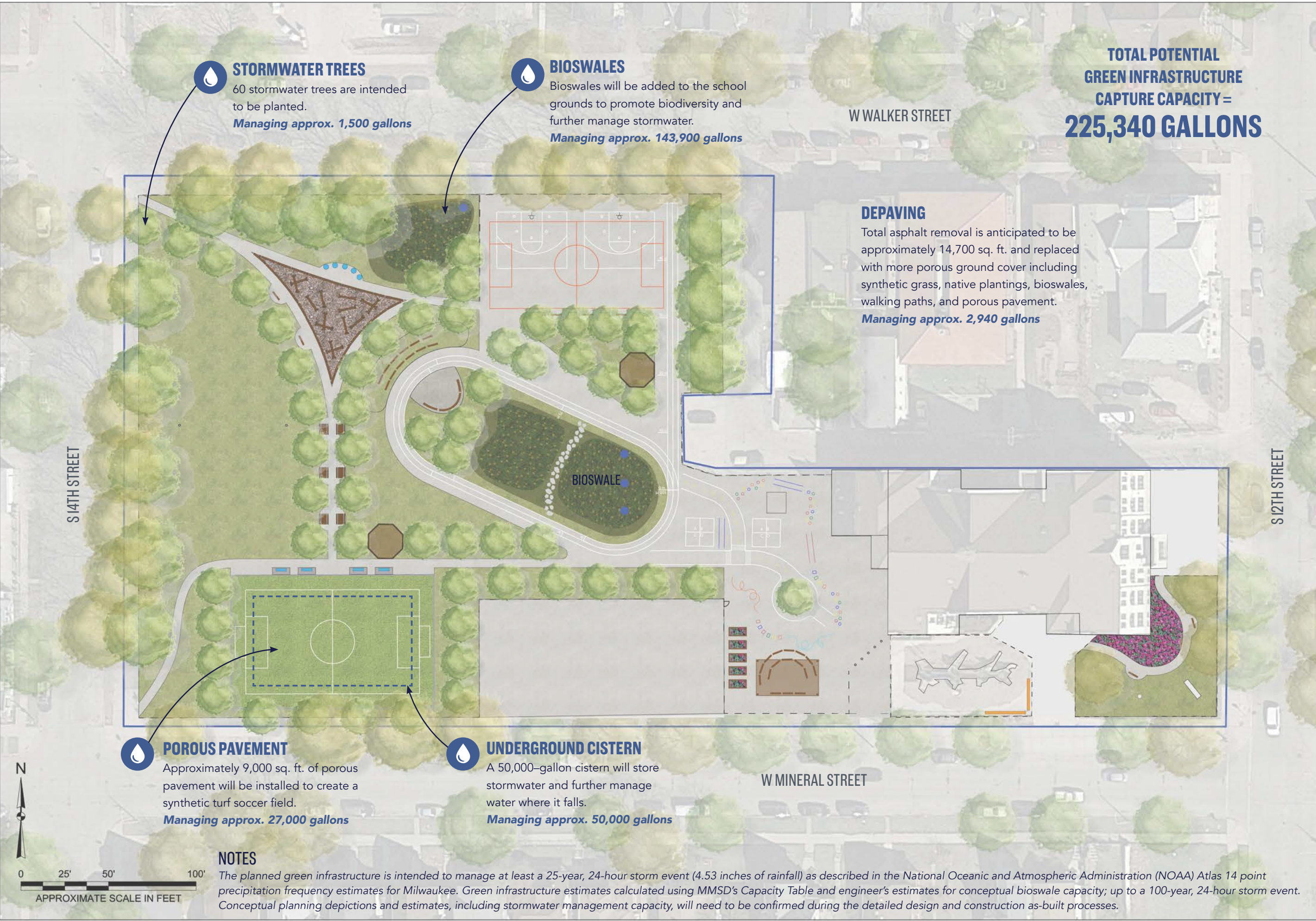
Project No: C7.MPS.35

Figure No: 2

Designed By: Reflo, CDS, and Kagel's Green Team
Drawn By: Justin Hegarty

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STORMWATER TREES
60 stormwater trees are intended to be planted.
Managing approx. 1,500 gallons

BIOSWALES
Bioswales will be added to the school grounds to promote biodiversity and further manage stormwater.
Managing approx. 143,900 gallons

DEPAVING
Total asphalt removal is anticipated to be approximately 14,700 sq. ft. and replaced with more porous ground cover including synthetic grass, native plantings, bioswales, walking paths, and porous pavement.
Managing approx. 2,940 gallons

POROUS PAVEMENT
Approximately 9,000 sq. ft. of porous pavement will be installed to create a synthetic turf soccer field.
Managing approx. 27,000 gallons

UNDERGROUND CISTERN
A 50,000-gallon cistern will store stormwater and further manage water where it falls.
Managing approx. 50,000 gallons

TOTAL POTENTIAL GREEN INFRASTRUCTURE CAPTURE CAPACITY = 225,340 GALLONS

NOTES

The planned green infrastructure is intended to manage at least a 25-year, 24-hour storm event (4.53 inches of rainfall) as described in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 point precipitation frequency estimates for Milwaukee. Green infrastructure estimates calculated using MMSD's Capacity Table and engineer's estimates for conceptual bioswale capacity; up to a 100-year, 24-hour storm event. Conceptual planning depictions and estimates, including stormwater management capacity, will need to be confirmed during the detailed design and construction as-built processes.



Drawing Title:

STORMWATER GREEN INFRASTRUCTURE PLAN

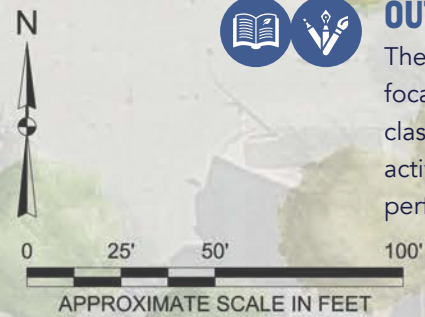
Project: Albert E. Kagel School
1210 W Mineral Avenue
Milwaukee, WI 53204

Designed By: Reflo, CDS, and Kagel's Green Team
Drawn By: Justin Hegarty

Project No: C7.MPS.35

Figure No: 3

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MUSICAL PLAY ELEMENTS

To enhance the learning experience and create a full sensory experience, Kagel would like to add secured musical instruments to provide students the opportunity to hone their creativity by freely creating music on the schoolyard.



EDUCATIONAL SIGNAGE AND EXHIBITION

Looking at the redeveloped school grounds through the lens of exhibition, there are several opportunities to display educational themes through artistic means. Students can participate in the original creation of the signs and if panels are to be easily replaceable, portions of the signs could be refreshed with new thematic student art on a regular basis.

Potential Sign Themes

- ① Bioswales and Stormwater Management
- ② School Gardens and Healthy Food Access
- ③ Outdoor Classroom - Use Schedule
- ④ Benefits of Nature Play
- ⑤ Project Partners and Site History
- ⑥ Native Plantings and Pollinator Species



MURALS AND PAVEMENT MARKINGS

Kagel would like to further activate the schoolyard through the visual arts. There are opportunities to add murals and colorful pavement markings to support sensory and curricular connections. Adding professionally developed murals with themes that reflect the schoolyard redevelopment can help to make the space feel more welcoming and connected while also providing an opportunity for local artists.



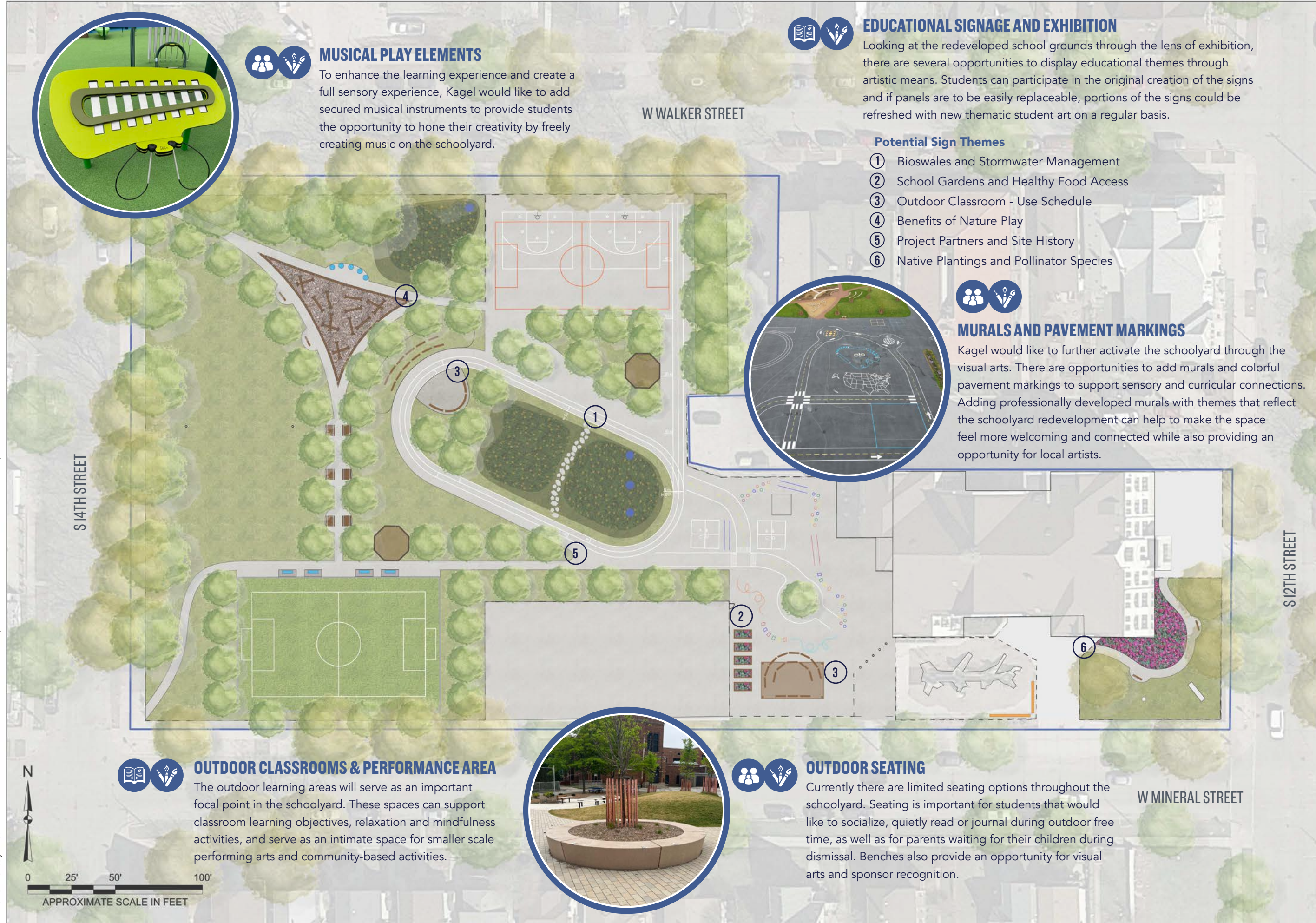
OUTDOOR SEATING

Currently there are limited seating options throughout the schoolyard. Seating is important for students that would like to socialize, quietly read or journal during outdoor free time, as well as for parents waiting for their children during dismissal. Benches also provide an opportunity for visual arts and sponsor recognition.



OUTDOOR CLASSROOMS & PERFORMANCE AREA

The outdoor learning areas will serve as an important focal point in the schoolyard. These spaces can support classroom learning objectives, relaxation and mindfulness activities, and serve as an intimate space for smaller scale performing arts and community-based activities.



Drawing Title:

ARTS, OUTDOOR EDUCATION, AND COMMUNITY ENGAGEMENT PLAN

Project: Albert E. Kagel School
1210 W Mineral Avenue,
Milwaukee, WI 53204

Designed By: Reflo, CDS, and Kagel's Green Team
Drawn By: Justin Hegarty

Project No: C7.MPS.35

Figure No:

For more information on how to support the /
Para más información en cómo apoyar a

Albert E Kagel School

schoolyard redevelopment project please contact: /
proyecto de reurbanización del patio de recreo por favor contacte:

Juan Mejia – Principal / Director

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**Maria Ramirez-Acevedo – K3 Head Start Bilingual Teacher /
Maestra Bilingüe de Head Start K-3**

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**Lisa Neeb – Green & Healthy Schools Program Manager /
Gerente de Programa de Escuelas Verdes y Saludables**

Reflo - Sustainable Water Solutions

lisa.neeb@RefloH2o.com



For additional information please visit /
Para obtener información adicional, visite

www.RefloH2o.com