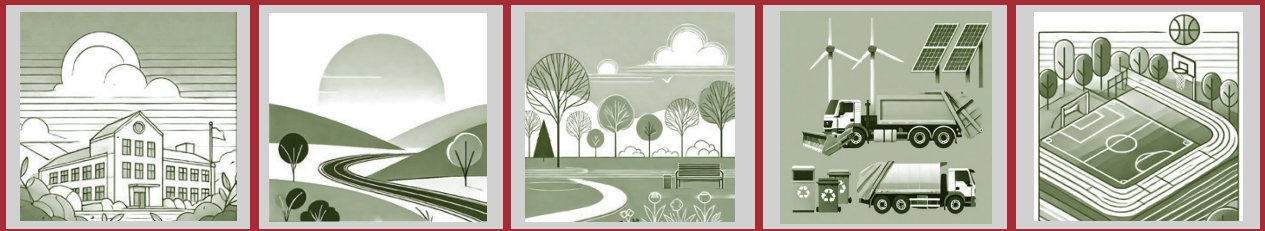
Climate Awareness Association

HELVETAS

GREEN CHECKLIST

FOR MUNICIPAL CAPITAL PROJECTS



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The ***Green Checklist*** has been developed as a comprehensive guide for municipalities to enhance their project design with sustainable, eco-friendly, and climate-resilient practices. This tool is tailored to assist municipal officials in incorporating essential environmental considerations into their projects, thereby promoting long-term sustainability and climate adaptation.

Purpose of the Green Checklist: The checklist is designed to support municipalities in aligning their capital projects with environmental standards and sustainable practices. It was created to help ensure that projects financed by grants or other municipal funds meet climate resilience and sustainability criteria. By following this guide, municipalities can create projects that contribute positively to the environment and public well-being.

How to Use the Green Checklist? The checklist can be used as a reference at various stages of project planning and execution. Ideally, it should be attached as an annex to tendering documents, ensuring that both municipalities and contractors are aware of the sustainable criteria to be met. This approach allows project planners and implementers to integrate eco-friendly measures from the start and confirm that these measures are included throughout the project lifecycle.

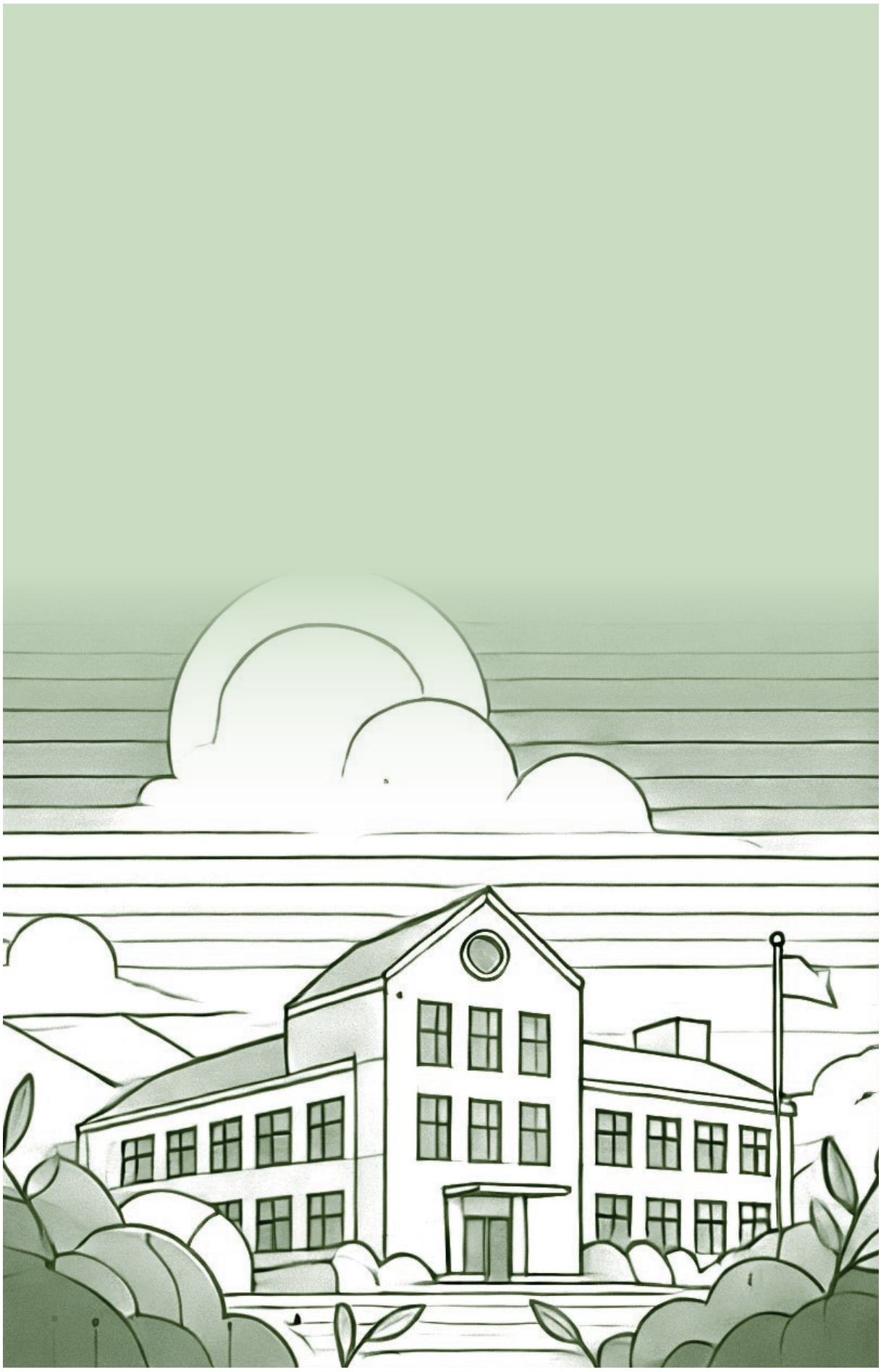
Structure of the Green Checklist: The checklist is organized by project categories and details essential criteria for each. For example, under the Schools section, it outlines considerations for site selection, such as choosing higher ground to avoid flooding and ensuring proximity to public transport. Each category is broken down further into practical steps and criteria for sustainable development, such as:

- **Site Selection and Layout:** Evaluating locations for risks like flooding, pollution, and potential climate impacts.
- **Design and Construction:** Incorporating renewable energy solutions and using recycled, low-impact materials.
- **Resilience and Adaptation:** Implementing strategies to withstand extreme weather conditions and promote biodiversity.

Promoting Good Project Design: The criteria outlined in the checklist aim to foster best practices for sustainable project design and development. Municipal officials are encouraged to use this tool not only during the design phase but also as a requirement for project implementers to demonstrate how they will address and meet these sustainability criteria during execution.

By embedding the *Green Checklist* into the planning and procurement processes, municipalities can ensure that their capital projects contribute to a greener, more sustainable future.

The Green Checklist



Schools

Code	Category	Section	Description	Criteria	Importance	Yes	No	N/A
1	Site Selection and Layout	Location	Choose a location on higher ground to avoid flooding	• Choose a location on higher ground to avoid flooding • Ensure that the site is not in a designated flood zone • Assess historical flood data for the area • Implement flood mitigation measures • Consider proximity to water sources	Major	☐	☐	☐
1.1	Site Selection and Layout	Location	Determine the school's location within walking distance from public transport	• Determine the school's location within walking distance from public transport • Ensure safe pedestrian routes • Provide connections to cycling paths • Plan for future transportation developments	Minor	☐	☐	☐
1.2	Site Selection and Layout	Location	Avoid locations near industrial areas to reduce exposure to pollution	• Avoid locations near industrial areas to reduce exposure to pollution • Check local air quality indexes • Conduct a pollution risk assessment at the site • Evaluate potential sources of noise pollution	Recommended	☐	☐	☐

Code	Category	Section	Description	Criteria	Importance	Yes	No	N/A
1.3	Site Selection and Layout	Location	Select a site with existing shade trees for natural cooling	• Select a site with existing shade trees for natural cooling • Plan to integrate trees into the landscape design • Protect existing trees during construction • Plant additional native shade trees • Design outdoor areas to benefit from natural shade	Recommended	☐	☐	☐
1.4	Site Selection and Layout	Location	Ensure the site has good drainage to prevent waterlogging	• Ensure the site has good drainage to prevent waterlogging • Conduct a soil and drainage assessment • Use permeable paving materials	Recommended	☐	☐	☐
1.5	Site Selection and Layout	Location	Choose a location that maximizes natural daylight	• Choose a location that maximizes natural daylight • Orient buildings to take advantage of the sun's path • Minimize the use of artificial lighting • Use light shelves to enhance daylight penetration • Avoid shading from nearby structures	Recommended	☐	☐	☐
1.6	Site Selection and Layout	Location	Avoid sites with a history of contamination or hazardous waste	• Avoid sites with a history of contamination or hazardous waste • Review historical land use records • Conduct soil testing for contaminants • Implement remediation plans if necessary • Use barriers to prevent contamination spread	Recommended	☐	☐	☐

Code	Category	Section	Description	Criteria	Importance	Yes	No	N/A
1.7	Site Selection and Layout	Location	Preserve existing mature trees	• Preserve existing mature trees • Protect trees during construction • Incorporate trees into the overall site design • Establish tree protection zones • Plan for long-term tree health and maintenance	Recommended	☐	☐	☐
2.1	Site Selection and Layout	Location	Utilize natural slopes for efficient water runoff	• Utilize natural slopes for efficient water runoff • Design terraces and retaining walls where necessary • Prevent soil erosion with appropriate planting • Use natural slopes to create varied outdoor spaces • Integrate slopes into the stormwater management plan	Recommended	☐	☐	☐
2.2	Site Selection and Layout	Location	Integrate existing bodies of water into the landscape design	• Integrate existing bodies of water into the landscape design • Protect water bodies from pollution • Design water features to support local wildlife	Recommended	☐	☐	☐
2.3	Site Selection and Layout	Location	Preserve native vegetation to support local biodiversity	• Preserve native vegetation to support local biodiversity • Avoid the use of invasive species	Recommended	☐	☐	☐
2.4	Site Selection and Layout	Location	Design classrooms with large windows for natural light	• Design classrooms with large windows for natural light • Use low-E glass to reduce heat gain and loss • Maximize window placement for daylighting • Use interior glass walls to spread light	Recommended	☐	☐	☐

Code	Category	Section	Description	Criteria	Importance	Yes	No	N/A
2.6	Site Selection and Layout	Location	Incorporate thermal mass materials like concrete or brick	• Incorporate thermal mass materials like concrete or brick • Use materials that help stabilize indoor temperatures • Use thermal mass in frequently occupied spaces	Recommended	☐	☐	☐
3.4	Design and Construction	Energy-Efficient Design	Design for natural cross-ventilation	• Design for natural cross-ventilation • Position windows to allow for airflow • Use ventilation corridors to enhance air movement • Combine with mechanical ventilation systems • Ensure operable windows for occupant control	Major	☐	☐	☐
3.5	Design and Construction	Energy-Efficient Design	Install skylights in common areas	• Install skylights in common areas • Use skylights to reduce the need for artificial lighting • Incorporate solar tubes for interior spaces • Use diffusers to distribute light evenly • Design for maintenance and cleaning access	Minor	☐	☐	☐
3.7	Design and Construction	Energy-Efficient Design	Implement zoned heating and cooling systems	• Implement zoned heating and cooling systems • Use programmable thermostats for efficiency • Design zones based on occupancy patterns • Monitor and adjust zones for optimal performance	Major	☐	☐	☐
3.8	Design and Construction	Renewable Energy	Install solar panels on the roof	• Install solar panels on the roof • Design roof orientation for maximum solar exposure • Integrate with the building's electrical system • Monitor solar panel performance regularly	Major	☐	☐	☐

Code	Category	Section	Description	Criteria	Importance	Yes	No	N/A
3.9	Design and Construction	Renewable Energy	Set up a small wind turbine for supplementary power	• Set up a small wind turbine for supplementary power • Assess site wind conditions for feasibility • Combine solar power for hybrid systems • Monitor wind turbine performance • Integrate with the building's electrical system	Minor	☐	☐	☐
4	Design and Construction	Renewable Energy	Use geothermal heat pumps for heating and cooling	• Use geothermal heat pumps for heating and cooling • Design for efficient ground loop placement • Monitor geothermal system performance	Recommended	☐	☐	☐
4.1	Design and Construction	Renewable Energy	Install solar water heaters	• Install solar water heaters • Design for optimal solar exposure • Combine with traditional water heating systems • Maintain systems for long-term efficiency	Recommended	☐	☐	☐
4.2	Design and Construction	Renewable Energy	Incorporate building-integrated photovoltaics (BIPV)	• Incorporate building-integrated photovoltaics (BIPV) • Design BIPV as part of the building envelope • Combine with other renewable energy systems • Monitor BIPV system performance • Integrate with building electrical systems	Recommended	☐	☐	☐
4.3	Design and Construction	Renewable Energy	Use solar-powered outdoor lighting	• Use solar-powered outdoor lighting • Design for solar panel placement on fixtures • Ensure proper maintenance of solar components	Recommended	☐	☐	☐

Code	Category	Section	Description	Criteria	Importance	Yes	No	N/A
4.4	Design and Construction	Renewable Energy	Set up an energy dashboard to monitor renewable energy production	• Set up an energy dashboard to monitor renewable energy production • Use real-time monitoring for energy management • Integrate with building management systems • Adjust energy systems based on data insights	Recommended	☐	☐	☐
4.5	Design and Construction	Sustainable Materials	Use recycled steel for structural components	• Use recycled steel for structural components • Source steel from certified recycling programs • Combine with other sustainable materials • Monitor steel performance and maintenance • Ensure structural integrity and safety	Recommended	☐	☐	☐
4.6	Design and Construction	Sustainable Materials	Install flooring made from reclaimed wood	• Install flooring made from reclaimed wood • Source wood from certified reclaiming programs • Combine with low-VOC finishes for durability • Monitor wood flooring performance • Ensure proper installation and maintenance	Recommended	☐	☐	☐
4.7	Design and Construction	Sustainable Materials	Use low-VOC (Volatile Organic Compound) paints and finishes	• Use low-VOC paints and finishes • Source from certified low-VOC suppliers • Combine with other sustainable building materials • Monitor indoor air quality for VOC levels • Ensure proper application and ventilation	Recommended	☐	☐	☐

Code	Category	Section	Description	Criteria	Importance	Yes	No	N/A
4.8	Design and Construction	Sustainable Materials	Install recycled glass countertops in laboratories	• Install recycled glass countertops in laboratories • Source glass from certified recycling programs • Combine with other sustainable laboratory materials • Ensure durability in lab environments	Recommended	☐	☐	☐
5	Design and Construction	Water Efficiency	Install dual-flush toilets	• Install dual-flush toilets • Monitor water usage for efficiency • Combine with low-flow fixtures • Ensure proper installation and maintenance	Recommended	☐	☐	☐
5.1	Design and Construction	Water Efficiency	Use sensor-operated faucets in restrooms	• Use sensor-operated faucets in restrooms • Monitor water usage for efficiency • Combine with low-flow fixtures • Ensure proper installation and maintenance	Recommended	☐	☐	☐
5.2	Design and Construction	Water Efficiency	Implement a rainwater harvesting system for irrigation	• Implement a rainwater harvesting system for irrigation • Design for optimal rainwater capture • Combine with greywater systems • Monitor system performance • Maintain systems for long-term efficiency	Recommended	☐	☐	☐

Code	Category	Section	Description	Criteria	Importance	Yes	No	N/A
5.3	Design and Construction	Water Efficiency	Use greywater systems for toilet flushing	• Use greywater systems for toilet flushing • Design for efficient water reuse • Combine rainwater harvesting systems • Monitor system performance • Maintain systems for long-term efficiency	Recommended	☐	☐	☐
5.4	Design and Construction	Water Efficiency	Install drip irrigation systems for landscaping	• Install drip irrigation systems for landscaping • Design for efficient water use • Combine with native, drought-tolerant plants • Monitor system performance • Maintain systems for long-term efficiency	Recommended	☐	☐	☐
5.5	Design and Construction	Water Efficiency	Plant native, drought-tolerant plants	• Plant native, drought-tolerant plants • Design landscaping for minimal water use • Combine with drip irrigation systems • Monitor plant health and water use • Maintain landscaping for long-term sustainability	Recommended	☐	☐	☐
5.7	Design and Construction	Indoor Environmental Quality	Use operable windows to allow fresh air	• Use operable windows to allow fresh air • Design for natural ventilation • Combine with mechanical ventilation systems • Monitor indoor air quality	Recommended	☐	☐	☐
6.3	Design and Construction	Indoor Environmental Quality	Use CO2 sensors to control ventilation	• Use CO2 sensors to control ventilation • Monitor indoor air quality • Adjust ventilation based on occupancy • Ensure proper sensor calibration and maintenance	Recommended	☐	☐	☐

Code	Category	Section	Description	Criteria	Importance	Yes	No	N/A
6.4	Design and Construction	Indoor Environmental Quality	Install green walls or indoor plants to improve air quality	• Install green walls or indoor plants to improve air quality • Choose low-maintenance plant species • Combine with other air quality measures • Monitor plant health and indoor air quality	Recommended	☐	☐	☐
6.5	Construction Practices	Waste Reduction	Separate and recycle construction waste	• Separate and recycle construction waste • Use designated bins for different materials • Design a specific area for composting	Recommended	☐	☐	☐
6.7	Construction Practices	Waste Reduction	Implement a waste management plan with targets	• Implement a waste management plan with targets • Set specific waste reduction goals • Monitor waste volumes regularly • Adjust plan based on performance	Recommended	☐	☐	☐
6.8	Construction Practices	Waste Reduction	Reuse materials from demolished buildings	• Reuse materials from demolished buildings • Identify reusable materials early in the project • Monitor material reuse volumes	Recommended	☐	☐	☐
6.9	Construction Practices	Waste Reduction	Donate excess materials to local community projects	• Donate excess materials to local community projects • Identify suitable materials for donation • Partner with local community groups	Recommended	☐	☐	☐
7	Construction Practices	Waste Reduction	Use digital plans to reduce paper waste	• Use digital plans to reduce paper waste • Implement digital project management tools • Monitor paper usage for reduction targets • Partner with suppliers for digital solutions	Recommended	☐	☐	☐

Code	Category	Section	Description	Criteria	Importance	Yes	No	N/A
7.2	Construction Practices	Eco-Friendly Practices	Use electric or low-emission construction equipment	• Use electric or low-emission construction equipment • Identify suitable low-emission equipment • Monitor emissions for reduction targets	Recommended	☐	☐	☐
7.4	Construction Practices	Eco-Friendly Practices	Use biodegradable erosion control products	• Use biodegradable erosion control products • Identify suitable erosion control products • Monitor erosion control performance	Recommended	☐	☐	☐
7.7	Construction Practices	Eco-Friendly Practices	Use water-efficient equipment for site cleaning	• Use water-efficient equipment for site cleaning • Identify suitable water-efficient equipment • Monitor water usage for reduction targets	Recommended	☐	☐	☐
7.8	Construction Practices	Eco-Friendly Practices	Ensure proper disposal of hazardous materials	• Ensure proper disposal of hazardous materials • Identify suitable disposal methods • Monitor hazardous material disposal	Recommended	☐	☐	☐
8.0	Energy and Water Systems	Efficient Systems	Use LED lighting throughout the school	• Use LED lighting throughout the school • Identify suitable LED lighting solutions • Monitor lighting performance regularly	Recommended	☐	☐	☐
8.2	Energy and Water Systems	Efficient Systems	Install energy-efficient kitchen appliances	• Install energy-efficient kitchen appliances • Identify suitable energy-efficient appliances • Monitor appliance performance regularly	Recommended	☐	☐	☐
8.3	Energy and Water Systems	Efficient Systems	Use high-efficiency boilers or heat pumps	• Use high-efficiency boilers or heat pumps • Identify suitable high-efficiency boilers or heat pumps • Monitor boiler or heat pump performance	Recommended	☐	☐	☐

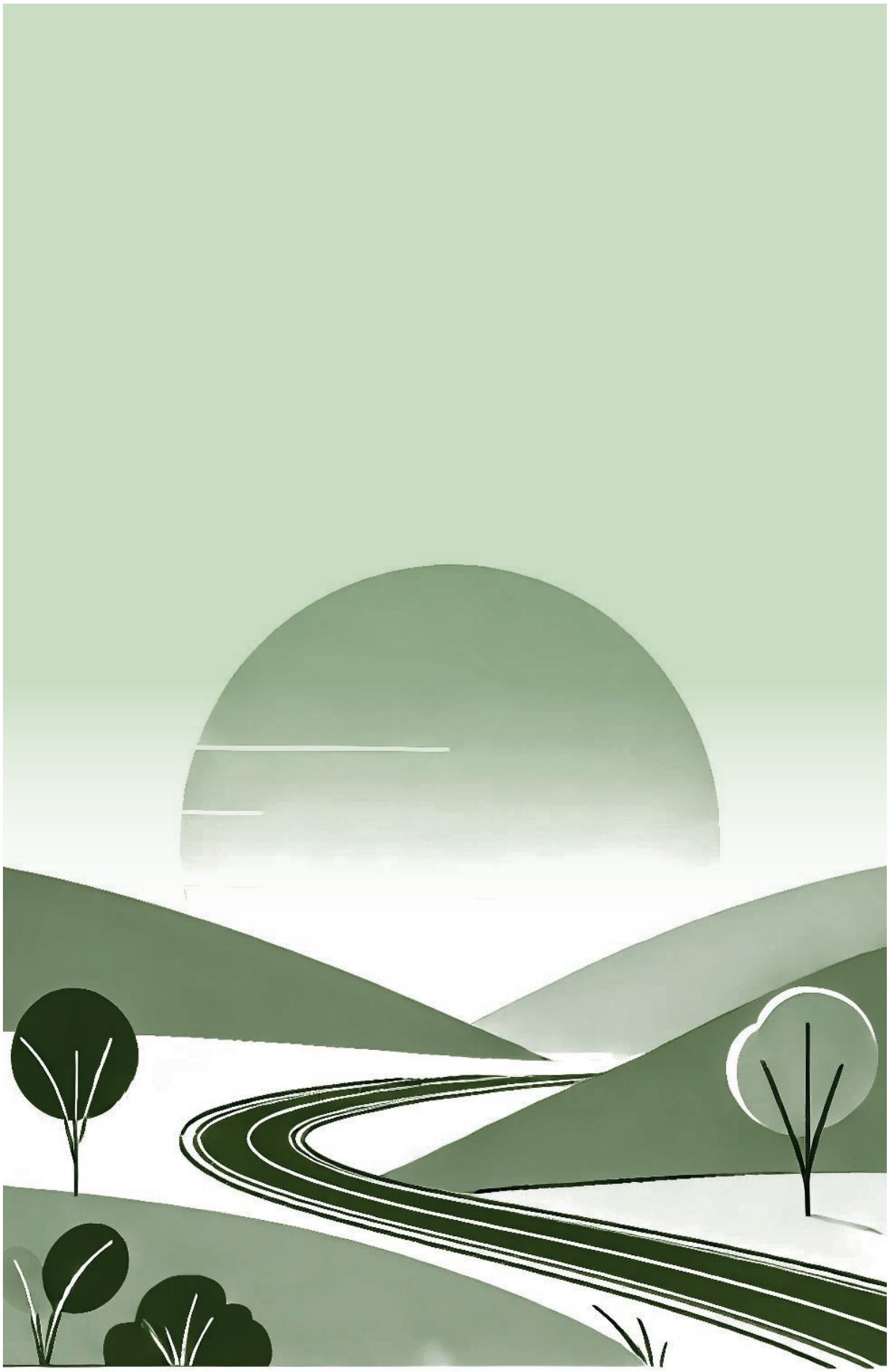
Code	Category	Section	Description	Criteria	Importance	Yes	No	N/A
8.5	Energy and Water Systems	Efficient Systems	Use energy recovery ventilation systems	• Use energy recovery ventilation systems • Identify suitable energy recovery ventilation systems • Monitor ventilation system performance	Recommended	☐	☐	☐
8.6	Energy and Water Systems	Renewable Integration	Connect solar panels to the grid	• Connect solar panels to the grid • Identify suitable grid connection solutions • Monitor solar panel performance	Recommended	☐	☐	☐
8.7	Energy and Water Systems	Renewable Integration	Use battery storage for renewable energy	• Use battery storage for renewable energy • Identify suitable battery storage solutions • Monitor battery storage performance • Educate workers on battery storage benefits • Partner with suppliers for battery storage solutions	Recommended	☐	☐	☐
9.0	Energy and Water Systems	Renewable Integration	Offer incentives for renewable energy use	• Offer incentives for renewable energy use • Identify suitable incentive programs • Monitor renewable energy usage regularly • Partner with renewable energy providers for incentives	Recommended	☐	☐	☐
9.1	Energy and Water Systems	Renewable Integration	Set up a microgrid for energy independence	• Set up a microgrid for energy independence • Identify suitable microgrid solutions • Monitor microgrid performance • Partner with suppliers for microgrid solutions	Recommended	☐	☐	☐

Code	Category	Section	Description	Criteria	Importance	Yes	No	N/A
9.4	Energy and Water Systems	Water Management	Use permeable paving materials in parking lots	• Use permeable paving materials in parking lots • Identify suitable permeable paving solutions • Monitor permeable paving performance • Educate workers on permeable paving benefits • Partner with suppliers for permeable paving solutions	Recommended	☐	☐	☐
9.6	Energy and Water Systems	Water Management	Implement a green roof to manage stormwater	• Implement a green roof to manage stormwater • Identify suitable green roof solutions • Monitor green roof performance	Recommended	☐	☐	☐
9.7	Energy and Water Systems	Water Management	Install water meters to monitor usage	• Install water meters to monitor usage • Identify suitable water meter solutions • Monitor water usage regularly • Partner with suppliers for water meter solutions	Recommended	☐	☐	☐
9.8	Energy and Water Systems	Water Management	Use water-efficient fixtures in all restrooms	• Use water-efficient fixtures in all restrooms • Identify suitable water-efficient fixtures • Monitor water usage for reduction targets • Ensure proper maintenance of water-efficient fixtures	Recommended	☐	☐	☐
10	Resilience and Adaptation	Climate Resilience	Design buildings to withstand extreme weather (e.g., reinforced roofs)	• Design buildings to withstand extreme weather (e.g., reinforced roofs) • Use durable materials for construction • Monitor building performance regularly • Ensure proper maintenance of building components	Recommended	☐	☐	☐

Code	Category	Section	Description	Criteria	Importance	Yes	No	N/A
10.1	Resilience and Adaptation	Climate Resilience	Use flood-resistant materials in flood-prone areas	• Use flood-resistant materials in flood-prone areas • Design for optimal flood resistance • Combine with other flood management practices • Monitor material performance regularly • Ensure proper maintenance of flood-resistant materials	Recommended	☐	☐	☐
10.2	Resilience and Adaptation	Climate Resilience	Install backup power systems for emergencies	• Install backup power systems for emergencies • Design for efficient backup power • Combine with renewable energy sources • Monitor backup power performance regularly	Recommended	☐	☐	☐
10.3	Resilience and Adaptation	Climate Resilience	Use heat-reflective materials on exterior surfaces	• Use heat-reflective materials on exterior surfaces • Design for optimal heat reflection • Combine with other cooling strategies • Monitor material performance regularly • Ensure proper maintenance of heat-reflective surfaces	Recommended	☐	☐	☐
10.4	Resilience and Adaptation	Climate Resilience	Elevate critical infrastructure above potential flood levels	• Elevate critical infrastructure above potential flood levels • Design for optimal elevation • Combine with other flood management practices • Monitor infrastructure performance regularly • Ensure proper maintenance of elevated infrastructure	Recommended	☐	☐	☐

Code	Category	Section	Description	Criteria	Importance	Yes	No	N/A
10.5	Resilience and Adaptation	Climate Resilience	Design flexible classrooms that can serve as shelters	• Design flexible classrooms that can serve as shelters • Design for optimal flexibility and safety • Combine with other resilience measures • Monitor classroom performance regularly	Recommended	☐	☐	☐
10.6	Resilience and Adaptation	Climate Resilience	Implement a stormwater management plan	• Implement a stormwater management plan • Design for efficient stormwater management • Combine with other green infrastructure practices • Monitor plan performance regularly • Adjust practices based on performance data	Recommended	☐	☐	☐
10.7	Resilience and Adaptation	Adaptation Strategies	Plan for flexible learning spaces	• Plan for flexible learning spaces • Design for optimal flexibility and adaptability • Combine with other sustainable practices • Monitor space performance regularly • Adjust practices based on performance data	Recommended	☐	☐	☐
10.9	Resilience and Adaptation	Adaptation Strategies	Design outdoor spaces for multiple uses	• Design outdoor spaces for multiple uses • Design for optimal flexibility and adaptability • Combine with other sustainable practices • Monitor space performance regularly • Adjust practices based on performance data	Recommended	☐	☐	☐

Code	Category	Section	Description	Criteria	Importance	Yes	No	N/A
11.1	Resilience and Adaptation	Adaptation Strategies	Plan for future expansion with sustainable materials	• Plan for future expansion with sustainable materials • Design for optimal sustainability and adaptability • Combine with other sustainable practices • Monitor expansion performance regularly • Adjust practices based on performance data	Recommended	☐	☐	☐
11.2	Resilience and Adaptation	Adaptation Strategies	Design for easy upgrades to renewable energy systems	• Design for easy upgrades to renewable energy systems • Design for optimal upgradeability and adaptability • Combine with other renewable energy practices • Monitor system performance regularly • Adjust practices based on performance data	Recommended			



Roads

Codes	Category	Section	Description	Criteria	Criteria	Yes	No	N/A
1.0	Site Selection and Layout	Location	Avoid Flood-Prone Areas	• Choose routes on higher ground to avoid flooding • Ensure the route is not in a designated floodplain • Assess historical flood data for the area • Implement flood mitigation measures • Consider proximity to water bodies	Major	☐	☐	☐
1.2	Site Selection and Layout	Location	Accessibility to Public Transportation	• Design routes to connect with public transportation hubs • Provide safe pedestrian access routes • Ensure connectivity with cycling paths • Plan for future transport developments • Assess the availability of multiple transport options	Recommended	☐	☐	☐
1.3	Site Selection and Layout	Location	Shade and Cooling	• Select routes with existing shade trees for natural cooling • Plan to integrate trees into the road design • Protect existing trees during construction • Plant additional native shade trees along the route • Design roadside areas to benefit from natural shade	Recommended	☐	☐	☐

Codes	Category	Section	Description	Criteria	Criteria	Yes	No	N/A
1.5	Site Selection and Layout	Location	Maximize Natural Daylight	• Choose a route that maximizes natural daylight • Orient roads to take advantage of the sun's path • Minimize the use of artificial lighting • Use reflective surfaces to enhance daylight penetration • Avoid shading from nearby structures	Minor	☐	☐	☐
1.6	Site Selection and Layout	Location	Avoid Contaminated Sites	• Avoid routes with a history of contamination or hazardous waste • Review historical land use records • Conduct soil testing for contaminants • Implement remediation plans if necessary • Use barriers to prevent contamination spread	Major	☐	☐	☐
1.8	Site Selection and Layout	Natural Features	Preserve Existing Mature Trees	• Preserve existing mature trees along the route • Protect trees during construction • Incorporate trees into the overall road design • Establish tree protection zones • Plan for long-term tree health and maintenance	Recommended	☐	☐	☐
1.9	Site Selection and Layout	Natural Features	Integrate Existing Bodies of Water	• Integrate existing bodies of water into the road design • Create sustainable water features along the route • Protect water bodies from pollution • Design water features to support local wildlife	Minor	☐	☐	☐

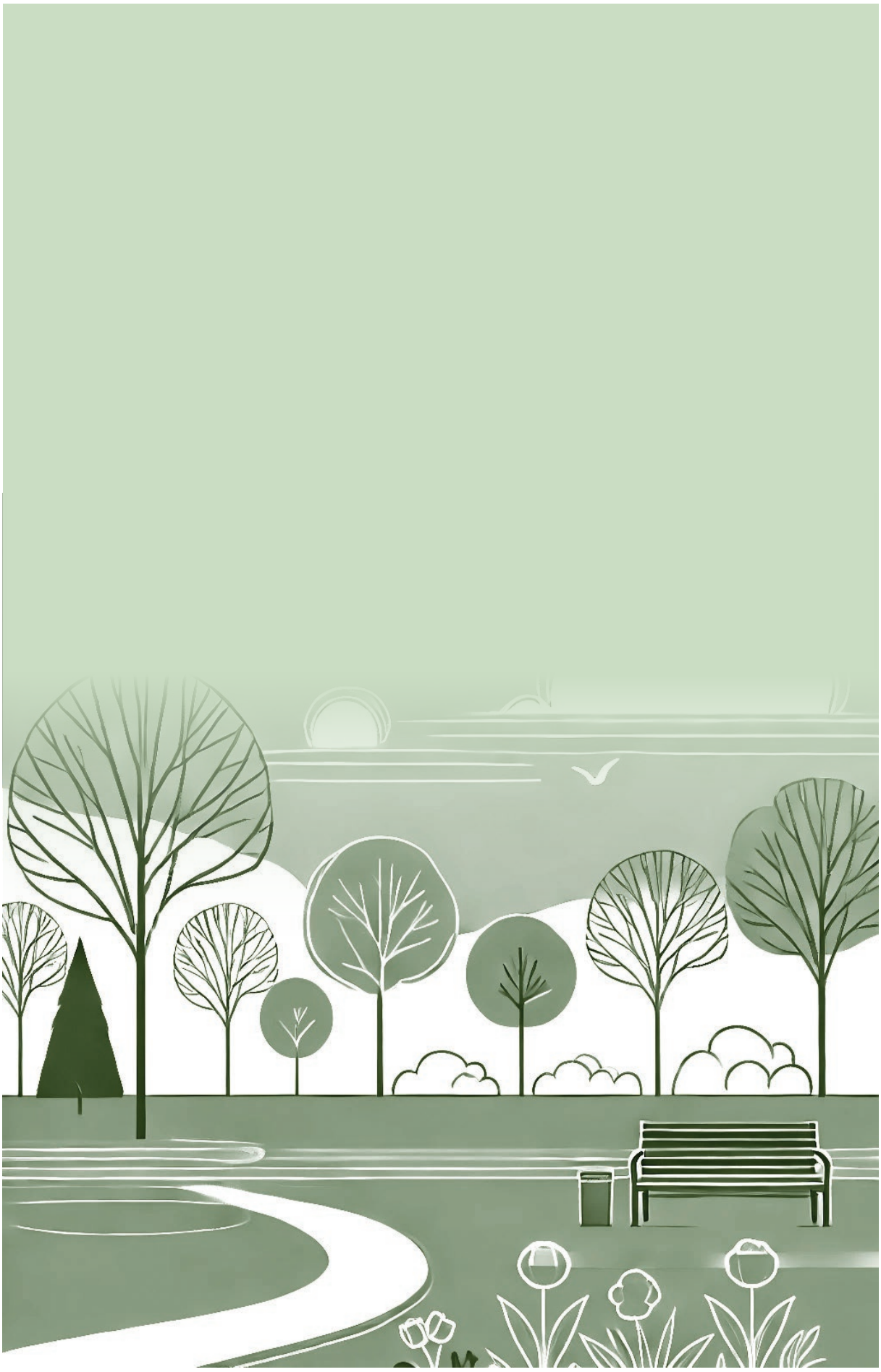
Codes	Category	Section	Description	Criteria	Criteria	Yes	No	N/A
2.1	Site Selection and Layout	Natural Features	Preserve Native Vegetation	• Preserve native vegetation to support local biodiversity • Avoid the use of invasive species • Design roadside areas to showcase native plants • Implement a maintenance plan for native vegetation	Recommended	☐	☐	☐
2.0	Design and Construction	Energy-Efficient Design	Design Roads with Large Reflective Surfaces for Natural Light	• Design roads with large reflective surfaces for natural light • Use low-E materials to reduce heat gain and loss • Maximize the use of natural light • Use light-reflecting paint or materials • Implement shading devices where needed	Minor	☐	☐	☐
2.1	Design and Construction	Energy-Efficient Design	Use Overhangs and Shading Devices to Reduce Heat Gain	• Use overhangs and shading devices to reduce heat gain • Incorporate architectural elements that provide shade • Use adjustable shading devices where appropriate • Design overhangs to complement the road's aesthetics • Combine shading devices with natural ventilation	Recommended	☐	☐	☐
2.2	Design and Construction	Energy-Efficient Design	Incorporate Thermal Mass Materials Like Concrete or Brick	• Incorporate thermal mass materials like concrete or brick • Use materials that help stabilize road temperatures • Combine with insulation for energy efficiency • Design thermal mass to absorb and release heat as needed • Use thermal mass in frequently traveled areas	Minor	☐	☐	☐

Codes	Category	Section	Description	Criteria	Criteria	Yes	No	N/A
2.3	Design and Construction	Energy-Efficient Design	Install Reflective Pavements in Common Areas	• Install reflective pavements in common areas • Use reflective surfaces to reduce heat absorption • Implement cool pavements for insulation and cooling • Combine with adequate road insulation • Design road systems for long-term durability	Recommended	☐	☐	☐
2.4	Design and Construction	Renewable Energy	Use Solar-Powered Outdoor Lighting	• Use solar-powered outdoor lighting • Design for solar panel placement on fixtures • Combine with battery storage for reliability • Monitor outdoor lighting performance • Ensure proper maintenance of solar components	Recommended	☐	☐	☐
3.0	Sustainable Materials	Materials	Use Recycled Asphalt for Road Construction	• Use recycled asphalt for road construction • Source asphalt from certified recycling programs • Combine with other sustainable materials • Monitor the performance of recycled asphalt • Ensure proper installation and maintenance	Major	☐	☐	☐
3.1	Sustainable Materials	Materials	Install Recycled Glass Barriers	• Install recycled glass barriers • Source glass from certified recycling programs • Combine with other sustainable materials • Monitor the performance of recycled glass • Ensure proper installation and maintenance	Recommended	☐	☐	☐

Codes	Category	Section	Description	Criteria	Criteria	Yes	No	N/A
3.2	Sustainable Materials	Materials	Use Recycled Plastic for Road Markers	• Use recycled plastic for road markers • Source plastic from certified recycling programs • Combine with other sustainable materials • Monitor the performance of recycled plastic markers • Ensure proper installation and maintenance	Recommended	☐	☐	☐
3.3	Sustainable Materials	Materials	Utilize Reclaimed Wood for Roadside Structures	• Utilize reclaimed wood for roadside structures • Source wood from certified reclaiming programs • Combine with low-VOC finishes for durability • Monitor wood performance and maintenance • Ensure proper installation and maintenance	Minor	☐	☐	☐
4.0	Design and Construction	Water Management	Use Permeable Paving Materials in Parking Lots	• Use permeable paving materials in parking lots • Allow rainwater to recharge groundwater • Reduce runoff and prevent flooding • Monitor surface durability and water infiltration • Maintain to prevent clogging and maintain effectiveness	Recommended	☐	☐	☐
4.1	Design and Construction	Water Management	Design for Stormwater Capture and Reuse	• Design for stormwater capture and reuse • Collect and store stormwater for non-potable uses • Implement systems to treat and reuse water where feasible • Monitor system efficiency and water quality	Major	☐	☐	☐

Codes	Category	Section	Description	Criteria	Criteria	Yes	No	N/A
5.0	Resilience and Adaptation	Climate Resilience	Design Roads to Withstand Extreme Weather (e.g., Reinforced Pavements)	• Design roads to withstand extreme weather (e.g., reinforced pavements) • Use durable materials and construction techniques • Monitor road performance during extreme conditions • Regular inspections and maintenance to ensure resilience • Update design standards based on climate trends	Major	☐	☐	☐
5.1	Resilience and Adaptation	Climate Resilience	Use Flood-Resistant Materials in Flood-Prone Areas	• Use flood-resistant materials in flood-prone areas • Select materials that withstand water exposure and pressures. • Monitor material performance in flood events • Regularly inspect and replace materials as needed	Major	☐	☐	☐
5.2	Resilience and Adaptation	Climate Resilience	Use Heat-Reflective Materials on Road Surfaces	• Use heat-reflective materials on road surfaces • Reduce surface temperatures and cool surrounding areas • Monitor surface performance under high temperatures • Combine with other cooling measures • Regular maintenance to preserve reflective properties	Recommended	☐	☐	☐

Codes	Category	Section	Description	Criteria	Criteria	Yes	No	N/A
5.3	Resilience and Adaptation	Climate Resilience	Elevate Critical Infrastructure Above Potential Flood Levels	• Elevate critical infrastructure above potential flood levels • Use raised platforms or build on elevated ground • Ensure accessibility and safety during floods • Monitor effectiveness during rain events • Regular checks to ensure structural integrity	Major	☐	☐	☐
5.4	Resilience and Adaptation	Climate Resilience	Implement a Stormwater Management Plan	• Implement a stormwater management plan • Design for efficient stormwater capture and reuse • Integrate green infrastructure practices • Monitor plan performance during rain events • Adjust practices based on performance data	Major	☐	☐	☐
5.5	Resilience and Adaptation	Adaptation Strategies	Plan for Flexible Road Designs	• Plan for flexible road designs • Use modular components that can be adapted to changing needs • Monitor performance and adjust as necessary • Incorporate future-proofing measures in the design	Recommended	☐	☐	☐
5.6	Resilience and Adaptation	Adaptation Strategies	Implement Adaptive Lighting Systems	• Implement adaptive lighting systems • Use smart lighting that adjusts to conditions • Monitor lighting performance and user satisfaction • Regular maintenance to ensure system effectiveness	Recommended	☐	☐	☐



Parks

Codes	Category	Section	Description	Criteria	Importance	Yes	No	N/A
1	Site Selection and Layout	Location	Flood Risk Assessment	• Conduct a flood risk assessment. • Choose sites on higher ground. • Implement drainage systems. • Avoid flood-prone areas. • Create flood barriers.	Major	☐	☐	☐
1.1	Site Selection and Layout	Location	Soil Quality	• Soil testing for nutrient content. • Check for soil contamination. • Ensure soil fertility. • Use organic fertilizers. • Improve soil structure.	Major	☐	☐	☐
1.2	Site Selection and Layout	Location	Biodiversity	• Identify native species. • Protect existing habitats. • Create wildlife corridors. • Avoid habitat fragmentation.	Major	☐	☐	☐
1.3	Site Selection and Layout	Location	Accessibility	• Proximity to bus stops. • Accessible by pedestrian paths. • Include bike racks.	Minor	☐	☐	☐
2	Design and Infrastructure	Infrastructure	Water Management	• Install rainwater tanks. • Use permeable paving materials. • Implement greywater systems. • Use drought-resistant plants.	Major	☐	☐	☐
2.1	Design and Infrastructure	Infrastructure	Energy Efficiency	• Install solar panels. • Use LED lighting. • Incorporate energy-efficient fixtures.	Major	☐	☐	☐

Codes	Category	Section	Description	Criteria	Importance	Yes	No	N/A
2.3	Design and Infrastructure	Infrastructure	Recycling and Waste Management	• Place recycling stations. • Install compost bins. • Use recycled materials. • Regular waste audits.	Minor	☐	☐	☐
2.4	Design and Infrastructure	Infrastructure	Maintenance	• Schedule regular maintenance. • Use sustainable practices. • Monitor plant health. • Repair infrastructure promptly.	Minor	☐	☐	☐
3	Plant Selection and Landscaping	Landscaping	Native Plants	• Select local plant species. • Use xeriscaping techniques. • Minimize water usage.	Major	☐	☐	☐
3.1	Plant Selection and Landscaping	Landscaping	Pollinator-Friendly Plants	• Plant pollinator-attractive species. • Create pollinator habitats. • Avoid pesticides. • Provide water sources.	Minor	☐	☐	☐
3.3	Plant Selection and Landscaping	Landscaping	Educational Signage	• Install educational signs that: - Highlight native species. - Explain ecological benefits. - Engage visitors with interactive displays.	Recommended	☐	☐	☐
4	Energy and Water Systems	Systems	Renewable Energy Sources	• Use solar panels and wind turbines. • Implement energy storage solutions. • Install energy-efficient lighting. • Use renewable energy for all facilities. • Monitor energy usage.	Major	☐	☐	☐
4.1	Energy and Water Systems	Systems	Water Conservation	• Install low-flow fixtures. • Use rainwater harvesting systems. • Implement greywater reuse. • Promote water conservation practices. • Monitor water usage.	Major	☐	☐	☐

Codes	Category	Section	Description	Criteria	Importance	Yes	No	N/A
4.2	Energy and Water Systems	Systems	Efficient Irrigation Systems	• Use drip irrigation systems. • Schedule irrigation during cooler times. • Use moisture sensors. • Optimize irrigation zones.	Major	☐	☐	☐
4.3	Energy and Water Systems	Systems	Low-Flow Fixtures	• Install low-flow faucets and toilets. • Use aerators on taps. • Implement water-saving practices. • Regularly check for leaks.	Major	☐	☐	☐
5	Resilience and Adaptation	Adaptation	Climate Resilient Design	• Design for climate resilience. • Use materials resistant to climate impacts. • Implement adaptive infrastructure. • Monitor and adjust for climate changes.	Major	☐	☐	☐
5.3	Resilience and Adaptation	Adaptation	Flood Mitigation	• Implement flood barriers and drainage systems. • Elevate structures in flood-prone areas. • Use flood-resistant materials. • Regularly monitor flood risks.	Major	☐	☐	☐
5.4	Resilience and Adaptation	Adaptation	Drought Tolerance	• Use drought-tolerant plants. • Implement water-saving irrigation systems. • Monitor and manage water usage.	Major	☐	☐	☐
6	Sustainable Materials	Materials	Recycled Materials	• Use materials with recycled content. • Source materials from local suppliers. • Choose low-carbon footprint materials. • Use non-toxic, safe materials. • Select durable, long-lasting materials.	Major	☐	☐	☐

Codes	Category	Section	Description	Criteria	Importance	Yes	No	N/A
6.2	Sustainable Materials	Materi-als	Low-Car-bon Materials	• Use materials with low carbon emissions. • Implement carbon reduction practices. • Monitor the carbon footprint of materials. • Choose materials with lower lifecycle emissions.	Minor	☐	☐	☐
6.4	Sustainable Materials	Materi-als	Durable Materials	• Choose durable, long-lasting materials. • Monitor material performance. • Plan for material maintenance. • Reduce material waste.	Minor	☐	☐	☐

Equipment

Codes	Category	Section	Description	Criteria	Importance	Yes	No	N/A
1	Energy Efficiency	Efficiency	Energy Star Rating	• Check for Energy Star rating. • Compare energy ratings. • Choose high-efficiency models.	Major	☐	☐	☐
1.1	Energy Efficiency	Efficiency	Power Consumption	• Assess power consumption. • Monitor energy usage. • Implement power-saving modes. • Use energy-efficient components. • Reduce peak power usage.	Major	☐	☐	☐
1.2	Energy Efficiency	Efficiency	Energy Recovery	• Install energy recovery systems. • Utilize waste heat recovery. • Integrate with renewable energy sources. • Monitor energy recovery efficiency. • Optimize energy recovery processes.	Major	☐	☐	☐
1.3	Energy Efficiency	Efficiency	Renewable Energy Compatibility	• Ensure compatibility with solar panels. • Integrate with wind turbines. • Use renewable energy for operations. • Monitor renewable energy usage. • Optimize renewable energy integration.	Major	☐	☐	☐

Codes	Category	Section	Description	Criteria	Importance	Yes	No	N/A
1.4	Energy Efficiency	Efficiency	Standby Power	• Minimize standby power usage. • Implement power-off features. • Monitor standby power consumption.	Minor	☐	☐	☐
2	Water Usage	Con-sumption	Water Efficiency	• Check for water-efficient models. • Monitor water usage. • Implement water-saving technologies. • Compare water efficiency ratings. • Choose low-water consumption devices.	Major	☐	☐	☐
2.2	Water Usage	Con-sumption	Recycling Water Systems	• Install water recycling systems. • Monitor recycled water usage. • Optimize water recycling processes. • Integrate with greywater systems.	Major	☐	☐	☐
3	Materials and Manu-facturing	Materials	Recycled Materials	• Use materials with recycled content. • Choose non-toxic materials. • Select durable materials. • Ensure eco-friendly manufacturing. • Monitor material usage.	Major	☐	☐	☐
3.1	Materials and Manu-facturing	Materials	Non-Toxic Materials	• Avoid toxic materials. • Use safe, non-toxic components. • Monitor material safety.	Major	☐	☐	☐
3.2	Materials and Manu-facturing	Materials	Durable Materials	• Choose durable, long-lasting materials. • Monitor material performance. • Plan for material maintenance. • Reduce material waste.	Minor	☐	☐	☐

Codes	Category	Section	Description	Criteria	Importance	Yes	No	N/A
4.4	Operational Impact	Usage	Ease of Maintenance	• Ensure ease of maintenance. • Monitor maintenance performance. • Implement maintenance improvements. • Optimize maintenance processes.	Recommended	☐	☐	☐
5	Disposal and Recycling	End-of-Life	Recycling Program	• Implement recycling programs. • Monitor recycling performance. • Optimize recycling processes. • Compare recycling options.	Major	☐	☐	☐
5.1	Disposal and Recycling	End-of-Life	Safe Disposal	• Ensure safe disposal. • Monitor disposal performance. • Implement disposal improvements. • Optimize disposal processes.	Major	☐	☐	☐
5.2	Disposal and Recycling	End-of-Life	Biodegradable Components	• Use biodegradable components. • Monitor biodegradability. • Implement biodegradable improvements. • Optimize biodegradability.	Minor	☐	☐	☐
6.4	Compliance and Certification	Standards	Energy Audits	• Conduct energy audits. • Monitor energy audit performance. • Implement energy audit improvements. • Optimize energy audit processes.	Recommended	☐	☐	☐

Sports Field

Codes	Category	Section	Description	Criteria	Importance	Yes	No	N/A
1	Site Selection and Layout	Location	Flood Risk Assessment	• Conduct a flood risk assessment. • Choose sites on higher ground. • Implement drainage systems. • Avoid flood-prone areas. • Create flood barriers.	Major	☐	☐	☐
1.1	Site Selection and Layout	Location	Soil Quality	• Soil testing for nutrient content. • Check for soil contamination. • Ensure soil fertility. • Use organic fertilizers. • Improve soil structure.	Major	☐	☐	☐
1.2	Site Selection and Layout	Location	Accessibility	• Proximity to public transportation. • Accessible by pedestrian paths. • Include bike racks.	Minor	☐	☐	☐
2	Design and Infrastructure	Infrastructure	Drainage Systems	• Install efficient drainage systems. • Regularly maintain drainage systems. • Use permeable materials.	Major	☐	☐	☐

Codes	Category	Section	Description	Criteria	Importance	Yes	No	N/A
2.1	Design and Infrastructure	Infrastructure	Irrigation Systems	• Install efficient irrigation systems. • Monitor irrigation efficiency. • Use water-saving technologies. • Schedule irrigation during cooler times. • Optimize irrigation zones.	Major	☐	☐	☐
2.2	Design and Infrastructure	Infrastructure	Lighting	• Use energy-efficient lighting. • Install solar-powered lights. • Monitor lighting efficiency. • Implement smart lighting systems. • Optimize lighting schedules.	Major	☐	☐	☐
2.3	Design and Infrastructure	Infrastructure	Seating Areas	• Use durable seating materials. • Monitor seating conditions. • Regularly maintain seating areas.	Minor	☐	☐	☐
3	Sustainable Materials	Materials	Recycled Materials	• Use materials with recycled content. • Choose non-toxic materials. • Select durable materials. • Ensure eco-friendly manufacturing. • Monitor material usage.	Major	☐	☐	☐
3.1	Sustainable Materials	Materials	Non-Toxic Materials	• Avoid toxic materials. • Use safe, non-toxic components. • Monitor material safety.	Major	☐	☐	☐

Codes	Category	Section	Description	Criteria	Importance	Yes	No	N/A
3.2	Sustainable Materials	Materials	Durable Materials	• Choose durable, long-lasting materials. • Monitor material performance. • Plan for material maintenance. • Reduce material waste.	Minor	☐	☐	☐
4	Water Management	Water Usage	Water Efficiency	• Check for water-efficient models. • Monitor water usage. • Implement water-saving technologies. • Compare water efficiency ratings. • Choose low-water consumption devices.	Major	☐	☐	☐
4.2	Water Management	Water Usage	Recycling Water Systems	• Install water recycling systems. • Monitor recycled water usage. • Optimize water recycling processes. • Integrate with greywater systems.	Major	☐	☐	☐
5.1	Energy Efficiency	Efficiency	Power Consumption	• Assess power consumption. • Monitor energy usage. • Implement power-saving modes. • Use energy-efficient components. • Reduce peak power usage.	Major	☐	☐	☐

Codes	Category	Section	Description	Criteria	Importance	Yes	No	N/A
5.2	Energy Efficiency	Efficiency	Energy Recovery	• Install energy recovery systems. • Utilize waste heat recovery. • Integrate with renewable energy sources. • Monitor energy recovery efficiently. • Optimize energy recovery processes.	Major	☐	☐	☐
5.3	Energy Efficiency	Efficiency	Renewable Energy Compati-bility	• Ensure compatibility with solar panels. • Integrate with wind turbines. • Use renewable energy for operations. • Monitor renewable energy usage. • Optimize renewable energy integration.	Major	☐	☐	☐
5.4	Energy Efficiency	Efficiency	Standby Power	• Minimize standby power usage. • Implement power-off features. • Monitor standby power consumption.	Minor	☐	☐	☐
6	Resilience and Adaptation	Adapta-tion	Climate Resilient Design	• Design for climate resilience. • Use materials resistant to climate impacts. • Implement adaptive infrastructure. • Monitor and adjust for climate changes.	Major	☐	☐	☐

Codes	Category	Section	Description	Criteria	Importance	Yes	No	N/A
6.2	Resilience and Adaptation	Adaptation	Heat Stress Mitigation	• Plant shaded trees and greenery. • Use reflective materials to reduce heat. • Create water features for cooling. • Install cooling shelters. • Monitor and mitigate heat stress.	Minor	☐	☐	☐
6.3	Resilience and Adaptation	Adaptation	Flood Mitigation	• Implement flood barriers and drainage systems. • Elevate structures in flood-prone areas. • Use flood-resistant materials. • Regularly monitor flood risks.	Minor			
6.4	Resilience and Adaptation	Adaptation	Drought Tolerance	• Use drought-tolerant plants. • Implement water-saving irrigation systems. • Monitor and manage water usage.	None	☐	☐	☐

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