



Midpeninsula Regional
Open Space District

PLANNING AND NATURAL RESOURCES COMMITTEE

R-26-144
October 6, 2026

AGENDA ITEM 2

AGENDA ITEM

Draft Strategic Plan for Adaptation and Resilience to Climate Change

GENERAL MANAGER'S RECOMMENDATION *BM* *den*

Forward the Strategic Plan for Adaptation and Resilience to Climate Change (SPARCC), with any feedback and requested changes, to the full Board of Directors for their review and consideration.

SUMMARY

Resource Management Policy XVI – Climate Change (Climate Change Policy) calls for the Midpeninsula Regional Open Space District (District) to “Prepare for climate change impacts and promote resilience for both natural and built environments.” In support of this policy, a contract was awarded in June 2025 under the General Manager’s authority to BluePoint Planning (BluePoint) to help develop the Strategic Plan for Adaptation and Resilience to Climate Change (SPARCC). A draft of the SPARCC is ready for review and comment by the Planning and Natural Resources Committee (PNR). The intent of the SPARCC is to articulate goals, strategies, and actions that guide the District in preparing for and responding to climate impacts, coupled with an action implementation framework. Following PNR feedback on the draft SPARCC, staff will revise and bring forward the document to the full Board of Directors for consideration of acceptance in early 2027.

BACKGROUND

The District’s Climate Program emerged in 2016 through agency-wide recognition that climate change presents a significant threat to the District’s mission, and that explicit policy direction, staffing, and action planning was needed to address that threat. Subsequent development of the Climate Change Policy (Resource Management Policy XVI) and Climate Action Plan, both approved by the District Board of Directors (Board) in 2018, set the intentions for addressing these far-reaching issues. The SPARCC builds upon those early efforts to further Climate Change Policy directives.

The Climate Program, as defined by the Climate Change Policy, consists of three branches: greenhouse gas emission reduction, carbon sequestration and storage, and resilience and adaptation. Progress on reducing operational greenhouse gas emissions has been steady and is reported to the Board biennially (the most recent emissions report, reporting data from calendar

year 2024, was presented to the Board in December 2025). In addition, land acquisitions continue to protect the vast stores of carbon that exist within undeveloped lands and various ecosystem management projects within preserves continue to expand the storage potential of District lands (carbon sequestration and storage).

Resilience—of natural, operational, and built systems—is the area in which the District has the most potential for new and impactful climate actions. In a moment when climate action at a national level is facing immense barriers to progress, state, local, and regional entities remain committed to this effort, recognizing that climate change affects not just lands and infrastructure, but also human health and operational capacity. Furthermore, researchers and California policymakers have made it clear that appropriate management of natural landscapes is key for combatting climate change. By establishing the SPARCC, the District will set the guiding framework for: protecting and preserving the function of many interconnected systems, responding to emerging impacts, and preparing for the intensification of climate-driven events through organized agency-wide action.

DISCUSSION

In spring of 2025, staff solicited proposals and qualifications from firms to assist with the SPARCC and, under the General Manager’s signing authority, a contract was awarded in June 2025 to BluePoint Planning (BluePoint). BluePoint worked with a cross-departmental project team, with feedback from managers and leadership at key junctures, to develop the following four tiers of the SPARCC:

1. **Goals** describe the high-level themes and intentions of the plan, in six focal areas: Resilience Culture, Ecosystem Management, Built Environment, Partnerships, Community Awareness, and Public Safety.
2. **Outcomes** envision the desired success, i.e., describing District operations upon accomplishment of each Goal.
3. **Strategies** provide broad direction (the “what”) to achieve Goals and Outcomes.
4. **Actions** articulate the specific methods (the “how”) at a level that can be more readily incorporated into the District’s action planning and resource-loading process, either through dedicated projects and programmatic work, or adjusting ongoing approaches or shifting the focus of ongoing activities.

The SPARCC also includes an executive summary that describes the project purpose and context (including resilience actions the District is already taking), and two tools to aid implementation and accountability. The first is a priority workflow graphic to facilitate inclusion of key SPARCC actions on the FY28 and FY29 workplans. This workflow graphic orders foundational actions (those that must be completed, or at least begun, before certain other actions can be undertaken) and their dependencies, along with staffing roles for cross-departmental coordination. It also includes select “low-hanging fruit” actions that can be easily accomplished early on with minimal staff time and cost. The second tool is a tracking spreadsheet, comprised of a table of the SPARCC actions with status options, which will support annual work planning as well as reporting on action plan progress to District leadership, including the Board.

The draft SPARCC is provided in Attachment 1.

Prioritization of SPARCC Actions and Staff Time and Budget Needs

The SPARCC is designed with a five-year timeline, meaning that within five years from the start of implementation (expected to be Fiscal Year 2028) all actions should be *begun*, but not necessarily complete. Some actions will be feasible to complete within the five-year timeline. Others are more complex and can only be started after foundational actions are undertaken

The SPARCC Action List provides approximate timelines for initiation (within 1-2 years, 3-4 years, or 4+ years), level of effort categorizations (low/pivot in existing practice, medium, high), order-of-magnitude cost estimations, and proposed lead departments/positions. Some actions may involve consultants when subject matter expertise or staff capacity limits feasibility of in-house implementation.

Careful attention was given to ensure the SPARCC is manageable and implementable given the District's many other priorities, including its "Big Rock" projects and its delivery of Measure AA commitments. Many of the Action Items are simply shifts in how the District operates (e.g., updating the docent training program, adjusting the focus of District external communications, highlighting new themes in interpretive materials, integrating climate resilience as part of the annual environmental scan). Another set of actions are part of other programs and repeated here to express their connection to climate resilience (e.g., continuing to ramp up Wildland Fire Resiliency Program activities, expanding volunteer efforts to support weed management). For actions that result in new projects, these efforts are phased into small, incremental steps to be completed over multiple fiscal years.

Many of the Action Items that require more substantial effort and budget can be integrated as part of the District's project delivery process. For example, the SPARCC guides the District with integrating climate resilient practices, materials, and engineering solutions that are compatible with the natural environment as part of new infrastructure designs or repairs to damaged or end-of-life facilities. Although the upfront cost will be higher for this type of work, the long-term costs for maintenance and repairs should be lower, as the District implements more resilient infrastructure that requires less maintenance and fewer cycles of capital repairs.

The SPARCC also includes a specific goal with numerous objectives and action items that help enhance the ecological resilience of District lands. This work will require landscape level analysis, regional partnerships, and innovative technologies to readily and effectively collect and analyze large volumes of data and arrive at adaptive management strategies that can be implemented broadly. For this work, the District will need to depend heavily on the resources and engagement of many external experts, including academia and research institutions, and work collaboratively with other land managers to implement large-scale solutions for our region.

Grant funding will be an important resource for implementing the SPARCC. The District will remain abreast of grant opportunities for climate resilience at state and local levels.

FISCAL IMPACT

There is no immediate fiscal impact associated with the recommended action. The current fiscal year budget for project 80101- *Strategic Plan for Adaptation and Resilience to Climate Change* contains sufficient funds for the completion of the SPARCC document. Costs associated with

implementation of plan actions will be budgeted in future fiscal years as discrete projects or programmatic budget items.

PRIOR BOARD AND COMMITTEE REVIEW

November 4, 2025, PNR – Review of Draft SPARCC Goals and Outcomes ([R-25-138](#), [Minutes](#))

PUBLIC NOTICE

Public notice was provided as required by the Brown Act and via email to the Natural Resource Management Interested Parties list.

CEQA COMPLIANCE

This item is not a project subject to the California Environmental Quality Act. The SPARCC establishes a framework to guide the District in preparing for and responding to climate impacts and does not authorize or approve any projects or actions.

NEXT STEPS

The SPARCC will be revised based on comments provided by the PNR Committee and a final version will be presented to the full Board of Directors in early 2027. SPARCC Action items will be incorporated into the District action planning process for FY28 through FY30, occurring in Q3 (December through March) of FY27.

Attachment

1. Draft SPARCC Report

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Prepared by/Contact person:
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Midpen Strategic Plan for Adaptation and Resilience to Climate Change

2027-2032



Purpose and Need

The Strategic Plan for Adaptation and Resilience to Climate Change (SPARCC) outlines Midpen's major needs and opportunities for addressing ongoing and future impacts of climate change to managed lands and agency operations. The SPARCC provides goals, strategies, and actions, along with the timeline for key near-term actions. The plan also includes accompanying workflows for key actions for implementation, incorporating climate change considerations into project planning and delivery.



Climate Impacts

Climate change is profoundly impacting the Bay Area's landscapes, ecosystem, and communities, affecting the health and function of California's natural systems through more frequent and extreme drought, more frequent and severe storm events, rising tides and temperatures, and increasing fire potential, among other impacts. These collective impacts challenge Midpen's goals of conservation and restoration. Simultaneously, human health impacts of climate change, including mental health impacts and cardiac and respiratory stress, make outdoor recreation increasingly important for well-being, even as extreme heat and poor air quality make it more difficult to safely recreate.

The climate change impacts listed to the right will have broad implications for the priorities and success of Midpen's land management and ability to protect and restore the function of natural systems.

Climate change impacts compared to the 1980-2010 30-year average



Higher average annual temperatures



More frequent and intense extreme heat



More intense precipitation



Greater precipitation variability



Increased chance of wildfire



Increased chance of drought



Damage to stormwater infrastructure



Damage to recreational amenities



Damage to facilities and Midpen-owned housing



Health risks to staff, volunteers, and visitors



Mental health impacts to staff



Additional staff time and resources

Operational Impacts

In addition to impacts on natural systems, climate change also impacts Midpen's day-to-day operations. This includes impacts on staff, volunteers, and visitors, as well as on the infrastructure it manages to support its operations. Notably, damage to stormwater infrastructure, facilities, and recreational amenities increases the staff time that must be dedicated to repairs, rather than on completing new projects. Similarly, extreme heat days can lead to loss of staff time for field staff, when conditions may not be safe for them to be outside. Extreme heat can also threaten visitor safety and the ability of community members to recreate in the preserves.

About Midpen

Focus on Climate and Resilience



Midpen Manages



66,111
acres of land
(>70,000 protected)



377 miles
of waterways



443 miles
of trails and roads
(<250 open for public use)



230 employees



20,000 annual
volunteer hours

...and counting!

Mission

Created in 1972, Midpen is an independent special district that helps plants, animals and people thrive throughout the greater Santa Cruz Mountains region by preserving a greenbelt of more than 70,000 acres of public open space. Midpen's mission is to acquire and preserve a regional greenbelt of open space land in perpetuity, protect and restore the natural environment, and provide opportunities for ecologically sensitive public enjoyment and education.

On the Coast, Midpen has an expanded mission: to acquire and preserve in perpetuity open space and agricultural land of regional significance, protect and restore the natural environment, preserve rural character, encourage viable agricultural use of land resources, and provide opportunities for ecologically sensitive public enjoyment and education.

State and Local Policy

Appropriate management of natural lands is now widely recognized as a key piece of combatting climate change. California's Fourth Climate Change Assessment identifies Natural Systems as one of the plan's three pillars of climate change resilience. In support of this state-level emphasis on natural climate solutions, the California Natural Resources Agency (CNRA) has multiple plans for adaptation and resilience including the Natural and Working Lands Climate Smart Strategy and Pathways to 30x30 (2022). CNRA's 2024 California Climate Adaptation Strategy also includes nature based solutions as a priority climate solution, and recognizes the need for greater landscape health and connectivity as a key strategy to build resilience of the State's biodiversity. Agencies in our region including California State Parks, East Bay Regional Park District, Valley Water, and multiple cities and counties have also published or are developing climate resilience plans and programs.



Defining Resilience

Midpen uses the following definition of resilience as part of the SPARCC:

The capacity of social, economic and environmental systems to cope with a hazardous event, trend or disturbance, responding or re-organizing in ways that maintain systems' essential function, identity, and structure while also maintaining the capacity for adaptation, learning and transformation.” (IPCC)

Below are additional key elements of resilience that help ground this plan.

- *The ability to adapt to change and challenges*
- *Being able to return to a prior state or equilibrium after stress or a disruption*
- *Agility*

Climate Program and SPARCC

Midpen's Climate Program emerged in 2016 through agency-wide recognition that climate change presents a significant threat to Midpen's mission, and that Midpen could have a greater impact with explicit policy direction, staffing, and action planning to address the threat. Midpen's three goals of the Board-approved Climate Change Policy are to "Reduce agency-generated greenhouse gas [GHG] emissions, increase carbon sequestration, and promote resilience to climate change impacts." These are the three branches of the Climate Program, all of which are necessary to effectively address climate change.

Midpen has made substantial progress on GHG reduction and is piloting studies of carbon sequestration methods, addressing the first two branches of the climate program. The third branch of the program, resilience, is the area in which Midpen has the most potential for new and impactful action. The Strategic Plan for Adaptation and Resilience to Climate Change (SPARCC) enables Midpen to protect and preserve the function of natural systems through agency-wide action on climate resilience. Through effective policies, programming, projects, and procedures, the SPARCC positions Midpen to effectively respond and adapt to climate impacts.



Strategic Framework

5-Year Plan



Strategic Framework

Goal

Outcomes

Strategies



Culture of Resilience

1

Elevate a culture of climate resilience throughout the organization to ensure climate-ready, efficient, and effective operations.

- Midpen staff, management, and the Board of Directors understand the meaning, implication, and benefits of resilience and effectively apply a resilience lens to their work.
- Midpen staff, management, and the Board of Directors embrace their roles and responsibilities for implementing actions in the SPARCC.

1.1 Increase organization-wide staff awareness and education on climate change and resilience.

1.2 Embed climate resilience principles into policies and procedures.

1.3 Strengthen tolerance of uncertainty in climate action.

1.4 Make climate resilience a prioritizing factor in developing Midpen work plans.

1.5 Provide appropriate resources to manage and build staff adaptive capacity to climate hazards.



Optimal Ecosystem Function

2

Effectively manage landscapes and natural resources for optimal ecosystem function in the face of changing climatic conditions.

- Midpen implements an adaptive landscape management approach that responds to emerging climatic changes.
- Midpen lands and partnerships strategically protect wildlife connectivity and foster healthy natural systems.

2.1 Integrate an adaptive management framework into Midpen's new landscape-scale Inventory and Monitoring Program to assess and adjust land management approaches based on a broad suite of ecological health indicators.

2.2 Identify and respond to emerging threats to climate-vulnerable species and ecosystems.

2.3 Continue to prioritize the protection of land that has high natural resource values, provides opportunities for improved habitat connectivity, and/or habitat enhancement.

2.4 Expand programmatic work that promotes ecosystem health, carbon sequestration, and resilience to climate change impacts, focusing on those elements with climate benefit.



Promote Resilient Projects

3

Strategically prioritize and scope projects to promote climate resilience for Midpen's facilities and infrastructure.

- Capital and operational projects are developed with resilience best practices.
- Project prioritization decisions include climate resilience considerations.

3.1 Increase internal knowledge about climate vulnerability and conditions of Midpen assets and operations.

3.2 Utilize cost-benefit analysis when planning and designing capital projects to balance upfront costs of including resilience measures with the potential for reducing future costs of responding to climate impacts.

3.3 Enhance the climate resilience of Midpen's facilities, residences, and utility systems.

Goal

Outcomes

Strategies



Strategic Resilience Partnerships

Grow, strengthen and lead strategic partnerships to expand Midpen's reach and impact on climate resilience efforts.

- Midpen leads and collaborates with partners in its land management efforts to holistically address resilience needs across land boundaries.
- Midpen seeks out and embraces new partnerships that build regional capacity to address climate resilience.
- Data on local climate trends and projections, ecological impacts, hazards and vulnerabilities are shared amongst Midpen and other jurisdictions, agencies, organizations, and universities.

4.1 Develop a high-level partnership strategy to effectively guide allocation of resources and staff capacity toward regional climate change resilience efforts that support Midpen lands.

4.2 Expand ongoing volunteer participation and understanding of resilience goals in high-impact vegetation management programs and trail work.

4.3 Strengthen regional datasets relevant to climate change impacts through partnerships and technology innovation.



Climate Resilience Awareness

Build community awareness of climate change impacts and climate resilience actions through access to Midpen preserves and programming.

- Midpen preserves function as a platform and tool to increase public awareness of climate change impacts and actions.
- Visitors to Midpen preserves recognize the impact of climate change on the landscape and on their lives.
- Visitors to Midpen preserves are aware of actions they can take to support resilience in their communities.

5.1 Increase accessibility of Midpen preserves to climate vulnerable communities to build local stewardship and support for long term resilience through experiential learning.

5.2 Equip staff, partners, and volunteers with supportive resources to increase public awareness about Midpen's climate resilience actions.



Visitor Safety

Be responsive to threats to public safety arising from climate change, and empower preserve visitors and neighbors to take appropriate actions in protecting their own health and safety.

- Midpen policies, programs, and participation in local emergency response planning efforts support visitor and community safety.
- Midpen educates visitors about the risks and safety precautions for recreating outdoors during climate-driven weather events.

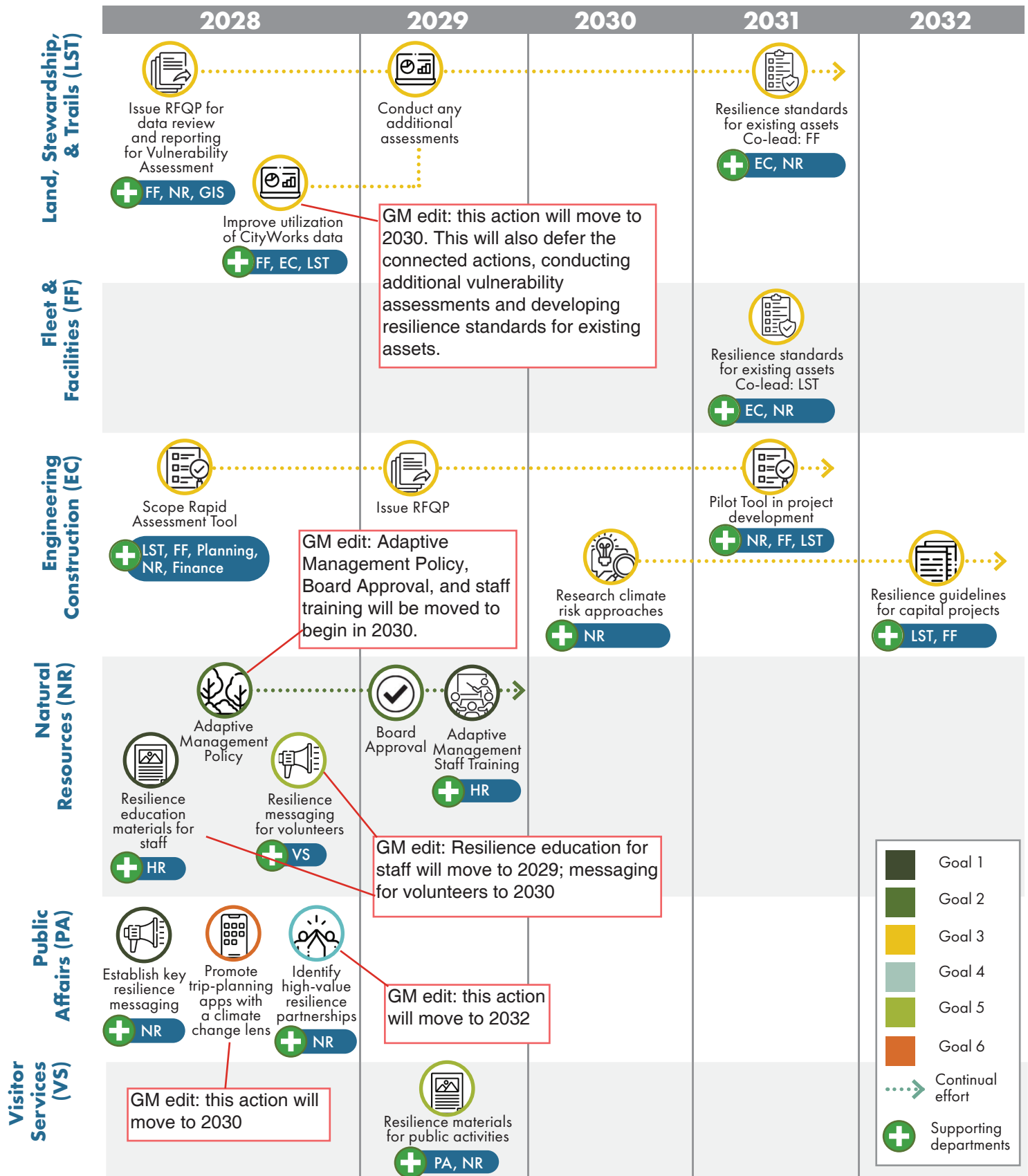
6.1 During hazardous conditions, limit or redirect visitation and programming.

6.2 Support the safety of tenants and neighbors through appropriate policies, practices, and partnerships.

6.3 Promote awareness of climate hazards and how to recreate safely.

Key Milestones

Below is a timeline of foundational SPARCC actions, many of which must be completed before other actions can be undertaken. The departments included in the graphic below are those leading the foundational actions, however other Midpen departments (Planning, Finance, GIS, Human Resources [HR]) are still involved in supporting these actions.



Resilience Actions

Ongoing efforts and
plan actions



Plan Alignment



The actions included in the SPARCC align with many ongoing efforts at Midpen. Below is a list of foundational existing guiding plans and policies that the SPARCC aligns with.

- Resource Management Policies
- Santa Cruz Mountains Climate Change Vulnerability Assessment Synthesis Report
- Santa Clara County Multi-Jurisdictional Local Hazard Mitigation Plan
- Midpen Strategic Plan Update FY2027
- Wildland Fire Resiliency Program Introduction, Background, and Policies
- Wildland Fire Resiliency Program Vegetation Management Plan
- Wildland Fire Resiliency Program Prescribed Fire Plan
- Ranger Operations Manual, Fire Operations
- Administrative Procedures Manual, Acquisition and Management of Midpen Lands



Ongoing Actions

Midpen has a variety of ongoing resilience efforts. Existing relevant actions already being taken by the organization include:

Culture of Resilience



- **Board Policy 3.08, Prohibited Investments:** Prevents investment of District funds in non-renewable energy sectors. Divesting from fossil fuel energy sectors insulates Midpen from possible adverse market effects as the global energy economy shifts toward renewables.
- **Administrative Policy 5.02, Telecommuting Program:** Allows situational telecommuting during severe inclement weather. Limits the impact of severe weather on office staff productivity by reducing the need for staff to commute to the office in severe conditions.
- **Heat Illness Prevention Plan and CAL-OSHA Requirements:** Midpen follows CAL-OSHA requirements for both heat and hazardous air quality, which limits staff exposure to unhealthy working conditions. Worksite assignment adjustments are ad-hoc, per best judgement of Area Manager and/or Lead OST. Land Stewardship and Trails may also prioritize work in cooler areas during forecasted extreme heat events.
- **Grants Program:** Seeks funding opportunities to support resilience projects and/or address funding gaps.

Optimal Ecosystem Function



- **Use of scientific literature:** Helps Midpen's work remain grounded in up-to-date, best-available science. Staff can readily increase their knowledge and expertise and stay abreast of scientific developments that can improve the quality and efficacy of resilience projects.
- **Acquisition of open space lands for resilience:** Protects intact habitats, preserves wildlife corridors and climate refugia, and allows for restoration and improved management of degraded ecosystems. This includes work led by Midpen or supported by Midpen and led by partners.
- **Adaptive Management:** Staff practice adaptive management in resource management work to remain responsive to changing conditions.
- **Conservation Grazing Program:** Livestock are an efficient way to reduce fine fuels and enhance grassland habitat mosaics. Livestock ponds can act as refugia for special-status species including California red-legged frog, Western pond turtle, and San Francisco garter snake.
- **Drought Response Resiliency Plan:** (To start in FY28) Defines thresholds and actions to ensure that water use is responsibly managed and balanced between habitat needs and beneficial uses (homes, livestock, agriculture).
- **Wildland Fire Resiliency Program:** Reduces the potential for catastrophic wildfire on Midpen lands through fuel reduction, including prescribed and cultural fire, and forest health projects.
- **Integrated Pest Management Program and Early Detection Protocol:** Enables Midpen to identify new populations of invasive species, including those with climate-influenced range expansion, and attempt to eradicate them before they become unmanageable.

Promote Resilience Projects



- **Defensible space maintenance and permitting:** Expands fire resilience and reduces fire risk through the maintenance of proper defensible space around Midpen facilities and residences. Permits are also given to neighbors whose defensible space perimeters extend onto Midpen property. In new construction, design includes fire-resistant materials.

Strategic Resilience Partnerships



- **Partner project sharing:** Provides opportunities to highlight, share, and learn from resilience partner projects.
- **Participation in Santa Cruz Mountains Stewardship Network–** Connects staff to a network of experts and land managers to share information, coordinate action, and respond to climate change at a regional level.

Climate Resilience Awareness



- **Increasing access points to preserves:** Provides mental health benefits and can offer relief from the heat (e.g. in coastal preserves) to more visitors.
- **Publication of climate resilience work through public-facing platforms:** Educating the public about Midpen's climate action on the climate change webpage and, as appropriate, other media e.g. newsletters, social media posts, and interpretive signage.
- **Language translation and interpretation at Midpen events:** Providing translated materials and live interpretation for non-English languages are available by request at public meetings.
- **Presenting resilience efforts at community and professional events:** Sharing climate resilience work and provide information about climate change impacts and actions at community tabling events and professional/academic conferences.

Visitor Safety



- **Visitor alerts for extreme heat conditions and information for safe recreation:** Alerting the public to extreme heat and red flag conditions, trail or preserve closures, and how to recreate safely. Fire weather boards in the vicinity of certain preserves alert visitors to the current hazard level via social media and website banners.
- **Volunteer land stewardship events scheduled to account for heat:** Most volunteer events begin in the morning and finish by noon or 1 pm, scheduled for the cooler hours of the day, which is especially important during summer. Heat exposure is considered when planning project locations, and events may be canceled or shortened due to extreme heat.
- **Interpretation and Education Staff and Docent Volunteers scheduled to account for heat:** Holding programming in cooler, shadier locations and during morning hours to avoid heat. This limits unhealthy heat exposure to staff, volunteers, and program participants. Explanations of climate change impacts and resilience actions can be incorporated into programming.

Full Action List

The following pages outline the full list of SPARCC goals, outcomes, strategies, and actions.



Culture of Resilience

Elevate a culture of climate resilience and ensure climate-ready, efficient, and effective operations.

Outcomes

- All staff understand the meaning, implication, and benefits of resilience and effectively apply a resilience lens to their day-to-day work.
- Staff understand and embrace their required roles and responsibilities to implement actions in the SPARCC.
- Staff are agile and can readily pivot their responsibilities and work as climate threats arise, and are supported by management in doing so.

1.1 Increase organization-wide staff awareness and education on climate change and resilience.

1.1.1 Agree upon common language, terms, and messaging to describe and discuss climate resilience, internally and to the public.

1.1.2 Integrate resilience awareness and education into staff training and internal communications.

1.1.3 Highlight projects with a major resilience component at All Staff meetings to share examples of resilience in action.

1.1.4 Promote staff training opportunities in adaptive management concepts.

1.1.5 Report progress on SPARCC implementation to the Board of Directors at least every two years.

1.2 Embed climate resilience principles into policies and procedures.

1.2.1 When developing or revising Midpen plans and/or policies, include as appropriate the use of pilots and demonstration projects to plan, learn from, revise, and monitor climate resilience approaches.

1.2.2 Integrate applicable resilience strategies and actions in updates of the Ranger Operations Manual, Maintenance Operations Manual, the Open Space Maintenance and Restoration Program Manual, and other similar field operational procedures and guidance documents.

1.2.3 During development and updates of Resource Management Policies, and development or updates of CEQA documents for districtwide policies, programs, or Preserve plans, consider the implications of possible future climate conditions by reviewing forward-looking studies e.g. climate projections applicable to Midpen's lands.

1.3 Strengthen tolerance of uncertainty in climate action.

1.3.1 Utilize the Environmental Scan to identify key climate vulnerabilities and uncertainties on an annual basis and share these considerations and proposed responses with leadership and the Board of Directors.

1.3.2 As part of project approval deliberations, communicate to the Board of Directors about the climate-related uncertainties that may be of concern and recommend as appropriate cost-effective proactive risk reduction measures to consider.

1.4 Make climate resilience benefit a prioritizing factor in developing Midpen work plans.

1.4.1 Ensure near-term SPARCC action items are prioritized by each department and included in the annual Action Plan and Budget, while considering potential dependencies, cross-department collaboration and capacity, and the simplicity and/or urgency of each action.

1.5 Provide appropriate resources to manage and build staff adaptive capacity to climate hazards.

1.5.1 Incorporate/update employee safety and risk management training to include mitigation and safety actions related to climate hazards (extreme heat, fire, poor air quality, extreme storms).

1.5.2 Strengthen employee and organizational resilience to climate change and climate stressors by providing support resources, through an Employee Assistance Program (EAP) or other avenue, that focus on climate-induced anxiety and stress.



Optimal Ecosystem Function

Effectively manage landscapes and natural resources for optimal ecosystem function in the face of changing climatic conditions.

Outcomes

- Midpen implements an adaptive landscape management approach that responds to emerging climatic changes.
- Midpen lands and partnerships strategically protect wildlife connectivity and foster healthy natural systems.

2.1 Integrate an adaptive management framework into Midpen's new landscape-scale Inventory and Monitoring Program to assess and adaptively adjust land management approaches based on a broad suite of ecological health indicators.

2.1.1 Develop and adopt a new landscape-scale adaptive management policy and relevant administrative procedures focused on climate resilience.

2.1.2 Research innovative technologies and approaches for analyzing large data volumes of ecological health indicators relevant to climate impacts and resilience to inform adaptive management work at a landscape scale (see action 3.1.2).

2.2 Identify and respond to emerging threats to climate-vulnerable species and ecosystems.

2.2.1 Identify the highest priority climate refugia and areas of rapid change to focus protection, habitat enhancement, connectivity, and monitoring efforts. If new research is needed, seek collaboration with academic labs specializing in such research (See Action 4.3.3). Scale will depend on capacity and available resources. Work will likely require phasing.

2.2.2 Collaborate with research institutions and land-management organizations (see Action 4.3.3) to plan, collect and maintain a genetically diverse seed bank inclusive of at-risk local species. Consider doing the same for widespread species that occur regionally in locations where the current climate is similar to projected future climates on Midpen lands.

2.3 Continue to prioritize the protection of land that has high natural resource values, provides opportunities for improved habitat connectivity, and/or habitat enhancement.

2.3.1 Utilize Midpen's Conservation Atlas and other applicable emerging data sources (e.g. Conservation Lands Network 3.0, CDFW Areas of Conservation Emphasis) to proactively seek land purchase opportunities with strategic climate benefit.

2.3.2 For preserve areas with high climate resilience value and/or high climate vulnerability, apply the Conservation Management Unit (CMU) Policy (Board Policy 4.01, Section E, as amended) to focus land management actions on achieving ecological health goals and limit the intensity of public access (see Action 2.2.1).

2.4 Expand programmatic work that promotes ecosystem health, carbon sequestration, and resilience to climate change impacts, focusing on those elements with climate benefit.

2.4.1 Increase fuel management and prescribed fire activities under the Wildland Fire Resiliency Program, as staffing and resources allow, up to the CEQA-analyzed annual limits to treat high-risk fuels and promote forest health.

2.4.2 Seek opportunities to expand contracted and volunteer work to help increase Midpen's invasive weed management coverage.

2.4.3 Adjust the current programmatic maintenance work to also upgrade infrastructure as part of annual repairs to address higher rainfall projections and other climate changes, thus reducing the potential for future failure.



Promote Resilient Projects

Strategically prioritize and scope projects to promote climate resilience for Midpen facilities and infrastructure.

Outcomes

- Capital and operational projects are developed with resilience best practices.
- Project prioritization decisions include climate resilience considerations.

3.1 Increase internal knowledge about climate vulnerability and conditions of Midpen assets and operations.

3.1.1 Conduct vulnerability assessments to understand climate risks (fire, severe weather, drought, heat, sea level rise) to physical Midpen assets and services such as public access infrastructure, buildings, utilities, historical assets, water supply, and information technology systems. Draw upon assessments conducted by other entities as applicable. Update as necessary.

3.1.2 Improve utilization of Cityworks as Midpen's data repository and maintenance tracking of assets (e.g., infrastructure, buildings, facilities) to inform proper scheduling of recurring maintenance actions and larger scale capital repairs.

3.2 Utilize cost-benefit analysis when planning and designing capital projects to balance upfront costs of including resilience measures with the potential for reducing future costs of responding to climate impacts.

3.2.1 Create a climate resilience rapid assessment tool to evaluate climate risks and vulnerabilities and cost-effective resilience measures during the early part of project scoping for new capital projects.

3.2.2 Provide training and ongoing assistance to staff in relevant departments on how to apply the rapid assessment tool to their projects.

3.2.3 Integrate use of the tool into organizational strategic planning processes and department work planning and resource-loading.

3.3 Enhance the climate resilience of Midpen's facilities, residences, and utility systems.

3.3.1 Research to understand public agency perspectives on resilience outcomes and approaches to managing climate risk for capital projects.

3.3.2 Define resilience standards for existing assets. Consider energy efficiency, backup energy and battery systems, drainage, fire hardening and defensible space, water usage and redundancy, and drinking water supply.

3.3.3 Establish and implement cost-effective and resource-efficient design guidelines for new capital projects and large-scale capital repairs that account for changing climate conditions.

3.3.4 As funding and capacity allows, retrofit existing buildings and infrastructure using new resilience design standards (see Action 3.3.2).

3.3.5 Amend Board Policies 4.02 Improvements on Midpen Lands and 4.09 Factors to Consider for Structures Disposition to include resilience as an evaluating factor in informing decision on the disposition of Midpen structures and improvements (e.g., water and power reliability, ability to maintain defensible space, access to evacuation or emergency routes).



Strategic Resilience Partnerships

4

Grow, strengthen and lead strategic partnerships to expand Midpen's leadership, reach and impact on climate resilience efforts.

Outcomes

- Midpen collaborates and leads with partners in its land management efforts to holistically address resilience needs across land boundaries.
- Midpen seeks out and embraces new partnerships that build regional capacity to address climate resilience.
- Data on local climate trends and projections, ecological impacts, hazards and vulnerabilities are shared amongst Midpen and other jurisdictions, agencies, organizations, and universities.

4.1 Develop a high-level partnership strategy to effectively guide allocation of resources and staff capacity toward regional climate change resilience efforts that support Midpen lands.

4.1.1 Identify high-value climate resilience partnerships that support Midpen's mission and its land stewardship goals; identify Midpen lead staff to engage with partners and grow these relationships; allocate staff hours accordingly in the resource loading process.

4.1.2 Identify sources of funding to support partnership work.

4.1.3 Interview long-standing, established partners (5+ years) to understand non-monetary resilience needs that can be supported by partnering with Midpen.

4.1.4 Streamline partnership agreements with key resilience partners, aligning agreement types with the appropriate scale and intent.

4.2 Expand ongoing volunteer participation and understanding of resilience goals in high-impact vegetation management programs and trail work.

4.2.1 Highlight climate awareness and resilience-focused stewardship as part of the educational/interpretive and volunteer opportunities.

4.3 Strengthen regional datasets relevant to climate change impacts through partnerships and technology innovation.

4.3.1 Leverage existing partnerships to improve collaboration on regional climate monitoring efforts.

4.3.2 Identify and close knowledge gaps by sharing information through key networks.

4.3.3 Pursue research collaborations with universities, government agencies, and/or private sector groups whose work furthers understanding of climate change impacts, resilience, and adaptation.



5

Climate Resilience Awareness

Build community awareness of climate change impacts and climate resilience actions through access to Midpen preserves and programming.

Outcomes

- Midpen preserves function as a platform and tool to increase public awareness of climate change impacts and actions.
- Visitors to Midpen preserves recognize the impact of climate change on the landscape and on their lives
- Visitors to Midpen preserves are aware of actions they can take to support resilience in their communities.

5.1 Increase accessibility of Midpen preserves to climate vulnerable communities to build local stewardship and support for long term resilience through experiential learning.

5.1.1 Evaluate efficacy of preserve parking areas and their amenities, consider transportation demand management (TDM) strategies and other improvements as appropriate to support access to Midpen preserves.

5.1.2 Consider how Midpen projects and programs conducted on Midpen lands can support broader community resilience efforts and goals, including through reduced downstream flooding potential, reduced wildfire risk and smoke impacts, and through education efforts; take actions to expand upon, where appropriate, and to broadly communicate these resilience interdependencies.

5.1.3 Grow partnerships with organizations that facilitate access and connections to Midpen preserves and our mission, and request the incorporation of climate resilience themes as part of their programming.

5.2 Equip staff, partners, and volunteers with supportive resources to increase public awareness about Midpen's climate resilience actions.

5.2.1 Utilize unified messaging (see Action 1.1.1) to develop and provide materials and/or talking points regarding Midpen climate resilience actions to staff, partners, and volunteers leading public activities on Midpen preserves.

5.2.2 Increase public messaging around Midpen's climate resilience work through public-facing platforms, including the Climate Change webpage, signs and brochures, social and traditional media, public presentations, and other outreach efforts.

5.2.3 Ensure climate awareness and resilience as it applies to Midpen land and mission-driven work is incorporated in volunteer trainings and regularly refreshed with new/updated content.



6

Climate Resilience Awareness

Be responsive to threats to public safety arising from climate change, and empower preserve visitors and neighbors to take appropriate actions in protecting their own health and safety.

Outcomes

- Midpen policies, programs, and participation in local emergency response planning efforts support visitor and community safety.
- Midpen educates visitors about the risks and safety precautions for recreating outdoors during climate-driven weather events.

6.1 During hazardous conditions, limit or redirect visitation and programming.

6.1.1 Ahead of forecasted heatwaves, increase public education and signage on safer choices (e.g. shady trails or temporarily forgoing outdoor recreation).

6.2 Support the safety of tenants and neighbors through appropriate policies, practices, and partnerships.

6.2.1 Continue to implement actions under the Santa Clara County and San Mateo County Multi-Jurisdictional Local Hazard Mitigation Plans and participate in updates.

6.2.2 Participate in future updates of the Santa Cruz County Multi-Jurisdictional Hazard Mitigation Plan as appropriate.

6.2.3 Work with grazing tenants to develop response plans for the movement of their livestock during climate emergencies, e.g. severe drought or fire.

6.3 Promote awareness of climate hazards and how to recreate safely.

6.3.1 Promote the use of apps through a climate change lens to guide safe recreation, including Avenza map app, and Midpen Trail Explorer app, and any future applicable apps.

Glossary

Glossary

Adaptation: The process of changing in response to a stressor event, trend, or disturbance, while retaining essential functions. The ability to readily adapt (adaptive capacity) is a key component of resilience.

Adaptive management: A land or project management strategy that depends on cycles of applied understanding, observation of outcomes, and reorientation and revision of approach. It is useful when outcomes are uncertain due to shifting baselines, complex and dynamic systems, and/or novel methods.

CEQA: The California Environmental Quality Act, California's predominant environmental regulation.

Climate refugia: Pockets of habitat, as small as a pool in a stream or as large as a regional microclimate, which are buffered from the extremes of climate change by their location, topography, hydrology, etc. Refugia support species who are less able to adapt to climate change and require a more stable environment to thrive.

Conservation Management Unit: Per District Board Policy 4.01, "areas within preserves, or [...] entire preserves, which because of certain criteria limiting their use, are planned and subsequently managed primarily for preservation of natural resources and viewshed."

Environmental Scan: An internal Midpen survey, distributed during the annual Action Planning process, in which Department Managers share with executive leadership how external factors (e.g. legislation, the economy, technology advances, climate change) are affecting Midpen's operations.

Defensible space: A zone around a structure where fuels are minimized to create a buffer from fire.

Nature-based solutions: Ways to mitigate the effects of climate change by leveraging natural processes, such as soil and vegetation's capacity for rainwater absorption and carbon sequestration; attenuation of storm surge by off-shore reefs or gradually sloped living shorelines; using trees and greenspace to provide shade and reduce localized temperatures, and vegetation to filter air pollutants.

Resilience: From the International Panel on Climate Change – "The capacity of social, economic, and environmental systems to cope with a hazardous event, trend, or disturbance, responding or reorganizing in ways that maintain systems' essential function, identity, and structure while also maintaining the capacity for adaptation, learning, and transformation."