RESOLUTION NO. 2026-03

A RESOLUTION OF THE HERONS GLEN RECREATION DISTRICT RATIFYING ITS ADOPTION OF ITS 2026 LONG-TERM MASTER PLAN; PROVIDING FOR GENERAL AUTHORITY; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

BE IT RESOLVED BY THE BOARD OF SUPERVISORS OF THE HERONS GLEN RECREATION DISTRICT:

SECTION 1. AUTHORITY FOR THIS RESOLUTION. The Board of Supervisors (the "Board") of the Herons Glen Recreation District (the "District") is authorized to adopt this Resolution under the authority granted by the provisions of Chapter 418, Part II, Florida Statutes, as amended, Ordinance No. 98-08 adopted by Lee County, Florida on April 28, 1998, as amended, and other applicable provisions of law (collectively, the "Act").

SECTION 2. FINDINGS.

A. Pursuant to the Act, the District shall set its operating policies.

B. At its January 26, 2026 meeting the District adopted, by voice vote, its 2026 Long-Term Master Plan.

D. The District intends, hereby, to now ratify its approval of the 2026 Long-Term Master Plan.

SECTION 3. ADOPTION OF PLAN. The District hereby ratifies its prior adoption of its **2026 Long-Term Master Plan**, as more particularly described in the attached **Exhibit "A."**

SECTION 4. AUTHORIZATION. The Chairman, Vice-Chairman, other officers of the District and the District Manager are authorized and directed to declare and comply with the procedures, actions and expenditures of District funds as set forth, and in accordance with, the District's 2026 Long-Term Master Plan.

SECTION 5. SEVERABILITY. Should any sentence, section, clause, part or provision of this resolution or the attachments hereto be declared by a court of competent jurisdiction to be invalid, the same shall not affect the validity of this resolution as a whole or any part thereof other than the part declared invalid.

SECTION 6. EFFECTIVE DATE. This resolution shall be effective immediately upon its adoption.

PASSED AND ADOPTED at a meeting of the Board of Supervisors of the Herons Glen Recreation District this 16th day of February 2026.

HERONS GLEN RECREATION DISTRICT

Howard Young

Howard Young, Chair

ATTEST:

District Secretary

EXHIBIT A
(Long Term Master Plan)

2026 HGRD Master Plan

Approved January 26, 2026

Contents

Executive Summary

This Long-Term Master Plan outlines the strategic vision and priorities for the Herons Glen Recreation District (HGRD) over the next 10–20 years. It reflects community input, independent research, existing infrastructure conditions, and financial planning to support sustainable growth and modernization.

Key drivers of this plan include shifting demographics, limited remaining land, increased expectations for technology-enabled services, and growing sustainability concerns.

HGRD Long Range Planning Tools

This Master Plan is meant to complement the other two primary tools used by HGRD to effectively plan for strategic initiatives. These include:

Annual Resident Survey: *Listening to Residents*

The annual Resident Survey is used to gather direct input from homeowners regarding their needs, priorities, and satisfaction. This is focused on ensuring that plans reflect the preferences of the community.

- Purpose: To provide demographic trends, collect homeowner feedback, assess resident satisfaction with HGRD facilities and amenities, guide planning priorities, and provide measurement of objectives achievement to meet Florida state requirements.
- How it Coordinates: Informs the strategic and master plans with real resident data and insights.

Annual Strategic Plan: *Setting Priorities and Direction*

The annual strategic plan is a 1–3 year roadmap that outlines goals, initiatives, and action steps to improve the community.

- Purpose: To define actionable short- and mid-term goals.
- How it Coordinates: Translates survey input into specific initiatives and informs timing and scope of master plan items.

Long-Term Master Plan: *The Long-Term Vision*

The master plan exams Mid-Term (3-10 years) and Long-Term (10–20+ years) using a framework that attempts to identify significant trends in resident demographics and wants, likely amenity and facility needs, anticipated major capital improvements, and infrastructure planning.

- Purpose: To ensure mid and long-term sustainability and modernization of the community.
- How it Coordinates: Builds on strategic goals and aligns with financial and physical planning needs over decades.

Capital Planning: *The Financial Plans*

HGRD utilizes a software tool and had initial consulting services from Club Benchmarking to identify HGRD assets, estimate useful life, forecast maintenance requirements, estimate

replacement lifecycles and costs, and enable a 20-year estimation of probable capital needs to maintain HGRD amenities and facilities. This asset database is refreshed each year and is used by management to develop the annual HGRD capital budgets and resident assessments.

- Purpose: To provide long-term capital planning to ensure asset maintenance, replacement, and new capital needs.
- How it Coordinates: Builds on strategic plan and Master Plan to identify long term capital needs and aligns financial planning with physical planning needs over decades.

Key Master Plan Recommendations

Governmental Grant opportunities

- As an official governmental organization, HGRD might benefit on potential grant opportunities for sustainability and "greenway" initiatives.

Mid-Term Planning Implications

- Three potential new/changed amenities received more "Important/Very Important" responses than "Not important/Should NOT be considered" in recent Resident Surveys. These included:
    - Outdoor Dining: This appears to be a viable enhancement to an existing amenity. This should be re-tested in future Resident Surveys and considered for Mid-Term investment based on continued, consistent interest.
    - Driving Range Bathroom: This amenity enhancement is already planned and is being developed
    - Additional Fitness Rooms: This is a significant capital investment that appears suitable for future rounds of Bond investment funding.
- Three potential new amenities received "near positive" responses from residents in recent Resident Surveys. These may be considered for future investment but should be tested by future Resident Surveys to validate sustained interest. They included:
    - Tiki Bar: The addition of a Tiki Bar appears to be a potentially viable enhancement to the existing Pool Dining amenity that could be considered in the Mid-Term.
    - Walking/Bike Trail: The addition of nature trails to provide Greenways/Trails and Wildlife viewing is the most popular outdoor activity identified by the FL SCORP study. Thus, it should be considered for inclusion in future HGRD plans as this was also identified by residents as potentially desirable and likely aligns with the demographic changes within Herons Glen.
    - Breakfast: The addition of the Breakfast Food Truck can be used to determine the overall attractiveness of this potential enhancement to the Restaurant.

Longer Term Planning Implications

Technology & Innovation

- Re-enable members to digitally pay in the bar, restaurant, and event ticketing areas, replacing manual entry; thereby increasing employee efficiency, reducing errors and potentially increasing revenue.

- Real time data would give management the tools to track spending patterns, monitor alcohol and food usage and evaluate event performance quickly and accurately. Positions the community for long term operational efficiency. It would also reduce manual workload for staff and minimize errors, while giving residents a more seamless experience.
- Use software dashboards for tracking resident usage (amenities, restaurant, events)
- Maintenance and work order management software tracking for maintenance staff (should tie into updating Club benchmarking)

Generational & Demographic Planning

- Prepare for long-term transition to active GenX/Millennials who value tech and wellness focused amenities.

Environmental & Sustainability

- Develop Water Sustainability Plan - Investigate additional water capacity and water storage capabilities
- Develop Energy Sustainability Plan – Continue to explore solar panels, energy storage, and energy conservation opportunities. Initial studies on solar and conservation areas were conducted in 2024. Continued research in this area is needed to evaluate return on investment and the energy policy environment.

Community Overview

Historical context:

Herons Glen is a gated championship golf and country club community with 1,300 homes in North Fort Myers on the northern edge of Lee County, Florida. The Herons Glen Recreation District offers many amenities to its residents and guests including a 45,000 sq ft clubhouse that features a ballroom with dance floor and stage, dining room and lounge.

The Recreation District was established under Chapter 418, Florida Statutes, for the purpose of providing recreational amenities. Furthermore, it was formed in 1998 when the residents of the community voted overwhelmingly to purchase the recreational facilities from, then developer, Coolidge Fort Myers Realty. A provision of Florida Law allowed for the financing of this purchase through a tax-exempt bond issue, creating an instrument of State Government known as the Recreational District. An elected Board of Supervisors governs the affairs of the Recreational District.

The Herons Glen Recreation district (HGRD) is distinct from the Herons Glen Homeowner's Association (HGHOA) in that the HOA owns and is responsible for the maintenance of the streets and common areas within Herons Glen while the HGRD is a governmental entity which is responsible for the development and maintenance of all recreational facilities and amenities. While they have distinctly separate organizational structures and functions, the HGRD and HGHOA cooperate for the benefit of the community.

HGRD Land Availability:

Herons Glen is a mature and fully developed community. Thus, there is very little readily available land for development of new amenities or infrastructure. Because the residential part of the community is built in accordance with what is legally allowed by our Development of Regional Impact, meaning no new homes can be built within the current boundaries of Herons Glen. The master plan must focus on modernization, repurposing, and sustainable use of limited land.

The map below is an overview of available land within the boundaries of the HGRD community. Note the scarcity of land significantly limits new large-scale amenities unless repurposing or land acquisition is pursued. Appendix A provides a more detailed review of the available land and its status. These available spaces should be considered HIGHLY valuable, and any further development of these spaces should be undertaken with the utmost prudence and supported by strong resident support.

HGRD Facilities and Amenities:

The Facilities and Amenities owned and managed by the HGRD include the following:

Golf Course

- 18-hole championship course redesigned by Ron Garl, the original architect, in 2021.
- Six sets of tees feature total yardages from 4,225 to 6,468 yards.
- A practice range includes 27 Turf-Hound hitting stations along with Bermuda grass stations,
- An 1,800 sq ft putting green and chipping area for golfers to warm up and practice.

Sport Complex

- Six Har-Tru tennis courts
- Six Har-Tru bocce courts
- Eight shuffleboard courts which also accommodate Corn-Hole play

Clubhouse

- 6,000 sq ft Grand Ballroom, with a 2,000 sq ft dance floor, a 500 sq ft stage equipped with professional lighting and sound systems, a full-service bar, and seating for dining and entertainment
- Formal dining restaurant and lounge with private dining area
- Lakefront heated swimming pool with spa and pool side dining service
- Two libraries/Card rooms
- One meeting room/Card room
- Craft and activities rooms
- Billiards room
- Meeting rooms and offices for HGRD and HGHOA

Fitness Center and Pickleball

- 5,070 sq ft fitness center
- Six pickleball courts

Mid-Term Amenity Planning

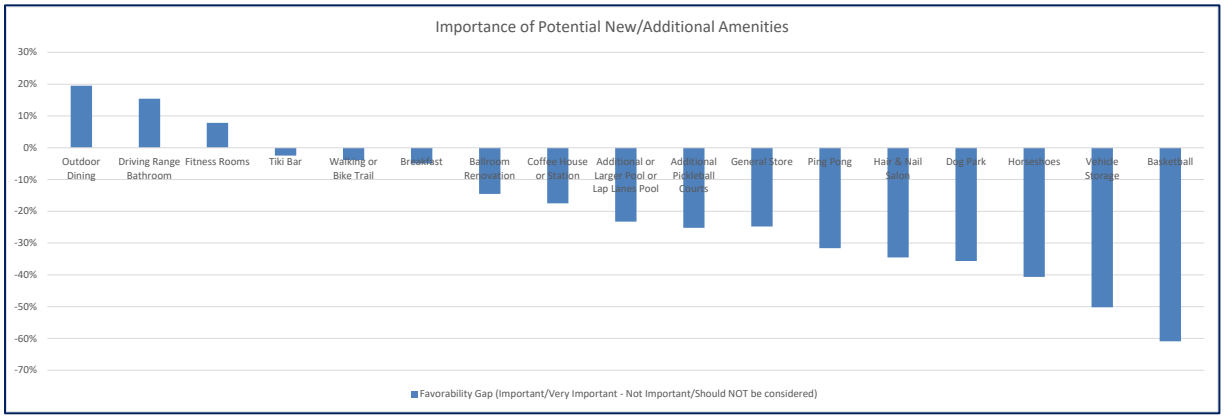
Existing Amenity Value

The annual HG Resident Survey provides insights into the relative value perceived of each of the existing HGRD amenities. Those Amenities deemed “Most” valued by residents may be a focus for continued investment and improvements. Those deemed “Least” valued provide consideration for reduced investment, multi-activity utilization, or potential repurposing. The aging population and shifting generational preferences of the community all play a role in explaining why some amenities are declining in popularity.

- Those amenities considered MOST valued are highly utilized by residents (greater than 30% of residents utilize at least once per week) and considered the most "important" by residents (greater than 75% of residents deem them "important"). These include the following:
    - Restaurant/Lounge
    - Fitness Center
    - Golf Course
    - Swimming Pool
- Those amenities considered LEAST valued are lightly utilized (less than 10% of residents utilize at least once per week) and considered less "important" by residents (less than 60% of residents deem them "important"). These include the following:
    - Tennis
    - Shuffleboard
    - Billiards

Interest in new amenities

The 2023 Resident Survey provided unbiased inputs into the desired renovation and/or development of amenities. The 2024 Resident Survey provided the following prioritization of the suggested new or upgraded amenities.



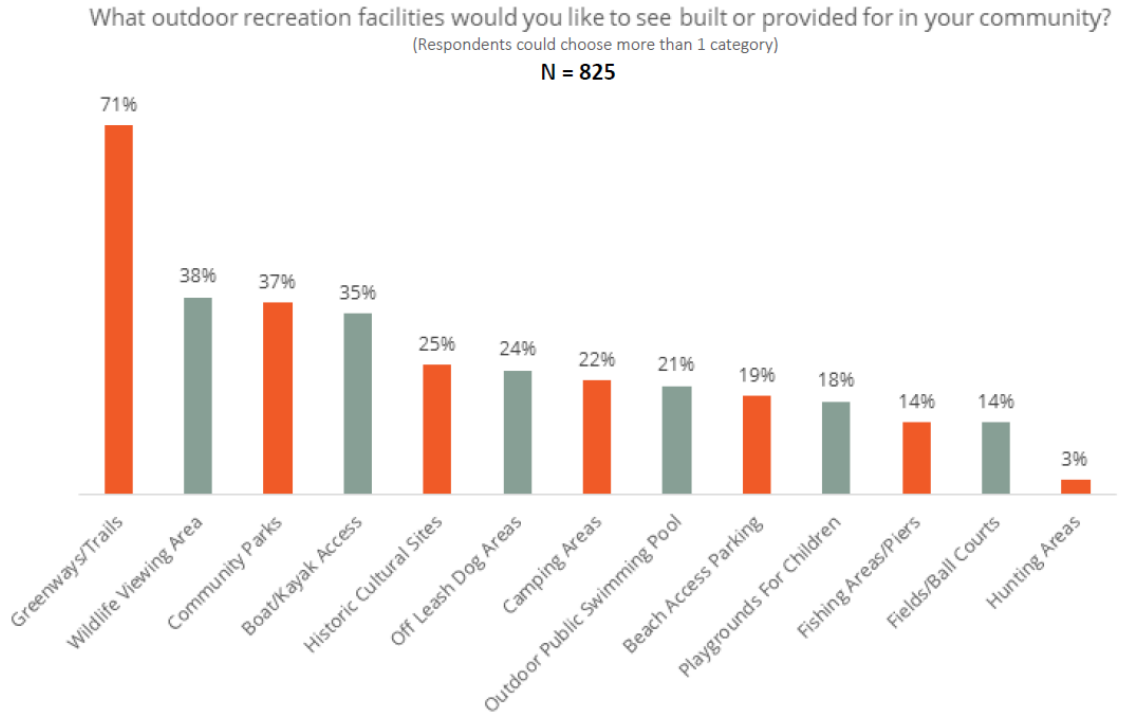
- Three potential new/changed amenities received more "Important/Very Important" responses than "Not important/Should NOT be considered": including Outdoor Dining, Driving Range Bathrooms, and additional Fitness Rooms.
- Three potential amenities were close to positive: including a Tiki Bar, Nature Trail for walking or biking, and breakfast offering.

Unfortunately, this question was not included in the 2025 survey. It is recommended that the annual resident survey provides an opportunity for residents to express their interest in new or changing amenities. It is also strongly recommended that future surveys consistently include the amenities prioritization question to ensure decisions reflect broad resident sentiment.

2023-2027 FL Statewide Comprehensive Outdoor Recreation Plan (SCORP)

A review of the FL Outdoor Recreation study provides additional insights into potential desirable amenities to be considered for Herons Glen. The study clearly identifies a strong preference for Greenways and outdoor walking trails. As this is not an amenity offered by Herons Glen, and it

aligns with a more sedentary resident population, this may be a strong consideration for future facilities plans.



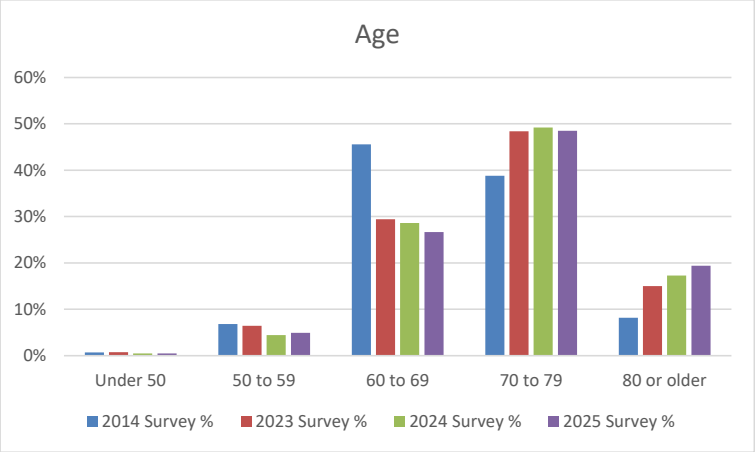
Source: 2023-2027 FL Statewide Comprehensive Outdoor Recreation Plan (SCORP)

Mid Term Planning Implications

- Nature trails to provide Greenways/Trails and Wildlife viewing, the most popular outdoor activities identified by the FL SCORP study, may be considered for inclusion in future HGRD plans as this was also identified by residents as potentially desirable and likely aligns with the demographic changes within Herons Glen.
- Of the three net positives requested new or upgraded amenities, one (outdoor dining) may be limited in scope such that it could be considered using future Capital Funds, one (Range Bathrooms) is already planned, while the third (additional fitness center space) would likely require special funding such as the next bond issuance.
- Three potential new amenities received "near positive" responses from residents. These included Tiki Bar, Walking/Bike Trail, Breakfast. These may be considered for future investment but should be tested by future Resident Surveys to validate sustained interest and prioritization of amenities.

Community demographics:

Herons Glen is an older, more well-established community. Many residents have lived in the Glen for an extended period, and the trend confirms that more residents have lived here longer. Thus, the resident population is getting older (with an increase in the number of females). This is assumed to be due to the fact that the growth in new homes has dwindled as the community is now fully built out. Thus, the existing residents remain and grow older while new residents added from new home construction slows.

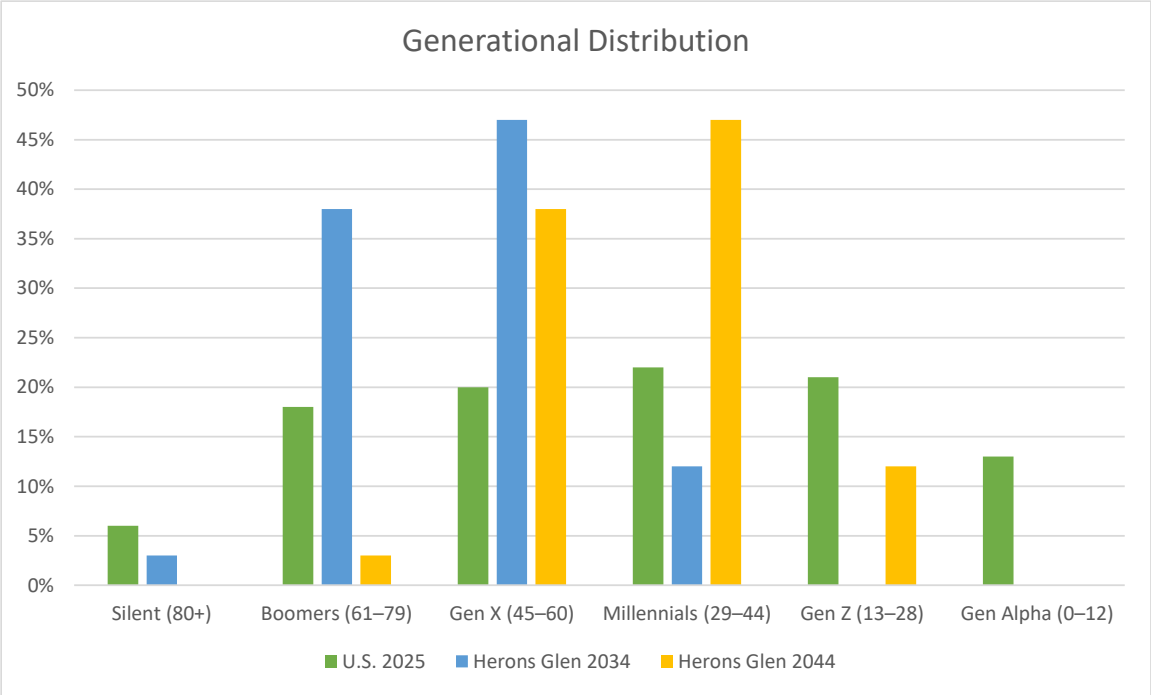


The Herons Glen population that is over 70 years old has increased to 68% of residents; this equates to an increase of 5% over the last 2 years (21% over the last 11 years).

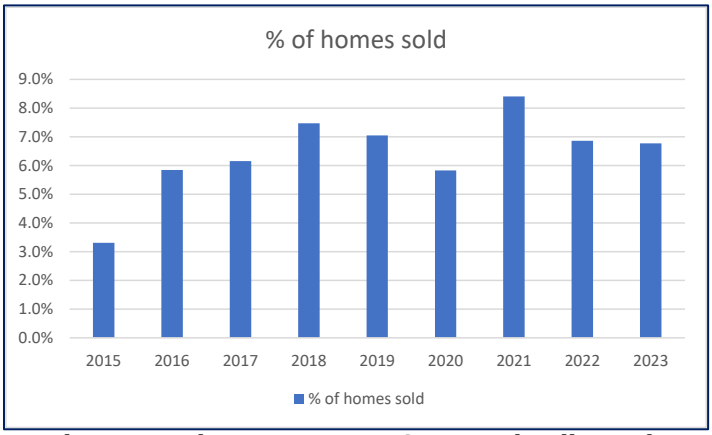
Generational Shifts expected

Approximately 95% of Herons Glen is made up of Baby Boomers and the Silent generation. As Herons Glens predominant Baby Boomer generation fades over the coming years, it is expected that Gen X and Millennials will become the majority of the resident population.

Generation (Age Range)	U.S. 2025	Herons Glen 2025	Herons Glen 2034 (Predicted)	Herons Glen 2044 (Predicted)
Silent (80+)	6%	95%	3%	0%
Boomers (61–79)	18%		38%	3%
Gen X (45–60)	20%	5%	47%	38%
Millennials (29–44)	22%	0%	12%	47%
Gen Z (13–28)	21%	0%	0%	12%
Gen Alpha (0–12)	13%	0%	0%	0%



- As the community ages, this is leading to more sedentary amenities becoming more utilized while more physically strenuous amenities are experiencing continuing decline:
    - Ballroom utilization up 10% over 2 years
    - Dining Area utilization up 6% over 2 years
    - Libraries/Card Rooms up 4% over 2 years
    - Bocce up 4% over 2 years
    - Pickleball down 4% over 2 years
- Average annual turnover of homes has been 6.4% over the last 9 years but has averaged 7.0% over the last 5 years. At 7% per year, it would take 10 years to turnover ½ of Herons Glen homes. This means that any evolution of the demographic makeup may be slower for HG as there is no new construction possible which might serve to bring in new or younger population. That said, a shift to Gen X and Millennials should be expected over the coming 10 – 20 years. With it will come shifting amenity preferences for these different generations.



- Future generations may expect more tech-enabled communication and flexible workspace-style areas. Future Gen X and Millennial residents may also seek different price/value structures, more casual dining, more flexible spaces, more tech-integrated interactions, and wellness/health programs.

Longer Term Planning Implications

1. Lifestyle Expectations – Gen X (45–60) and Millennials (29–44) will drive demand for tech-integrated amenities, healthy food options, upgraded fitness facilities, wellness programs, robust fitness programs, and cafes as they prefer to socialize on their own terms rather than large, formal gatherings.
2. Recreation – Expect growing interest in activities like pickleball, biking, travel clubs, group fitness, as well as both solo and competitive video gaming.
3. Design – Residents will want modern, flexible-use clubhouses and eco-friendly facilities.
4. Digital Communication – Online reservations, mobile apps, and digital networking will become standard for engagement with HGRD operations.
5. Service Balance – While active amenities may rebound with this shift, accessibility and senior-friendly services will remain critical as Silent Generation and Boomer residents continue to represent a share of the community.

Sustainability Considerations

Water

Appendix B provides an overview of 10-year predictions for precipitation in Southwest Florida. Key findings indicate no major shift in total annual precipitation, but with seasonal nuances and increased variability.

Water supply in southwest Florida depends heavily on aquifer recharge from seasonal rains, with about 60% of annual precipitation occurring in the wet season. A modest drying trend and heightened variability may reduce groundwater levels, leading to more frequent declarations of Phase I water shortages (as seen in 2023), restrictions on non-essential use, and reliance on alternatives like desalination or reclaimed water. Projections indicate total water demand rising 10–15% by 2035 from population growth, straining supplies if recharge lags; surface water (lakes, rivers) fluctuate more wildly. Adaptation strategies, including conservation and storage projects, aim to buffer these effects, but sustained drier conditions could challenge sustainability.

Feasibility studies on storage options and expansion, reclaimed water exploration, as well as monitoring Florida and Lee County restrictions and changes in policy should be considered.

Energy

Appendix C provides a 15-year theoretical plan for transitioning to a sustainable energy community.

Southwest Florida's subtropical climate drives electricity uses primarily for air conditioning (40–50% of total), irrigation pumps, and lighting. Vulnerabilities include hurricane-induced outages, as seen in recent storms, underscoring the need for resilient systems.

To protect Herons Glen against potential energy shortages and/or increased duration power outages, HGRD might consider the ability to operate as a self-sustaining, hurricane-resilient sustainably powered community.

Feasibility studies will be required to evaluate solar installation options, microgrid infrastructure, energy storage capacity, and other potential energy producing technologies along with the HGRD financial capital investment return before implementing.

Conclusions: Next steps

The Herons Glen community has undergone major renovations and upgrades over the past five years. The most recent Bond projects and other capital improvements have modernized and revitalized the community, its facilities, and its amenities. The following is a short list of projects that have been completed over the past five years.

- Refurbished Golf Course
- Tennis court upgrades
- Refurbished Multi Use path
- Additional two pickleball courts
- Refurbished Bocce, Shuffleboard courts, sports complex
- Refurbished Clubhouse Lobby
- Refurbished Restaurant and Lounge
- Expanded and refurbished Pool Deck
- Refurbished Ballroom
- Parking Lot Asphalt resurfacing
- Impact Windows and Doors
- Clubhouse, New Roof
- Ballroom Bar and Flooring
- Facilities Maintenance Area
- Kitchen Electrical upgrades
- Driving Range Restrooms (early 2026)
- Maintenance Storage Containers (early 2026)
- Upgrade of irrigation (CLIS) (2 wire contract, completion early 2026)

The focus now should be on the maintenance and sustainability of these improved facilities with renewed research and planning for the future of Herons Glen Recreational District. The following areas are potential topics to be studied and included in future HGRD Master Plans.

- Prioritize land-use strategy
- Resume consistent amenities survey questions
- Develop Water & Energy Sustainability Plans (2–3-year timeline)
- Identify generational transition strategies
- Evaluate technology modernization pathway (POS, dashboards, Visual search)

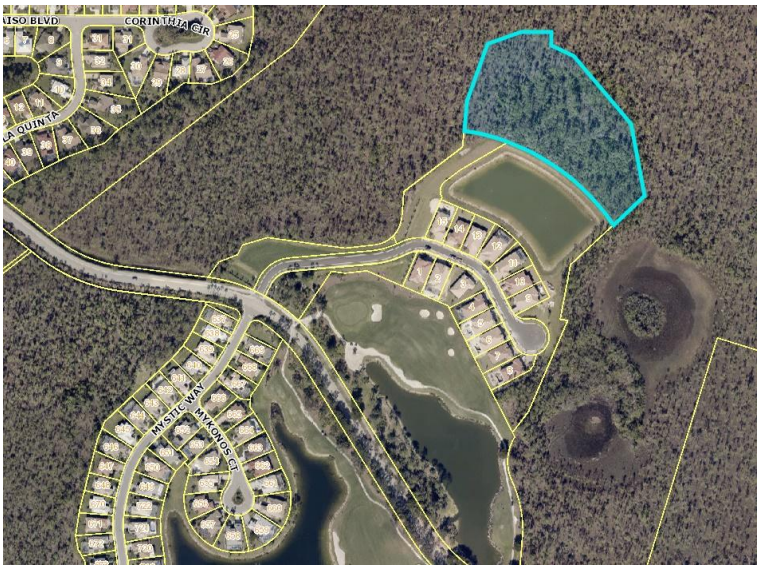
Appendix A – Land Availability

Land Study: Potential development sites owned by HGRD

In 2024 the Long-Range Planning Committee conducted an analysis of HGRD owned available land within the boundaries of Herons Glen. Following is an overview of the analysis.

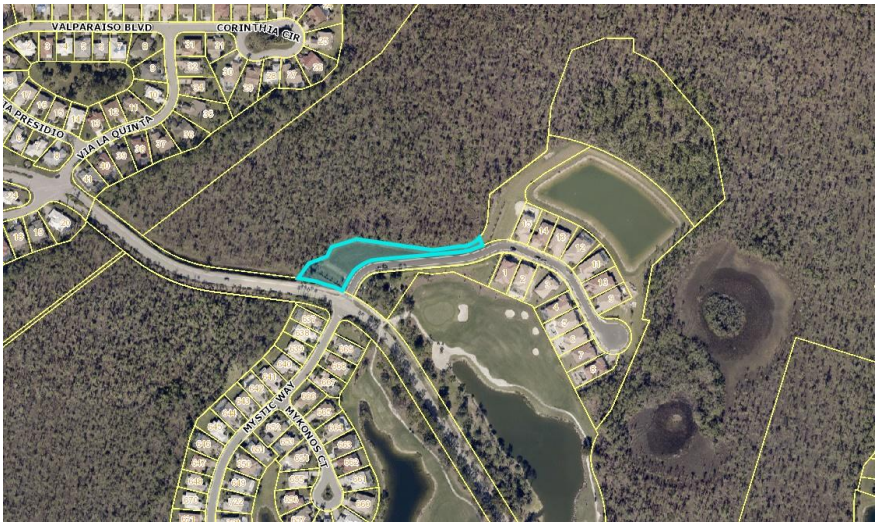
Mystic Way site behind water retention pond

- This is zoned as a Residential Planned Development (RPD) and is buildable, however there may be wetlands, vernal pools, etc. that would deem all or part of it unusable requiring a soil scientist or Environmental Engineer to evaluate.
- No existing road access. This would require the development of a road.
- 4.49 available acres (Access strip is 0.84 acres)



Mystic Way (4.49 acres)

Mystic Way (.84 acres) land for road access

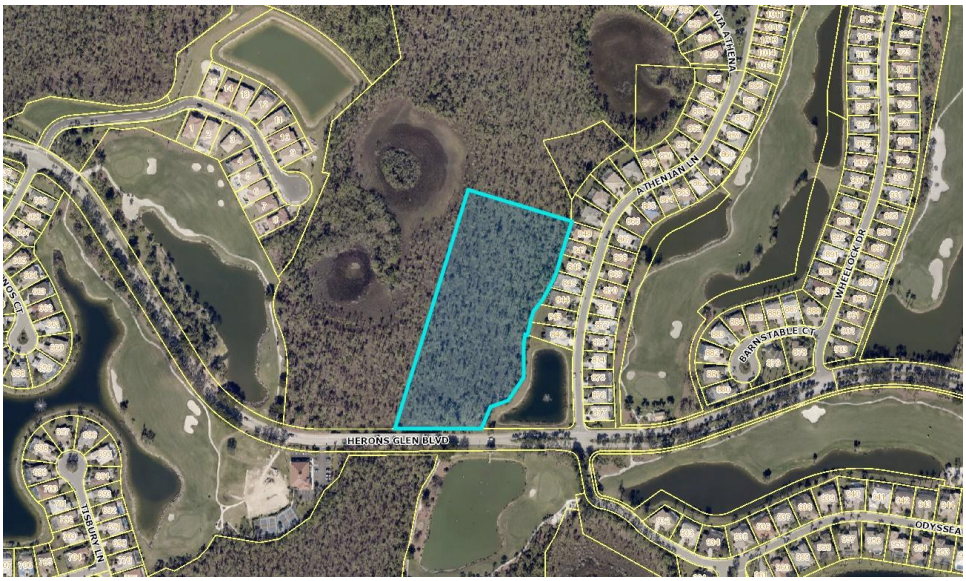


Mystic Way site at entrance

- This is zoned as a Residential Planned Development (RPD) and is buildable
- Road access available.
- 0.75 available acres
- Currently designated as emergency landing site for helicopter access

Maintenance building site

- Majority of useful land will be used for planned container storage facility. Foundation and utility work will begin early 2026.



Herons Glen Blvd and Athenian (6.76 acres) (Coolidge-Fort Myers Real Estate LP owned)

- This area is protected conservation land, not useable for recreational use, and should not be considered for HGRD development.
- HGRD does not own this land, not a viable option for development
- Existing street access
- 6.76 acres

Fitness Center (acreage TBD)

- This is zoned as a Residential Planned Development (RPD) and is buildable
- Existing Street access
- The small amount of land remaining on this site will potentially be used for additional parking, and therefore not useable for any large recreation project.
- Available acreage is limited

Land Development Planning Implications

The property that HGRD owns with the highest buildable value is the 4.38 acres behind the newly created pond off of Mystic Way with the .84 acre strip needed for access. If a specific recreational need would be identified by Herons Glen residents, further investigation into engineering and permitting limitations would need to be conducted to better define the buildable area and road access.

Appendix B – Water Sustainability

Overview of 10-Year Precipitation Predictions for Southwest Florida

Southwest Florida (encompassing areas like Tampa, Sarasota, Fort Myers, and Naples) experiences a tropical climate with a distinct wet season (May–October, driven by thunderstorms and hurricanes) and dry season (November–April). Historical annual precipitation averages 50–55 inches, with about 60–70% falling during the wet season. Predictions for the next decade (2025–2035) are derived from climate projections rather than short-term weather forecasts, as they account for global warming trends, greenhouse gas emissions scenarios, and regional modeling. These projections come from sources like NOAA, the Florida Climate Center, and peer-reviewed studies using CMIP6 global climate models (GCMs) with statistical bias corrections for local accuracy.

Key findings indicate **no major shift in total annual precipitation**, but with **seasonal nuances and increased variability**. Annual totals are likely to remain near historical norms (slight decrease of 0–5% under moderate emissions scenarios like RCP 4.5), while wet season rainfall may decline modestly, offset by potential increases in fall precipitation and more frequent extreme events. These trends are influenced by warmer sea surface temperatures (enhancing atmospheric moisture) and shifting patterns like La Niña/El Niño cycles, which could amplify droughts or floods year-to-year.

Projected Annual Precipitation Trends (2025–2035)

Based on downscaled GCMs for South Florida (including Southwest), projections show stability with low confidence for large changes due to model variability. Here's a summary:

Scenario	Annual Change from Historical Average (50–55 inches)	Key Drivers	Confidence Level
Low Emissions (RCP 2.6)	0 to +2% (near normal)	Reduced global warming; stable Atlantic patterns	Medium
Moderate Emissions (RCP 4.5)	-1 to -3% (slight decrease)	Ongoing emissions; warmer Gulf of Mexico	High
High Emissions (RCP 8.5)	-3 to -5% (modest decrease)	Accelerated warming; intensified hurricanes	Medium-High

- **Rationale**: A 2024 study using hybrid bias-corrected GCMs (empirical quantile mapping) analyzed 20+ weather stations in South Florida, finding slight annual decreases at 95% confidence under future scenarios (2015–2100). The USDA (2024) corroborates a >10% summer precipitation drop persisting in South Florida. However, the Florida Climate Center (2025) notes higher confidence in North Florida increases but projects South Florida stability or slight declines, consistent with Southeast U.S. trends.
- **Extreme Events**: Even with stable totals, heavy rainfall days (>2 inches) are projected to rise 10–20%. For example, Tampa may see ~12 such events/year by 2030 (up from 10 historically), increasing flood risk. NOAA's Precipitation Prediction Grand Challenge (2025) highlights that a warmer atmosphere holds 7% more moisture per 1°C rise, fueling intense downpours.

Seasonal Breakdown

Projections vary by season, with summer drying and potential fall wetting:

Season	Historical Avg. (inches)	Projected 2025–2035 Change	Notes
Wet (May–Oct)	35–40	-5 to -10% (drier summers)	Reduced convective activity; USDA projects >10% drop in June–Aug.
Dry (Nov–Apr)	15–20	Near normal to +5%	La Niña influences (e.g., 59% chance through early 2025) may bring drier winters, but overall stable.
Fall Transition (Sep–Nov)	10–12	+5 to +10% (wetter)	Increased tropical moisture; 40–50% chance of above-normal per NOAA fall 2025 outlook.

- **Short-Term Context (2025–2026)**: NOAA's 2025 rainy season outlook favors slightly above-normal totals for South Florida, but drought persists in Southwest (e.g., extreme drought expanded in May 2025). Winter 2025–2026 leans drier (below-normal precipitation favored in Southeast coastal areas). Old Farmer's Almanac predicts above normal for southern Florida summers through 2025.

Uncertainties and Recommendations

- **Variability**: Year-to-year swings from ENSO (e.g., neutral through summer 2025) or hurricanes could override trends—e.g., intensified storms may add 5–10 inches in a single event.
- **Impacts**: Slight drying raises drought risk (groundwater decline observed in southern counties), while extremes worsen flooding. Sea level rise (6–12 inches by 2035 under moderate scenarios) compounds coastal inundation.
- **Sources for Updates**: Monitor NOAA Climate Prediction Center, Florida Climate Center, or South Florida Water Management District for real-time adjustments.

Impacts on Water Supply

Water supply in southwest Florida, managed by the Southwest Florida Water Management District (SWFWMD), depends heavily on aquifer recharge from seasonal rains, with about 60% of annual precipitation occurring in the wet season. A modest drying trend and heightened variability may reduce groundwater levels, leading to more frequent declarations of Phase I water shortages (as seen in 2023), restrictions on non-essential use, and reliance on alternatives like desalination or reclaimed water. Projections indicate total water demand rising 10–15% by 2035 from population growth, straining supplies if recharge lags; agriculture, using ~40% of groundwater withdrawals, could face allocations during droughts, while surface water (lakes, rivers) fluctuates more wildly. Intensified extremes compound risks: heavy downpours cause rapid runoff (reducing infiltration) and contaminant mobilization, while dry spells lower lake/river levels, impacting environmental flows and exacerbating saltwater intrusion in coastal aquifers amid sea level rise. Adaptation strategies, including conservation and storage projects, aim to buffer these effects, but sustained drier conditions could challenge sustainability without policy interventions.

Appendix C – Energy Sustainability

Southwest Florida's subtropical climate drives electricity use primarily for air conditioning (40–50% of total), irrigation pumps, and lighting. Vulnerabilities include hurricane-induced outages, as seen in recent storms, underscoring the need for resilient systems.

To protect Herons Glen against potential energy shortages and/or increased duration power outages, HGRD might consider the ability to operate as a self-sustaining, hurricane-resilient sustainably-powered community.

Potential Goals for a sustainable energy community:

- **Short-term (2025–2030):** Reduce consumption 30%; source 40% from renewables; install resilient microgrid for 72-hour outage coverage.
- **Medium-term (2030–2035):** Achieve 70% renewable sourcing; cut consumption 40%; electrify 80% of fleet (carts, maintenance vehicles).
- **Long-term (2035–2040):** 100% renewable electricity; 50% consumption reduction; net-zero emissions via offsets for residual grid use.

These align with industry benchmarks for "real zero" carbon footprints through 60% energy reductions and clean sourcing.

Strategies

Energy Efficiency Improvements

Focus on high-impact areas: irrigation (25% of use), clubhouse/HVAC (30%), and course lighting (15%).

- Retrofit irrigation with AI-driven smart systems for 20–30% water/energy savings.
- Install LED fixtures and motion sensors where appropriate.
- Upgrade HVAC to high-efficiency heat pumps with zoning controls; insulate buildings for coastal humidity.
- Conduct annual audits to identify leaks or inefficiencies.

Renewable Energy Integration

Capitalize on solar potential (5–6 kWh/m^2/day average irradiance).

- Deploy 2–3 MW rooftop/ground-mount solar arrays on clubhouses, maintenance sheds, and underutilized course edges (e.g., solar cartports).
- Partner with electric utilities and federal, state, or local governmental entities to identify and leverage grants and other assistance for community solar programs.
- Explore agrivoltaics: Dual-use solar over shade-tolerant turf or pollinator habitats.

- Transition to 100% solar-powered golf carts and EV charging stations.

Energy Storage and Resilience

Address hurricane risks with distributed systems.

- Install 1–2 MWh lithium-ion batteries paired with solar for peak shaving and backup (inspired by Babcock Ranch's 409 MWh storage).
- Develop a microgrid connecting key facilities (course pumps, emergency lighting, resident hubs) for islanding during outages.
- Integrate smart grid tech for demand response, reducing peak loads by 15–20%.