REGENCY AT PROVIDENCE - DESCRIPTION OF COMMUNITY PONDS

This document provides descriptive information for the four RAP community ponds. These facilities are an integral part of RAP's storm water management system and also serve to enhance the aesthetic quality of the community. They are overseen by the Ponds, Stormwater & Irrigation Committee reporting to the Community Association Board. A consultant, under the direction of the Community Manager, is utilized to advise the Committee on best practices, to perform routine inspections/maintenance and to provide various treatments for managing water quality.

POND 1

Description

This is a retention basin that is intended to permanently hold water and provide additional storage capacity for precipitation events. It was constructed by Toll Brothers, Inc. in 2006 and designed by ESE Consultants, Inc. of Horsham, PA.

Physical Dimensions

Approximately 0.2 acres surface area with an average depth of approximately 5 feet.

Inflow

From precipitation, localized runoff and well make-up water; no storm drains feed this pond.

Outflow

From concrete outlet structure through 18" diameter reinforced concrete pipe ("RCP") to adjacent wetlands; discharge pipe fitted with concrete anti-seep collars. A 28 foot long emergency spillway located at southwest corner of pond provides relief during extreme rain events.

Makeup Well

305 feet deep, 6 inch diameter steel casing well with a Goulds 25 gpm, 10 stage pump driven by a 2 HP, 230 volt, single phase motor. Drilled by Bucks County Well Drilling in 2005 on common property near northwest corner of pond. Daily make-up water addition determined by programmable digital controller at well site. (Pump and controller also provide water for Sloan clubhouse irrigation system.)

Pond Access Point

From west side of Fairmount Boulevard.

Aeration

Fine bubble aerator system. Two Pentair 9 inch EDPM weighted diffuser discs positioned on bottom of pond, pressurized from an air pump in a faux rock enclosure located near the well. System runs 24x7 April through November; above ground equipment removed, maintained and stored during winter by a pond consultant.

Recent Treatment Regimen

- Triploid grass carp first introduced in 2018 for vegetation control (milfoil, duck weed, pondweeds, etc.) under a stocking permit with the Pennsylvania Fish and Boat Commission.
- Blue/black dye introduced in 2021 to counter planktonic algae blooms.
- Time release bacteria blocks and water soluble bacteria packets to control aquatic waste products.

Wildlife Control

Canada Geese controlled with daily visits by contractor with trained Border collie on an as-needed basis. Principally done in spring to prevent nesting by breeding pairs.

Other/Comments

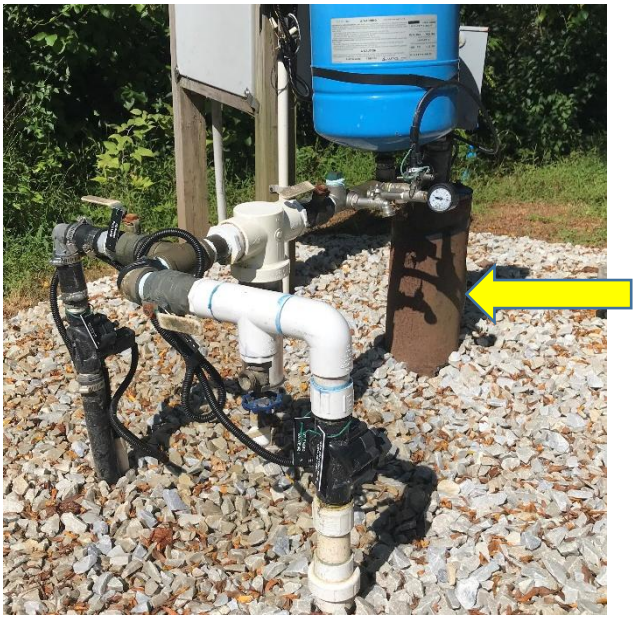
- This pond is not fenced.

- Fine bubble aerator system designed and installed in June 2020 by Coon Hollow Lawn & Pond Services. This system replaced an Otterbine fountain aerator which had experienced multiple failures.
- Well pump replaced in kind in 2021 and corroded carbon steel drop pipe replaced with thick-wall PVC pipe (see PONDS section of RAP website for report). Work done by Edward Powell Pump & Well Drilling, Inc.
- Pond level is principally controlled by operation of the well pump due to insufficient natural make-up.

Pond 1 – Aerial view and ground level view from the perspective of the yellow arrow

Concrete outfall structure fitted with trash rack. Discharges through reinforced concrete pipe to adjacent wetland.

A faux rock enclosure holds the Pond 1 aeration pump. Unit is a Gast rotary vane air pump, model AT05-101-G215DX, 120 volt, 4.7 amp.



Well discharge equipment header. Arrow denotes exposed portion of the steel well casing.

Programmable digital controller located at well site controls daily amount of make-up water to the pond (as well as irrigation water for Sloan clubhouse).

POND 2

Description

This is a retention basin that is intended to permanently hold water and provide additional storage capacity for precipitation events. It was constructed by Toll Brothers, Inc. in 2007 and designed by ESE Consultants, Inc. of Horsham, PA.

Physical Dimensions

Approximately 0.55 acres surface area with an average depth of approximately 4 feet.

Inflow

From all Phases 1 and 2 storm drains, as well as five storm drains along Egypt Road east of the community entrances. Via 54" diameter RCP beneath a 25 foot wide drainage easement between #261 and #263 Hanover Road; also via 21" diameter RCP (overflow from StormTech infiltration chambers) beneath walking trail terminating at northeast corner of pond.

Outflow

From concrete outlet structure through 30" diameter RCP to adjacent wetlands; discharge pipe fitted with concrete anti-seep collars. A 143 foot long emergency spillway (with riprap apron) located at northwest corner of pond provides relief during extreme rain events.

Makeup Well

305 feet deep, 6 inch diameter steel casing well with a Goulds 10 gpm, 12 stage pump driven by a 1 HP, 230 volt, single phase motor. Drilled by Bucks County Well Drilling in 2007. Pump installed by Thomas G. Keyes, Inc. in 2008. Well is located on common property behind #263 Hanover Road.

Pond Access Point

Along a 25' wide drainage easement between #261 and #263 Hanover Road

Aeration

Fine bubble aerator system. Three weighted Pentair diffuser discs positioned on bottom of pond, pressurized from an air pump located near north shore of the pond. System runs 24x7, April through November; above ground equipment removed, maintained and stored during winter by a pond consultant.

Recent Treatment Regimen

- Triploid grass carp first introduced in 2018 for vegetation control (milfoil, duck weed, pondweeds, etc.) under a stocking permit with the Pennsylvania Fish and Boat Commission.
- GreenClean Pro granular algaecide (100 pounds) to address blue-green algae
- Time release bacteria blocks and water soluble bacteria packets to control aquatic waste products.
- Rodeo herbicide applied to control growth of cattails at shoreline.

Wildlife Control

- Canada Geese controlled with daily visits by contractor with trained Border collie on an as-needed basis. Principally done in spring to prevent nesting by breeding pairs.
- Trapping and relocating of snapping turtles by pond consultant was discontinued in 2022.
- Largemouth bass added in 2024 to control goldfish over-population.

Other/Comments

- This pond is partially fenced along its northern perimeter adjacent to the walking trail.
- Fine bubble aerator system designed and installed by Coon Hollow Lawn & Pond Services in June 2019. This system replaced three Otterbine fountains which had experienced multiple failures. Original Charles Austen air pump replaced September 2024 with a HiBlow, Model HP-200 unit. Rebuilt original kept as a spare for either Pond 1 or Pond 2.
- A shoreline buffer roughly 700 feet long by 13 feet wide was planted in May/June of 2017 by Penn Outdoor Services. The purpose of this buffer of aquatic plants is to stabilize the sloping hillside, filter rainwater and enhance the pond's aesthetics.
- Make-up water from the well is rarely needed for this basin due to nearly continuous storm water inflow.

Pond 2 – Aerial view and ground level view from the perspective of the yellow arrow

Pond 2 main inlet structure (one of two) is fed from Phase I and Phase 2 storm water systems.

Outlet structure discharges to adjacent wetlands through reinforced concrete pipe.

One of three air diffusers that sit on the pond bottom, fed by weighted plastic tubing. Ponds 1 & 4 diffusers are identical.

A faux rock enclosure houses the pressurized air source. Unit is a linear diaphragm air pump.

POND 3

Description

This is a *detention* basin that is normally empty. It is designed to receive and hold storm water until it is slowly discharged to the adjacent wetlands. It was constructed by Toll Brothers, Inc. in 2010 and designed by ESE Consultants, Inc. of Horsham, PA.

Physical Dimensions

Approximately 0.46 acres surface area at the level of the emergency spillway.

Inflow

From Phase 3 storm drains via 36" diameter RCP beneath a 25' wide drainage easement between #416 and #418 Peters Way.

Outflow

From concrete outlet structure through 24" diameter RCP to adjacent wetlands; discharge pipe fitted with concrete anti-seep collars. An 82 foot long emergency spillway (with riprap apron) located at eastern corner of pond provides relief during extreme rain events.

Makeup Well

Not applicable.

Pond Access Point

Along a 25' wide drainage easement between #416 and #418 Peters Way.

Aeration

Not applicable.

Recent Treatment Regimen

- VectoBac 12G Bti (bacterial insecticide) granules applied for seasonal control of mosquito larvae.
- Rodeo herbicide applied to control growth of cattails.

Wildlife Control

- Not applicable.

Other/Comments

- This basin is not fenced.
- In 2012 Toll Brothers, at their cost, planted 3,200 plugs of various aquatic species in the floor of this basin prior to transfer of ownership to the RAP Homeowners' Association. The purpose of the plantings was to absorb stagnant water remaining in the bottom of the basin, thereby eliminating a breeding habitat for mosquitoes.

Aerial view of Pond 3 detention basin. Arrows denote the perspective of the following two photos.

Pond 3 from the perspective of the yellow arrow above. Water-absorbing plantings are thriving in the floor of the basin.

Pond 3 from the perspective of the red arrow above.

Inlet structure is fed from the Phase 3 storm water systems.

Outlet structure gradually discharges storm water to adjacent wetlands through a 3" diameter bottom orifice. Two sides also have two 1" orifices several feet above the bottom.

A riprap apron borders the basin's emergency spillway to prevent erosion during severe storms.

Adjacent wetlands as viewed from the emergency spillway.

POND 4

Description

This is a retention basin that is intended to permanently hold water and provide additional storage capacity for precipitation events. It was constructed by Toll Brothers, Inc. in 2011 and designed by ESE

Consultants, Inc. of Horsham, PA.

Physical Dimensions

Approximately 0.75 acres surface area with an average depth of approximately 4 feet.

Inflow

From Phase 4 storm drains via 34" by 53" elliptical reinforced concrete pipe at western corner of basin; also via 15" RCP at southern corner of basin. All pipe buried within 25' wide drainage easements.

Outflow

From concrete outlet structure through 30" diameter RCP to a variable width conservation easement; discharge pipe fitted with concrete anti-seep collars. A 125 foot long emergency spillway located northwest of the outlet structure provides relief during extreme rain events.

Makeup Well

602 feet deep, 6 inch diameter steel casing well with a Goulds 13 gpm, 21 stage pump driven by a 3 HP, 230 volt, single phase motor, 1¼" PVC drop pipe. Daily make-up water determined by mechanical timer settings.

Pond Access Points

Along a 25' wide drainage easement between #617 and #619 Regency Hills Drive.
Along walking trail entrance between #834 and #836 Woods End Court (best access to fence gate).
Vehicle access: along walking trail from emergency vehicle entrance next to #601 Regency Hills Drive.

Aeration

Fine bubble aerator system. Five weighted Pentair diffuser discs positioned on bottom of pond, pressurized from an air pump housed in a locked cabinet located on the north berm of the pond. System runs 24x7, April through November; Gast compressor removed, maintained and stored during winter by a pond consultant. A rebuilt spare for the compressor was acquired in 2025.

Recent Treatment Regimen

- Triploid grass carp first introduced in 2018 for vegetation control (milfoil, duck weed, pondweeds, etc.) under a stocking permit with the Pennsylvania Fish and Boat Commission.
- Phoslock slurry distributed in February 2020 to control blooms of blue/green algae by reducing the concentration of dissolved phosphate.
- Time release bacteria blocks and water soluble bacteria packets to control aquatic waste products and combat occasional blue-green algae outbreaks. Green Clean Pro (27.6% hydrogen peroxide) applied with backpack sprayer to control algae.
- Rodeo herbicide applied to control growth of cattails and purple loosestrife at shoreline.
- Blue/black dye and beneficial bacteria first introduced in 2022 to counter planktonic algae blooms.

Wildlife Control

- Canada Geese controlled with daily visits by contractor with trained Border collie on an as-needed basis. Principally done in spring to prevent nesting by breeding pairs. Largemouth bass added in 2025 to control goldfish over-population.

Other/Comments

- This pond is fenced around its entire perimeter. An access gate is located in its southeast corner, accessible from the walking trail. A combination padlock was installed on the gate May 2023.
- Fine bubble aerator system designed and installed by Coon Hollow Lawn & Pond Services in June 2022. This system replaced a Kasco fountain whose motor had failed catastrophically in May 2022.

- A die-off of more than 1,000 goldfish occurred in March of 2023. The cause was likely due to a toxin produced by planktothrix (blue-green) algae. No other aquatic species were impacted. Dead fish were removed from pond and properly disposed of offsite.

Aerial view of Pond 4 retention basin. Yellow arrow denotes the perspective of the following photo.

Pond 4 from the perspective of the arrow in preceding photo.

Main inlet structure (one of two) is fed from the Phase 4 storm drains.

Outlet structure discharges to adjacent variable width conservation easement. A leak at the horizontal joint between the pictured pre-cast concrete section and the section below it was repaired in August 2022 by Coon Hollow. See report in PONDS section of RAP website for details.

Pond outfall is located at the northeast corner of the earthen dam and is similar to those of the other ponds. Riprap in foreground reduces erosion during heavy discharge flow.

Compressor for bubble aerator system is a Gast rotary vane, model 1023-101Q-G608NEX, rated at 10 cfm, 10 psi.

Well site at northwest corner of Pond 4 has electric power panel and well pump controls.

Intermatic timer for Pond 4 well pump is housed in a weather-proof enclosure and is similar to the well pump timer at Pond 2.

General Information

- Each of the basins' earthen dams has a key trench and clay core constructed with an impervious material (unified soil classification CL-ML or ML). The bottom of the key trench has a minimum width of 12 feet and is a minimum of 2 feet below the existing (pre-construction) grade.
- Fencing around ponds in the Commonwealth of Pennsylvania is not required unless it is determined that a pond represents an "attractive nuisance", one that would lure children and put them at risk. The case *Murdock v. Pennsylvania Railroad Company* provides further perspective on this issue.
- The HOA Board first contracted for a pond consultant in 2016 and selected SOLitude Lake Management of Virginia Beach, Virginia (a nation-wide firm). In 2018 the Board awarded the contract to Coon Hollow Lawn and Pond Services of Riegelsville, Pennsylvania; Coon Hollow's principal, Ed Osterhuber, performs all of RAP's routine pond service activities. In 2026 the community contracted with Tigris Aquatic Services of Bordentown, NJ to provide these services while Coon Hollow continues deployment and winter storage of aerator compressors.
- In 2017 the HOA Board began contracting with Geese Chasers Southeastern PA LLC to discourage Canada geese from using our ponds - and the areas around them - for refuge, feeding and nesting. Geese Chasers has several crews, each consisting of a handler and a Border collie, who make daily visits to our three detention ponds, usually in the spring of the year; these visits signal to the geese that RAP ponds are not a desirable place for them to reside. The regional Geese Chasers franchise is owned and operated by Scott Savoy.
- In June 2023 permits for all ponds were amended to allow manufacturers' maximum recommended dosage of all relevant treatment products. The permits can be viewed on the community website here.
- As of May 2026 the Commonwealth of Pennsylvania does not require the posting of warning placards near ponds after treatment with beneficial bacteria, enzymes or dye.

Information Sources

Various Emails, documents and meeting notes from pond consultants
PS&I Committee maintenance history spreadsheet
Documents, plans and contracts from current and past Board members
RAP Community Association Board minutes
Early residents' photographs and recollections
B. Sieving photographs and observations
Quotations, emails and meeting notes from various pond maintenance and well drilling contractors
Application for Use of an Algicide, Herbicide or Fish Control Chemical in Waters of the Commonwealth, Amendments for Ponds 1 – 4, January 2021
PennState Extension website - https://extension.psu.edu/management-of-fish-ponds-in-pennsylvania
Goulds Pump website – series GS stainless steel submersible pumps for 4" and larger wells
Google Earth website
Pennsylvania Department of Conservation & Natural Resources website: Groundwater Information
ESE Consultants, Inc. drawings (stored in Sloan clubhouse management office):

- Final As-Built Plan Basin #3, Revised 5/19/08
- Final As-Built Plan Wet Pond Basin #1, Revised 5/19/08
- Final As-Built Plan Basin #2, Revised 4/16/12

- Detention Basin Details, sheets 46 – 49 (of 78), Revised 1/31/05
- Post Developed Drainage Area and Post Construction Stormwater Management Plans, sheet 75 (of 78), Revised 1/31/05
- Utility Easement Profiles, sheet 22 (of 56), Revised 12/6/07
- Detention Basin Details, sheets 29 & 30 (of 56), Revised 12/8/07

ESE Consultants, Inc. drawing (in PDF digital format):

- Final As-Built Basin #1 (Regency Hills), Job #1654, 5/20/16

Bruce Sieving
Ponds, Stormwater & Irrigation Committee
Updated May 2026