



MCRA ANNUAL REPORT 2017

Dedicated to providing services, products and opportunities of value that offer enrichment to the community.

Vision Statement

Montgomery County Revenue Authority (MCRA) is committed to growing a sustainable network that:

- Is nationally, regionally and locally recognized for its offerings and performance.
- Is dedicated to achieving higher environmental standards.
- Continues to offer new and innovative programs and services for the benefit of the community and our team.

MCRA is committed to the following core values:

1. Genuine Smile
2. Do Anything Attitude
3. Deliver Excellence

MCRA - OVERVIEW

The Montgomery County Revenue Authority (MCRA), created in 1957, is an instrumentality of Montgomery County, Maryland and a public corporation. The MCRA was established to construct, improve, equip, furnish, maintain, acquire, operate, and finance projects devoted wholly or partially for public use, good, or general welfare. A six-member Board governs the MCRA, with five members appointed by the County Executive and confirmed by the County Council. The sixth member – the Chief Administrative Officer of Montgomery County or designee serves in a non-voting, *ex-officio* capacity.

The two primary activities of the MCRA are to operate self-supporting facilities and to finance public facilities. On the operations side, the MCRA manages its golf course system comprised of nine golf courses along with the Montgomery County Airpark. The operated facilities generate various forms of revenue, which are used to fund MCRA operations and to provide for facility improvements. A portion of the operating revenues are used to retire any debt associated with operated facilities.

On the public financing side, the MCRA issues bonds to raise capital, to acquire land or other property, or to pay construction costs for Montgomery County facilities. Through a financing partnership with a broad range of County agencies, the MCRA has supported important public purposes as far reaching as economic development, education, transportation, health and human services, recreation, and the arts. The agencies' lease payments are used by the MCRA to retire the debt obligations.

MONTGOMERY COUNTY REVENUE AUTHORITY – 2017 HIGHLIGHTS

The Montgomery County Revenue Authority (MCRA) remained committed to its mission to grow through new initiatives and continued partnerships. The golf industry saw a decrease in rounds of 2.7% nationally in 2017. Rounds of golf decreased by 2.7% locally and by 1.6% in the Baltimore Washington area, according to industry data. The MCRA golf courses experienced an *increase* in rounds of 6%.

The MCRA issued revenue bonds refinancing the Montgomery College Arts Center project in November of 2015. The present value of the cash savings realized is \$3,578,120. The MCRA continues to enhance its operations and work with its partners to provide products that maximize the recreational enjoyment of the community while also identifying opportunities to save taxpayer dollars.

MCRA Golf Initiatives

The MCRA's golf course system, operated under the flag of MCG, hosted 392,562 rounds in 2017 at its nine golf courses. This was an increase of approximately 21,800 rounds from the previous year. The following is a summary of the broad range of MCRA initiatives focused on the needs of the communities we serve.

- ***Community Assistance and Event Programs***
 - MCRA continued its relationship with the Wounded Warriors Foundation during the Labor Day weekend by raising funds for this important initiative.
 - For a second year, MCRA worked with the Salute Military Golf Association (SMGA), which focuses on rehabilitating local wounded warriors through the game of golf.
 - MCRA donated auction items valued at more than \$25,000 to more than 100 local charities including public and private schools.
 - Support of Montgomery County Public Schools continued by MCRA providing an excess of \$25,000 worth of free golf rounds to the high school golf teams.
 - MCRA hosted a golf outing at Northwest Golf Course, with proceeds donated to The First Tee of Montgomery County and the SMGA.

- ***Family Golf***
 - MCRA continued to offer its successful Family Golf program that is offered at all nine MCG courses throughout the summer. This program consists of:
 - Free Family Golf clinics offered each Saturday or Sunday from April – August at rotating golf courses.
 - Attributable to Family Golf clinics, an estimated 1,200 people visited our courses during these special events and possibly put a golf club in their hands for the first time.
 - \$10 rates for all families were offered Monday – Friday at any time at our 9-hole courses and after 5 pm weekdays and after noon on weekends at all 18-hole courses.
 - A “course within a course” is set up for juniors and new players to the game to make the game much more fun and enjoyable, along with family friendly scorecards.

- **FootGolf**
 - Northwest and Sligo Creek Golf Courses were the first FootGolf courses established in the DC Market.
 - FootGolf is a combination of soccer and golf whereby a player kicks a soccer ball and follows the rules of golf. This proved to be a tremendous success and the two facilities. In 2017, numerous soccer teams and team building corporate events at the two FootGolf facilities.

- **MCG Academy**
 - The MCG Academy has continued with our 6-step program for lessons. With Golf 101 and 102 for beginners, 103 and 104 focusing on the golfer's long or short game, 201 and 202 for private instruction and playing lessons, we have found an instructional plan for all levels of players. This step-by-step program allows golfers to start with a plan, or intermediate players can fit right in based upon their experience level.
 - In 2017, the MCG Academy increased its instructional program by more than 2% or 13,000 golfers.

- **Robust Junior Golf Programs**
 - The MCG Academy also created and implemented a weekly mini-camp for kids. These mini-camps were offered after school at Falls Road, Northwest, Needwood, Rattlewood and Laytonsville.
 - We continued our long-standing partnership with The First Tee of Montgomery County, a program that uses golf to teach life skills to underprivileged kids. MCG Academy instructors host more than 400 participants annually at our Laytonsville, Needwood, Northwest and Sligo Creek Golf Courses.
 - MCG PGA Junior Teams were present at 8 of our 9 golf courses and one of the teams qualified for the regional finals in 2015.



- **Golf Industry Supported Initiatives**
 - Get Golf Ready, initiated in 2009, was continued through 2017 with great success.
 - This national "grow golf" program was initiated by the World Golf Foundation.
 - Get Golf Ready instruction is specially priced at \$99 for five introductory golf lessons.



- An estimated 1,000 participants have taken advantage of this great program since its inception.
- MCG is ranked in the Top 25 in the country for Get Golf Ready participants.
- LPGA-USGA girls golf was introduced in 2015 at Falls Road, with more than 80 girls who participated.



- ***Junior PGA Teams***

- Junior PGA teams totaled 416 juniors who were involved in either the 7-9 division or the 10-13 division with one of our teams making it all the way through to the third round of the Mid-Atlantic sub regional finals. We have expanded to include another age group for next season. MCG continued to have great success with the 16U junior division.



- ***MCG Programs***

- The MCG Academy team continued its successful Get Golf Ready and Keep Golf Going programs. We developed and implemented a new short game and long game program. More than 350 players participated in the program and many became loyal MCG customers and new golfers.
- Member for a Day -This program included an “all inclusive” price, which consists of continental breakfast, green fee, cart fee, lunch, driving range and replay rounds Monday – Friday. The program was successfully offered at Little Bennett, Laytonsville, Poolesville and Rattlewood.
- MCG has a number of Membership Programs that allow players to experience discounts on golf, food and beverage and pro shop merchandise. In 2017, these programs had registered over 3,300 players.



Little Bennett Golf Course

Agronomy and Environmental Stewardship at MCRA Golf Courses

MCRA golf courses remained committed to important environmental initiatives in 2017 and finished another year with great playing conditions in large part due to the maintenance practices that have been implemented over the years.

Important agronomic strategies continued, and a number of projects were undertaken that will have long-term benefits to playability and the environment.

Agronomy: Among the key agronomic programs that allow our superintendents to deliver appealing playing surfaces while reducing pesticide and fertilizer use are:

- **Aeration:** Aeration is the most important of all cultural practices we perform. Core aeration, wherein plugs of turf, thatch, and underlying soil are removed, allows for increased root growth, improved air exchange to roots, and improved water infiltration, among a host of other benefits.



When aeration is performed on greens, holes are typically backfilled with 100% sand, which keeps these important channels open for weeks or months for continued turf health benefits. The sand is of specific angularity and particle size to allow it to maintain surface firmness as well as permit the playing surface to “breathe.” While this procedure is temporarily disruptive for golfers, it is a significant reason why highly scrutinized playing surfaces can be maintained in such great condition.

- **Deep vertical mowing with sand injection:** In addition to normal core aeration, most of our courses have implemented a more aggressive strategy of deep vertical mowing, combined with sand injection, to help combat the numerous plant health issues that can be exacerbated by excessive thatch. This process was performed in late fall to allow these channels to be open all winter and help reduce potential injury caused by ice accumulation. We performed this procedure at 7 golf courses (all except Poolesville and Rattlewood) and were able to successfully eliminate spring core aeration in Spring 2018. The timing of the core aeration was historically to do it as early as possible so greens are perfect during better late spring weather, but many years is



challenged by unpredictable temperatures that can slow healing and cause prolonged disruption of putting surface smoothness.

Topdressing: Weekly or bi-weekly applications of light amounts of sand, brushed in to the greens, go virtually unnoticed by golfers. This important process not only continues to maintain the surface firmness desired by our golfers, but also helps to dilute thatch and organic matter that naturally builds up as the turf grows. Minimizing the buildup of organic matter in soil is important because thatch holds moisture (increasing disease pressure) and is a habitat or food source for undesirable insects.



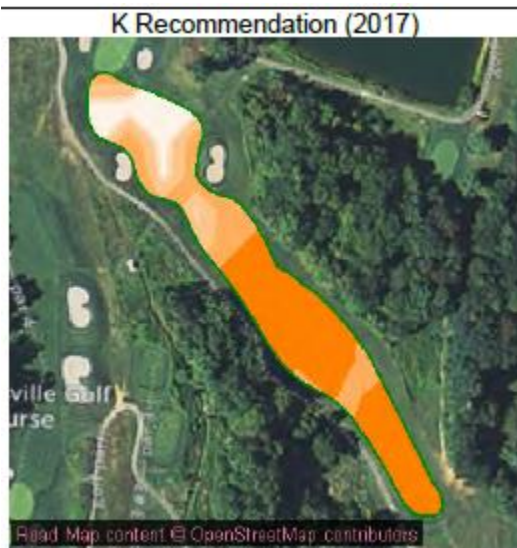
- **Rolling:** Lightweight (800-lb) dedicated, motorized rollers are used typically 3-5 times per week on greens and have been shown in numerous university research studies to reduce incidence of disease such as dollar spot (*Sclerotinia homeocarpa*), one of the diseases our greens are most prone to getting. Using these machines allows us to also increase green speed when necessary, as well as smooth the playing surface. We continue to utilize this practice to eliminate mowing 2-3 days per week by simply rolling greens in the morning to prepare the greens for play; this practice not only reduced disease pressure but also reduced fuel emissions. On these days, we reduce by 75% the amount of fuel used to prepare greens for play.
- **Venting/Spiking:** Every 2-4 weeks throughout the year, superintendents will make a decision to perform another important but minimally disruptive practice. Venting is usually performed with equipment that leaves very small (0.2 - 0.25 inch) holes throughout the green at 1.25-inch spacing. This machine rolls the turf smooth afterwards as well. Spiking is typically done with special units that fit on a greens mower and leave small slits in the green. This process is much faster, but since the slits will close more quickly it is typically beneficial for a shorter period of time. Both practices are still very important tools that can help dry out a wet green and/or provide oxygen to the upper root zone and make the turf healthier.



- Soil Testing:** Without a well-balanced soil, many of our efforts to maintain great turf are wasted. By taking soil samples of individual greens, tees, fairways, or roughs, we are able to determine exactly what the grass needs. And we save a lot of labor, fuel, and resources by only targeting specific applications of nutrients or soil amendments like gypsum or compost where the soil tests dictate. Not only does the grass perform better at an “ideal” nutrient ratio but the soil will also more readily support a diverse microbiology and have improved drainage properties. In 2016, we began to implement MLSN (Minimal Levels of Sustainable Nutrition) guidelines (<https://goo.gl/Tzu0PI>), a sustainable approach to managing turfgrass nutrition developed by PACE Turf and the Asian Turfgrass Center after careful analysis of thousands of soil tests from around the world of healthy and unhealthy turf. We continued to evaluate this in 2017 and have seen positive results.

Total Exchange Capacity (M. E.)		4.86	4.01	
pH of Soil Sample		6.80	6.80	
Organic Matter, Percent		2.37	2.22	
ANIONS	SULFUR:	p.p.m.	13	14
	Mehlich III Phosphorous:	as (P ₂ O ₅) lbs / acre	264	226
EXCHANGEABLE CATIONS	CALCIUM:	Desired Value	661	544
		Value Found	644	498
		Deficit	-17	-46
	MAGNESIUM:	Desired Value	100	100
		Value Found	100	82
		Deficit		-18
	POTASSIUM:	Desired Value	100	100
		Value Found	82	71
		Deficit	-18	-29
	SODIUM:	Desired Value	52	50
		Value Found		
		Deficit		

- Soil texture mapping:** In late 2016, we began the process of using a Veris machine to map the texture of the soils of our fairways at all 9 courses using electrical conductivity. This process will allow us to further reduce necessary fertilizer applications. In the picture here is an example of the potassium recommendations for #6 fairway at Laytonsville. Areas lighter in color will not need any potassium applied, so on this hole we would see about a 50% reduction in that fertilizer. This picture also demonstrates the high variability of the soil around our properties, as



well as our commitment to more precision turf management. Once the soils are mapped, soil samples are taken from each similar zone in every fairway to provide a recommendation. Nutrient recommendations are given for P, K, Mg, Ca, S, Zn, Mn, Fe, Cu, and B, as do most standard soil tests. We can look at this data combined with MLSN guidelines to provide an innovative new way to further reduce nutrient use.

- Water conservation:** One of the keys to managing healthy turf is to be in control of the water (when Mother Nature allows). Keeping soils dry, especially in the spring and fall, makes the grass search for water by growing deep roots. Deep roots help turf survive better by more efficiently accessing water and nutrition that is available in the soil. Irrigation computers are set up to specifically water dry areas when necessary on a large scale using highly efficient sprinkler heads. On a smaller scale, such as greens, much of the water comes in the form of hand watering. Superintendents and their teams can apply water to specific areas that need it at a time when overhead sprinklers that are more general in coverage may give unnecessary water to a wetter part of a green, for example, that could result in rapid turf decline. Hand watering and judicious irrigation programming saves an estimated 10 – 20 million gallons of water each year at our nine golf courses.
 - Wetting agents** are also used at our facilities in an effort to reduce watering and improve the effectiveness of our irrigation practices. Wetting agents allow water to more readily and evenly infiltrate into the soil. This immediately reduces runoff during heavy rain events and allows water from irrigation (when needed) to reach the entire root system and keep plant health at an ideal level to tolerate traffic and weather stress. Wetting agents can be targeted with a hose on localized dry spots, applied to entire turf areas such as greens, tees, or fairways, or applied through the irrigation system for a broad, positive impact as soil conditions dictate throughout the year. Rates are easily adjusted and different chemistries are available that allow water to be held near the surface or penetrate deeper into varying soil types from sand to clay and everything in between.

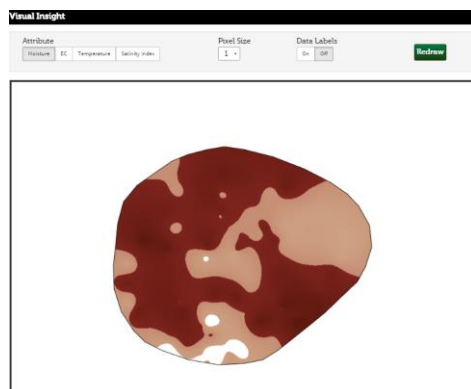


- Technology:** MCRA continued its use of tools that we now consider indispensable: TDR 300 and 350 Field Scout Soil Moisture Meters. These devices are located at every facility and they allow the superintendents to instantly see moisture levels on a digital display. With this information, they can more accurately pinpoint areas that are deficient in water, or that are too wet. This has enabled us to use even less water as we manage our greens, and by ensuring proper moisture levels (not too



wet, not too dry) throughout the entire green, plant health is consistently better, and the grass requires fewer inputs in the way of pesticides or fertilizers.

- MCRA also has a POGO meter. This device captures more data,



such as moisture, electrical conductivity, canopy temperature, and salinity index. The data is captured using GPS locations, can be visually presented and analyzed, as well as historically graphed over time. This advanced instrument will allow our superintendents to more precisely deal with various challenges to maintaining fine turfgrass in the Mid-Atlantic. The data also visually demonstrates the

variability of soil moisture and underscores the importance of hand-watering as a standard and responsible way of managing this important resource.

- **Scouting:** As a part of our Integrated Pest Management (IPM) strategy, scouting the golf courses daily for dozens of insect and disease pests that can significantly damage turf is performed. One example of a pest that is



causing significant turf damage in the Mid-Atlantic region is the Annual Bluegrass Weevil (ABW). The ABW has been a pest to the northern states such as Massachusetts and New York for many years and has now migrated south as far as North Carolina and adapted to

the slightly warmer climate where it is difficult to control with as many as 4 generations throughout one growing season. We spend a significant amount of time talking with university researchers and other experts about ideal control strategies that will allow us to minimize chemical inputs and maximize control of this pest. There are multiple methods to scout for the ABW. A “soap flush” with lemon scented dish soap is applied with water to host turf (primarily *Poa annua*) which makes the adults rise from cover to the tops of grass blades to be identified and counted. A “salt flush” is used other times of year to draw larvae from grass stems and is done by simply adding salt to a jar with water and adding a small turf plug and shaking. Cutting into the turf then pulling

apart the thatch to identify larger, older larvae can also be done. There are other monitoring techniques such as vacuuming to identify ABW numbers and develop a control plan if needed. After scouting data is collected, the turf manager will implement a control strategy to targeted areas as needed based on their findings.

Environment: MCRA courses continue to work within the guidelines of the Audubon International Cooperative Sanctuary Program for Golf Courses (<http://acspgolf.auduboninternational.org/>), as well as the Groundwater Guardian Greensite Program (<http://groundwater.org/gg/greensites.html>). These successful programs help managed green spaces such as golf courses carry out safe groundwater practices against chemical use and pollution as well as develop effective conservation and wildlife enhancement programs.

In 2017, Poolesville Golf Course joined Little Bennett, Needwood, and Northwest in completing the certification program. Through the end of 2017, all MCRA golf courses are much closer to achieving Audubon certification by completing requirements in the six focus areas of this intensely managed program:

- Wildlife & Habitat Management
- Water Conservation
- Environmental Planning
- Water Quality Management
- Chemical Use Reduction & Safety
- Outreach and Education

Research: MCG courses continue to evaluate new and existing strategies for optimizing playing conditions with fewer inputs of water, fertilizer, and pesticides. One of the ways we do this is by the use of check plots when applications are made. By keeping a small plot of turf untreated with a particular application, it allows us to evaluate the effectiveness and timing of control strategies. The goal is continue to enhance the ways in which we can manage our courses more sustainably – both environmentally and economically.

Needwood Golf Course's Executive 9 is home to a number of research projects aimed at reducing pesticide use with a variety of biological products on greens, tees and fairways. In 2017, more data was accumulated in studies on greens, tees, and fairway areas here, continuing the trend of turf loss in very stressful weather conditions during summer months using these "bio" products. We will continue to assess these programs to evaluate how weather extremes can play a role in their integration.

Projects: Numerous projects were completed in 2017, which have a direct, positive impact on course playability, as well as a long-term reduction in annual maintenance expense.

- **Drainage** was installed in select fairways at Poolesville and Hampshire Greens. Of all projects, continued drainage work is among the highest priority projects because overly wet conditions will kill more turf than drought stress ever will. Weather patterns the last 2 decades or so are trending lately towards higher rainfall totals with more time in between rain events. Getting water off the short grass (greens, tees, fairways) as quickly as possible is key to maintaining healthy turf, particularly during stressful summer months!

- **Tee amenity areas** at Falls Road have been improved with pavers. Previously, these areas were mulched with wood chips and have required a lot of ongoing maintenance throughout the season. The installation of pavers not only looks good, but also results in long-term labor savings that allow staff to focus on more primary tasks.



- **Bermudagrass conversion** of tees was completed in 2017 at Falls Road and Northwest's main 18 hole course. In addition to these tees, a few tee boxes at Laytonsville, Poolesville and Little Bennett, as well as the remaining ryegrass half of Little Bennett's driving range tee was also established with the Latitude 36 variety of this water-, fertilizer-, and pesticide-reducing turfgrass. Bermudagrass is typically native to Southern climates, but new cultivars have been developed that are more cold-tolerant, and are increasing in usage now further north into our area. This grass requires far fewer resources and inputs to keep it alive because of its aggressive growth habit in the summer months, as well as its tolerance to attack from disease, insects, and drought.



- **Sand traps** – A concerted effort is being made across our system to evaluate both the need for, and the long-term costs associated with the numerous sand traps on our golf courses. These hazards require a significant amount of labor to maintain, from their preparation for daily play, to repair many times per year after storm events, as well as annual sand replenishment and drainage work to prevent standing water. Last year, we eliminated select bunkers at some facilities (Falls Road, Laytonsville), rebuilt select bunkers at Needwood, Poolesville, Rattlewood, Laytonsville, Falls Road, as well as reduced the size of a few other bunkers to maintain the integrity of hole design but reduce maintenance costs.
- **Cart path work** was completed at Laytonsville (#1 green cart path extension) to extend cart entry to the green complex away from the walk-on area to the green and improve the condition of the immediate green surround.
 - Another important project was the re-grading and resurfacing of 6 green cart path at Little Bennett. The new path is concrete and will hold up to weathering in this wet area for a long time to come.



- Asphalt repair and drainage work was also done near the Northwest driving range to alleviate standing water after rain events, as well as a major repair at the entry to the maintenance shop area.

Montgomery County Airpark

The Montgomery County Airpark (Airpark), acquired in 1960, is owned and operated by the MCRA through a 99-year lease dating back to 1959. The MCRA maintains sole control over the northwest end of the Airpark property. In addition, the MCRA subsidizes the annual operating losses for the benefit of the County and the community.

As owner and federal grant sponsor, MCRA secures State and Federal funding for the Airpark and is responsible for the runways, taxiways, navigation aids, and other common areas. The fixed base operator (FBO) offers services to support aeronautical activities including fueling, aircraft storage, aircraft maintenance, flight training, and related services. Following the expiration of an 18-year lease with an aviation services company, the *long-term* leaseholder, doing business as DC Metro Aviation Services, became the fixed base operator (FBO). Since DC Metro Aviation Services took over as FBO, there have been vast improvements in both operations and facilities, including the construction of new hangars for aircraft storage and the addition of self-fueling service for pilots.

More than 150 aircraft are stored on the property. Montgomery County Airpark's 4,200-foot runway has three instrument approaches and is the closest "jetport" to the Nation's Capital. A portion of the traffic is of the commercial type or air taxis consisting of a variety of modern day aircraft such as Cessna Citation, Lear Jet, Beechcraft (both jet and turbine), and Falcon Jet. The Airpark is also home to an air taxi firm that specializes in transporting air travelers to various destinations in the east coast and the mid-west on a regular on-demand basis.

In 2016, the MCRA secured a \$5.477M FAA grant with a \$310k matching grant to refinish and relight the taxiway Airpark. This is the first of a two phase project and the MCRA will be seeking additional grants for phase 2.

According to 2015 economic data supplied by the Maryland Department of Transportation, the Airpark provides the following direct, indirect, and induced benefits to Montgomery County:

- 290 jobs
- \$11.26 million in personal income
- \$11.84 million in business revenues
- \$1.19 million in tax revenues



Financing Activities

Long-term sustainability continues to be a focus at the MCRA. A key strategy to attain this, in addition to constant attention to the operating budget, is an ongoing effort to reduce overall liabilities. In January of 2017, MCRA took advantage of a favorable interest rate environment to replace its interest rate swaps on a principle balance of \$17,168,000. This will save MCRA approximately \$32,000 per year in debt service payments through the remaining life of the bonds. Final maturity occurs in December of 2027.

In addition to its own debt, the MCRA carries more than \$81 million in debt related to projects around the County, which is not considered part of the County's debt service calculation. The MCRA issued revenue bonds refinancing the Montgomery College Arts Center project in June of 2015. The present value of the cash savings realized is \$3,578,120. The Goldenrod Building was purchased in September of 2011 with bonds totaling over \$15 million. It is now owned by Montgomery College. MCRA refinanced the Bethesda North Conference Center bonds in 2012, thereby saving the County \$1.052 million in cash flow over the remaining life of the bonds.

Additional projects include:

- Bethesda North Conference Center
- Health and Human Services Building
- Germantown Indoor Swim Center and other County swim facilities
- Montgomery College Arts Center
- Montgomery College Silver Spring Parking Facility
- Goldenrod Building



Bethesda North Conference Center



Germantown Indoor Swim Center