

February 26, 2019

# **MEMORANDUM**

To: Planning and Parks Committee Members

From: Department of Planning and Parks

Re: Proposal from Gateway Off-Road Cyclists (GORC) for a Flow Trail and Other Facilities at Bluff View

Park (Ward Six)

Cc: The Honorable James R. Bowlin, Mayor

Administration and Public Works Committee Members

Economic Development Committee Members Steve Cross, Co-Interim City Administrator

John A. Young, City Attorney

Rick Brown, P.E. and P.T.O.E., Director of Public Works Kathy Arnett, Assistant Director of Planning and Parks Gary Crews, Superintendent of Parks and Recreation

# Background >>>

The Gateway Off-Road Cyclists (GORC) organization, as many of the Committee Members will recall, had made a proposal in 2018 for the use of Belleview Farms Park for a major use facility for its purposes. The park would contain a system of trails, challenge courses, and a children's facility that do not exist there today. The development of these venues was to be completed by the organization through its volunteer network and had an estimated timeline, at least for the first phase, of approximately one (1) year to eighteen (18) months. A plan for the use of this park site was provided, along with a large amount of background materials in support of it as well.

The proposal was submitted to a number of different City entities for consideration, including this Committee, and received general support, but also generated a number of questions about it, particularly given the concerns of Sherman Area residents that were voiced in regards to the use of Belleview Farms for this purpose. Many in that community noted the desire for a passive park facility, which emphasized nature and activities that were low-impact in nature to it. Ultimately, this Committee made a decision to allow for a thorough ten (10) step review process to be undertaken on the site to allow for all of its environmental characteristics, including fauna and flora, to be identified and understood, before any major decision on the future use of this property was to be made by the City of Wildwood.

This decision has altered the timeline for the development of public use for this park property and will certainly lead to a number of future discussions, once the environmental inventory is presented to the City from this ten (10) step process. Additionally, the Parks Action Plan Update Committee of the City, which just

completed its update process of the Action Plan 2007, has made several recommendations in regards to this property and those items will need to be viewed against the outcome of this environmental inventory as well. Accordingly, this process will take additional time and may not lead to any allowances for the use of Belleview Farms for this type of off-road cycling use that has been proposed.

# New Information >>>

With this delay, and potential outcome, Gateway Off-Road Cyclists (GORC) has been considering alternatives to this location for the flow trail and other related facilities. One (1) of those locations is Bluff View Park, which is located on Old State Road, and leased by the City of Wildwood from St. Louis County. Several discussions were held between this organization and the City about this location and the Department of Planning and Parks agreed to allow the members to propose a design for this Committee's review and consideration. The design would be wholly contained at this location and utilize existing improvements for certain purposes, like parking and restroom facilities.

Gateway Off-Road Cyclists (GORC) has provided a design for these facilities in Bluff View Park to the City for its consideration. This design contains four (4) specific components for cyclists and include the following items:

- 1. Flow Trail (directional);
- 2. Dirt Pump Track;
- 3. Kid's Trail; and
- 4. Family Trail.

These facilities are intended to serve a range of ages and capabilities and, from the Department's perspective, have a very limited impact on the park site itself, given it is over one hundred (100) acres in size. Representatives of the organization have noted the addition of the flow trail will also improve safety on the existing Bluff View Trail that connects the upper parking lot area in the park to the Al Foster Memorial Trail by the Meramec River. The flow trail can be used to ensure downhill riders are sent in one (1) direction, while the current trail will primarily be used for the return and uphill climb, which will reduce speeds and improve safety on it. No additional parking or other facilities are planned at this time. It is important to note that not all of the facilities will be available at the same time, but will require a phasing process, given, again, volunteers will be used to construct these facilities within the park.

The Department of Planning and Parks has also had preliminary conversations with the St. Louis County Department of Parks and Recreation regarding this use and it is awaiting more information, before providing its complete input to the City. However, it was noted that, initially, it appeared to be a positive for the area and the overall St. Louis Region. Although the City has a lease with St. Louis County that provides for Wildwood to make such decisions, but the expertise that exists with this larger regional government, its input is welcome and needed.

Further reviews are needed of the plans by other agencies and, of course, the City of Wildwood and St. Louis County. Additionally, the Department would also want to allow for public input on this proposed use and would expect to hold an Open House or some other form of public input session(s) allowing neighbors to the property and others to offer opinions, comments, and/or suggestions. These processes could be started in a very short period of time and allow for the input to be presented to the Planning and Parks Committee thereafter. With this public input, decisions could then be made on the design, its facilities, and other considerations about the park.

# Recommendation >>>

Given the proposal that has been provided to the City, the Department is initially supporting it and would like to receive direction from the Planning and Parks Committee on the same. If this direction is positive, the Department would then begin a process to develop the needed plans and documents for the development of these facilities, at a level, to meet the City's permitting purposes. Thereafter, the next steps would be as follows:

- 1. Submit the plans to other agencies and St. Louis County for review and comment.
- 2. Incorporate the comments from this review process.
- 3. Conduct the public input components for comments, including those other users that were considered in the park's original design, which would include walkers, runners, hikers, and equestrian enthusiasts.
- 4. Incorporate the comments from this public input process.
- 5. Finalize plans, provide a list of all comments from all parties, including the public input components, and submit them to the Planning and Parks Committee for review and action.
- 6. Submit the recommendation of the Committee to City Council.

Once these steps are completed, and if favorable, the Department would then proceed with the City's standard authorization process for permits.

It is important to note that Gateway Off-Road Cyclists (GORC) does not necessarily consider this location a substitute for its Belleview Farms plan, but understand the process associated with that property will take time and delay its use. Regardless, the Department has held the opinion that Bluff View Park remains somewhat underutilized and this project, if agreeable to the City and its partners, would add a vital activity to it for Wildwood residents and visitors alike.

# Other >>>

If any of the Committee Members should have any questions or comments regarding this information, please feel free to contact the Department of Planning and Parks at (636) 458-0440. A presentation is planned on this matter at tonight's meeting. Thank you for the opportunity to present this information to the Committee on this important matter.



# **Trail Proposal**

# **Bluff View Park:**

Mountain Bike Trails and Pump Track

Presented by: The Gateway Off-Road Cyclists



## **PROJECT OVERVIEW**

The Gateway Off-Road Cyclists (GORC), a 501(c) 3 non-profit corporation dedicated to advocacy, design, construction and maintenance of mountain bike trails proposes to add mountain bike specific natural surface trails to Bluff View Park in Wildwood MO. The trails would include a one-way gravity trail, family trail and kid's trail (All open to hikers). We are also proposing that a pump track be added to the center island at the main trailhead off Old State Road.

GORC, in cooperation with St. Louis County Parks and Recreation and the City of Wildwood, completed construction of the 11-mile Bluff View Trail in the fall of 2018 with over 9,000 hours donated at a value of \$290,400. The trail system has become a popular destination for mountain bikers, hikers, dog walkers, trail runners and other user groups from all over the region. This plan would enhance the recreational opportunities currently available and provide a safer recreational experience for all park users.

# **PROJECT DETAIL**

The one-way gravity trail and pump track will provide a new and unique mountain biking experience to the St. Louis region and will continue to advance the City of Wildwood as a leader in outdoor recreational opportunities. Other communities have embraced trails that are specifically built for mountain bikes with progressive features. Rollers, jumps, berms and grade reversals create a "rhythm" where mountain bikers can enjoy a flow and build their riding skills. The proposed gravity trail would include these features, yet be safe for all skill levels. (See the attached drawings and trail feature description document for more detailed information)

GORC's plan would be to develop these features in Bluff View Park in three phases:

PHASE 1: Construction of a 3/4 mile one-way gravity mountain bike trail.

- Benefit: Downhill cyclists would be separated from highest use trail to bluff overlook, therefore reducing user conflict.
- · Construction Timeline: 3-4 months.
- Cost: \$20,000 In-kind donation by volunteers.

PHASE 2: Construction of a pump track near the trailhead/parking area.

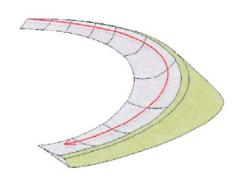
- Benefit: Provide a location for riders to develop their skills and encourage a sense of community by creating a family atmosphere.
- Construction Timeline: 1 month
- Cost: \$10,000 to \$30,000 In-kind donation by volunteers

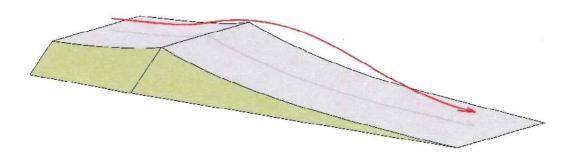
PHASE 3: Construction of a ¼ mile family trail and kid's trail.

- Benefit: Provide an entry level trail experience near the trailhead/parking lot.
- Timeline: 1 month
- Cost: \$7,000 In-kind donation by volunteers

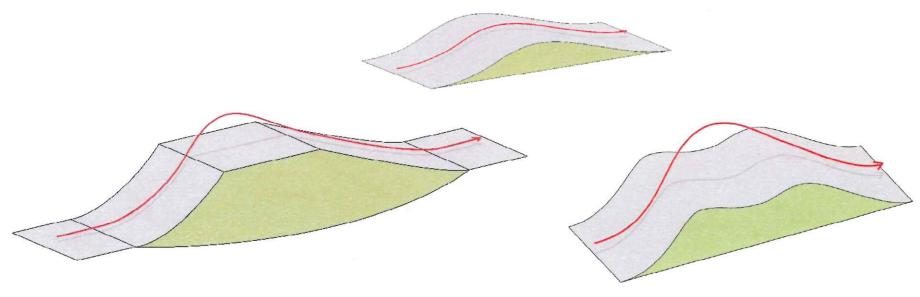
GORC is committed to providing all volunteer labor to build these trails and seeking the donation of any materials required.







# **MOUNTAIN BIKE TRAIL FEATURES**





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## **MOUNTAIN BIKE TRAIL FEATURE – Berms**

#### DESCRIPTION

A berm is a banked and curved cornering feature on a trail that provides support for the rider when turning a corner allowing them to turn in a smooth manner. A berm allows the user to maintain speed while cornering. The features are usually located on flat or downhill section of trail. A beginner graded berm will be generally open and shallow with more difficult berms encompassing tighter angles, steeper surfaces and higher entrance speeds. The speed at which a berm is ridden increases with rider skill and experience. Berms may also be used as trail feature in themselves, with a series of berms on a descent being a typical feature of modern bike trails.

#### **DESIGN COMMENTS**

It is important to ensure that a berm is continued around a bend to a point where the rider is able to exit safely on the line of the trail. Riding the feature during construction will indicate the correct exit point much better than design sketches. The trail formation specification needs increasing for berms that are to be ridden at higher speeds or is on steep gradients.

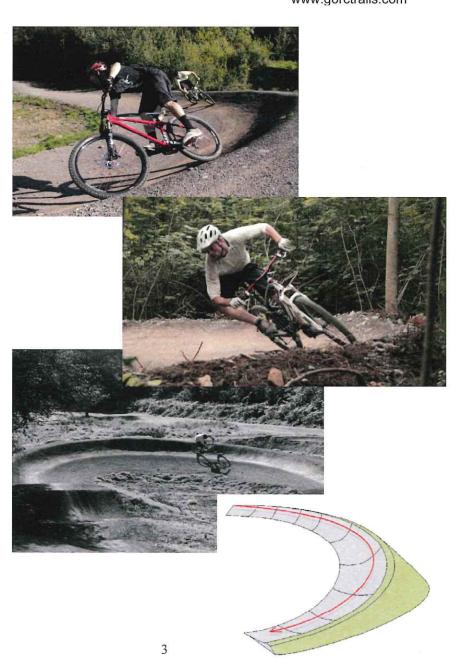
#### CONTRUCTION METHODOLOGY

Berms are created by either constructing a bank from earth or stone or identifying an existing bank/gradient that has suitable properties for the trail. A basic 20-45° bank should be formed in a rough semicircle of 8-10′ radius with an inverted dished face and suitable turning angle for the grade of trail. A trail compactor may be used to compact the earth or stone into the face of the berm, which should appear sealed when finished with no loose stone. An appropriate drainage area on the inside of the berm should be excavated to ensure water is shed successfully off the surface.

#### CONSTRUCTION MATERIALS

Local earth/soil Local stone

#### CONSTRUCTION MACHINERY





#### **MOUNTAIN BIKE TRAIL FEATURE – Rollers**

#### DESCRIPTION

A roller is a trail feature where the trail surface rises then falls smoothly, which should be ridable without pedaling. As the name suggests, rollers are designed to be rolled over. Skillful riders can use rollers to gain speed and control by 'pumping' them. Rollers can occur on the trail singularly, or in series, depending on the grade of the trail. On intermediate grade trails, rollers should generally be singular, although multiple rollers could be used if there is a minimum of a bike length (~6') gap between them. Advanced grade rollers can occur in succession and are steeper, taller and spaced closer than intermediate grade. Expert grade rollers should be technically challenging to ride, due their steepness and height. In some cases, riders can jump from one roller to another.

#### CONSTRUCTION METHODOLOGY

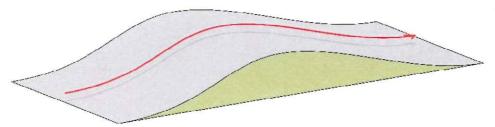
Rollers can be constructed from material on site or from imported material from local sources. Rollers can be built up on flat terrain, or use naturally occurring features. If built on flat terrain, a roller can be expected to use typically ½ ton of sub base. Machinery should be used to import and manipulate material into the appropriate spacing and heights. The shape of the rollers should then be refined using hand tools. The trail surface should be built according to specifications.

#### CONSTRUCTION MATERIALS

Local earth/soil Local stone

#### CONSTRUCTION MACHINERY









# **MOUNTAIN BIKE TRAIL FEATURE – Jumps**

#### DESCRIPTION

A jump is an exciting trail feature allowing riders to take off from the ground and land safely using their momentum. The larger the feature, the more severe the grade of jump. The entrance to and exit from a ramp is usually long which provides a safe environment within which to gain momentum, undertake the feature and land safely. Jumps may be constructed on all gradients, making them ideal trail features.

#### **DESIGN COMMENTS**

Poorly constructed jumps are dangerous. Focus should be on creating entrance and exit to the feature which will enable users to take the jump at different speeds requiring different skill levels.

#### CONSTRUCTION METHODOLOGY

A machine should construct a solid ramp out of local or imported earth or stone. Dumpers may import material and ramps may be shaped roughly by the machine before being finished by hand and compacted. Rocks and boulders may be installed on the lip of the ramp to allow users to drop off or roll out of the jump if the feature is not to be 'jumped'. Slabs or extra stone may be laid on the feature landing to reduce erosion caused by landing bikes. The route corridor at the entrance and exit to the jump should have a good line of sight.

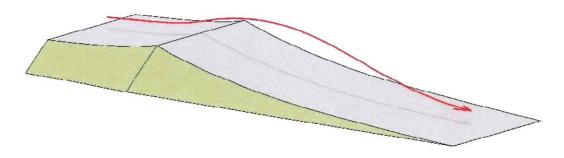
#### **CONSTRUCTION MATERIALS**

Local earth/soil Local stone

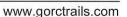
#### CONSTRUCTION MACHINERY

Hand Tools Dumper Mini-Skid Steer Compactor





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# **MOUNTAIN BIKE TRAIL FEATURE – Tabletop**

#### DESCRIPTION

A tabletop is a jump feature allowing riders to experience jumps with a gap between the take-off and landing in a safe and controlled manner. The feature is fundamentally a take off ramp with a flat top and a downslope. The advantage of using this type of jump is that the gap is not mandatory allowing a rider to lump onto the flat top of the jump, working their way up to jumping to the downslope of the landing. The difference in tabletop design between moderate and severe grades of trail is focused on the gradient encountered on the up and down slopes, the height of the ramp to be navigated and the overall length. Tabletops can be constructed out of earth or stone material. It should be noted that whilst tabletops allow riders of all abilities to attempt the jump, the lip of the take-off is therefore more susceptible to erosion than jumps with mandatory gaps.

#### **DESIGN COMMENTS**

Dividing the entry route into two will provide opportunity to offer users different approach options to the same feature (e.g. steeper and cambered options for more difficult grades).

#### CONSTRUCTION METHODOLOGY

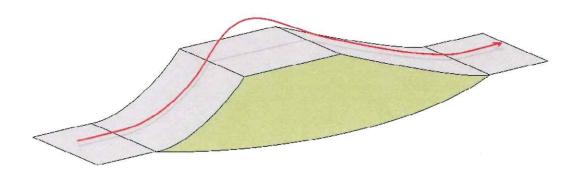
A tabletop feature is usually constructed from stone or earth that has been imported from appropriate local sources. A machine should be used to form material into a flat topped mound of

#### **CONSTRUCTION MATERIALS**

Local earth/soil Local stone

#### CONSTRUCTION MACHINERY









# **MOUNTAIN BIKE TRAIL FEATURE - Roller Double**

#### DESCRIPTION

A roller double is a manmade jump feature with a smooth, shallow bowl between the take-off and landing slopes. This allows the feature to be rolled over providing an inclusive feature with no opt out route necessary. The difference between a moderate (intermediate) roller double jump and more severe grades (advanced) is the length, height and angle of transitions.

#### **DESIGN COMMENTS**

Roller double jumps are good for trails requiring features to be included for a variety of skilled users. Less able users will be able to simply roll over the feature whereas better riders can perform a large jump.

#### CONSTRUCTION METHODOLOGY

A roller double jump may be constructed from stone or earth found on site or which has been imported from appropriate sources. An mini-skid steer or excavator should be used to form local material into two ramps with a rollable center and side slope of no more than 45°. A compactor should be used to compact the material at regular intervals to a required height. A final stone or clay should be installed in a tray on the top of the ramps and compacted so that the surface appears sealed. The entry on the first ramp may be split into 2 to provide different angles of approach. The landing points on the downhill of the second ramp can be fortified with extra stone or clay and should be elongated to provide a safe landing strip.

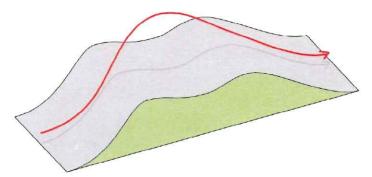
#### **CONSTRUCTION MATERIALS**

Local earth/soil Local stone

#### CONSTRUCTION MACHINERY

Hand Tools
Dumper
Mini-Skid Steer











# MOUNTAIN BIKE TRAIL FEATURE - Grade Reversal

#### DESCRIPTION

Grade reversals are a feature that can be used when traversing a side slope where a full bench cut is required. The feature helps to maintain trail flow, add interest, control speed and shed water at strategic points across a traverse, by using the undulating trail gradient. The line of the trail can be descending, slightly ascending or flat. The gradient of grade reversals can vary hugely in length, height, and frequency. Riders can gain speed by pumping the down sides of the reversals and carry momentum up the next incline before repeating. Grade reversals are also very useful for managing runoff on the trail surface, as water can be shed quickly from the troughs of the grade reversals. This avoids high volumes of water flowing on the trail surface and therefore reduces erosion. Grade reversals on a true beginner trail are generally smooth and low with more technical grade reversals encompassing shorter wavelengths, higher amplitudes and faster entrance speeds. The speed at which grade reversals are ridden, increases with rider skill and experience. For best practice, the trail gradient should always be less than half that of the side slope.

#### DESIGN COMMENTS

Routing the trail above large boulders and trees helps to provide natural demarcation and avoids undermining root systems.

#### CONSTRUCTION METHODOLOGY

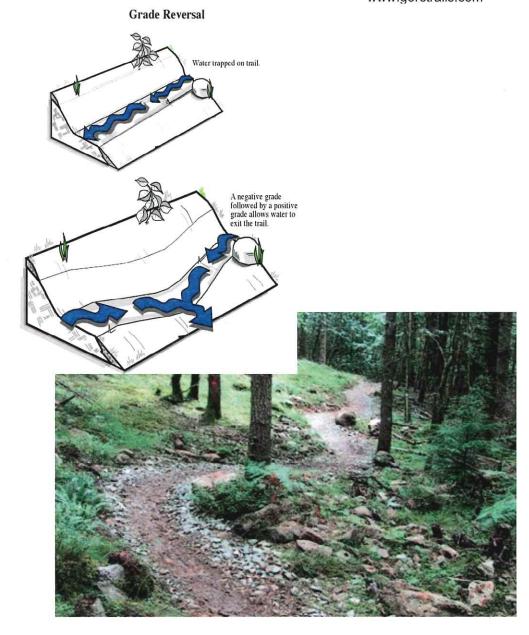
Create a full bench cut (either by creating a platform with hand tools or a mini-skid steer) and make sure the trail is constantly moving up or down. It is important to ensure that water can exit on the grade dips. A ditch and/or a culvert may be necessary. Once the shape is correct, a compactor should be used to compact the tread, which should appear sealed when finished with no loose stone.

#### CONSTRUCTION MATERIALS

Local earth/soil Local stone

#### CONSTRUCTION MACHINERY

Hand Tools Dumper Mini-Skid Steer







# **MOUNTAIN BIKE TRAIL FEATURE - Pump Track**

#### DESCRIPTION

Pump tracks are an easy way to add challenge to an existing trail system. Pump tracks consist of bumps (called rollers) and earthen berms that vary in height and frequency. These land forms allow riders to navigate through the pump track course without pedaling by absorbing the front side of the rollers and compressing the back side. They are relatively small in overall size and can fit anywhere. For land managers, pump tracks provide a fresh, low-risk recreation option in a central, easily managed location. Pump tracks provide a fun place for kid's to play, experienced riders to learn new skills and friends/family a place to hang out.

#### **DESIGN COMMENTS**

The pump track will be designed with features that are suitable for riders of all abilities. It will be designed to allow riders to develop skills and experience needed for more advanced features. Minimum size should be 600 square feet and be built on a slight grade of 2-5 percent for drainage.

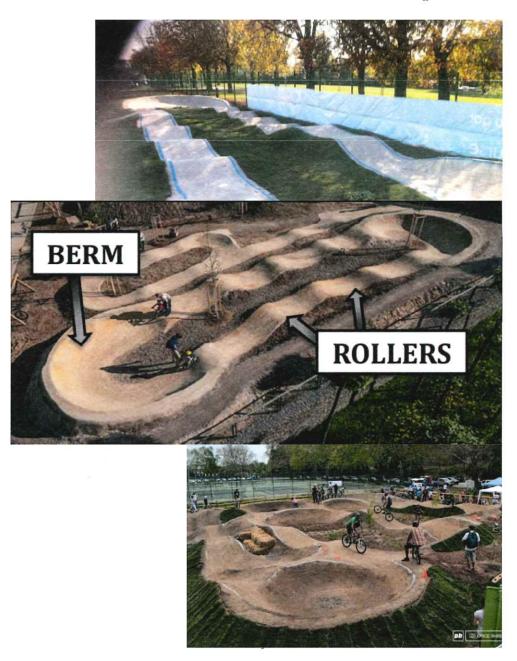
#### CONSTRUCTION METHODOLOGY

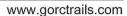
Existing dirt can be used, but it's best to import loam with fairly high clay content. Over time, the soil will compact, which will aid in drainage and sustainability. The use of materials other than compacted soil may be considered in the construction of pump tracks. These other materials will be selected based on durability and their need for on-going maintenance. Construction begins with the berms and then rollers are spaced evenly between.

#### **CONSTRUCTION MATERIALS**

Local earth/soil

#### CONSTRUCTION MACHINERY







# **MOUNTAIN BIKE TRAIL FEATURE – Family Trail**

## Description

A family trail provides a safe introduction to the sport of mountain biking. This is classified as the easiest of all trails and should be able to be ridden by all users on any type of off-road bicycle. The trail is wide and free of major obstacles while maintaining a nearly flat grade. The ideal location is close to the trailhead/parking area.

# **Design Comments**

The family trail will utilize many of the same concepts as pump tracks but arrange these features in a linear manner to create a trail. The trail will be 36" to 48" wide and free of major obstacles with possible advanced alternate lines provided to promote skill progression. Grades should be kept to less than 3-4% with no steep climbs.

#### **Construction Materials**

Local earth/soil Local stone

# **Construction Machinery**



