

CHOOSING THE RIGHT TRAIL SURFACE

Presented by:

Steve Saitta

Superintendent of Planning and Development

Mike Snyder

Senior Parks Planner





MKT Trail



Stephens Lake Park

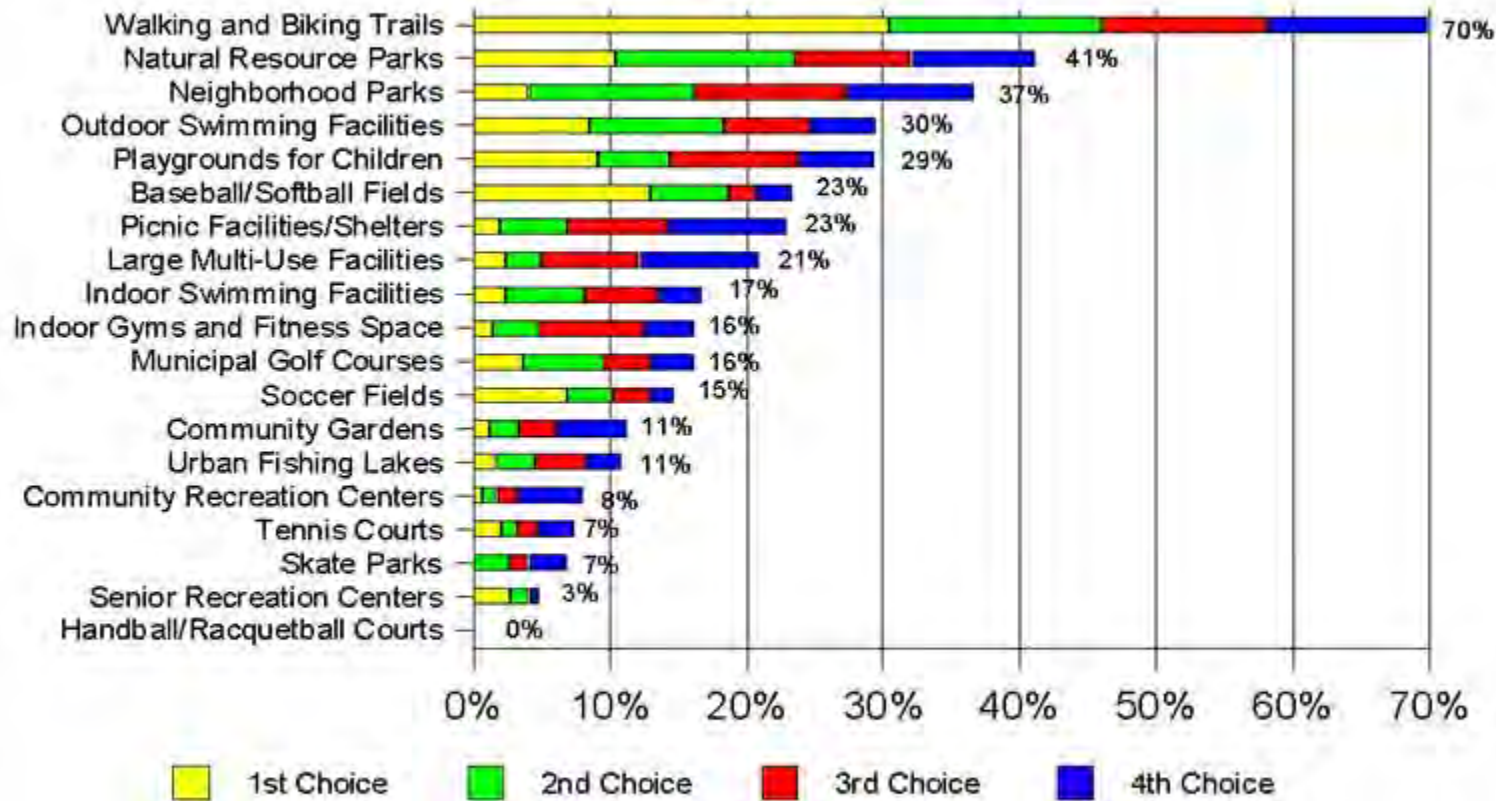


Cosmo Park

The Citizens of Columbia value trails. Trails and trail related activities always lead in our scientific surveys of residents.

Q7. The Four Facilities Most Important to Household Respondents

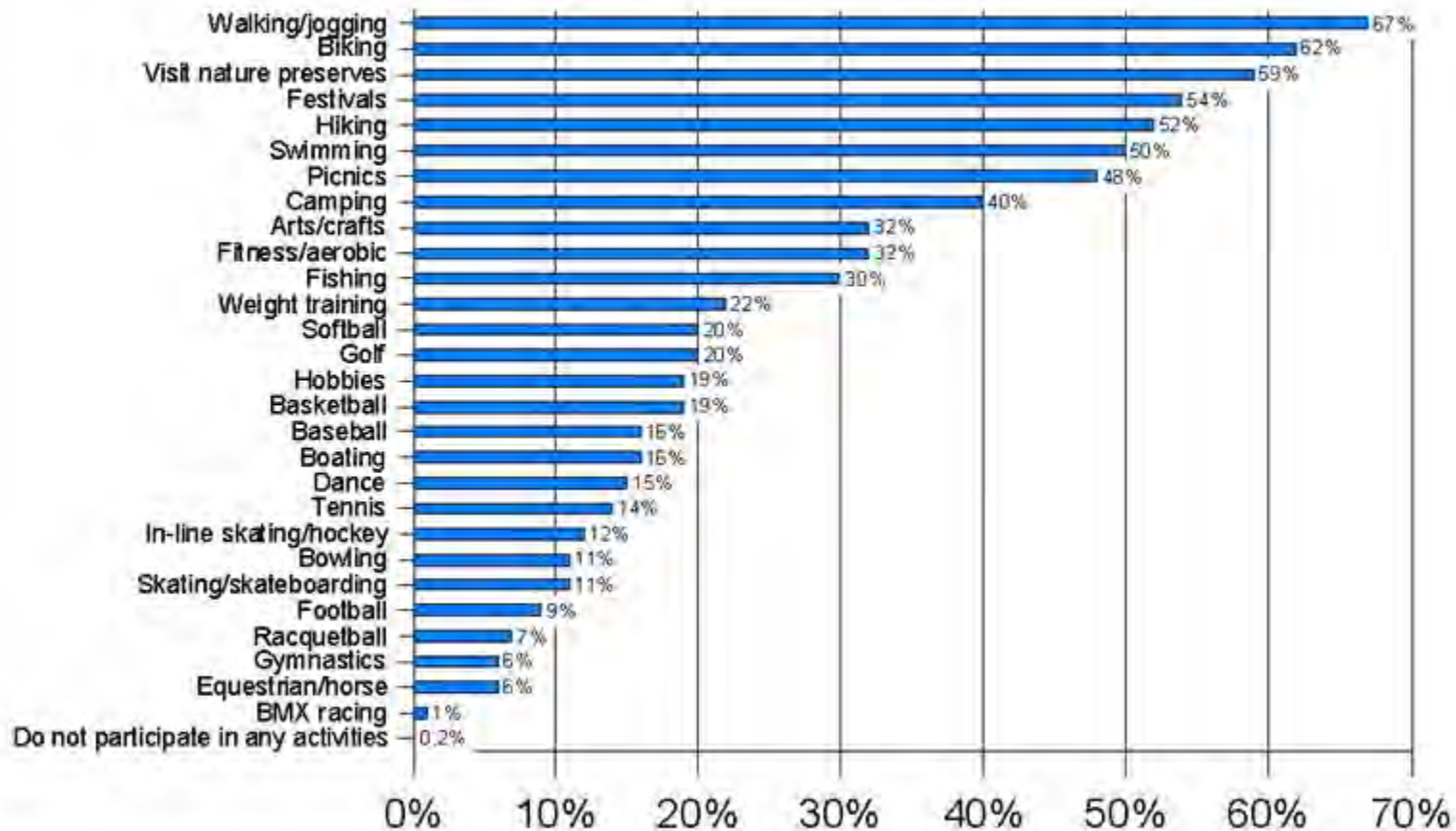
By percentage of respondents choosing four



Source: Columbia Parks & Recreation - User Survey (9/01)

Q1. Leisure Activities in Which Respondents and Households Participate Regularly

By percentage of respondents



Source: Columbia Parks & Recreation - User Survey (9/01)

Trail options for City Trail Master Plan

- Gravel
- Asphalt
- Concrete

Gravel trails



Bear Creek Trail



MKT Trail



Rock Quarry Park

Gravel Trails **Pros** and **Cons**

PROS

- Considered by some to be more natural looking.
- Good for flat areas out of flood plains.
- Softer on joints (running).
- Cheaper initial installation cost.

CONS

- High ongoing maintenance costs.
- Difficult to maintain consistent surface quality.
- Environmental damage caused by gravel erosion.
- More difficult to use in winter due to soft, wet and dirty conditions.
- Gravel migrates on steep trail slopes.
- Difficult to ride bikes on steep slopes and in loose gravel.
- Difficult to remove silt deposits after heavy rains.
- A dirty surface during and many days after rains.
- Very difficult to meet ADA surface standards.
- Less stability for running and walking in loose gravel.



Our trails flood regularly.



Bear Creek Trail during flood.

Ongoing Maintenance



**Removing mud deposits after floods
along the Bear Creek Trail.**



Gravel wash out at Bear Creek Trail bridge.



Replacing rock after flooding along the MKT Trail.



Blowing leaf litter off the edge of the Bear Creek Trail.



Gravel build-up in natural areas after flooding.



Trail damage after flooding.



**Gravel build-up
in natural areas
after flooding.**

- **We replace about 179 tons of gravel that washes into the adjacent creeks after every major storm event.**
- **On average over 1000 tons of gravel each year.**



Compacted gravel with fines is not very pervious.



Dirty surface after rain events is hard on clothes and bikes.



Cosmo Park 12' asphalt trail



Cosmo Park 12' asphalt trail



Asphalt trails



Cosmo Park 12' asphalt trail

Asphalt Pros and Cons

PROS

- Best initial surface (smooth, no cracks)
- Slightly cheaper than concrete in initial cost.

CONS

- Edges crack with vegetation. If you want a 10' wide trail, you have to install a 12' wide asphalt trail.
- Constant maintenance of crack filling and sealing with our clay soils.
- Must be completely overlaid approximately every 8-10 years.
- Little structural strength to span over soil problems below.
- Requires greater initial excavation (harming trees) to provide the required rock base depth.
- Impervious surface.



Asphalt Maintenance

Cracks appearing in first year even though the Cosmo Trail was built with 11" of gravel base.



Cosmo Trail required crack filling and sealing after only 2 years.



Asphalt settling where base failed on Lions-Stephens Trail.



**Concrete work done at the same time as asphalt.
Lions-Stephens Park 6' wide asphalt trail.**



The Cosmo Trail was well built with 11" of gravel base rock and has been well maintained, yet in 7 years it has major problems.

Concrete Trails



Stephens Lake Park 10' concrete trail

Concrete Pros and Cons

PROS

- Best ADA surface long term
- Best longevity. Should last 20+ years.
- Best consistency of surface. Does not wash or break apart.
- Does not wash in flood areas or on steep slopes.
- Steel in concrete keeps it from deflecting preventing tripping hazards or barriers for wheel chairs.
- Cleaner surface during and after rains. Keeps commuters clean as well as less wear and tear on bikes.
- Does not require gravel base rock so impact on trees is less than asphalt.
- We don't have to put tons of gravel in our creeks and natural areas every time it rains.

CONS

- More expensive (initial installation).
- Harder on joints (running).
- Less natural looking than gravel.
- Impervious surface.



**Oakland Park 8'
concrete trail**

Concrete trail in a natural setting.

**Stephens Lake Park
10' concrete trail**



Concrete provides a high quality surface for wheeled activities.



**Oakland Park 8'
concrete trail**

Concrete provides a high quality ADA surface.



Concrete requires no base rock so it requires less grading around existing trees.



**15 year old concrete in perfect shape
at Oakland Park 8' trail.**



Concrete does not require gravel base like asphalt.



Steel re-bar used in trails to prevent deflection and tripping hazards.



Concrete allows for rolled curb to prevent a wheel chair from rolling down steep slopes.



Flat Branch Park during flood.



Debris deposited during flood can be easily swept off concrete.

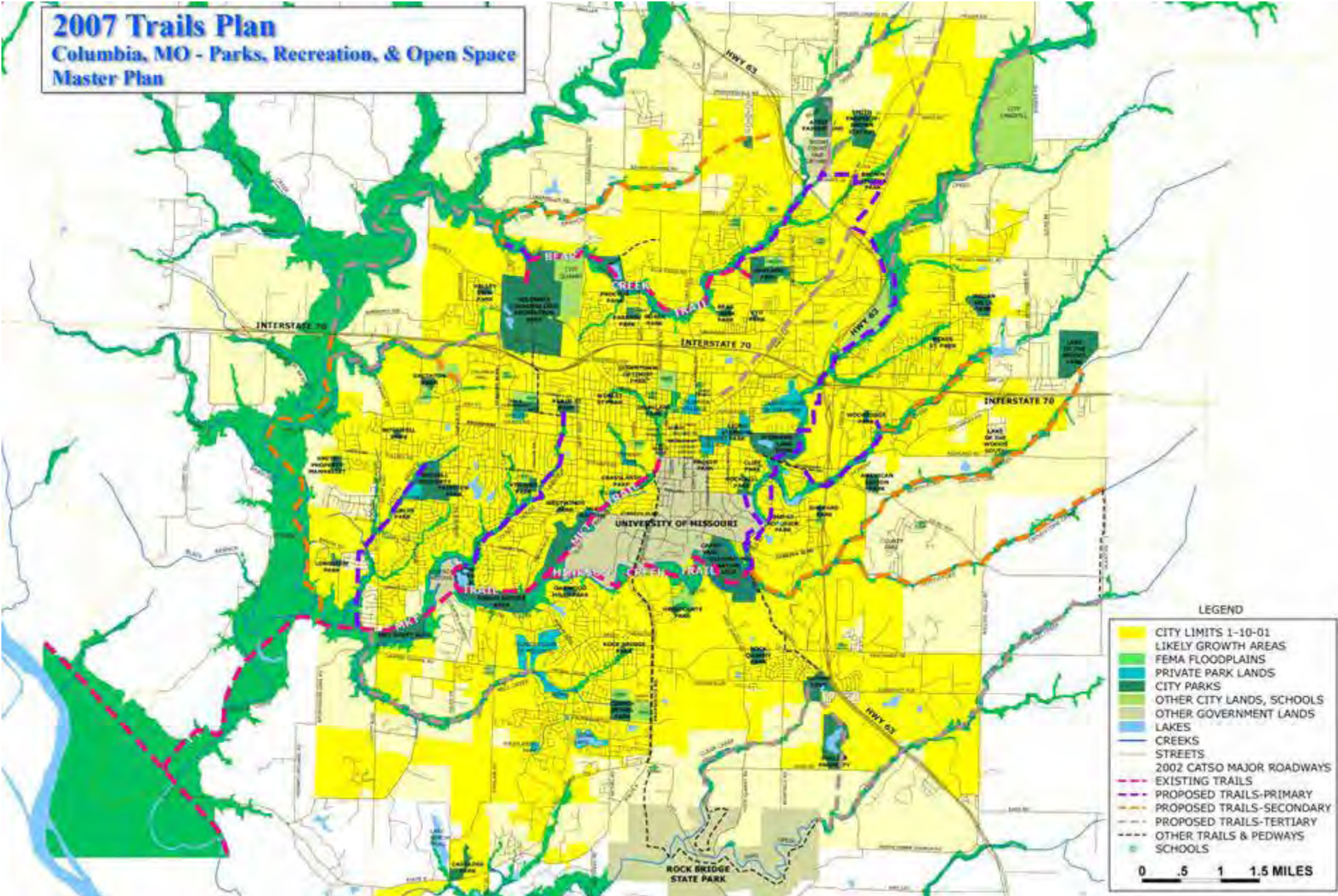


This concrete has been under water multiple times.



Concrete currently utilized under bridges.

Most of our proposed trails are in the flood plain.



Annual cost to maintain a ¼ mile of trail.

<i>Trail Type</i>	<i>Annual Cost</i>
Concrete	\$745
Asphalt	\$2,168
Gravel (in non washout/flood areas)	\$1,320
Gravel (in washout/flood areas)	\$4,226

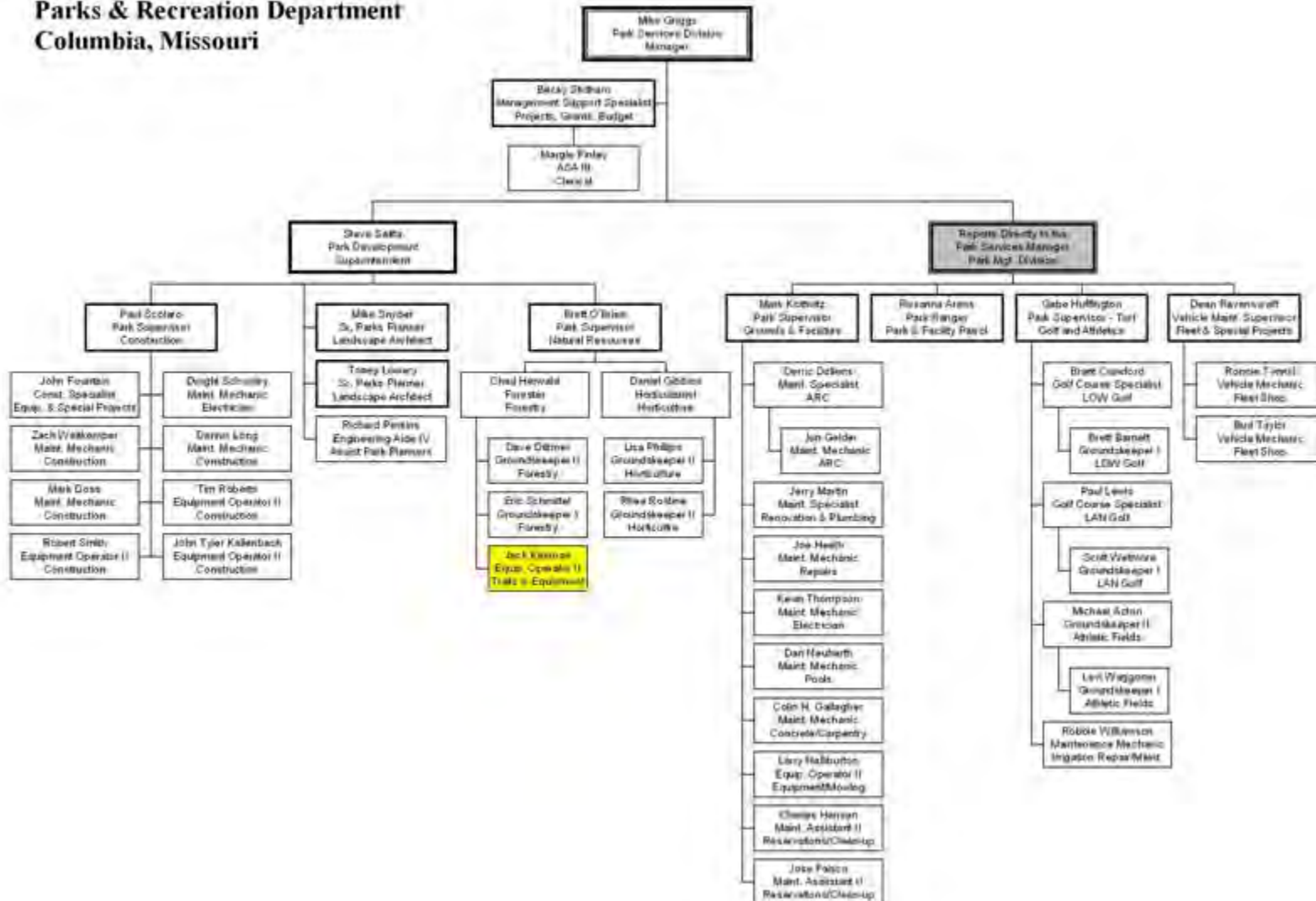
Why is staff concerned?

Currently Parks and Recreation maintains:

<i>Trail Type</i>	<i># of Miles</i>
Hard Surface	5.54
Mountain Bike	2.40
Nature	11.27
Gravel	18.22
Total Trail Miles Maintained	37.43

Parks and Recreation Department has only one FTE employee for trail maintenance

Park Services Division Parks & Recreation Department Columbia, Missouri





Steve Saitta
sms@gocolumbiamo.com

Mike Snyder
mts@gocolumbiamo.com

Creating Community through People, Parks and Programs