# Building Urban Trails
# Lessons Learned

28 March 2018

# The Team

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# Eric Bowlby

Executive Director
**San Diego Canyonlands**

*"We saw an opportunity to transform degraded, open spaces into wildlife havens, where people can enjoy nature, where we can absorb urban runoff before it gets to the ocean…*

*…and maybe we won't have to close our beaches every time it rains."*

# Mark Carpenter

Natural Resource
Planning Principal
**KTUA**

*"OK…so how about we go this way instead?"*

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# Hans Keifer

President
**Bellfree Contractors**

*"Um, John?
I think you better
come out and take a
look at this…"*

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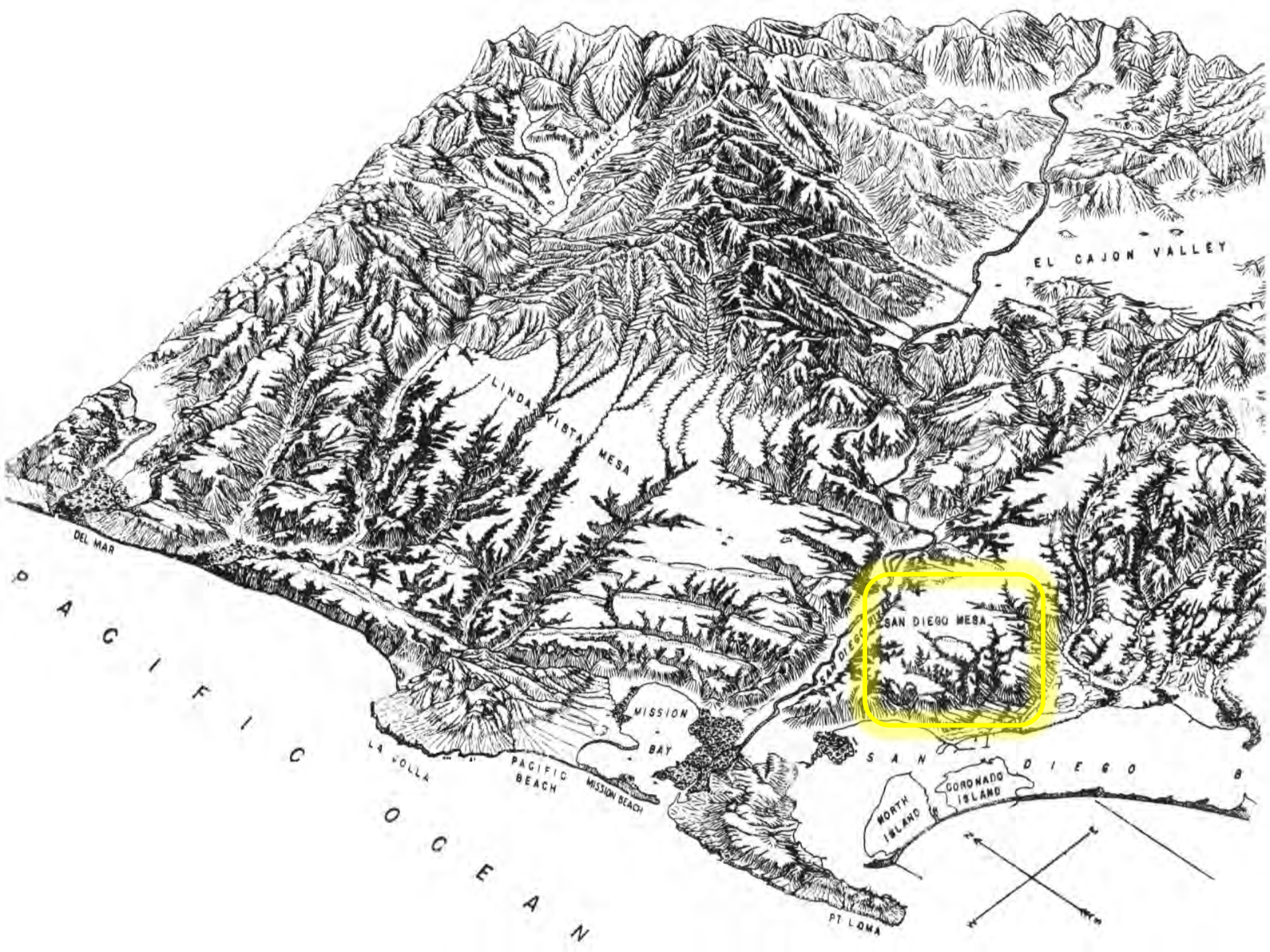
# Context

This all started because of where sewer lines were put decades ago…

- San Diego has 10,000 acres of urban open space within 150 canyons
- As development covered mesa tops, canyons became valuable habitat, but…
- Development also accelerated urban run-off, eroding soil into streambeds and ocean
- Many canyons cut through disadvantaged communities with little open space access


POWAY VALLEY
EL CAJON VALLEY
LINDA VISTA MESA
DEL MAR
PACIFIC OCEAN
SAN DIEGO MESA
MISSION BAY
LA JOLLA
PACIFIC BEACH
MISSION BEACH
SAN DIEGO B
CORONADO ISLAND
NORTH ISLAND
PT LOMA

Myrtle Ave
Thorn St
Marlborough Ave
41st St
42nd St
Central Ave
Manzanita Dr
Poplar St
Columbine
Highland Ave
Redwood St
45th St
Olive St
Menlo Ave
47th St
Euclid Ave
Belle Isle Dr
Jacob Dekema Freeway
38th St
40th St
Snowdrop St
Tuberose St
Violet St
Sumac Dr
Tulip St
Shamrock St
Modesto St
44th St
Roseview Pl
Laurel St
46th St
Ralene St
39th St
Juniper St
Fairmount Ave
Cynthia Pl
Clematis St
Larch St
Wendell St
Baily
Ridge
15
805

Thorn St
VanDyke Ave
Glenfield St
Manzanita Dr
Heather St
44th St
Poplar St
Fairmount Ave
Columbine St
Redwood St
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Chamoune Ave
Quince St
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Fairmount Ave
Columbine St
Olive St
Menlo Ave

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# Context

**1998**

- City proposed paved sewer line maintenance roads in canyons

# Timeline

## 1999 - 2002

- Canyons' Friends Groups convince City Council to limit roads to 8 feet, unpaved and vegetated

## 2007 - 2008

- Canyons officially designated as open space
- San Diego Canyonlands formed to protect it
- SDC conducts planning process with lots of public input

## 2008 - 2015

- With professional volunteer help, SDC wins Strategic Growth Council - Urban Greening Grant to develop "Canyon Enhancement Plan" integrating revegetation, erosion control and trails
- Trails are part of revegetation project's environmental review
- Work begins on trails system layout and design

# Timeline

## 2015 - 2016

- Developed design guidelines
- Prepared construction drawing package
- Shepherded plans through permitting
- Selected contractor
- Oversaw construction
- Flagged trails to avoid sensitive resources like rare plants
- Revised some segments due to erosion that occurred since alignments were defined

## 2017

- Construction completed
- Ribbon-cutting
- Much rejoicing

# Getting the Project Going

## Grantors were impressed by:

- Plan's public input and consensus building
- How many of us were there to meet them at their project selection tour stop
- Our commitment to the project

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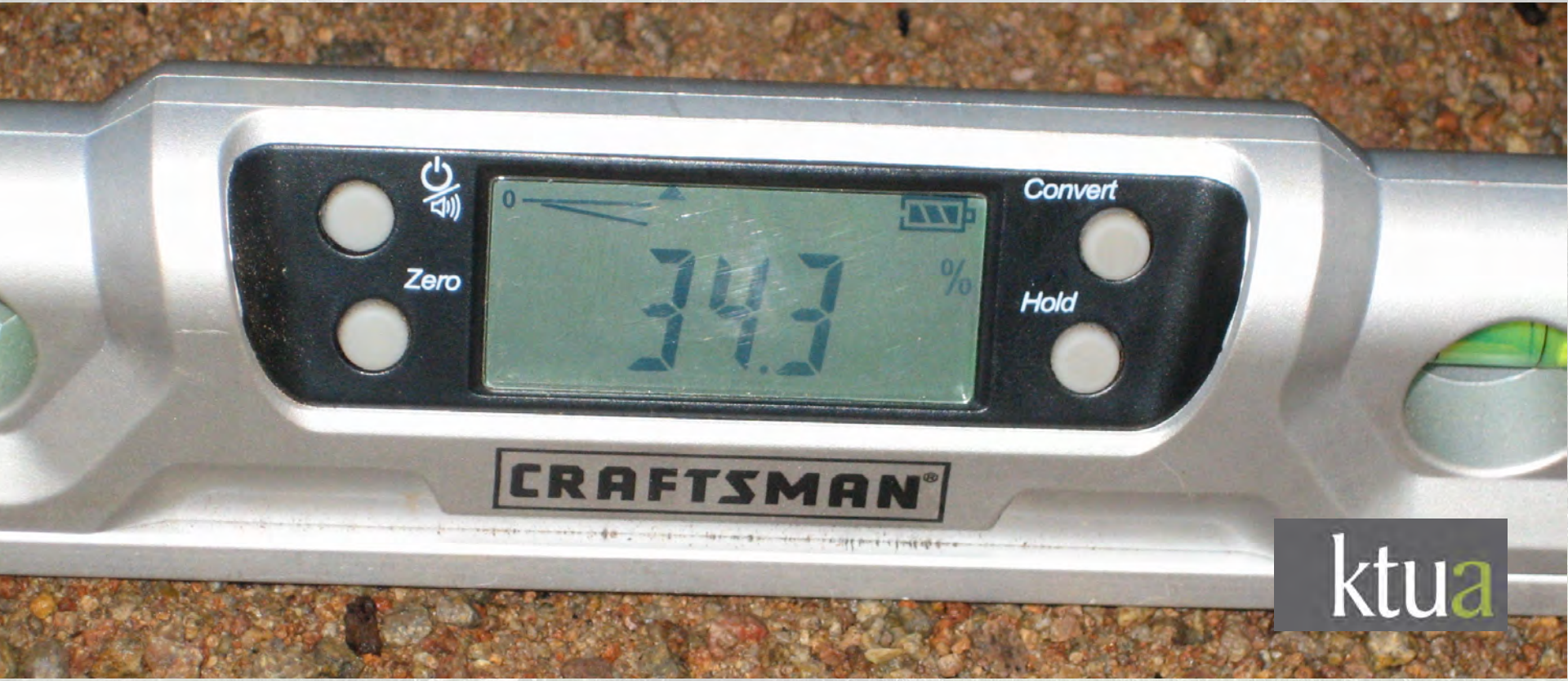
# Working with Your Agencies

- Expect to have to educate your permitting agency “ologists” about sustainable trail design…and it may not be an easy sell

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# Working with Your Agencies

**Make an agreement with your permitting agency to allow some flexibility in laying out trail alignments:**

- Some restrictions, such as sensitive bird breeding periods, are non-negotiable
- Specify what species and habitats are off-limits and how to protect them

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# Working with Your Agencies

# Managing Construction

- Set up construction staging well in advance, including securing materials

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# Managing Construction

- Arrange for a water source because streams dry up quickly after the rainy season

# Managing Construction

- Be ready to deal with construction changes caused by weather, sensitive species discoveries, available personnel, equipment failure, etc.

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# Managing Construction

- Adequate soil moisture is necessary for sustainable trail construction, but…
- Be prepared for rain delays

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# Managing Construction

- Large scale erosion controls are usually not needed, but small ones may be

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# Managing Construction

- Pipes can spring leaks and delay construction until the responsible utility fixes them

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# Layout Tools

- Start with aerials and topo maps, but get out there and thoroughly evaluate the site

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# Layout Tools

- Lots of things you should know about may not show up on maps or aerial photos

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# Layout Tools

- Conditions change and topo maps may no longer reflect reality

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# Layout Tools

- You don’t need an expensive GPS device
- Confirm alignments with available smartphone tools (ArcGIS Collector)
- The bigger the smart phone the better
- GPS add-ons improve accuracy (Bad Elf)

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# Mission Hills Canyon | Socio-Infrastructural Conditions

**Existing Conditions Map Set for Mission Hills Canyon**

**Map Date: 05/17/2015** | Imagery Date: 2013

Data Sources: SanGis, City of San Diego, San Diego Canyonlands

Contact: Eric Bowlby | www.sdcanyonlands.org

For More Info: www.sdcanyonlands.org/programs/canyon-enhance-planning

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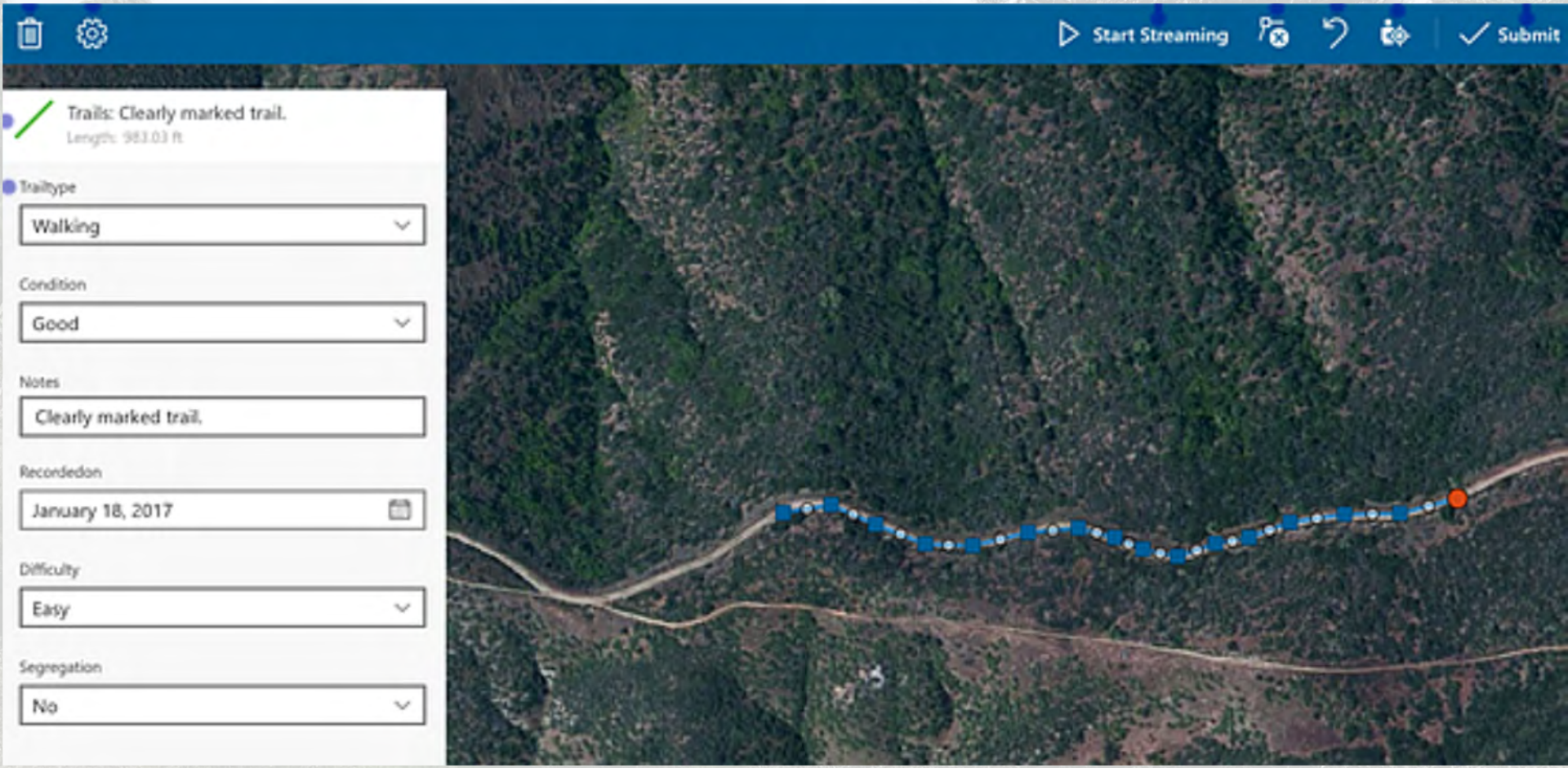
# Layout Tools

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# Layout Tools

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# Layout Tools

- Get a clinometer and know how to use it
- Never try to guess at grade!

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# Personnel

- Trails are a specialty that most general contractors simply do not understand
- Hire a contractor who has actually built sustainable trails

# Personnel

- Pre-qualify contractor candidates
- Good candidates ask annoying questions

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# Personnel

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# Personnel

- Hire consultants who are committed to being available on short notice to address changing site conditions and contractor's tight schedule

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# Volunteers

- Including youth volunteer component can make your grant application stand out

# Volunteers

- Volunteers can build an easier segment, or follow and “fine-tune” contractor’s work

# Volunteers

- Keep a close eye on them
- Closely space flagging on trails to be built by volunteers

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# Volunteers

## Establish a relationship with your local mountain bike association

- Usually the local sustainable trail experts
- Knowledgeable team leaders know how to manage volunteers
- Most groups can provide their own tools

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# Final Thoughts

- Local residents may come out in opposition long after trails are under construction (but many others may be happy to see them)
- Not everybody will be happy with the results (mountain bikers don’t like steps)
- Don’t expect your project to solve all your issues immediately

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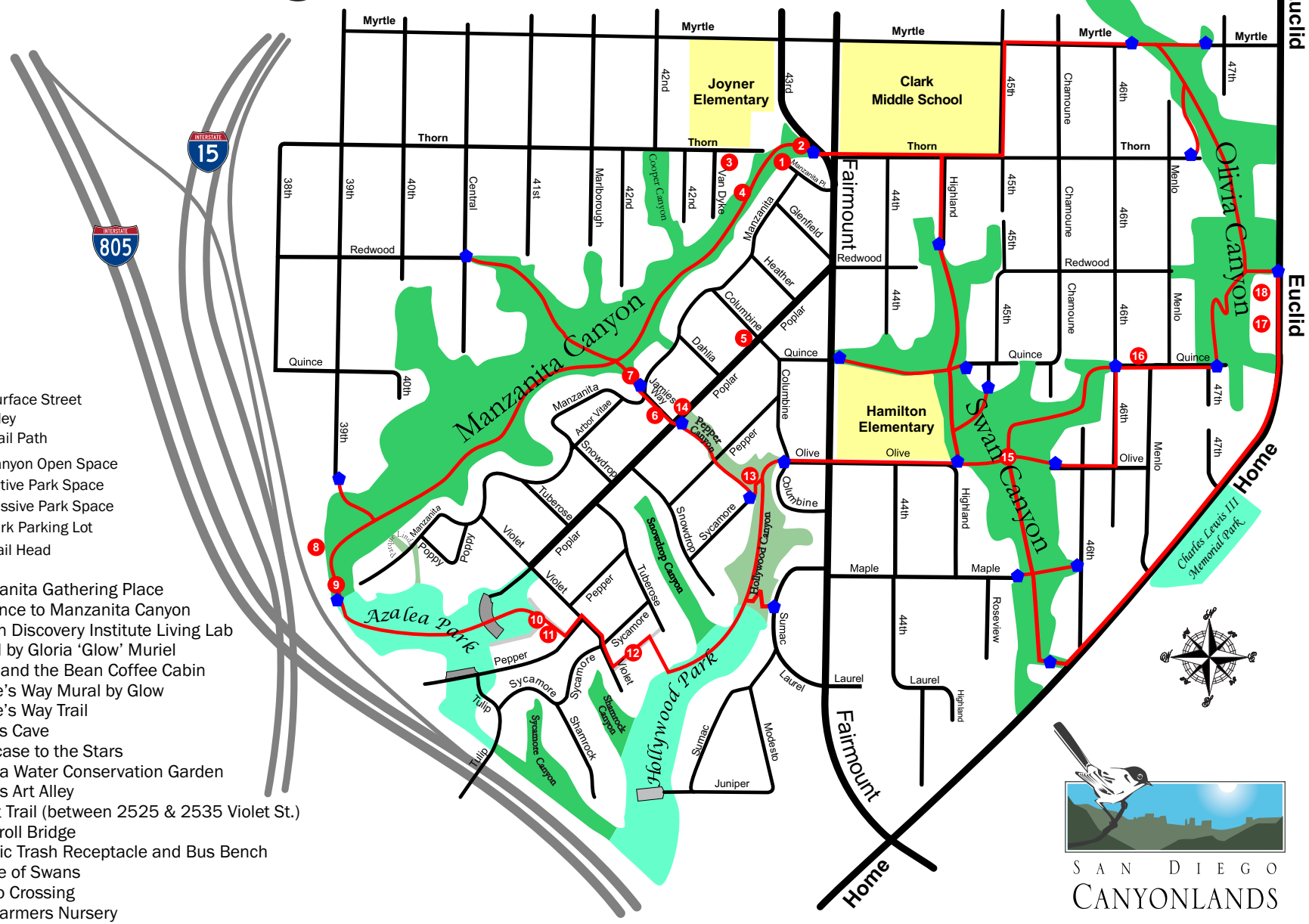
# You are most likely to get political support for grassroots, green infrastructure projects that benefit underserved communities and youth

# City Heights Canyons Loop Trail

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gizmoGraphics

Issue 02.14.18

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# Building Urban Trails
# Lessons Learned

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# Session Description

The trail planning, design and construction process starts with identifying sustainable routes, followed by developing design guidelines, preparing a construction drawing package, shepherding them through permitting, selecting a contractor and overseeing the work, including flagging the trail to avoid sensitive resources like rare plants, as well as revising some segments due to erosion damage or huge tree falls that occurred since the original alignments were defined.

What could possibly go wrong?

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# Session Purpose

What we learned implementing a trail plan that might help other trail planners, advocates and open space land managers do it better

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# Learning Objectives

1. **Expect the unexpected:**
   What do you need to watch out for to keep a trails project on track?
2. **Training your agency**
   How do you maintain your sanity through permitting and building?
3. **Balancing different groups' wants**
   Where do you compromise?

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