

# Authoritative But Not Authoritarian: Preparing Your Geodata For A Future That Is Already Here





Previous slide notes:

We are mostly familiar with the rhetoric of “open”— open data, open govt, transparency, etc. All good and worthy sentiments to be sure, but as stewards of authoritative geodata on the Front Range, we’re the ones who will be tasked with the work of implementing any ‘vision’—if we, and our bosses, are even convinced these ideas are worthy of tangible support.

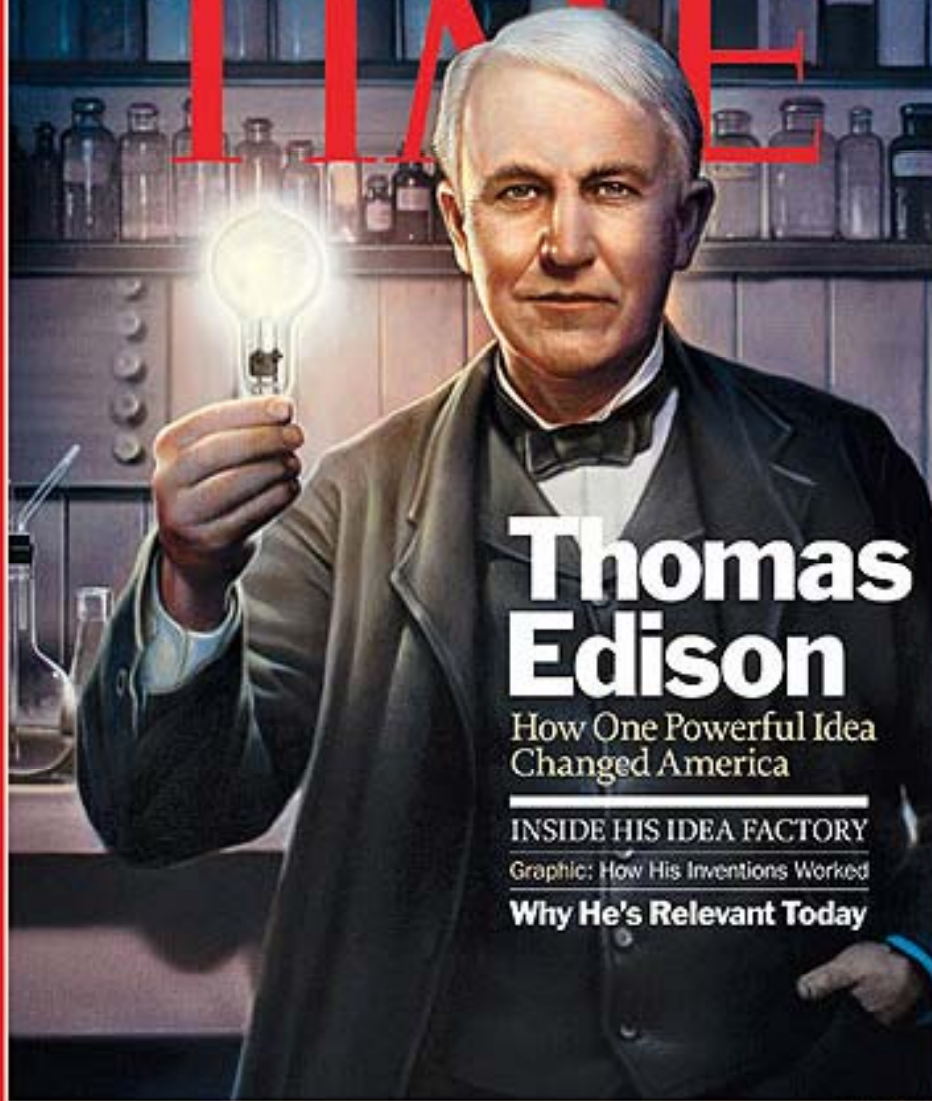
So today’s talk will be a bit philosophical but with real world examples that will help you frame your own thoughts and ideas on the worthiness of ‘open’ and how DRCOG may help foster initiatives surrounding this idea.

9th ANNUAL SPECIAL

JULY 5, 2010

# THE HISTORY ISSUE

# TIME



## Thomas Edison

How One Powerful Idea Changed America

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INSIDE HIS IDEA FACTORY

Graphic: How His Inventions Worked

**Why He's Relevant Today**

[www.time.com](http://www.time.com)

Previous slide notes:

We all know Thomas Edison as the inventor of the light bulb, but it's his quest to 'monetize' his invention that offers something instructive for us to ponder.

In addition to the light bulb, Edison had to expend much research and money on

- developing the proper generator to supply DC electricity to his light bulbs
- the appropriate rubber insulation on copper wire to transmit the electricity
- the supervision of trench digging in NYC to bury the electric lines to ensure safety

\*Many GIS managers would recognize the majority of their tasks to come under the metaphorical heading of 'trench digging'.

The result was that Edison lost the electricity war to Westinghouse and Tesla who developed methods to transmit (safely) alternating current (AC) electricity over long distances and at higher voltages.

Insult to injury—Edison never made much money of his light bulb patents...

Strained-metaphor takeaway: as stewards of authoritative geodata, we spend a disproportionate amount of resources on allowing users to interact with our valuable geodata only via our own very structured, overdetermined methods...

# The Portal Metaphor circa 1998

**YAHOO!**

New Cool Today's News More Yahoos

**1998 Winter Games**  
NBA - NASCAR - PGA

[Win a Grammy CD music]

**Valentine's Day**  
Yahoo! Personals

Search options

Yellow Pages - People Search - Maps - Classifieds - Personals - Chat - Free Email  
Shopping - My Yahoo! - News - Sports - Weather - Stock Quotes - more...

- **Arts and Humanities**  
Architecture, Photography, Literature...
- **Business and Economy [Xtra!]**  
Companies, Finance, Employment...
- **Computers and Internet [Xtra!]**  
Internet, WWW, Software, Multimedia...
- **Education**  
Universities, K-12, College Entrance...
- **Entertainment [Xtra!]**  
CoolLinks, Movies, Music, Humor...
- **Government**  
Military, Politics [Xtra!], Law, Taxes...
- **Health [Xtra!]**  
Medicine, Drugs, Diseases, Fitness...
- **News and Media [Xtra!]**  
Current Events, Magazines, TV, Newspapers...
- **Recreation and Sports [Xtra!]**  
Sports, Games, Travel, Autos, Outdoors...
- **Reference**  
Libraries, Dictionaries, Phone Numbers...
- **Regional**  
Countries, Regions, U.S. States...
- **Science**  
CS, Biology, Astronomy, Engineering...
- **Social Science**  
Anthropology, Sociology, Economics...
- **Society and Culture**  
People, Environment, Religion...

**AOL.COM**

AOL NETFIND  
AOL NETMAIL  
INSTANT MESSENGER  
MY NEWS

**TRY AOL**  
50 Free Hours  
Download NOW!

**Today on AOL.COM**  
Saturday | April 25, 1998

• Rates are low. Is it time to [refinance?](#)

• Try our search engine [just for kids.](#)

**AOL NETFIND** Click here to search the Web Find

**WEB CHANNELS**

- Travel**  
Bargains, Guides, Tips
- Entertainment**  
Music, Movies, Gossip, TV
- Sports**  
NBA, NHL, Auto Racing
- Personal Finance** NEW  
Quotes, Taxes, Mortgage
- Computing**  
Buyer's Guides, Software
- Shopping**  
Books, Music, Gifts
- Research**  
Education, Geography
- News**  
Newspapers, Archives
- Lifestyles**  
Seniors, Women, Gay
- Interests**  
Autos, Genealogy, Pets
- WorkPlace**  
Postings, Health, Humor
- International**  
Global Culture, News
- Health**  
Diseases, Reference
- Local**  
City Guides, Resources
- Families**  
Parenting, Babies
- Kids Only**  
Games, Clubs, Sports

NetHelp  
Feedback  
Link to Us  
Advertise with Us  
About AOL.com

Previous slide notes:

For those of us who were introduced to the Internet in the late 90s, AOL and Yahoo were 2 major portals who became multibillion dollar companies by providing a starting point from which we could navigate and discover content on the Internet. They were very structured and hierarchical (directories and sub-directories!), but they tamed the chaos of this new thing called the web.

And note the touch of whimsy on the Yahoo page—buttons that say “New” and “Cool”.

Yes, it was a simpler time <*theatric sigh*>.

# GIS Portal circa 2010

**City of Greeley Property Information Map**

**ORIGIN Maps - Property Information Results**

▼ Property: (4303 14TH STREET LN)

- A. Weld County Assessor Data: [\\*\\*\\*\[Click Here\]\\*\\*\\*](#)
- B. Full Name: DODGE KARL E DODGE KRISTIN L
- C. Street Address: 4303 14TH STREET LN
- D. City, State, Zip: GREELEY CO 80634
- E. City Zoning: R-L [\\*\\*\\*\[Click Here For Code Sheet\]\\*\\*\\*](#)
- F. Flood Insurance Zone: N/A
- G. Fire Station Response: 5
- H. City Voting Ward: III
- I. School District: Greeley
- J. High School Attendance: Greeley Central
- K. Middle School Attendance: Heath
- L. Elementary School Attendance: Monfort
- M. Subdivisions: COUNTRY CLUB ESTATES PUD 2ND RPLT TR I

Close

ORIGIN © City of Greeley - Spring 2008 Aerial Imagery

City of Greeley  
Greeley  
Great. From the Ground Up.



Previous slide notes:

While screen captures of AOL and Yahoo pages circa 1998 provide a moment of wistful sentimentality, the uncomfortable truth is the we in the GIS world are still foisting the portal metaphor on our users, and more importantly, would-be users of our geo-data as we present our information only through interfaces, that while they may be “slick” bewilder all but the most savvy ‘power users’.

One way entry, a monolithic platform, minimal bookmarking capabilities—we wouldn’t suffer such treatment in looking for other types of information on the internet, would we?

# Search & Intention

**Google**

400 E 8th avenue denver co ✕ Search


400 e 8th **avenue denver co**  
400 e 8th **ave**  
400 e 8th **ave denver**  
400 e 8th **avenue**  
400 e 8th

About 102,000 results (0.21 seconds) Advanced search

**Everything**  
Images  
Videos  
News  
Shopping  
More

**Denver, CO**  
Change location

Show search tools

 **Colorado State Executive Residence** ☆ 🔍  
[Place page](#)  
400 East 8th Avenue  
Denver, CO 80203-3625  
 (303) 837-8350   
Bus: 8th Ave & Logan St  
[Get directions](#) - [Is this accurate?](#)  
Open Daily 1pm-3pm  
[3 reviews](#) - [Write a review](#)

[400 E 8th Ave, Denver, CO 80203](#) - Zillow ☆ 🔍  
400 E 8th Ave, Denver, CO 80203 has a Zestimate home value of 4196500. See photos, maps, neighborhood and school info for this home in Colorado on Zillow.  
[www.zillow.com/.../400-E-8th-Ave-Denver-CO.../82272828\\_zpid/](#) - [Cached](#)

[Map of Cheesman-Evans-Boettcher Mansion, 400 E. 8th Avenue, Denver ...](#) ☆ 🔍  
Sep 23, 2008 ... Citysearch® has maps, driving directions, and more for **400 E. 8th Avenue, Denver, CO 80203** in Denver. Also find reviews, directions and ...  
[denver.citysearch.com/.../denver\\_co/cheesman\\_evans\\_boettcher\\_mansion.html](#) - [Cached](#)

[555 E 8th AVE, Denver, CO 80203 MLS# 852866](#) - Property Details ☆ 🔍  
555 E 8th AVE, Denver, CO 80203 property descriptions. This **Colorado Denver** Single Family House ... **400 E 3rd Ave, Denver, Colorado** · **400 E 3rd Ave, Denver ...**  
[www.movoto.com/co/555-e-8th-ave-denver/521\\_852866.htm](#) - [Cached](#)

Previous slide notes:

Search engines such as Google have become scary accurate in algorithmically figuring out what we're trying to find on the Internet. Even to the point of having autocomplete features that finish our request before we're done typing.

Example: address of Governor's mansion. (Talk delivered on day of new governor's inauguration.)

Right on the top half of results we have a map and various snippets of the most relevant information.

All good, right?

Question: Citizens come to local government sites seeking information. What is the likelihood they're looking for information about their own residence/parcel? Fairly high, right? How many local gov home pages have an entry box for residential addresses, let alone one that auto completes with choices for all valid addresses in that jurisdiction?

On the Front Range, the answer is Zero....

# Location in the Brave New World



Previous slide notes:

This lack of findability is even more glaring as we increasingly adopt devices with built in GPS devices that announce our intention without typing—namely our location. The user wants to know something about *where* they are *now*.

Sidebar: who here has a line-item in their budget to develop an augmented reality iPad application? Why not think about opening your geodata so 3<sup>rd</sup> parties may take it upon themselves to develop such apps?

# 4 Types of “Open” for Authoritative Geodata

Downloadable shapefiles via FTP

Portals where I can view data

*Findable via Search Box*

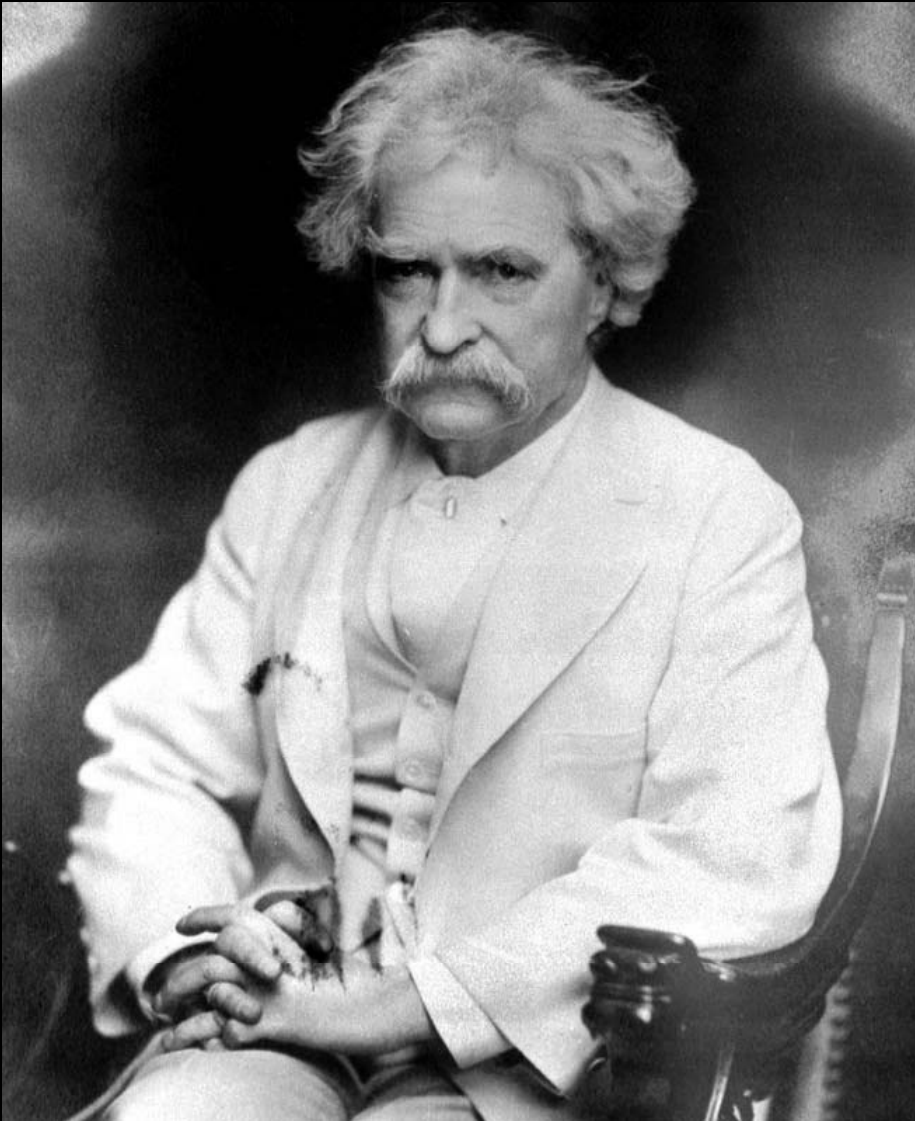
*Live Syndicated Data Feeds*

Previous slide notes:

Least “open” data mean different things to different people, let’s talk about what it may or may not be re geodata.

1. Shapefiles downloadable via FTP? OK, good start. But normal people don’t know what shapefiles are, or FTP, or, heaven forfend, comprehend your custom State Plane projection.
2. Portals where I can view data. Ok, at least we have a picture. But usability? GIS Portals especially bad since the impulse circa 2001 was to make online maps “GIS stuffed into a web page.” Again, our normal person may or may not understand the interface...
3. Findable via search-box. Can would be users google their address and find YOUR authoritative data on the first page of results. We caretakers of geodata measure authoritativeness in terms of positional accuracy and timeliness. The public measures authority by search rankings. If you’re not on the first page of results, they probably don’t care.
4. Open data feeds. Raw data that developers can easily use and repurpose. This is what we’ll be talking about from here on forward when we refer to “open data”.

# The Most Ubiquitous Syndicated Feed



"Everybody talks  
about the *weather*,  
but nobody does  
anything about it."



Previous slide notes:

Weather information is ubiquitous on the Internet.

Most of the information comes from the National Weather Service.

Thoughtfully, the National Weather Service doesn't make everyone come to their site to find out the weather. Yes, they do have a website with this info, but more importantly they have freely accessible data feeds that can be used by third parties to build their own applications.

Check out this example—

<http://bit.ly/hFVOUv>

This XML is raw, structured data that developers can easily access and present information in a customized way for customized use cases.

# 8 Principles of Open Data

1. Complete
2. Primary
3. Timely
4. Accessible
5. Machine Processable
6. Non-discriminatory
7. Non-Proprietary
8. License-free

Previous slide notes:

Principles of Open Data—description

[http://resource.org/8\\_principles.html](http://resource.org/8_principles.html)

# Mecklenburg County, NC

The screenshot displays the Mecklenburg County GIS GeoPortal interface. At the top, the browser title is "GeoPortal - Mecklenburg County GIS". The main header features a search bar on the left and the "GeoPortal" logo on the right. Below the search bar, there are tabs for "Data" and "Map".

The left sidebar contains a "Welcome" section with the following text:

**Welcome To GeoPortal**  
Use the text box in the upper left portion of the screen to perform a search and select a result from the list with the keyboard (Up/Down arrows + Enter) or the mouse. For more information, check out our video tutorial.  
This site is powered by free and open source software. The source code can be found here.  
By using this web site, you are agreeing to abide by our Disclaimer.

Below the welcome message is a "Search Results" section showing "108 MANLEY ST, CHARLOTTE NC 28216". A list of categories is provided with expandable arrows:

- Property
- Services
- Transportation
- Environment
- Economic Development
- Schools
- Voting
- Community

The main map area shows a street grid in Charlotte, NC. A tooltip is visible over a property, displaying:

**Selected Property**  
108 MANLEY ST, CHARLOTTE NC  
28216  
[Zoom to Feature](#)

The map includes a navigation toolbar with a compass, a scale bar (100 m / 200 ft), and a scale of 1:3386. The bottom right corner shows the coordinates -80.89047, 35.26619 and a "Permalink" link. At the bottom of the interface, there is a disclaimer and navigation links: "Disclaimer · Tutorial (Flash) · Report Problem · Strategic Planning and Program Support · Mecklenburg County GIS".

Previous slide notes:

OK, reciting the 8 Principles of open data is both tedious and preachy.

How about something from a world more familiar—public sector GIS.

Mecklenburg County, NC

--they have a portal, because GIS people can't help themselves

<http://maps.co.mecklenburg.nc.us/geoportal/>

--but they are also exposing their data via raw data feeds

<http://maps.co.mecklenburg.nc.us/rest/>

And what would people do with a raw feed? Check out this building permits application—

Public feed of raw information -- <http://bit.ly/ijvggG>

Application -- <http://open-data-day.geojason.info/>

Background info -- <http://geojason.info/2010/12/open-data-day-hack/>

Big picture: Imagine we had building permits feeds for the Front Range—that would be an incredibly useful indicator to monitor the relative health of the regional economy. So when we think about who would use the idea and why, a part of us has to be OK with the idea that we have no idea what people would do with data and how they would use it. But let people decide how public data would be useful to them.

# 2010 Word of the Year

'app'

Previous slide notes:

Having just enjoyed the holiday with a nephew obsessed with the Angry Birds on his iPhone, I can attest to the current obsession with all things pertaining to “apps”.

But the larger point is that there is a huge pool of developers who would love to use timely, authoritative geodata to create compelling, interesting, and useful apps that your department would never have the budget/time/technical sophistication to develop.

Instead think of the Internet as a virtual public space where as caretakers of authoritative geodata your responsibility is to provide digital infrastructure in the form of raw data feeds. And I would challenge those who sell public data as a cost-recovery scheme to think about the multiplier effects of providing free access to feeds to enable uses and apps that you never would've been able to provide to your citizens yourself.

And as we've seen with Google results, the world is not standing still. If you won't make your authoritative data findable and usable, there are 3<sup>rd</sup> parties already stepping up with less timely and less accurate versions of your information that the public uses because it's 'good enough.'

But instead on inflicting workarounds on the public, let's embrace our role of stewards of critical geodata and open our information to foster a more innovative, efficient world around us.

# Coda





Previous slide notes:

This photo is of George Westinghouse and wife at Niagara Falls. Westinghouse and Tesla's hydroelectric project there was the death knell of Edison's electricity dreams.

When Westinghouse announced the project and his capacity for generating 100,000 horsepower, lots of reasonable, sensible people scoffed because his only customer was the nearby city of Buffalo, which required only 2-3,000 horsepower for their lighting needs. What possible uses could require 100,000 horsepower??

Good question.

Charles Martin Hall was working on the energy intensive process of creating aluminum in Pittsburgh. Seeing the unprecedented opportunity to have access to cheap abundant energy, he built a plant at Niagara and his Aluminum Company of America (ALCOA) became the global leader in aluminum production, a position it still holds today, 100 yrs later.

By the time Westinghouse's Niagara project came online, all the capacity was spoken for.