

Tapping Your Inner Futurist
**Libraries and the Future of
Sustainable Communities**



**Presented by:
Garry Golden**



@garrygolden
#nyla2016



Start

End



Foresight 101



**Drivers of Change
for Sustainable Communities**



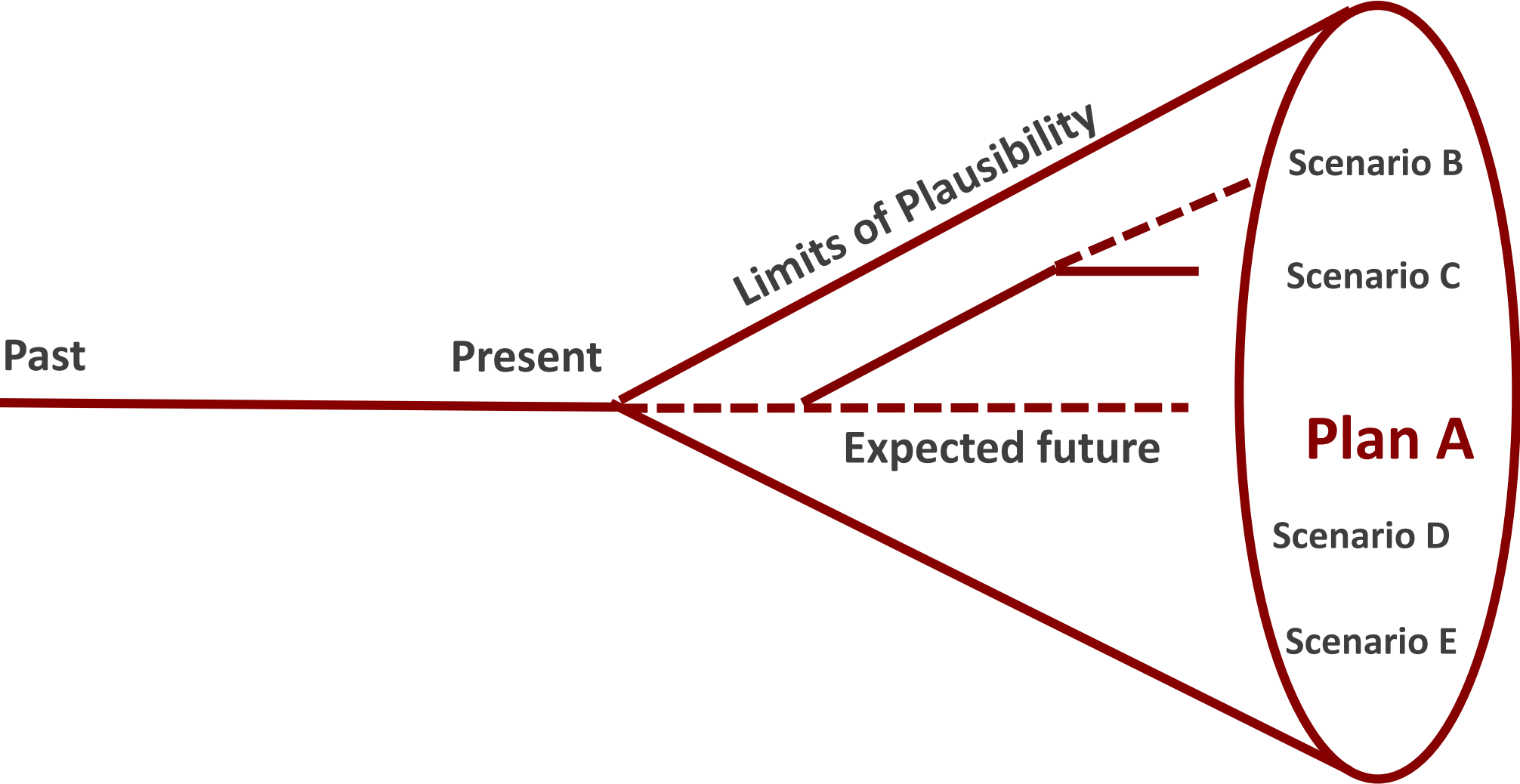
Next Steps


Tapping My Inner Futurist?



Foresight 101: Cone of Plausibility

Multiple Outcomes, Multiple Time Horizons



A close-up photograph of a person's hand holding a small, rectangular white slip of paper. The paper is held between the thumb and index finger, with the rest of the hand visible in the lower-left corner. The background is a solid, dark black. The text on the paper is printed in a clean, black, sans-serif font. The paper is slightly tilted, and the lighting is soft, highlighting the texture of the skin and the paper.

You will have funding
certainty for years to come.

IF YOU HIT THIS SIGN
YOU WILL HIT THAT BRIDGE





WAIT FOR IT

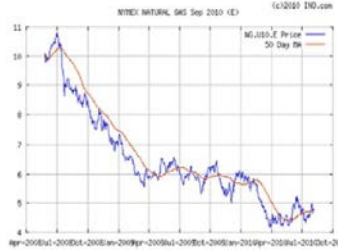
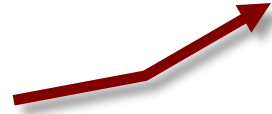
.....Wait for it.....

**Every day I make an effort to move toward
what I do not understand.**

- Cellist, Yo-Yo Ma

Foresight: Three Mechanisms of Change

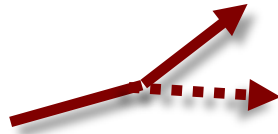
Trends
(Continuities)



**Plausible
Futures**

Forecasts

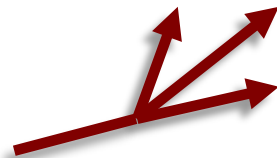
Events
(Discontinuities)



**Possible
Futures**

Scenarios

Choices
(Discontinuities)



**Preferred
Future**

Visions



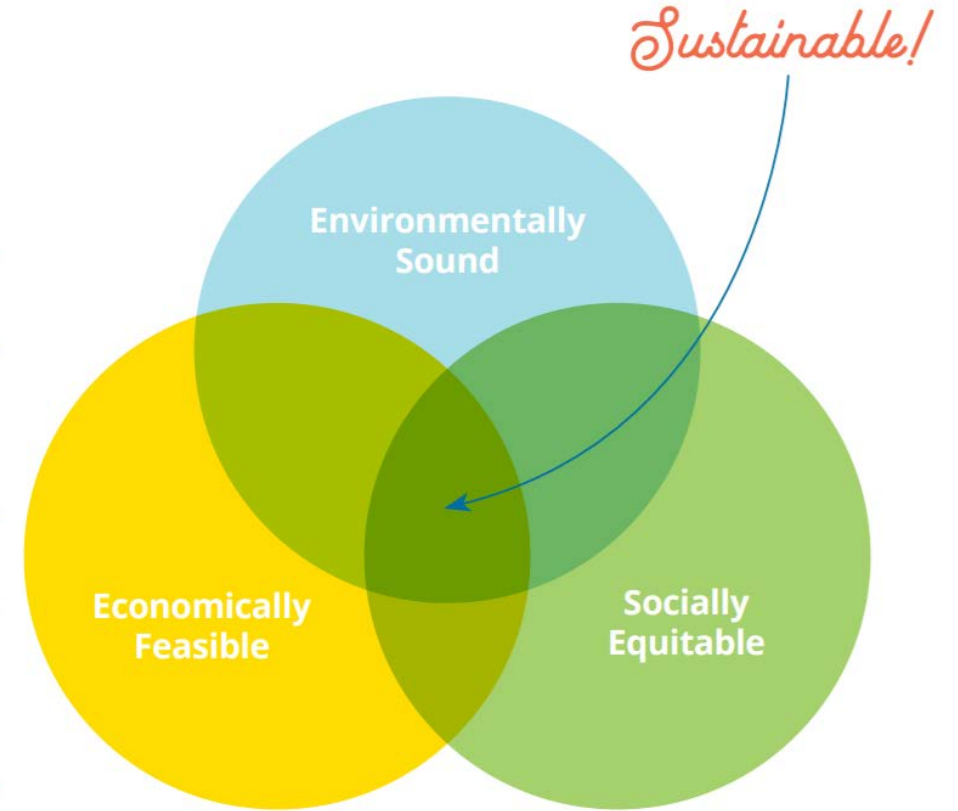
Points to Ponder

What do the three words below mean to you?

Sustainable: the capacity to endure

Resilient: to bounce back after disruption

Regenerative: to bring new, energetic life; revive



End



Foresight 101



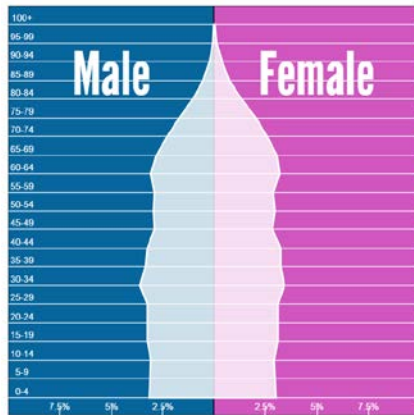
**Drivers of Change
for Sustainable Communities**



Next Steps

Sustainability Strategies Shaped by Emerging Trends + Issues

United States of America
2025
Population: 345.084.000



**Demographic
Transitions**



**Reforming the
Energy Vision**

**Transforming
Energy**



**Blockchain +
Trusted Transactions**



In the News

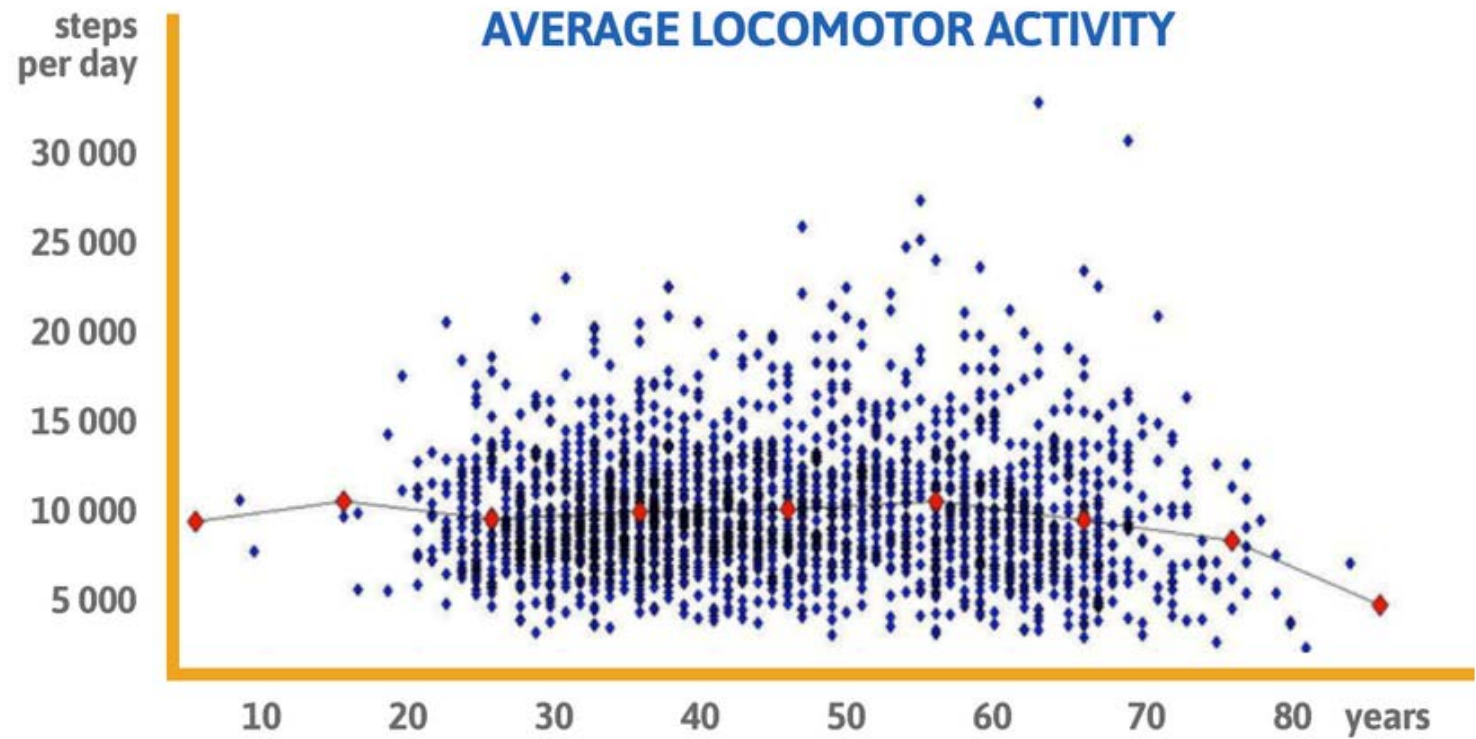
In 2018, all senior residents in the Japanese city of Nara will be required to have wearable devices that connect to the city's secured data feed used by families and local health & service agencies.



True

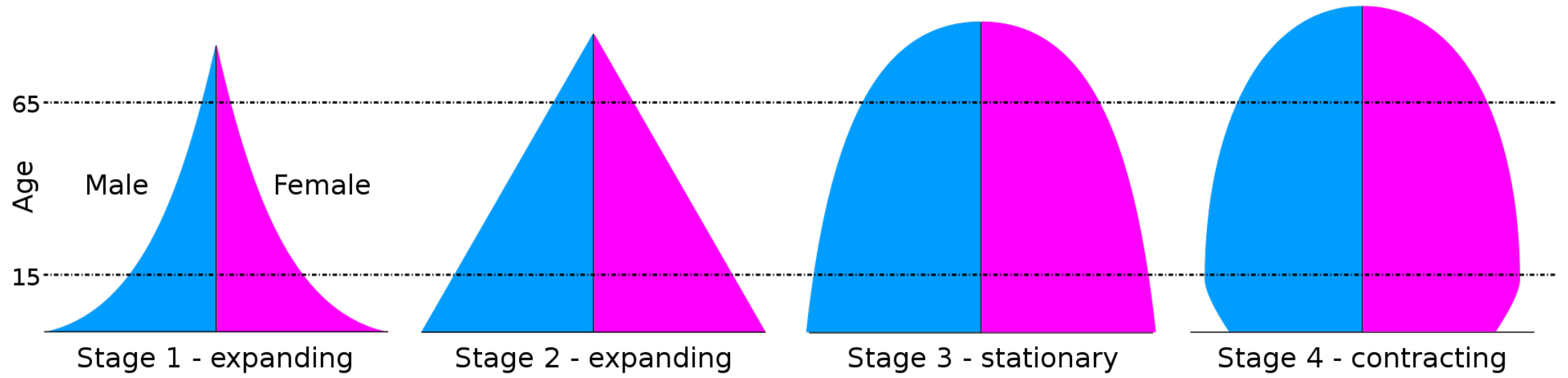
False

Assumption: Radical Solutions Ahead for *Aging Populations*



Wearables + Early Warning Signals = Interventions

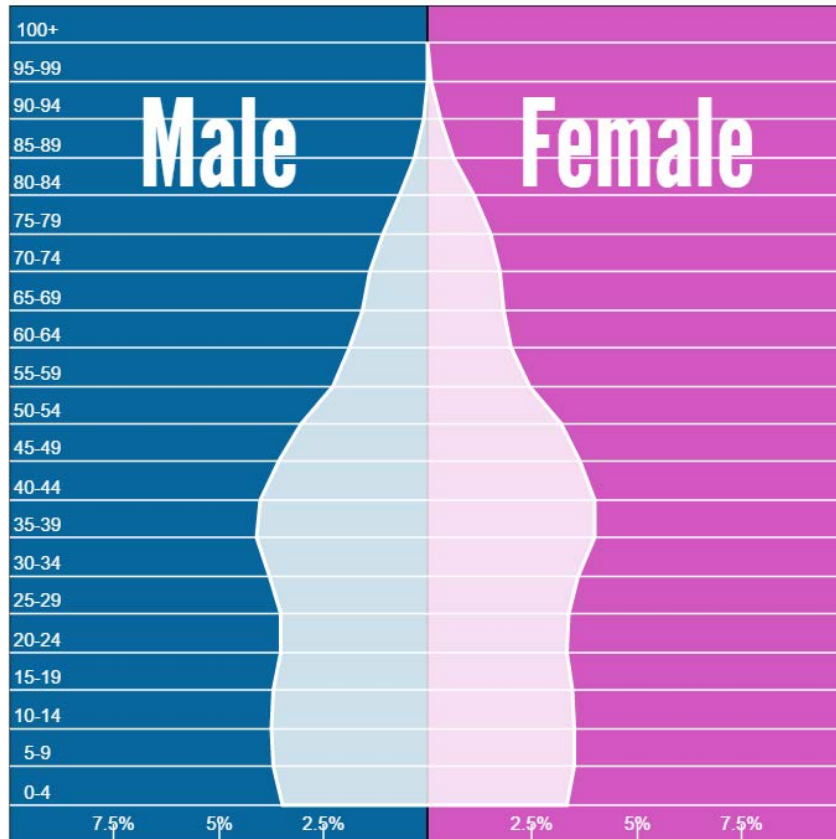
Sustainability + Demographic Transitions



America's Waning Demographic Dividend

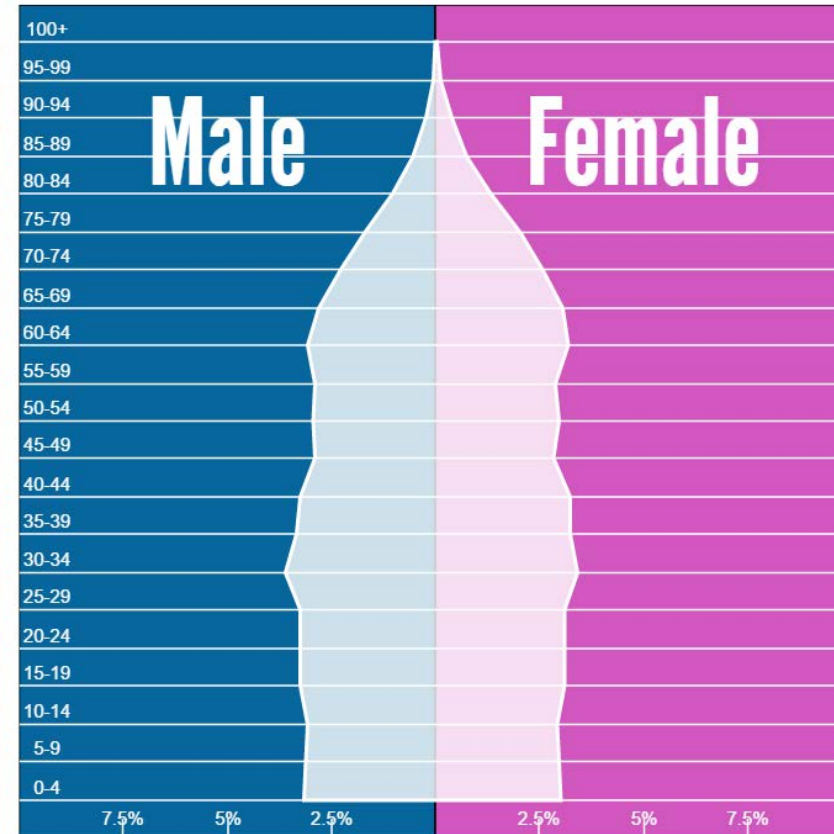
United States of America 2000

Population: **282.895.000**



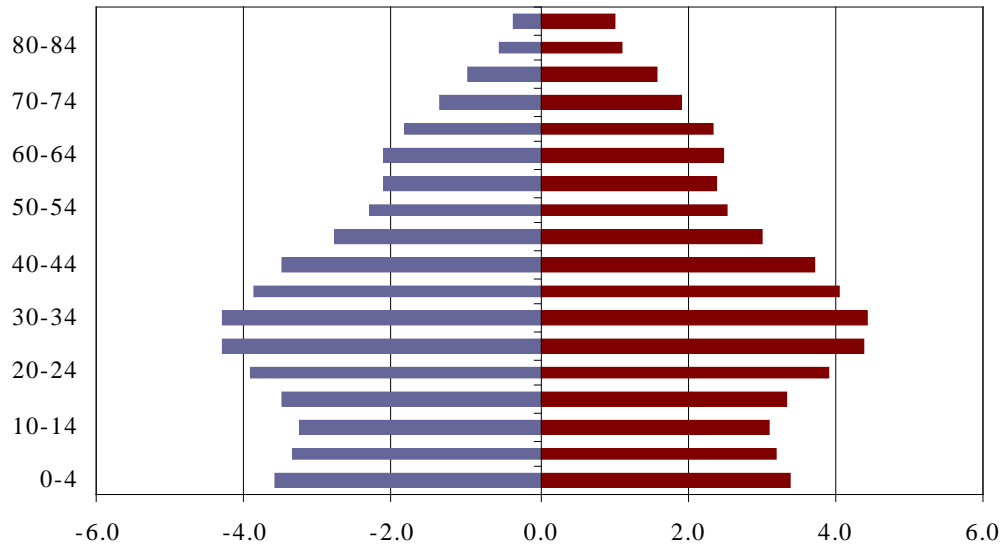
United States of America 2025

Population: **345.084.000**



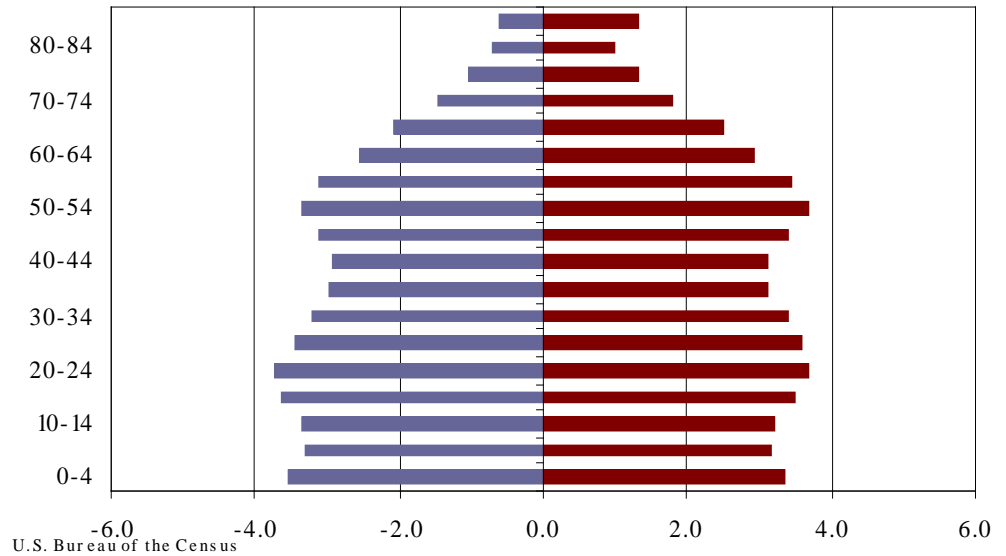
New York State Dynamics: Aging + Immigration

Population Pyramid New York State, 1990



■ Male
■ Female

Population Pyramid New York State 2015

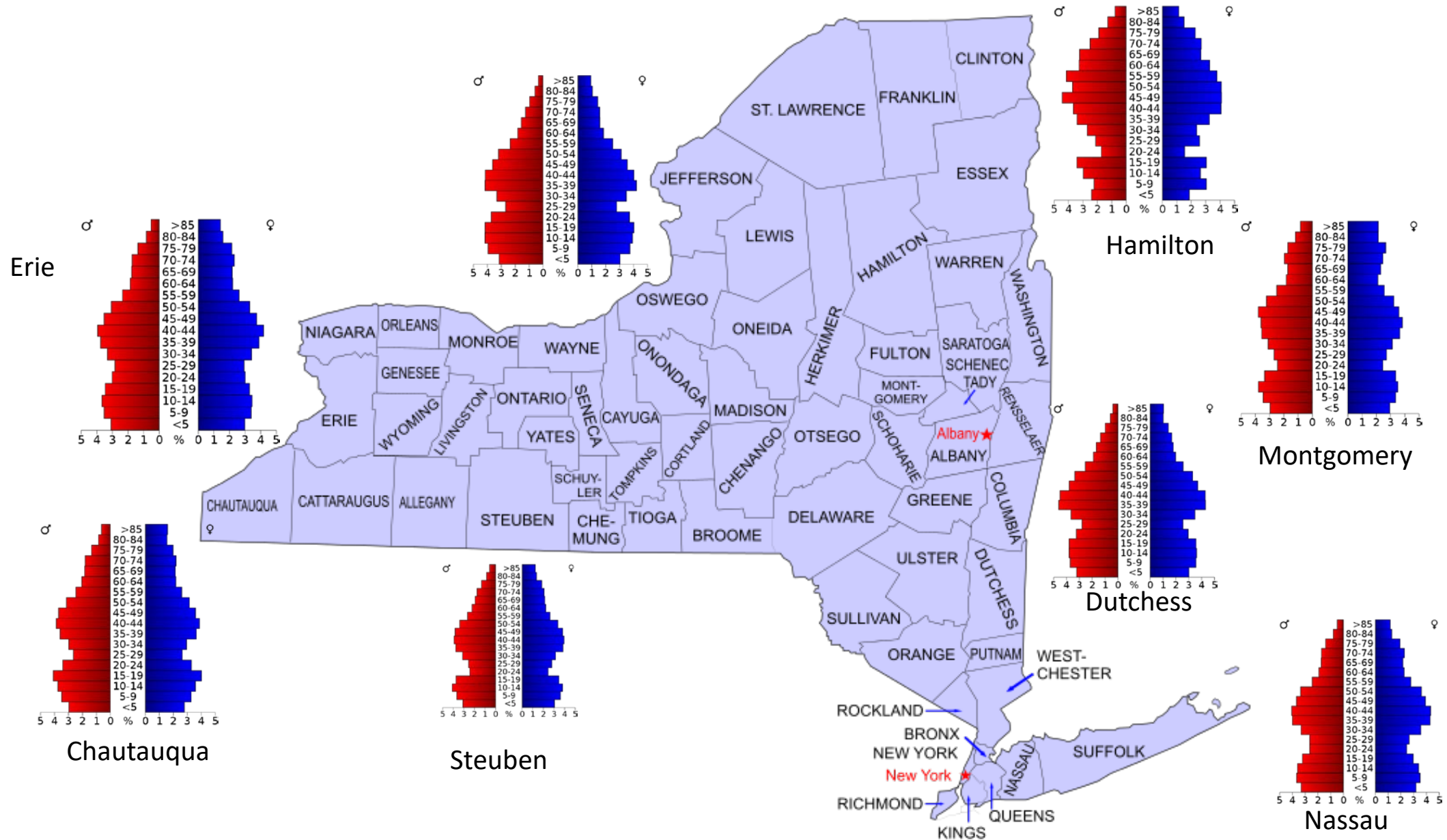


■ Male
■ Female

U.S. Bureau of the Census

Source: Project 2015 – New York’s Changing Demographics” by Robert Scardamalia, Chief Demographer, Empire State Development. Top graph derived from US Bureau of the Census, bottom graph derived from Cornell Institute for Social & Economic Research.

Understanding Local Demographic Destinies



What does *sustainability* mean to Aging Populations?

Points to Ponder

What do the three words below mean to you?

Sustainable: the capacity to endure

Resilient: to bounce back after disruption

Regenerative: to bring new, energetic life; revive

New York State 62 Counties Change in Population Aged 60 and Over 2010 to 2020		
Proportion of County Population Aged 60 and Over	Number of Counties with Specified percent of Older Persons	
	2015	2025
Less than 20%	7	5
20% to 24%	41	6
25% to 29%	12	33
30% and over	2	18

Source: Woods & Poole Economics, Inc., 2014
State Profile

Aligning Sustainability Efforts to Aging Strategy Memes

Aging-in-Place
Active Aging
Creative Aging

In-Home Solutions

Tapping Community Assets

Emphasis on Social Experiences
Emphasis on Cognitive Engagement

Active + Arts focused Lifestyles

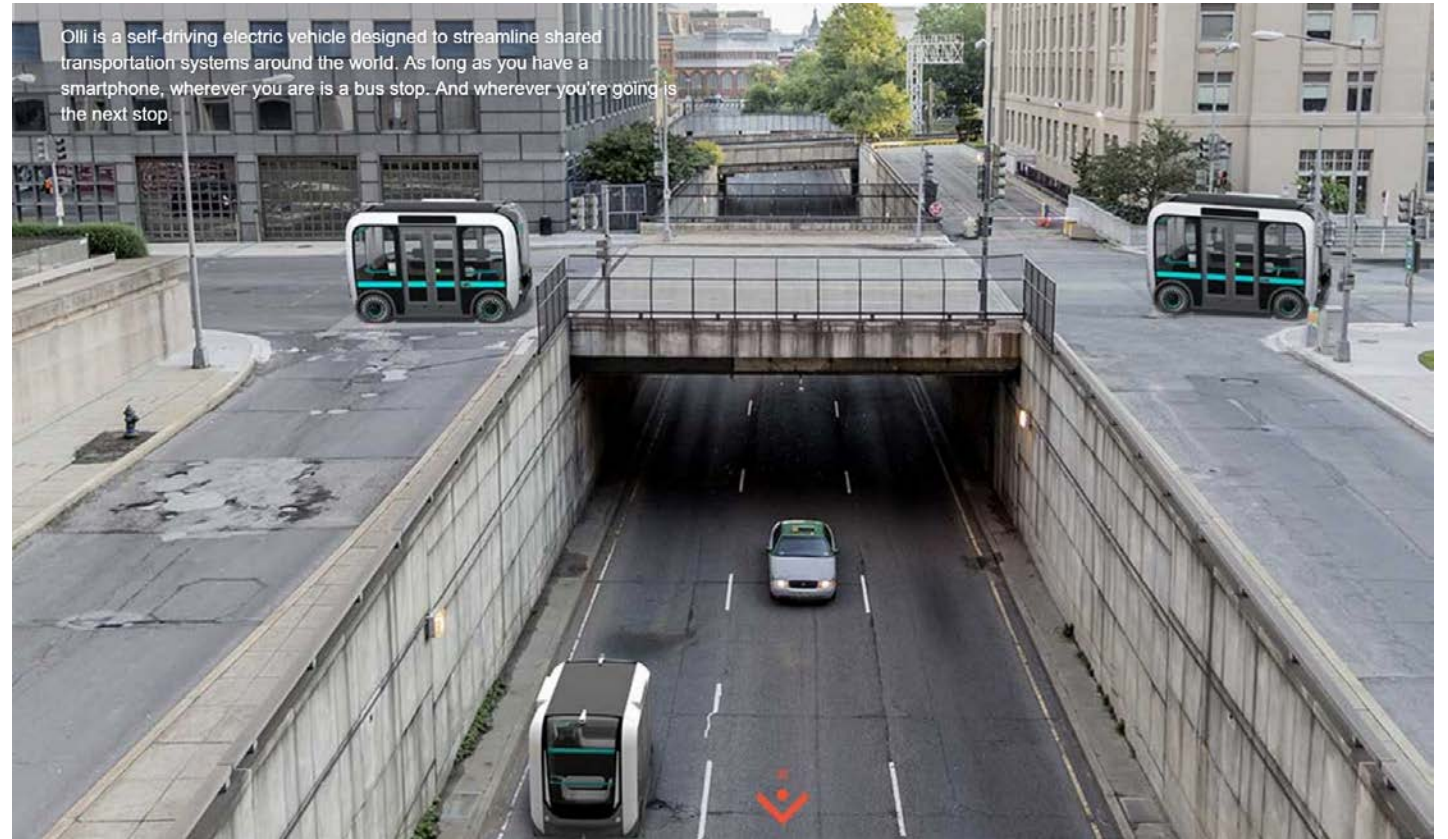
Universal Design Library + Beyond

Resilience + Regeneration



Radically Rethinking Mobility – Green + Autonomous

Mobility
Library + Beyond
Equity + Access



Autonomous People Movers Coming Soon!



Substance Use Disorders

Resilience + Regeneration
vs 'Silent Epidemic'



More than 6 out of every 1,000 Medicare patients are diagnosed with an opioid disorder, compared with 1 of every 1,000 patients covered by commercial insurance plan.
-Stanford University

Should the library be the first stop for Aging Populations?

Registry Program

Legal Assistance of Western New York, Inc., or "Law NY"

FallsPrevention™
STEP UP TO STOP FALLS

Contact Information

County Office for the Aging
214 West Martin Luther King Jr. / State St.

Ithaca, New York 14850
(607) 274-5482 email us

[View Full Info and Map](#)

- [Long Term Support Services in Tompkins County](#)
- [Long Term Care Coalition-- New York State](#)
- [Resources for Caregivers in Tompkins County](#)
- [Alzheimer's Resources in Tompkins County](#)
- [Hospicare](#)
- [Careers in Caring](#) is a guide for those looking for employment opportunities in the long term care field. Learn more today!
- ["Managed Long Term Care" - now mandatory in Tompkins County](#). Beginning December 2014, Medicare beneficiaries who are also eligible for Medicaid must enroll in a Managed Long Term Care (MLTC) plan if they receive long term care services at home (such as help with bathing, dressing, and other personal care services). Click [here](#) for more information.

Other Useful Resources

- [Benefits Checklist for Older Adults in Tompkins County-2015](#)
- [NYSEG: Friendly Reminder Third Party Notification](#)
- ["You May Qualify..."](#)
- [CITRA-Cornell Institute for Translational Research on Aging](#)
- [Human Services Coalition of Tompkins County](#)
- [Ithaca College Gerontology Institute](#)
- [Sharing Your Wishes](#)
- [Tompkins County Public Library](#)
- Learn more about the [Defense of Marriage Act \(DOMA\)](#) and its impact on Medicare benefits here: ["After DOMA and what it means for you"](#) brought to you by ["Lambda Legal"](#)

What does *sustainability* mean to Millennial adults?

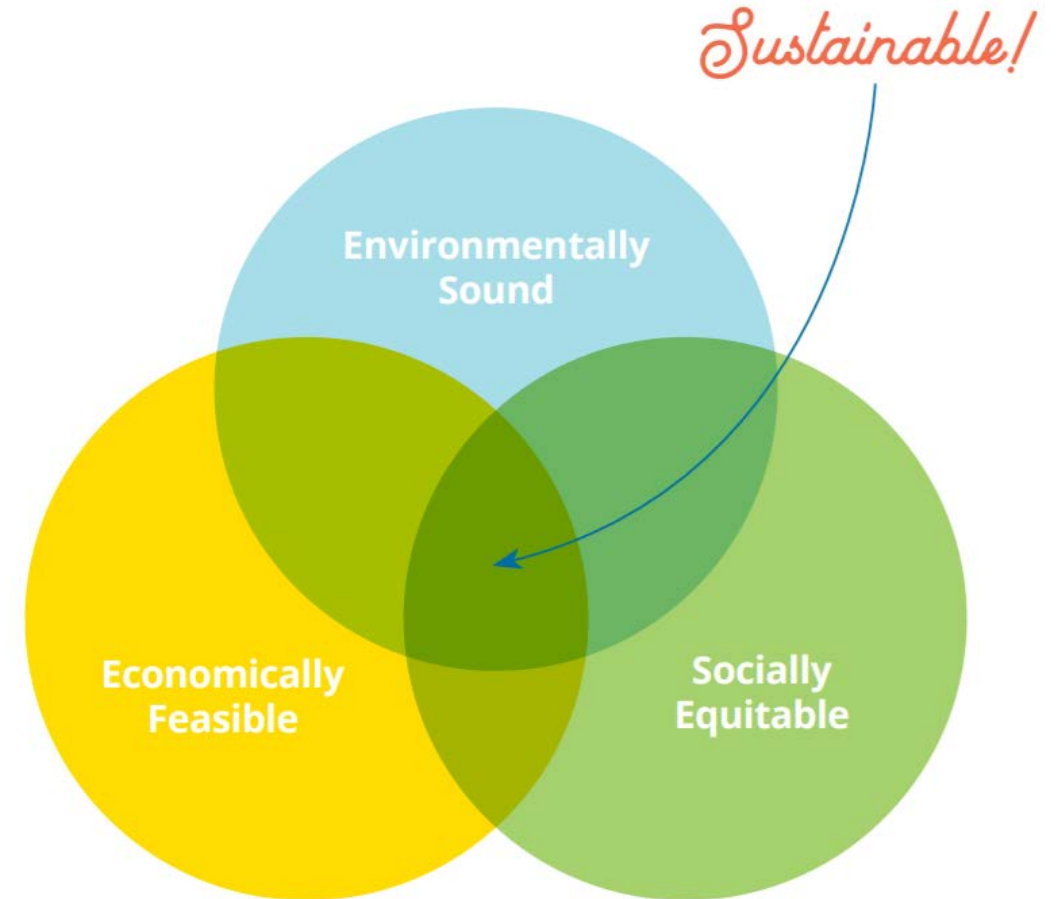
Points to Ponder

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Regenerative: to bring new, energetic life; revive



Libraries and the Re-framing of Social Justice Issues



Craig Froehle [Follow](#)

Business professor, PhD, tech junkie, aspiring photog, husband, dad of 2. Opinions are mine alone. Mostly ..
Apr 14 · 15 min read

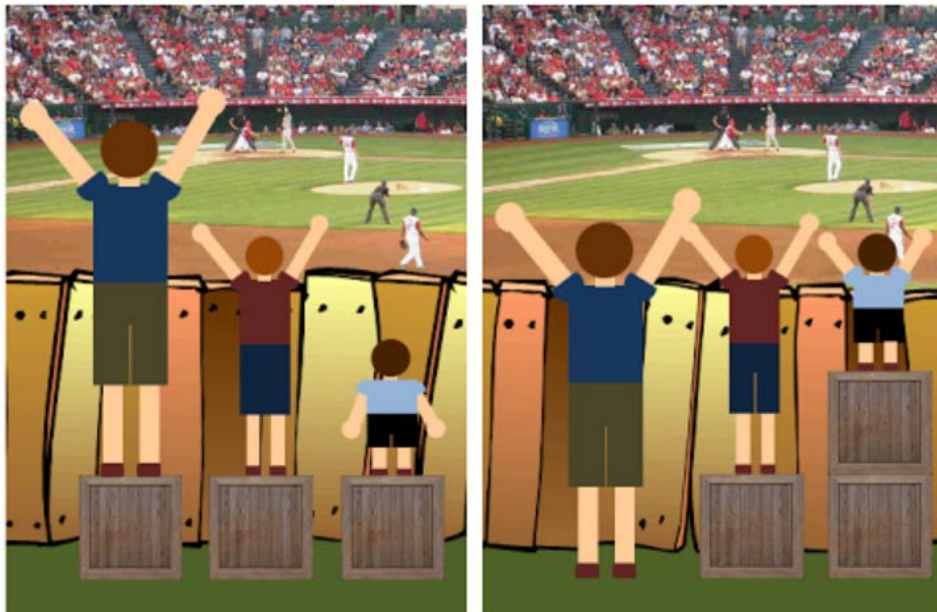
The Evolution of an Accidental Meme

How one little graphic became shared and adapted by millions

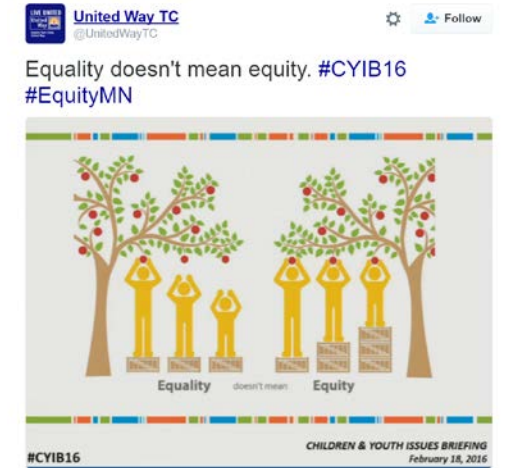
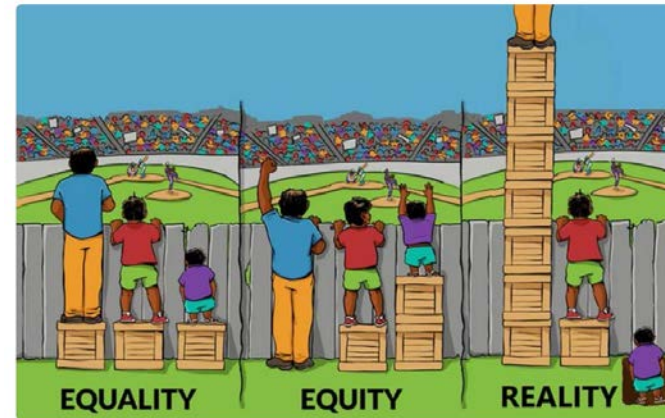
EQUALITY

to a conservative

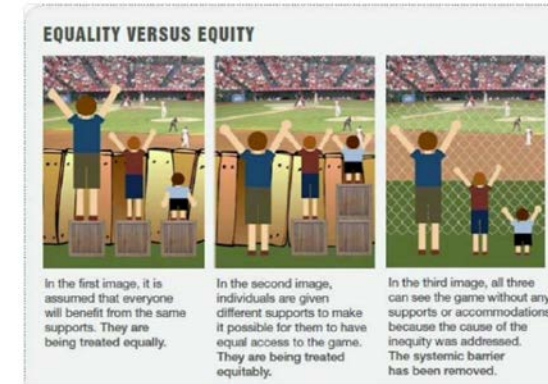
to a liberal



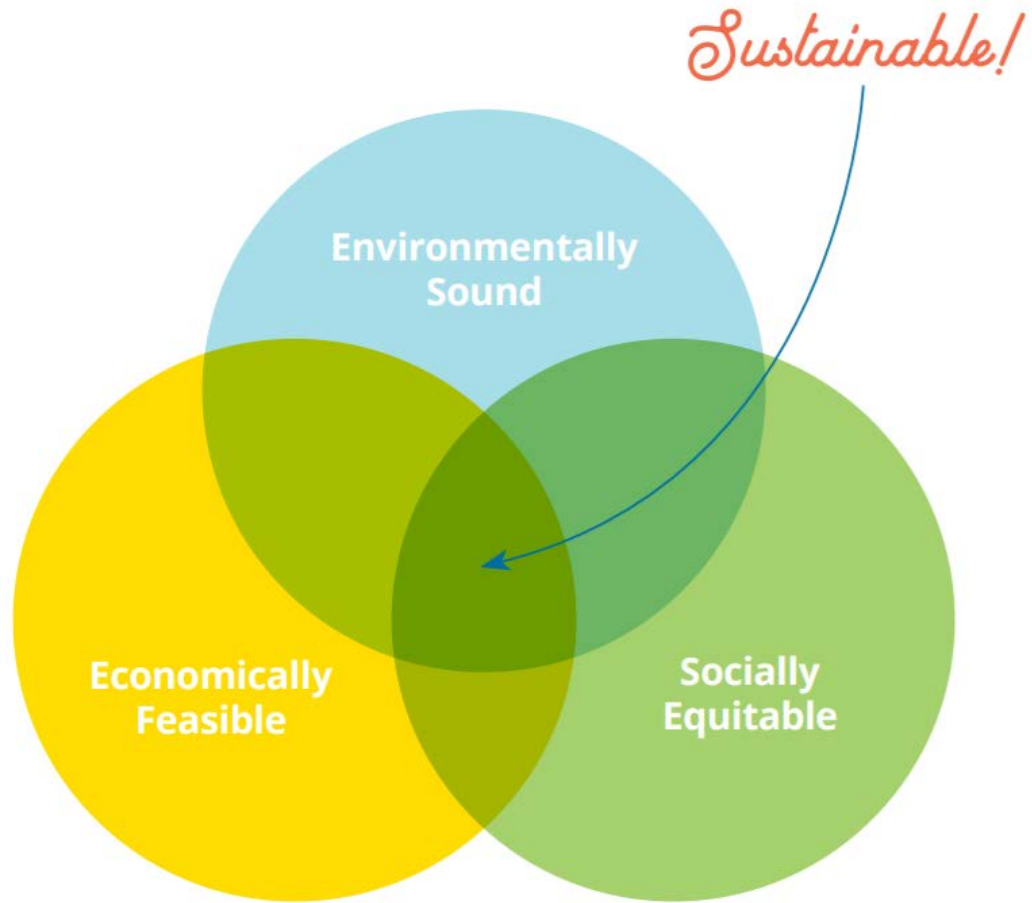
April 17, 2013 — <https://plus.google.com/u/0/104187811393591357050/posts/3aRS8ofocqP>



Love this. A clear illustration of the difference between equality, equity and removal of systemic barriers.



My original image — December 19, 2012 — <https://plus.google.com/+CraigFroehle/posts/AdKcNKesXwa>



How might Millennials see libraries as a lever for eliminating inequities and creating community conditions for social justice in outcomes?

Learn More



Connect the Dots

- Demographic Transition Model Concepts**
(+market-policy formation; +technology adoption)

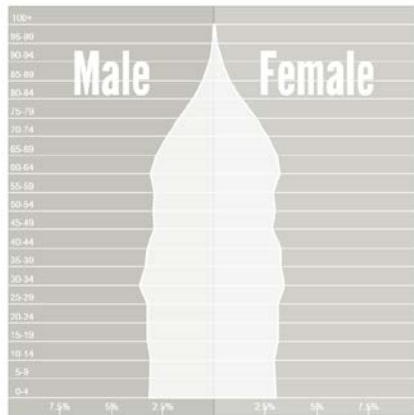
- Garry's Diigo Tags**
diigo.com/user/garrygolden/aging
www.diigo.com/user/garrygolden/millennials
diigo.com/user/garrygolden/demographics

- Sites: Census.org; Policymap.com**

- World Values Survey (University of Michigan)**

Sustainability Shaped by Emerging Trends + Issues

United States of America
2025 Population: 345.084.000



Demographic
Transitions



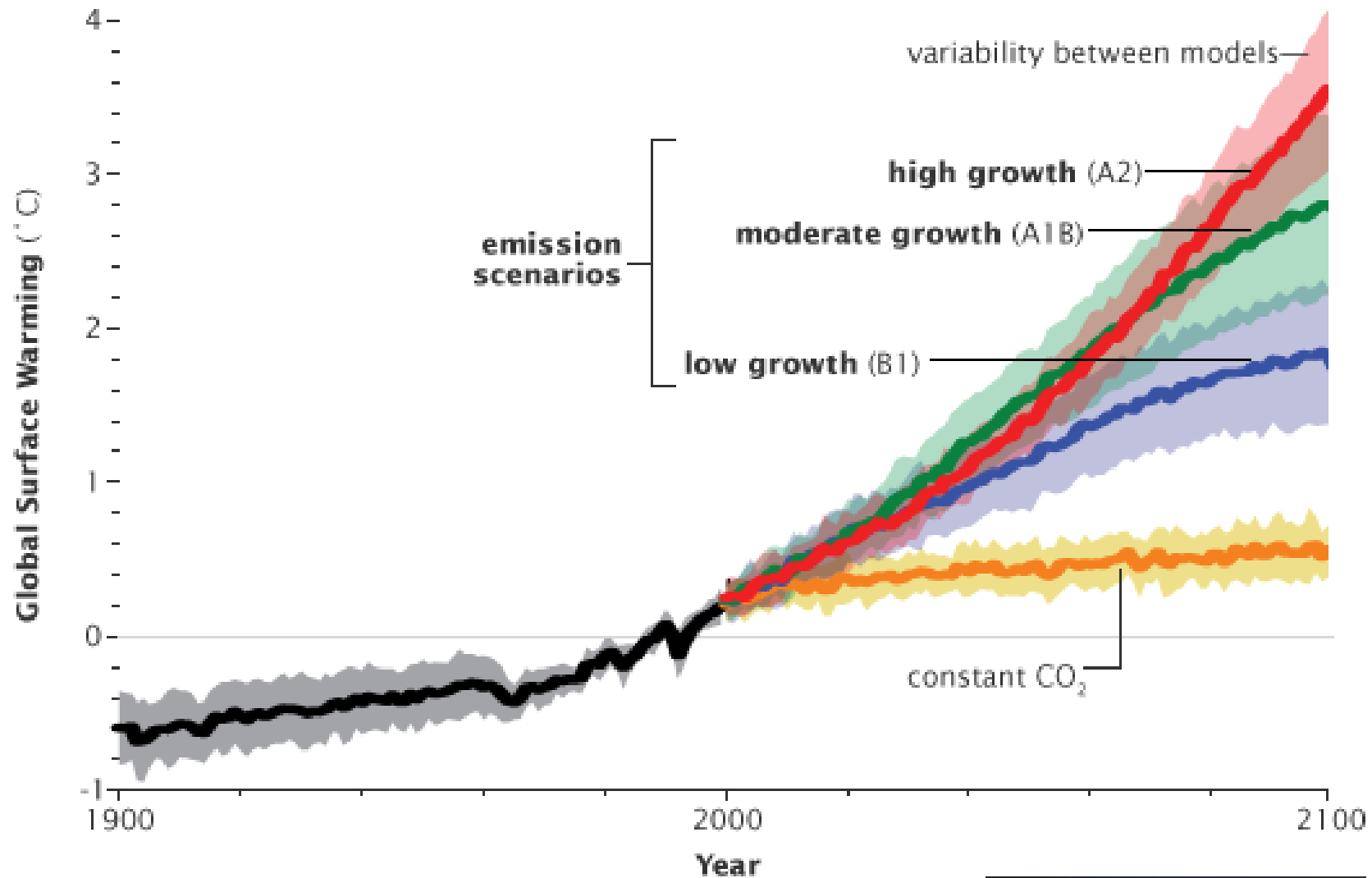
Reforming the
Energy Vision

Transforming
Energy



Blockchain +
Trusted Transactions

Climate Change has its own Cone of Plausibility



But Garry, some of my community members think climate change is a hoax



YALE PROGRAM ON
Climate Change
Communication

[About](#)

[Research](#)

[Publications](#)

[Visualizations & Data](#)

[News & Events](#)



What We Do

We conduct scientific research on public climate change knowledge, attitudes, policy preferences, and behavior, and the underlying psychological, cultural, and political factors that influence them. We also engage the public in climate change science and solutions, in partnership with governments, media organizations, companies, and civil society, and with a daily, national radio program, Yale Climate Connections.



Audiences



Behaviors



Beliefs &
Attitudes



Climate Impacts

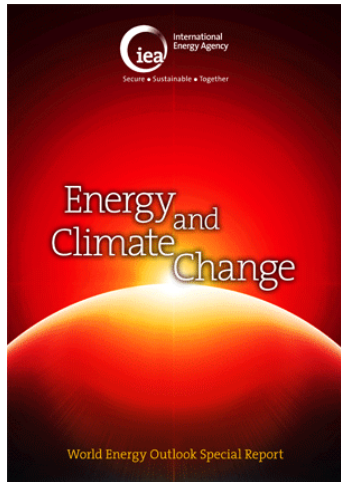
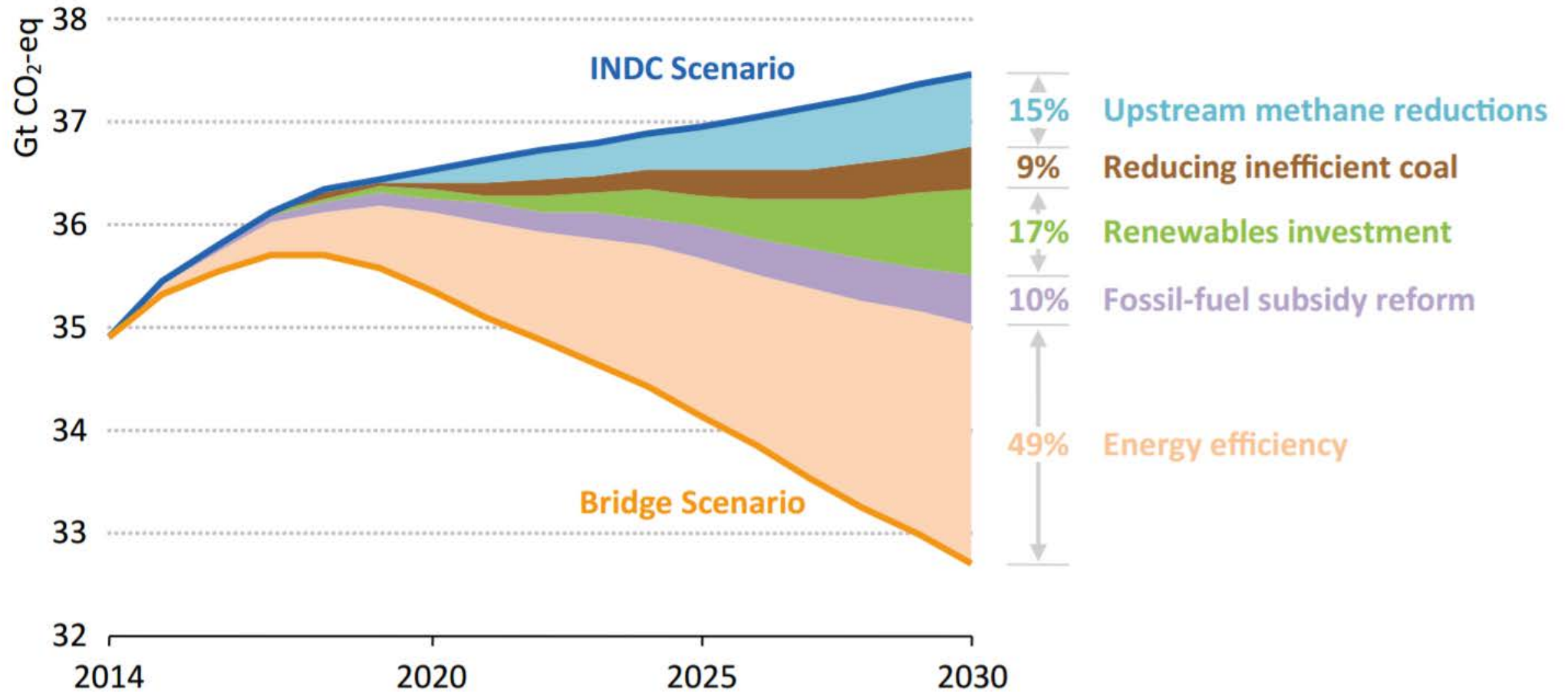


Messaging



Policy & Politics

Figure 3.2 ▷ Global energy-related GHG emissions reduction by policy measure in the Bridge Scenario relative to the INDC Scenario





Reforming the Energy Vision

Concepts to Explore

- Policy drives changes in energy sector
- Communities + Distributed Power (Solar, Fuel Cells & Micro Grids)

REV 2030 Goals

40% reduction in greenhouse gas emissions
from 1990 levels

A mandate for 50% of New York's electricity
to be generated from renewable sources

23% reduction in energy consumption of
buildings from 2012 levels



Reforming the
Energy Vision

ENERGY TO LEAD: REFORMING THE ENERGY VISION

ENTER YOUR LOCATION OR ZIP CODE TO VIEW REV PROJECTS IN YOUR AREA

Location  **GO**

How might libraries bring policy and program opportunities to community level?



Reforming the Energy Vision

- Solar
- Wind
- Hydro
- Bio Energy
- Fuel cells (Stationary)
- Electric Vehicles (Battery/Fuel cell)
- Efficiency Programs

GET TO KNOW SOME REV INITIATIVES

Clean Energy Fund

Delivering on New York State's commitment to reduce ratepayer collections, drive economic development, and accelerate the use of clean energy and deployment of energy innovation to modernize New York's electric grid. The Clean Energy Fund will attract more private capital into New York's emerging clean energy economy, reduce the cost of clean energy by accelerating the adoption of energy efficiency in order to reduce load, and promote the adoption of renewable energy. This investment will deliver over \$39 billion in customer bill savings over the next decade.

Clean Energy Standard

Meeting Governor Cuomo's aggressive commitment that requires 50% of New York State's electricity come from renewable sources by 2030.

NY-Sun

Helping finance 3,000 megawatts worth of solar projects in the next 10 years. NY-Sun is investing in communities that need it, committing \$13 million to projects in low- to moderate-income communities. That means cheaper and cleaner energy for everyone.

K-Solar

Helping K-12th grade schools statewide go solar at reduced costs. This will save schools money on their electric bills, allowing them to spend less on utilities and more on educating New York's children. So far, 323 school districts have registered into the program to date (over 40% of all the public school districts in NYS).

NY Prize

Offering \$40 million in awards to communities that build their own local energy systems, known as microgrids. The less electricity traveling long distances across electrical lines, the cheaper and more reliable it can become.

BuildSmart NY

Working to cut energy use in State buildings 20% by 2020. The government's plan to lead by example is not just good for the environment, it will save taxpayers tens of millions of dollars on State electricity bills.

NY Green Bank

Working with partners in the finance community to invest \$1 billion in clean energy technologies and projects. NY Green Bank is the largest green bank in the country with a goal to make both public and private sector financing available for clean energy projects, and to keep reinvesting those funds in building New York's clean energy future.

What's Happening? Policies for Consumer-driven Rooftop Solar



Policies are Terrifying to most Utilities

May 23, 2014, 11:45 A.M. ET

Barclays Downgrades Electric Utility Bonds, Sees Viable Solar Competition

On Rooftops, a Rival for Utilities

Solar panels north of Los Angeles. Power companies say such systems are draining away their customers and profits.

By DIANE CARDWELL
Published: July 26, 2013

Moody's: Cheap Batteries Could be 'Credit Negative' for Utilities and Power Generators



The image shows the cover of a report from the Deloitte Center for Energy Solutions. At the top left is the Deloitte logo. The main title is "The new math." followed by the subtitle "Solving the equation for disruption to the U.S. electric power industry". Below the text is a graphic of a blue map of the United States with a network of glowing nodes and lines representing an energy grid. At the bottom right is the text "Deloitte Center for Energy Solutions".

Deloitte.

The new math.

Solving the equation for disruption to the U.S. electric power industry

Deloitte Center
for Energy Solutions

Cost, ROI and Integration (not Storage) are the Real Issue for Utilities

ENERGY STORAGE

 greentechmedia:

Duke Energy Teams Up With Green Charge Networks for Behind-the-Meter Batteries

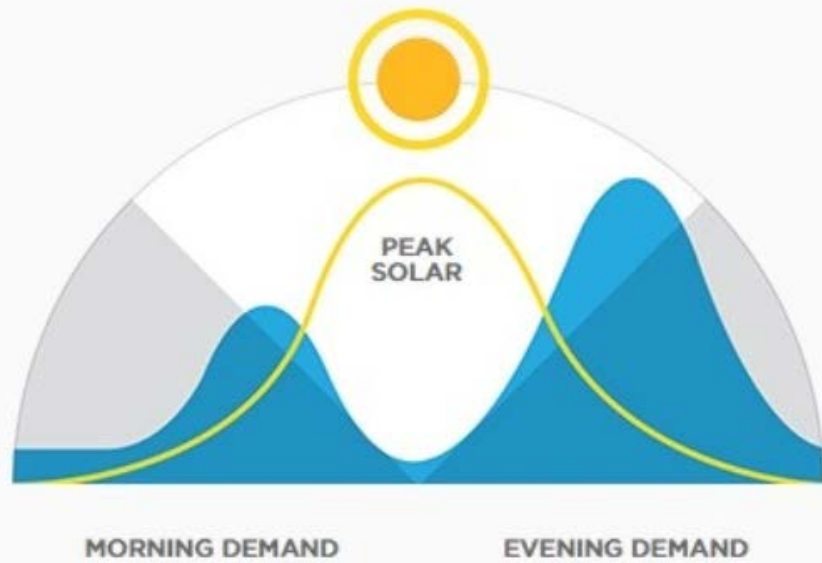


Hawaii and Southern California are the target markets for the partnership.

by Jeff St. John
December 08, 2015

2020 Signals of Change in Your Community?

Distributed (Centrally Controllable) *Behind-the-Meter* Energy Storage



sonnen

Signals of Change

Utilities Coordinate Aggregated System level Solutions

"Community Storage" is an emerging term for programs that aggregate distributed energy storage resources that are located throughout a community, such as water heaters, electric vehicles, and interconnected storage batteries, to improve the operational efficiency of electric energy services to consumers.

The Community Storage Initiative

[Join Our Email List](#)

The co-founders of the community storage initiative ask for your support:

- Click on the link above to join the Initiative's email list to receive information about the Initiative and upcoming events
- Promote an "above the baseline" approach to electric water heating, electric vehicle charging, and residential battery use marketed as "Community Storage"
- Share your business model and best practices around "Community Storage"

We ask you to follow the Guiding Principles of The Community Storage Initiative:

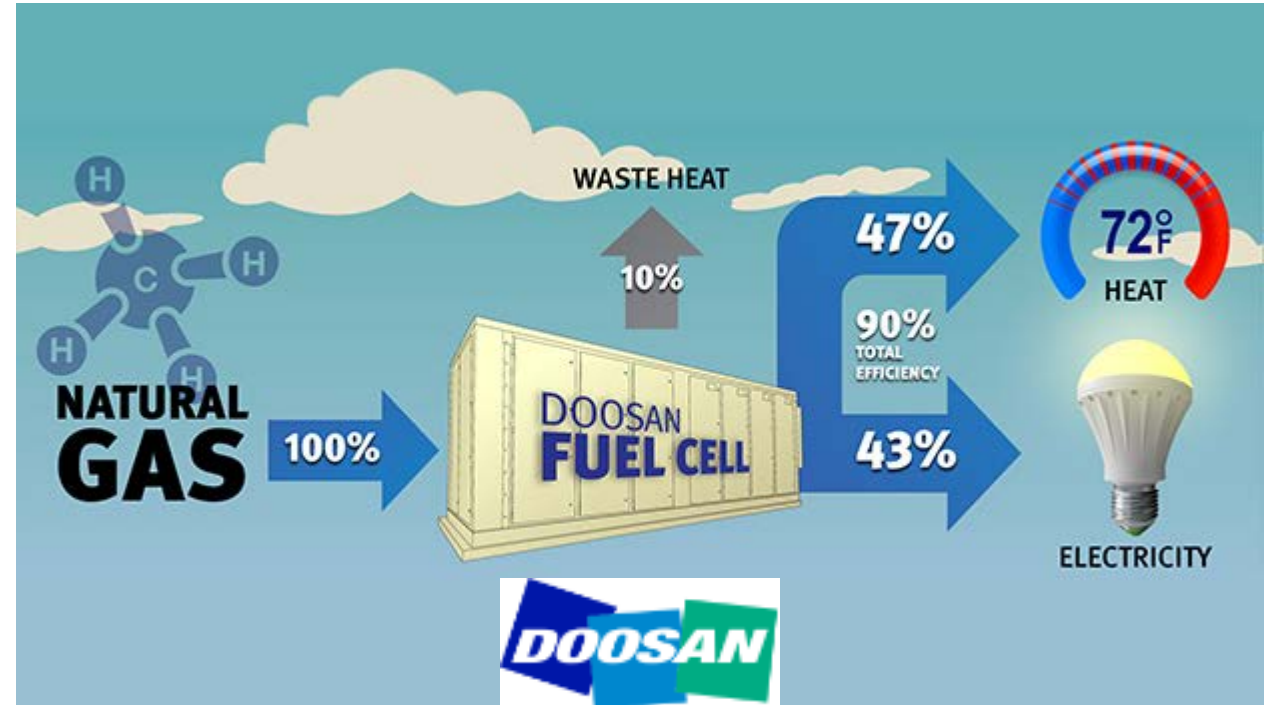
1. Voluntary Participation (by the utility, home, business or individual)
2. Education & Training (information resources, program templates, quick-start guides, etc.)
3. Market Acceptance (locally, regionally and nationally)



Beyond Solar: Fuel Cells as Foundation for Community Micro Grids



Bloomenergy



Natural Gas & Renewable Hydrogen for Distributed Power Generation

**PLUG
POWER** 
Latham, NY



GE Fuel Cells expanding with new lease at Saratoga County tech park

Jan 26, 2016, 3:50pm EST Updated Jan 27, 2016, 10:21am EST

The fuel cells will eventually be able to produce up to 10-megawatts of power. One megawatt can power 1,000 homes.



The Country Will Be Watching NY State's Micro Grid Efforts

NY town moves forward with \$22.9M microgrid proposal

Posted on [July 20, 2016](#) by [districtenergy \(LAP\)](#)

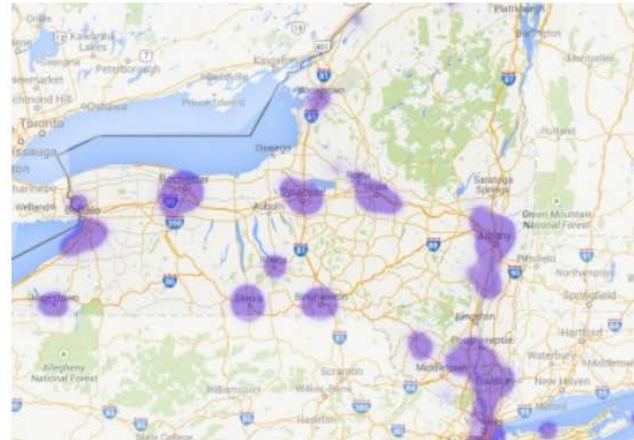
Huntington, New York, town board [approved](#) an agreement with the New York Power Authority (NYPA) to conduct local property energy audits for the town's nearly \$22.9 million microgrid proposal.

(the) proposed 7.7 MW islandable microgrid will employ several forms of distributed energy generation, including solar, energy storage, combined heat and power systems (CHP), fuel cells and diesel generators.



One Map Shows New York's Microgrid Hot Spots

How might libraries promote the development of micro grids in local communities?



And the \$40M NY Prize to build microgrids is officially open.

by Katherine Tweed
February 13, 2015

Learn More



Connect the Dots

Key Energy Concepts:
Distributed Energy; Net-Metering;
Energy Storage vs Integration

Garry's Diigo Tags
www.diigo.com/user/garrygolden/energy

Sites: GreenTechMedia

Follow the conversation:
[@Rev4NY](https://twitter.com/Rev4NY) [@NYSEIA1](https://twitter.com/NYSEIA1) [@PlugPowerInc](https://twitter.com/PlugPowerInc)

Blockchain

(I don't like the sound of this...)



It Was Hard to Explain the Internet in 1994

All descriptions failed:

- It's a billboard
- It's a massive network
- You write to it, like mail*
- Great for emergencies
- 'You don't need a phone line to operate the Internet?'



1994: "Today Show": "What is the Internet, Anyway?"

What is going on here....?



World Economic Forum Survey Projects Blockchain 'Tipping Point' by 2023

By 2025, 10% of of Global GDP will be orchestrated by blockchain applications.

Dubai Wants All Government Documents on Blockchain By 2020

Michael del Castillo (@DelRayMan) | Published on October 5, 2016 at 16:40 BST



NEWS

Evolution of the Web: Trust for Transactions



*Internet of Files
(Websites)*



*Internet of
Social Networks*



*Internet of
Trusted Transactions*

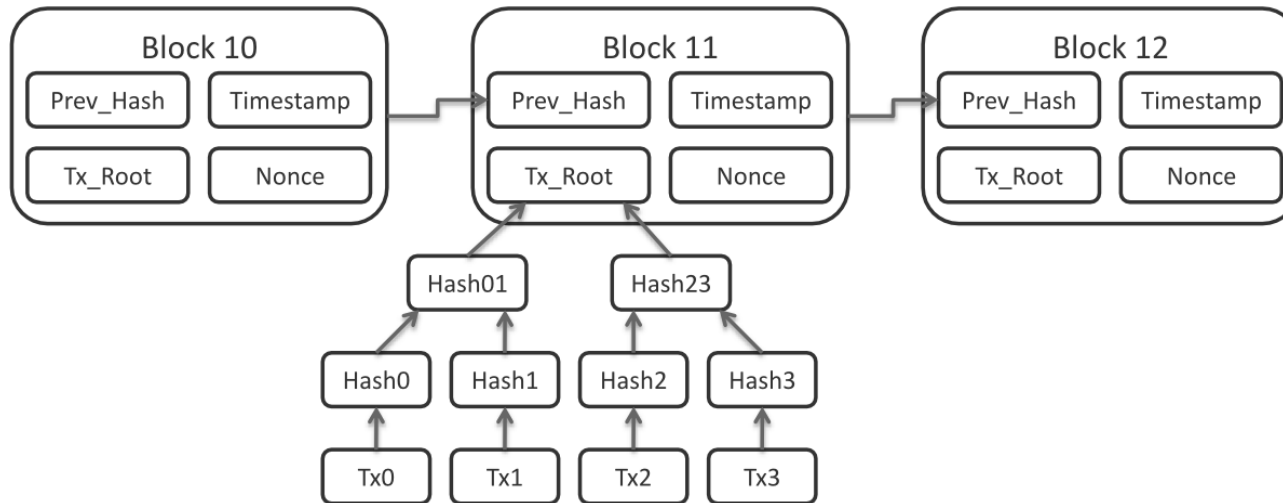
Low Cost + High Security in Low-trust Environment without traditional 'Third Parties'

It's just Decentralized Databases + Process Automation!

Assets get entered onto the ledger and generate keys

Network Consensus on who did what...

Smart Contracts execute legal agreements + business processes



The Transaction is the Settlement

A sample of EtherScript

```
note: ***An Ethereum smart contract to sell website for "5000 by March"
note: First, store buyer's ethereum address:
put: 6af267736363738ghgs7726337373737 in storage slot BUYER
note: Then, store seller's ethereum address:
put: 6af267736363738ghgs7726337373737 in storage slot SELLER
note: April 1, 2014 is 13929839948 in "computer time"
put: 16365437465 in storage slot DEADLINE
note: If the agreed amount is received on time...
When: transaction value >= 50000 ether
and block timestamp <= storage slot DEADLINE
then
note: ... then designate the buyer as the new website admin and pay the seller
put storage slot BUYER in storage slot WEBSITE_ADMIN
Spend contract balance to storage slot SELLER
```

Assumption to Explore (even if it confusing!)

By 2020, blockchain infrastructure for decentralized applications (DApps) and *smart contracts* will be used to:

- Reduce operation costs
- Ensure compliance (*regtech*)
- Confront cybersecurity issues
- Reduce friction for *peer-to-peer (P2P)* economic and civic exchanges

Early Application Development Ecosystems

Public Blockchains



Private Blockchains



Blockchain Marketplaces

Decentralized exchanges to disrupt the traditional third-party role. *Low fees may still apply.



iTunes without iTunes

Smart Contracts disperse payments



ebay without ebay

Distributed Marketplace

Should libraries encourage creation of new community marketplaces?

Blockchain for P2P + Sharing Economy

Decentralized exchanges to disrupt* the third-party while opening up service stack for new value driven services. *Low fees may still apply.



Uber without Uber
Distributed Ridesharing Network

Peer-to-Peer
Energy Trading Network

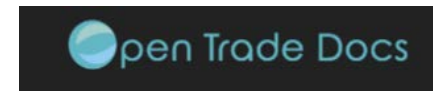
Should libraries support evolution of peer-to-peer culture?

Supply Chains + Logistics

Efficient, low cost, transparent and automated supply chains based on origin verification, manufacturing logs, shipping, fulfillment, taxes, to retail payment.



Enhance Trust. Access Capital.



Should government support conditions of blockchain driven trade?

Healthcare + Wellness Sector

Improve efficiencies, reduce fraud, and use smart contracts for programmable compliance and reward systems to scale behavior change.



Could blockchain transform population health management?



Government departments to reduce the cost and complexity of tasks:

- Data Collection + Authentication
- Taxation
- Procurement
- Identity (Passports; Birth certificates)
- Asset Registries (including land)
- Voting
- Access Control to Documents
- Permitting Processes (Soft costs)
- Community Crypto Currencies (Financial inclusion)
- Cyber Security
- DAOs (Autonomous Govt Structures)

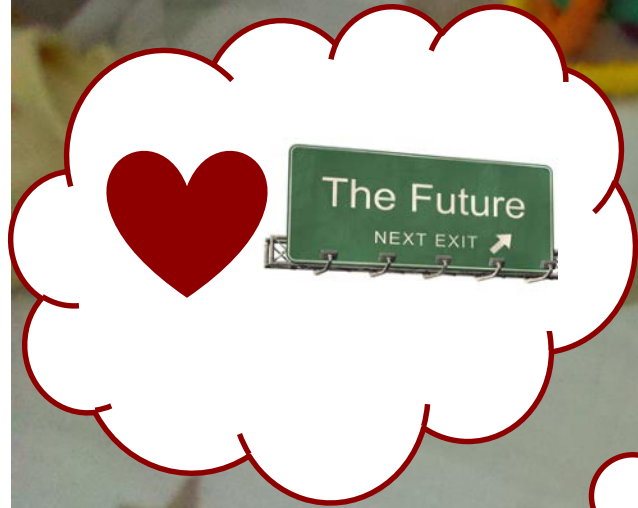
Should libraries lead public sector conversation on blockchain benefits?

I don't
like the
future...



#Never_Garry_the_Futurist





Every day I make an effort to go toward
what I don't understand.

Yo-Yo Ma

End



*Warm up
Foresight 101*



Drivers of Change



***Learning More
Foresight Culture***

Urgency to Get Culture Aligned Around Anticipation



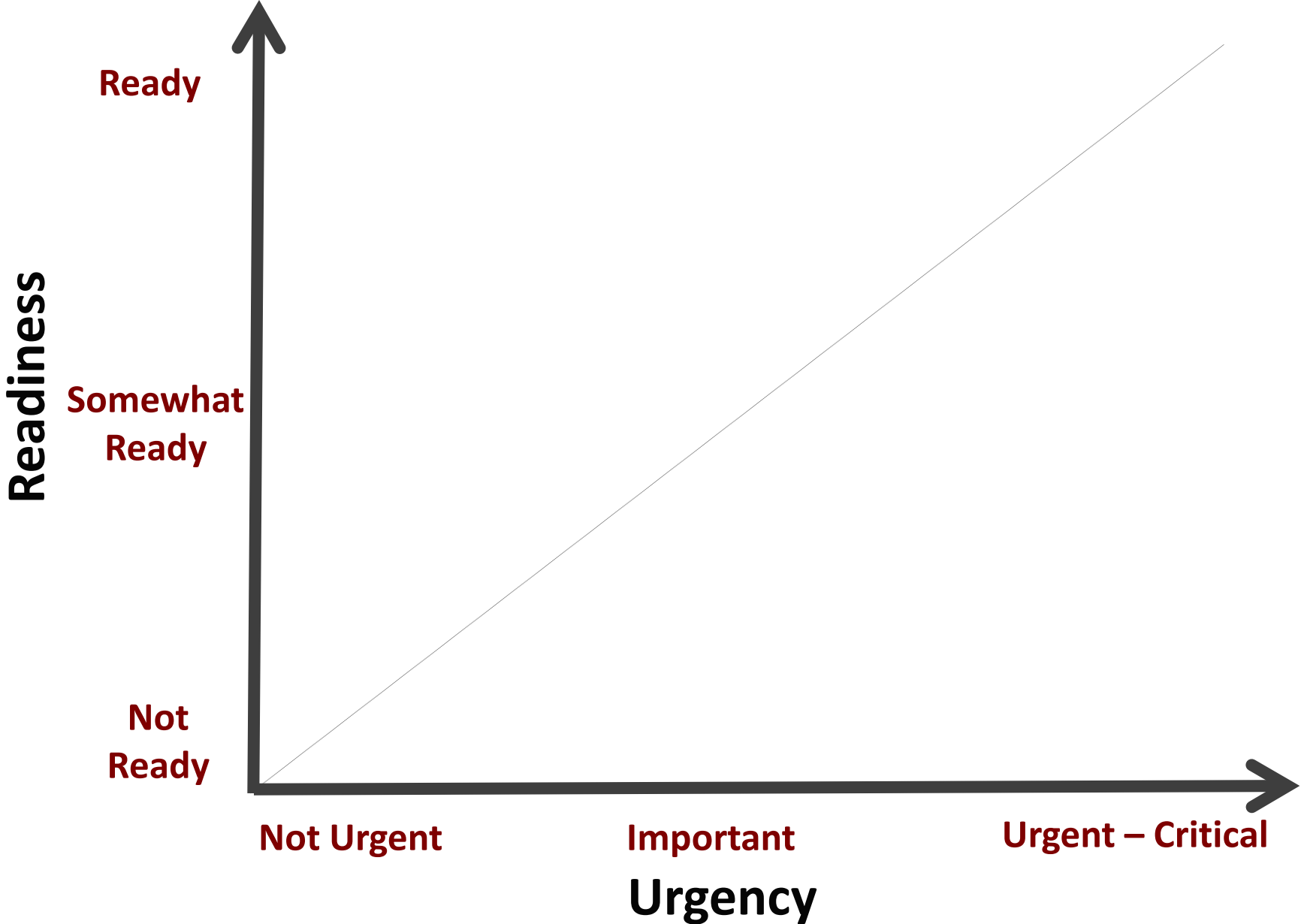
On the Plateau 'Managing the Decline'

- Incumbent mindset
- Incremental Improvement
- Fear, Uncertainty,
Doubt & Denial

Big Bets, Small Steps

- Entrepreneurial mindset
- *Prototyping*
Transformative Change
- *Failing Forward*

Survey Staff, Leadership and Community Leaders



Futurist as Follower

Create a shared list of people, projects and events for colleagues to have on their radar

Informed & Passionate



Follow People

twitter

facebook

Follow Projects + Memes

#museumworkersspeak

To Increase Diversity, Museums Need Change from the Front Door to the Boardroom

ARTSY EDITORIAL
BY ISAAC KAPLAN
OCT 3RD, 2016 9:25 PM



From left to right: Candice Anderson, Margaret Morton, Tom Fialatpord, Migal Luciano, James E. Barden, and Nicole Ivy. Photo by Margarita Correas, courtesy of Cool Culture.

Follow Events

 livestream

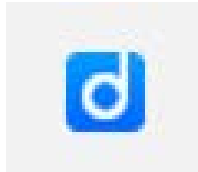


 | All Things Digital.

Scanning for Change via Social Bookmarks

Shared Tools: Create an External + Collective Memory Bank

One-click + four keywords = Forget about Forgetting



The screenshot shows the Diigo V5.0 beta interface. At the top, there is a navigation bar with the Diigo logo and the text "Annotate, Archive, Organize". Below this, there are tabs for "My Library", "My Network", "My Groups", and "Community". The main content area displays a list of bookmarked items. The first item is "NATASHA TSAKOS | HOME | Innovative Theatrical Experiences & Technology" from "www.natashatsakos.com", with keywords "people", "art", "theatre", and "projection+mapping". The second item is "macarthur 'genius grant' winner is uw-madison alumna site icons view on campus" from "news.wisc.edu", with keywords "macarthur", "wisconsin", "theatre", "artsedu2020", and "aging". The third item is "EarDial protects you from hearing loss at thunderous concerts | VentureBeat | Busi" from "venturebeat.com", with keywords "blog+post", "Venture+Beat", "audio", "hearing", "experience", "theatre", and "ux".

Futurist as Storyteller

Tell Stories + Take Mental Leaps via Trend Card Poker

Create Sustainability focused Scenario Cards for Libraries to Explore



Fictional Future Events:

- New Laws + Regulations
- New Competitors
- New Internal Rules
- New Leadership
- Disruptive Wildcards

Futurist as Provocateur

Give Structure to Innovative Thinking!

Use 'Killer Questions' to Brainstorm Ideas

Following the success of HP's Chief Innovation Officer Phil McKinney, generate a weekly 'Killer Question' email message or 'Twitter' conversation that spurs conversation about the future of libraries and sustainability issues.

What is a library driven sustainability effort that does not exist today but in five years will be our most powerful program of change?

What is the #1 misconception about sustainability – and how do we overcome it?

Thank you!

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Learn More...

garrygolden.com/nyla2016