

# Designing for Affordability: Change, Context, and Co-Thriving

*A Presentation to Wyoming AIA  
October 7, 2016*

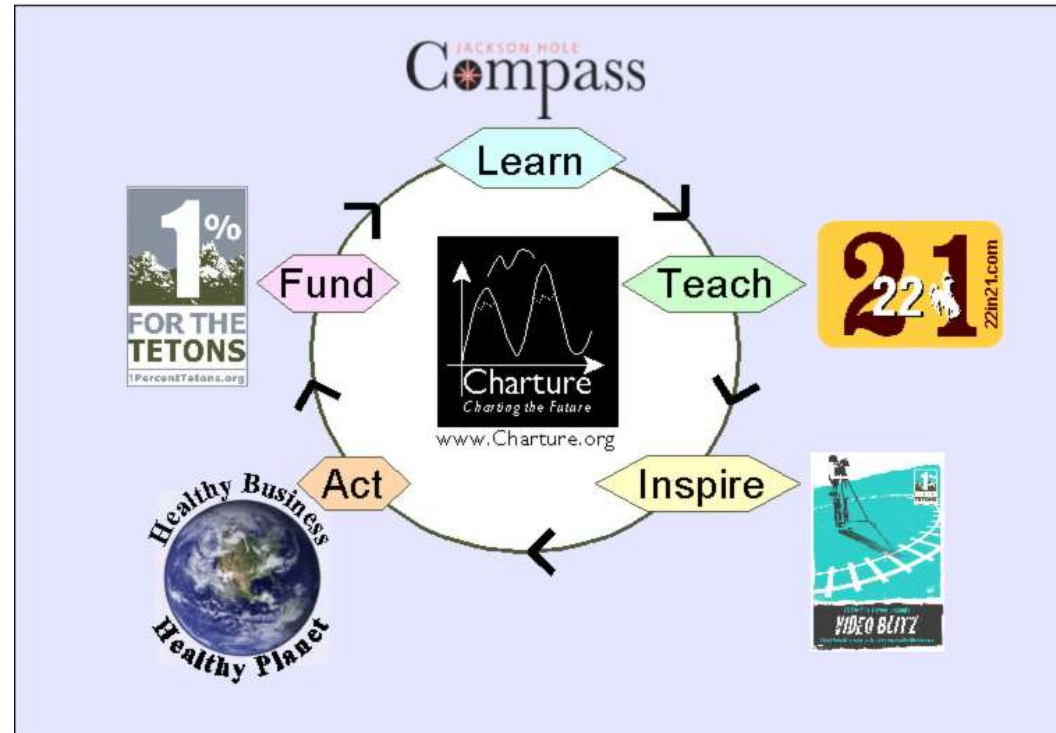
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# Designing for Affordability – my role

- Schechter's Equation for Life
  - $S=R-E$
  - Satisfaction equals Reality minus Expectations
- Calibrating expectations
  - I'm not a designer
    - Very little black in my wardrobe
  - So who am I? What can I offer you?

The Charture Institute: a think tank examining and working with communities closely-connected to nature

## Charture: What We Do



**The Charture Institute**

*Helping human and natural communities Co-Thrive*

## My goal: offer you context

- The world is hallmarked by rapidly-accelerating change
- The change can be seen as random happenings forming into larger patterns
  - What does affordability mean in this case?
  - What role do design professionals have in such an environment?
  - How do design professionals cope with randomness and rapid change?

# Two major themes underlying rapidly-occurring change

- Short-term: random occurrences
- Long-term: patterns emerge

# Randomness

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Point: A series of random occurrences may be only that. Human instinct is to make it more than that.

- Lesson for designers: The end result of your actions is more than a series of random occurrences; its consequences more lasting

# Patterns



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## Schechter's Maxim

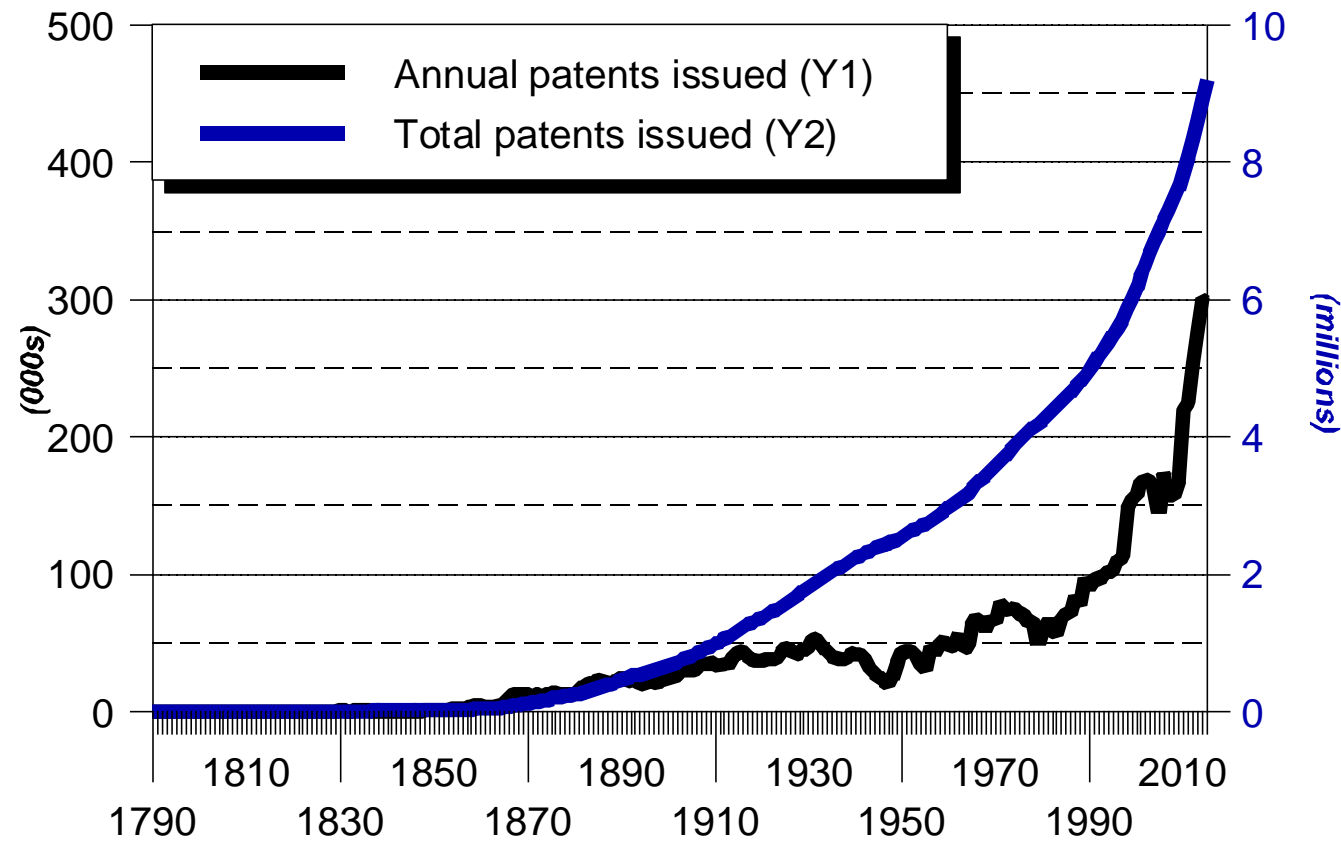
- Technologies change faster than economies
  - Economies change faster than perceptions
  - Perceptions change faster than politics
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The Industrial Revolution began in the 1760s in England; i.e., right around the time of the American Revolution

# Patents: a proxy for the pace of technologic change

## US Patents: 1790-2015

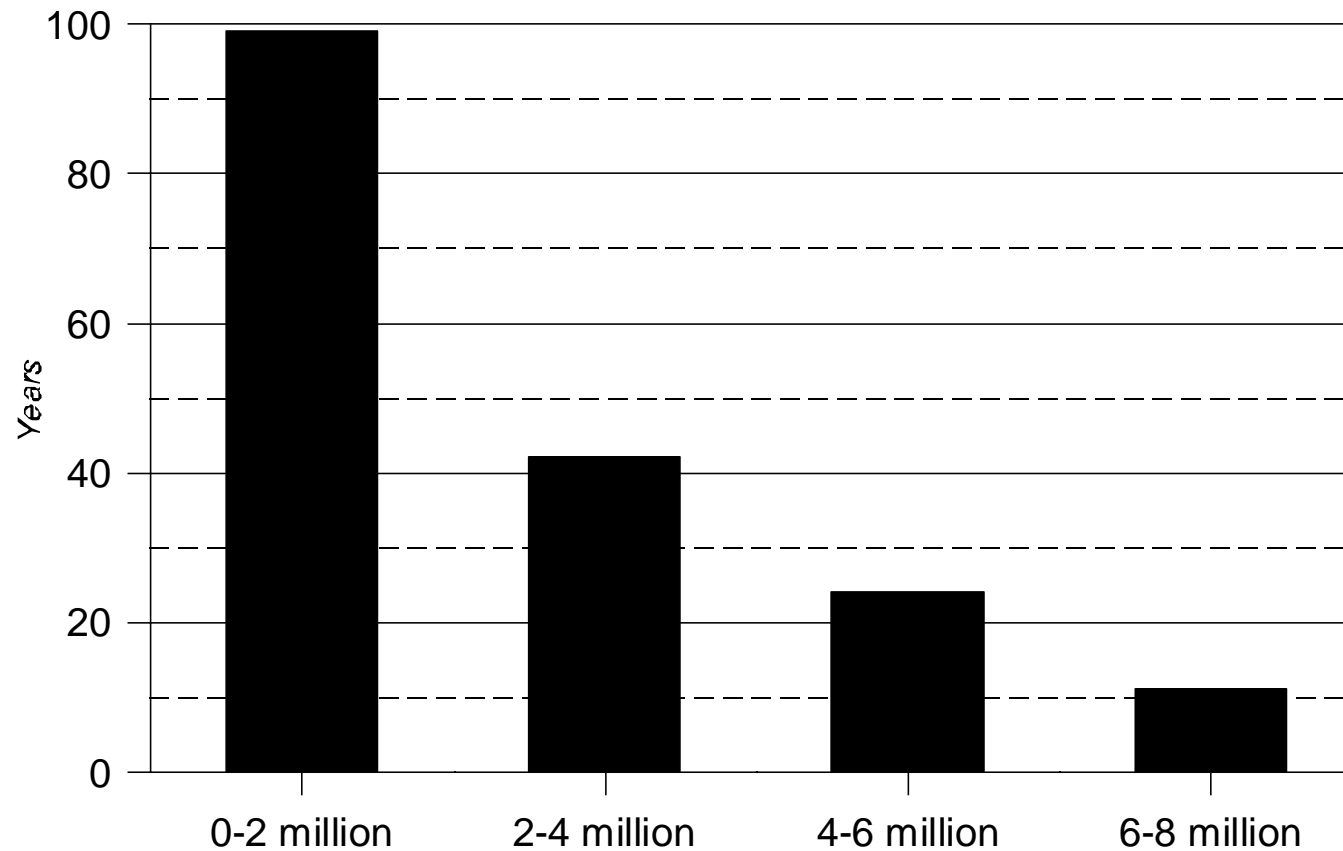
Total Patents Issues: Annual and Cumulative



# The pace of change is accelerating geometrically

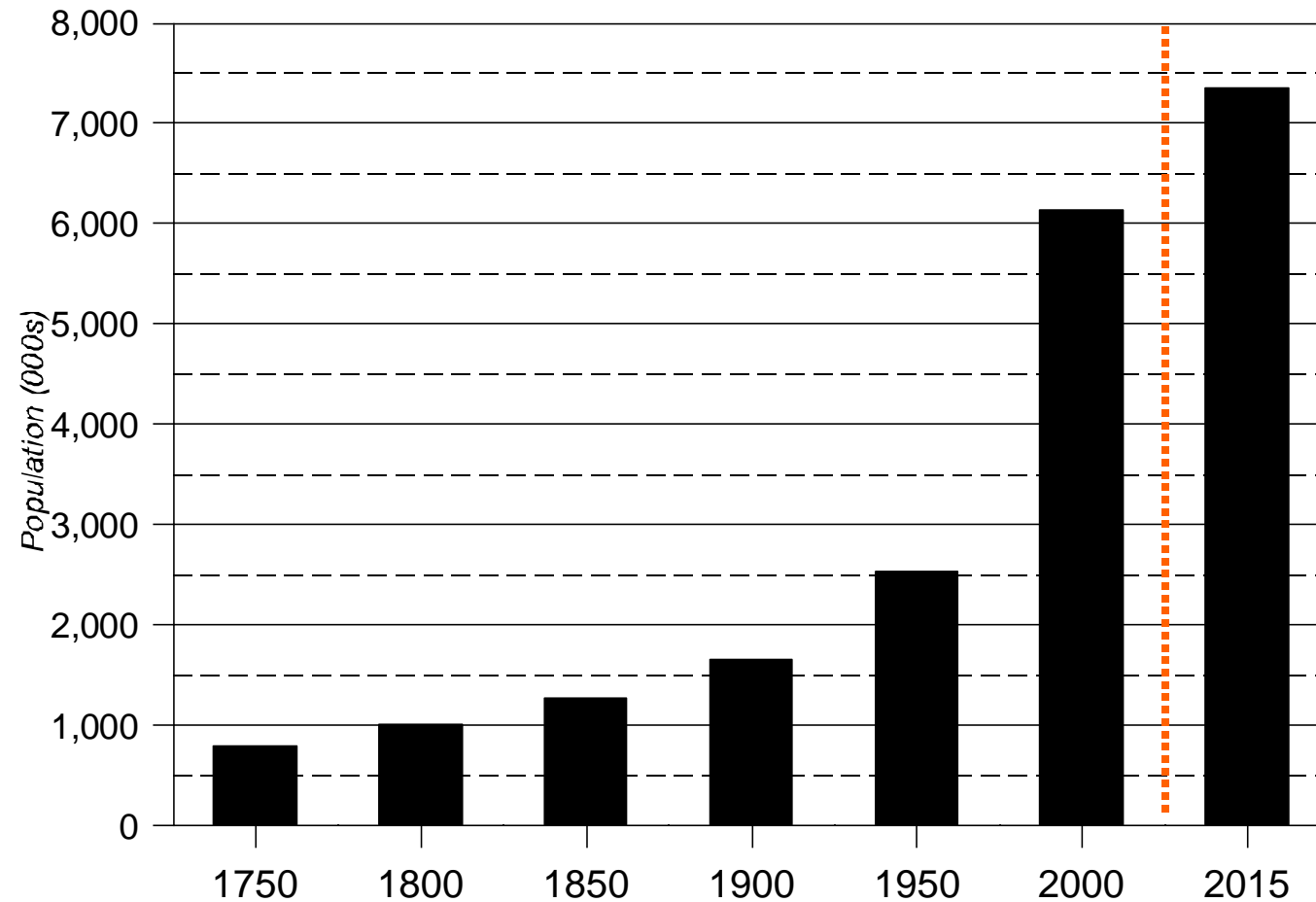
## US Patents Issued: 1790-2015

# of Years to Issue 2 Million Patents



Technologic changes have improved the quality and quantity of human life

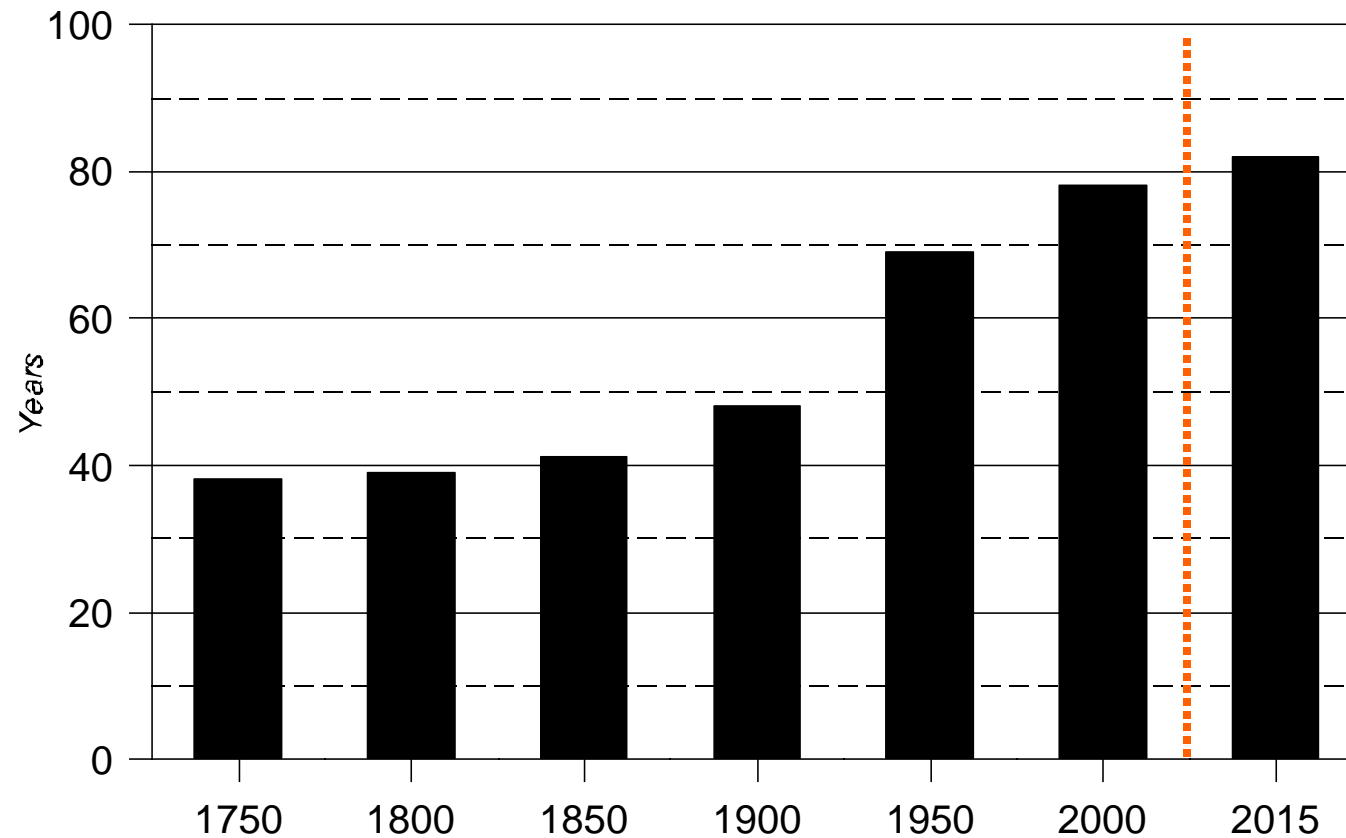
World Population: 1750-2015



Today billions of people enjoy better lives than all but royalty did 250 years ago

## Human Life Expectancy: 1750-2015

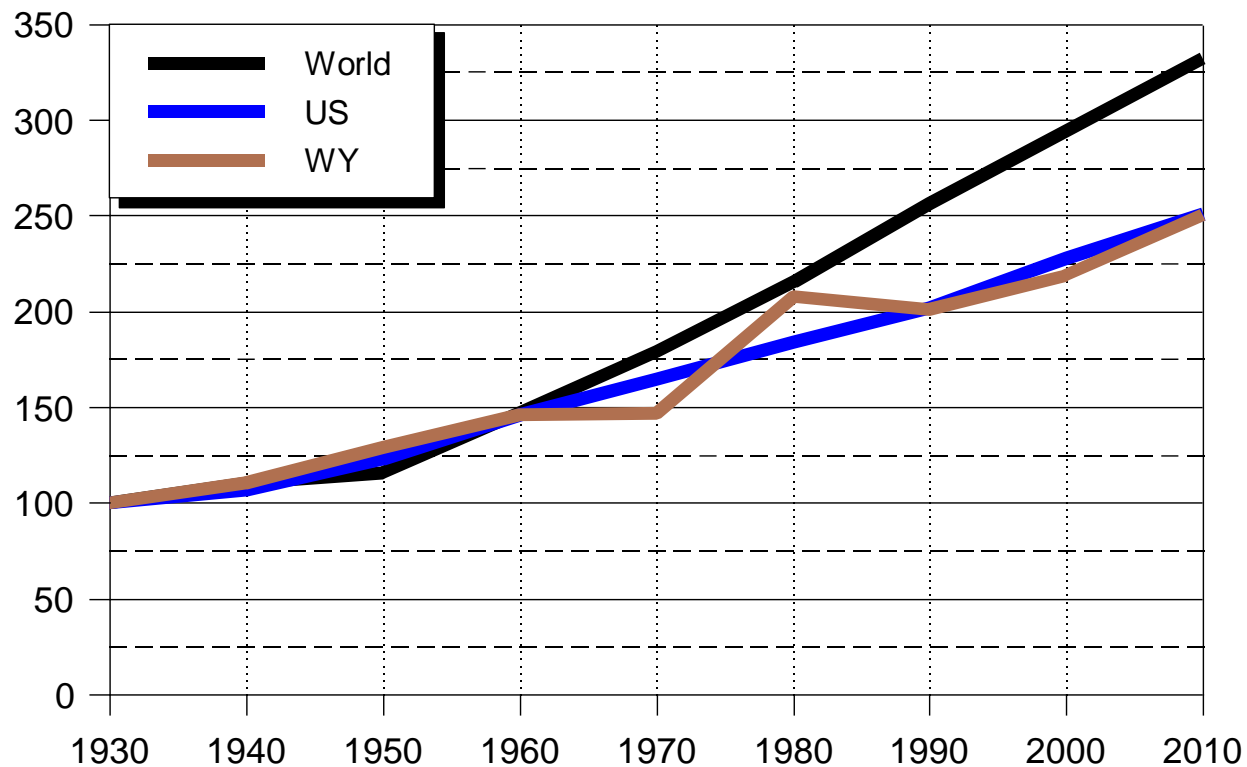
All Residents of United Kingdom



Bringing it closer to home, over the past 80 years the world has grown faster than the US or WY

### World, US, WY: 1930-2010

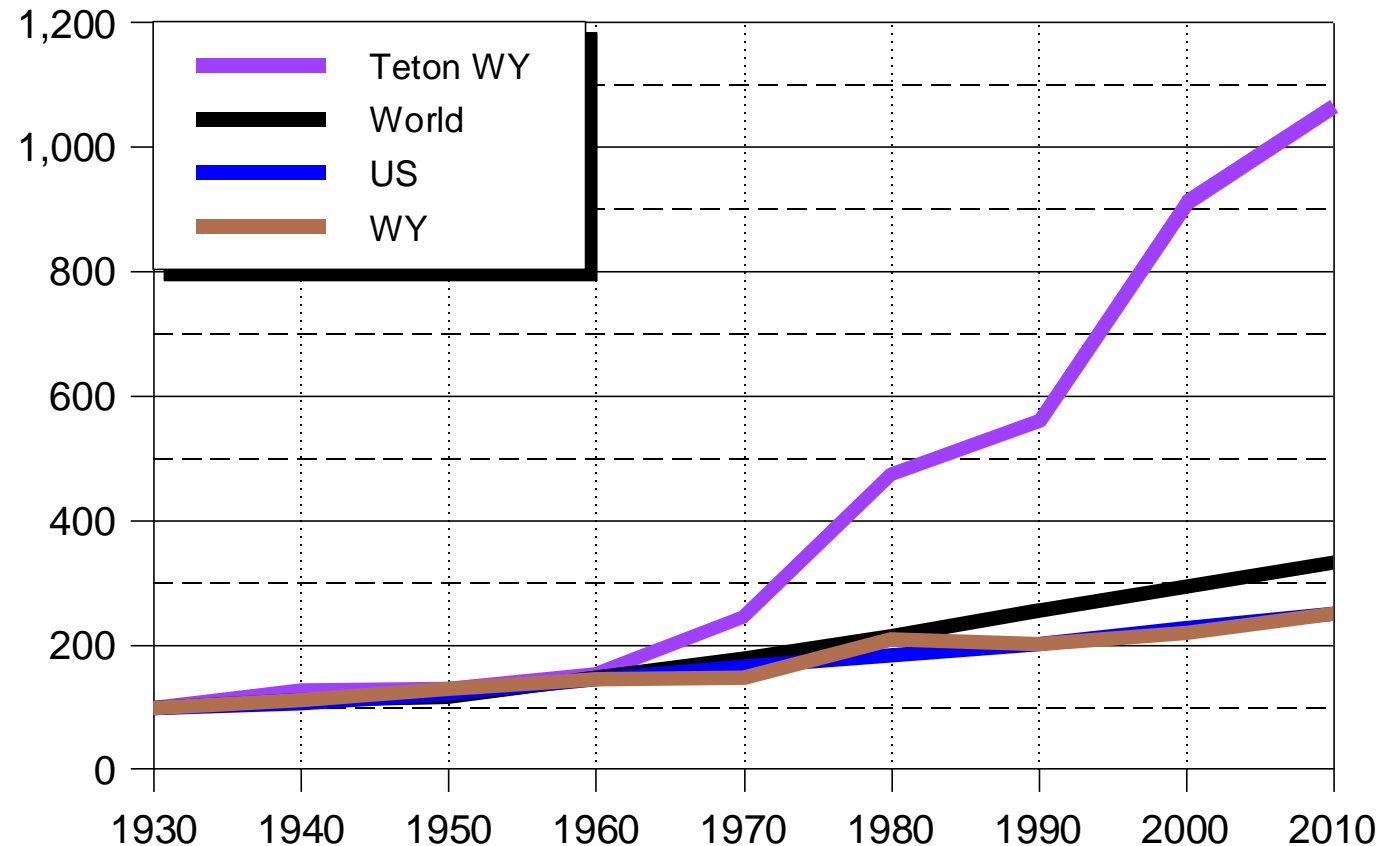
Relative Population Growth (1930=100)



# But all have paled in growth v. Teton County WY

World, US, WY, Teton County WY: 1930-2010

Relative Population Growth (1930=100)





# 6 forces interacted synergistically to produce Teton County's remarkable growth

- Technology
- Economy
- Transportation
- Mores
- Values
- Suburbs becoming cities

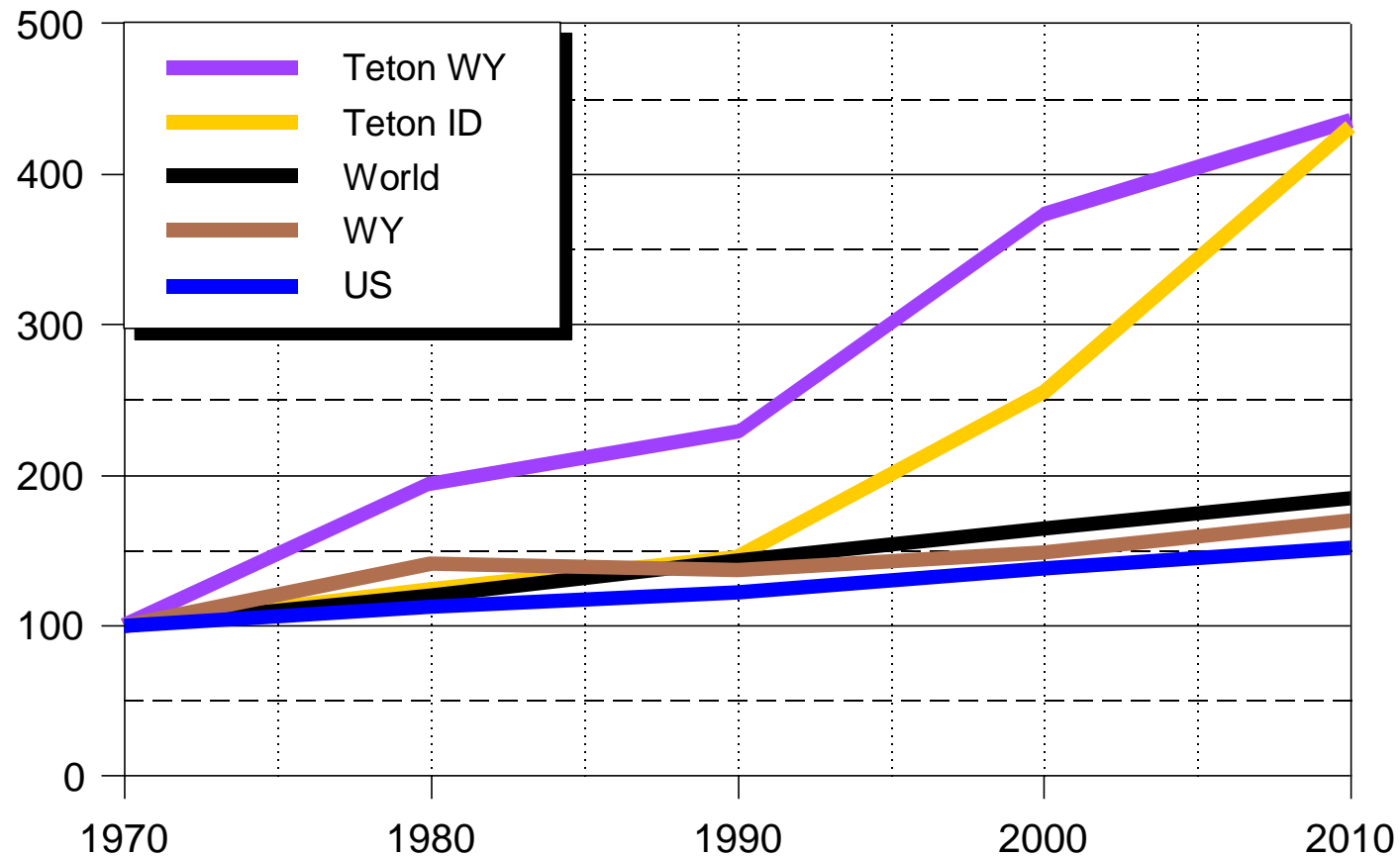
Yet this isn't new – these same forces had already produced the suburbs that transformed the world's major urban areas.

What is new? Virtual suburbs (with their own physical suburbs down the canyon or over the hill)

# The growth of Teton County WY's physical suburb...

## World, US, WY, Teton Counties: 1970-2010

Relative Population Growth (1970=100)



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The goal in all cases was an improved quality of life. Physical suburbs were perceived as cleaner, healthier, better places to raise a family. Ditto virtual ones.

- *Ditto leaving the Old World for the New...*

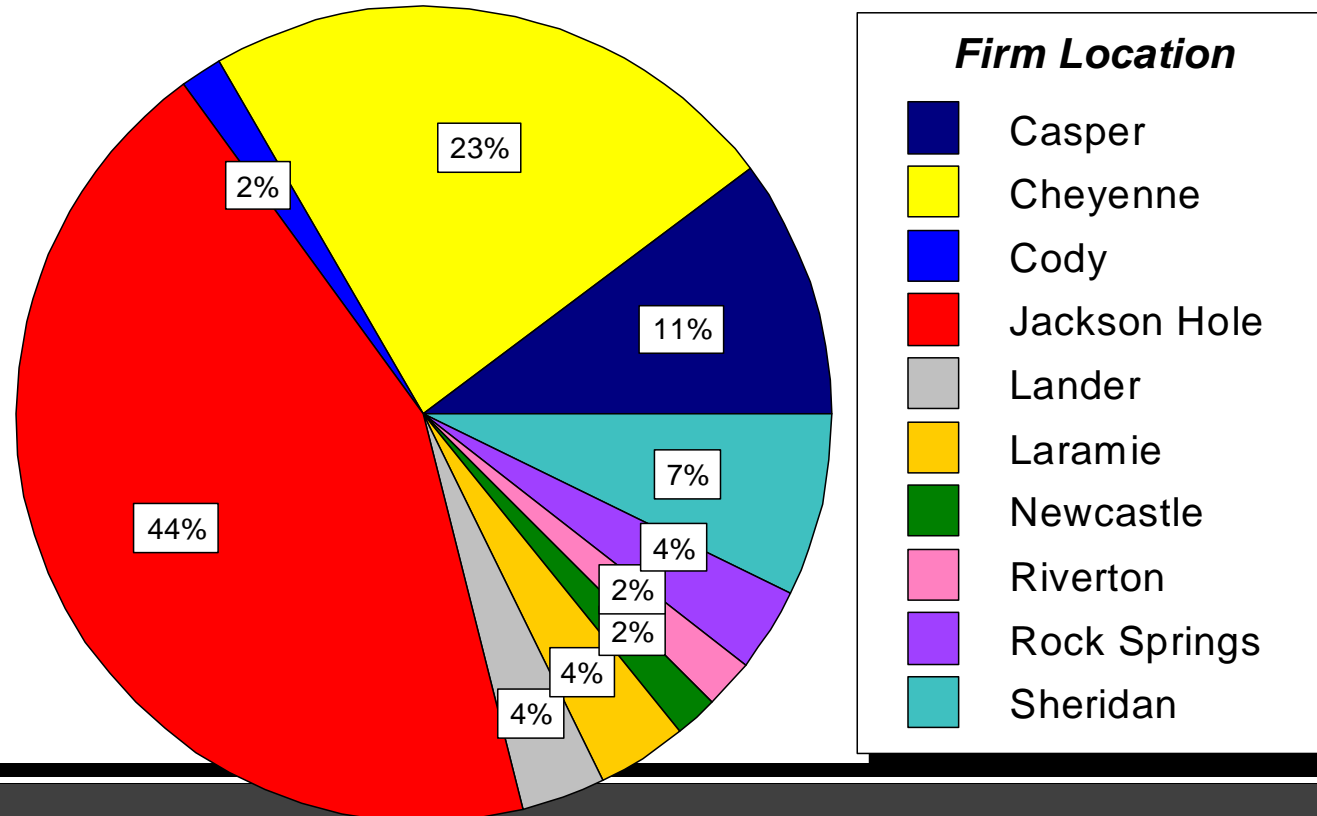
A personal history of  
technologic  
improvements: 1983-2016

Fundamental question for you: In the face of such rapid change, what is timeless in design?

# Let's switch gears a bit and talk about you/WY. What is it about Jackson Hole?

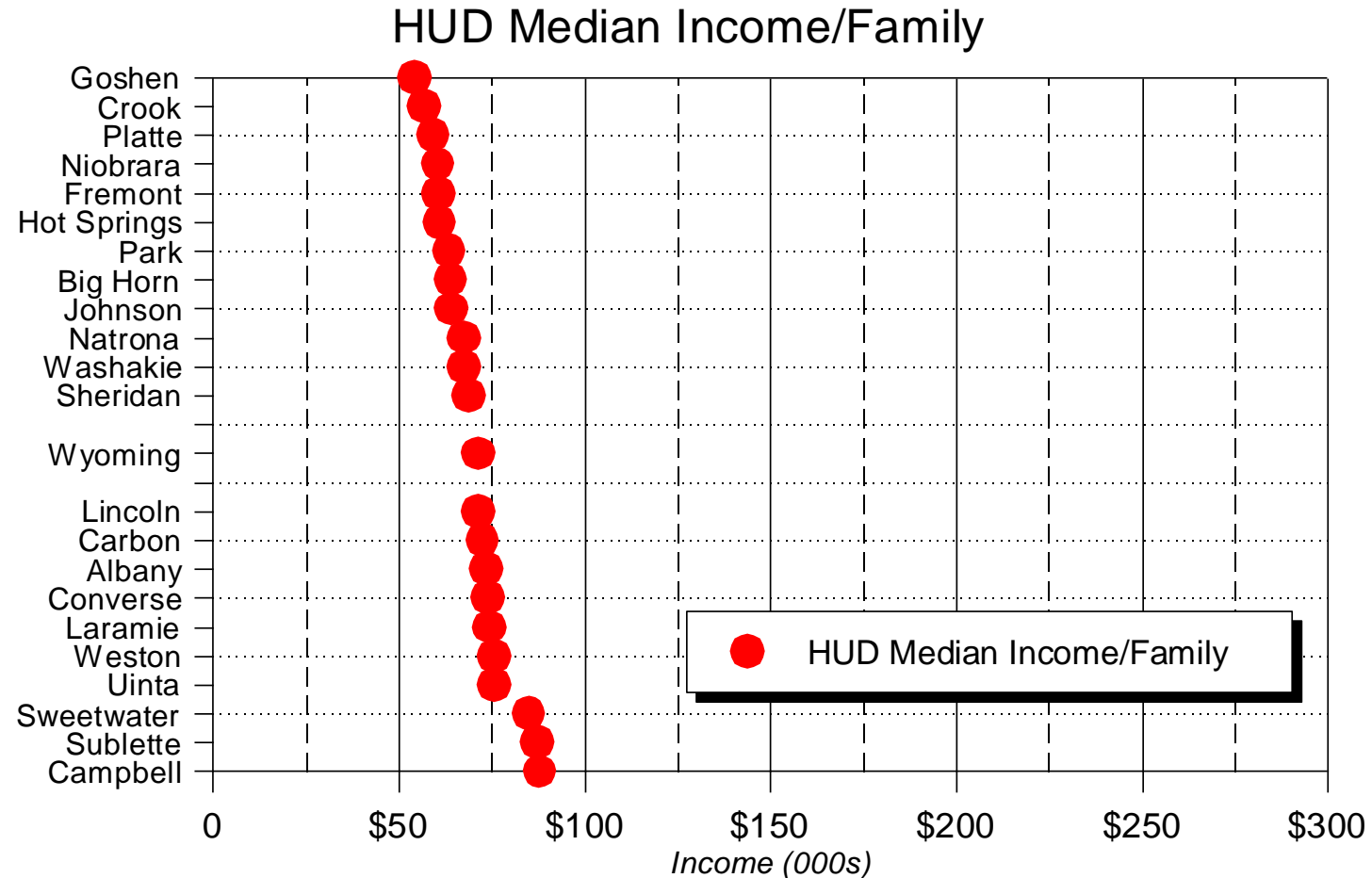
## WY AIA Membership: October 2016

*Total # of Firms = 57*



# Since our theme is affordability, let's start with income

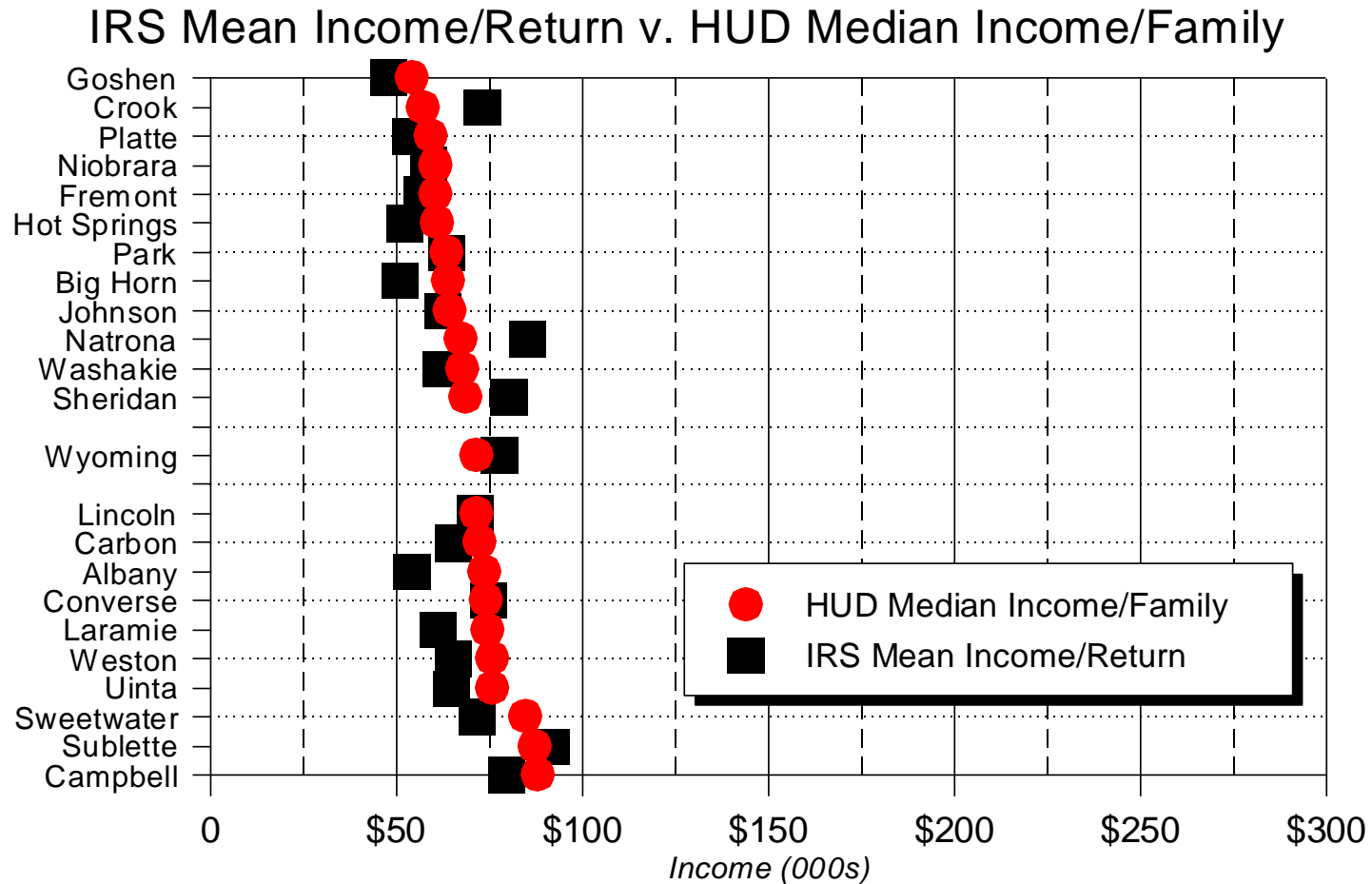
## Wyoming & Its Counties: 2014





# A narrow band of median & mean income for WY's counties

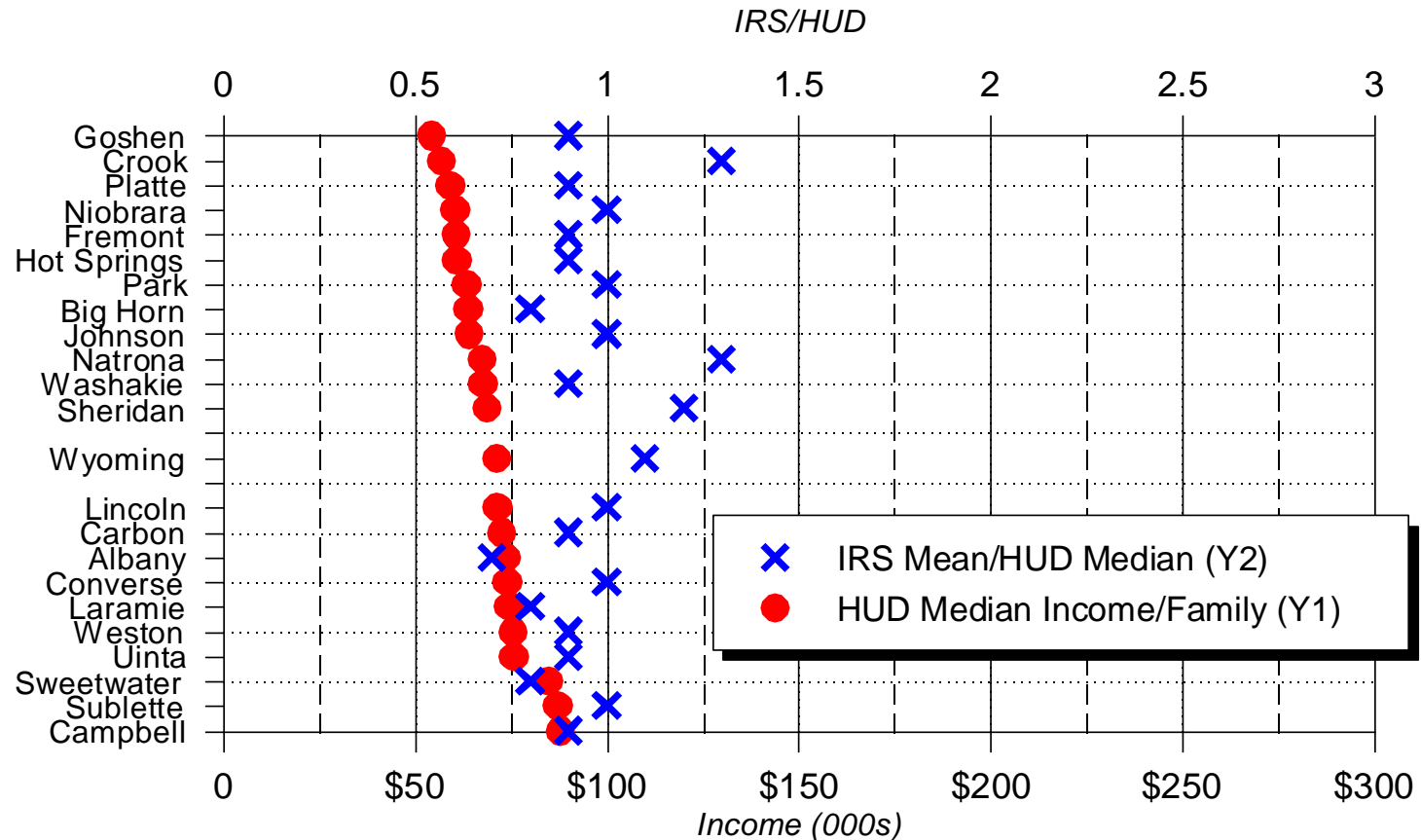
## Wyoming & Its Counties: 2014



Ditto the result when you divide mean into median

## Wyoming & Its Counties: 2014

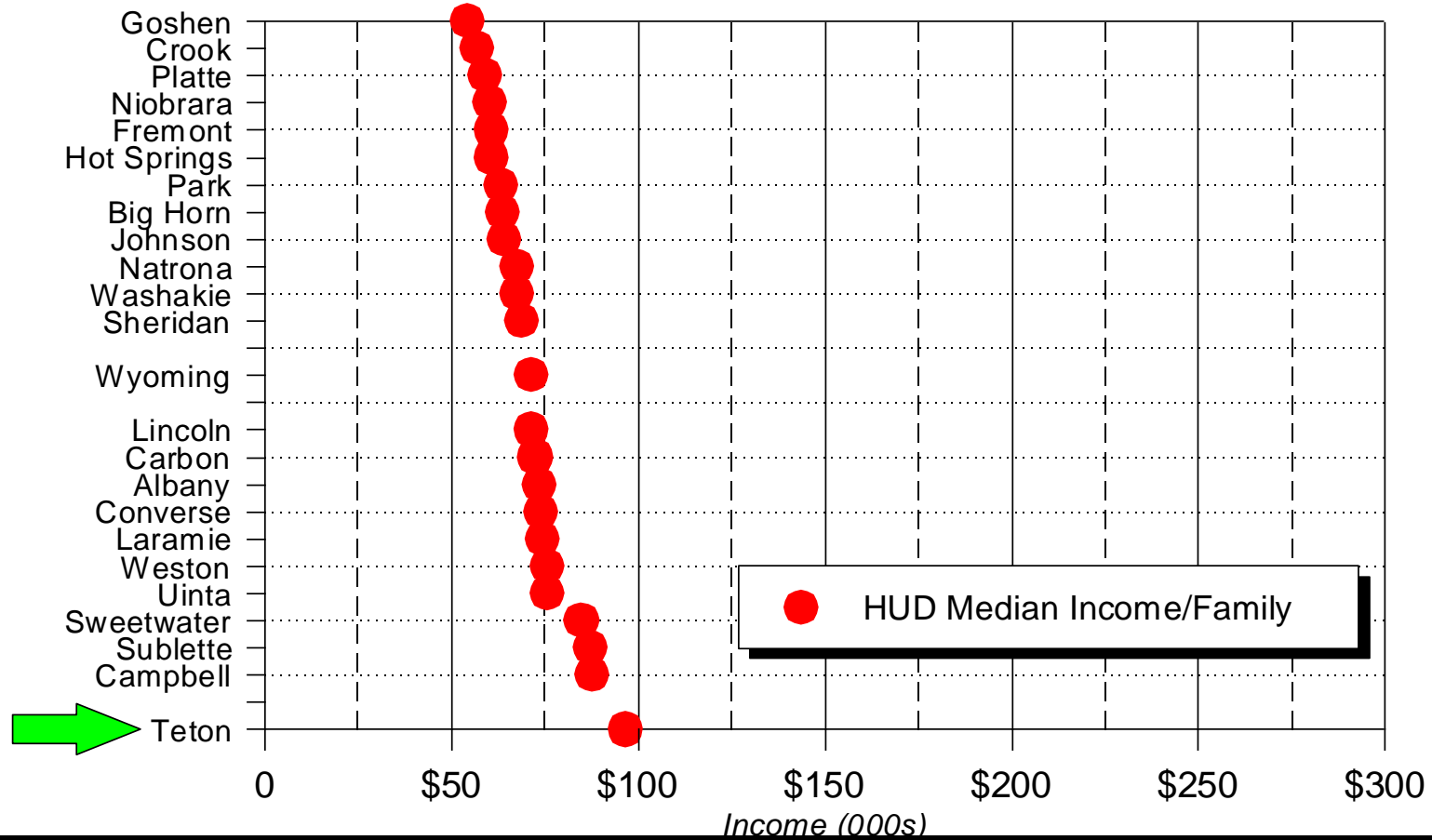
HUD Median Income/Family v. Mean/Median



# Jackson Hole. Only an hour from Wyoming?

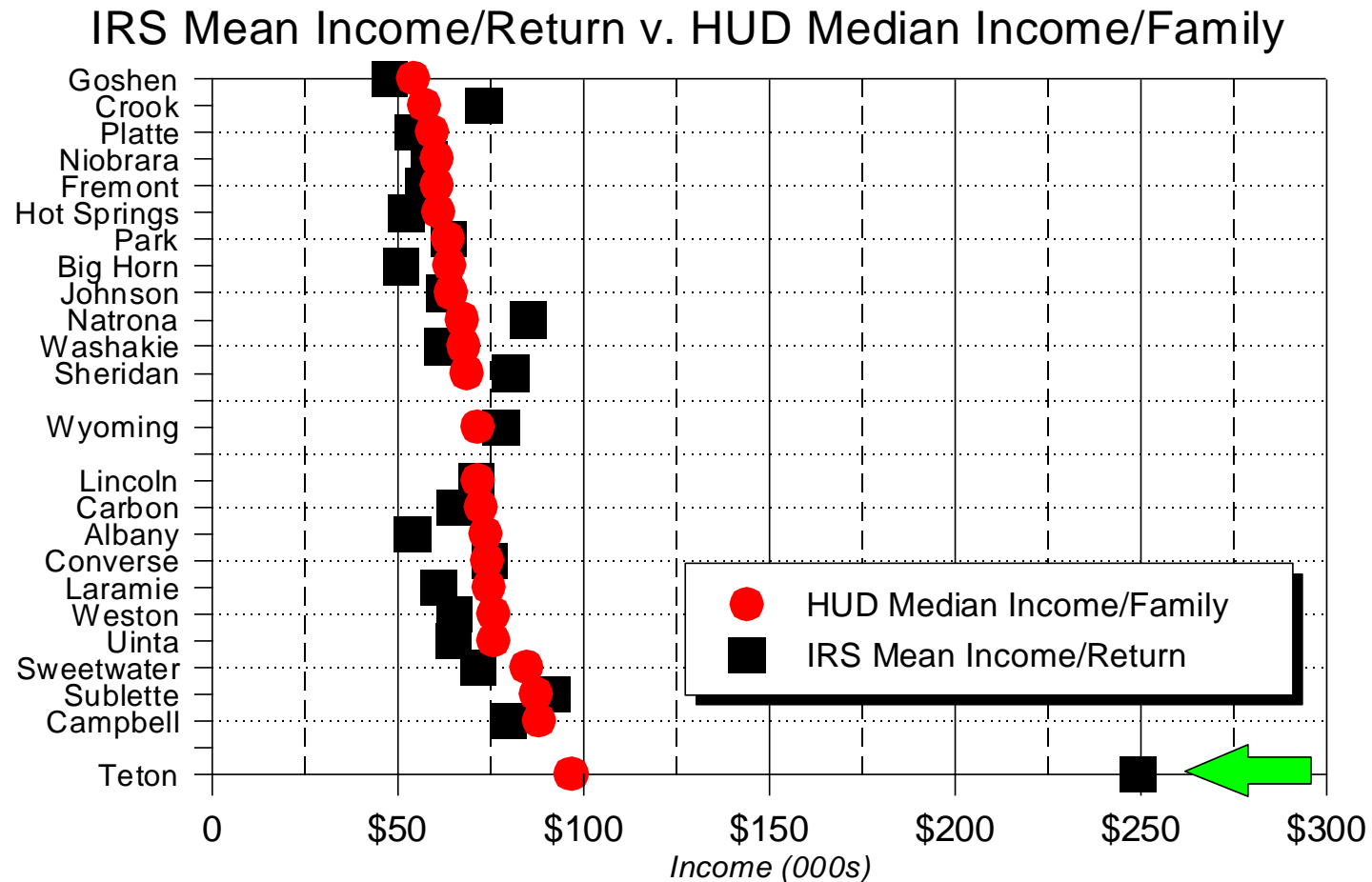
## Wyoming & Its Counties: 2014

HUD Median Income/Family



# Look at mean income, and vive la différence!

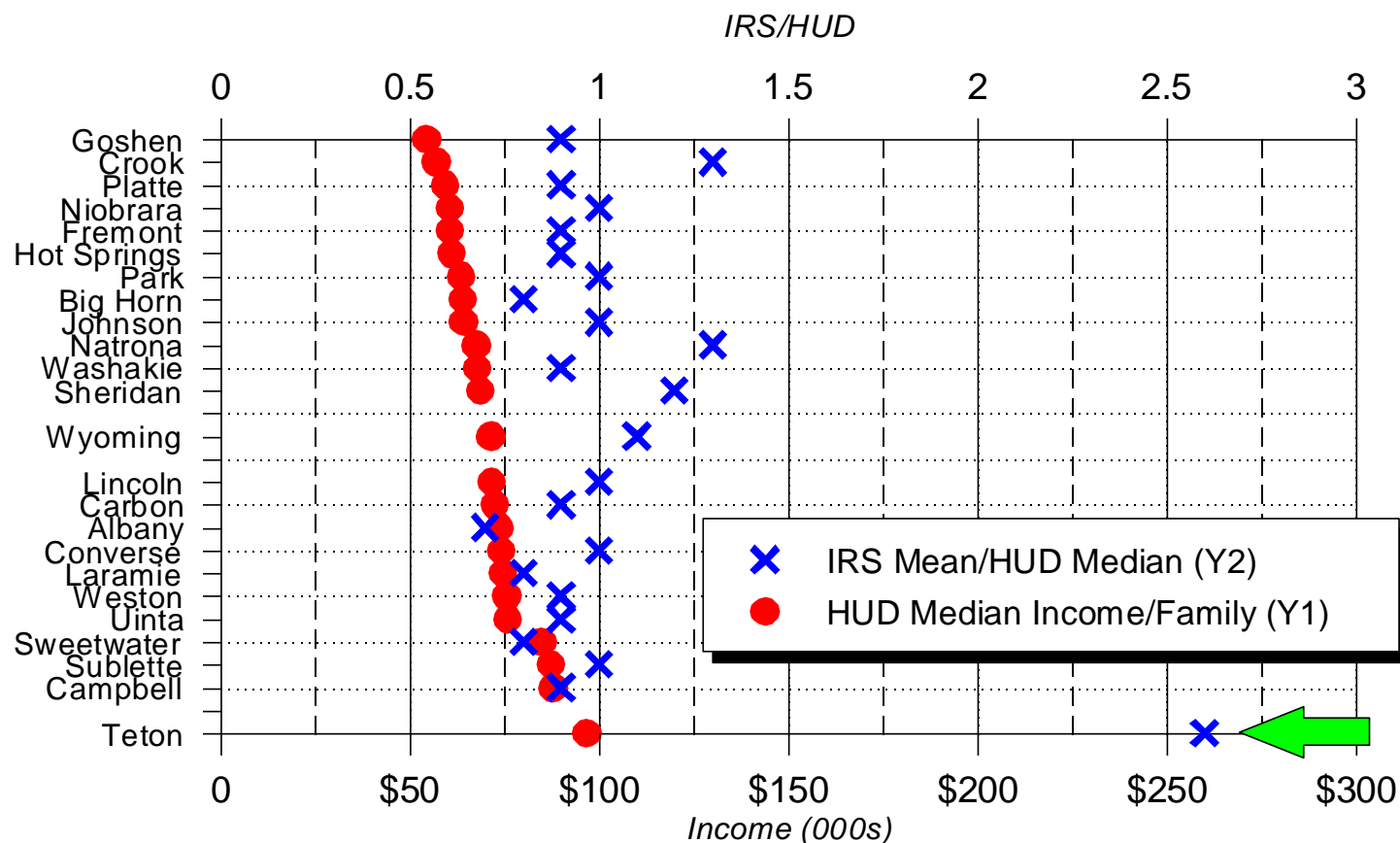
## Wyoming & Its Counties: 2014



# A YUGE la difference! America's greatest income inequality

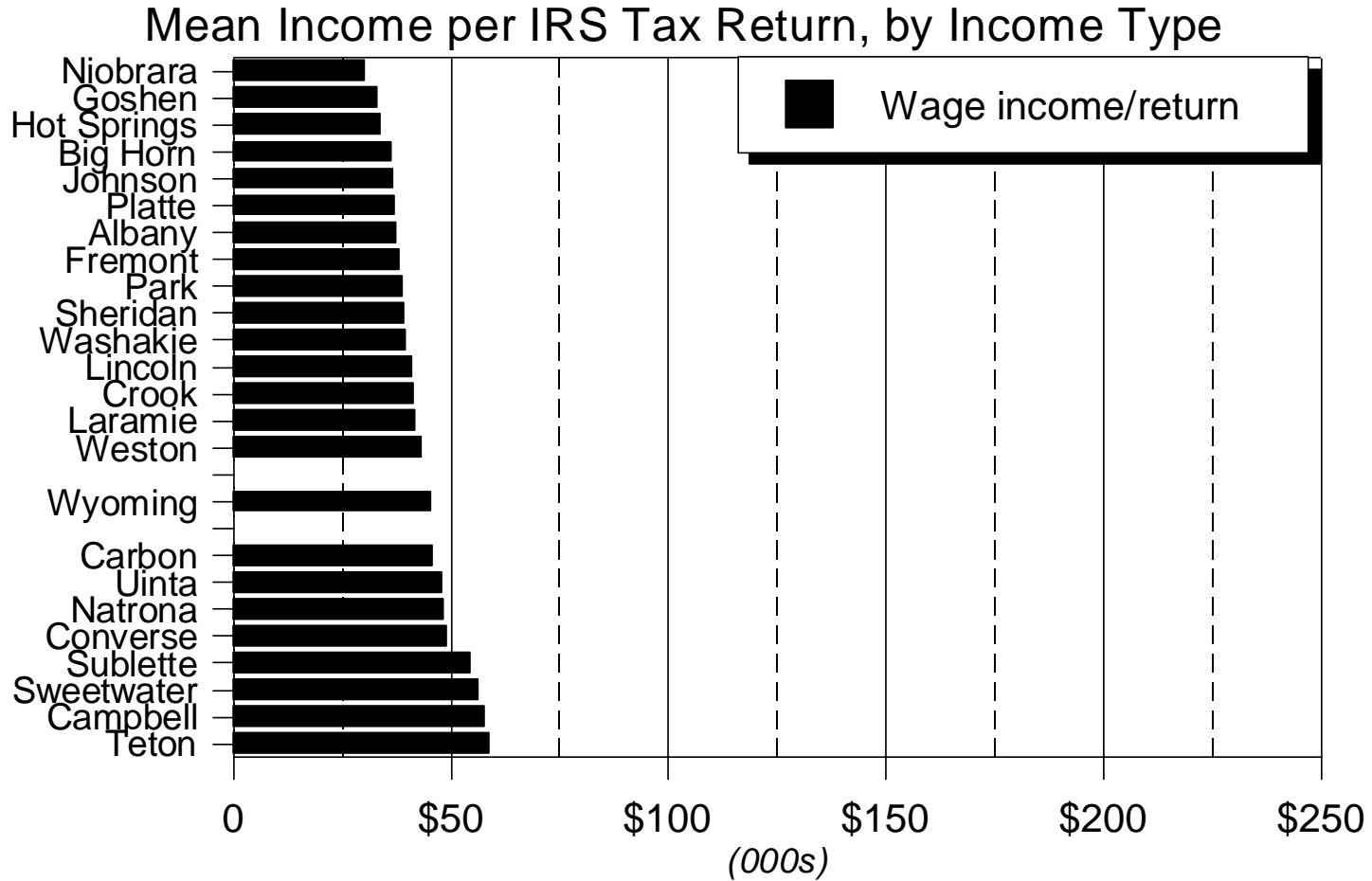
## Wyoming & Its Counties: 2014

IRS Mean Income/Return v. HUD Median Income/Family



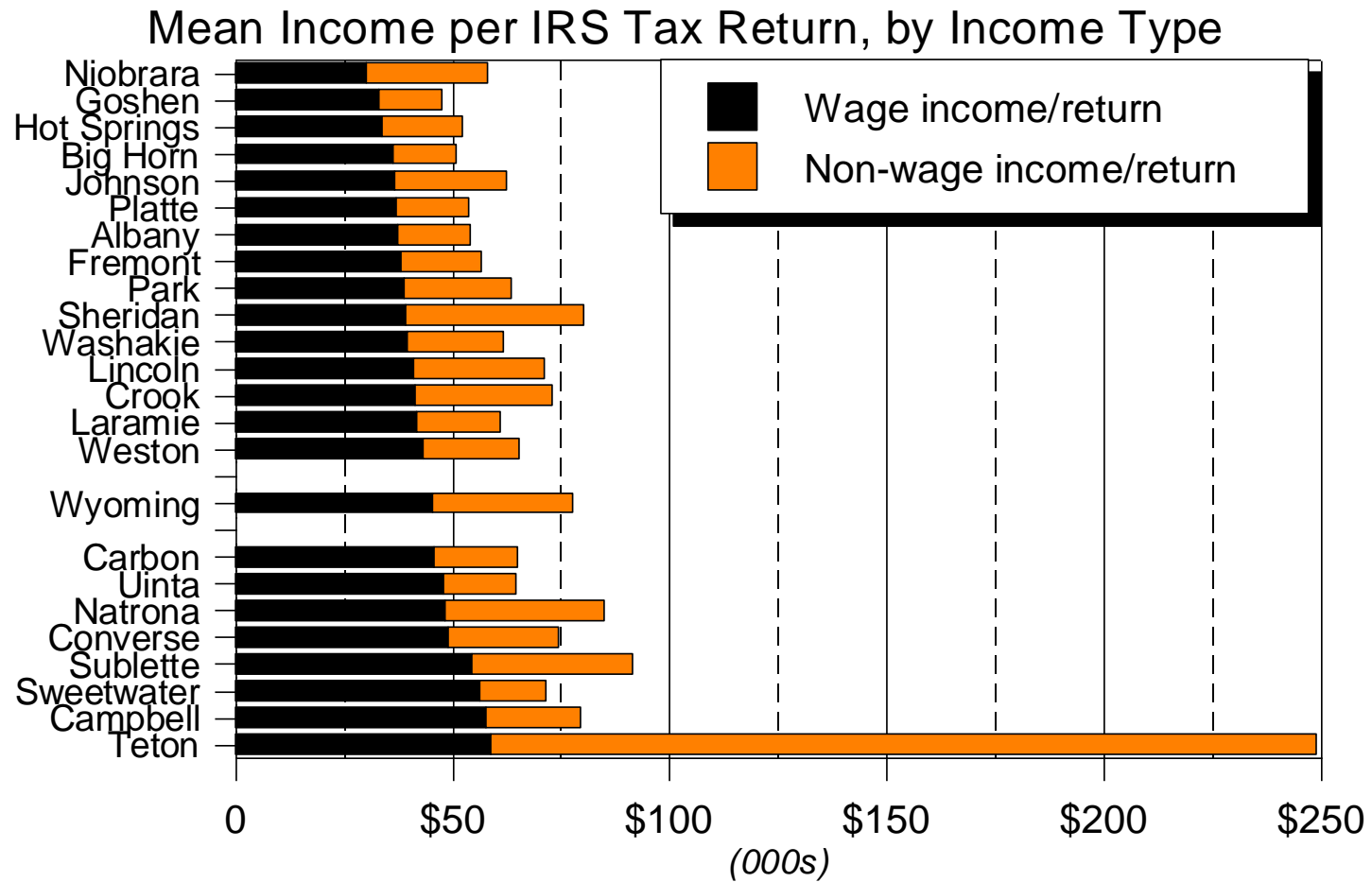
# What's going on? Wage income is similar...

## Wyoming & Its Counties: 2014



...but not investment income

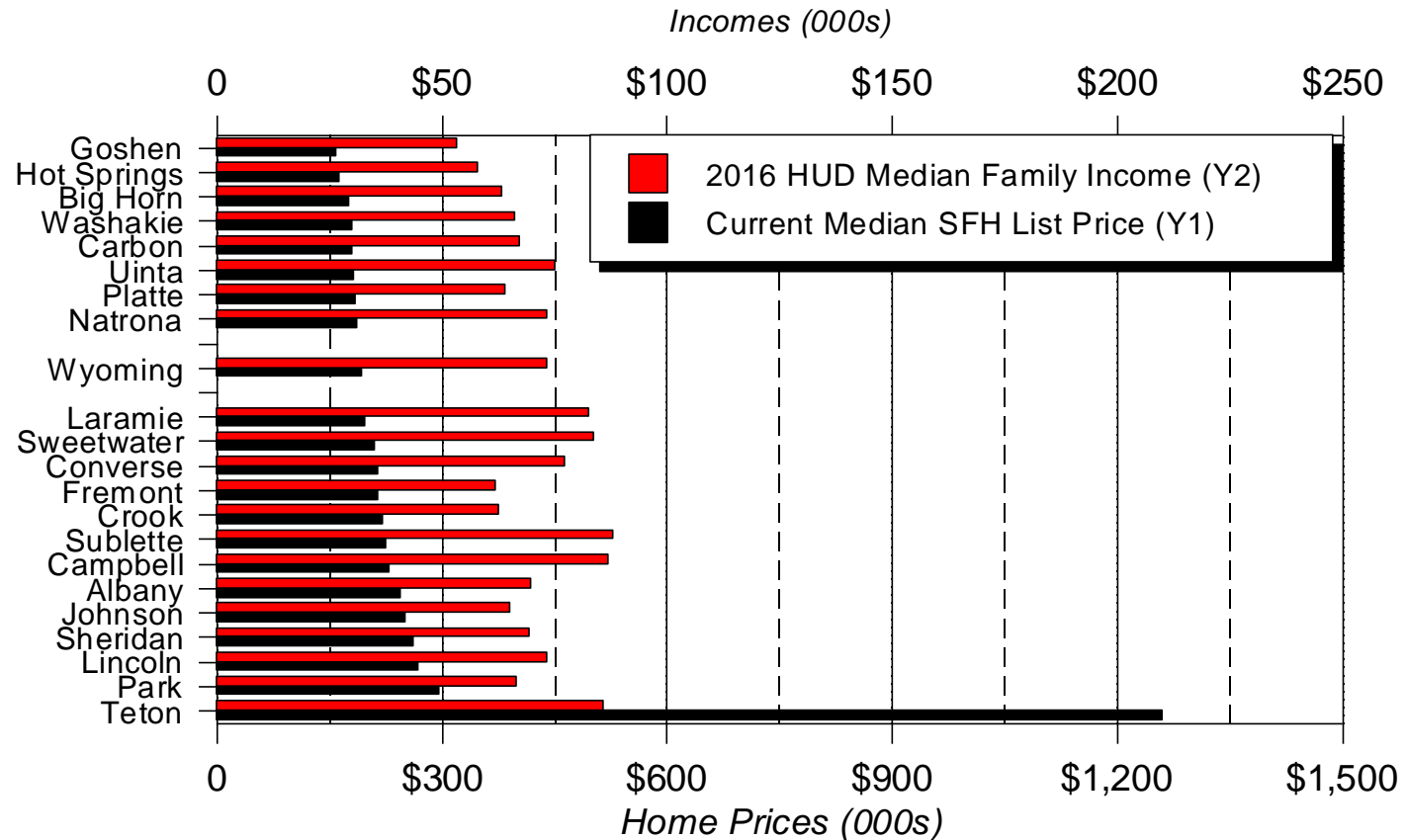
## Wyoming & Its Counties: 2014



# Housing prices sorta' reflect median income

## Wyoming & Its Counties: 2014

### Home Prices v. Median income

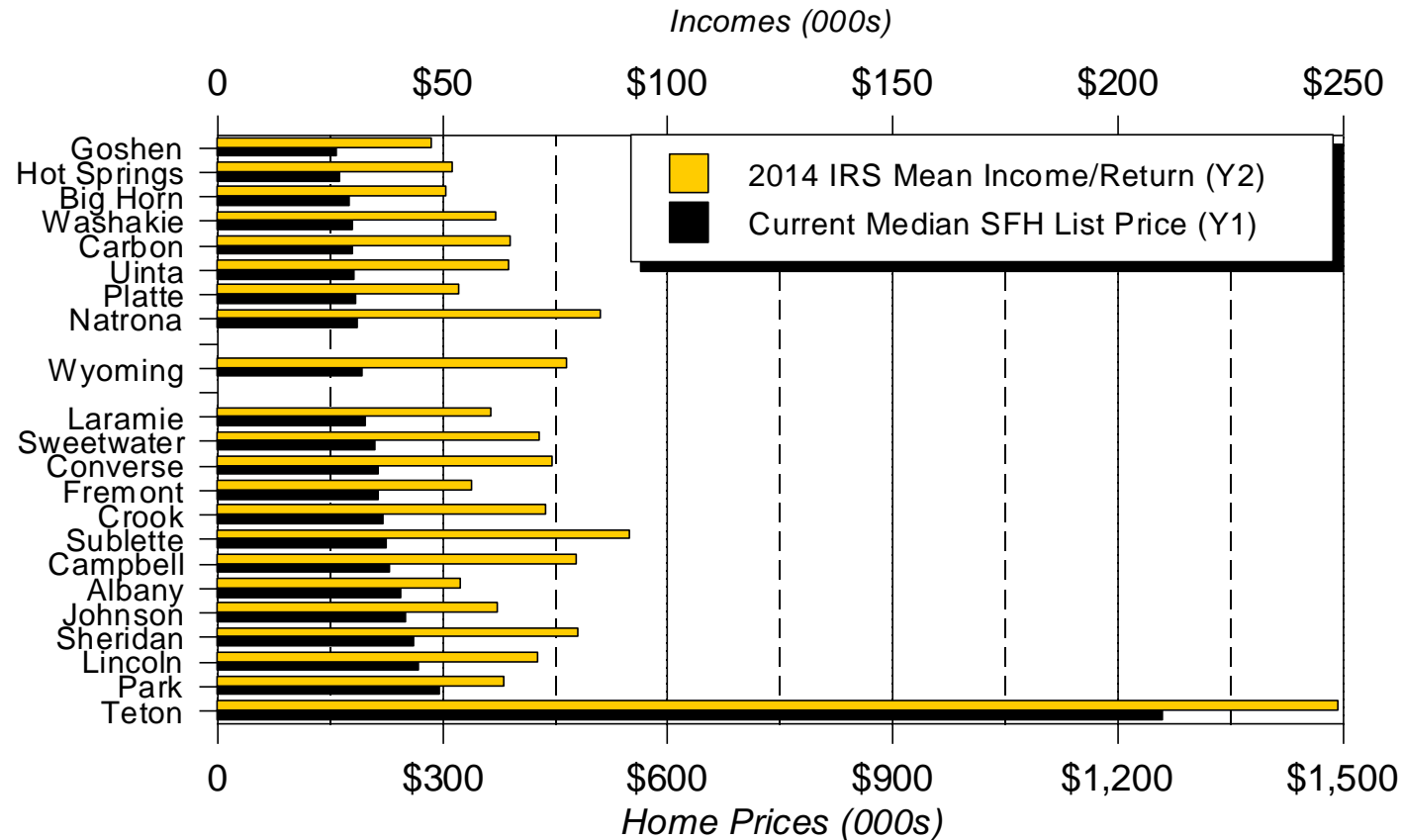




# They really reflect mean income

## Wyoming & Its Counties: 2014

### Mean Income v. Home Prices



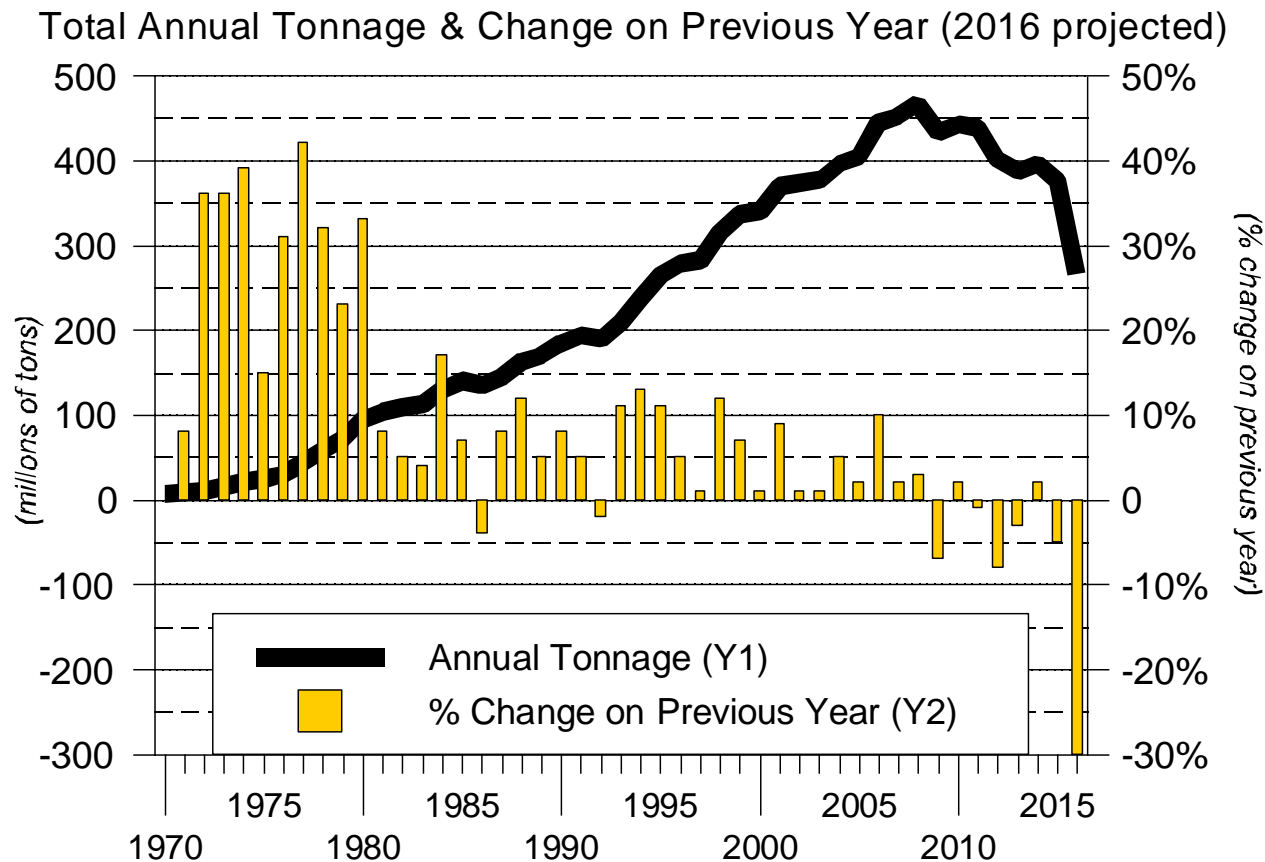
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Which raises the question: When you live in a state as disparate as Wyoming, what is affordable?

And if you don't live in Teton County, is this really an issue?

Yes! We're all Wyoming, with our collective financial wagon hitched to a rapidly-fading star.

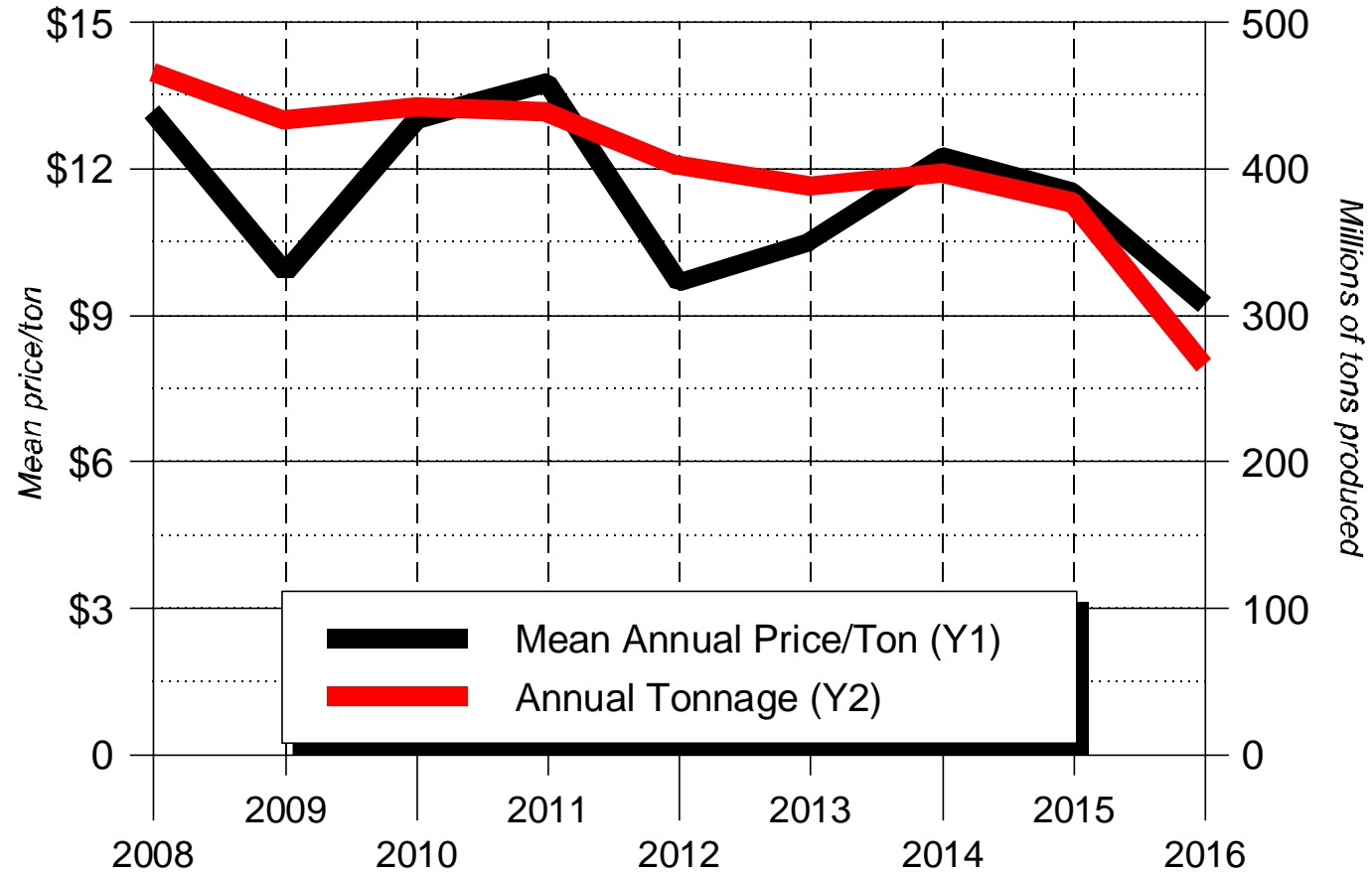
### Wyoming Coal Production: 1970-2016



# Fading not just in production, but price

## Wyoming Coal Production: 2008-2016

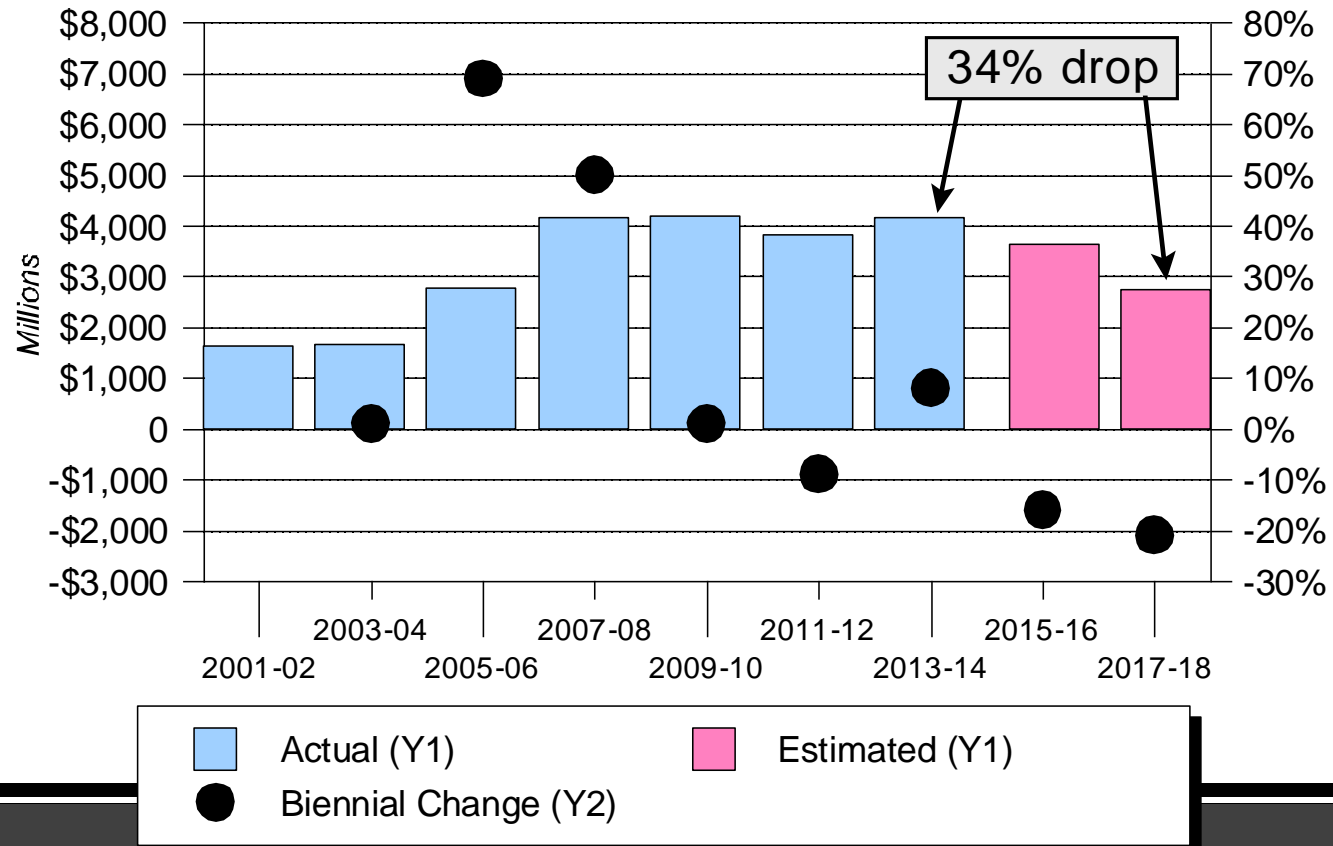
Mean Price/Ton & Total Annual Tonnage (2016 projected)



# Which means cuts to everything: social services in coal counties; affordable housing in Teton

## Wyoming General Fund, by Biennia: 2001-2018

Actual Appropriations 2001-2014; Estimated 2015-2018



“Whenever I run into a problem I can’t solve, I always make it bigger. I can never solve it by trying to make it smaller, but if I make it big enough I can begin to see the outlines of a solution.”

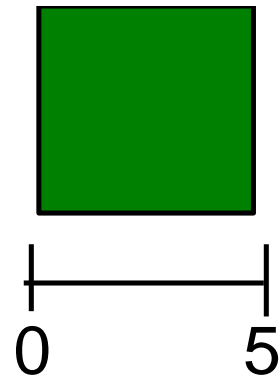
– Dwight D. Eisenhower

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Along with rapid growth and change and economic disparities, here's another factor making all this more complicated: generational disparities

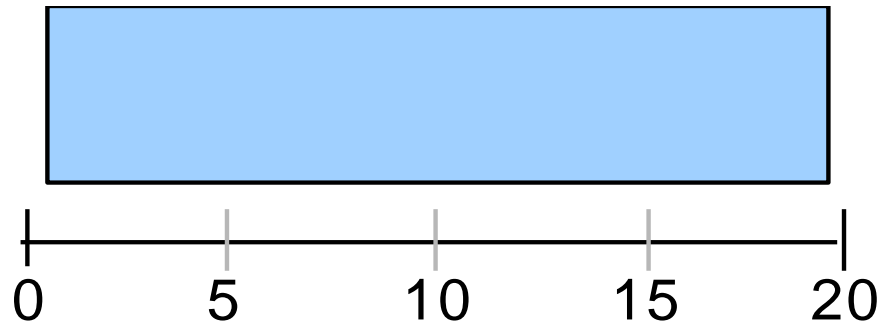
- Consider the three pillars of sustainability:
  - Economic capital
  - Human capital
  - Environmental capital

What's the generational span of economic capital? For most building projects, let's say 5 years

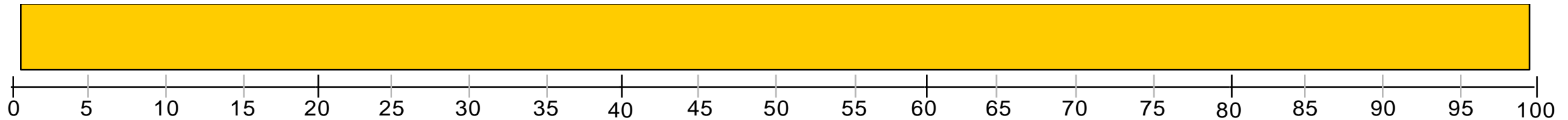




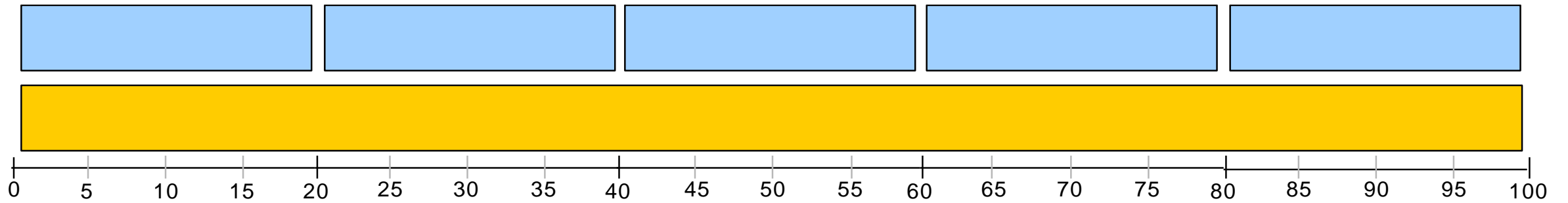
What about human capital? Let's say the 20 years it takes between birth and being launched



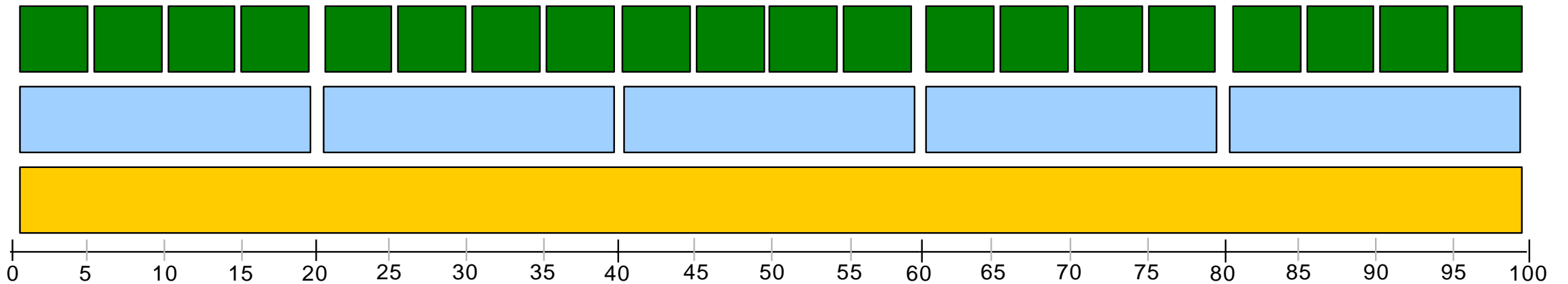
Environmental capital? For the lodgepole pine forests around Jackson, it's 100 years



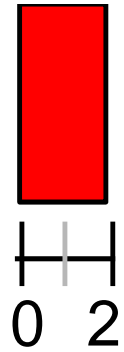
Which is 5 human generations...



...and 20 economic generations

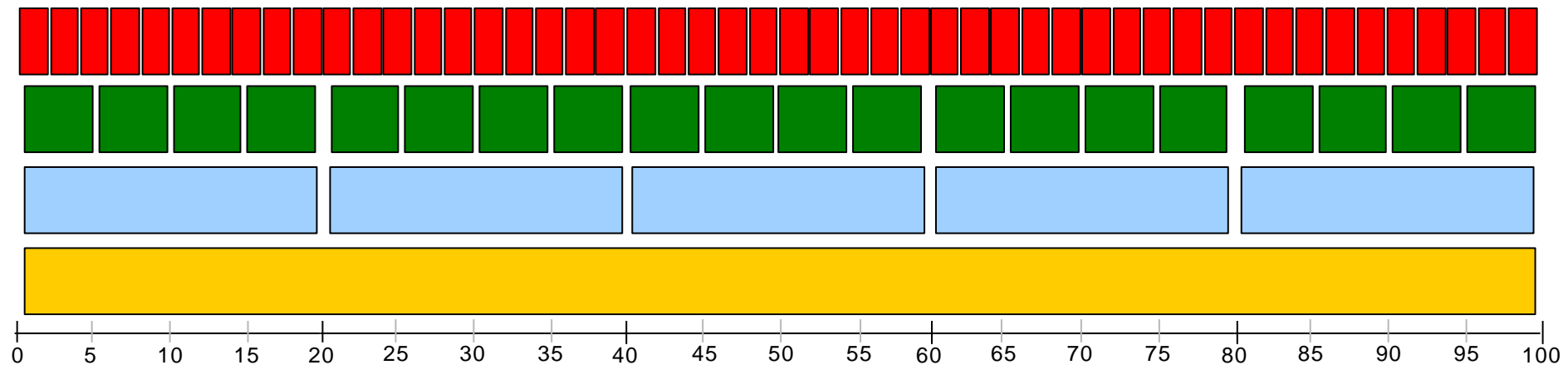


Let's make the problem bigger still. A political generation is two years

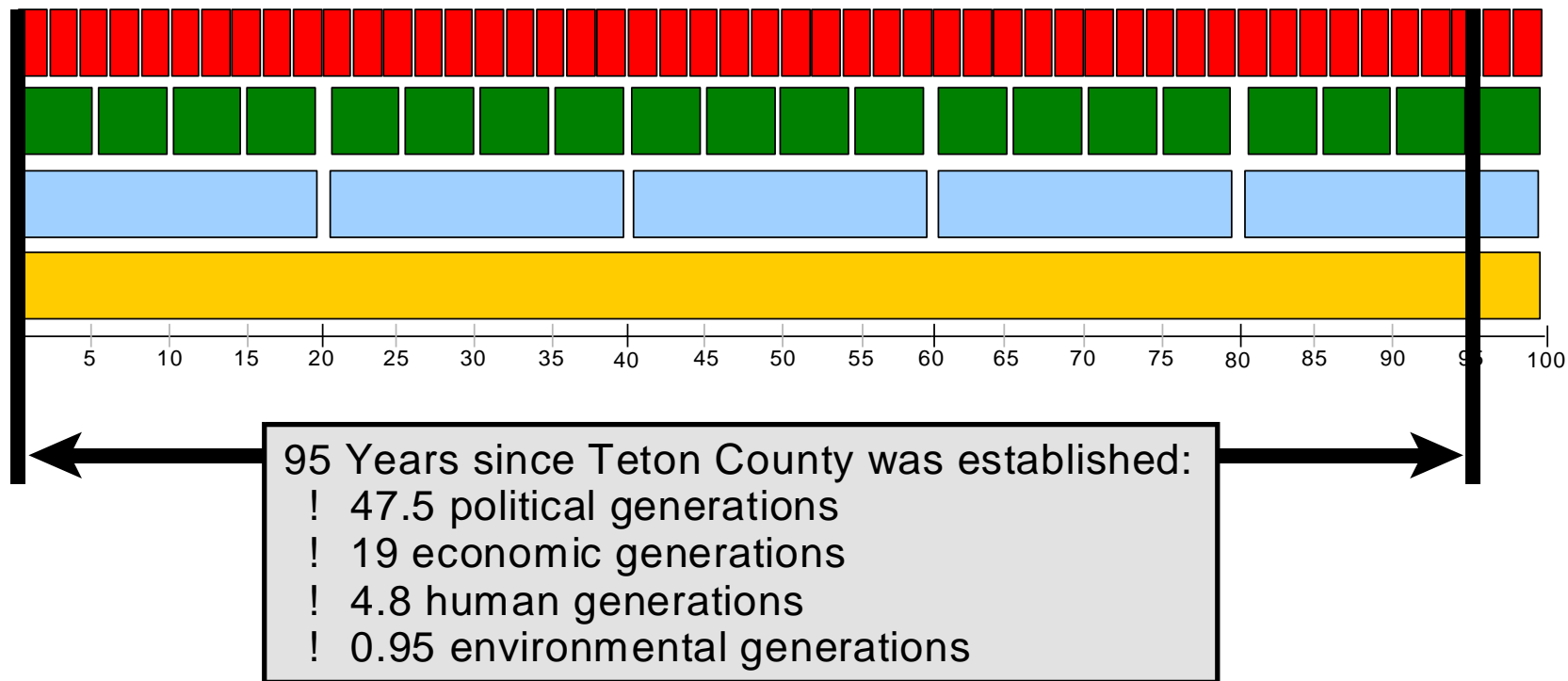


1 environmental generation =  
5 human generations =  
20 economic generations =  
50 political generations.

- *And since human nature tends to value the immediate and discount the future...*



Point: Until we can better align the exigencies of an economic generation with those of human and environmental generations, politics will tend to trump economics, which will tend to trump human needs, which will tend to trump the environment.



Which makes being a designer even harder, for most of you likely got into the business because of an interest in human &/or environmental capital, not economic

- *Which, along with your fashion sense, is pretty much the only real difference between you and investment bankers...*



# My Big Question

In the entire world, is there any community, region, or state that has developed an industrial or post-industrial economy without significantly damaging the ecosystem in which it lies?

- *maybe Jackson Hole...*

## E.O. Wilson

- “The real problem of humanity is the following: we have Paleolithic emotions; medieval institutions; and God-like technology. And it is terrifically dangerous, and it is now approaching a point of crisis overall.”
- The next 35 years are the most important in the history of humans’ interactions with the planet. We will learn to use resources far better, but will we do so in time to preserve most of Earth’s species and all of its basic ecosystems and their functions?



Q: Why does this matter to architecture?

A: Because the designed and built space is where humans spend most of their time.

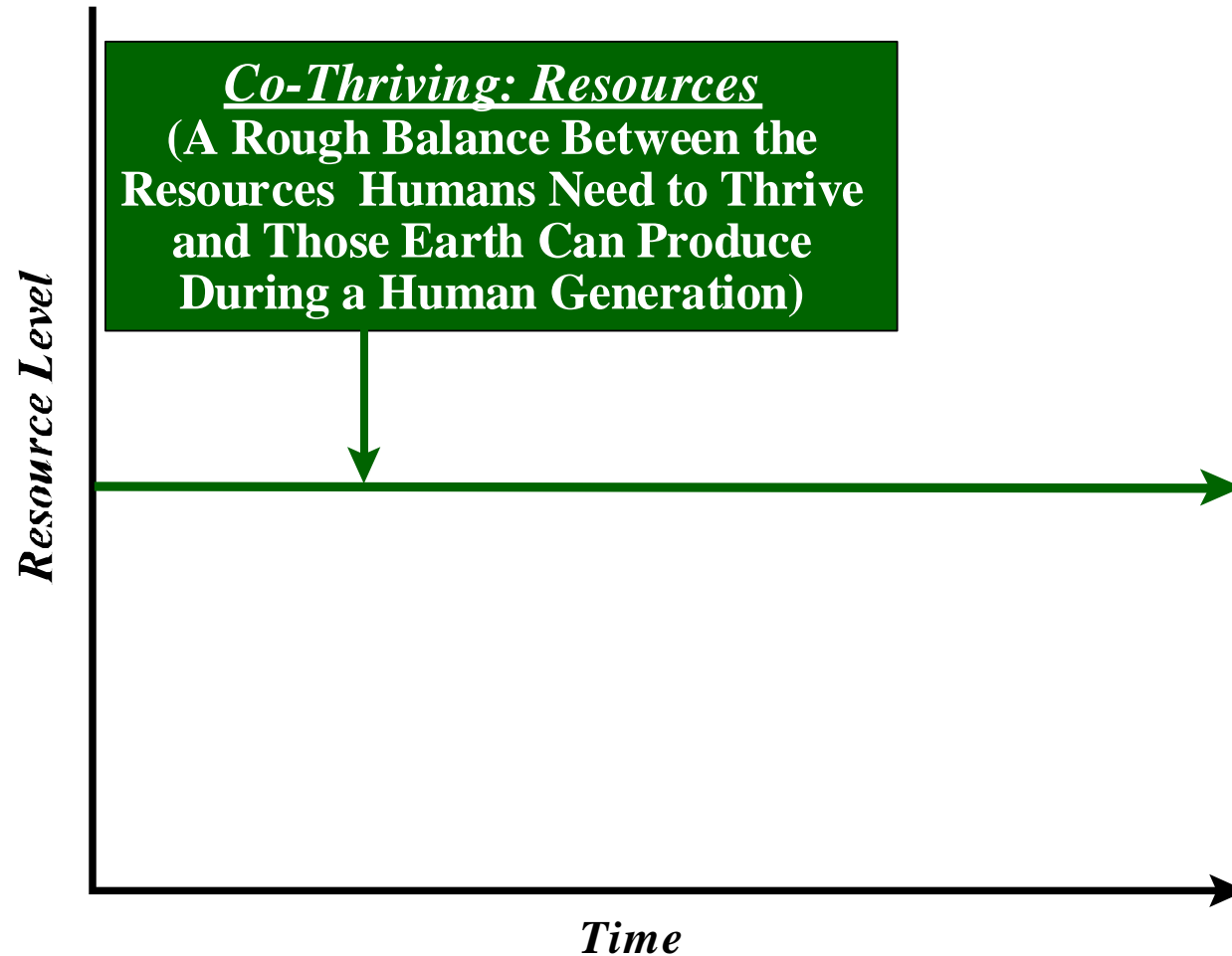
- *The materials within, and processes underlying, that space have a profound effect on how we interact with Earth, both today and in the future*

Thinking about the next 35 years (in the context of the past 250)...

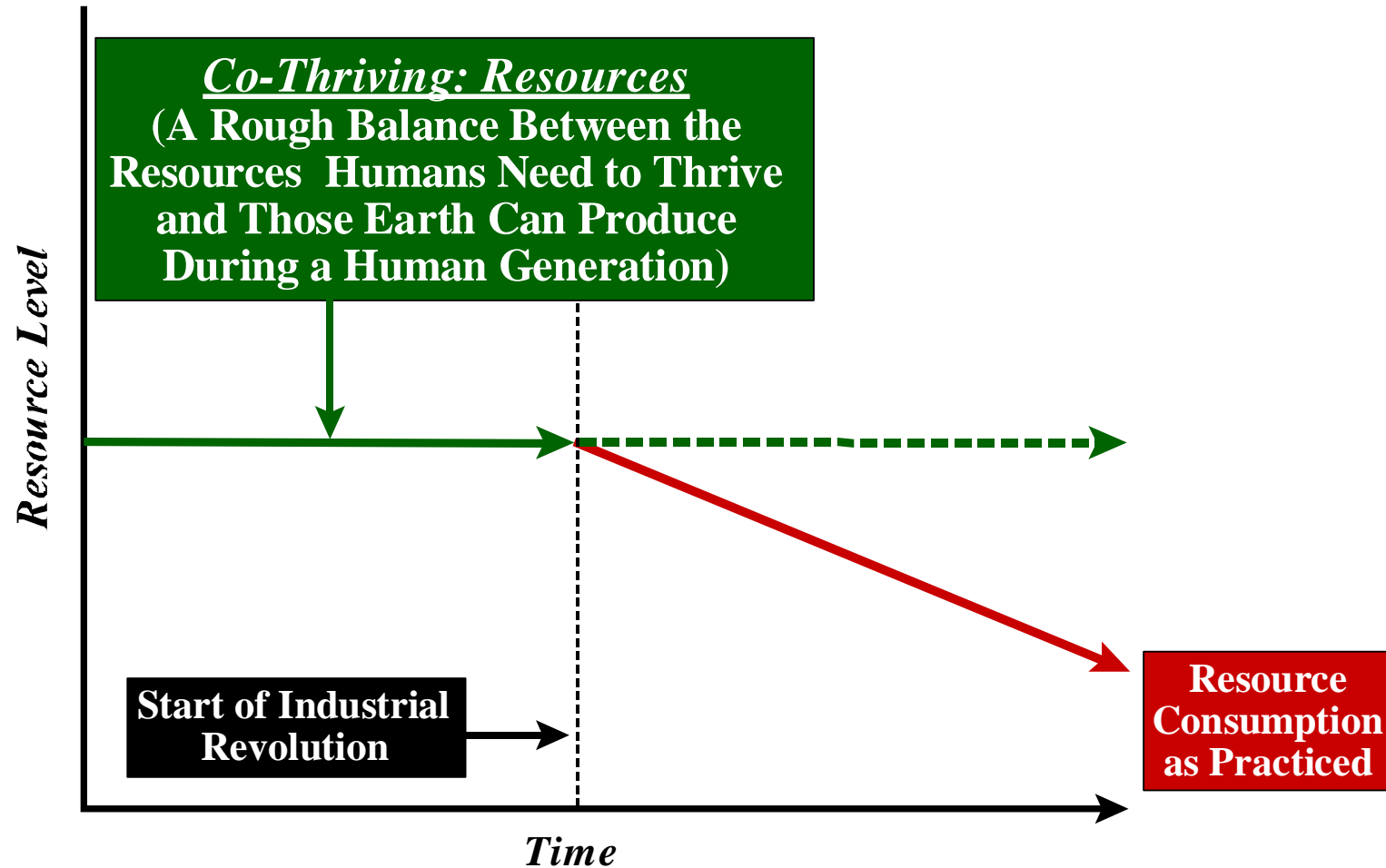
Q: What can we do to achieve a state of “Co-thriving,” in which both human communities and the natural environments in which they lie simultaneously thrive?

- *The alternative is to figure out how to deal in a world defined by Wilson’s apocalyptic view; i.e., without adequate resources, most species, and properly-functioning ecosystems*

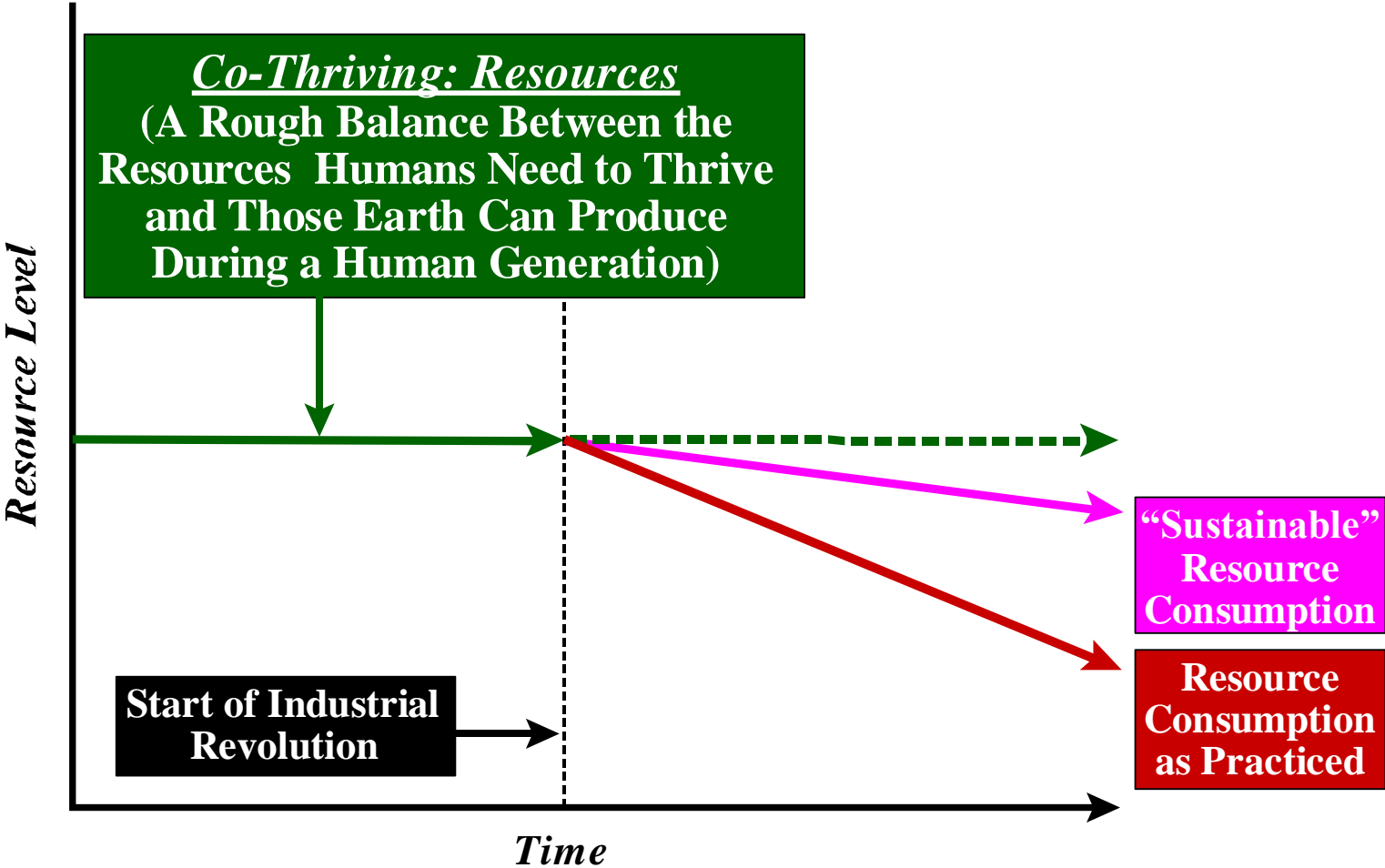
Pre-Industrial Revolution, there was a rough balance between resource use and Earth's replenishment abilities



Wilson's point: Since then, we've learned to use resources very inefficiently

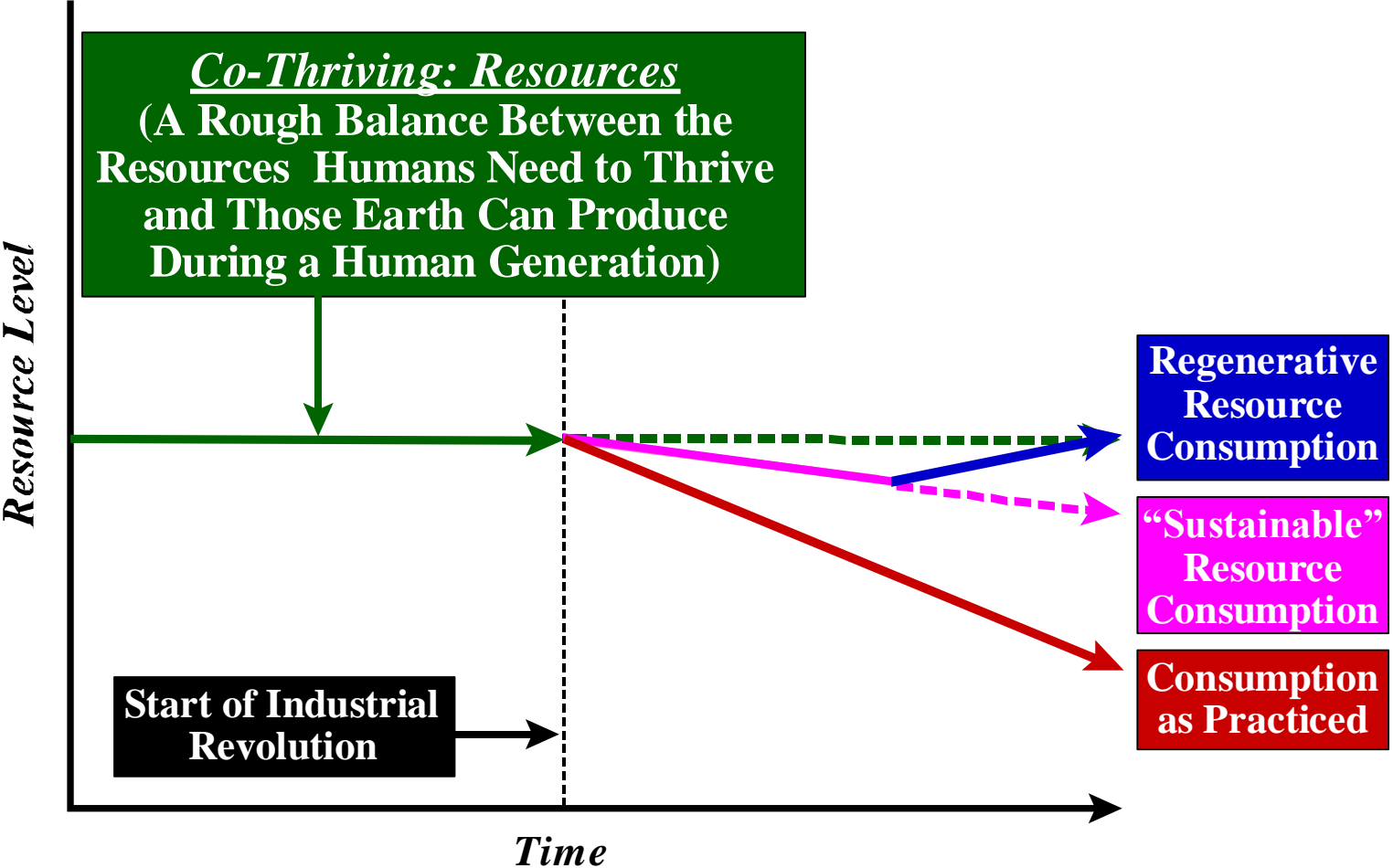


As practiced, “sustainability” is better than nothing, but...

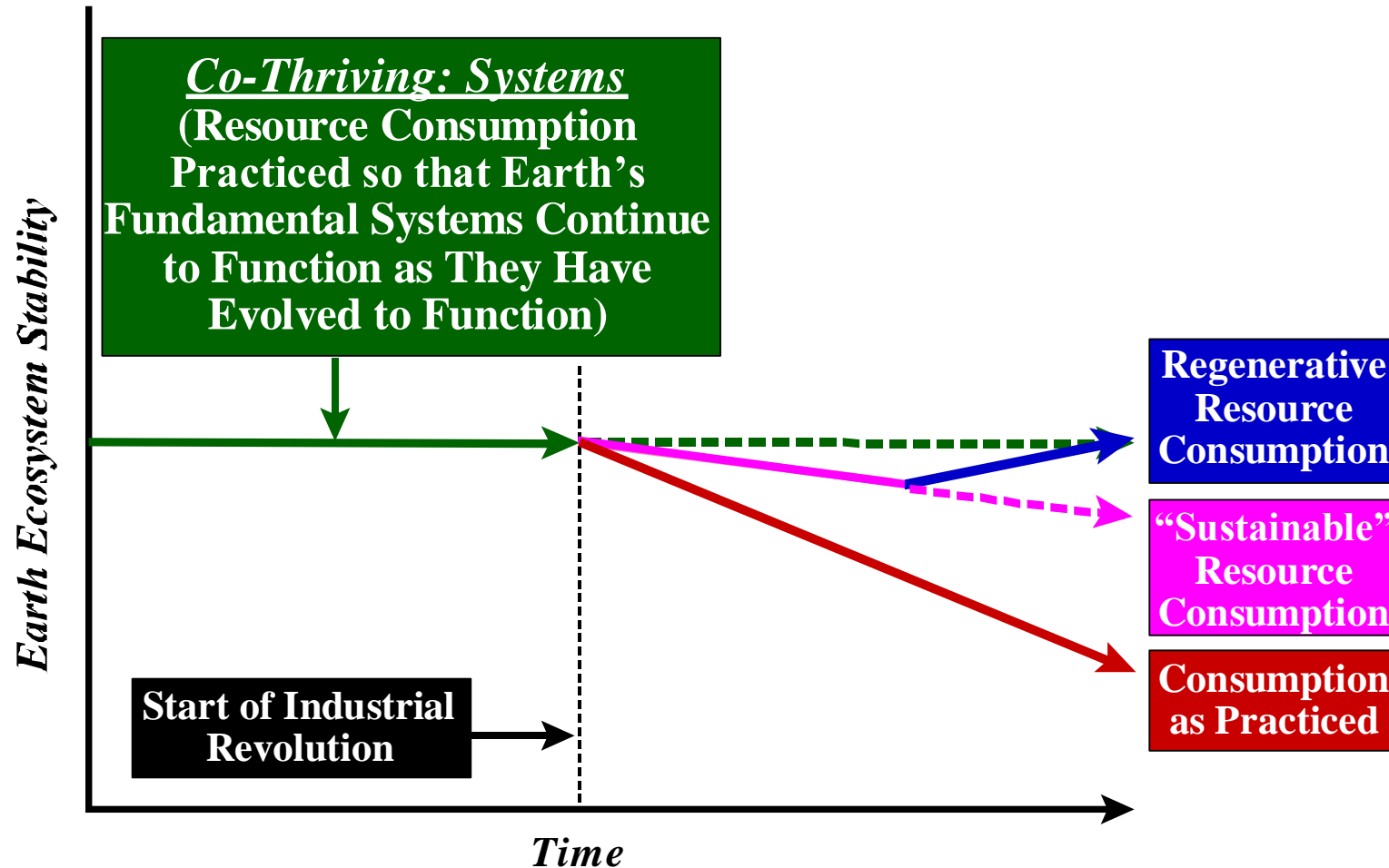




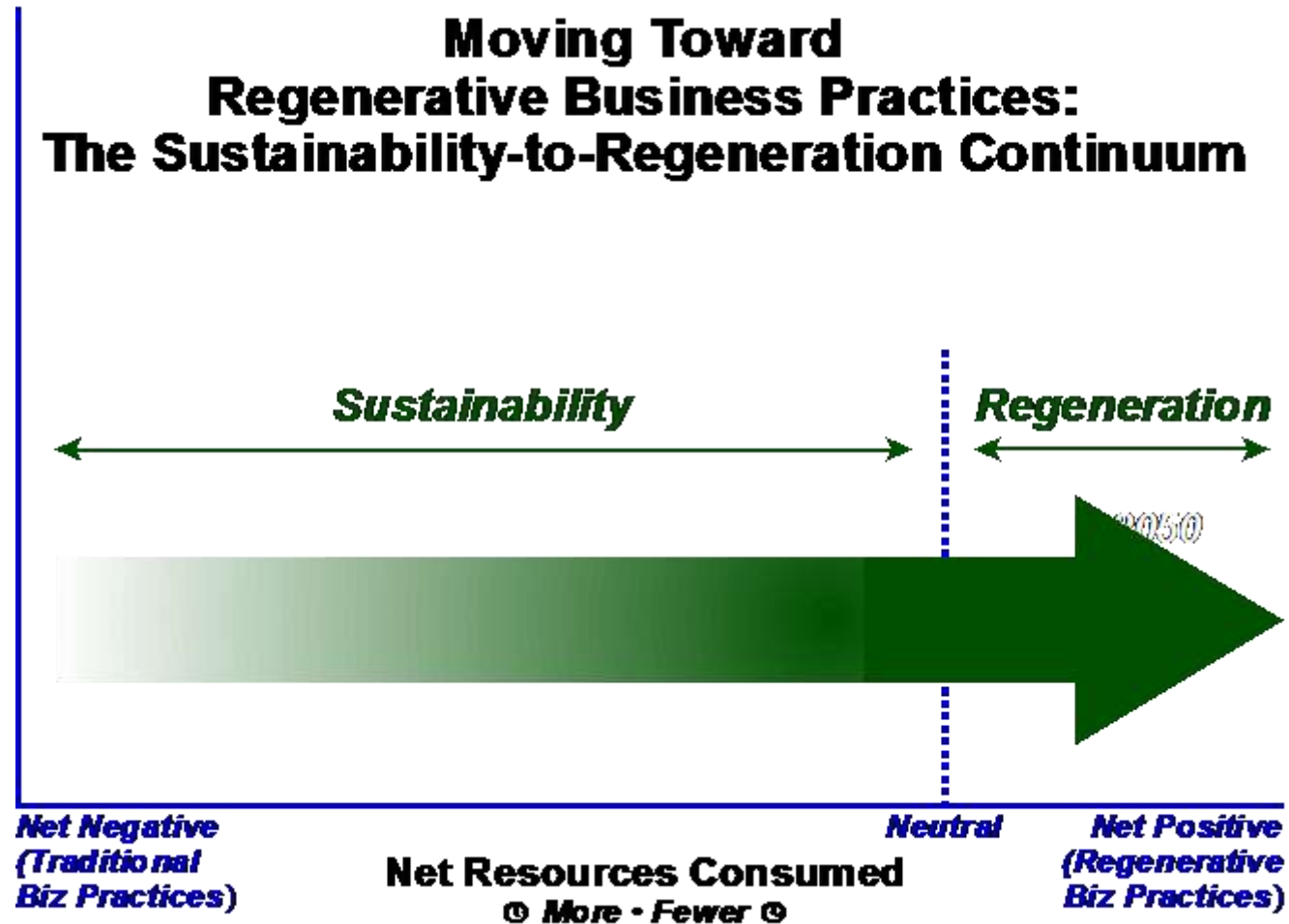
# To achieve co-thriving, we need to be regenerative



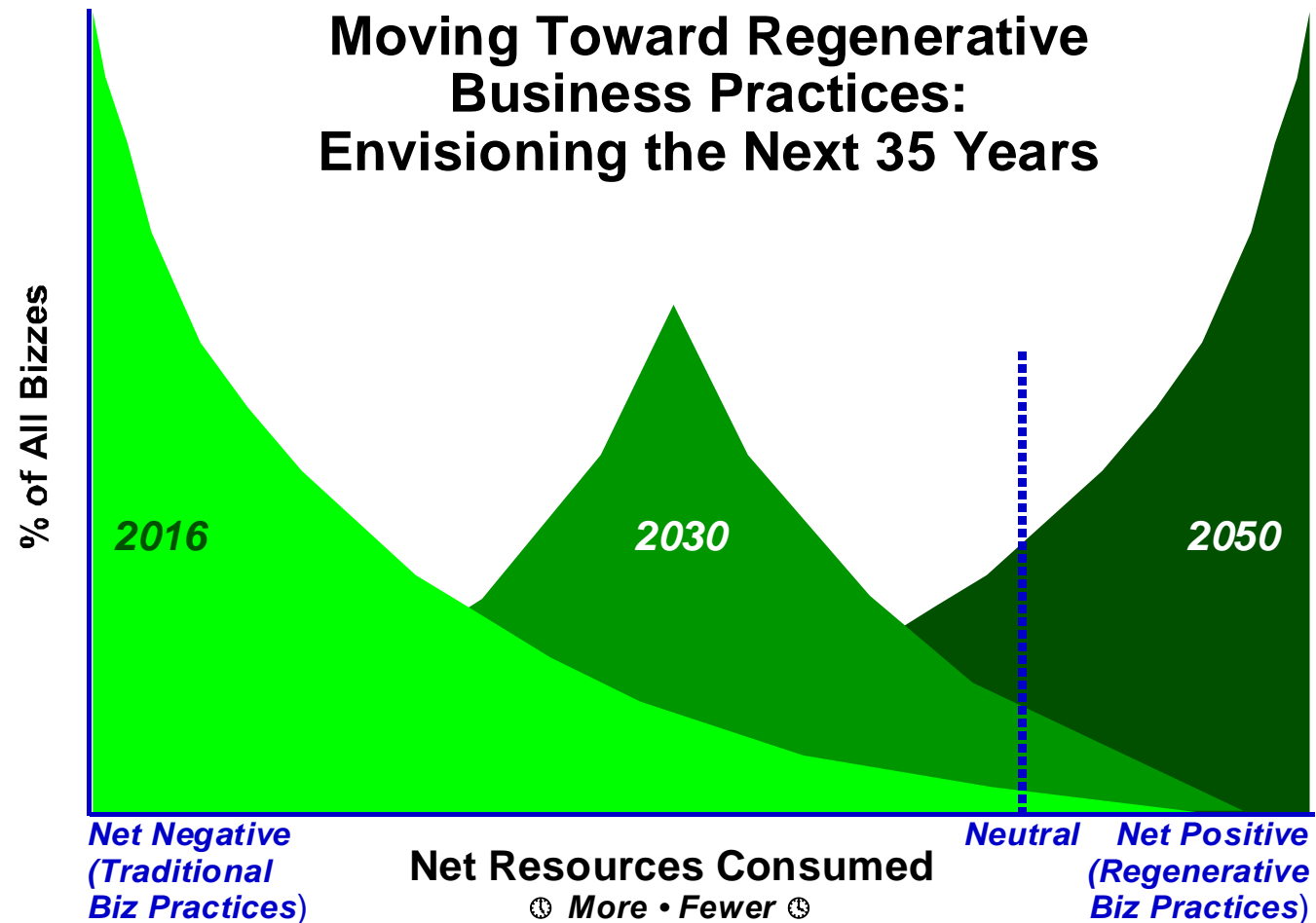
# With a focus on not just resources, but systems



Business is the only economic force powerful enough to lead this effort



# A long way to go in a short period...



...but actions are being taken



# AEC Design Transparency: *A New 501(c)6 non-profit*

## Vision

- Accelerate and broaden the global development of sustainable buildings and resilient communities by transforming AEC design performance data into publicly- and freely-available knowledge and insight

## Mission

- Develop an integrated, open-source platform that enables the aggregation, curation, publication, and search of trustworthy performance data for use by architects, engineers, builders, real estate developers and owners, product manufacturers, software developers, governments, NGOs, educational institutions, and consumers of all types.

**DESIGN**TRANSPARENCY

## AEC DT's three foundational questions

- Do you care about the provenance of the materials you specify?
  - Should you care?
- If you care, what's your process for determining that provenance?
- In that process, where do you go for your information? Can you trust that information?

# The current situation

## DISCLOSURE

Where does disclosed information come from?



RESEARCH + DISCOVERY

## UNDERSTANDING

How is it organized?  
How is it accessed?



CURATION + AGGREGATION

## GOOD DECISIONS

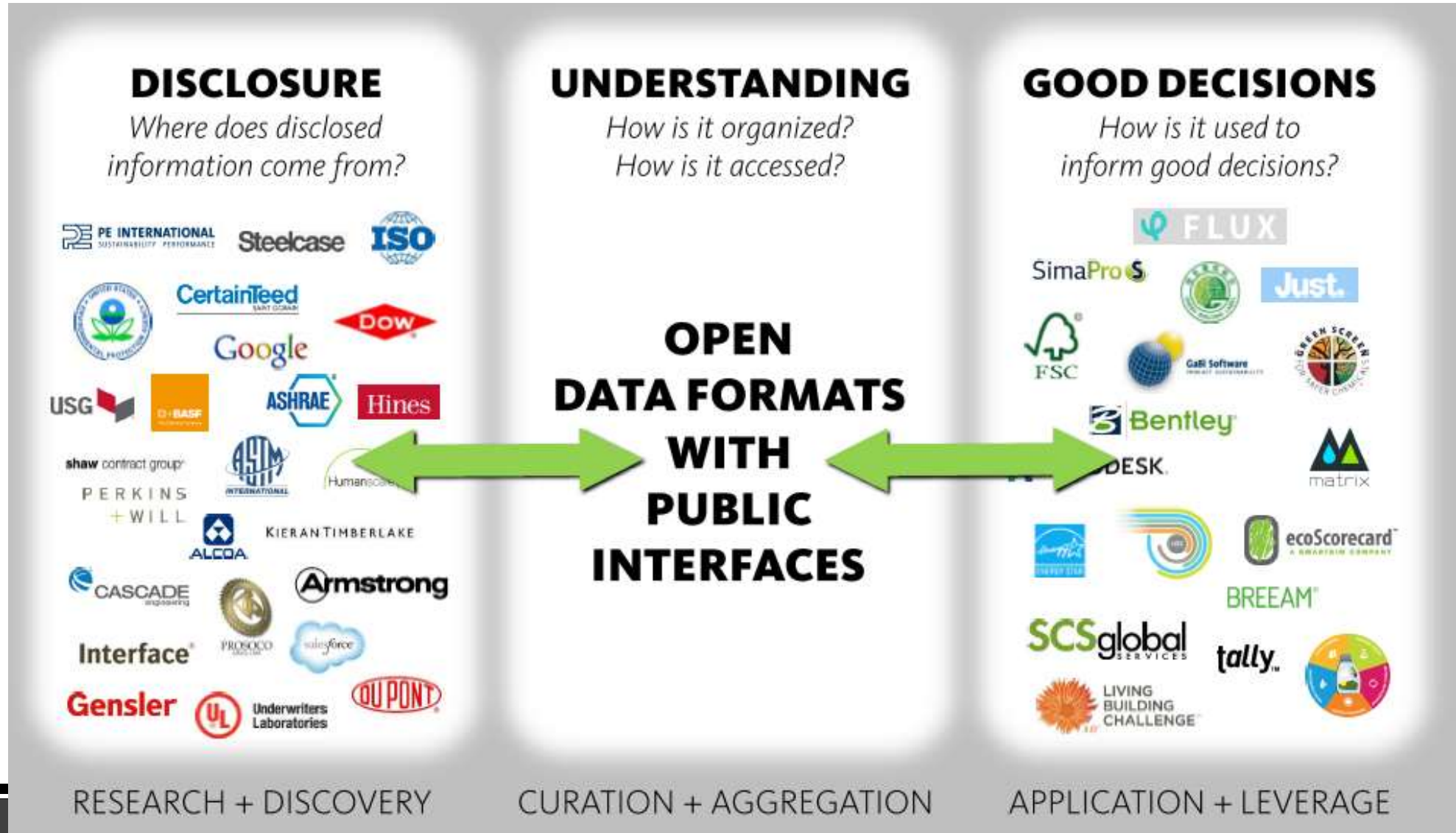
How is it used to inform good decisions?



APPLICATION + LEVERAGE



# The ideal future



# AEC DT's goal: Make it easier for everyone to do the right thing

- Why?
  - Because clients are demanding it
  - Because no firm has the resources to do it alone
  - Because the designed and built space is where humans spend most of their time.
    - The materials within, and processes underlying, that space have a profound effect on how we interact with Earth, both today and in the future
- [DesignTransparency.org](http://DesignTransparency.org)

## In closing: a quick review

- Randomness in the moment; patterns overall
- Patterns affecting design in Wyoming
  - *Rapid, accelerating change*
    - Resource use outstripping resource production; reduced margin of error
  - *Wyoming is different economies linked by hydrocarbon dependence*
    - Affordability is in the wallet of the beholder
- Mis-alignment between different resource categories
- The need to co-thrive
  - *Sustainability isn't enough*
  - *First steps being taken, including AEC DT*

## In closing: what you might think about

- The importance of design
  - *Permanence and timelessness in an environment of accelerating change*
- 35 years to achieve co-thriving
  - *2050; one generation*
  - *How might that affect your work? How might you affect it?*