Transformation is NOW!



Josh Radoff - Principal

YR&G


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Corporate Sustainability
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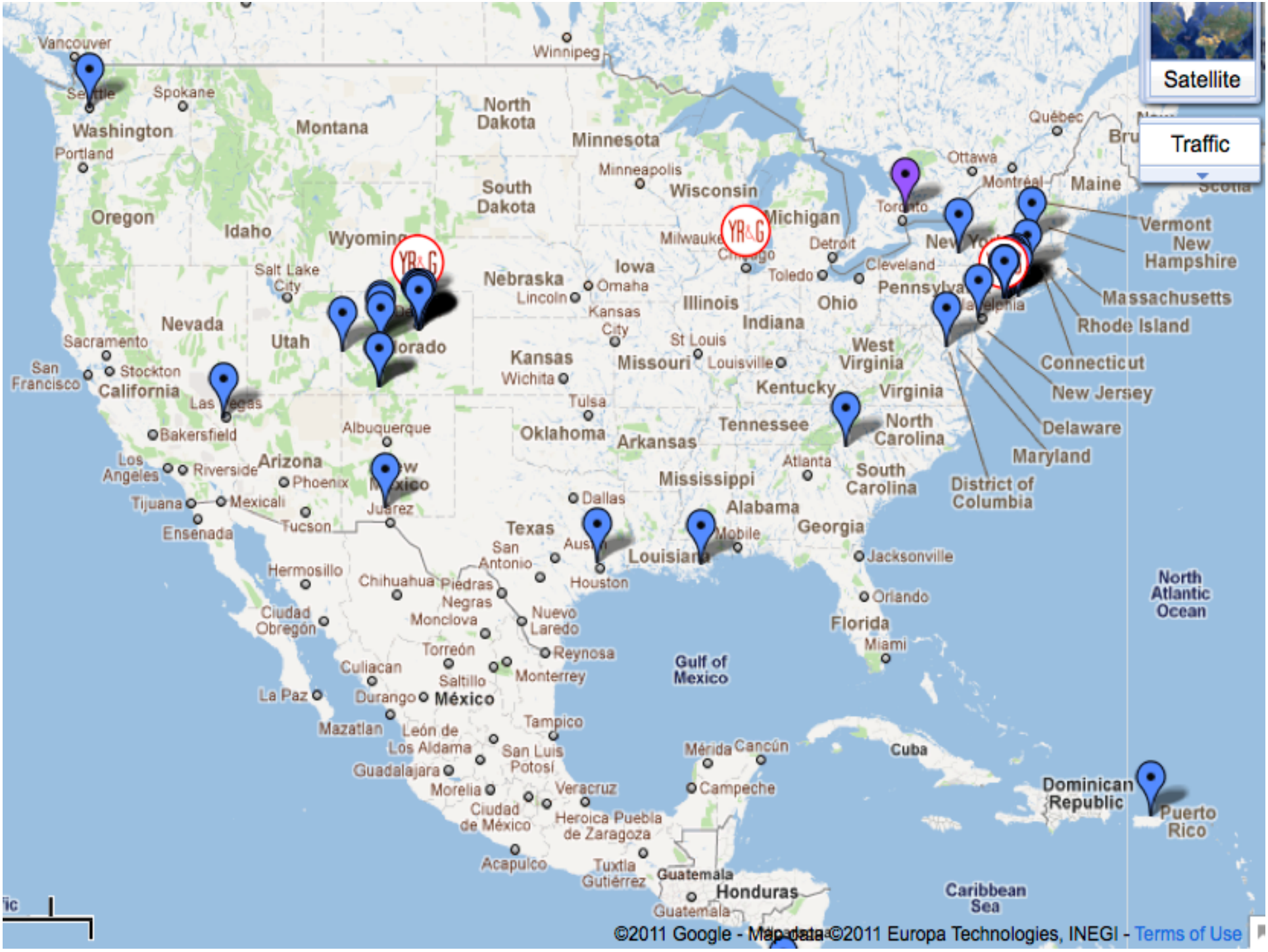
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Tampico
San Luis Potosí
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Heroica Puebla de Zaragoza
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Timing is Everything


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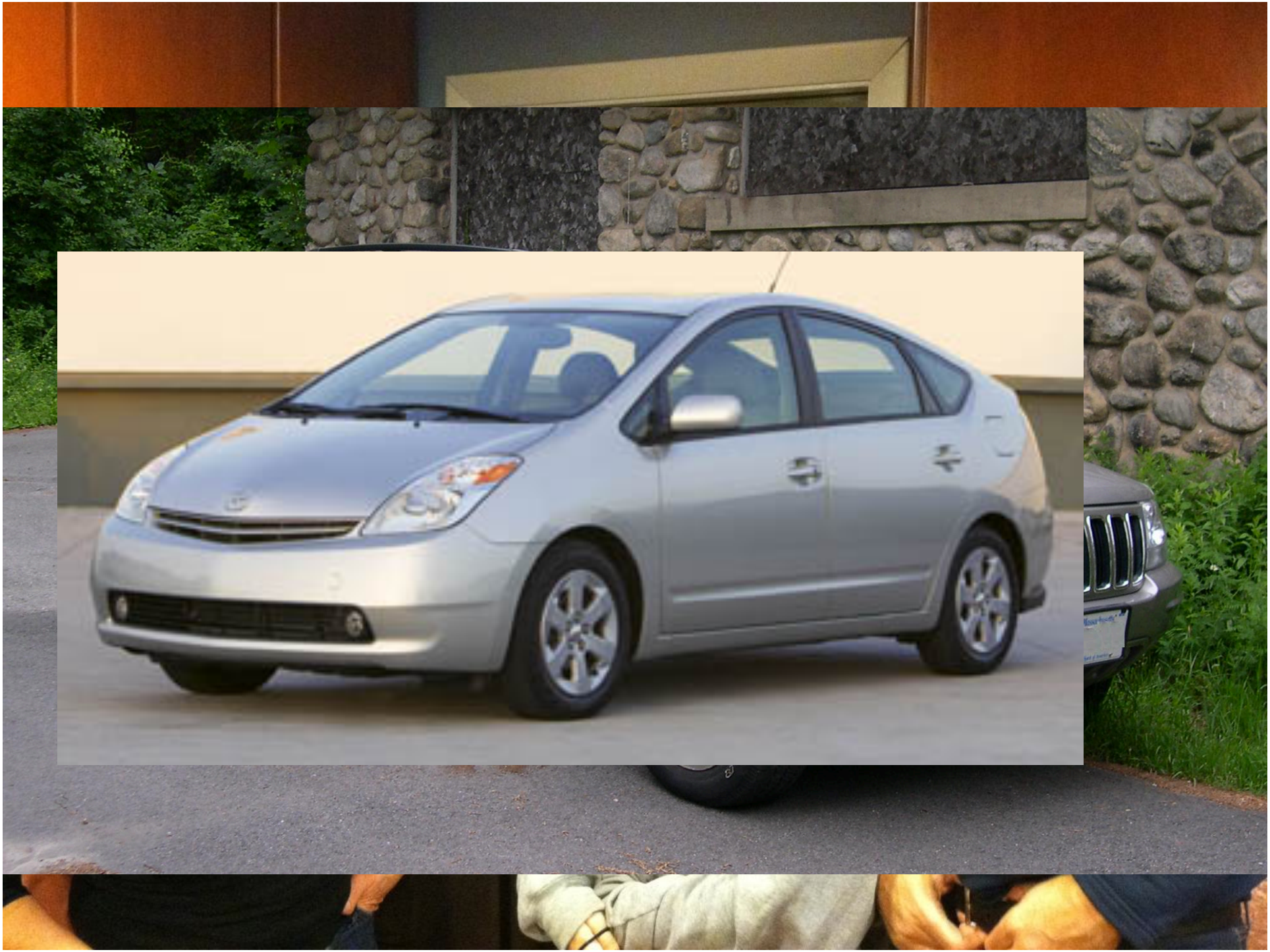
Jeep

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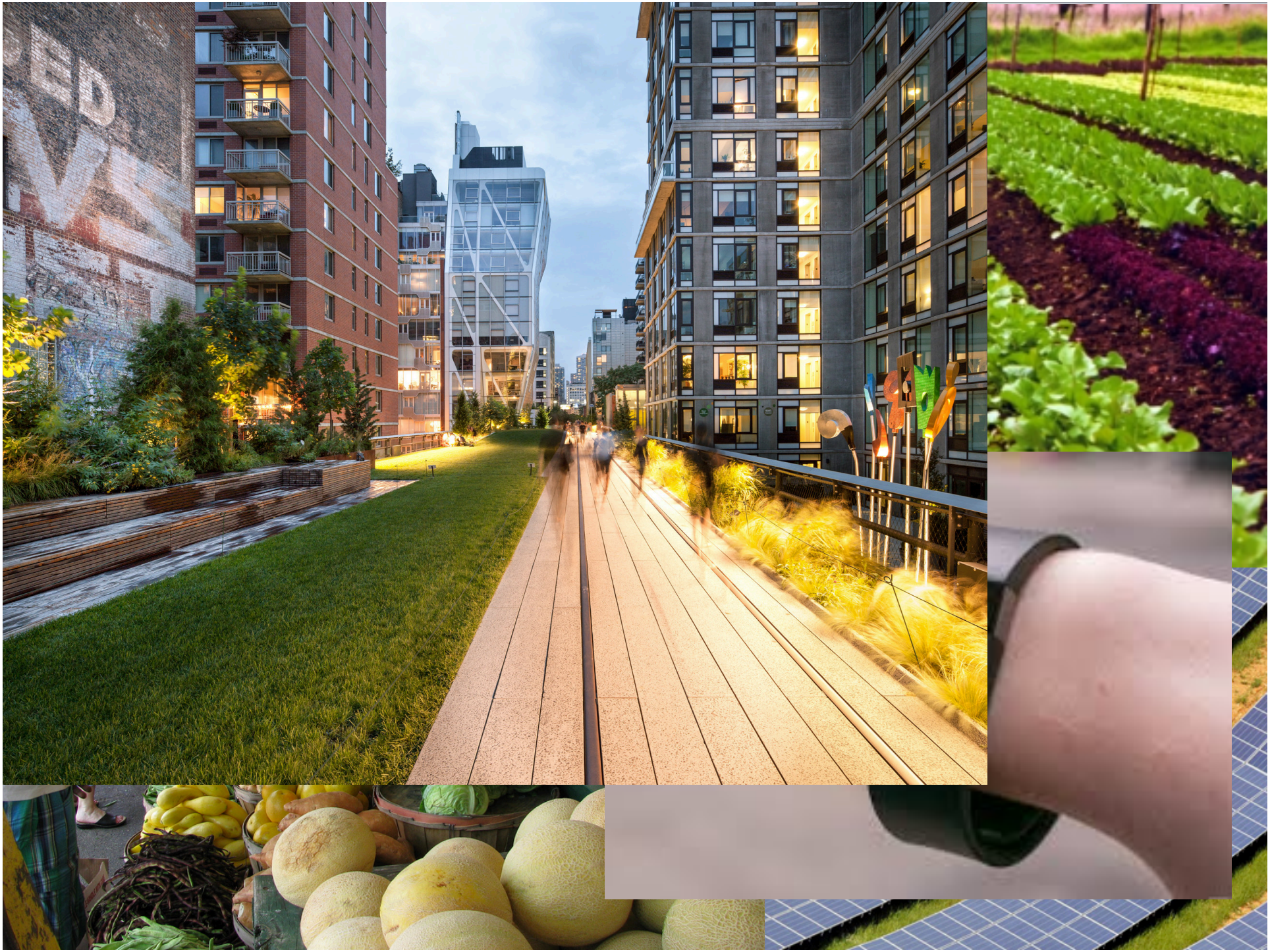

Pope Francis's edict on climate change will anger deniers and US churches

Pontiff hopes to inspire action at next year's UN meeting in Paris in December after visits to Philippines and New York



Pope Francis was a key player in thawing relations between the US and Cuba. Photograph: Fra
Images

theguardian
Winner of the Pulitzer prize 2014


Breaking News
LIVE MASS HYSTERIA: Dogs and Cats Living Together
Bill Murray's prophecy comes to pass as the Apocalyspe nears.
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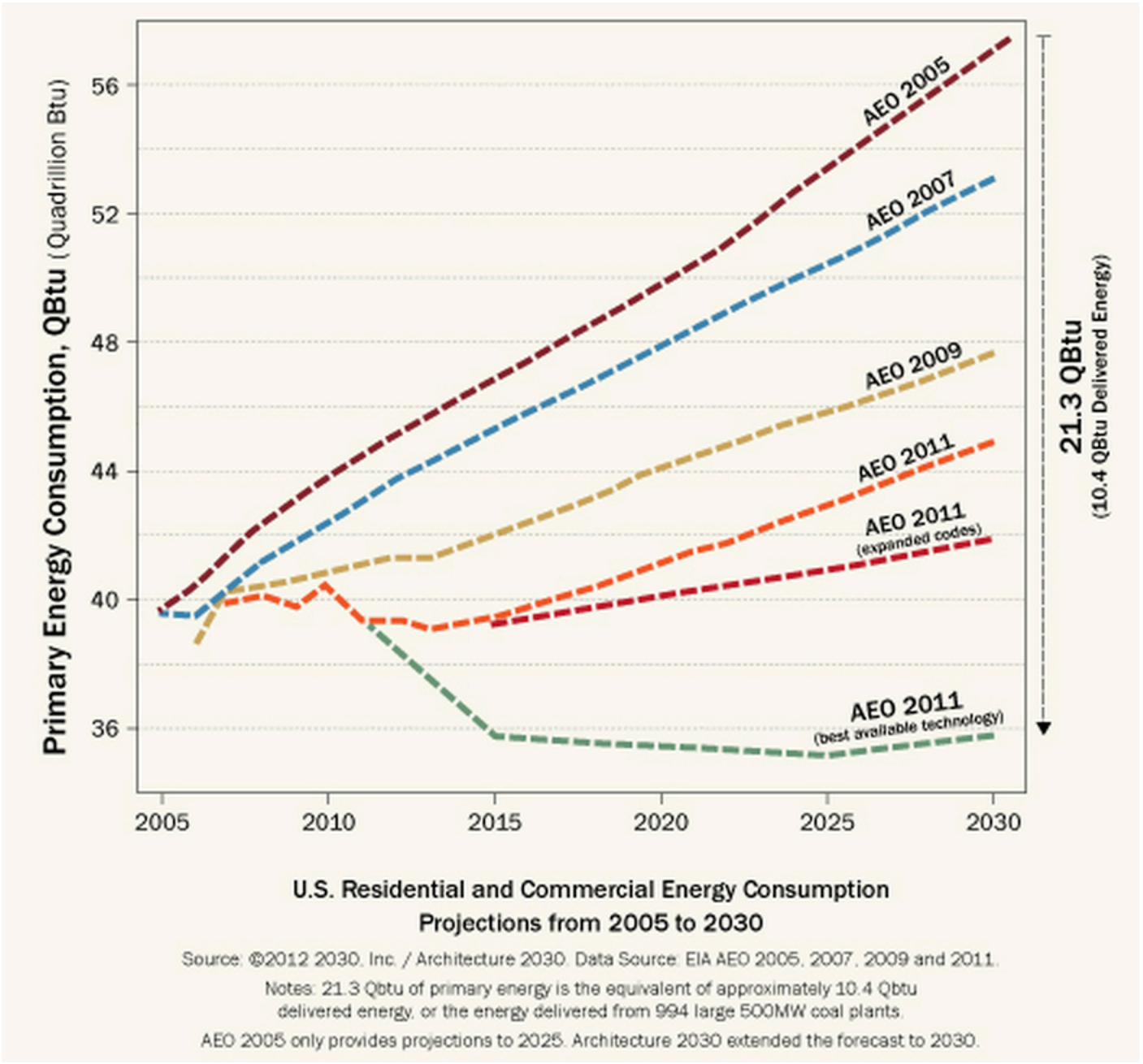
Reducing by Halves...





U.S. Residential and Commercial Energy Consumption
Projections from 2005 to 2030

Source: ©2012 2030, Inc. / Architecture 2030. Data Source: EIA AEO 2005, 2007, 2009 and 2011.

Notes: 21.3 Qbtu of primary energy is the equivalent of approximately 10.4 Qbtu delivered energy, or the energy delivered from 994 large 500MW coal plants.

AEO 2005 only provides projections to 2025. Architecture 2030 extended the forecast to 2030.

Time for an Upgrade

LEED 2009 is obsolete (it's 2015!) –
Like we're still using the iPhone 2G





The New York Times

Some Buildings Not Living Up to Green Label

By MIREYA NAVARRO
Published: August 30, 2009

The Federal Building in downtown Youngstow
extensive use of natural light to illuminate offi
reflect heat.

Enlarge This Image



It has LEED ce
most recognize

Freakonomics

The Hidden Side of Everything



March 19, 2010, 11:30 AM

Green Building: LEEDing Us Where?

By JAMES MCWILLIAMS

The Philip Merrill Environmental Center is a
32,000-square-foot building in Annapolis,



Photo: Andreas Kollegger

The Philip Merrill Environmental Center

gy

ls)

ure. However, as David Owen

OP-ED CONTRIBUTOR

Don't LEED Us Astray

By ALEC APPELBAUM
Published: May 19, 2010

TODAY Al Gore is expected to join some of the city's top developers and bankers for the grand opening of the luminous office tower known as 1 Bryant Park — the second-tallest building in New York City and, with a handsome foyer and a roster of prominent tenants, a ray of hope in a gloomy commercial real estate market.



LEED Therapy:
Embracing Your Inner Green

Energy Codes and LEED Requirements

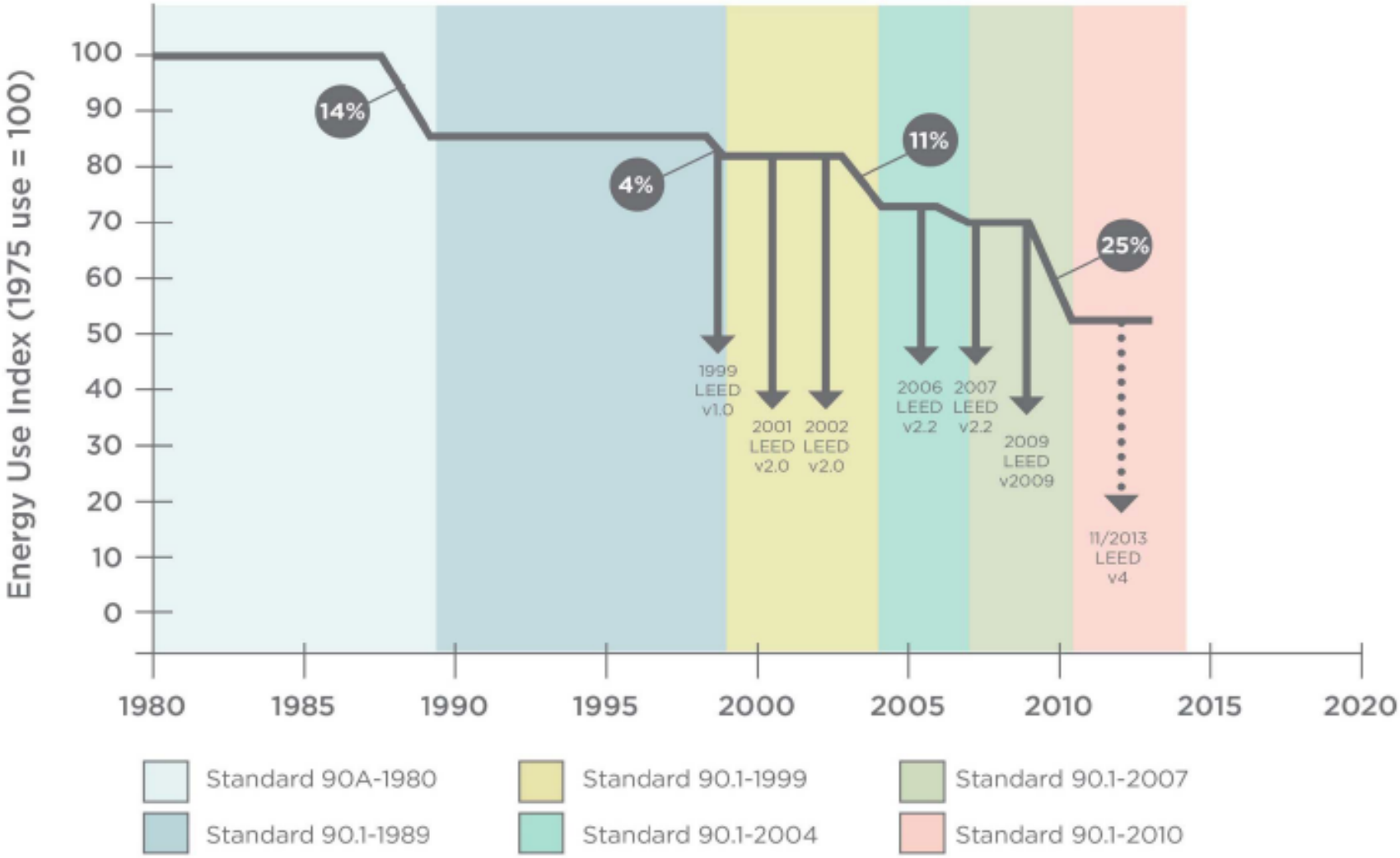


Table 7. Estimated Percent Energy Savings with 2010 Edition – by Building Type

Building Type	Building Prototype	Building Type Floor Area Weight %	Percent Savings in Whole Building Energy Use Intensity (%)		
			Site EUI	Source EUI	ECI
Office	Small Office	5.61	16.1	16.4	16.4
	Medium Office	6.05	22.1	24.4	24.4
	Large Office	3.33	22.3	21.5	21.5
Retail	Stand-Alone Retail	15.25	26.1	24.7	24.7
	Strip Mall	5.67	16.8	18.9	18.9
Education	Primary School	4.99	24.2	20.8	20.8
	Secondary School	10.36	26.7	23.3	23.2
Healthcare	Outpatient Health Care	4.37	22.6	22.2	22.2
	Hospital	3.45	24.5	20.1	20.1
Lodging	Small Hotel	1.72	5.9	7.7	7.7
	Large Hotel	4.95	11.0	10.5	10.5
Warehouse	Non-Refrigerated Warehouse	16.72	20.7	23.1	23.1
Food Service	Fast Food Restaurant	0.59	5.1	8.6	8.6
	Sit-Down Restaurant	0.66	13.5	19.3	19.4
Apartment	Mid-Rise Apartment	7.32	6.8	4.4	4.4
	High-Rise Apartment	8.97	7.2	4.5	4.5
National		100	18.5	18.2	18.2

Frameworks in Play































NZE



California's Net Zero Energy Building Mandate To Reshape US Construction Industry

California's recent revisions to Title 24 put in place ambitious performance goals: all residential buildings must be Zero Net Energy (ZNE) by 2020, and all commercial buildings must follow suit by 2030. The code also applies to retrofit projects that pass certain thresholds. (A ZNE building produces as much energy on-site as it consumes on an annual basis.) These changes promise to reshape the construction industry in significant ways — and not just in California. Here's how.

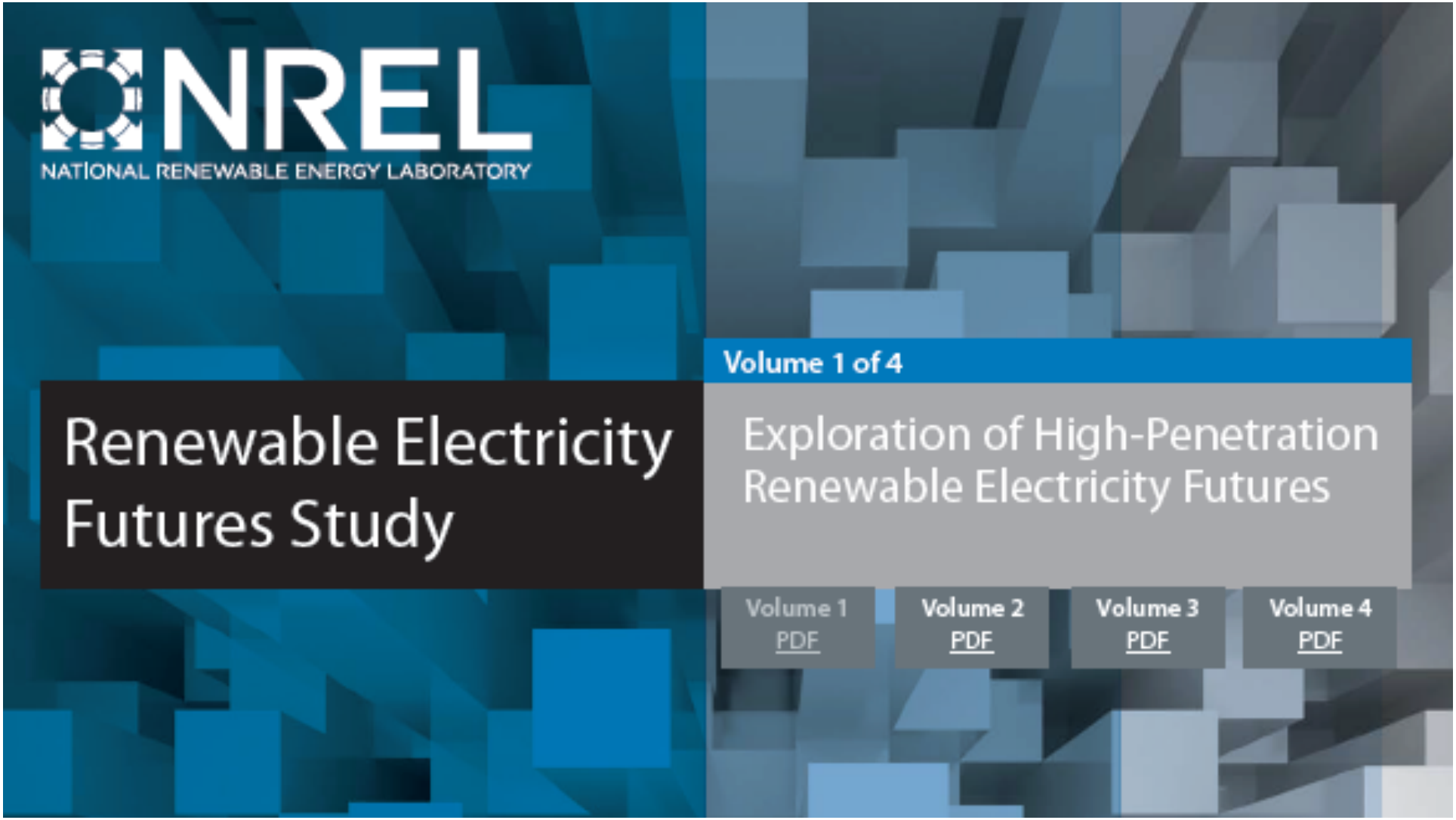
The 2014 list of ZNE verified buildings includes 32 buildings and one district, for a total of 33 projects. These projects are located in 36 states covering all climate zones and include a variety of building types. The map below is interactive; for more information on specific projects, zoom in and hover over a project.




Net Zero Energy Buildings - worldwide
Satellite
Google
Imagery ©2015 NASA, TerraMetrics
1000 km
Terms of Use
building typology
special typology (hotel, hospital, sports hall,...)
educational building
settlement (building group, row houses)
small residential building
office building
appartment building (block of flats)
Others

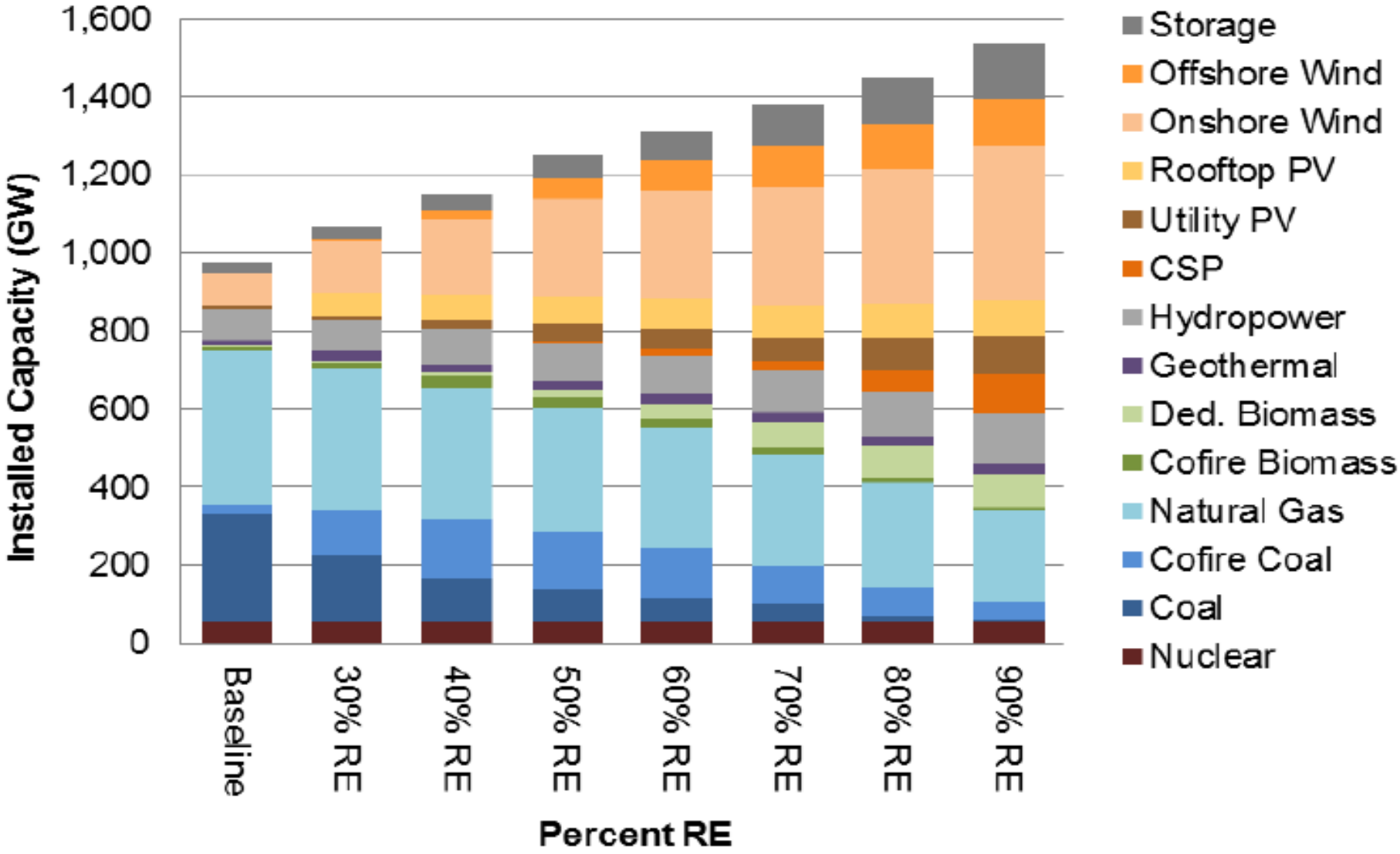
California's Net Zero Energy Building Mandate To Reshape US Construction Industry

California's recent revisions to Title 24 put in place ambitious performance goals: all residential buildings must be Zero Net Energy (ZNE) by 2020, and all commercial buildings must follow suit by 2030. The code also applies to retrofit projects that pass certain thresholds. (A ZNE building produces as much energy on-site as it consumes on an annual basis.) These changes promise to reshape the construction industry in significant ways — and not just in California. Here's how.



Renewable electricity generation from technologies that are commercially available today, in combination with a more flexible electric system, is more than adequate to supply 80% of total U.S. electricity generation in 2050 while meeting electricity demand on an hourly basis in every region of the country.

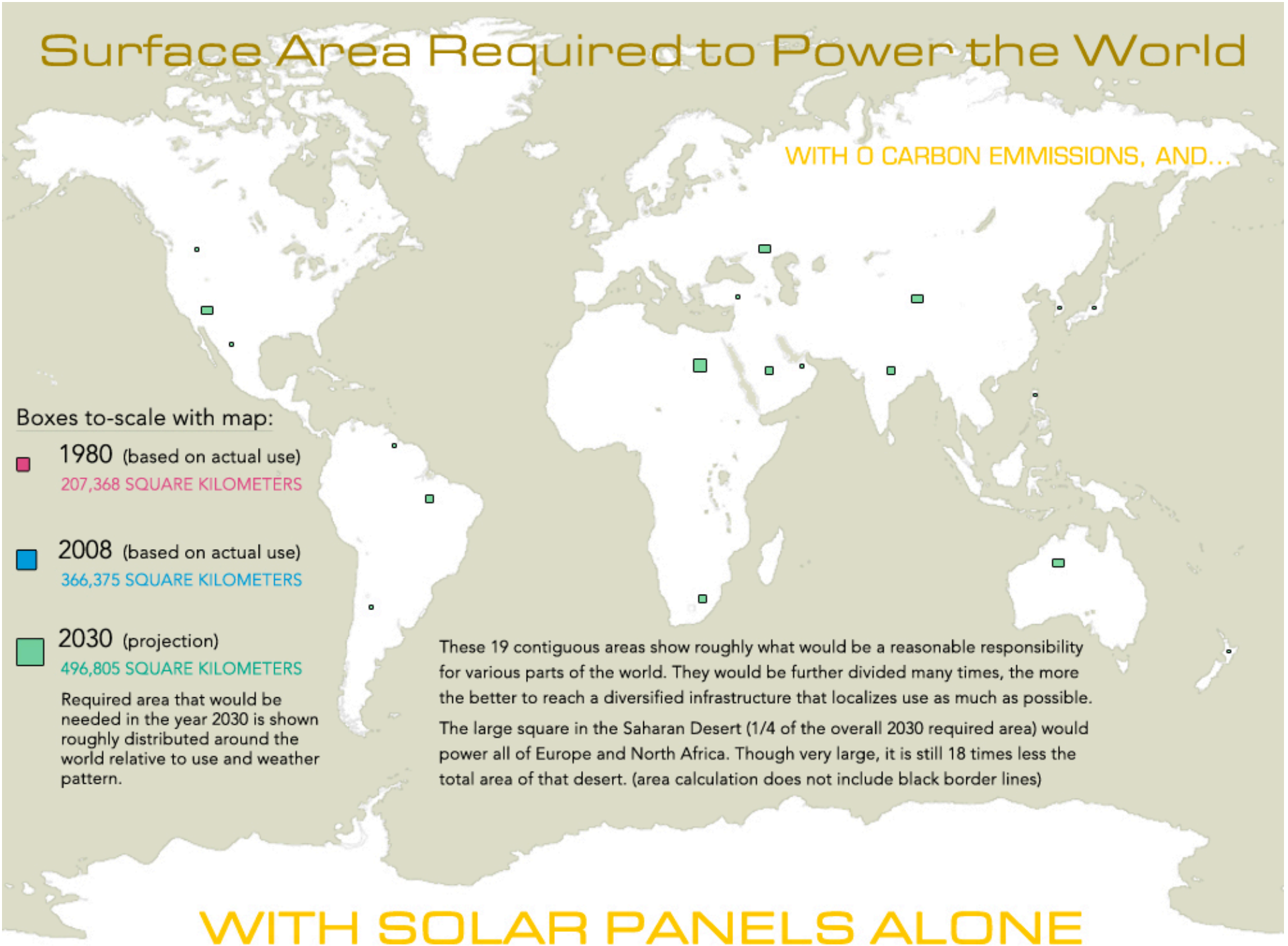
NREL: Renewable Electricity Futures Study
Exploration of High-Penetration Renewable Electricity Futures



(a) Capacity mix in 2050 for the exploratory scenarios

Surface Area Required to Power the World

WITH O CARBON EMMISSIONS, AND...



Boxes to-scale with map:

1980 (based on actual use)
207,368 SQUARE KILOMETERS

2008 (based on actual use)
366,375 SQUARE KILOMETERS

2030 (projection)
496,805 SQUARE KILOMETERS

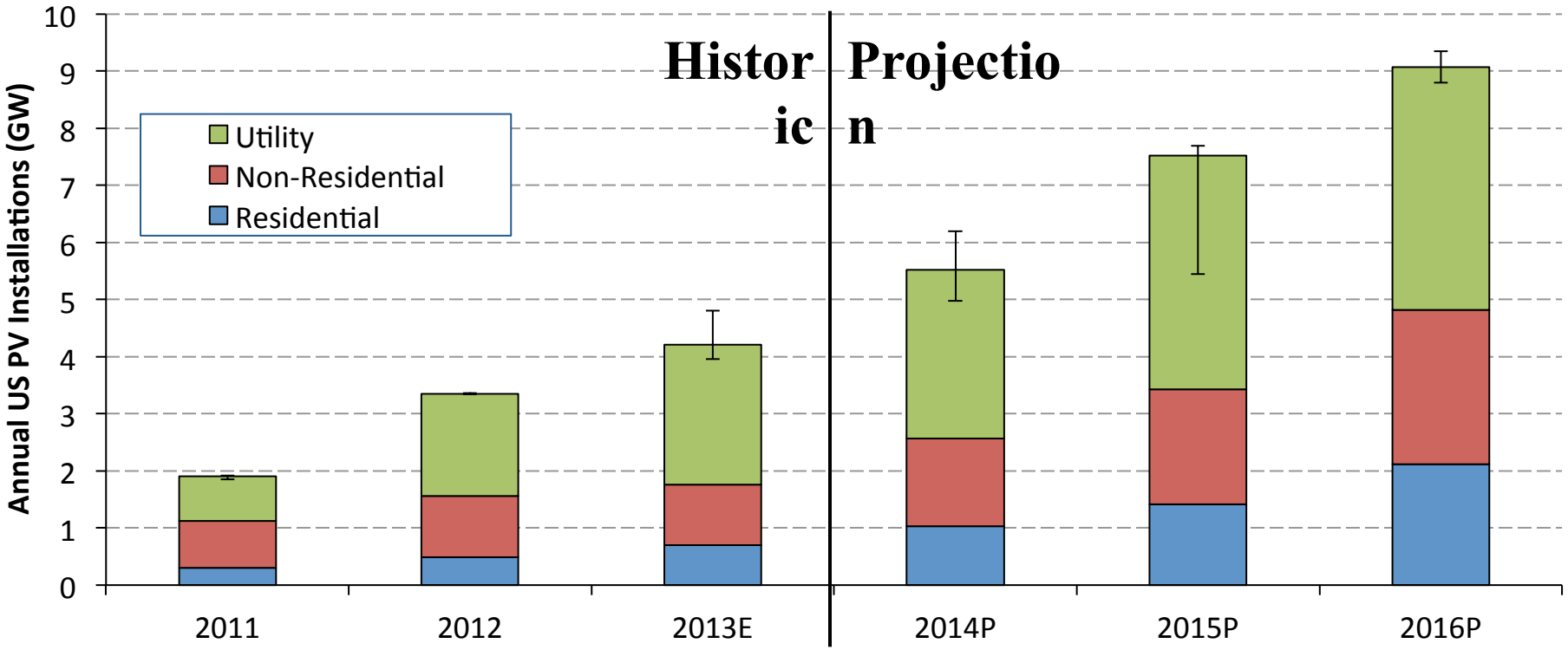
Required area that would be needed in the year 2030 is shown roughly distributed around the world relative to use and weather pattern.

These 19 contiguous areas show roughly what would be a reasonable responsibility for various parts of the world. They would be further divided many times, the more the better to reach a diversified infrastructure that localizes use as much as possible.

The large square in the Saharan Desert (1/4 of the overall 2030 required area) would power all of Europe and North Africa. Though very large, it is still 18 times less the total area of that desert. (area calculation does not include black border lines)

WITH SOLAR PANELS ALONE

US PV Annual Installation Projections



- **Annual US installations in 2013 is estimated to be 4 - 4.5 GW**
- **Analysts project installations to continue to increase through 2016**
  - **Utility-scale installations to comprise over ½ of all installs**
  - **All sectors projected to grow**

Note: P = projection; E=estimate

Sources: data displayed represents the median figures from the following sources, New**: BNEF (12/02/13), Goldman Sachs (01/06/14), GTM Research (December 2013).**

Figure 10

Indicative levelised costs of solar PV electricity over time, and estimated lowest utility-scale costs to date, compared with a global reference level for coal and natural gas

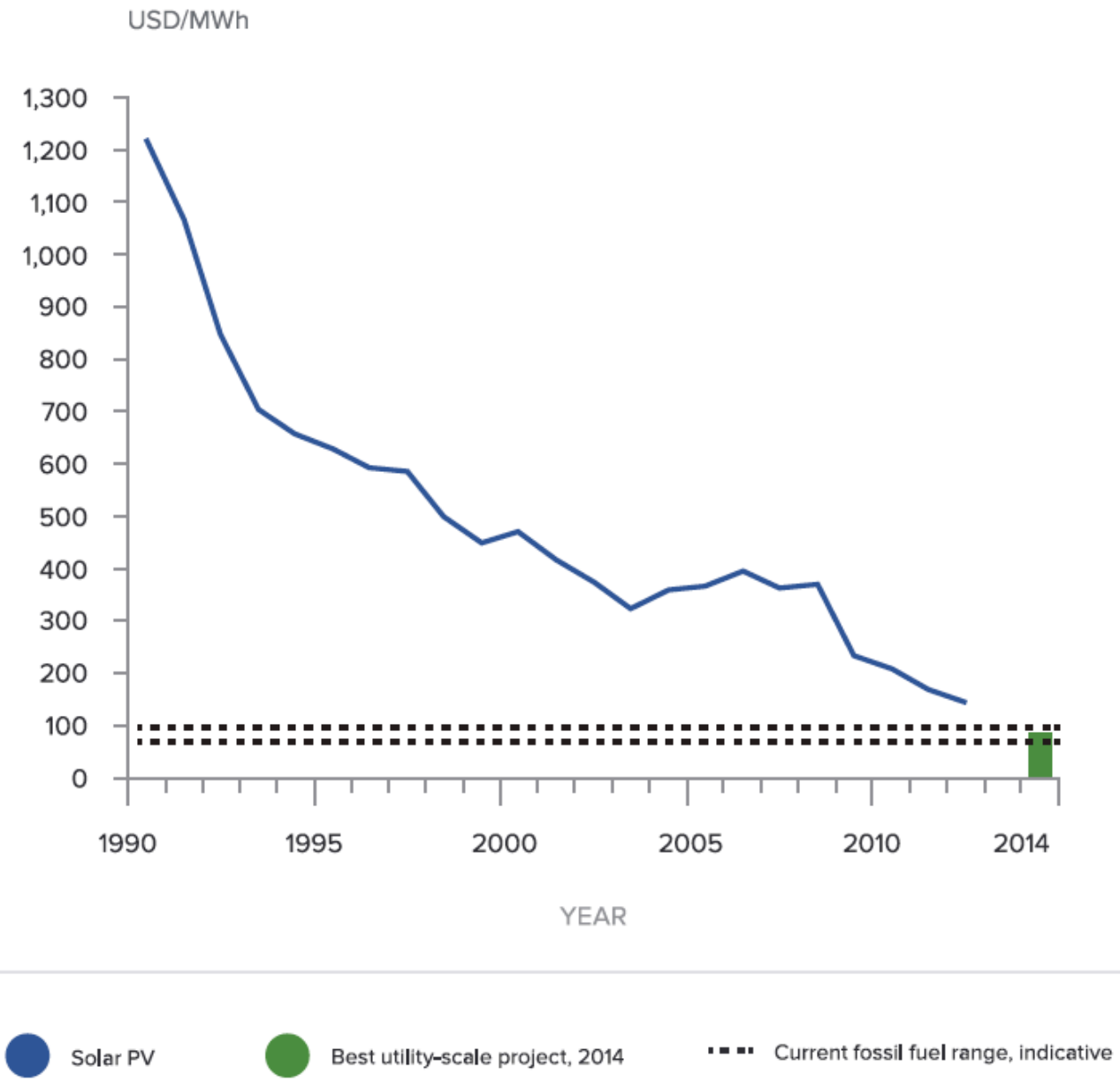
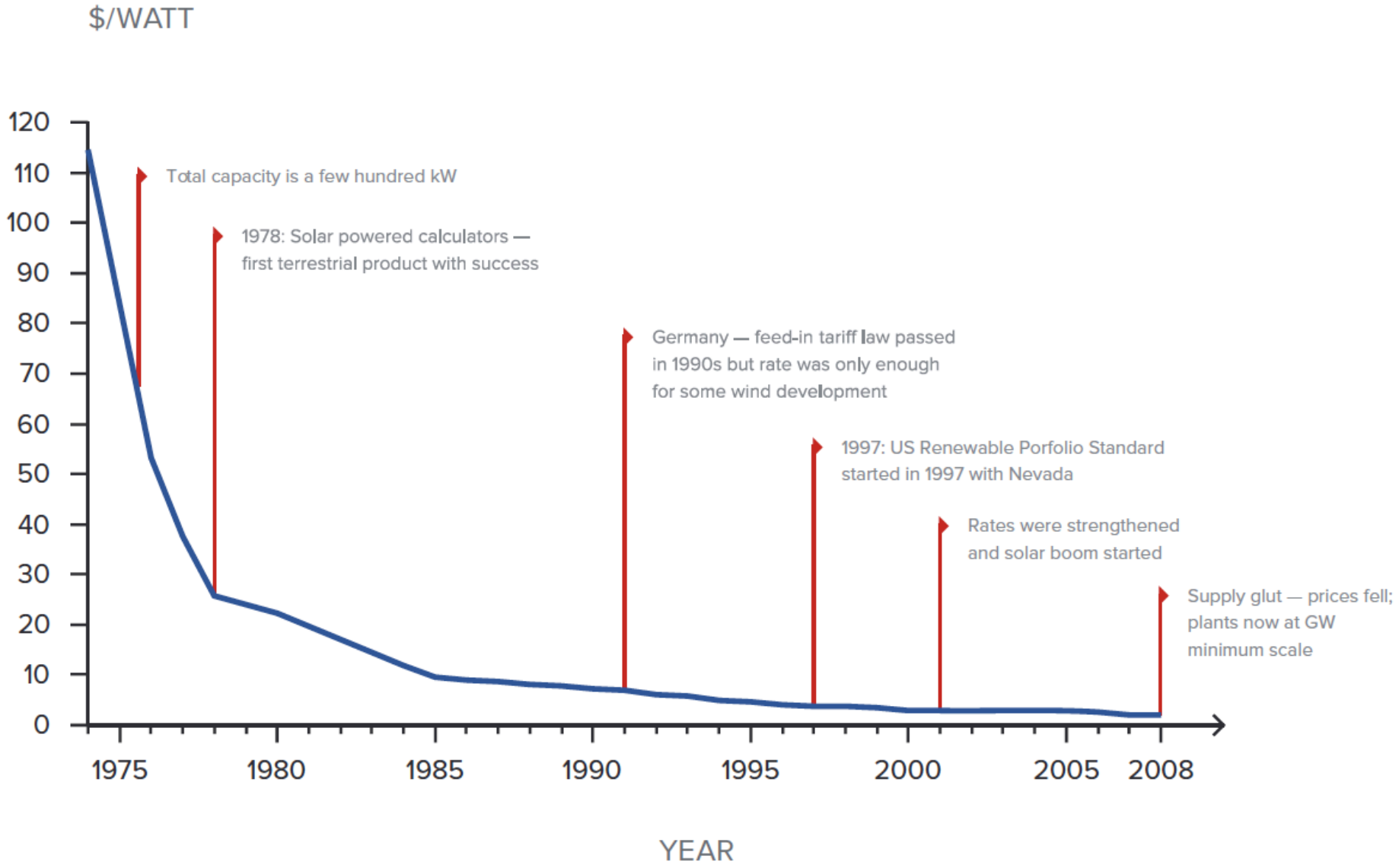


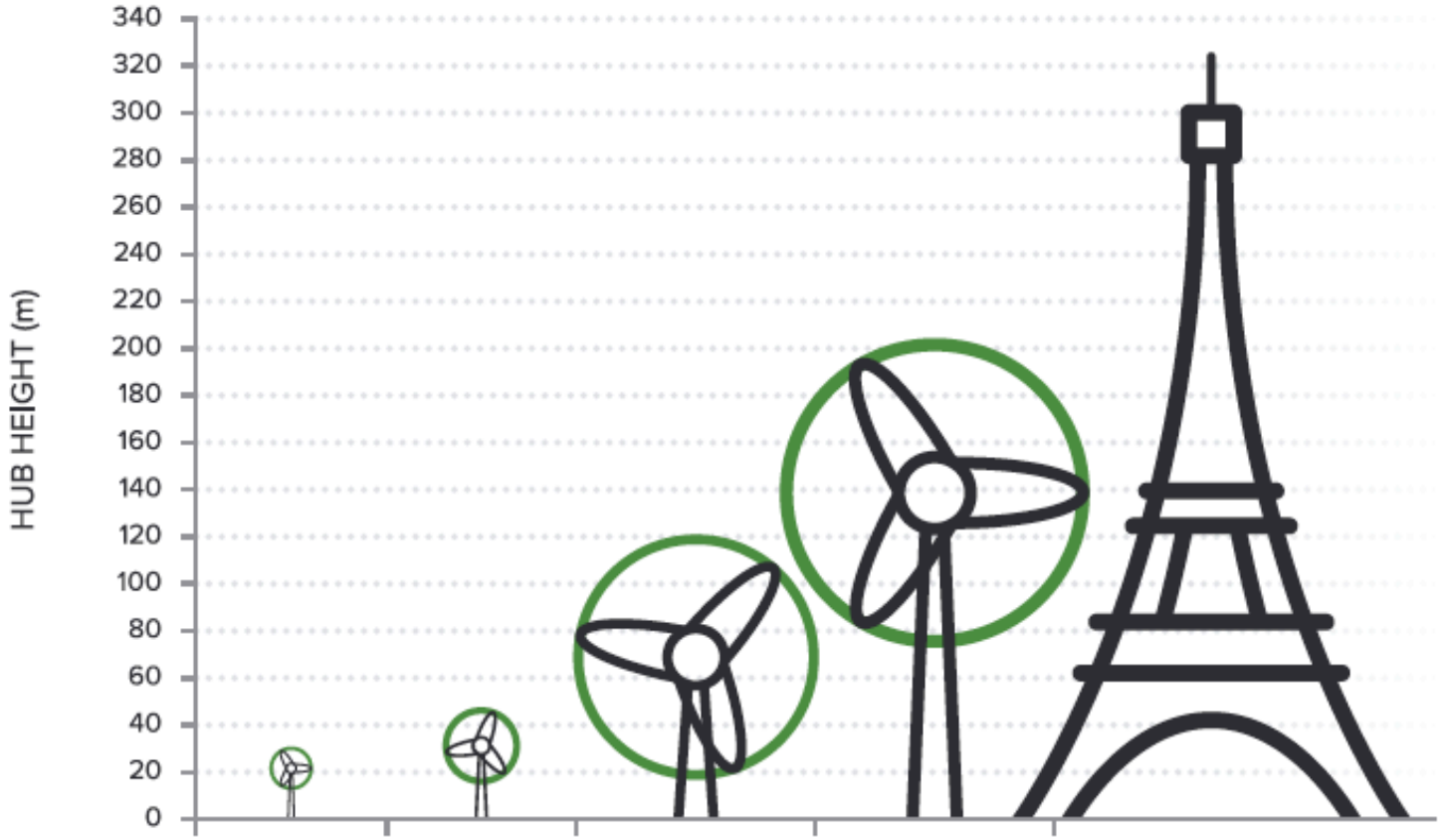
Figure 7:
Solar photovoltaic production cost: 1974-2008



Source: US Department of Energy, 2013; O'Connor et al, 2010.[98]

Figure 13

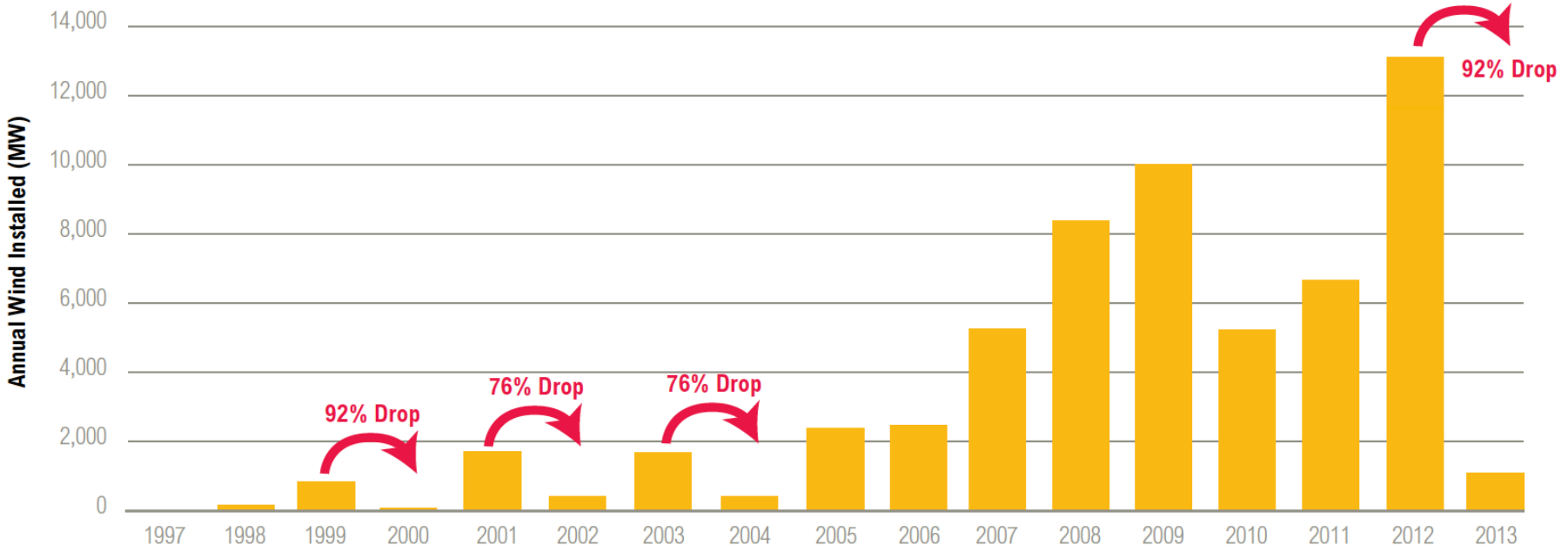
Wind turbines can generate 100 times the power of 30 years ago



YEAR	1980 – 1990	1990 – 1995	2000 – 2005	2011	Eiffel Tower
ROTATOR DIAMETER	17 m	30 m	100 m	126 m	324 m
RATING	75 kW	300 kW	3,000 kW	7,500 kW	

Source: Adapted from the European Wind Energy Association.

Figure 1.11 | **Impact of Production Tax Credit Expirations on Annual Wind Capacity Installation, 1997–2013**



Note: The production tax credit expired and was extended in 2000, 2002, and 2004. In 2013, the tax credit expired.

Source: American Wind Energy Association (AWEA), "Federal Production Tax Credit for Wind Energy," accessible at http://www.awea.org/Advocacy/Content.aspx?ItemNumber=797.

The New York Times

1 of 10 articles read SUBSCRIBE NOW

ENERGY & ENVIRONMENT

Solar Power Battle Puts Hawaii at Forefront of Worldwide Changes

By DIANE CARDWELL APRIL 18, 2015





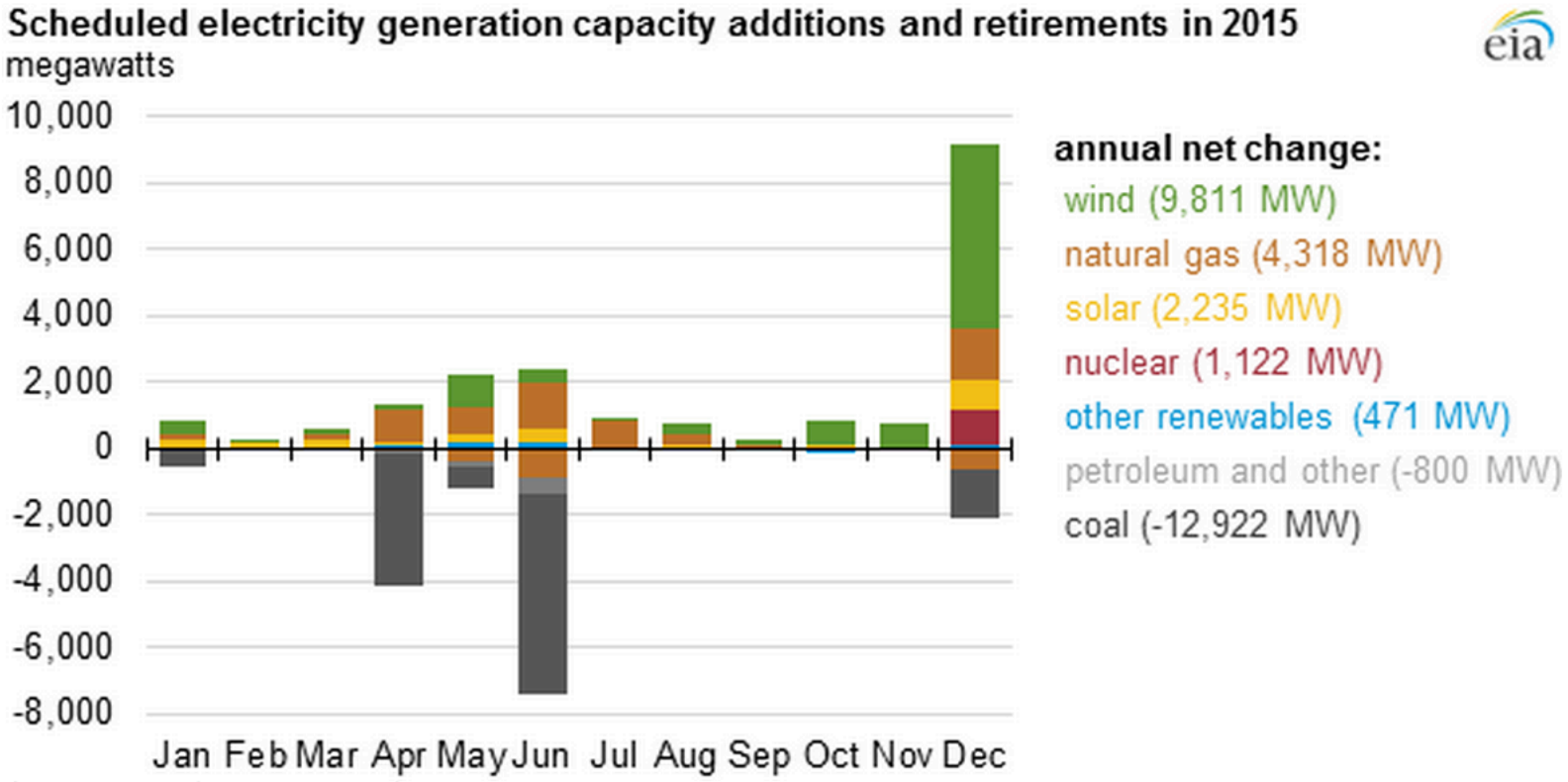
9. Hawaii PUC to Rule on HEI-Nextera Merger and Utility Plans

Isolated from the mainland power grid and saddled with the highest electricity prices in the U.S., Hawaii has long been at the forefront of adding renewables to their mix. This may be why Herman Trabish from Utility Dive wrote, "It is thought NextEra is acquiring Hawaiian Electric Industries (HEI) to use Hawaii to test solar grid integration solutions it can profit from as U.S. solar penetration rises." The $4.3 billion merger, which has to be approved by the PUC, FERC, and HEI's shareholders, is expected to be completed by December 3, 2015.

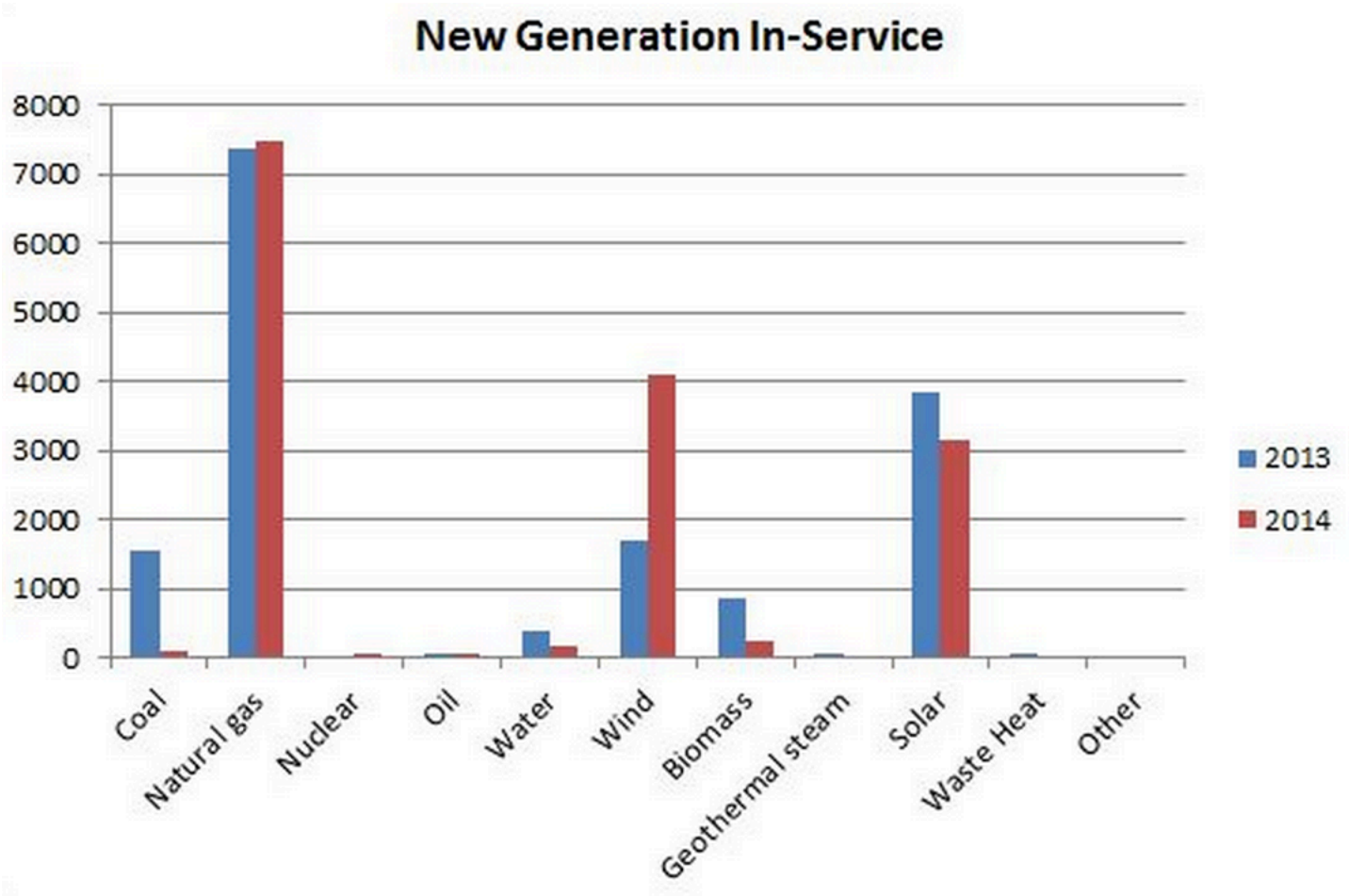
The Hawaii PUC has also recently opened two important proceedings that build on the PUC's recent white paper on the utility of the future. One of the proceedings consolidated the Hawaiian Electric Companies' power supply improvement plans (filed August 26 and supplemented October 10) to facilitate a comprehensive stakeholder review. The other proceeding is to investigate the utilities' distributed energy resource policy plans which were filed last summer and to provide transparency and an opportunity to comment for all stakeholders. The Commission has yet to release a procedural schedule for either proceeding.

MARCH 10, 2015

Scheduled 2015 capacity additions mostly wind and natural gas; retirements mostly coal



Source: U.S. Energy Information Administration, *Electric Power Monthly*
Note: Other renewables include hydroelectric, biomass/wood, and geothermal.

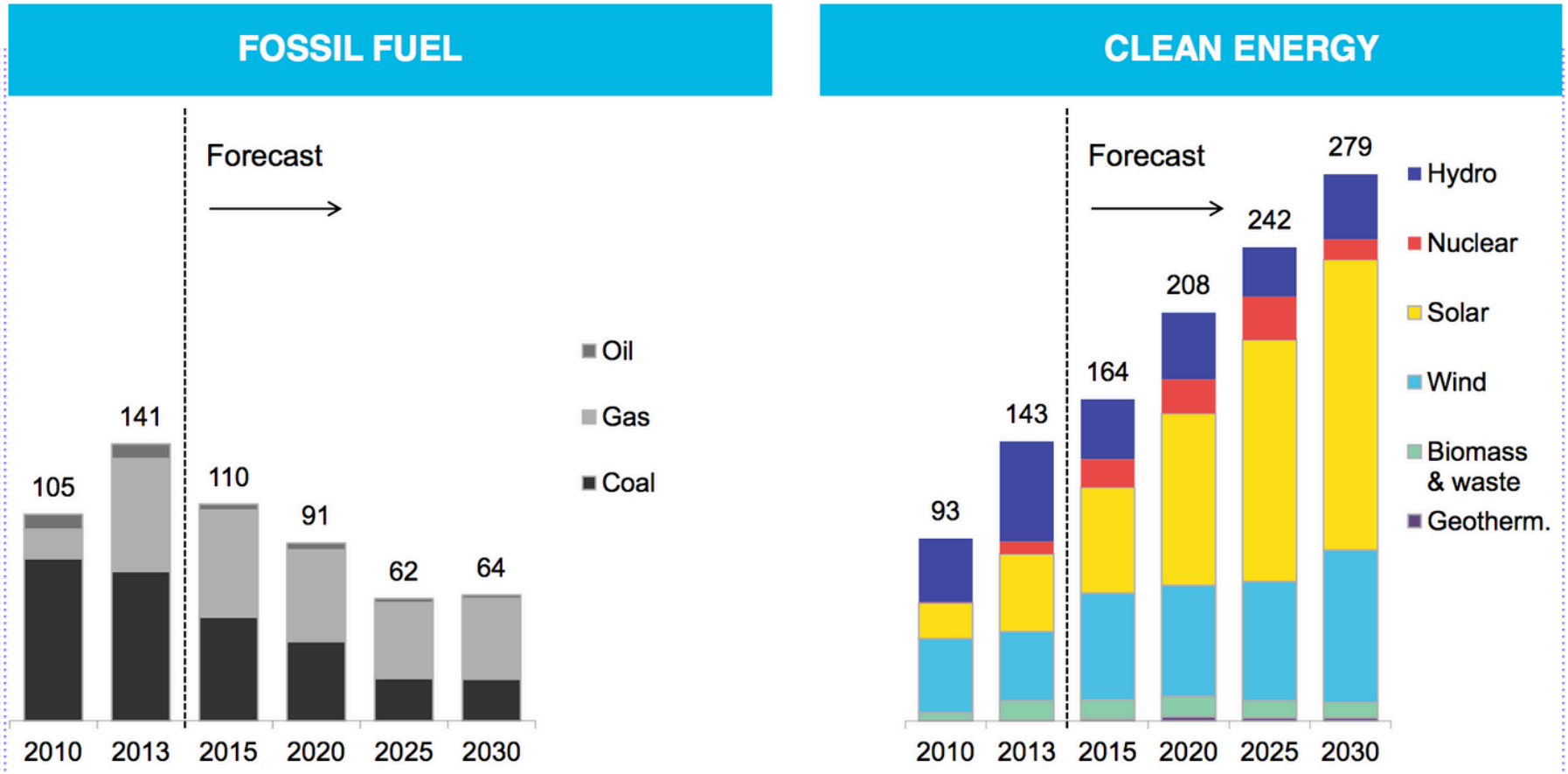

New Generation In-Service
8000
7000
6000
5000
4000
3000
2000
1000
0
Coal
Natural gas
Nuclear
Oil
Water
Wind
Biomass
Geothermal steam
Solar
Waste Heat
Other
2013
2014

Fossil Fuels Just Lost the Race Against Renewables

This is the beginning of the end.



The Beginning of the End



Power generation capacity additions (GW)

Bloomberg New Energy Finance

If Affordable Housing Can Draw Zero Net Energy, Then Anything Can

April 30, 2015

To most of the public, solar panels and batteries for home energy storage may seem like status baubles of the wealthy—cool, but not practical in an actually-saves-money kind of way. That was true, at one point. But this essential technology has now proven itself within the demanding setting of an affordable housing installation. If solar and integrated energy storage can work here, it can work anywhere.



Artist rendering of the completed 2500 R Midtown affordable housing community. (Courtesy: Pacific Housing)

Tesla Unveils Powerwall Stationary Energy Storage

May 4, 2015 By Linda Hardesty



Tesla Motors will market energy storage systems to homeowners, businesses and utilities. The company's foray into the stationary energy storage market will include rechargeable lithium-ion battery packs that can mount to a home garage wall as well as connected battery packs large enough to smooth out fluctuations in the grid, according to the New York Times.

Tesla will start producing its new energy storage battery, called the Powerwall, later this year and will sell it for $3,500.

Tesla says its Powerwall can be easily combined with solar systems at homes or businesses and customers can connect up to nine of the battery packs to store excess power and also be protected in the event of power outages.

SolarCity Launches Solar, Battery Microgrid Service

March 17, 2015 By Linda Hardesty



7

SolarCity unveiled GridLogic, a microgrid service that combines solar energy with battery storage. SolarCity is targeting municipalities as well as critical service providers such as hospitals with the microgrid service that ensures resiliency against power outages. GridLogic can operate either in conjunction with or independently of the utility grid.

In addition to resiliency, GridLogic also includes a demand response capability to store power for high-peak demand use.

SolarCity will offer financing options for GridLogic, including payment programs with little to no upfront cost.

SolarCity's in-house grid engineering team will design and install each GridLogic project with a system of software-based monitoring and controls that manage the mix of distributed energy resources and utility power.

The microgrids will use new lithium-ion Tesla batteries and can be scalable by installing larger or smaller battery banks, reports Breaking Energy.

Will Solar Cause A 'Death Spiral' For Utilities?

By Jean-Marc Ollagnier, Accenture

Solar panels are sprouting up fast and getting cheaper everyday. Soon some of the homes and businesses that own or lease these solar systems could “cut the cord” and unplug entirely from the power grids operated by their regional power utilities. But let’s start by dispelling a myth. What has popularly become known in the industry as the utilities “death spiral” is extremely unlikely to occur. Distributed generation like solar will hurt, but power companies have time to manage the pain.

COMMENT

The great unbundling: cable TV as we know it is dying

Internet upstarts are pushing incumbents to offer more a la carte options



(Schmilblick - Flickr)

The Long, Slow Death of Cable Just Reached a Tipping Point



iStockphoto

For Immediate Release:

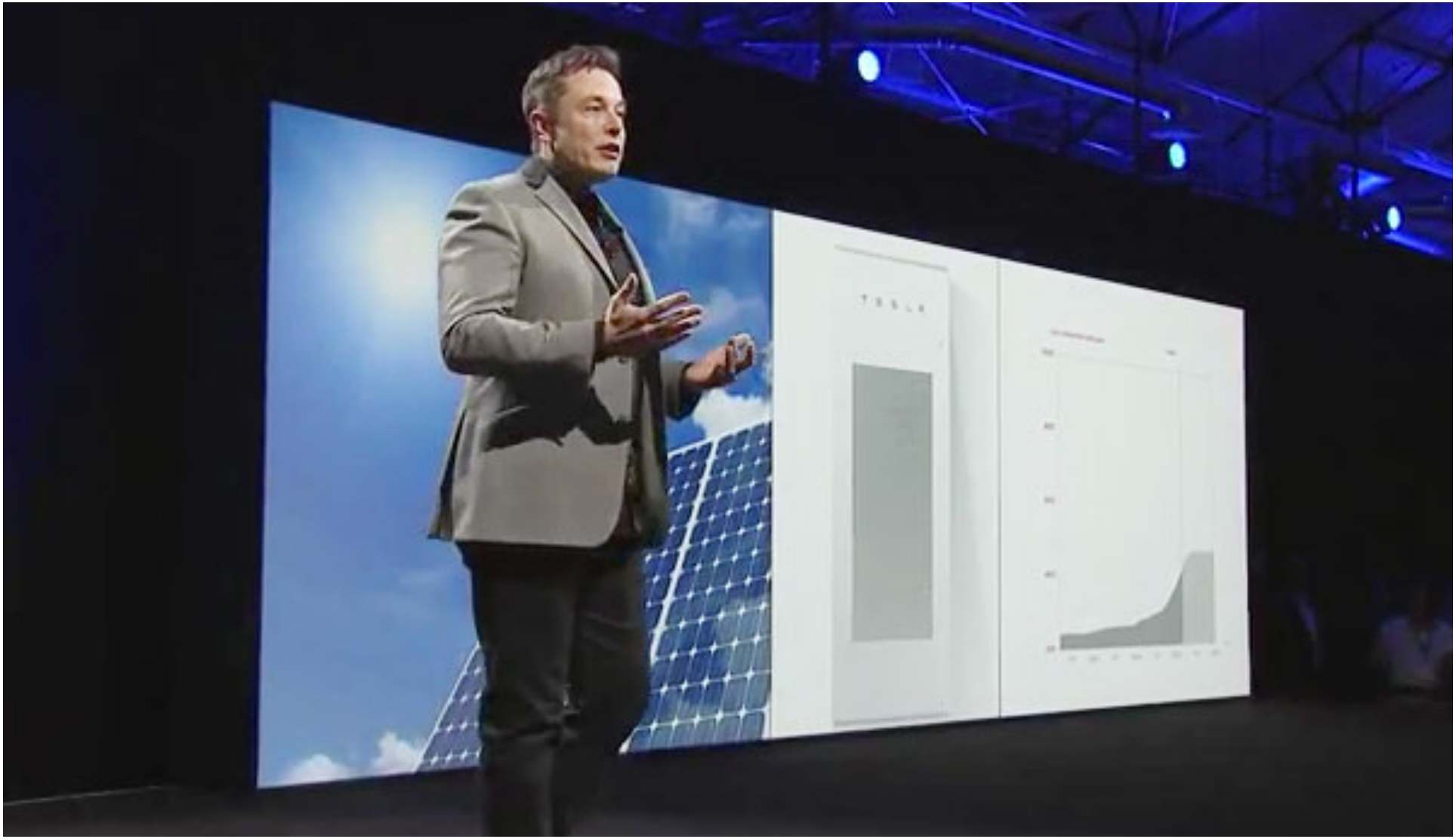
Contact: Tom Polikalas, (970) 240-1245
public.relations@dmea.com

2008 "Earth Day" at DMEA:
Innovative Utility "Geothermal Loop Tariff" Announced

Colorado Co-op Will Install and Own Geothermal Heat Pump Loops to Help Customers Heat and Cool Their Homes with Renewable Earth Energy

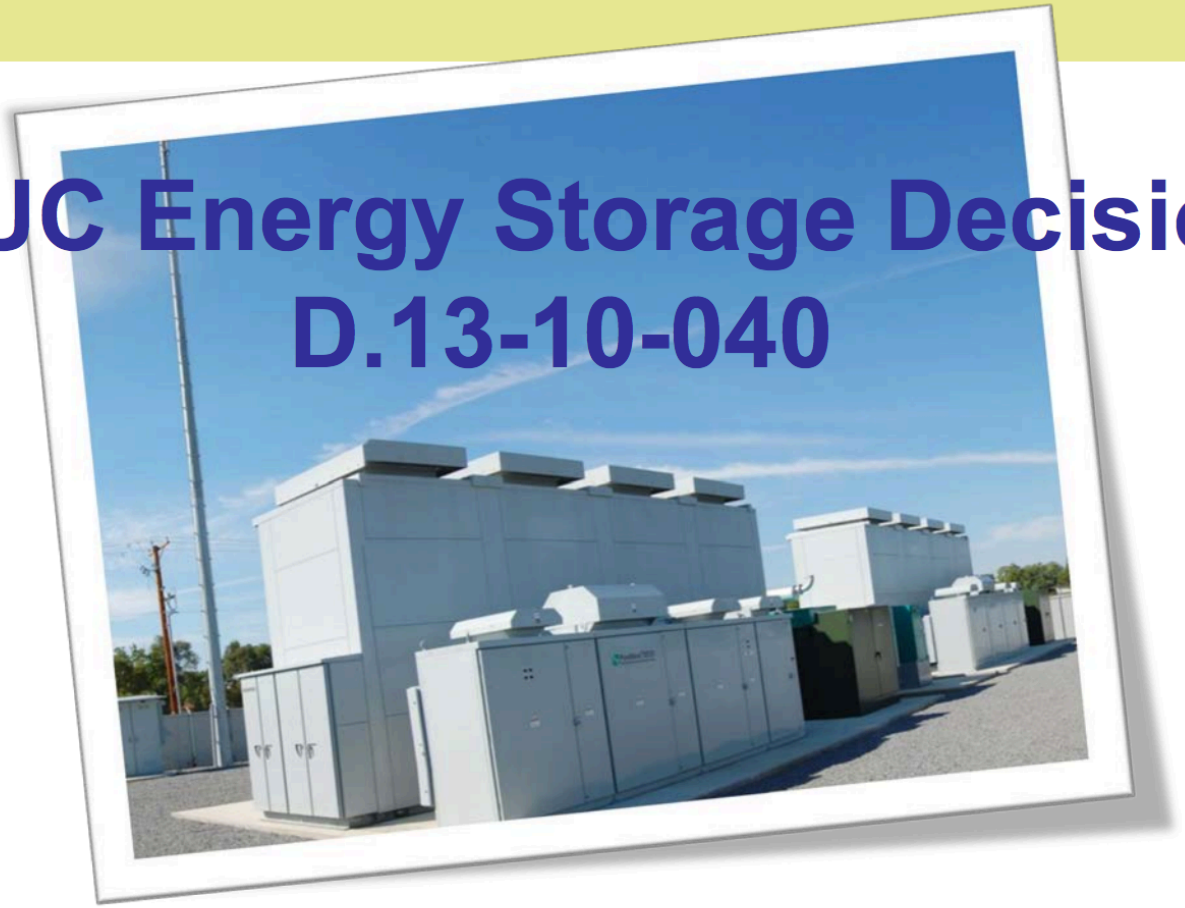
(Montrose, CO) On April 22, 2008, as the nation celebrated the 38th anniversary of the first "Earth Day" in the U.S., the board of directors of Delta-Montrose Electric Association (DMEA) launched a program to make renewable earth energy to heat and cool their members' homes much more affordable.

Under the "ground breaking" provisions of DMEA's "Co-Z Loop Tariff," the cooperative will pay for the installation of a residential ground-source heat pump's loops—normally about half the system's cost. DMEA will own and maintain the loop as utility plant, charging the residential co-op member signing up for the loop tariff an affordable monthly fee, analogous to the monthly base charge members pay for electric service. DMEA's geothermal loop tariff will run $15-$29 a month for most homes.





CPUC Energy Storage Decision D.13-10-040



1,325 MW in operation by 2024

ix

PNC BANK MAKES GREAT INVESTMENT WITH SOLAR POWERED DC MICROGRID

OVERVIEW

Ft. Lauderdale, Florida is one of the sunniest locations in the United States, so it makes a lot of sense for businesses to use the great weather to their advantage by powering electrical systems with solar power. But for a PNC Bank branch, the traditional solar system they employed was too ineffficient to be cost effective. That's when they turned to Nextek Power Systems.



Most solar technologies take the direct current (DC) produced by photovoltaic arrays and invert it to alternating current (AC), so it can be used by existing wiring and equipment. But there is a significant power loss in the inversion from DC to AC. Plus, the power must then be converted back to DC for use in equipment that incorporates semiconductors, resulting in additional power loss.

For a company that prides itself on fiscal acumen and responsibility, this strategy didn't make much sense. They asked Nextek to see what their Direct Coupling® technology could do to improve the energy situation.

Coal Microgrids?



Specs



Technology
Wall mounted, rechargeable lithium ion battery with liquid thermal control.

Models
10 kWh $3,500
For backup applications
7 kWh $3,000
For daily cycle applications

Warranty
10 years

Efficiency
92% round-trip DC efficiency

Power
2.0 kW continuous, 3.3 kW peak

Voltage
350 – 450 volts

Current
5.8 amp nominal, 8.6 amp peak output

Compatibility
Single phase and three phase utility grid compatible.

Operating Temperature
-4°F to 110°F / -20°C to 43°C

Enclosure
Rated for indoor and outdoor installation.

Installation
Requires installation by a trained electrician.
DC-AC inverter not included.

Weight
220 lbs / 100 kg

Dimensions
51.2" x 33.9" x 7.1"
1300 mm x 860 mm x 180 mm

Certification
NRTL listed to UL standards

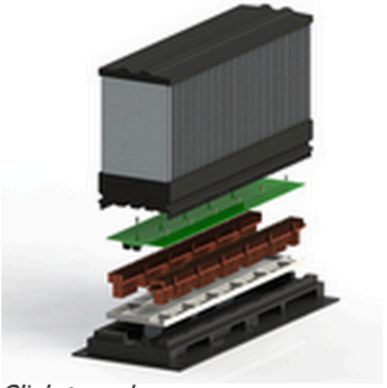
Flat Screen TV	Lights Per Room	Laptop	Refrigerator	Clothes Washer	Clothes Dryer
0.1 kWh /hr	0.1 kWh /hr	0.05 kWh /hr	4.8 kWh /day	2.3 kWh each use	3.3 kWh each use


PART 2:
BATTERIES
BATTERIES

EV-Lite project closes with new EV battery design; lower weight, lower cost

7 August 2014

Cenex, the UK-based not-for-profit consultancy focused on low carbon vehicles and associated energy infrastructure, announced the successful completion of the two-year project Sustainable Lightweight Low Cost Battery Systems for Extended Life Cycles (EV-Lite). (Earlier post.) The project was co-funded by the UK's innovation agency, the Technology Strategy Board. The project consortium comprises the Manufacturing Technology Centre; Unipart Manufacturing; Electrovaya; RDVS; CRR; Bluebird Innovation Group; Loughborough University; and Cenex.



Click to enlarge.

The project realized a 41% reduction in weight and a 63% reduction in cost of the non-cell components. This translates to a saving of 45 kg (99 lbs) at the battery pack level. The ultimate aim of the project is to enable volume manufacturing for electric vehicle battery packs in the UK through innovative design and, in doing so, help bring electrical vehicles to the mass market.

podcast

Episode 620: Why Batteries Suck

MAY 01, 2015 9:00 PM ET

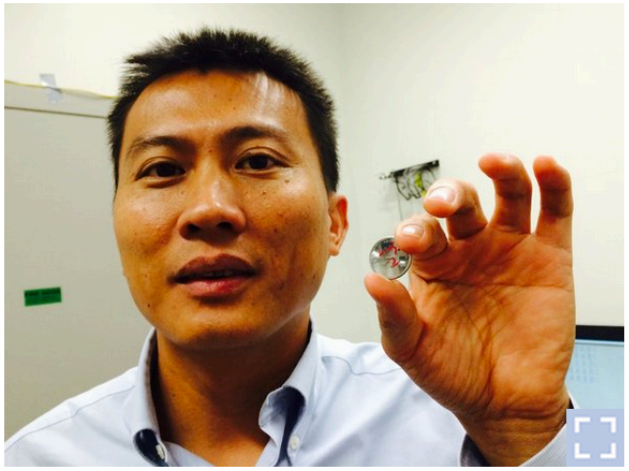
Listen

16:11

+ Playlist Download Transcript

Most technology has been getting faster, smaller, and cheaper, every year. Everything except batteries.

This is not just a problem for the iPhone 6 Plus owners of the world. It's holding back two of the biggest technological revolutions in the world: electric cars and solar power. A better, cheaper battery could save the world.



Stephen Henn/NPR

SHARE


Li-ion

MIT Technology Review

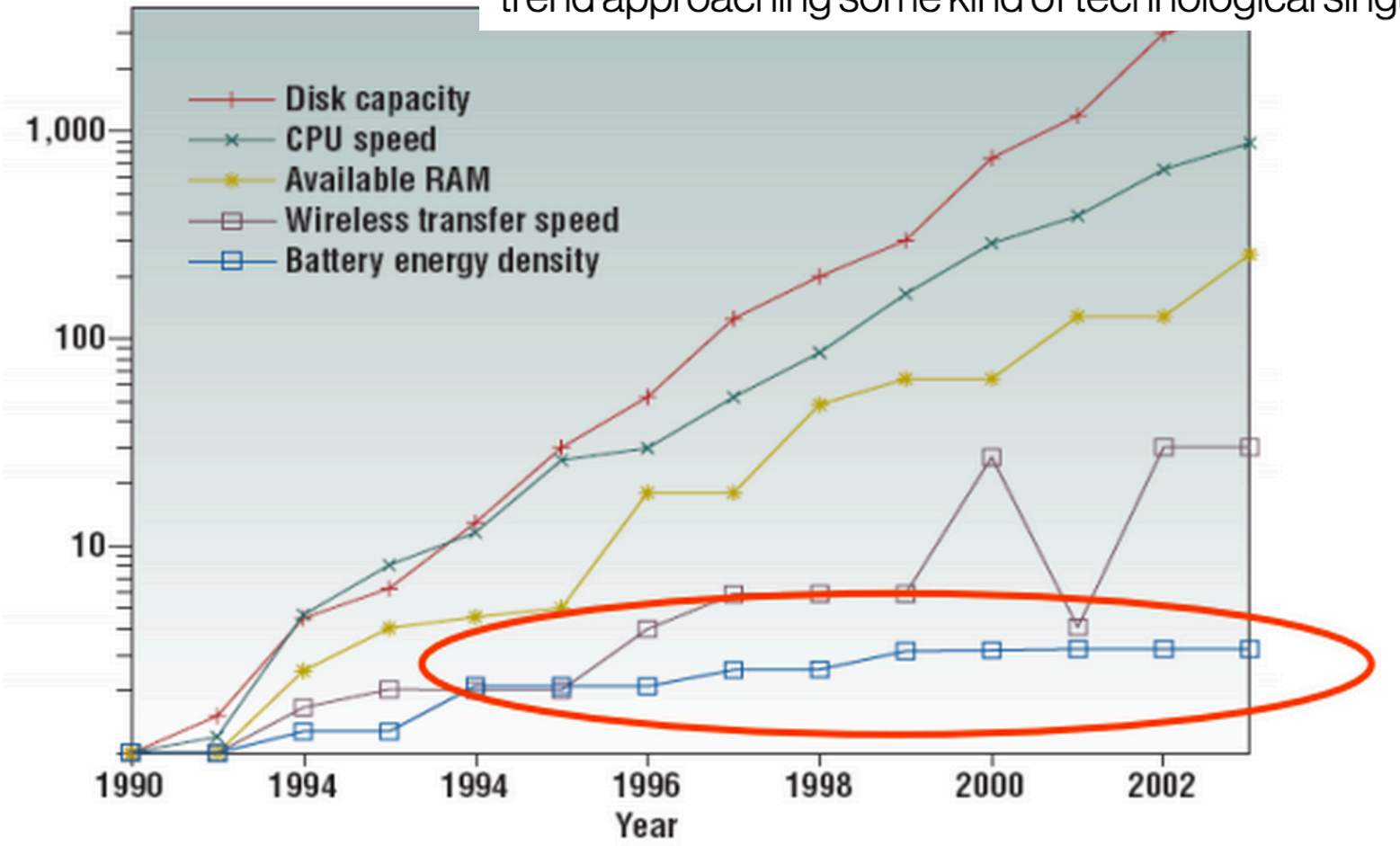


Christopher Mims

August 11, 2011

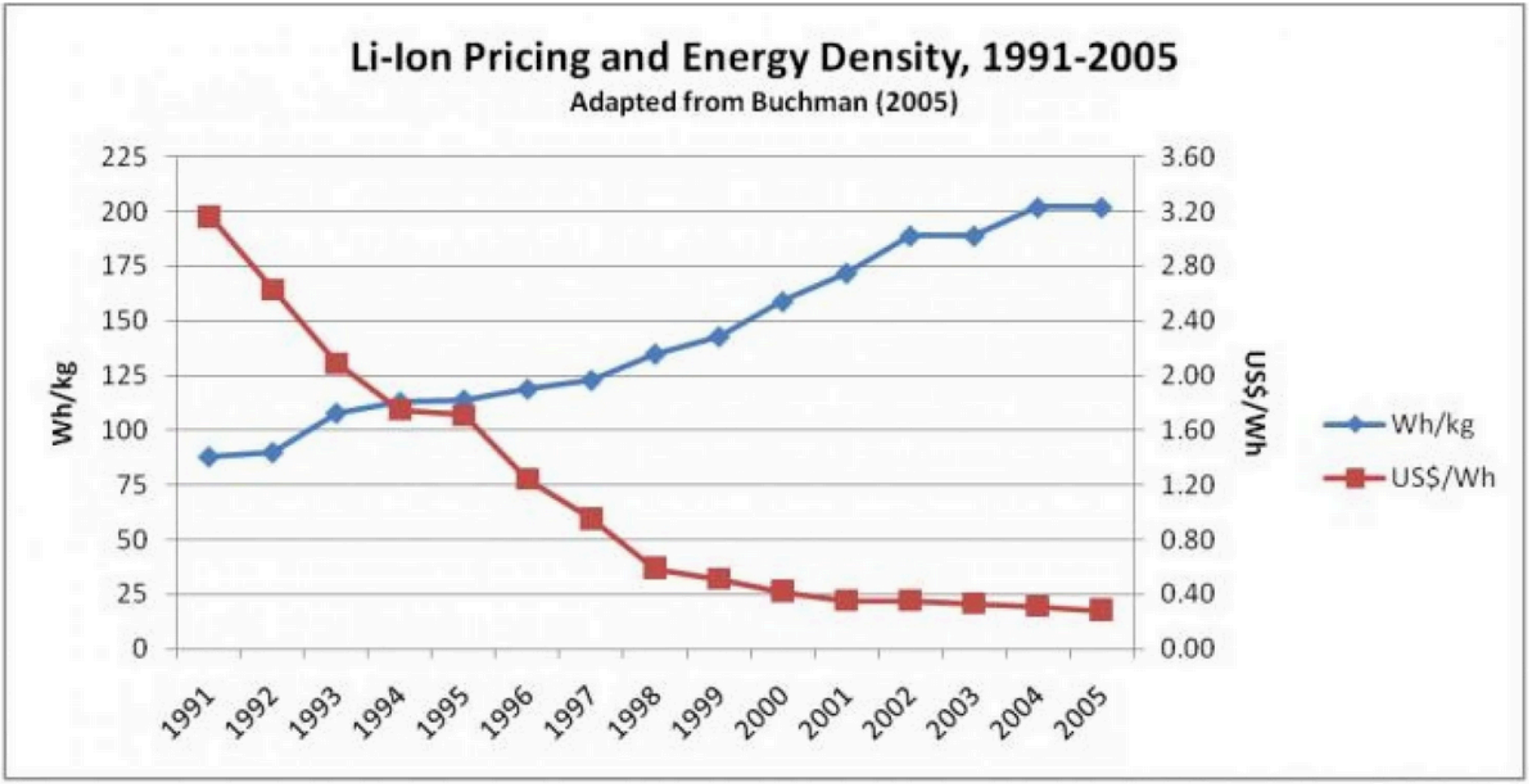
Why Your Battery Life is Terrible, in One Handy Chart

Not every technology is on an endlessly compounding growth trend approaching some kind of technological singularity



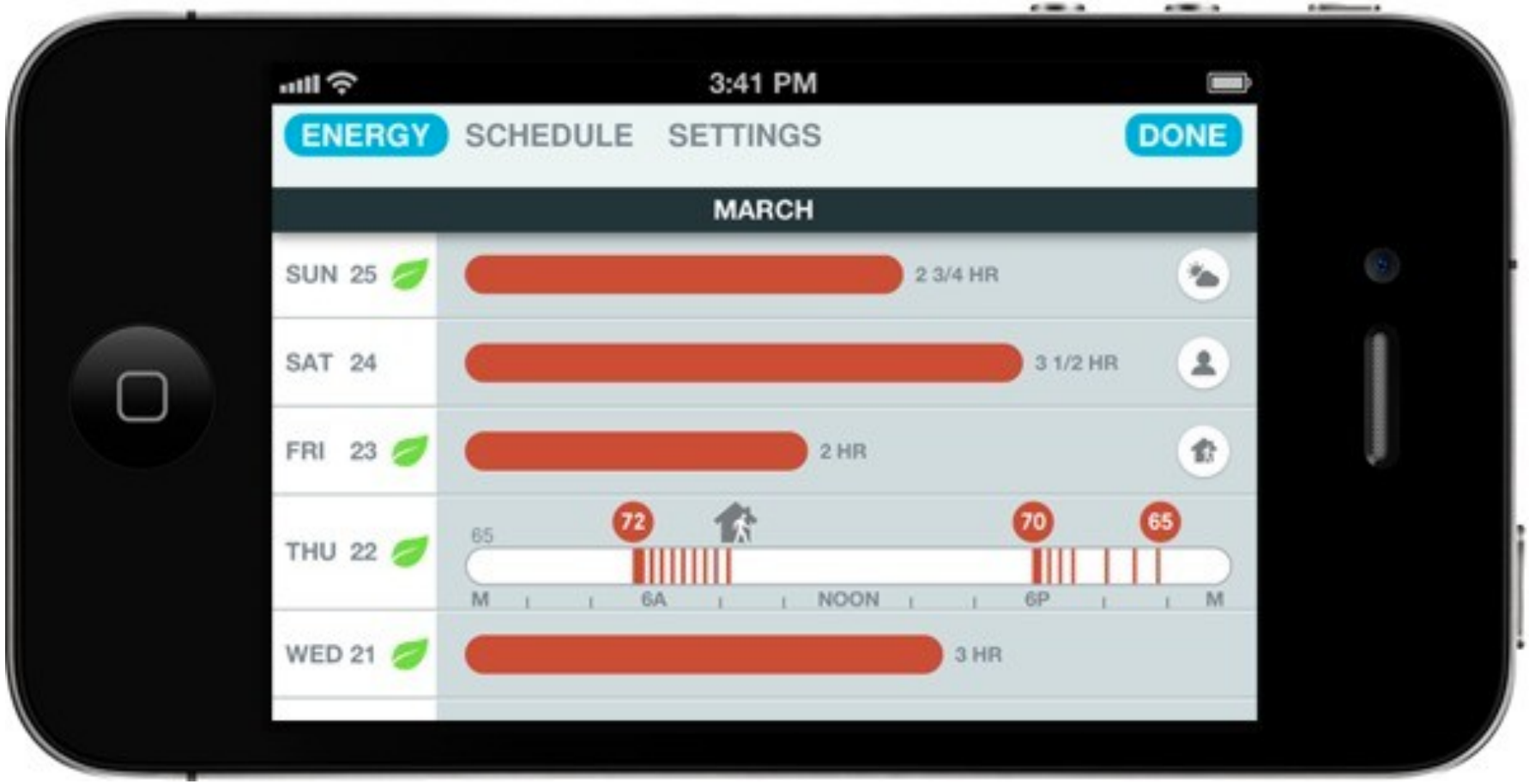
Wonkblog

Expensive batteries are holding back electric cars. Can that change?



The Washington Post


nest
67
IN 25 MIN
72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MARCH
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2 HR
THU 22
65
72
70
65
M
6A
NOON
6P
M
WED 21
3 HR

Feedback Effect

Energy Used Last Month: **1,137 kWh**

Electricity Bill: **$67.12**

Your Energy Use compared to your neighbors:



Most Energy Use **Average** **Least Energy Use**

Feedback Effect

Energy Used Last Month: **637 kWh**

Electricity Bill: **$22.82**

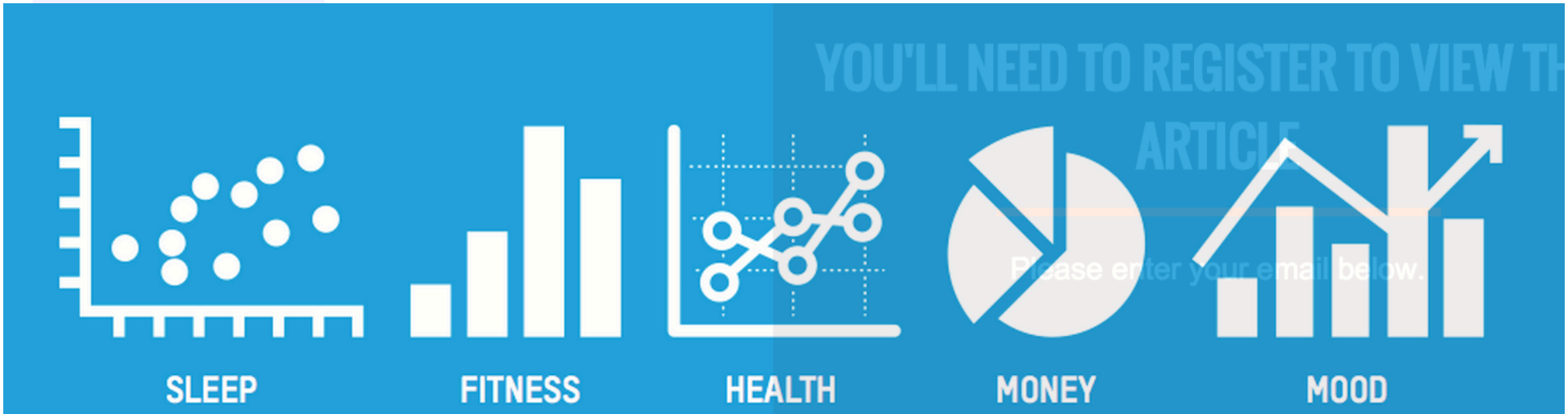
Your Energy Use compared to your neighbors:



Most Energy Use **Average** **Least Energy Use**


TREE
SLAYER

YOU'LL NEED TO REGISTER TO VIEW TH
ARTICLE
Please enter your e-mail below.



productivity (55)
relationships (19)
sleep (34)
social (95)
web app (212)

Price Range

free (328)
$1-10 (103)
$10-50 (60)

digifit
Get fit Stay healthy

rate, pace, speed, cadence, and power of your running, cycling and other athletic endeavors. Data can be uploaded to the well established training sites Training Peaks and New Leaf. The ecosystem is is split up into the Digifit™, iCardio™, iRunner™, iBiker™, iSpinner™ and iPower™ apps. To utilize the full functionality of the app you must purchase the Digifit Connect ANT+ dongle and and the purchase of an advanced functionality App.

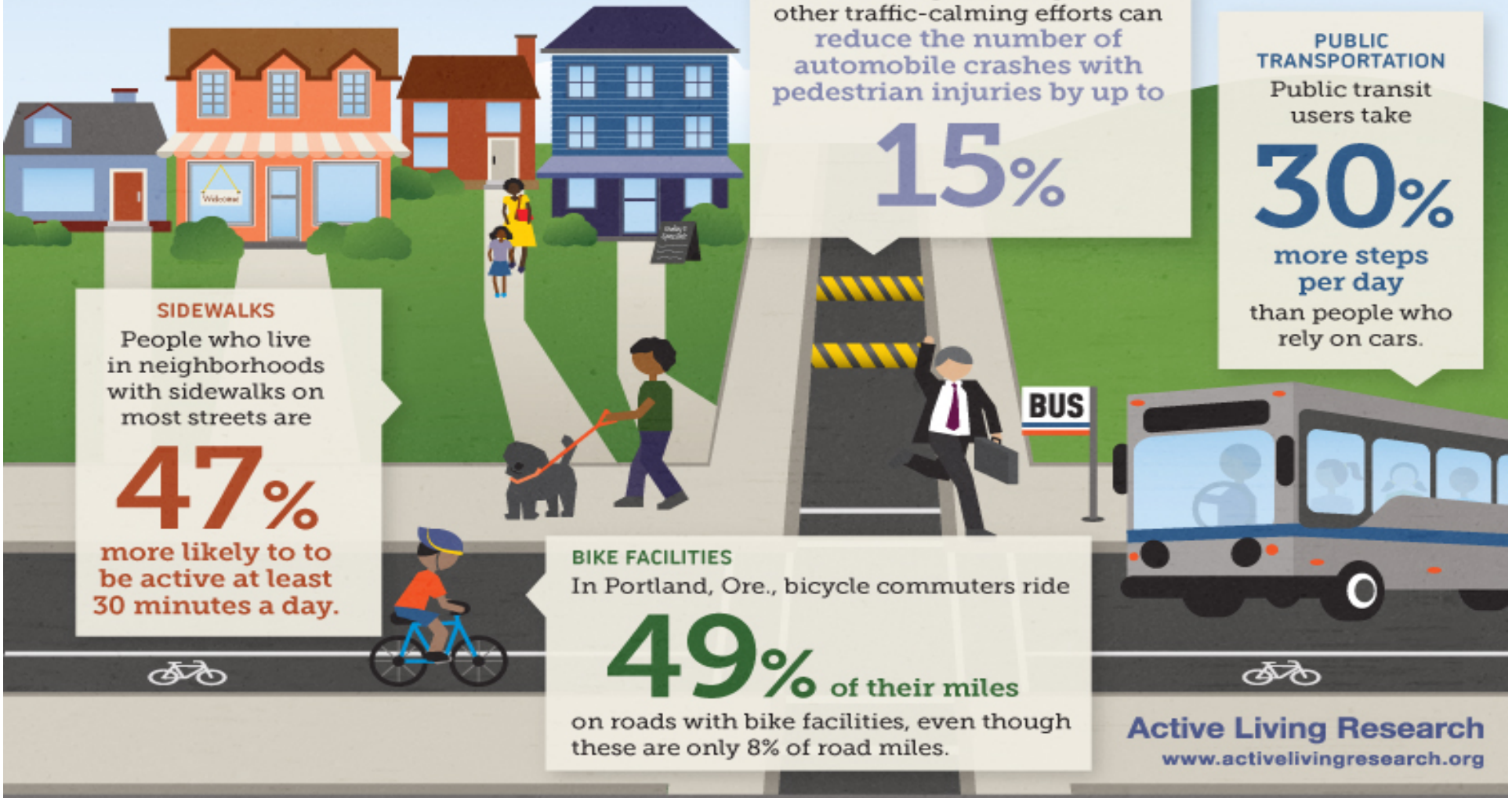
URL: http://digifit.com/

Tags: sleep, iPhone, health, fitness
Price: $50-100

THE ROLE OF

Transportation

IN PROMOTING PHYSICAL ACTIVITY



SIDEWALKS

People who live in neighborhoods with sidewalks on most streets are

47%

more likely to to be active at least 30 minutes a day.

TRAFFIC CALMING

Medians, speed bumps and other traffic-calming efforts can **reduce the number of automobile crashes with pedestrian injuries by up to**

15%

PUBLIC TRANSPORTATION

Public transit users take

30%

more steps per day

than people who rely on cars.

BIKE FACILITIES

In Portland, Ore., bicycle commuters ride

49% **of their miles**

on roads with bike facilities, even though these are only 8% of road miles.

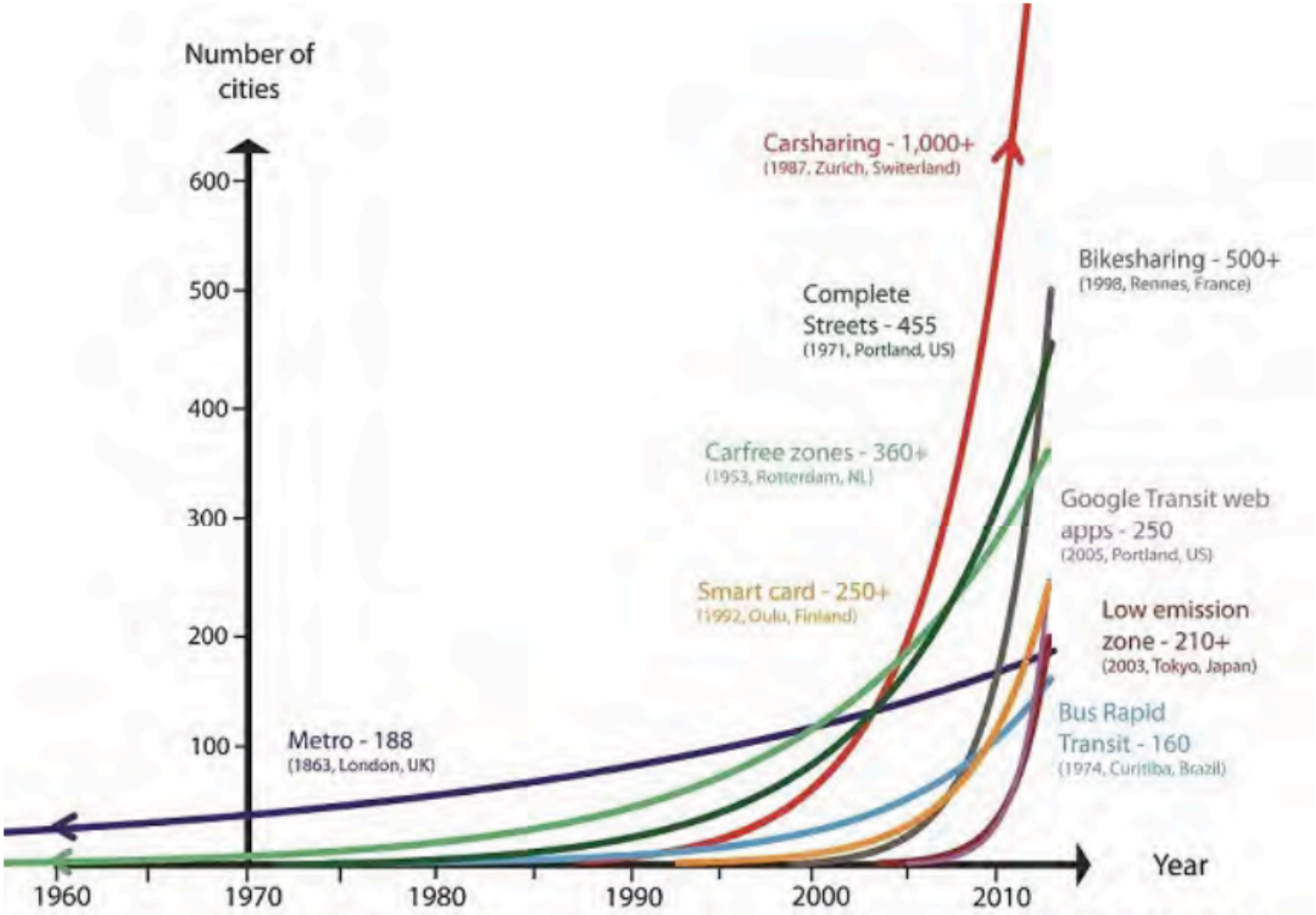
Active Living Research

www.activelivingresearch.org

Sources: SIDEWALKS: Sallis J, Bowles H, Bauman A, et al. "Neighborhood Environments and Physical Activity among Adults in 11 Countries." American Journal of Preventive Medicine, 36(6): 484–490, June 2009. BIKE LANES: Dill J et al. Bicycling for Transportation and Health: The Role of Infrastructure. Journal of Public Health Policy (2009) 30, S95–S110. doi:10.1057/jphp.2008.56). TRAFFIC CALMING: Bunn F, Collier T, Frost C, et al. "Area-Wide Traffic Calming for Preventing Traffic Related Injuries." Cochrane Database of Systematic Reviews (1), January 2003; Elvik R. "Area-Wide Urban Traffic Calming Schemes: A Meta-Analysis of Safety Effects." Accident Analysis and Prevention, 33(3): 327–336, May 2001. PUBLIC TRANSPORTATION: Edwards R. "Public Transit, Obesity, and Medical Costs: Assessing the Magnitudes." Preventive Medicine, 46(1): 14–21, January 2008.

Figure 18

Global adoption of sustainable transport systems

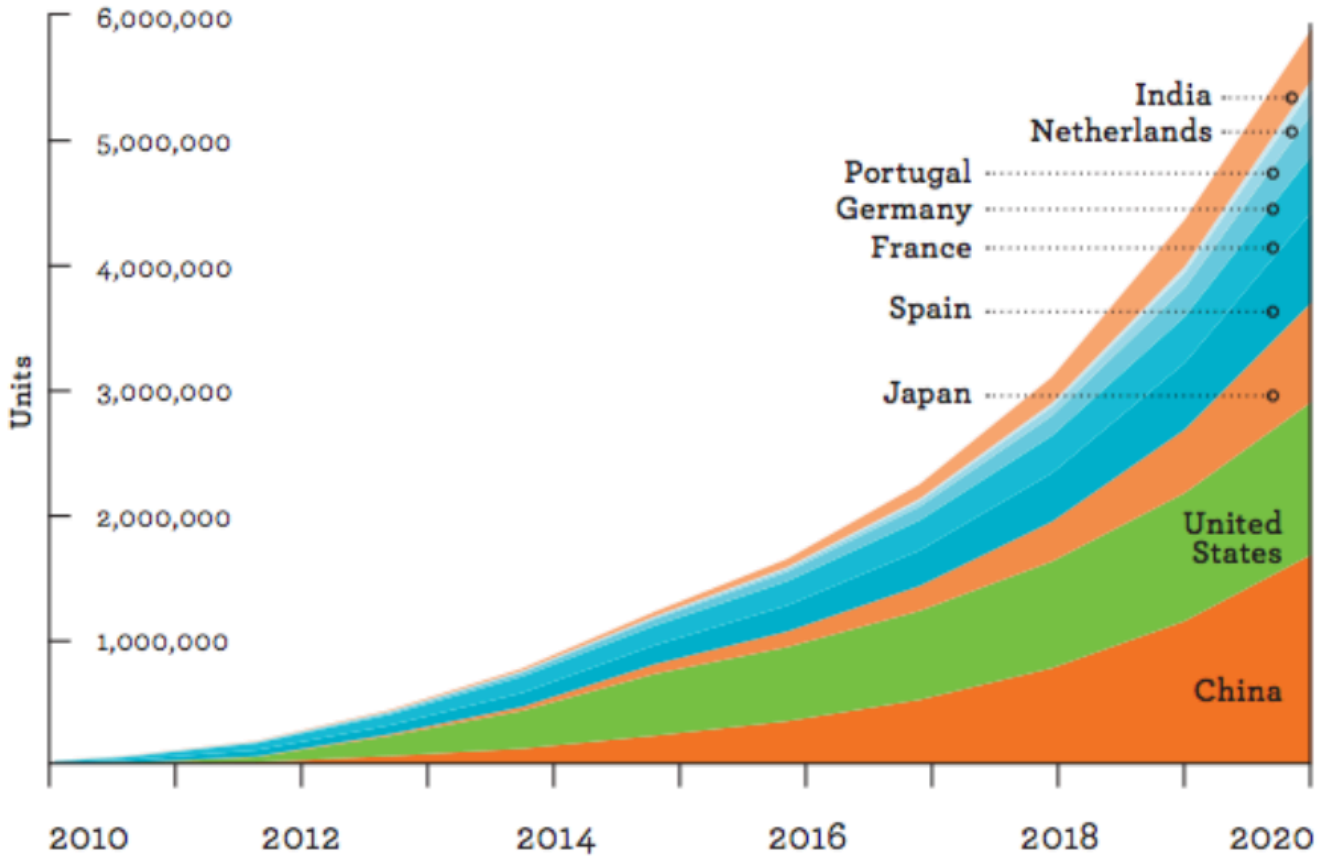


Source: Hidalgo and Zeng 2013

Tweaking incentives could aid the adoption of electric vehicles

Figure 2. EV Sales Targets [select EVI members]

Source: EVI. Note: A 20% compound annual growth rate is assumed for countries without a specific sales target (i.e., only a stock target) or with targets that end before 2020.



Transportation Carbon Reduction – TDM Idea Highlights



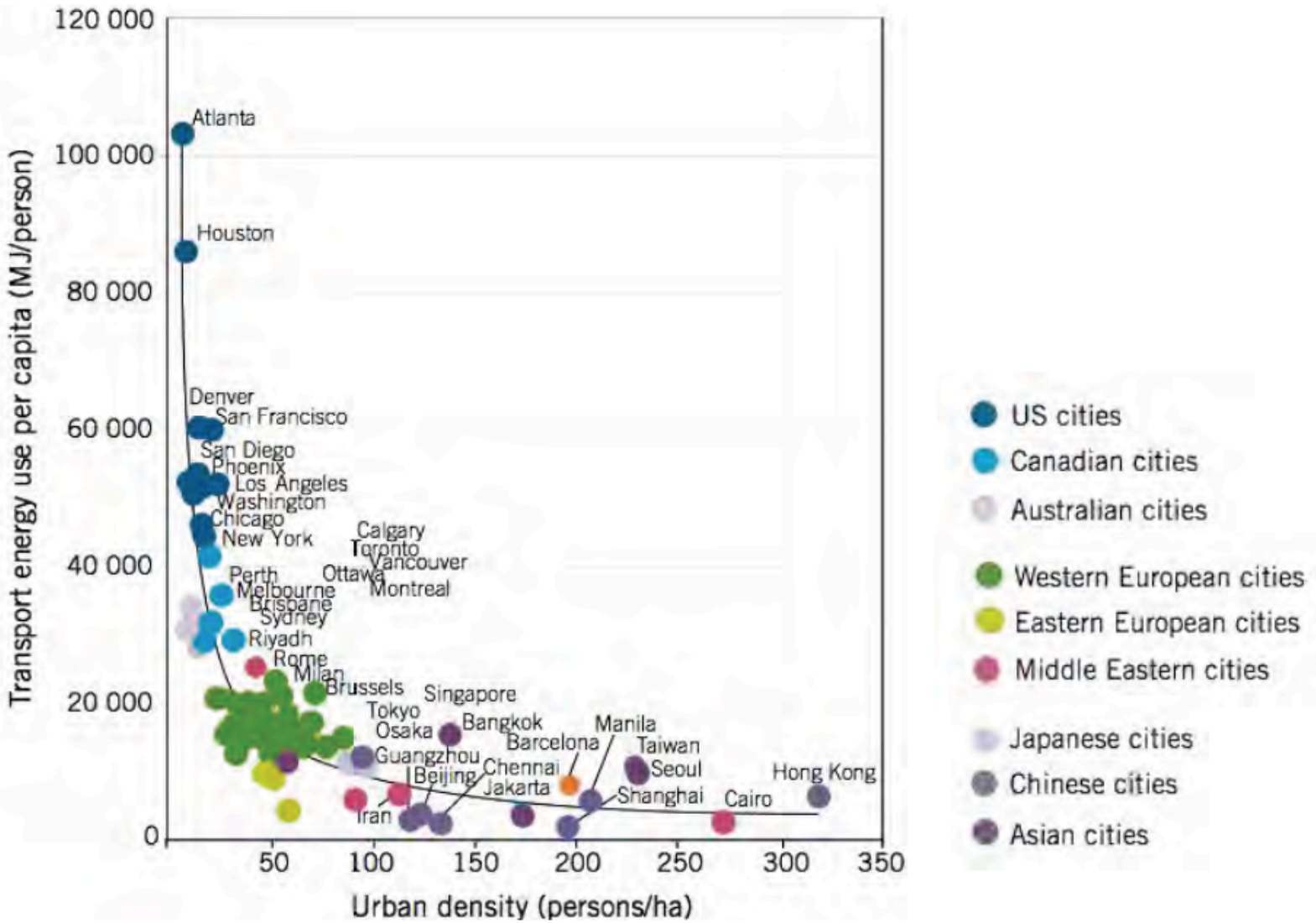
Shared Cars, Shuttles and Taxis:

- Car share cars permanently located on site
- Indoor, secure executive bike parking for bicycle commuters
- Shuttle services (airport, to and from Table Mesa Park ‘n Ride, etc)
- Taxi stand
- Transportation coordinator with active education about options
- Van pool and car pool programs

B
B
station

Figure 3

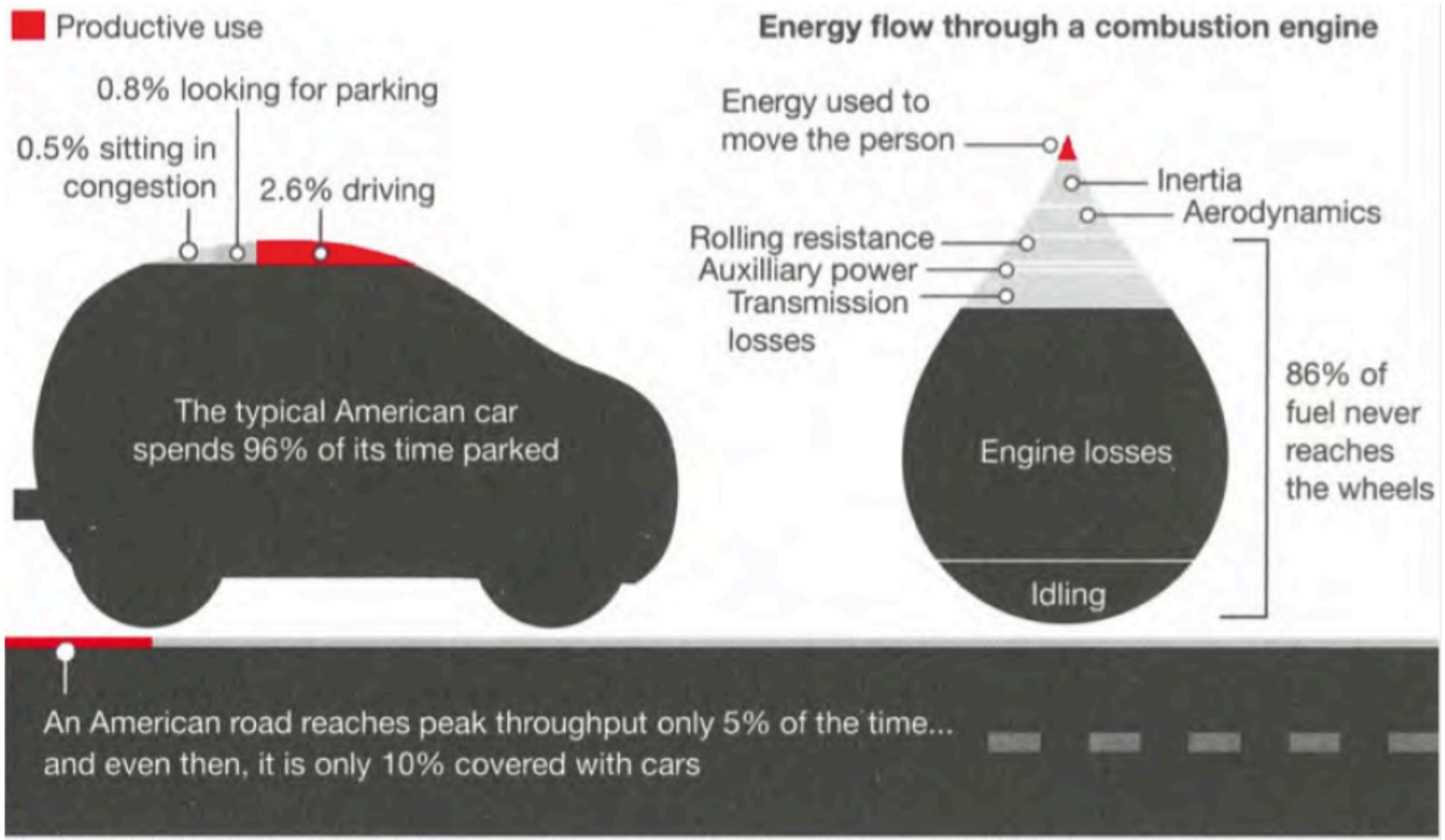
Population density and transport energy use per capita for selected cities



Source: WHO 2011

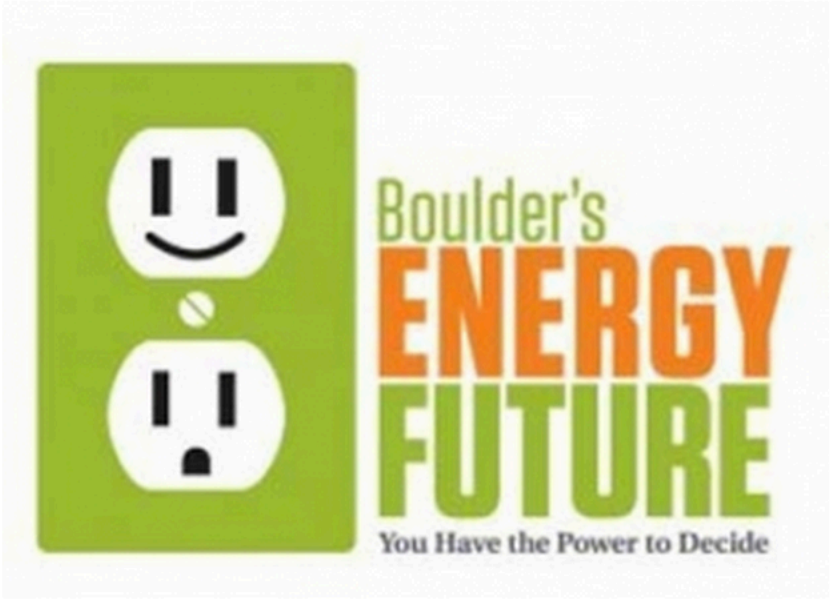
Figure 23

Waste in fuel, cars, and roads caused by automobile transport



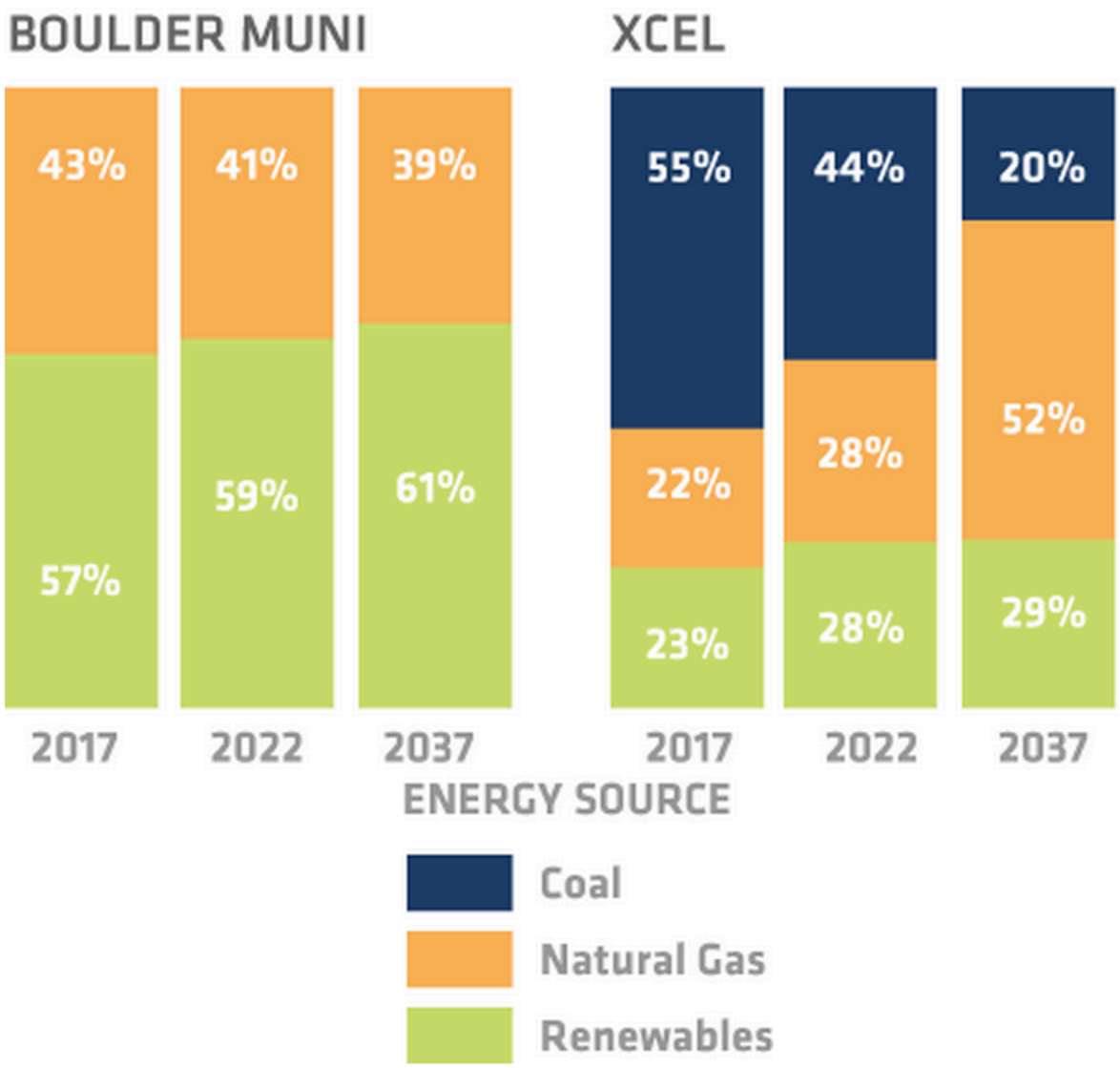
Source: Heck and Rogers 2014

City of Boulder's Clash With Xcel Continues



The city wants renewables. Xcel wants to keep Boulder's business.

Herman K. Trabish
September 11, 2013


BOULDER MUNI
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41%
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2022
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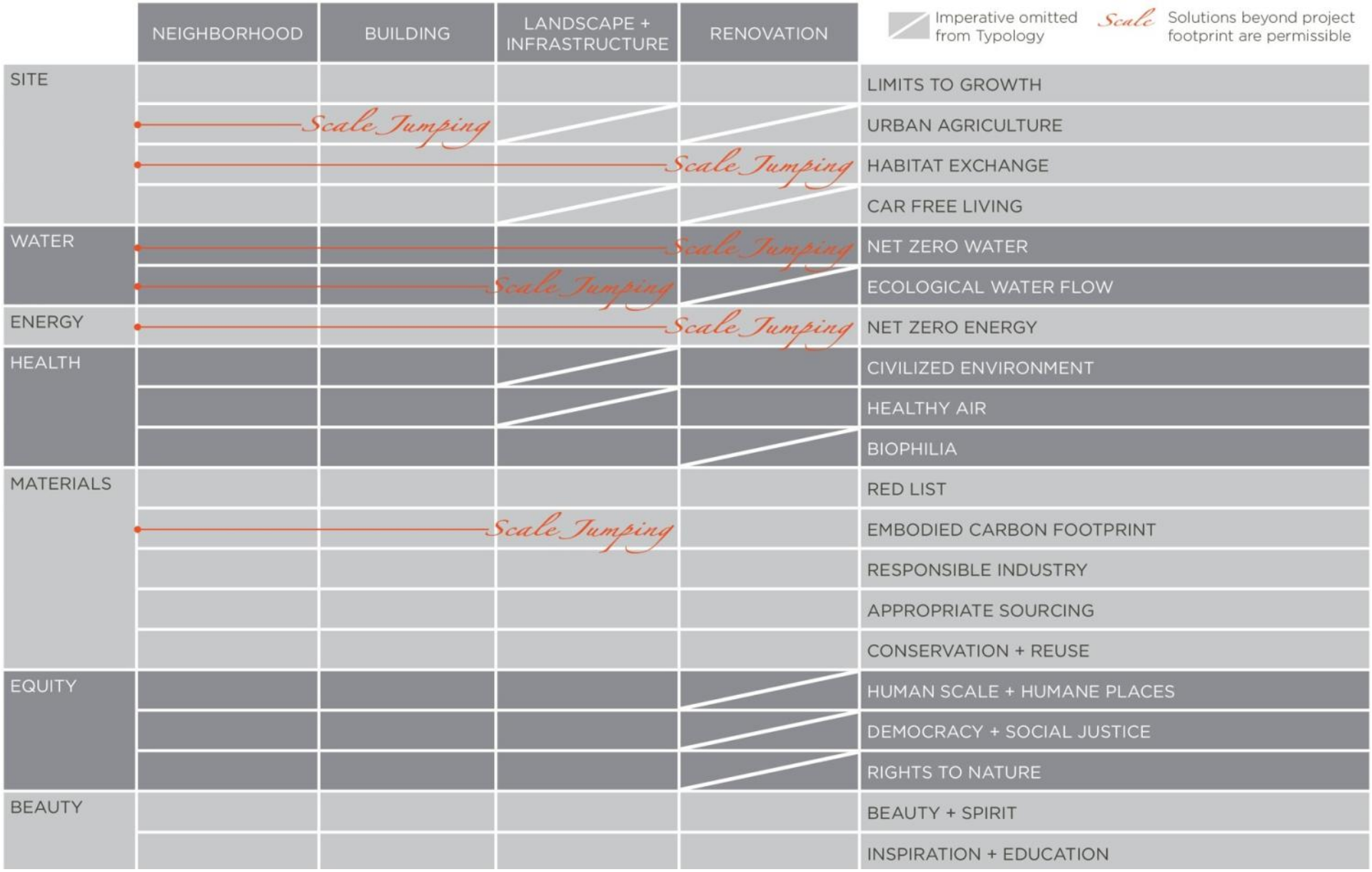
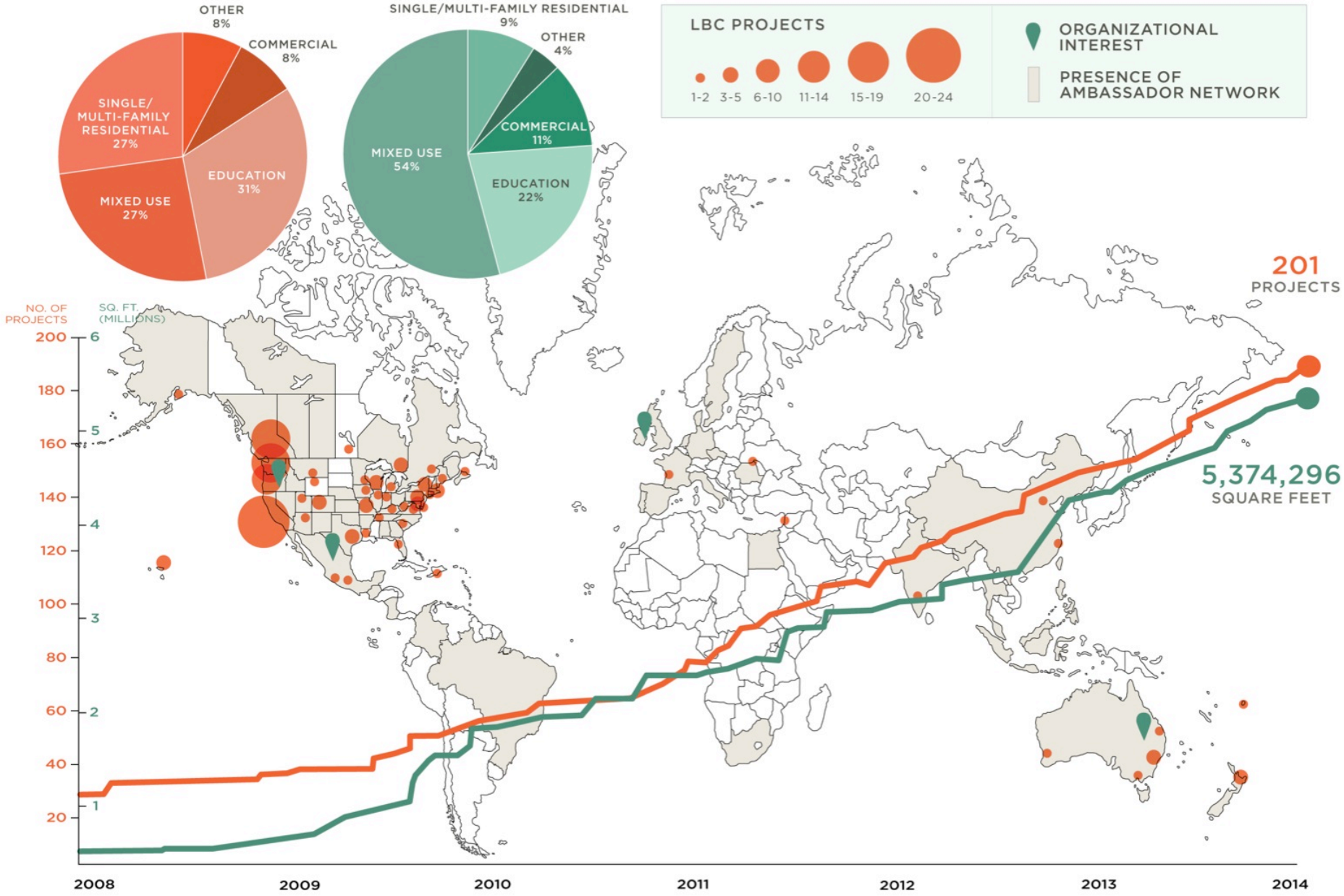
ENERGY SOURCE
Coal
Natural Gas
Renewables

Living Building Challenge





International Living Building Institute



GLOBAL REGISTERED PROJECT MAP (MAY 2014)

© 2014 International Living Future Institute

Net Zero Water




Lake Mead Water Level
Maximum (1229 feet)
Average (1173 feet)
Drought (1125 feet)
Ration Regime I (1075 feet)
Ration Regime II (1050 feet)
Ration Regime III (1025 feet)
Pump Limit (1000 feet)
1240
1220
1200
1180
1160
1140
1120
1100
1080
1060
1040
1020
1000
980
1935
1940
1945
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2000
2005
2010
2015

Nation's largest ocean desalination plant goes up near San Diego; Future of the California coast?

By Paul Rogers | progers@mercurynews.com

POSTED: 05/29/2014 02:18:19 PM PDT | UPDATED: 10 MONTHS AGO

535 COMMENTS





Hassalo on 8th – Lloyd Ecodistrict Super Block: Portland, OR

Project Background
- Four block "super block" development in the Lloyd District
- 637 new apartment units and 47,000 square feet of retail/commercial space
- Projected completion in Summer 2015

Wastewater System
- 45,000 gallon wastewater per day
- Treatment steps:
  - primary treatment,
  - trickling filters,
  - tidal flow constructed wetlands,
  - anoxic constructed wetlands,
  - denitrification unit,
  - filtration,
  - disinfection with ozone and ultraviolet light.
- Closed loop system recycles water for toilet flushing, irrigation, and cooling tower make-up.

Design & Operations
- Under construction (2014-2015)
- Architect: GBD Architects
- MEP engineer: Glumac
- Landscape Architect: Place Studio
- Wastewater System Design - Biohabitats
- Wastewater Operator – Puttman Infrastructure
- Operator Support – Biohabitats
- Project Information
  - http://www.gbdarchitects.com/portfolio-item/lloyd-blocks-2/

Biohabitats



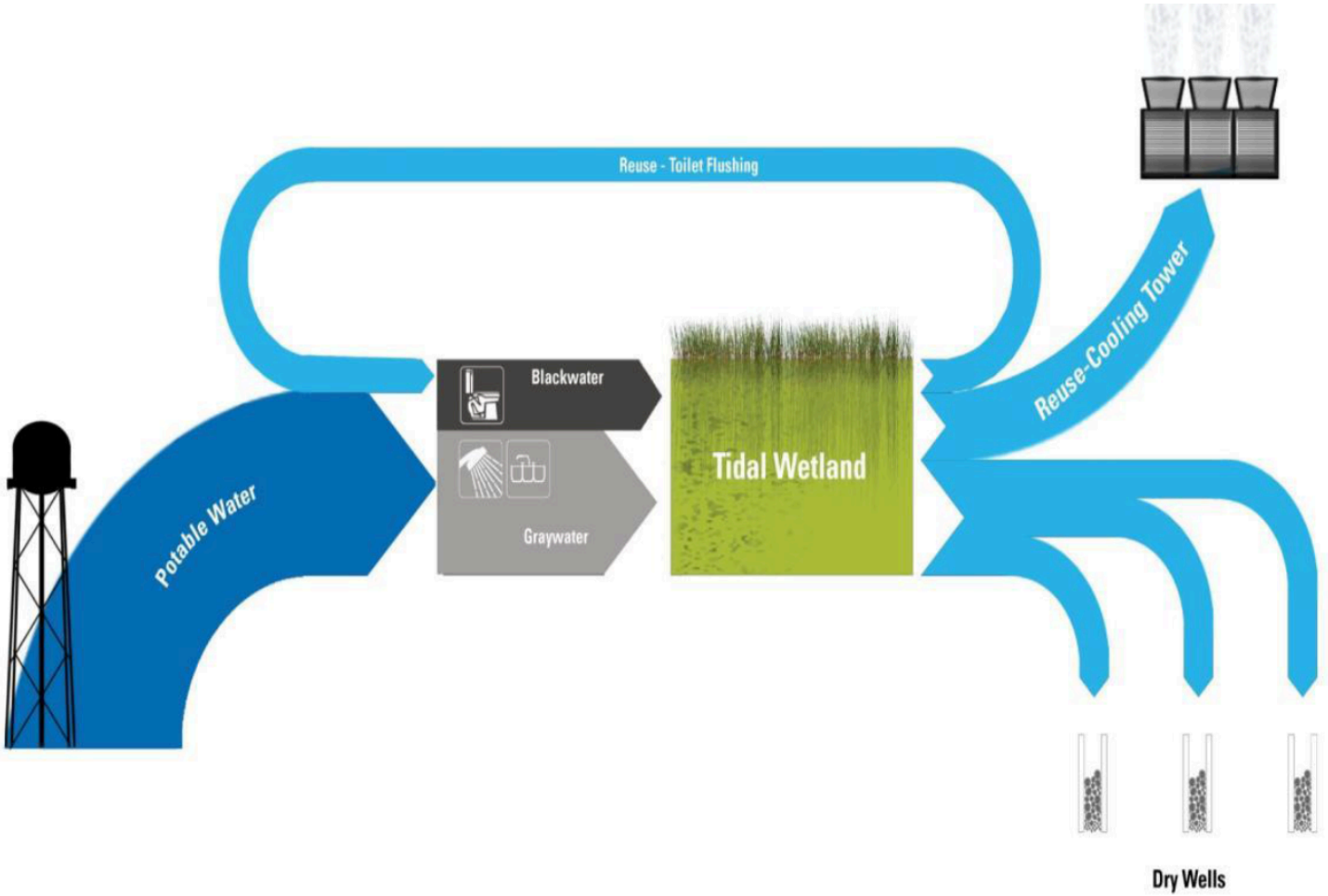
Project Rendering – Constructed Wetlands

Image Credit: GBD Architects



Project Rendering – Trickling Filters

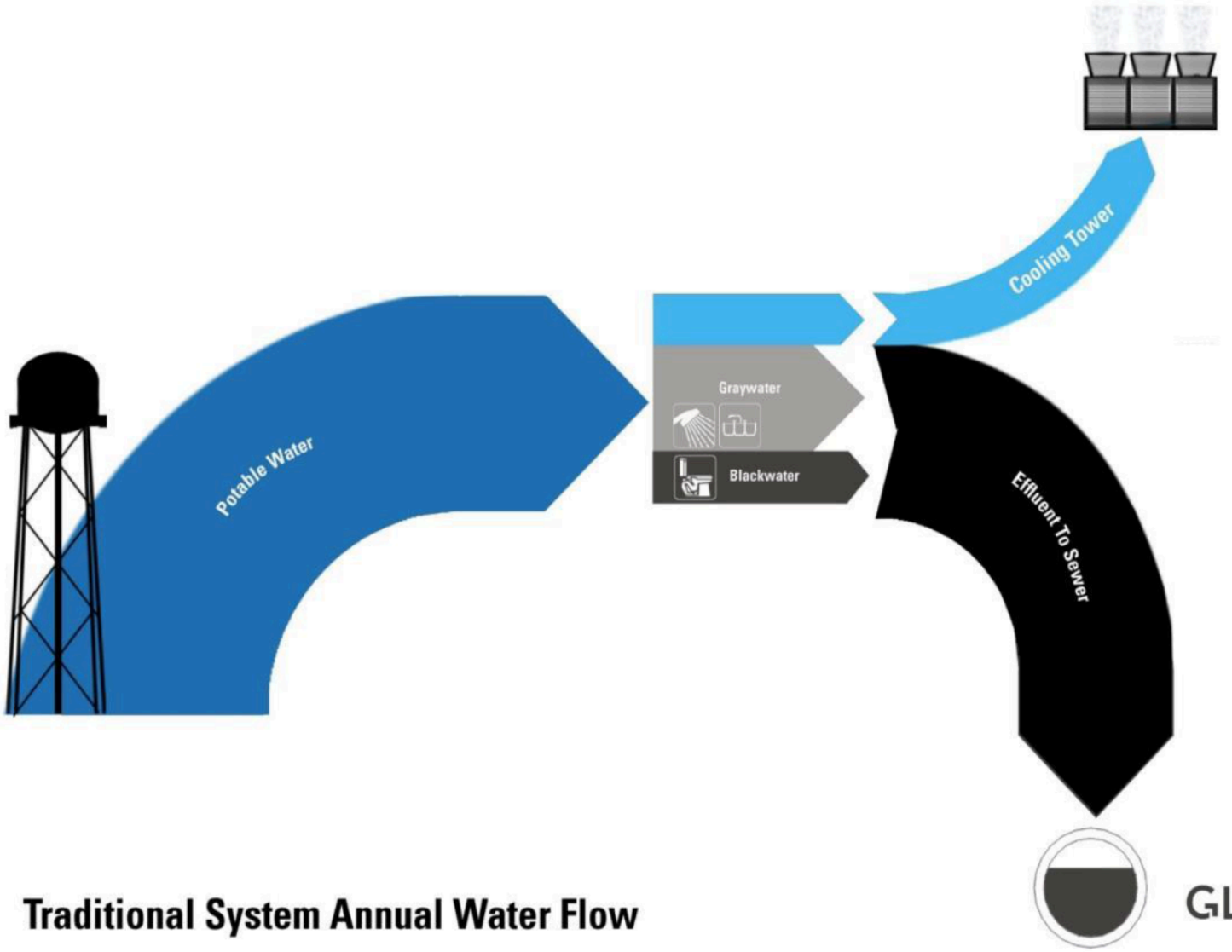
Image Credit: GBD Architects



On Site Treatment Annual Water Flow

GLUMAC

Biohabitats



Traditional System Annual Water Flow

GLUMAC

Poop Train

Tuesday, September 24, 2013 - 05:00 PM

00:00 / 00:00

Listen Add Download Embed Stream



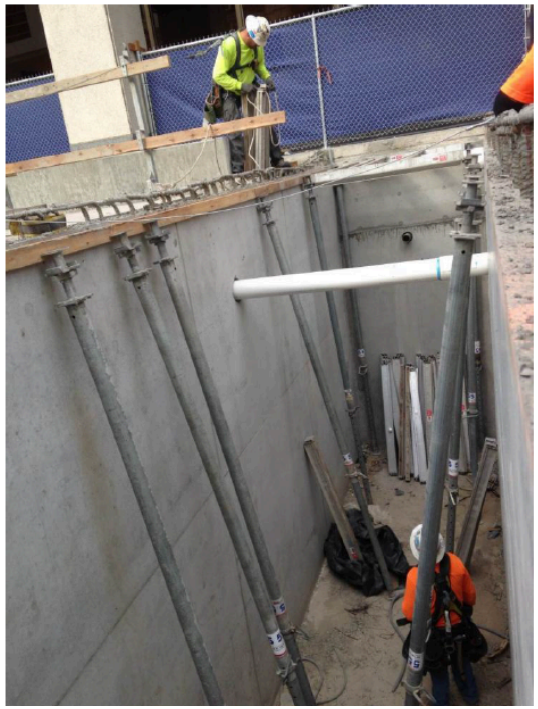
(Michael Katzif / WNYC)

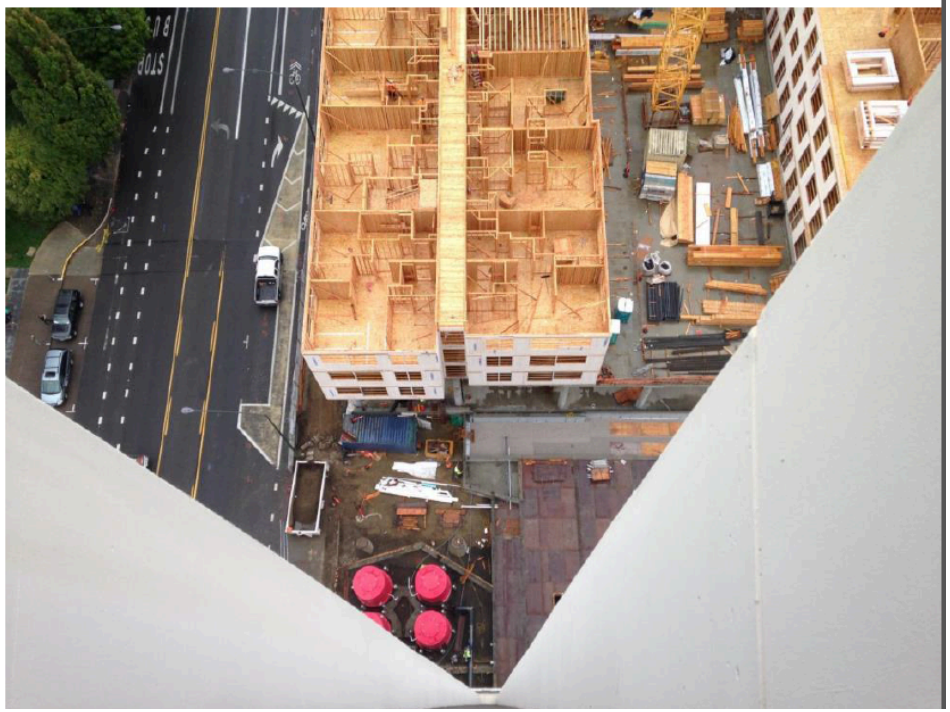
You may not give a second thought (or backward glance) t what the toilet whisks away after you do your business. But we got wondering -- where would we wind up if we thought of flushing as the start, and not the end, of a journey? In thi short, we head out to trace the trail of sludge...from Manhattan, to wherever poop leads us.





Wastewater Construction Fall 2014





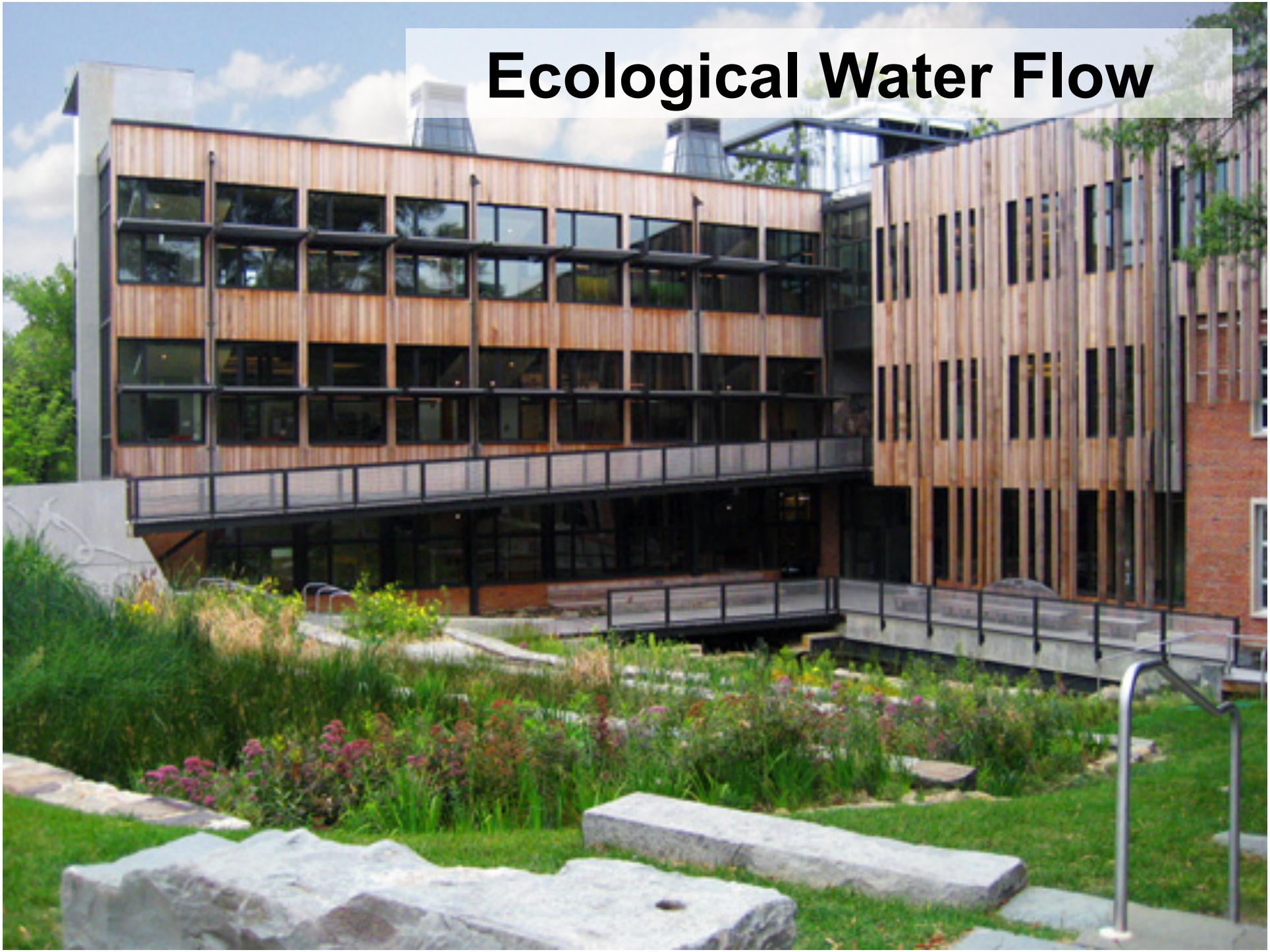
Biohabitats



Project Rendering – Constructed Wetlands



Project Rendering – Trickling Filters


Ecological Water Flow


Constructed Wetland
Photo: www.archdaily.com



Civilized Environment?

A HUFFINGTON POST GRAPHIC

How Your Job is Killing You

More than 80 percent of Americans are stressed about their jobs. And work stress is not just making us unhappy — it can also spur some serious health problems. Here are nine alarming ways your high-pressure career could be messing with your health.

HIGHER HEART ATTACK RISK

Here's a big reason to de-stress at your desk: A 2012 University College London review of studies found that people with demanding, high-pressure jobs have a 23 percent higher risk of heart attack than those without stressful jobs.

INCREASED RISK OF DIABETES

Women with stressful jobs are at a greater risk for developing diabetes, according to a 2012 study published in the *Journal of Occupational Medicine*. However, researchers did not find that work-related stress had this same effect for men.

HIGHER RISK OF DEATH

Many of us like to complain about how our jobs are "killing" us, and it turns out that there may be some truth in the jest. A 20-year study by researchers at Tel Aviv University found that individuals who worked in a hostile office environment had a significantly increased risk of death compared to those who did not work in a hostile environment.



ACCELERATED AGING

We've all seen before-and-after photos of U.S. presidents. It's immediately obvious how much they've aged, and the science suggests that the stress of the job could be to blame. Recent research has linked work stress to accelerated aging, showing that individuals with the highest levels of work stress had the shortest telomeres (DNA sections that have been linked with longevity).

DEPRESSION

According to a 2011 study published in the journal *PLOS ONE*, those who work 11-hour-plus days are twice as likely to suffer from a major depressive episode as those who work more reasonable hours. Depression, in turn, has been linked with negative health outcomes including a shorter life expectancy, increased stroke and heart attack risk, disrupted sleep and addiction, according to WebMD.

Your Commute Is Killing You

Long commutes cause obesity, neck pain, loneliness, divorce, stress, and insomnia.

By Annie Lowrey | Posted Thursday, May 26, 2011, at 5:57 PM

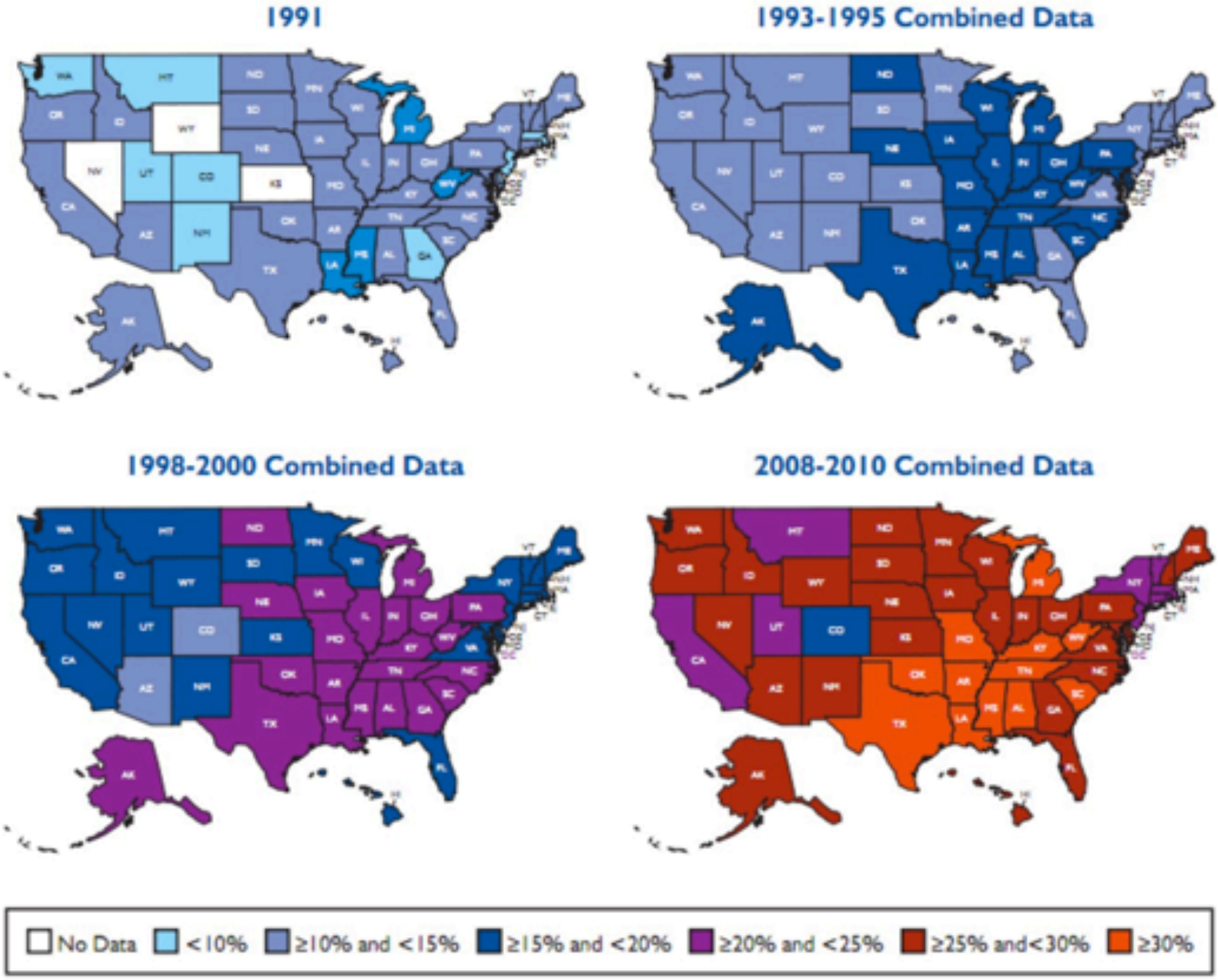
Also in Slate, Tom Vanderbilt asks if Twitter and tweets about traffic will change the way we drive, and he looked at whether bus drivers might have the most stressful job on the planet.



This week, researchers at Umea University in Sweden released a startling finding: Couples in which one partner commutes for longer than 45 minutes are 40 percent likelier to divorce. The Swedes could not say why. Perhaps long-distance commuters tend to be poorer or less educated, both conditions that make divorce more common. Perhaps long transit times exacerbate corrosive marital inequalities, with one partner overburdened by child care and the other overburdened by work. But perhaps the Swedes are just telling us something we all already know, which is that commuting is bad for you. Awful, in fact.

Commuting is a migraine-inducing life-suck—a mundane task about as pleasurable as assembling flat-pack furniture or getting your license renewed, and you have to do it *every day*. If you are commuting, you are not spending quality time with your loved ones. You are not exercising, doing challenging work, having sex, petting your dog, or playing with your kids (or your Wii). You are not doing any of the things that make human beings happy. Instead, you are getting nauseous on a bus, jostled on a train, or cut off in traffic.

Obesity Trends in the U.S.

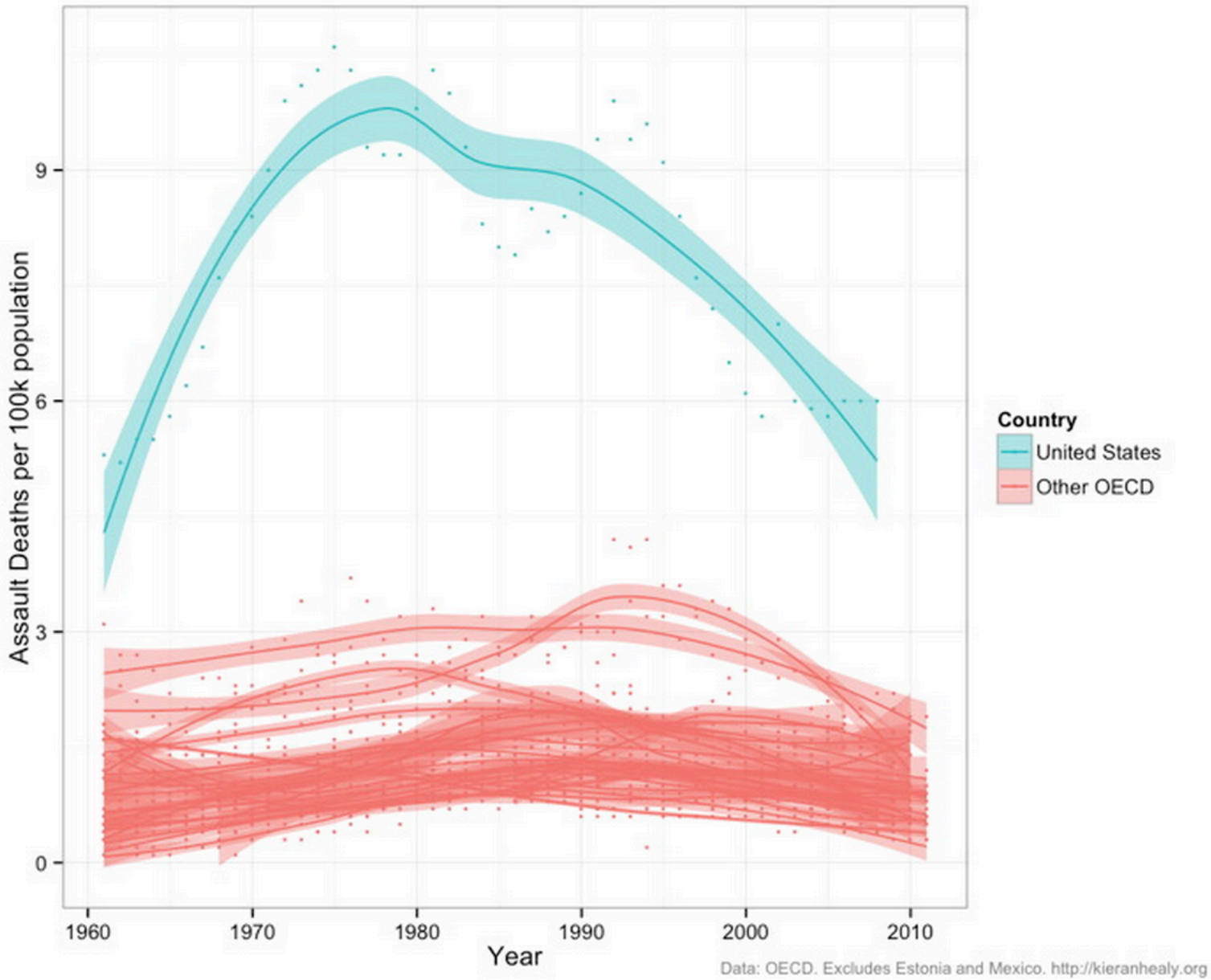



24 HOUR
FITNESS




STOP
OZY 367


E Fairchild Dr
E Courtland Pl
Fairchild Dr
S Broadway
Fairchild Dr
Michener Way
Walk Score
9
Car-Dependent
Agree
Disagree
Almost all errands require a car.


Assault Deaths per 100k population
9
6
3
0
1960
1970
1980
1990
2000
2010
Year
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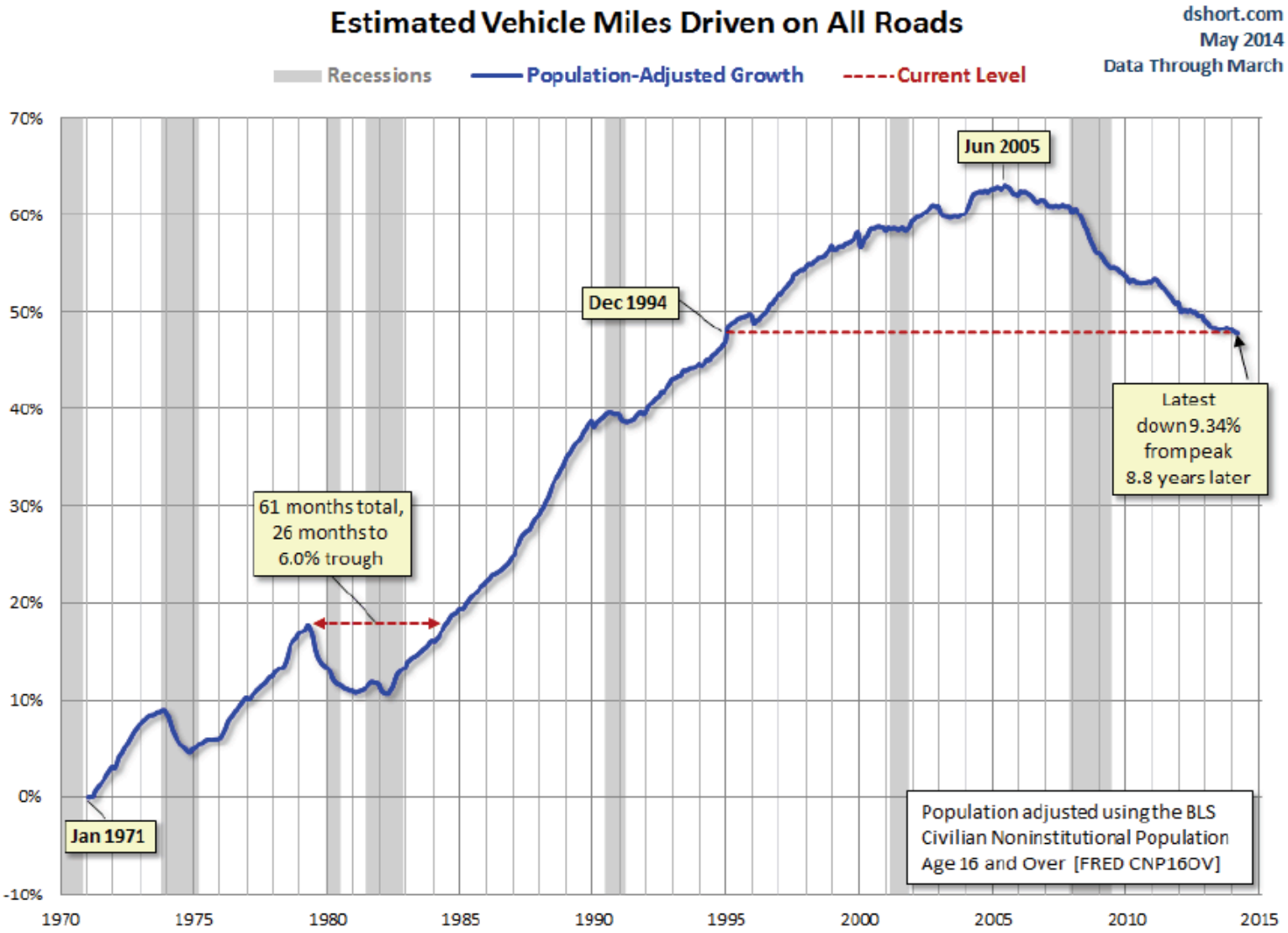
United States
Other OECD
Data: OECD. Excludes Estonia and Mexico. http://kieranhealy.org

Figure 16

Estimated vehicle miles driven on all roads in the United States

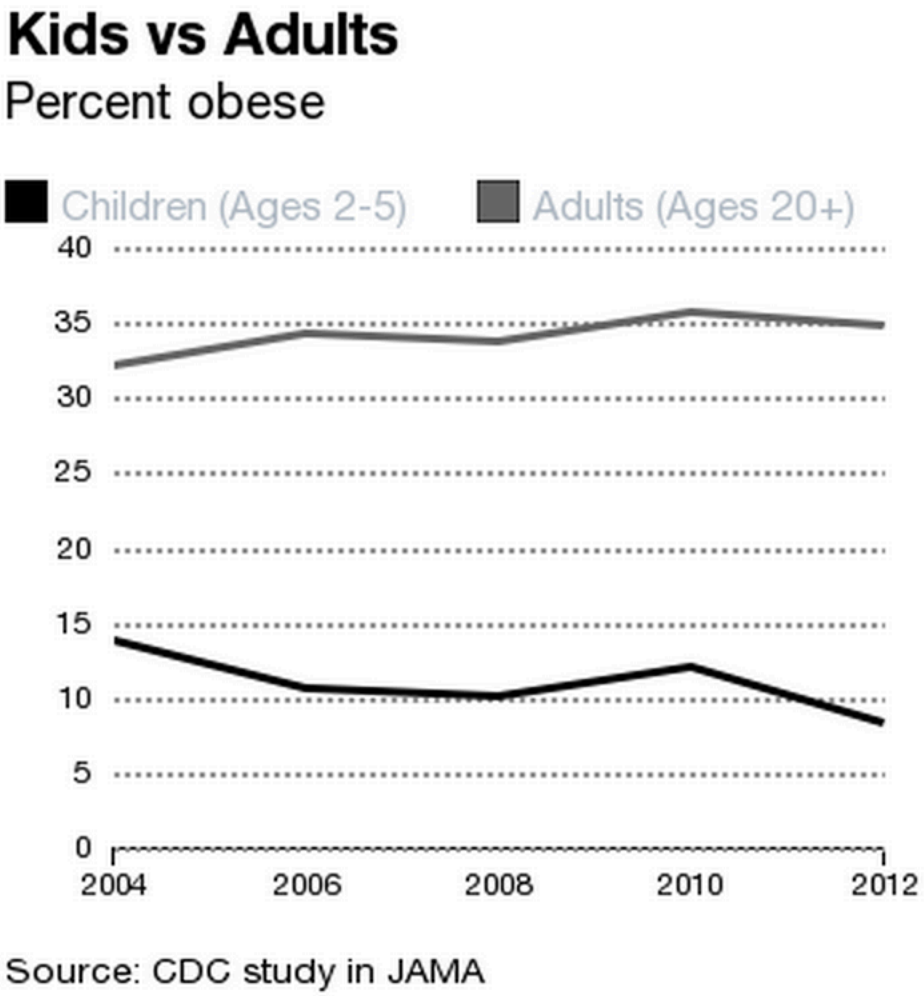


Source: Short 2014

Social Issues

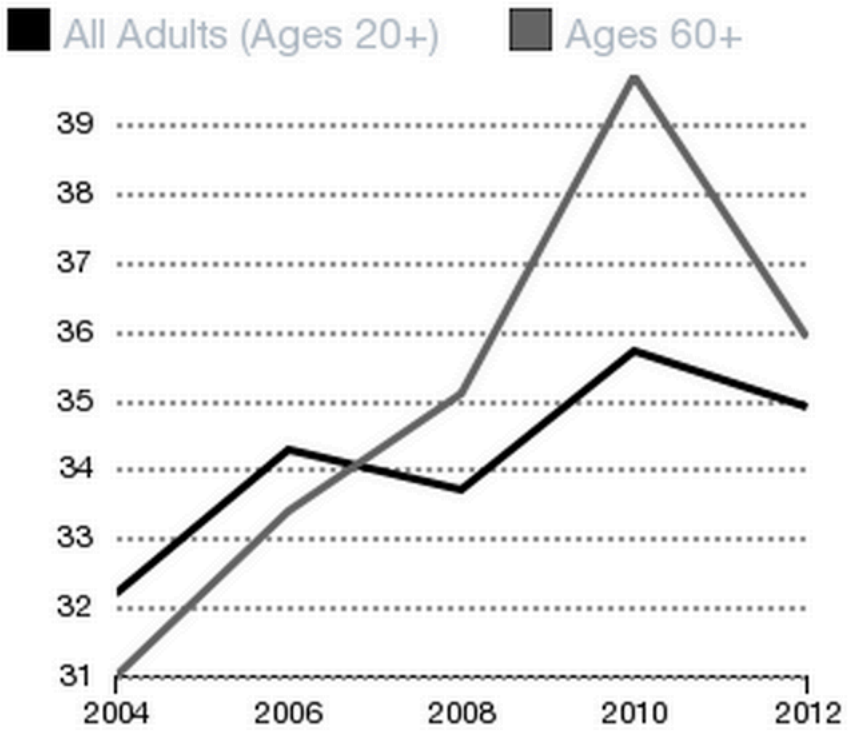
Five Charts on American Obesity: The Youngest Kids Are Alright

By Venessa Wong | February 26, 2014



Elderly vs All Adults

Percent obese



Source: CDC study in JAMA

Why Your ZIP Code May Be More Important to Your Health Than Your Genetic Code

This commentary by James Marks, MD, MPH, originally appeared April 23, 2009, on The Huffington Post.

April 23, 2009

Tweet 1 g+1 0 Like 0 Share Print

How you see a problem drives how you create the solution.

We are not a healthy country. And while health reform focuses on coverage, cost, access and care, this is simply triage to a system that fails to ask the question "Why aren't we healthier in the first place?" Our health reform debate is focusing on where health ends (with medical care) and not on where our health begins (where we live, learn, work and play).

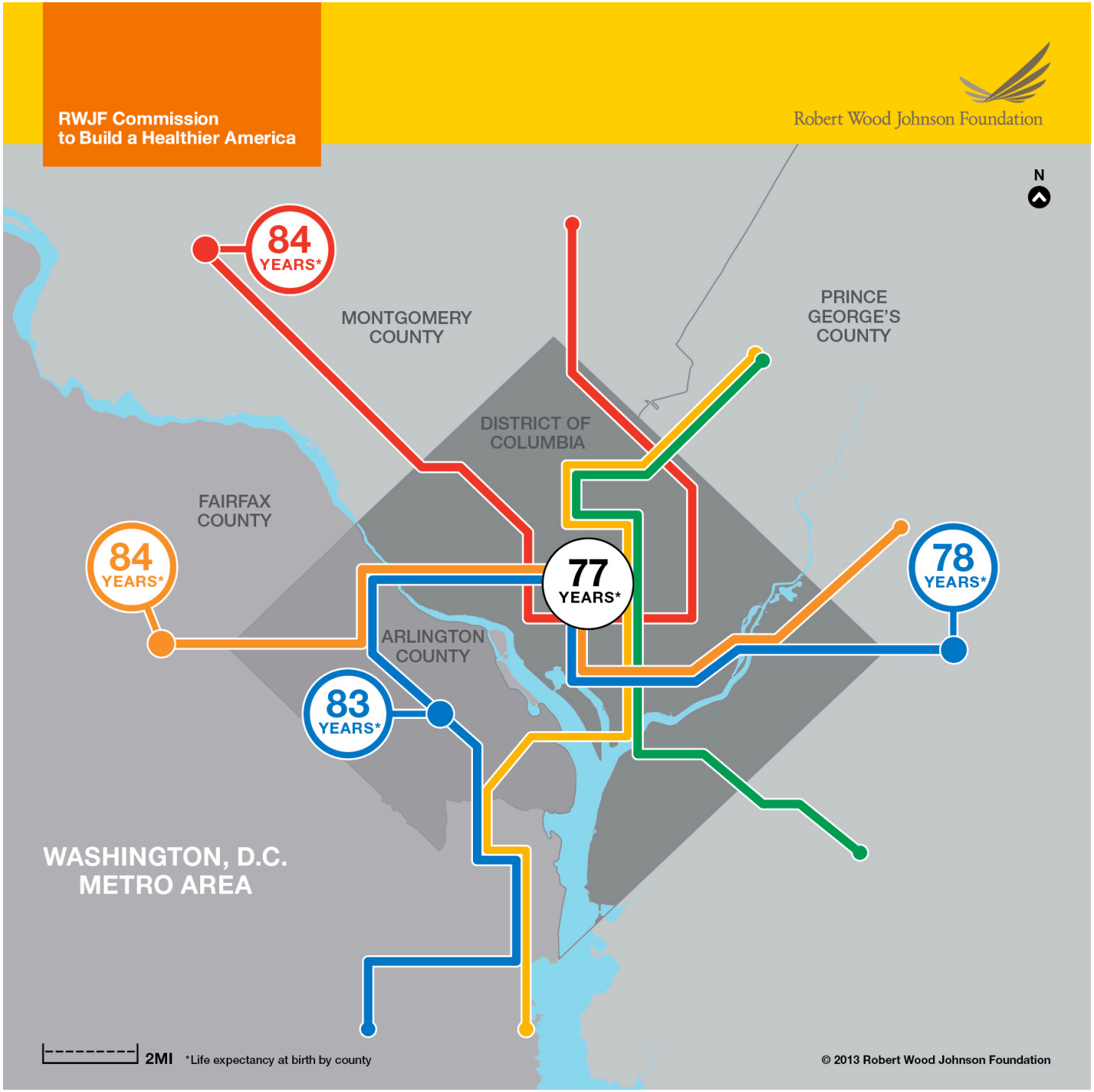
This month, the Robert Wood Johnson Foundation Commission to Build a Healthier America released a report about all of those other things. This report comes out of a bi-partisan commission created to look at the factors that affect Americans' health in our homes, our work environments, and our communities. In wonky terms, we call these factors "social determinants of health." In plain English, the Commission's purpose was to look for ways beyond medical care that could improve our health.

What do we mean by "beyond medical care?" There is a ton of evidence that shows where and how people live, learn, work and play has a tremendous impact on our health. And while this link may seem intuitive to most, the extent of the relationship is not reflected in either the way we

Recommended

Topics

Social Determinants of Health →



7 yrs

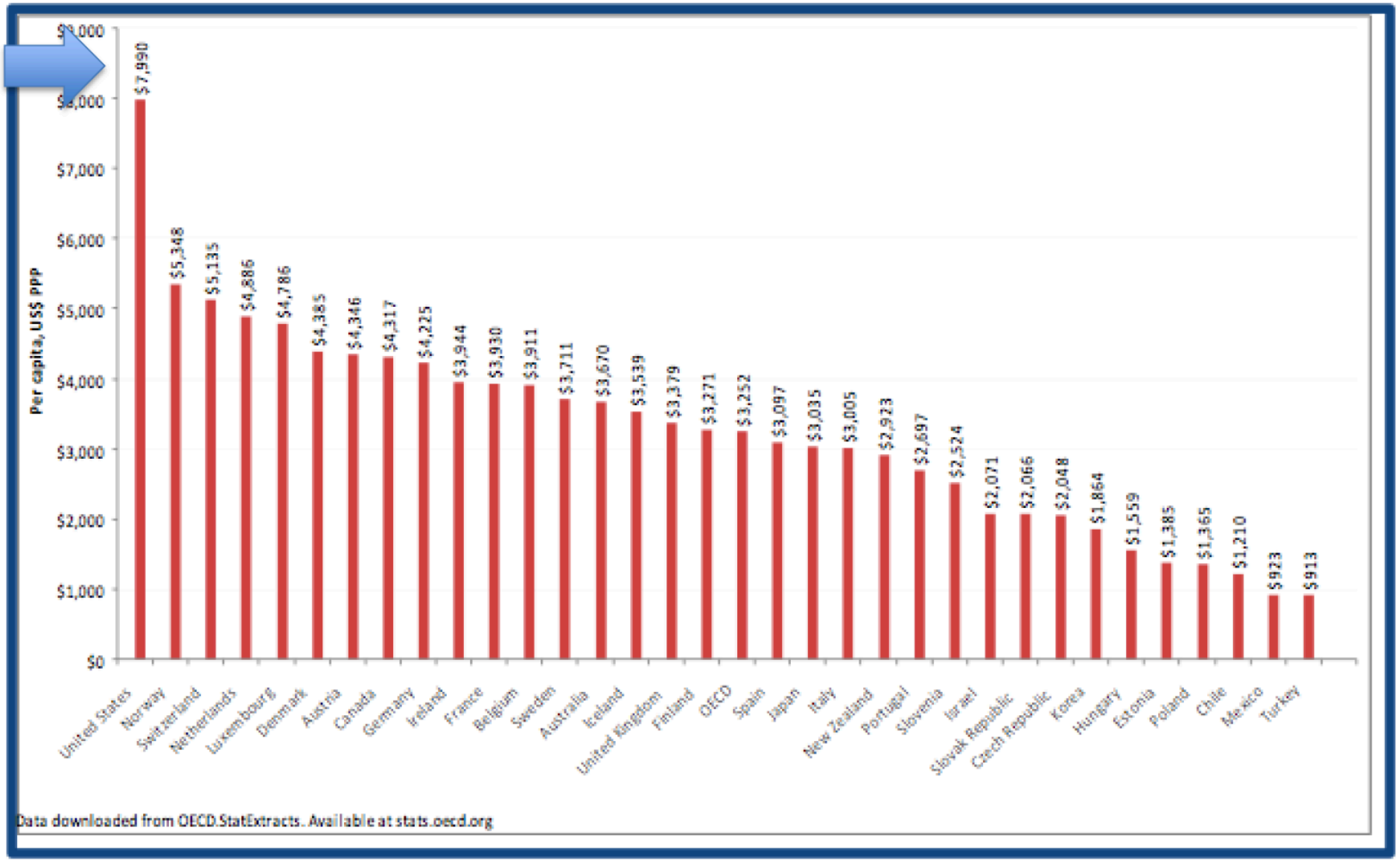
Just a few metro stops can mean a 7-yr life expectancy difference for babies born in the D.C. area.

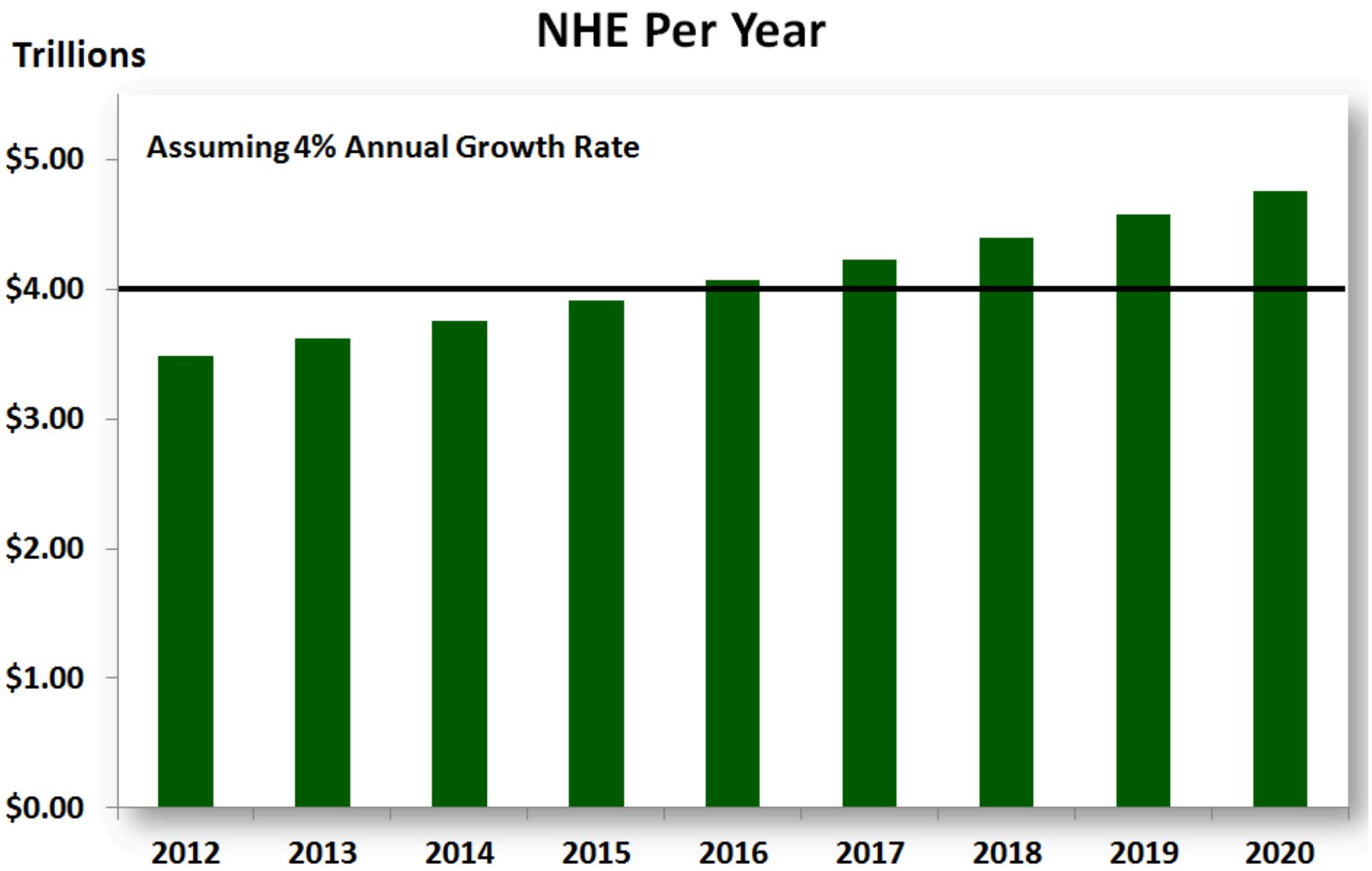


25 yrs

Just a few miles can mean a 25-yr difference in life expectancy for babies born in New Orleans.

Spending on health care




NHE Per Year
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$2.00
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$0.00
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2015
2016
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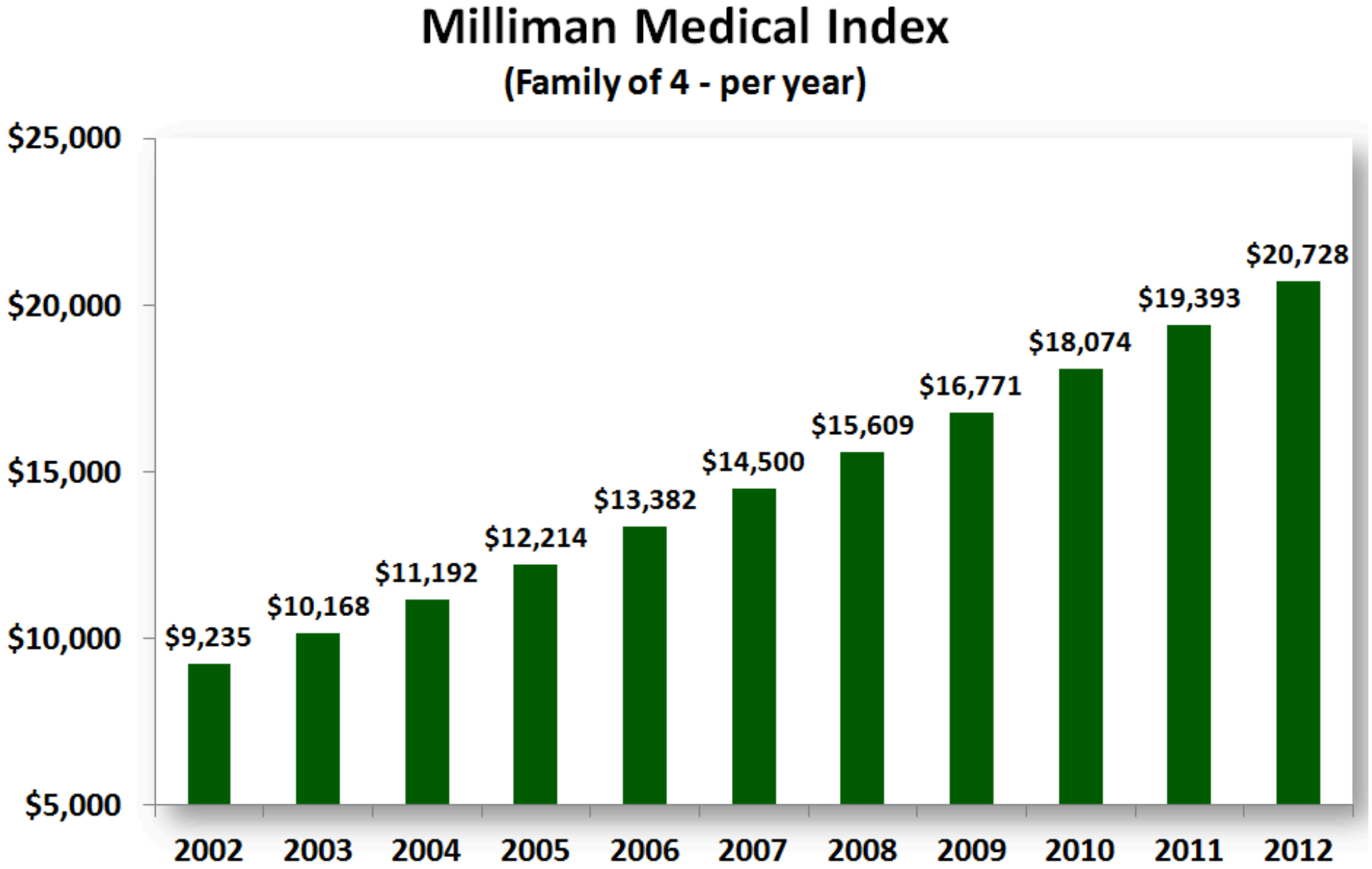
2018
2019
2020


Milliman Medical Index
(Family of 4 - per year)
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$20,000
$15,000
$10,000
$5,000
$9,235
$10,168
$11,192
$12,214
$13,382
$14,500
$15,609
$16,771
$18,074
$19,393
$20,728
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012

Health outcomes

US Ranking out of 34 OECD countries

Maternal Mortality: 25th

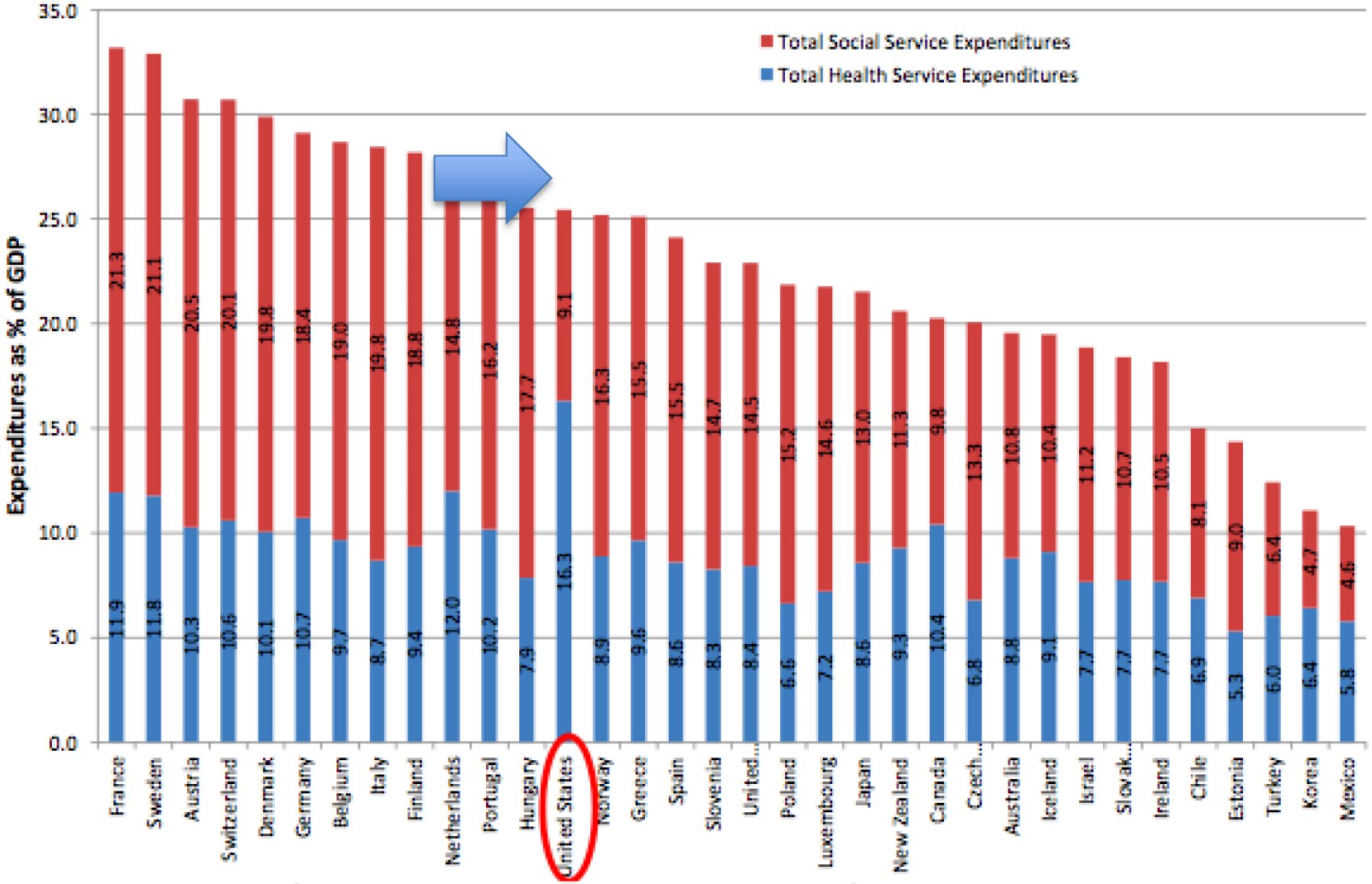
Life expectancy: 26th

Low birth weight: 28th

Infant mortality: 31st

Source: OECD, *Health at a Glance 2009*: OECD Publishing

Total health care investment in US is *less*

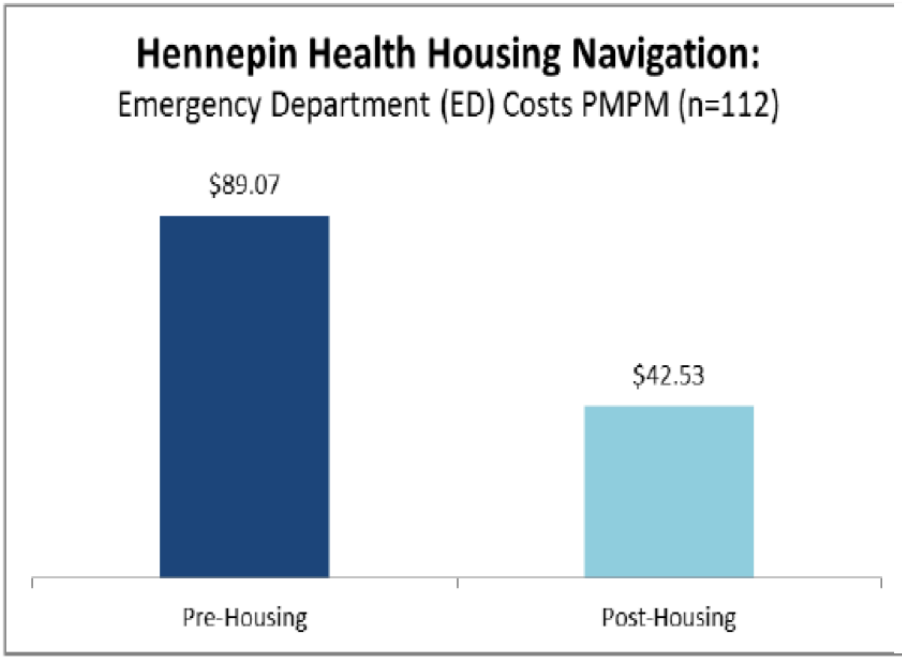


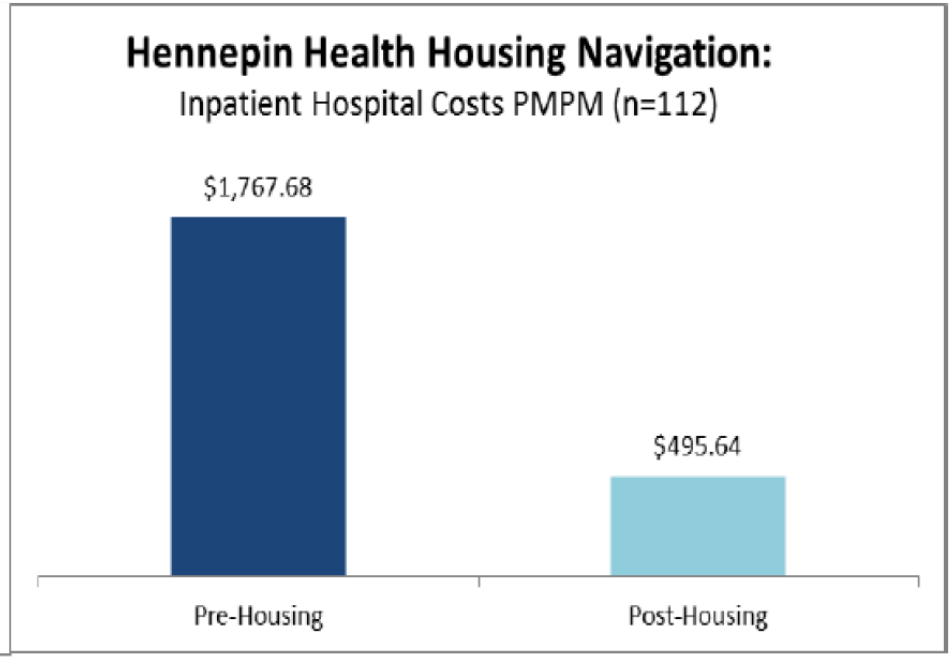
n OECD, for every $1 spent on health care, about $2 is spent on social services

n the US, for $1 spent on health care, about 55 cents is spent on social services

Results and Outcomes

- Housing- (112 patients)
  - -52% decrease ED costs pmpm,
  - -72% decrease inpatient costs pmpm



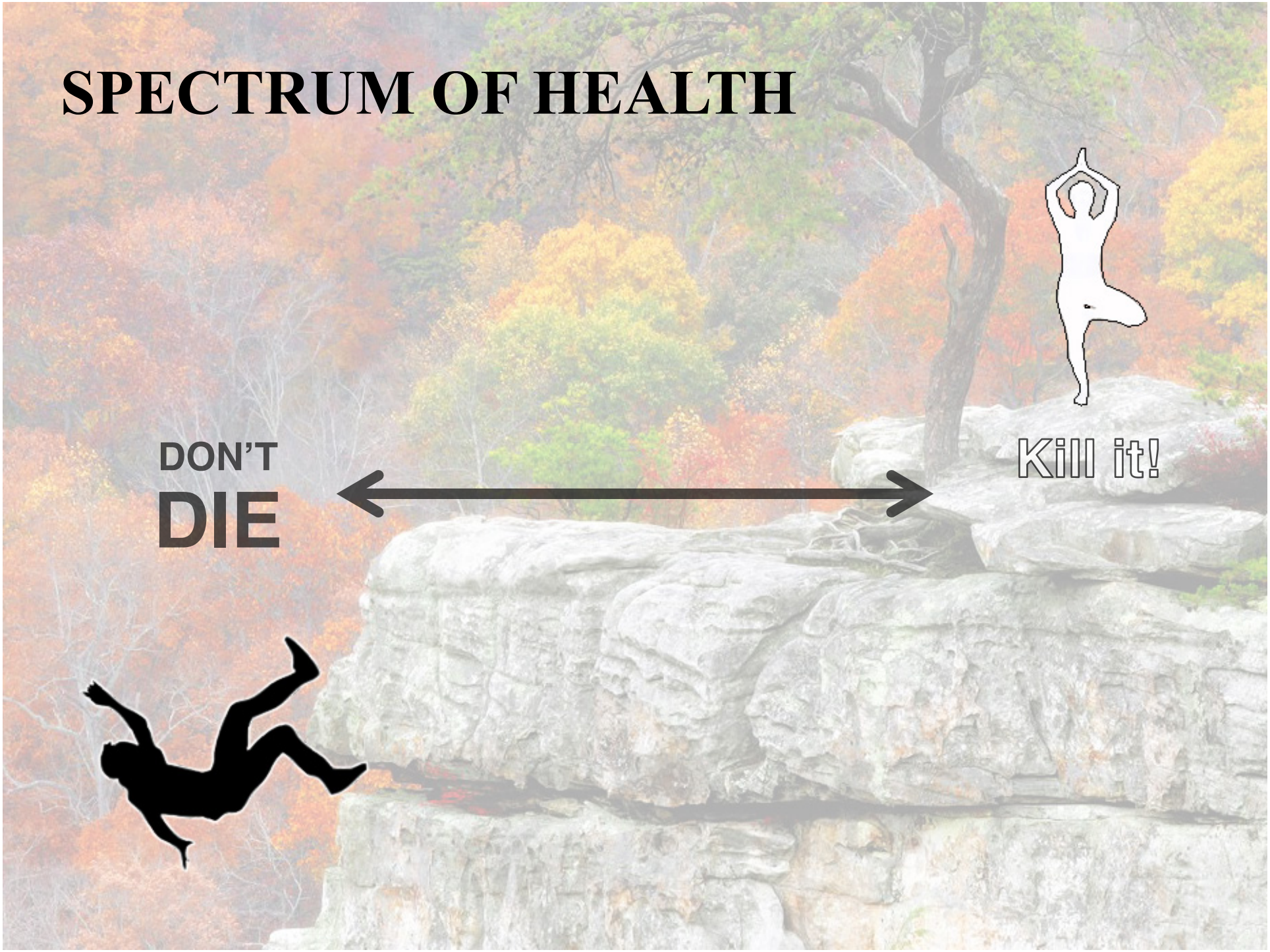


The New York Medicaid Redesign Team's Supportive-Housing Allocation Plan, Fiscal Year 2012–2		
Project	**Description**	**Funding** *dollars*
NY/NY III acceleration†	Capital funding to leverage unutilized federal housing tax credits to accelerate funding of NY/NY III units for high-cost Medicaid populations.	25,000,000
Coler–Goldwater project	Funding to construct 171 apartments for current residents of a skilled nursing facility who could instead live safely in a community setting.	7,300,000
Homeless Housing and Assistance Program update	Capital funding to construct new supportive housing units for high-cost Medicaid populations.	14,365,000
Expansion of existing rental or service subsidies	Funding directed to multiple New York State agencies (Supportive Housing Program, Office for People with Developmental Disabilities, Office of Mental Health, Office of Alcoholism and Substance Abuse Services, Department of Health AIDS Institute) to provide services to specific subpopulations who are of high cost to Medicaid and are homeless, at risk for homelessness, or living in institutional settings and able to transition to the community.	25,324,000
Office of Temporary and Disability Assistance subsidies	Funding to pay for ongoing rent subsidies for 300 formerly homeless persons with disabilities facing imminent eviction in New York City.	2,600,000
Other	Funding for supportive and permanent housing initiatives in Long Island (Long Island Housing for Persons with Disabilities) and the Bronx ("The Claremont").	411,000
Total		75,000,000

* Details on the Supportive Housing Allocation Plan are available at www.health.ny.gov/health_care/medicaid/ lesign/affordable_housing_workgroup.htm.

† NY/NY III was a joint agreement by New York State and New York City signed in 2005 to provide 9000 supportive-housing units to specific target populations of homeless people in New York City (http://shnny.org/budget-policy/nyc/ny-ny/ny-ny-iii).

SPECTRUM OF HEALTH



Urban Land Institute
Building Healthy Places Initiative

BUILDING HEALTHY PLACES

TOOLKIT







STRATEGIES FOR **ENHANCING HEALTH** IN THE **BUILT ENVIRONMENT**

http://uli.org/research/centers-initiatives/building-healthy-places-initiative/building-healthy-places-toolkit/

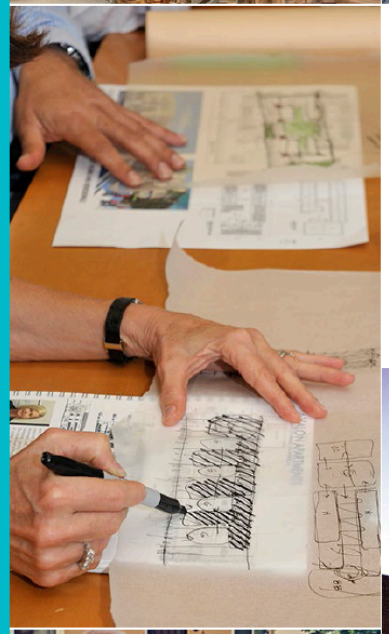
KEY

Evidence-Based Recommendations

1. Incorporate a mix of land uses
2. Design well-connected street networks at the human scale
3. Provide sidewalks and enticing, pedestrian-oriented streetscapes
4. Provide infrastructure to support biking
5. Design visible, enticing stairs to encourage everyday use
6. Install stair prompts and signage
7. Provide high-quality spaces for multigenerational play and recreation
8. Build play spaces for children
9. Accommodate a grocery store
10. Host a farmers market
11. Promote healthy food retail
12. Support on-site gardening and farming
13. Enhance access to drinking water
14. Ban smoking
15. Use materials and products that support healthy indoor air quality
16. Facilitate proper ventilation and airflow
17. Maximize indoor lighting quality
18. Minimize noise pollution
19. Increase access to nature
20. Facilitate social engagement
21. Adopt pet-friendly policies







2015 ENTERPRISE GREEN COMMUNITIES CRITERIA





2015 ENTERPRISE GREEN COMMUNITIES CRITERIA

M

1.2a Resident Health and Well-Being: Design for Health

Identify potential resident health factors and design your project to address resident health and well-being by using the matrix provided on pages 22 and 23.

12

1.2b Resident Health and Well-Being: Health Action Plan

At pre-design and continuing throughout the project life cycle, collaborate with public health professionals and community stakeholders to assess, identify, implement and monitor achievable actions to enhance health-promoting features of the project and minimize features that could present health risks. Specifically, create a Health Action Plan and integrate the selected interventions and a plan for monitoring and evaluating progress per the full criterion.

M

1.3a Resilient Communities: Design for Resilience *(New Construction and Substantial Rehab only)*

Given your project building type, location and expected resident population, identify a project characteristic that would most likely impact your project's ability to withstand an unexpected weather event or loss of power. Select at least one criterion from the given list that would help mitigate that impact, and incorporate this within your project plans and design. Include a short narrative providing your rationale for selecting this criterion above the others.

M

7.12 Active Design: Promoting Physical Activity Within the Building

Situate at least one building stairway per the criterion to encourage use **OR** emphasize at least one strategy inside the building designed to increase frequency and duration of physical activity per the criterion.

10

7.13 Active Design: Staircases and Building Circulation

A staircase must be accessible and visible from the main lobby as well as visible within a 25-foot walking distance from any edge of lobby. Ensure that no turns or obstacles prevent visibility of or accessibility to the qualifying staircase from the lobby, and that the staircase is encountered before or at the same time as the elevators.

From the corridor, accessible staircases should be made visible by: Providing transparent glazing of at least 10 square feet (1 square meter) at all stair doors or at a side light **OR** providing magnetic door holds on all doors leading to the stairs **OR** removing door enclosures/vestibules.

9

7.14 Interior and Outdoor Activity Spaces for Children and Adults

Provide an on-site dedicated recreation space with exercise or play opportunities for adults and/or children that is open and accessible to all residents; see criterion for specifics.

The WELL BUILDING STANDARD®









THE SEVEN CONCEPTS OF THE WELL BUILDING STANDARD®



Concept	Preconditions		Optimizations		Wellness Score
	Applicable	Achieved	Applicable	Achieved	
Air	12	12	17	3	5.9
Water	5	5	3	0	5
Nourishment	8	8	7	7	10
Light	4	4	7	2	6.4
Fitness	2	2	6	3	7.5
Comfort	5	5	7	2	6.4
Mind	5	5	14	12	9.3
Total	41	41	61	29	7.4
				Final Wellness Score	7


ACTIVE
DESIGN
GUIDELINES
PROMOTING PHYSICAL ACTIVITY
AND HEALTH IN DESIGN


STREET
CLOSED
11:30AM-1:30PM
SCHOOL DAYS


EXIT

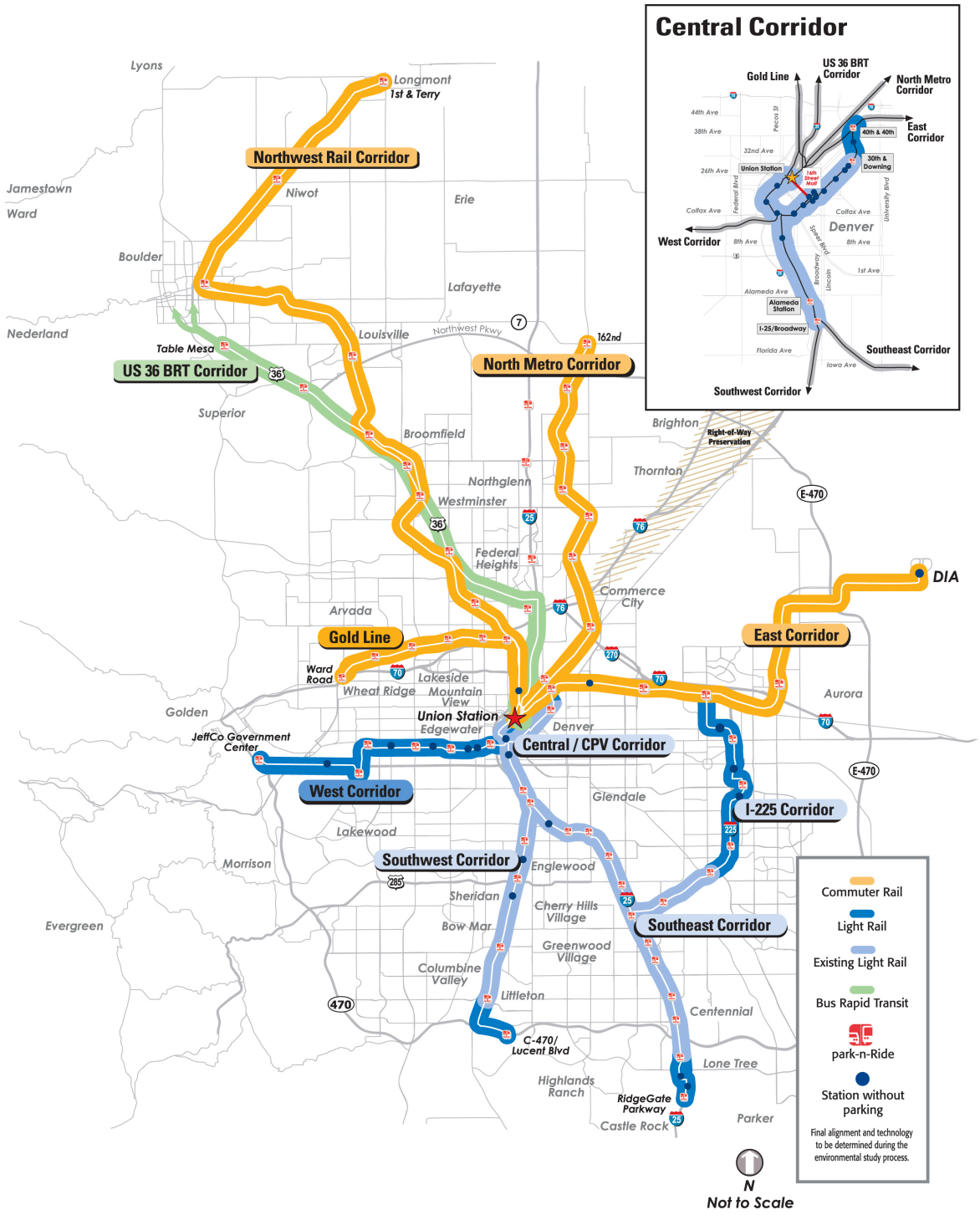

patagonia
33

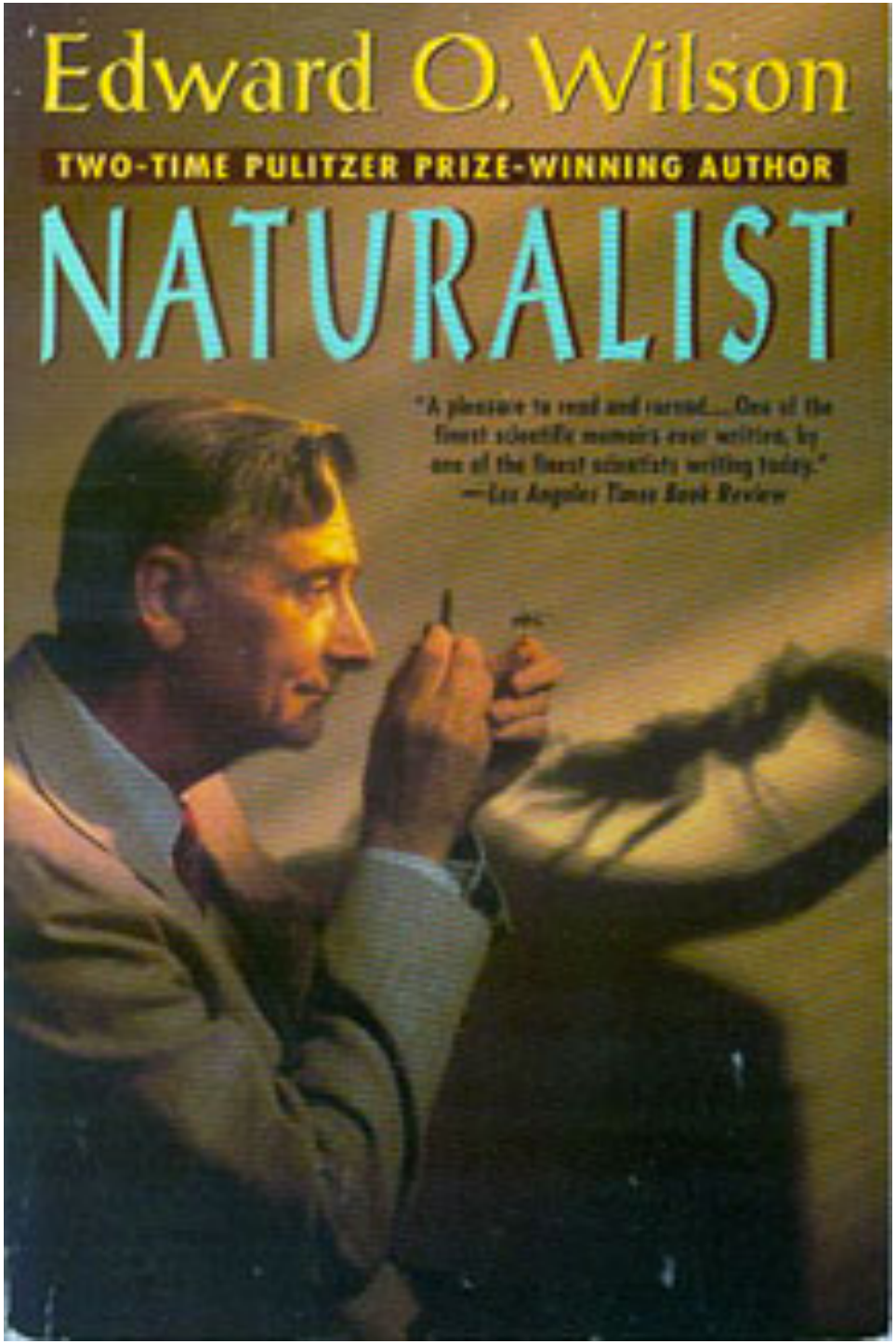







UNION STATION
TRAVEL BY TRAIN
© 2014, Ryan Dravitz
WWW.RYANDRAVITZPHOTOGRAPHY.COM


Central Corridor
US 36 BRT Corridor
Gold Line
North Metro Corridor
East Corridor
West Corridor
Southeast Corridor
Southwest Corridor
Union Station
Denver
Lyons
Longmont
1st & Terry
Northwest Rail Corridor
Jamestown
Ward
Niwot
Erie
Boulder
Lafayette
Nederland
Louisville
Northwest Pkwy
Table Mesa
US 36 BRT Corridor
Superior
Broomfield
162nd
North Metro Corridor
Brighton
Right-of-Way Preservation
Thornton
Northglenn
Westminster
Federal Heights
Commerce City
DIA
Arvada
Gold Line
East Corridor
Ward Road
Wheat Ridge
Lakeside
Mountain View
Union Station
Edgewater
Denver
Aurora
Golden
JeffCo Government Center
Central / CPV Corridor
West Corridor
Glendale
I-225 Corridor
Lakewood
Southwest Corridor
Englewood
Morrison
Sheridan
Cherry Hills Village
Bow Mar
Southeast Corridor
Evergreen
Greenwood Village
Columbine Valley
Littleton
Centennial
C-470/ Lucent Blvd
Lone Tree
Highlands Ranch
RidgeGate Parkway
Castle Rock
Parker
Commuter Rail
Light Rail
Existing Light Rail
Bus Rapid Transit
park-n-Ride
Station without parking
Final alignment and technology to be determined during the environmental study process.
N
Not to Scale



Biophilia suggests humans seek out deep connections to the natural world, and this motivation is rooted in our biology

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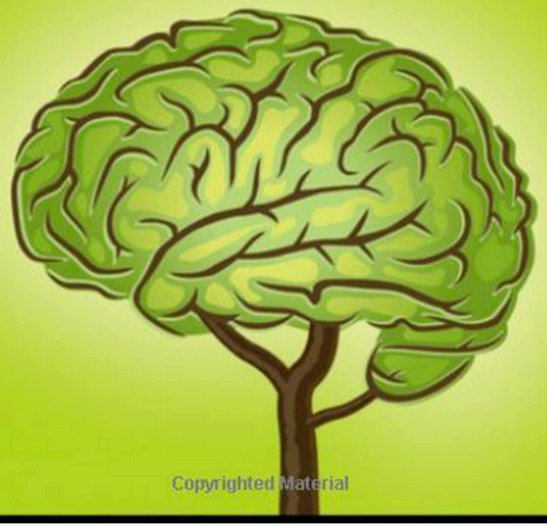
EVA M. SELHUB MD ALAN C. LOGAN ND

Your Brain — on — NATURE

The Science of Nature's Influence on Your Health, Happiness, and Vitality



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What Research Says

1. Urbanites with access to green space are happier and have more social cohesion
2. Office workers with nature access are less stressed / more productive
3. Surgery patients with a view of the outdoors heal faster
4. Kids are better at learning in daylit classrooms
5. Technology surrogates for nature are not as good as the real thing





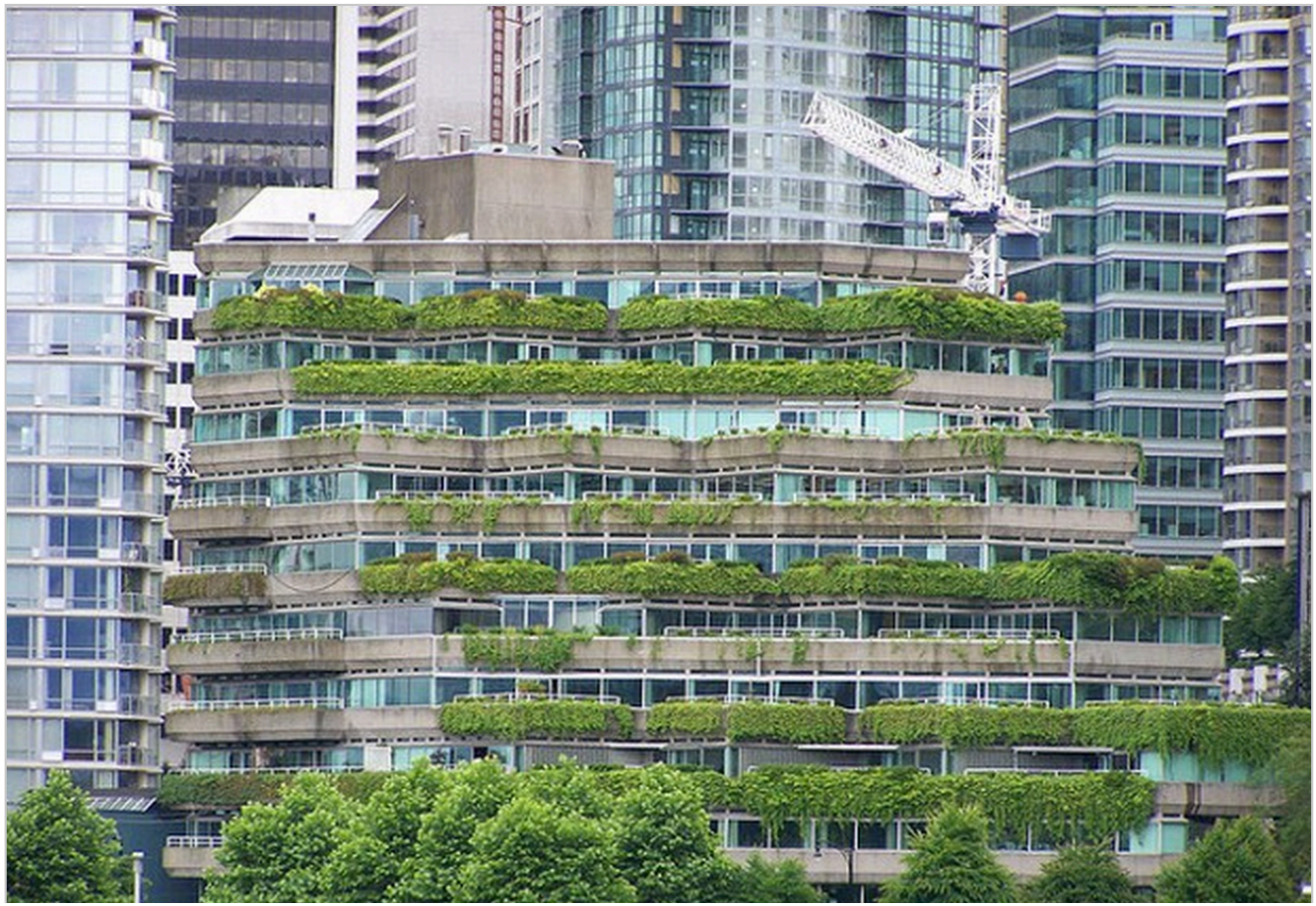


How a Quick Glimpse of Nature Can Make You More Productive

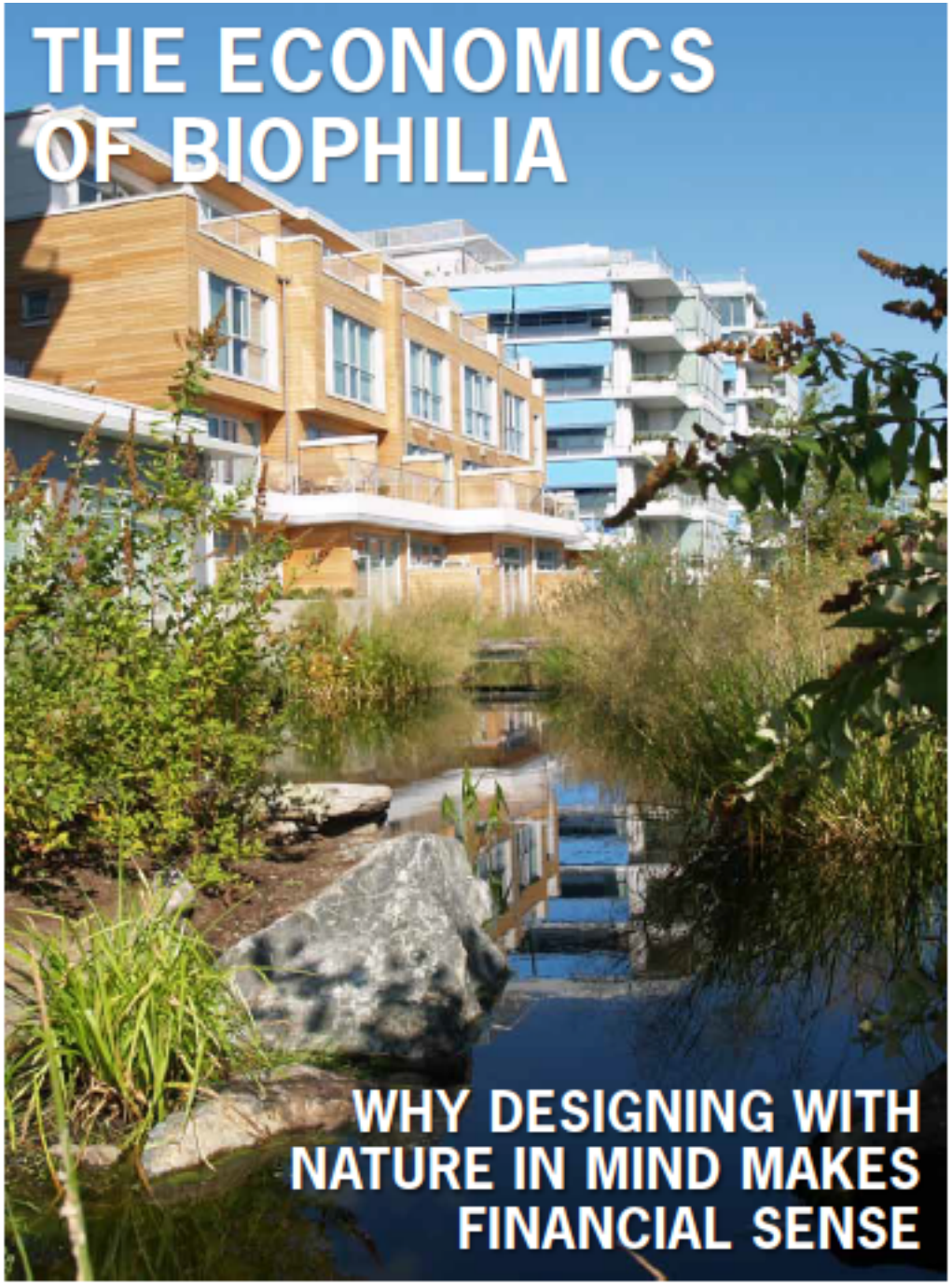
Green roofs are great for the environment. Turns out they're great for tired workers, too.

ERIC JAFFE | @e_jaffe | May 5, 2015 | 3 Comments

1.8k Shares Share on Facebook Tweet

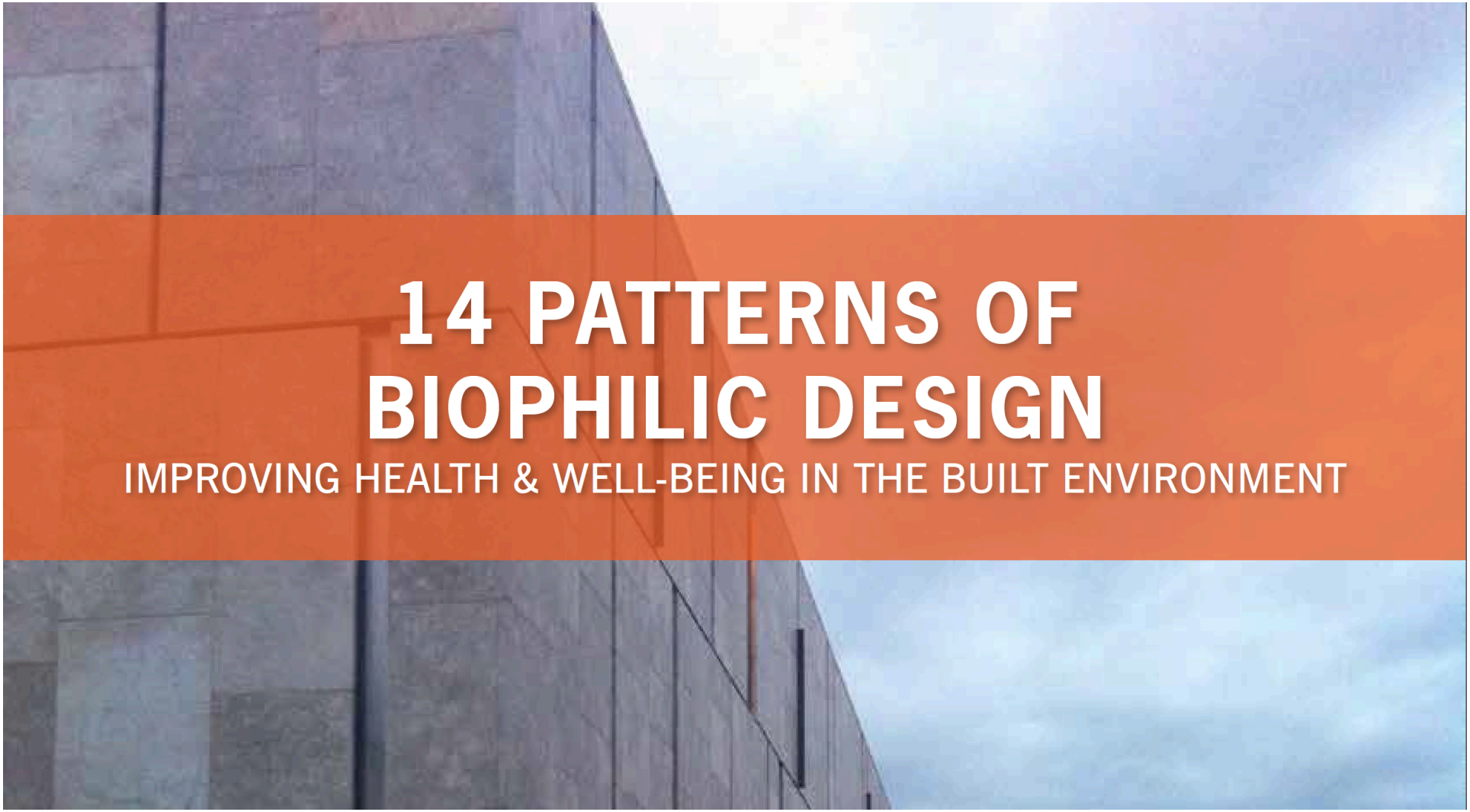


THE ECONOMICS OF BIOPHILIA



WHY DESIGNING WITH NATURE IN MIND MAKES FINANCIAL SENSE

© 2012 Terrapin Bright Green LLC



14 PATTERNS OF BIOPHILIC DESIGN

IMPROVING HEALTH & WELL-BEING IN THE BUILT ENVIRONMENT

	14 PATTERNS	*	STRESS REDUCTION	COGNITIVE PERFORMANCE	EMOTION, MOOD & PREFERENCE
NATURE IN THE SPACE	**Visual Connection with Nature**	* * *	**Lowered blood pressure and heart rate** (Brown, Barton & Gladwell, 2013; van den Berg, Hartig, & Staats, 2007; Tsunetsugu & Miyazaki, 2005)	**Improved mental engagement/ attentiveness** (Biederman & Vessel, 2006)	**Positively impacted attitude and overall happiness** (Barton & Pretty, 2010)
	Non-Visual Connection with Nature	* *	**Reduced systolic blood pressure and stress hormones** (Park, Tsunetsugu, Kasetani et al., 2009; Hartig, Evans, Jamner et al., 2003; Orsega-Smith, Mowen, Payne et al., 2004; Ulrich, Simons, Losito et al., 1991)	**Positively impacted on cognitive performance** (Mehta, Zhu & Cheema, 2012; Ljungberg, Neely, & Lundström, 2004)	**Perceived improvements in mental health and tranquility** (Li, Kobayashi, Inagaki et al., 2012; Jahncke, et al., 2011; Tsunetsugu, Park, & Miyazaki, 2010; Kim, Ren, & Fielding, 2007; Stigsdotter & Grahn, 2003)
	Non-Rhythmic Sensory Stimuli	* *	**Positively impacted on heart rate, systolic blood pressure and sympathetic nervous system activity** (Li, 2009; Park et al, 2008; Kahn et al., 2008; Beauchamp, et al., 2003; Ulrich et al., 1991)	**Observed and quantified behavioral measures of attention and exploration** (Windhager et al., 2011)	
	Thermal & Airflow Variability	* *	**Positively impacted comfort, well-being and productivity** (Heerwagen, 2006; Tham & Willem, 2005; Wigö, 2005)	**Positively impacted concentration** (Hartig et al., 2003; Hartig et al., 1991; R. Kaplan & Kaplan, 1989)	**Improved perception of temporal and spatial pleasure (alliesthesia)** (Parkinson, de Dear & Candido, 2012; Zhang, Arens, Huizenga & Han, 2010; Arens, Zhang & Huizenga, 2006; Zhang, 2003; de Dear & Brager, 2002; Heschong, 1979)
	Presence of Water	* *	**Reduced stress, increased feelings of tranquility, lower heart rate and blood pressure** (Alvarsson, Wiens, & Nilsson, 2010; Pheasant, Fisher, Watts et al., 2010; Biederman & Vessel, 2006)	**Improved concentration and memory restoration** (Alvarsson et al., 2010; Biederman & Vessel, 2006) **Enhanced perception and psychological responsiveness** (Alvarsson et al., 2010; Hunter et al., 2010)	**Observed preferences and positive emotional responses** (Windhager, 2011; Barton & Pretty, 2010; White, Smith, Humphryes et al., 2010; Karmanov & Hamel, 2008; Biederman & Vessel, 2006; Heerwagen & Orians, 1993; Ruso & Atzwanger, 2003; Ulrich, 1983)
	Dynamic & Diffuse Light	* *	**Positively impacted circadian system functioning** (Figueiro, Brons, Plitnick et al., 2011; Beckett & Roden, 2009) **Increased visual comfort** (Elyezadi, 2012; Kim & Kim, 2007)		
	Connection with Natural Systems				**Enhanced positive health responses; Shifted perception of environment** (Kellert et al., 2008)

NON-VISUAL CONNECTION WITH NATURE



EXAMPLES

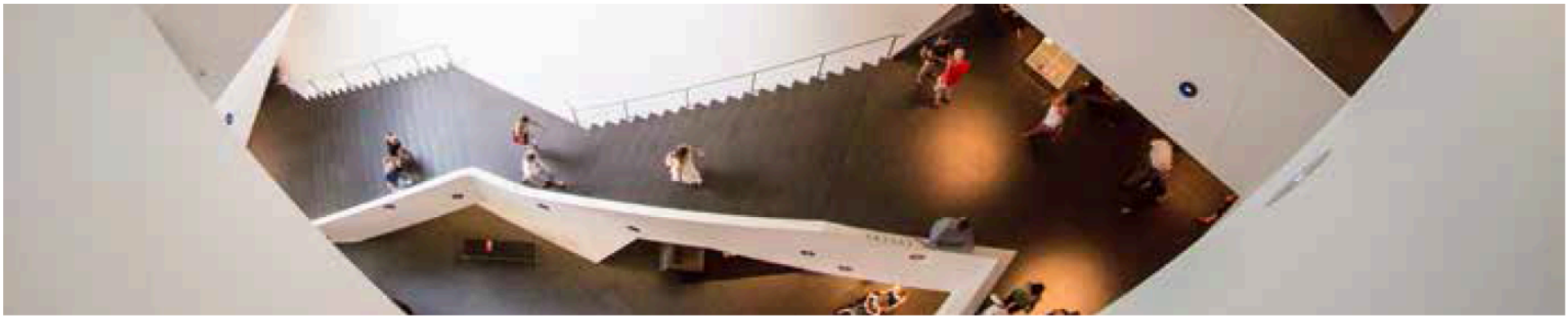
Naturally Occurring

- Fragrant herbs and flowers
- Songbirds
- Flowing water
- Weather (rain, wind, hail)
- Natural ventilation (operable windows, breezeways)
- Textured materials (stone, wood, fur)
- Crackling fire/fireplace
- Sun patches
- Warm/cool surfaces

Simulated or Constructed

- Digital simulations of nature sounds
- Mechanically released natural plant oils
- Highly textured fabrics/textiles that mimic natural material textures
- Audible and/or physically accessible water feature
- Music with fractal qualities
- Horticulture/gardening, including edible plants
- Domesticated animals/pets
- Honeybee apiary

RISK/PERIL

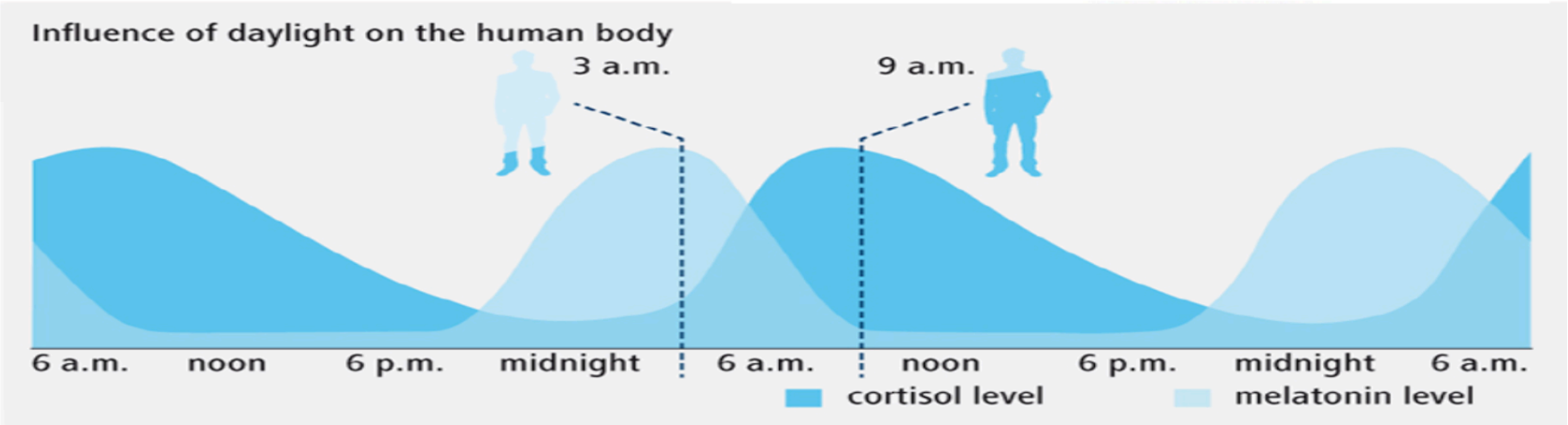




sustainability consulting, education and analysis
T 303.952.5000
yrgxyz.com

DAYLIGHTING AND CIRCADIAN LIGHTING

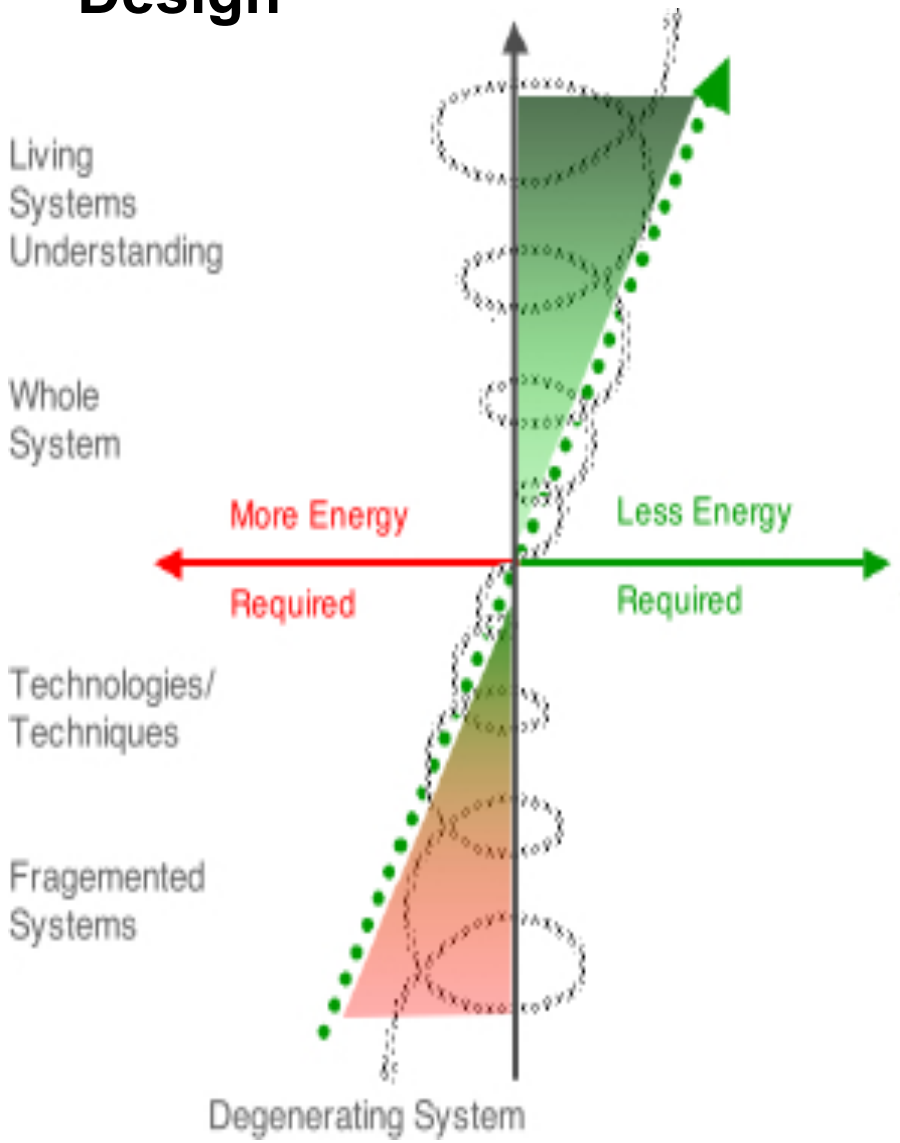
October 2014



THE SUSTAINABLE SITES INITIATIVE™

GUIDELINES AND PERFORMANCE BENCHMARKS 2009

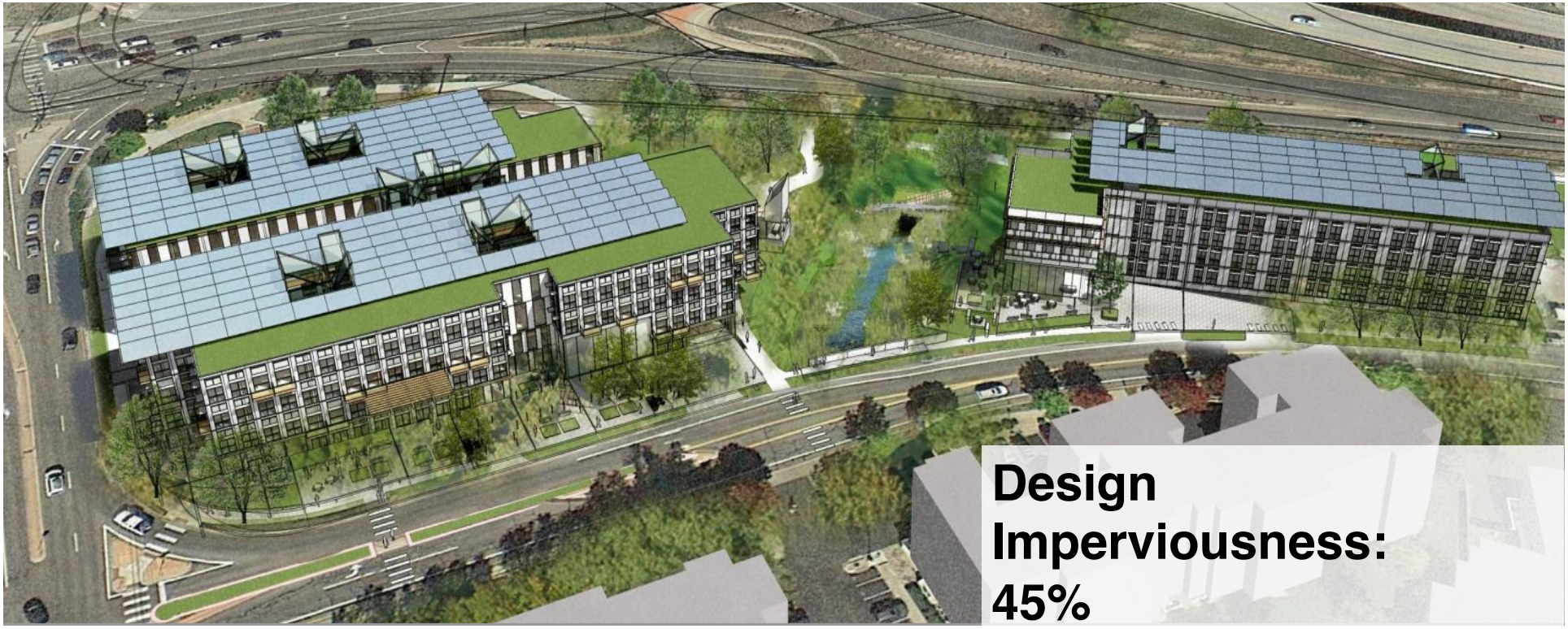
Regenerative Design

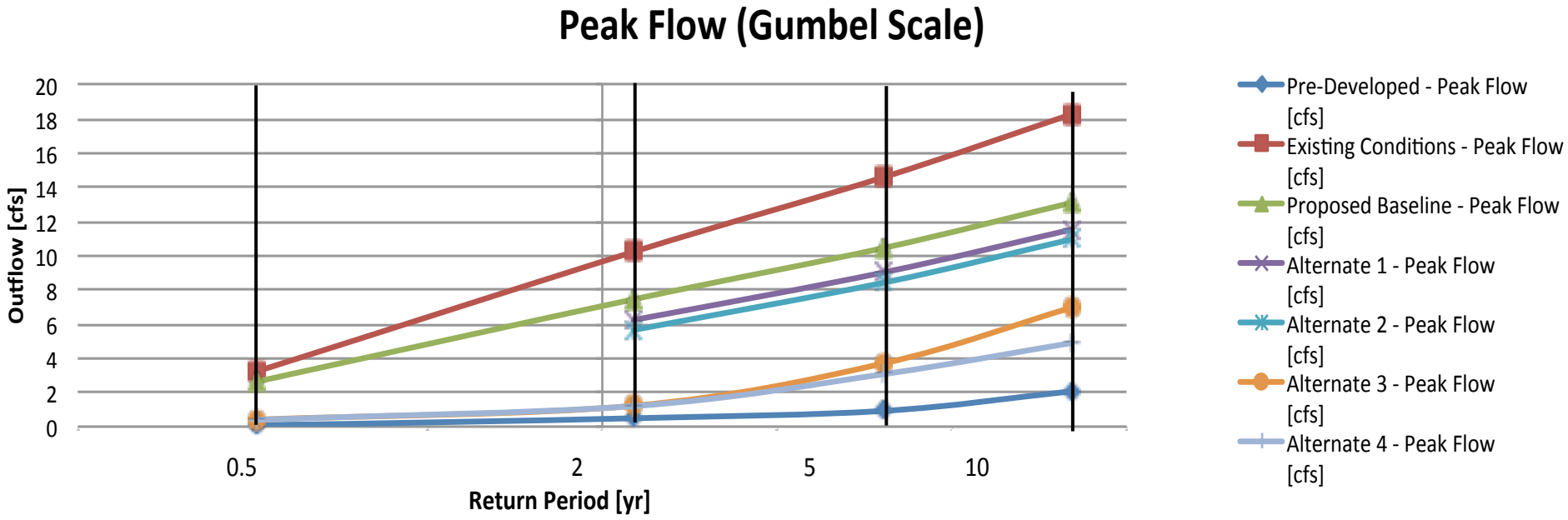


SSI Sample Metrics

- Include non-invasive pedestrian access to wetlands (e.g. boardwalks)
- Restore the riparian and wetland areas
- Rehabilitate the stream channel with native plant communities, appropriate habitat, and water quality improvements
- Treat rainwater as an amenity through the way it is received, conveyed and managed, and made accessible to site users.
- Create distinct habitat areas




Design
Imperviousness:
45%


Peak Flow (Gumbel Scale)
Outflow [cfs]
20
18
16
14
12
10
8
6
4
2
0
0.5
2
5
10
Return Period [yr]
Pre-Developed - Peak Flow [cfs]
Existing Conditions - Peak Flow [cfs]
Proposed Baseline - Peak Flow [cfs]
Alternate 1 - Peak Flow [cfs]
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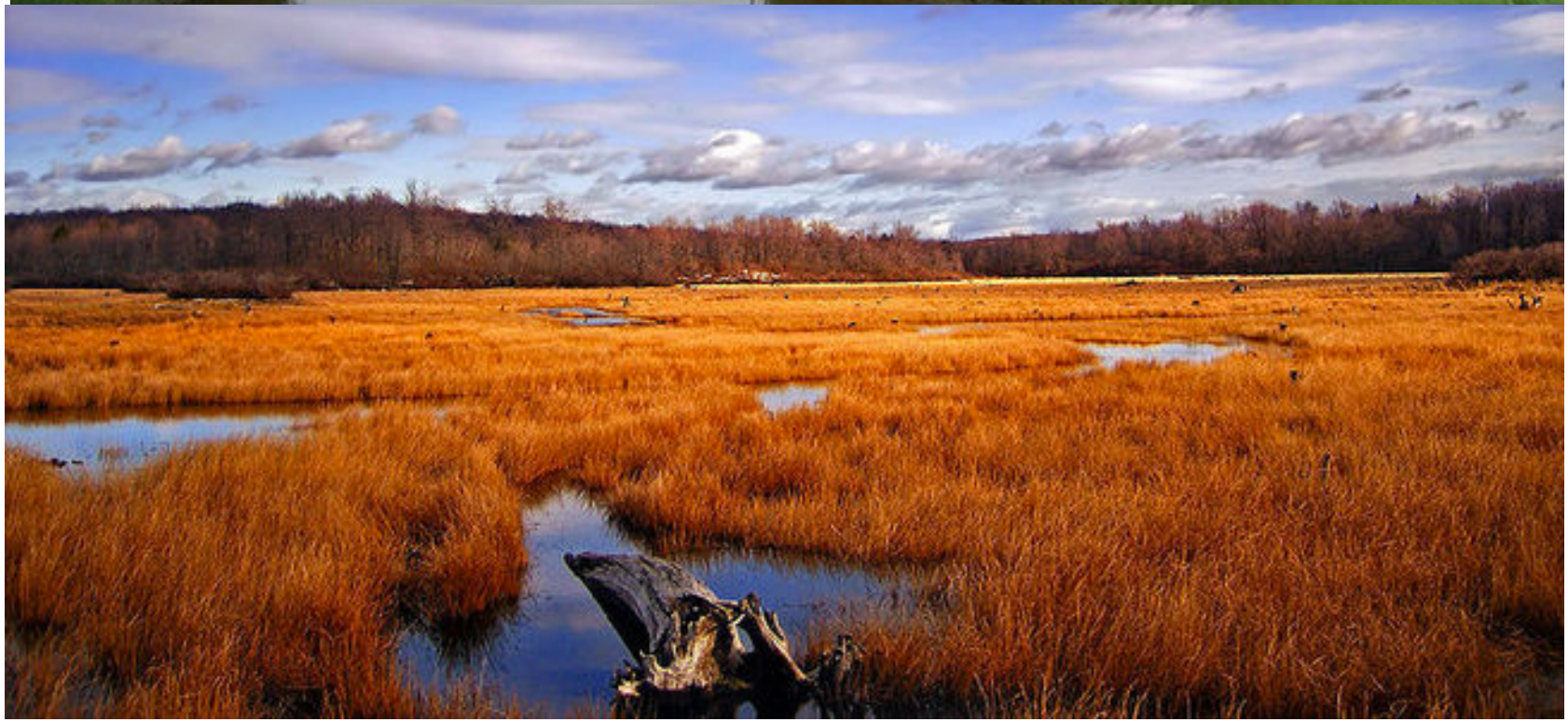
Alternate 3 - Peak Flow [cfs]
Alternate 4 - Peak Flow [cfs]





How to Get High on Soil

M. vaccae, a living creature that resides in your backyard compost pile, acts like a mind-altering drug once it enters the human body, functioning like antidepressant pills to boost your mood.

PAGAN KENNEDY | JAN 31, 2012

M. vaccae, a living creature that resides in your backyard compost pile, acts like a mind-altering drug once it enters the human body, functioning like antidepressant pills to boost your mood.



Antidepressant Microbes In Soil: How Dirt Makes You Happy

By Bonnie L. Grant


Image by amoceptum

Prozac may not be the only way to get rid of your serious blues. Soil microbes have been found to have similar effects on the brain and are without side effects and chemical dependency potential. Learn how to harness the natural antidepressant in soil and make yourself happier and healthier. Read on to see how dirt makes you happy.

Natural remedies have been around for untold centuries. These natural remedies included cures for almost any physical ailment as well as mental and emotional afflictions. Ancient healers may not have known why something worked but simply that it did. Modern scientists have unraveled the why of many medicinal plants and practices but only recently are they finding remedies that were previously unknown and yet, still a part of the natural life cycle. Soil microbes and human health now have a positive link which has been studied





Rain Oculus - Ned Khan


PURPLE MARTIN BREEDING RANGE
WATER TANK MODIFICATIONS
WATER TANK MODIFICATIONS - DETAILS







Ecosystem Services

Provisioning services

- **food (including seafood and game), crops, wild foods, and spices and medicines**
- **water**
- **energy (hydropower, biomass fuels)**

Regulating services

- **carbon sequestration and climate regulation**
- **waste decomposition and detoxification**
- **purification of water and air**
- **crop pollination**
- **pest and disease control**

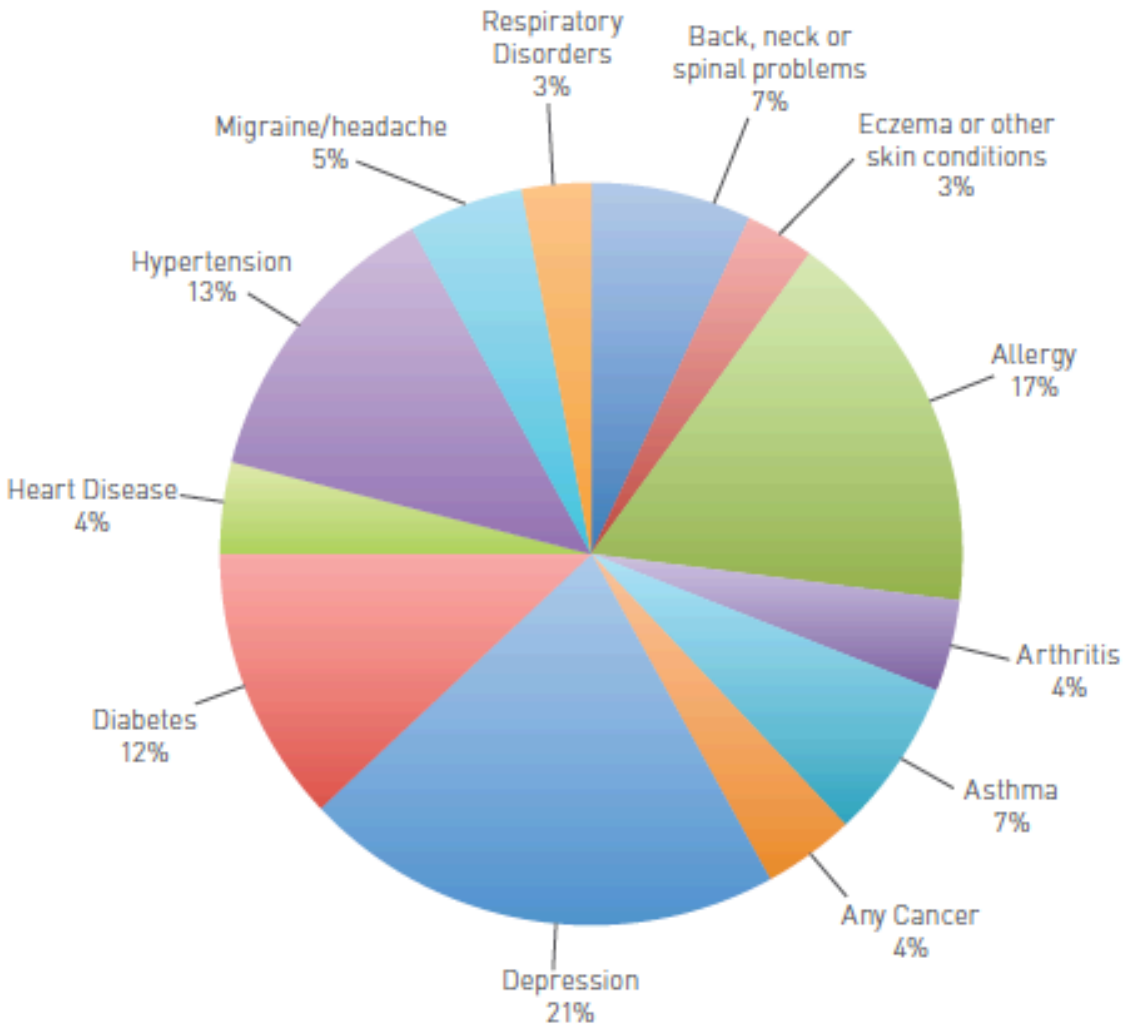
Supporting services

- **nutrient dispersal and cycling**
- **seed dispersal**
- **primary production**

Cultural services

- **cultural, intellectual and spiritual inspiration**
- **recreational experiences (including ecotourism)**

Figure 3: Contribution of medical conditions to overall productivity loss



Source: KPMG Econtech
Note: Percentages refer to the contribution that each medical condition makes to the overall productivity loss of 2.6% in 2009-10.

Source: Medibank: Sick at Work The cost of presenteeism to your business and the economy. July 2011

Karoshi: Death from overwork



The first recorded case of karoshi occurred in 1969. Nearly a decade later (1978), the concept was given the name “karoshi”. In 1982, the release of the book entitled *Karoshi* by Tajiri Seiichiro, Hosokawa, and Uehata brought the issue in the public view, but it wasn’t recognized as a major social problem until the 1980’s Bubble Economy.

Crying It Out in Japan

Tokyo gets into communal bawling.



The Asahi Shimbun/Getty

Japanese hotel launches 'crying rooms'

A hotel in Tokyo is offering rooms designed to allow female guests to “cry heartily” in private

710 273 2 1 986 Email

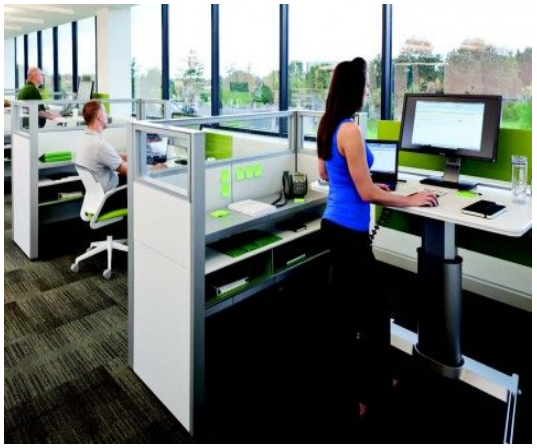


The tissues provided in the crying rooms are said to be as soft as cashmere Photo: Fotolia/AP

Evolving Workplace



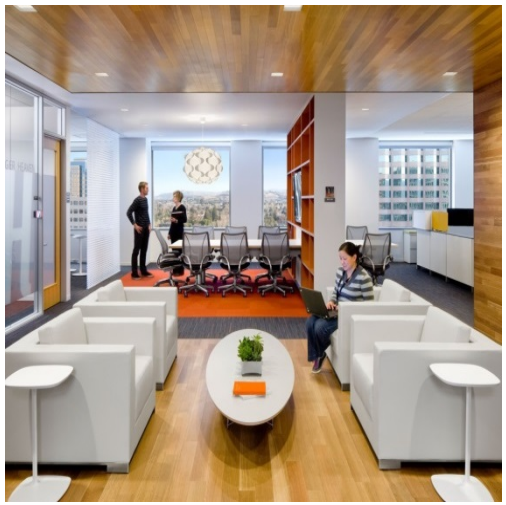
INNOVATION



PERSONALIZATION



SOCIAL CONNECTIONS



COMFORTABLE



COLLABORATION



TECHNOLOGY

DAVIS PARTNERSHIP ARCHITECTS



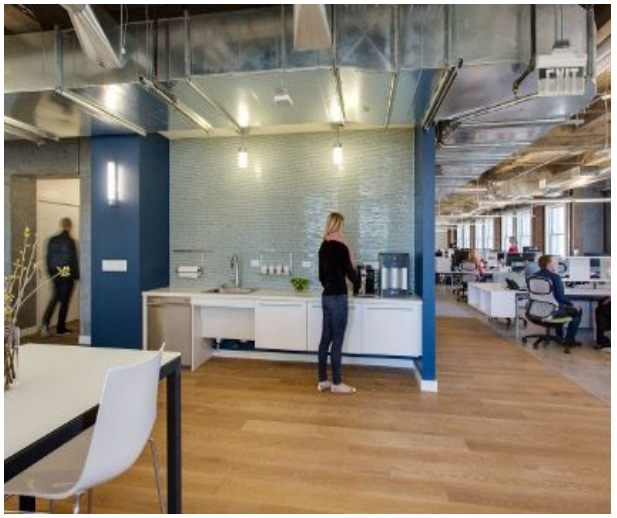
SHARED LIGHT SHARED VIEWS



TRANSPARENCY



FLEXIBLE SPACES



ACCESS TO HEALTHY FOOD



BIOPHILIA

DAVIS PARTNERSHIP ARCHITECTS

10 DESIGN INTERVENTIONS
FOR A HEALTHIER, HAPPIER AND MORE PRODUCTIVE WORKPLACE

1	**MAKE WORKERS MORE ACTIVE**	Sitting is the new smoking.
2	**EASY ACCESS TO WATER + HEALTHY SNACKS**	Lack of water is the greatest source of fatigue for workers.
3	**THE AIR WE BREATHE**	Absenteeism is one of the biggest expenditures draining company coffers.
4	**NATURE EVERYWHERE**	Humans crave the outdoors.
5	**SENSORY ENVIRONMENT**	A lack of visual stimulation dulls people's senses and contributes to the loss of focus.
6	**ACOUSTICS**	Good workplace acoustics mitigate distractions by introducing elements of privacy.
7	**LIGHTING**	Natural light and well designed lighting maintain the alignment of our circadian rhythms
8	**ERGONOMICS 101**	Good posture prevents injury and preventing injury keeps workers healthy and engaged.
9	**CONTROL YOUR DESTINY**	Personal control of storage, lighting levels and HVAC functionality vests each worker with a sense of ownership and gives them the ability to achieve their own level of optimal comfort.
10	**EVERYONE NEEDS A NUDGE**	Communicate the location and benefits of healthy design elements through environmental branding and appropriate signage.

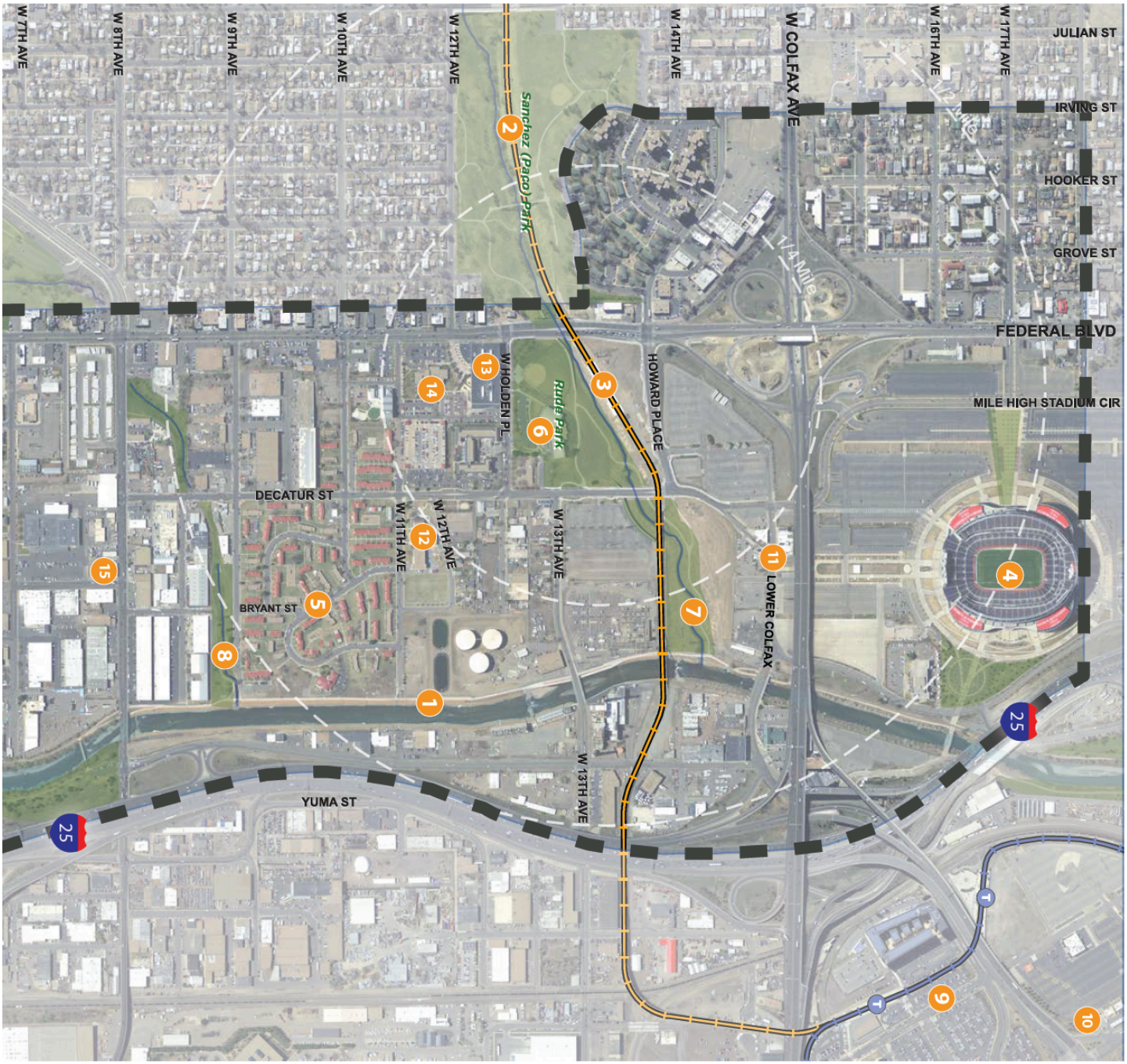


published by Gensler

SUN VALLEY NEIGHBORHOOD

DECATUR-FEDERAL

STATION AREA PLAN




+Josh
Sports Authority
Field at Mile High
Mile High Stadium Cir
ant St
Aurar
5th St
87
287
14th Ave
88
210B
W 13th
87
SUN VALLEY
Decatur St
Zuni St
210A
Google



HOUTAN PARK
SHANGHAI, CHINA

BEFORE



HOUTAN PARK
SHANGHAI, CHINA

AFTER



The Chenoggye freeway ran through the center of Seoul ~1970-2005



CHEONGGYECHEON STREAM RESTORATION
SEOUL, SOUTH KOREA

AFTER



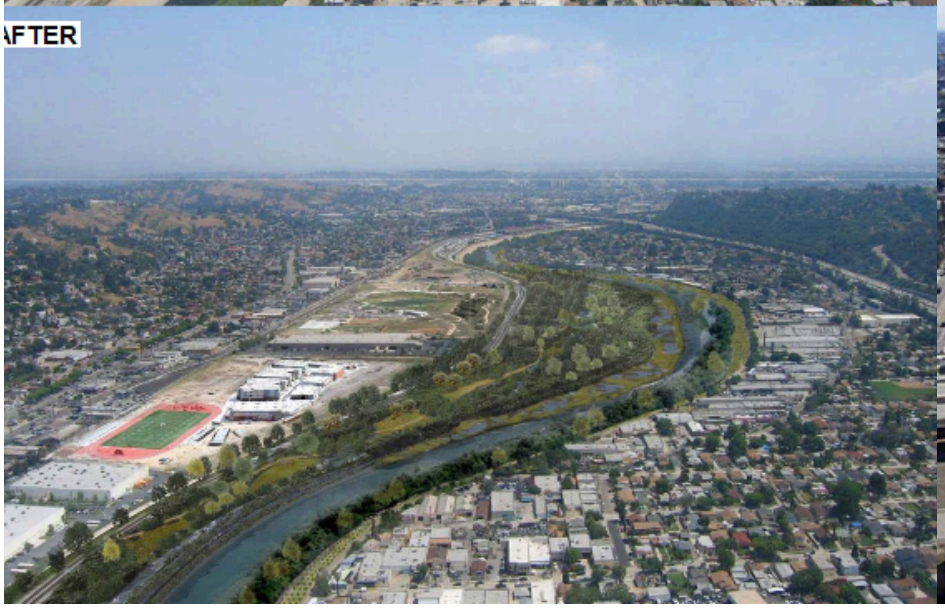







BEFORE



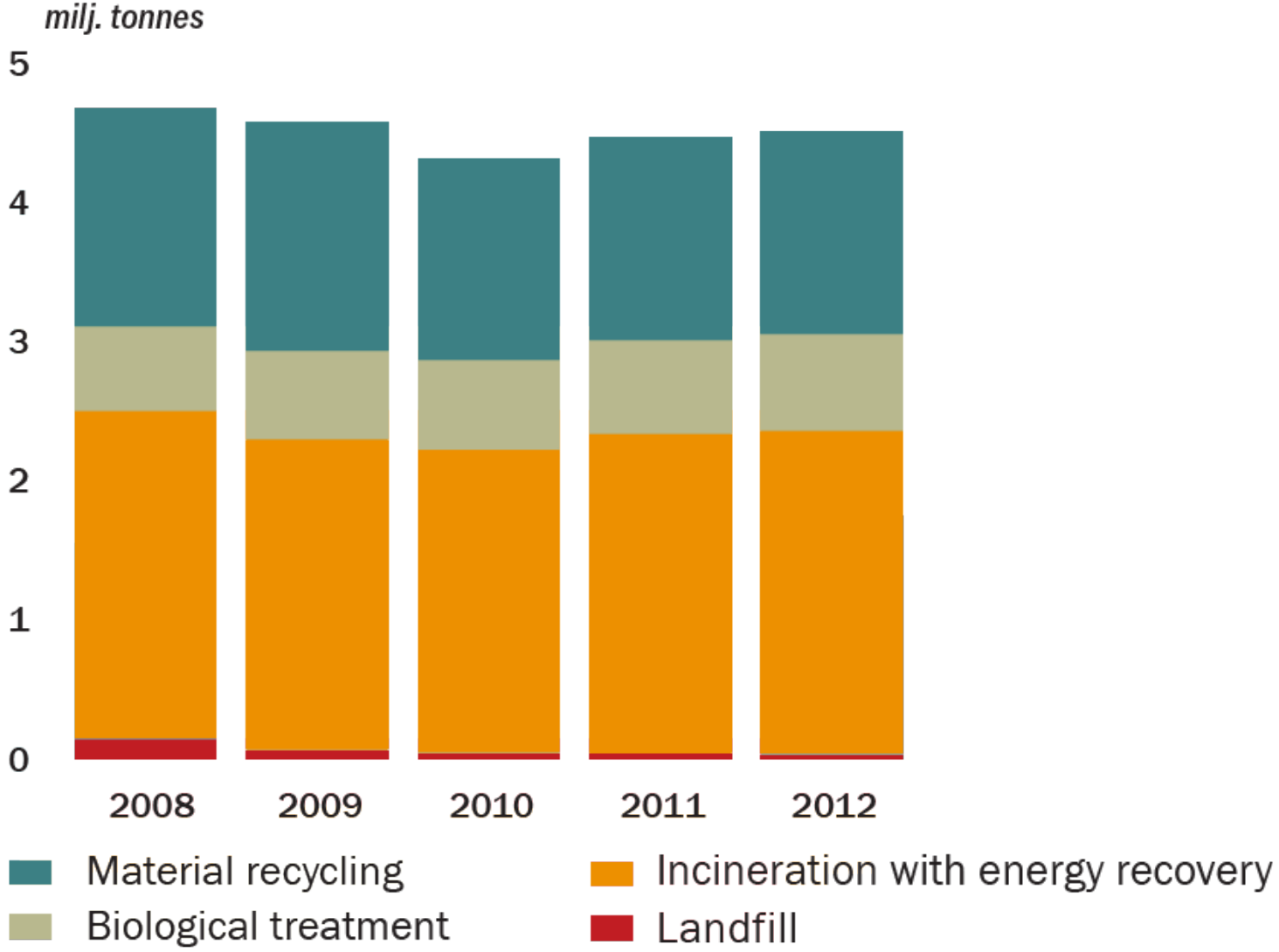

AFTER



BIG's combined power plant and ski slope is "turning science fiction into fact"

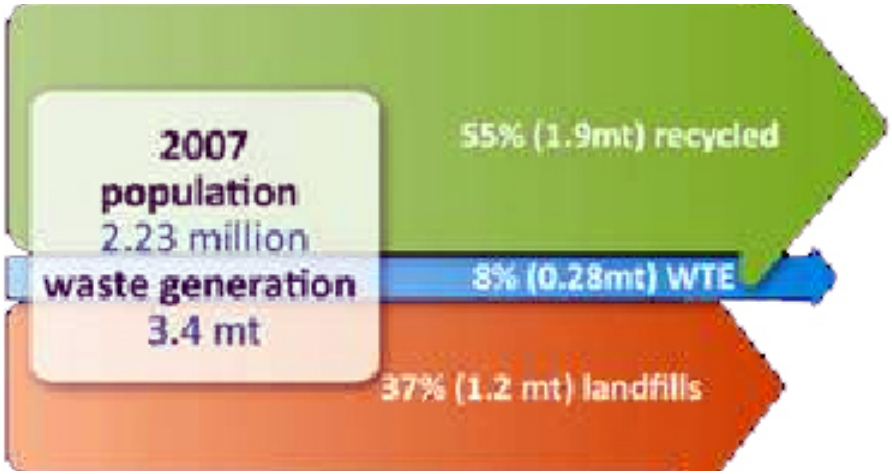


Waste Distribution 2008-2012



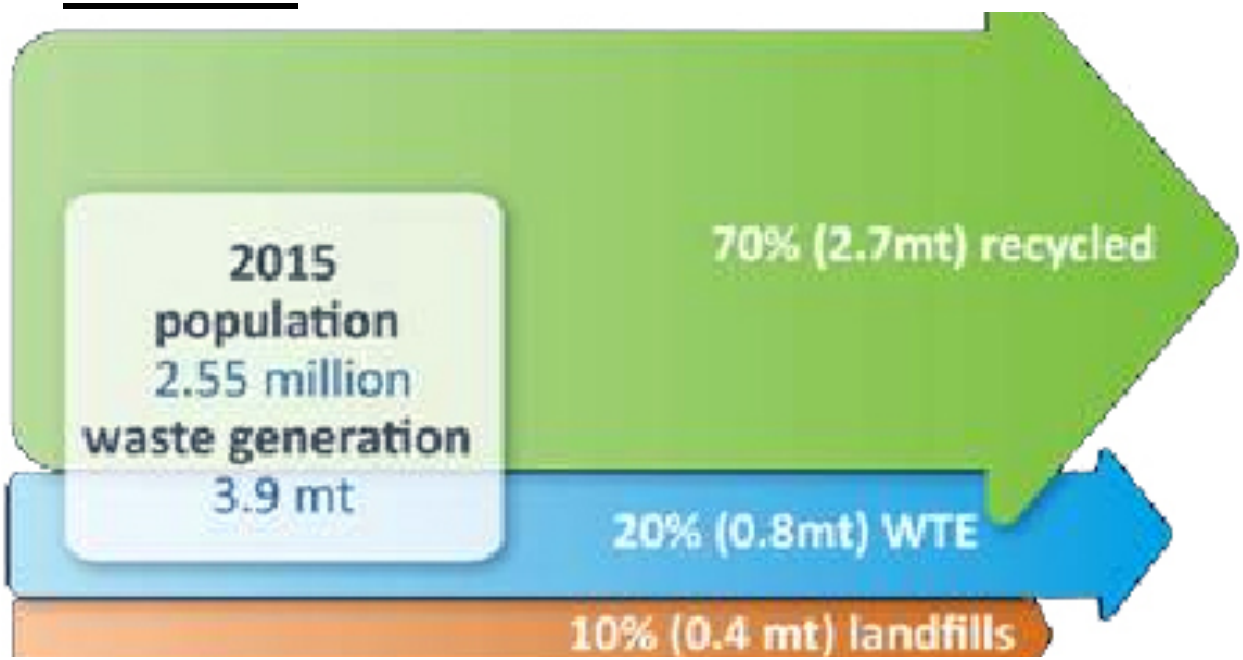
[About Avfall Svierige – Swedish Waste Management]

Vancouver Waste Management

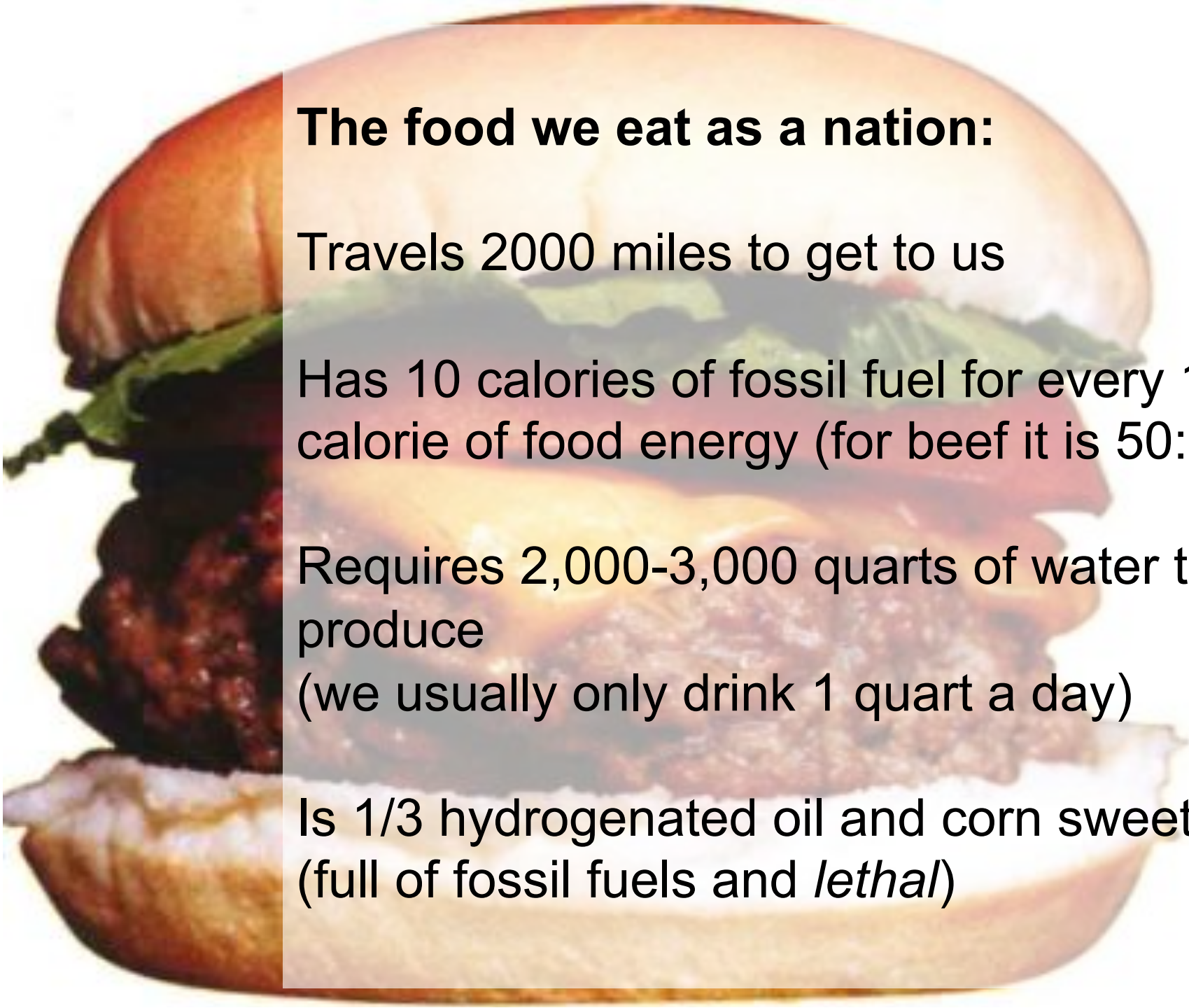


Current

Planned




FOOD
AIR RIDE EQUIPPED



The food we eat as a nation:

Travels 2000 miles to get to us

Has 10 calories of fossil fuel for every 1 calorie of food energy (for beef it is 50:1)

Requires 2,000-3,000 quarts of water to produce
(we usually only drink 1 quart a day)

Is 1/3 hydrogenated oil and corn sweeteners (full of fossil fuels and *lethal*)

Urban Agriculture







Community Gardens



Source: Enterprise Green Communities video “2020 Call to Action”



Forest Houses, Bronx, NY



Forest Houses, Bronx, NY



Supermarket


WHOLE FOODS MARKET

There Are Bee Hives On The Roof Of The W Hotel



Bees? Bees! That fresh honey you're tasting at Trace this summer? It comes straight from the top...of the roof. Central Texas Bee Rescue has worked out an arrangement with the W Hotel downtown to have 10 hives of endangered honeybees live on their rooftop. The honey, which should amount to 4,000 pounds a year, will be implemented into dishes and drinks at Trace and treatments at the hotel's spa.

Waldorf-Astoria Hotel Installs Bee Hives On Roof

By Associated Press 04/19/12 02:44 PM ET AP



NEW YORK -- New York City's Waldorf-Astoria Hotel is buzzing with thousands of tiny new visitors.

The luxury hotel has installed six beehives on its rooftop with the goal of harvesting honey by mid-summer. One mature hive has 20,000 bees and five starter hives have 5,000 bees each.

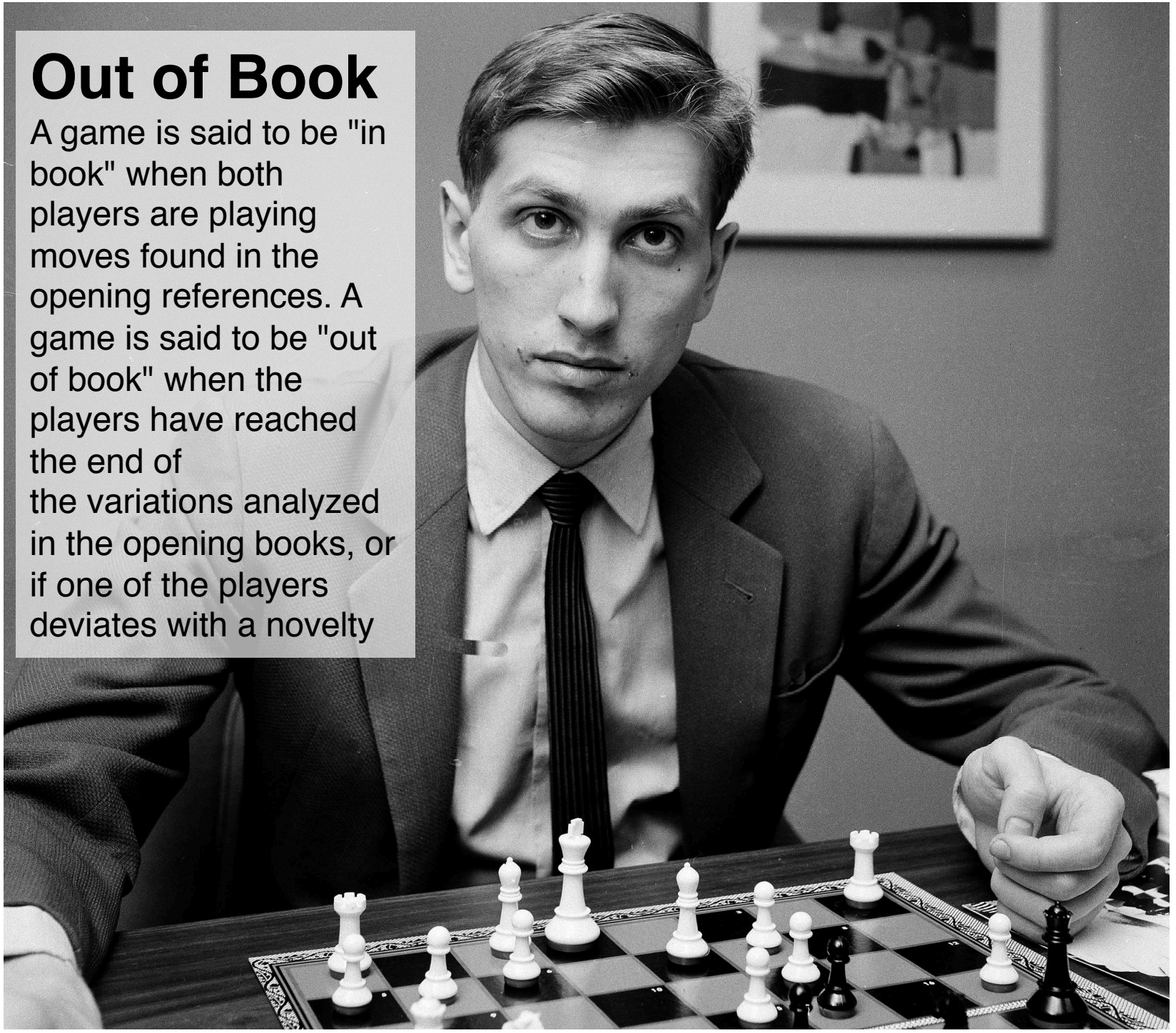
By August, the hotel hopes to host 300,000 bees in total.

The bees arrived last week in a luxury car. Then they were escorted through the lobby to their new home on the 20th floor.

Guests at the historic hotel can tour the hives. The insects also are visible from certain rooms.

Honey will be used in dishes served at the hotel's restaurant.

Members of the public can help the hotel name the hives in a social media contest.



Out of Book

A game is said to be "in book" when both players are playing moves found in the opening references. A game is said to be "out of book" when the players have reached the end of
the variations analyzed in the opening books, or if one of the players deviates with a novelty

Josh Radoff – Principal
jradoff@yrgxyz.com




YR&G
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Corporate
Analysis
Education