The meeting teleconference will begin shortly

Listen to the meeting by using your computer or tablet speakers or by calling (877) 853-5247 using meeting ID 831-755-936-63

View the live meeting presentation at https://us04web.zoom.us/j/684456030

Public comments, suggestions or questions regarding technical issues may be emailed to comments@sbvmwd.com

Please use the chat feature in the Zoom toolbar to let the moderator know that you would like to make a comment during the meeting.

Your microphone will be muted during the meeting to reduce background noise. Click on the microphone icon to unmute your microphone if needed.

Call to Order

Board of Directors Workshop - Policy
Thursday, May 14, 2020

Chairperson – Director Longville
Vice-Chair – Director Kielhold

Introductions

Following the introduction of Directors and District staff, participants may use this time to state their name and agency/affiliation in order to be included in the formal record of attendees.

Public Comment

Any person may address the Board on matters within its jurisdiction.

- *Please use the chat feature on the Zoom toolbar or digitally raise your hand to let the moderator know you would like to make a comment.*

Summary of Previous Meeting (Pg. 3)

Board of Directors Workshop – Policy – April 9, 2020

Presentations (Pg. 9)

Heather Dyer, M.S., M.B.A - General Manager

Recognizing and Addressing the Potential for Long-Term Drought in California

Staff Recommendation
Receive and file.

What is drought?

Science. Vol 368, Issue 6488, 17 April 2020

Empty reservoir, Lake Cachuma near Santa Barbara

Drought Bucket Model Equation

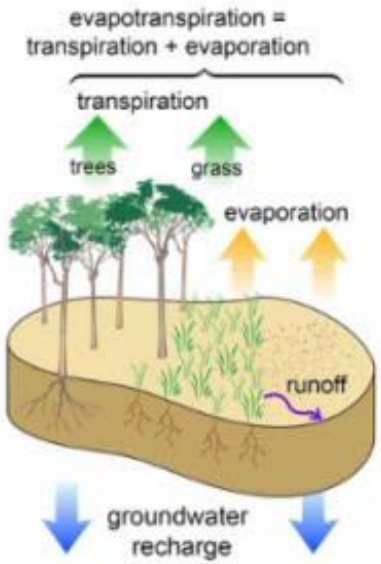
$$P - E = \frac{dS}{dt} + R_o + G_w$$

Precipitation – Evapotranspiration = Soil Moisture Storage + Runoff + Groundwater

Supply

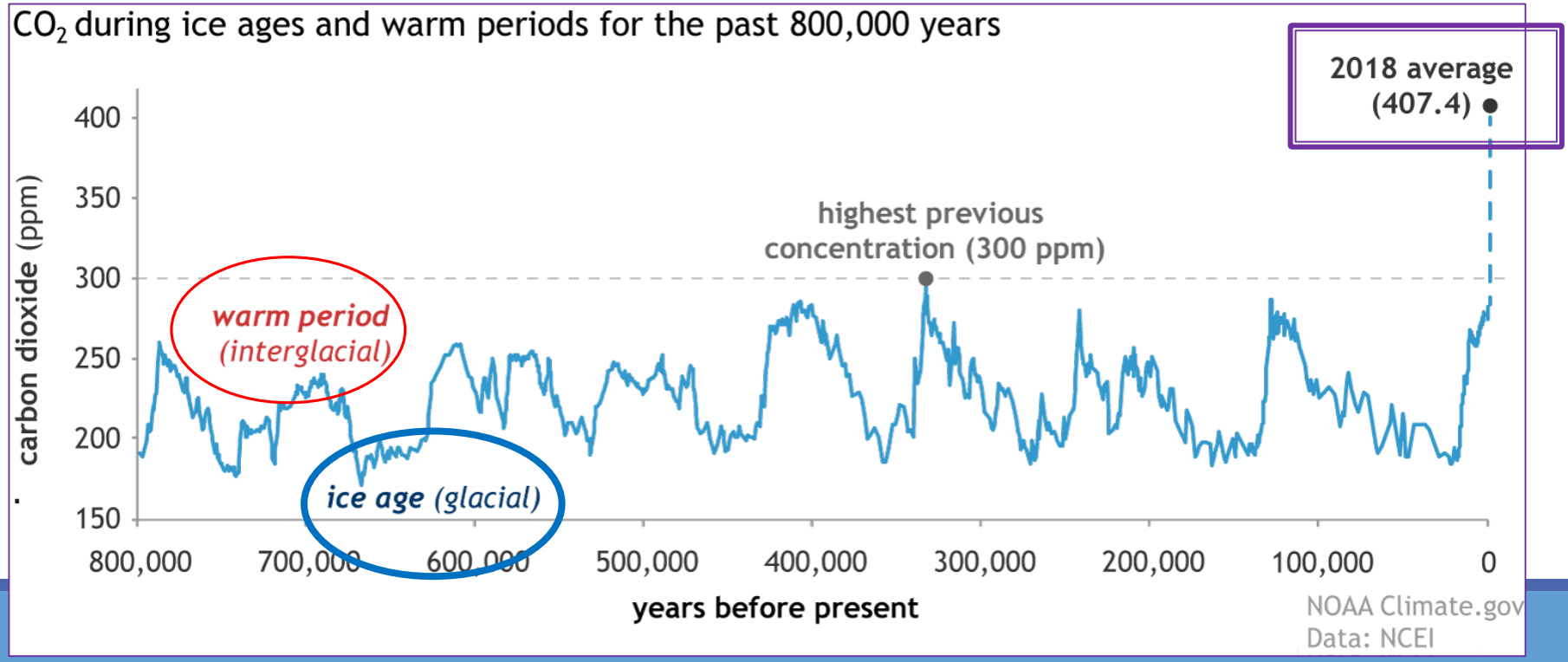
Demand

How do we know the value of these variables in the future? Can we predict drought?

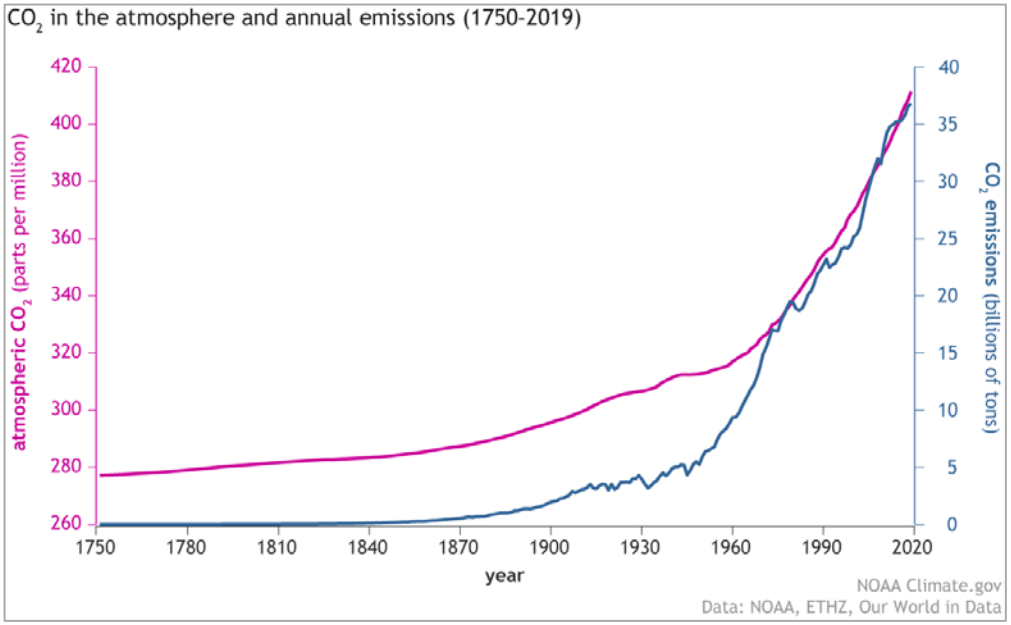


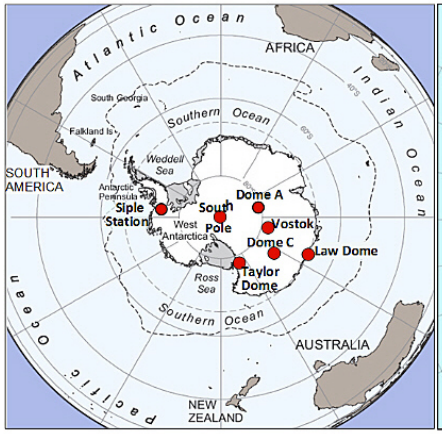
Climate Conditions Drive Weather Patterns

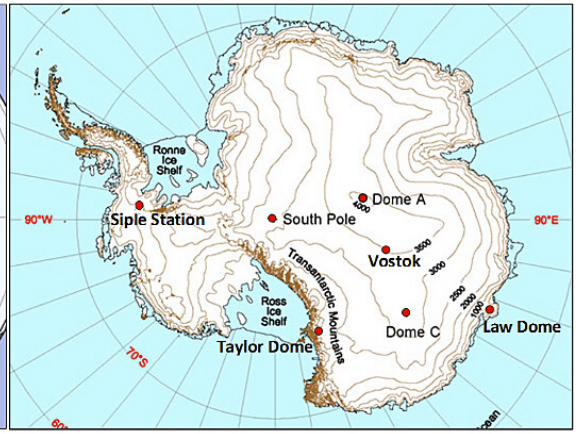
- Carbon dioxide is a greenhouse gas: a gas that absorbs and radiates heat
- Increased levels in CO_2 atmosphere increases global temperature (Heat)
- Increased Heat Causes Increased Evapotranspiration which changes Precipitation Patterns (weather) around the Globe
- Drought Arises from Condition of Shortage of Precipitation or Excess Evapotranspiration.



- The annual rate of increase in atmospheric carbon dioxide over the past 60 years is about 100 times faster than previous natural increases (@ end of the last ice age 11,000-17,000 years ago).







- The last time the atmospheric CO_2 amounts were this high was more than 3 million years ago, when temperature was 2°–3°C (3.6°–5.4°F) higher.

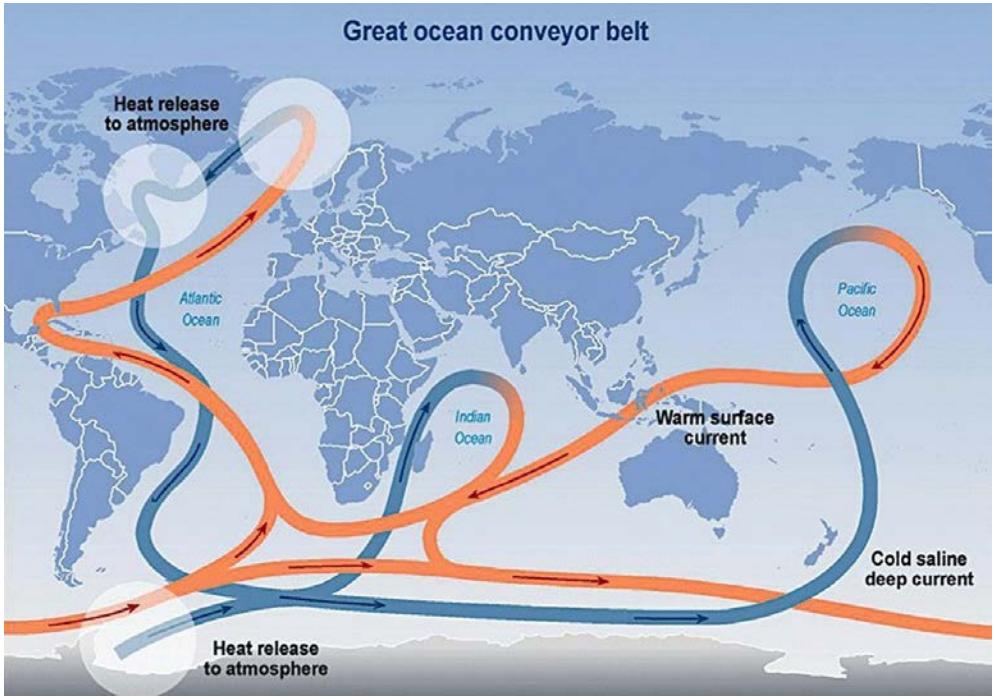
CO_2 levels are High and Rising.

Q: What does this mean for humans? A: Weather will become more extreme and variable.

- Increased intensity and duration of heat waves
- Longer, drier, periods in some areas with longer wet periods in others
- Increased frequency and intensity of wildfire
- Increased duration and frequency of hurricanes and monsoons
- Increased ocean temperature, which influences weather patterns
- Melting polar ice, sea level rise

Weather vs. Climate

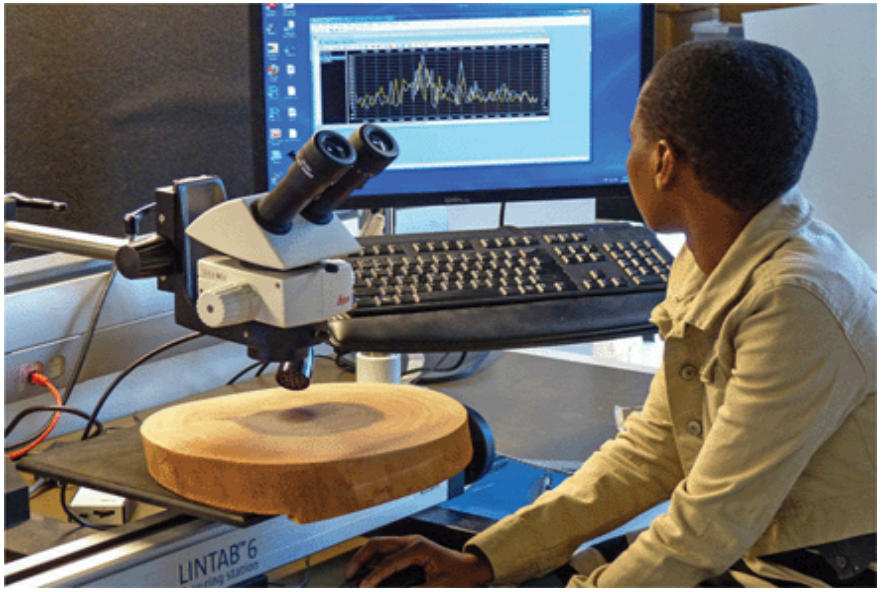
- Weather refers to atmospheric conditions that occur locally over short periods of time. Ex: rain, snow, clouds, winds, floods or thunderstorms.
- Climate refers to the long-term regional or even global average of temperature, humidity and rainfall patterns over seasons, years or decades.
- Climate is a driver of Global Weather Patterns.



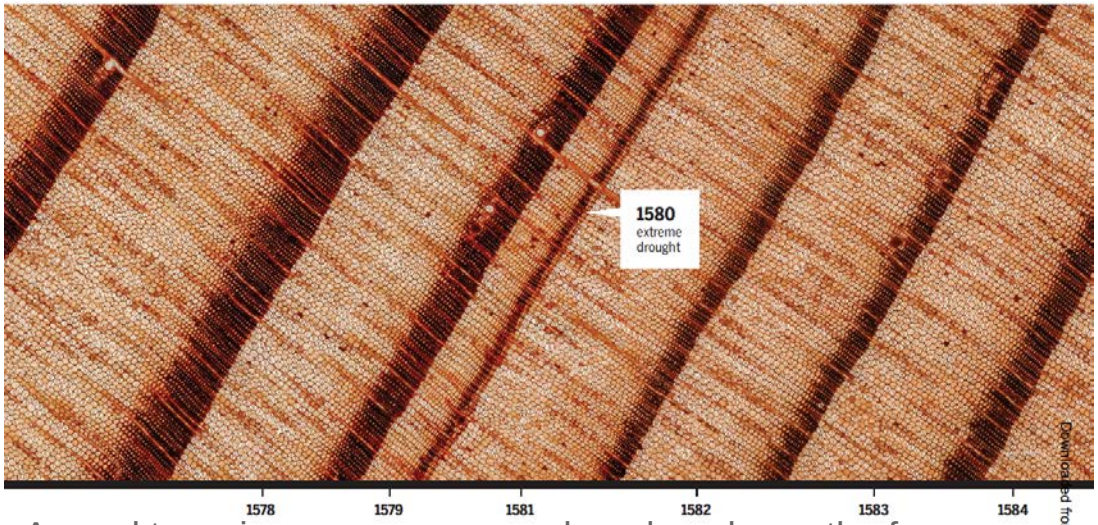
Changes in Precipitation Patterns

- General circulation of atmosphere delivers moisture from the oceans to land.
- Large atmospheric disruptions caused by ocean temperatures and currents (e.g. El Niño, La Niña)
- Hotter temperatures demand more from land surface
- Drought indices depict unprecedented drying throughout much of US
- Megadrought Lasting Decades Is 99% Certain in American Southwest

- Climate history is embedded in long tree-ring chronologies.
- Narrow rings in trees of semiarid climates indicate hot, dry summers.
- Megadroughts were extremely rare phenomena occurring only once or twice per millennium
- Megadrought of late 1500s worst multidecadal drought in 1200 years
- Second worst event: 2000 – 2018 in American Southwest

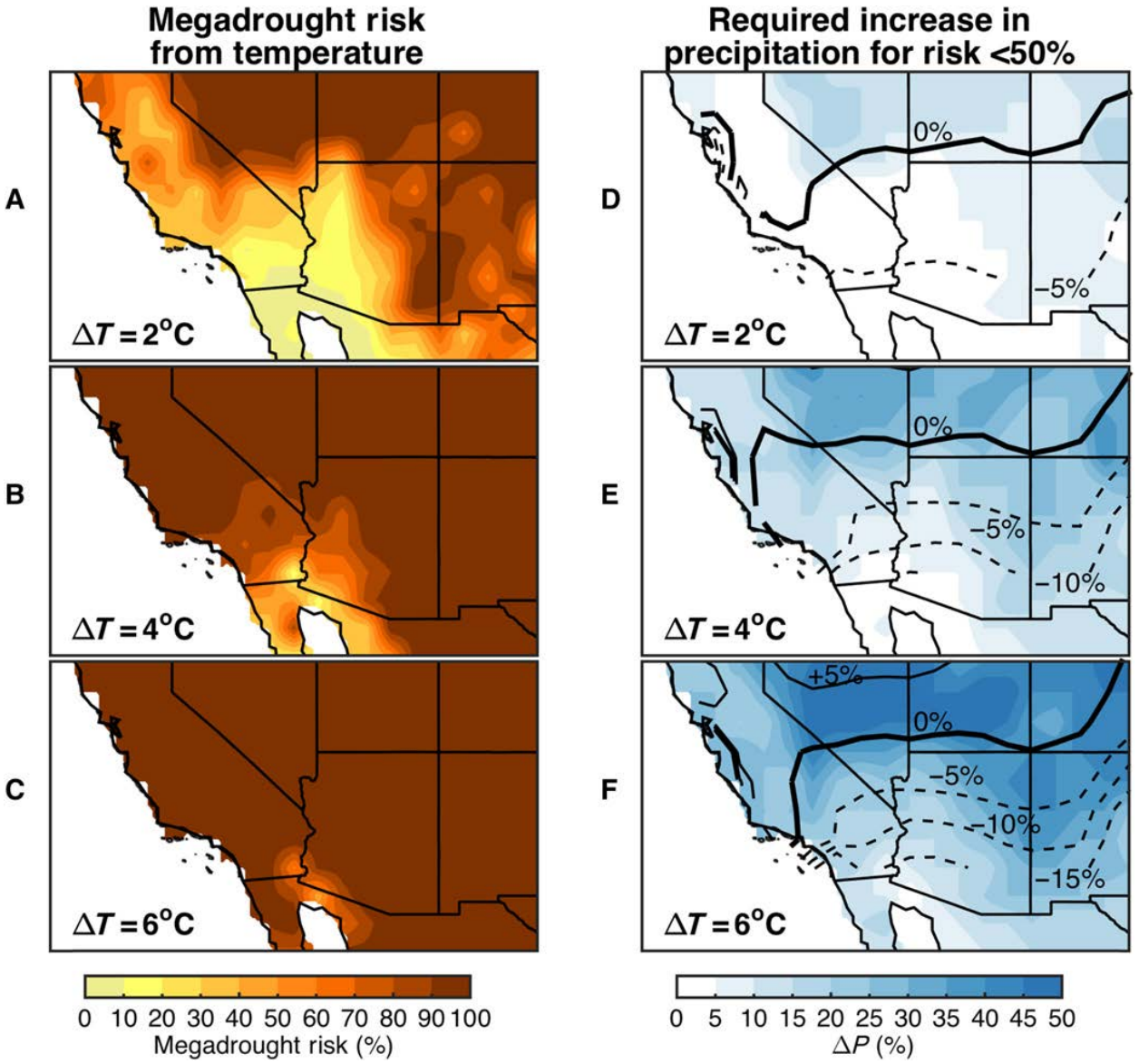


Dendrochronologist Zakia Hassan Khamisi measures tree-ring widths
PHOTO: VALERIE TROUET



Annual tree-ring sequence reveals reduced growth of a Douglas fir in California during the late 16th-century megadrought.

Maps of megadrought risk for the American Southwest under different levels of warming, and the required increase in precipitation to compensate for that warming.(**A** to **C**)



Citation: Relative impacts of mitigation, temperature, and precipitation on 21st-century megadrought risk in the American Southwest
BY TOBY R. AULT, JUSTIN S. MANKIN, BENJAMIN I. COOK, JASON E. SMERDON
*SCIENCE ADVANCES*05 OCT 2016 : E1600873

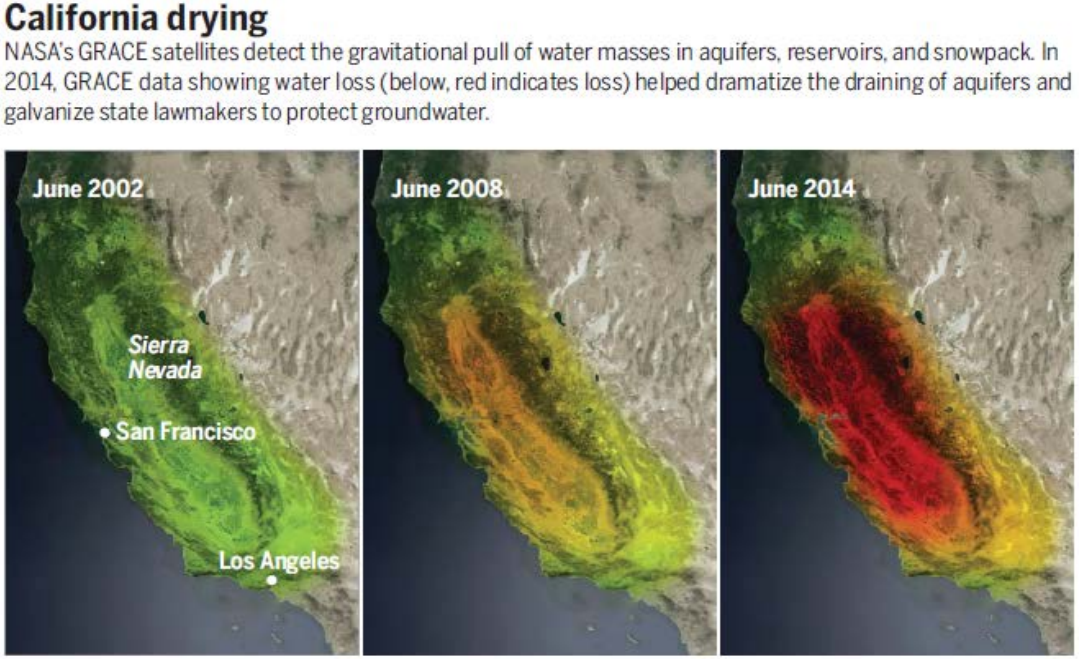
Climate change alters the balance of moisture throughout the world.

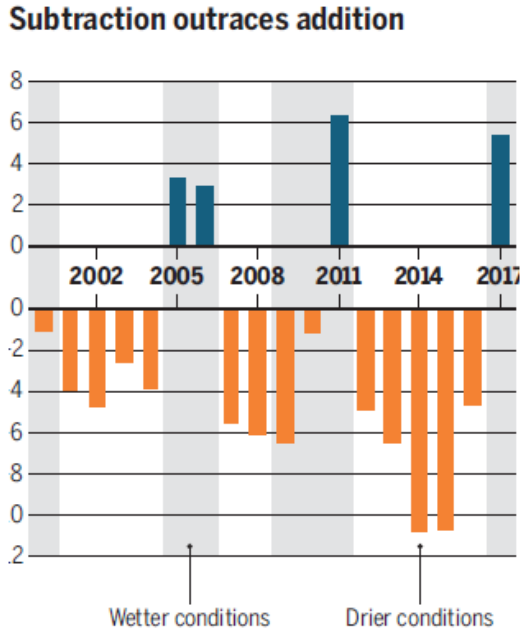
"If you are a water resource manager and you remember just one thing from this review, it should be this ---

cutting CO_2 emissions reduces drought risk." Toby Ault, *Essentials of Drought.*

What Can We Do?

1. Be a Steward of our Groundwater:

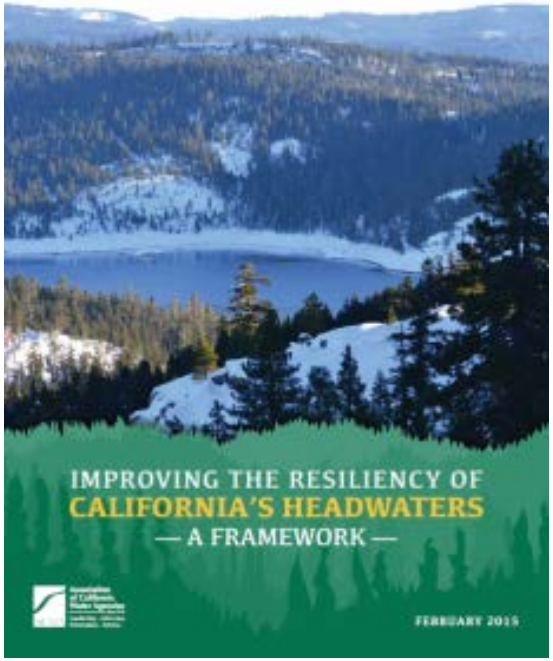




- Maintaining and restoring groundwater levels are becoming even more important as surface flow from precipitation and snow melt become less dependable with climate change.
  - Recharge is only one part of the equation and is variable due to weather patterns (in both Northern and Southern California)
  - Reduced demand (groundwater pumping) must be part of the solution.
  - Innovation and progressive whole-basin management is key.

Protect our Headwater Supply:

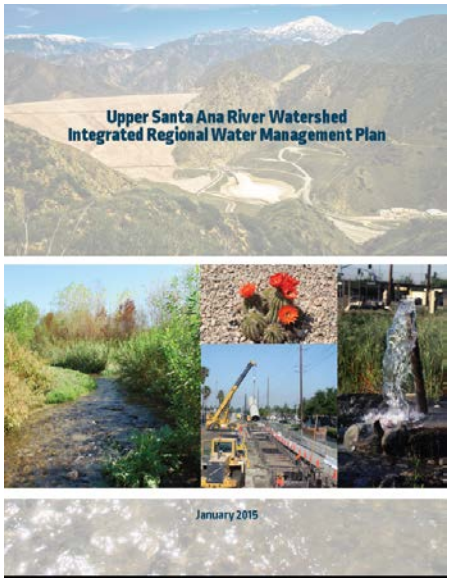
- Forests provide water to 90 per cent of the world's most populous cities
- Forests also provide other essential water services like drinking water, flood control, hydroelectricity, fishing and recreational opportunities
- When rainstorms follow large and severe wildfires, they tend to flush ash, nutrients, heavy metals and toxins, and sediments into streams and rivers.



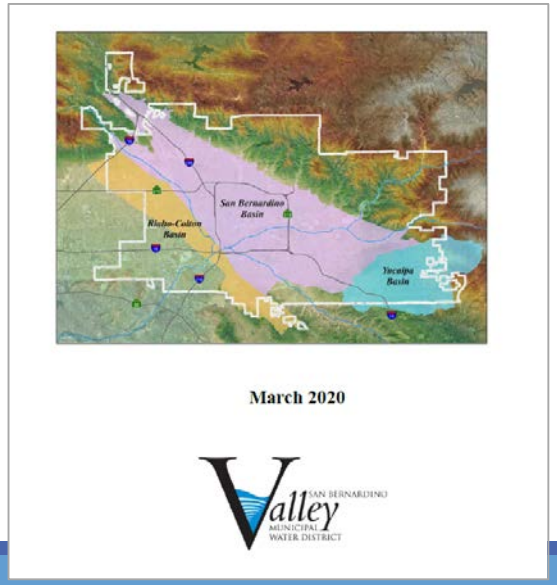
Invest in Science & Planning:

RAND STUDY:

- Part I: Estimated Future Demand in 2018 Study
  - Evaluated drivers of demand (population, water use, behavior etc.)
  - If temperature and population growth increase to high end of estimated range then demand could reach estimated supply
  - If WUE is not included, plausible demand could slightly exceed current supply projection with our “Reliability Factor”, in abnormal (i.e. dry) years.

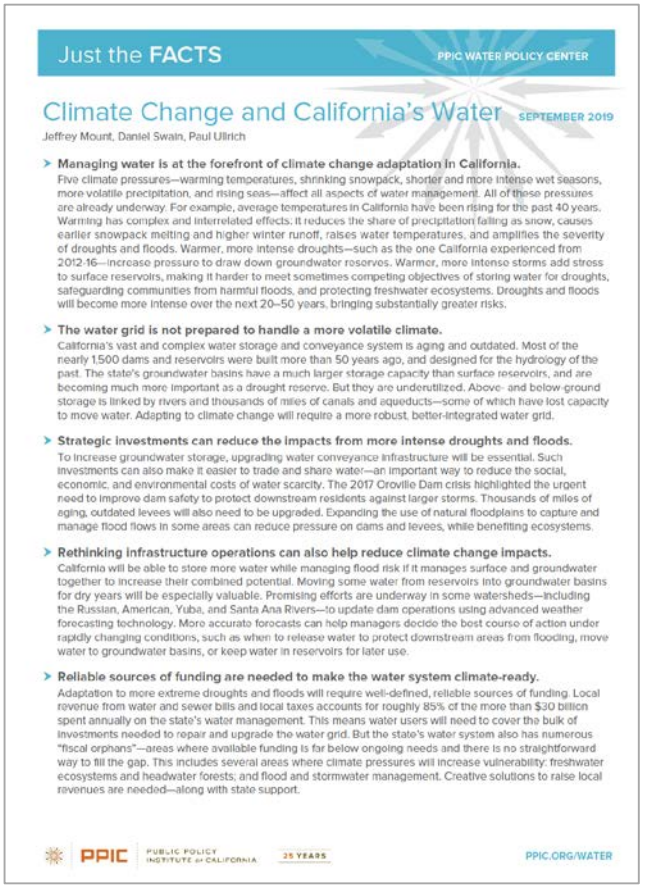


- Part II: Examining Supplies incorporating Climate Change
  - Exaggerating historical droughts to increase their duration and intensity.
  - Modeling a 10-year drought, 20-year drought, and a 30-year drought.
  - Applying change factors from climate models to the drought periods to scale them up and down in terms of intensity



Statewide Strategies & Collaboration :

- Climate pressures affect all aspects of California water management:
  - warming temperatures,
  - shrinking snowpack,
  - shorter and more intense wet seasons
  - volatile precipitation
  - rising seas.
- The water grid is not prepared to handle a more volatile climate.
- Strategic investments can reduce the impacts from droughts and floods (increased storage and transmission facilities)
- Rethinking infrastructure operations can also help reduce climate change impacts.
- Reliable sources of funding are needed to make the water system climate-ready



Just the FACTS

PPIC WATER POLICY CENTER

Climate Change and California's Water

SEPTEMBER 2019

Jeffrey Mount, Daniel Swain, Paul Ullrich

Managing water is at the forefront of climate change adaptation in California.
Five climate pressures—warming temperatures, shrinking snowpack, shorter and more intense wet seasons, more volatile precipitation, and rising seas—affect all aspects of water management. All of these pressures are already underway. For example, average temperatures in California have been rising for the past 40 years. Warming has complex and interrelated effects. It reduces the share of precipitation falling as snow, causes earlier snowpack melting and higher winter runoff, raises water temperatures, and amplifies the severity of droughts and floods. Warmer, more intense droughts—such as the one California experienced from 2012-16—increase pressure to draw down groundwater reserves. Warmer, more intense storms add stress to surface reservoirs, making it harder to meet sometimes competing objectives of storing water for droughts, safeguarding communities from harmful floods, and protecting freshwater ecosystems. Droughts and floods will become more intense over the next 20–50 years, bringing substantially greater risks.

The water grid is not prepared to handle a more volatile climate.
California's vast and complex water storage and conveyance system is aging and outdated. Most of the nearly 1,500 dams and reservoirs were built more than 50 years ago, and designed for the hydrology of the past. The state's groundwater basins have a much larger storage capacity than surface reservoirs, and are becoming much more important as a drought reserve. But they are underutilized. Above- and below-ground storage is linked by rivers and thousands of miles of canals and aqueducts—some of which have lost capacity to move water. Adapting to climate change will require a more robust, better-integrated water grid.

Strategic investments can reduce the impacts from more intense droughts and floods.
To increase groundwater storage, upgrading water conveyance infrastructure will be essential. Such investments can also make it easier to trade and share water—an important way to reduce the social, economic, and environmental costs of water scarcity. The 2017 Oroville Dam crisis highlighted the urgent need to improve dam safety to protect downstream residents against larger storms. Thousands of miles of aging, outdated levees will also need to be upgraded. Expanding the use of natural floodplains to capture and manage flood flows in some areas can reduce pressure on dams and levees, while benefiting ecosystems.

Rethinking infrastructure operations can also help reduce climate change impacts.
California will be able to store more water while managing flood risk if it manages surface and groundwater together to increase their combined potential. Moving some water from reservoirs into groundwater basins for dry years will be especially valuable. Promising efforts are underway in some watersheds—including the Russian, American, Yuba, and Santa Ana Rivers—to update dam operations using advanced weather forecasting technology. More accurate forecasts can help managers decide the best course of action under rapidly changing conditions, such as when to release water to protect downstream areas from flooding, move water to groundwater basins, or keep water in reservoirs for later use.

Reliable sources of funding are needed to make the water system climate-ready.
Adaptation to more extreme droughts and floods will require well-defined, reliable sources of funding. Local revenue from water and sewer bills and local taxes accounts for roughly 85% of the more than $30 billion spent annually on the state's water management. This means water users will need to cover the bulk of investments needed to repair and upgrade the water grid. But the state's water system also has numerous "fiscal orphans"—areas where available funding is far below ongoing needs and there is no straightforward way to fill the gap. This includes several areas where climate pressures will increase vulnerability: freshwater ecosystems and headwater forests; and flood and stormwater management. Creative solutions to raise local revenues are needed—along with state support.

PPIC PUBLIC POLICY INSTITUTE of CALIFORNIA 25 YEARS

PPIC.ORG/WATER

- Ault, T.R. 2020. *On the Essentials of Drought.* Science:368(6488), 256-260
- Ault, T.R. et al. 2016. *Relative impacts of mitigation, temperature, and precipitation on 21st-century megadrought risk in the American Southwest. Science Advances*: Vol. 2, no. 10.
- Miro, M. et al. 2018. *Estimating Future Water Demand for SBVMWD*. RAND Corporation.
- Mount, J. et al., 2019. *Managing Drought in a Changing Climate*. Public Policy Institute of California.
- Stahl, D.W. 2020. *Anthropogenic Megadrought*. Science:368(6488), 238-239.
- Stokstad, E. 2020. *Deep Deficit*. Science:368(6488), 230-233.

Director Comments and Discussion

T. Milford Harrison
President

Paul Kielhold
Vice President

Susan Longville
Treasurer

June Hayes
Director

Gil Navarro
Director

Staff Recommendation

Receive and file.

Discussion Item 5.1 (Pg. 10)

Cindy Saks, Deputy General Manager – Administration

PFM Asset Management Market Update

Staff Recommendation
Receive and file.

Market Update

Market Update Week of May 4, 2020

Prepared by the PFM Asset Management LLC

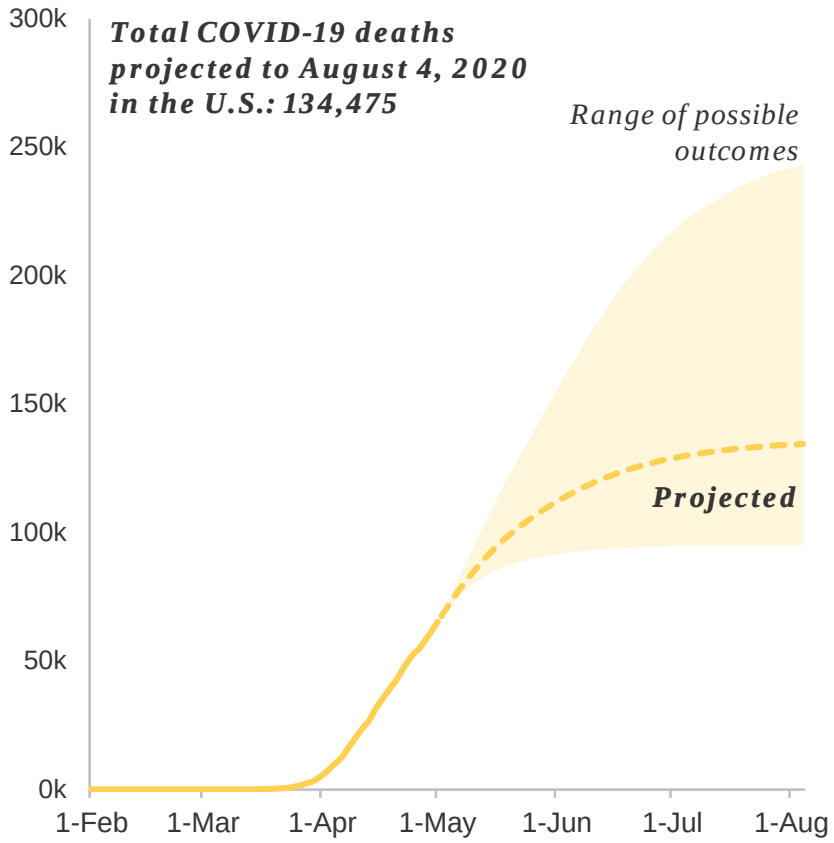
PFM Asset Management LLC

213 Market Street
Harrisburg, PA 17101

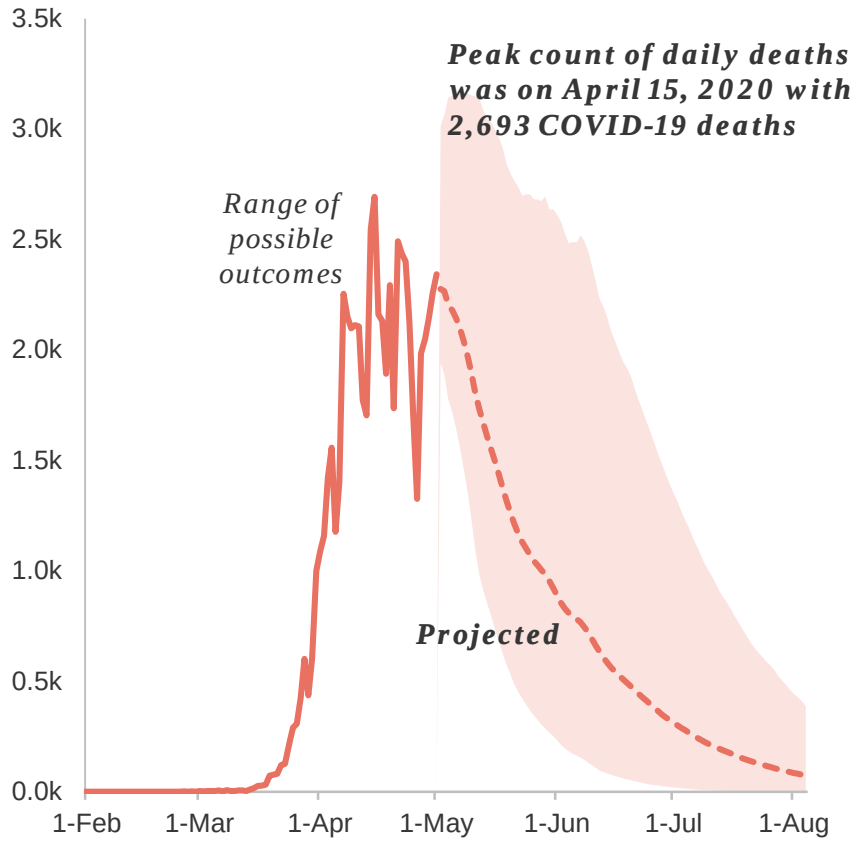
717.232.2723
pfm.com

Due to Relaxed Social Distancing, U.S. Death Projections Rise

Total Deaths

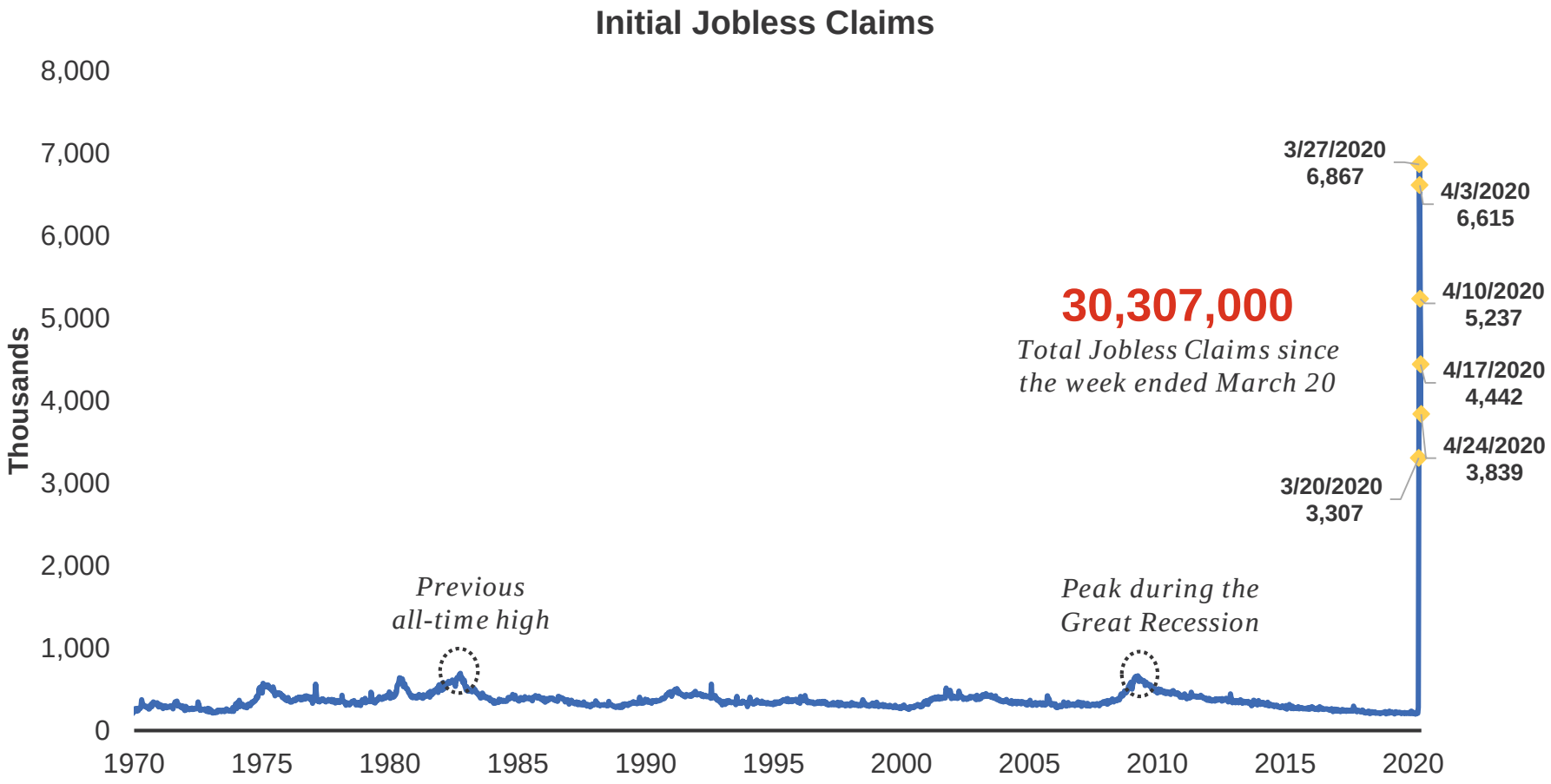


Deaths per day



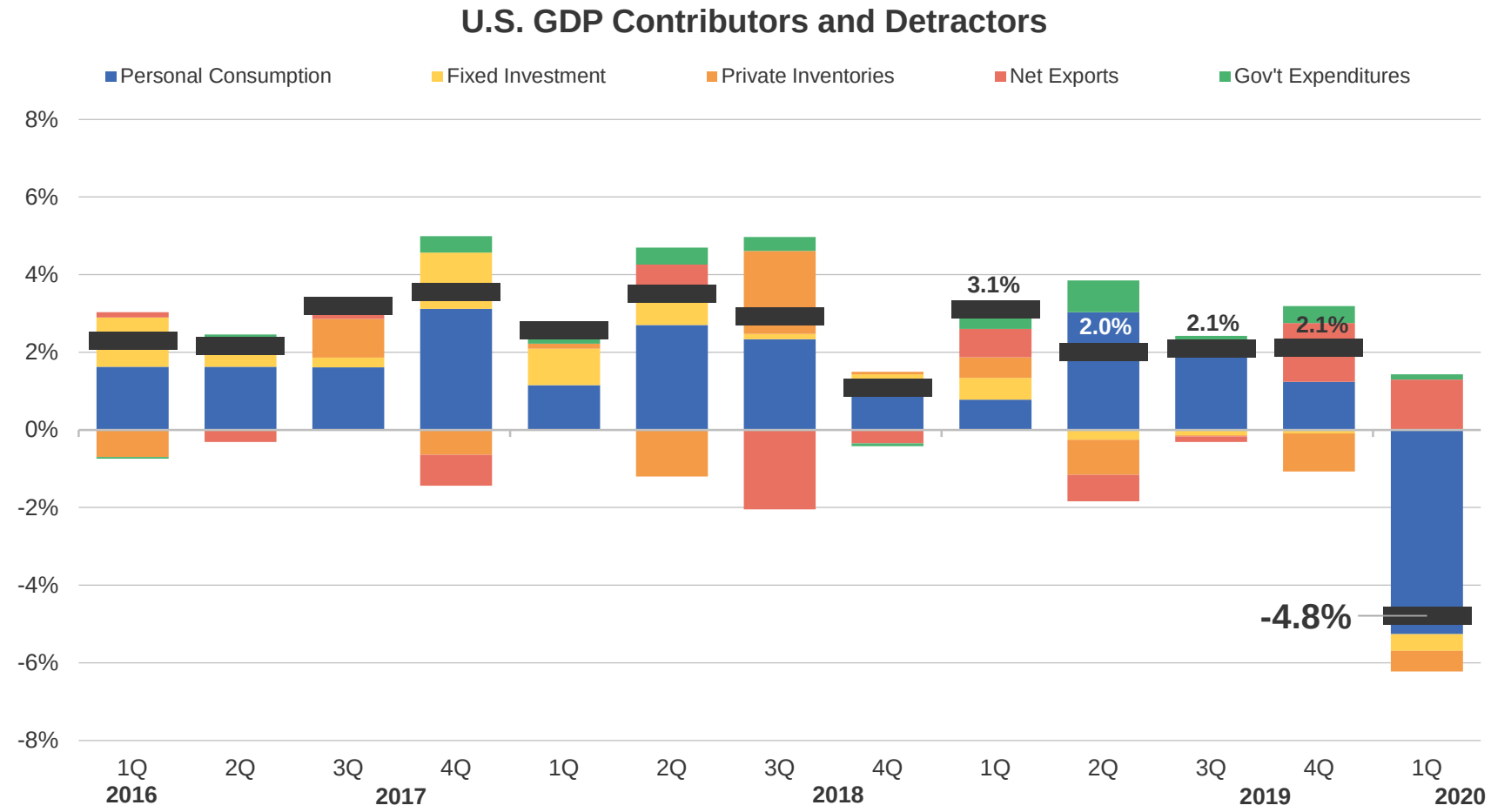
Source: Institute for Health Metrics and Evaluation, as of 5/04/2020. https://covid19.healthdata.org/projections

Initial Jobless Claims Exceed 30 Million



Source: Bloomberg, as of 5/04/2020. Data is seasonally adjusted.

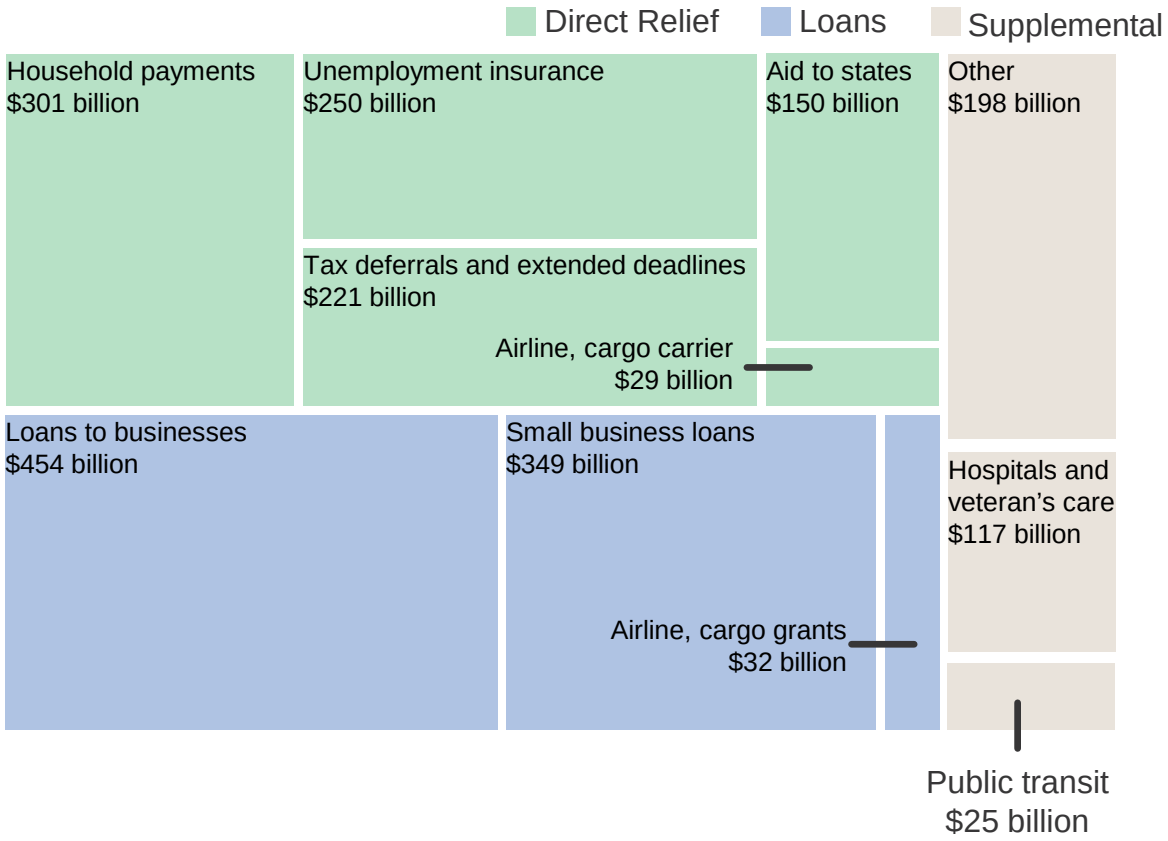
Q1 U.S. GDP Falls 4.8% as COVID-19 Lockdown Weighs on Growth



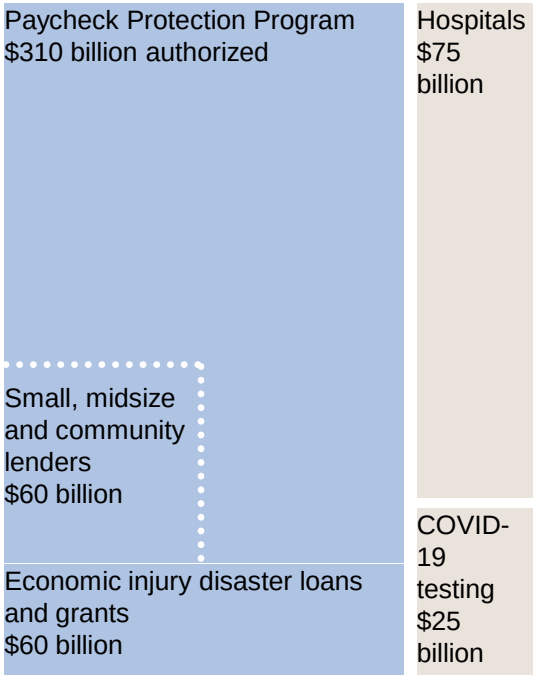
Source: Bureau of Economic Analysis.

Congress Providing Fiscal Stimulus to the Economy

Coronavirus Aid, Relief, and Economic Security (CARES) Act



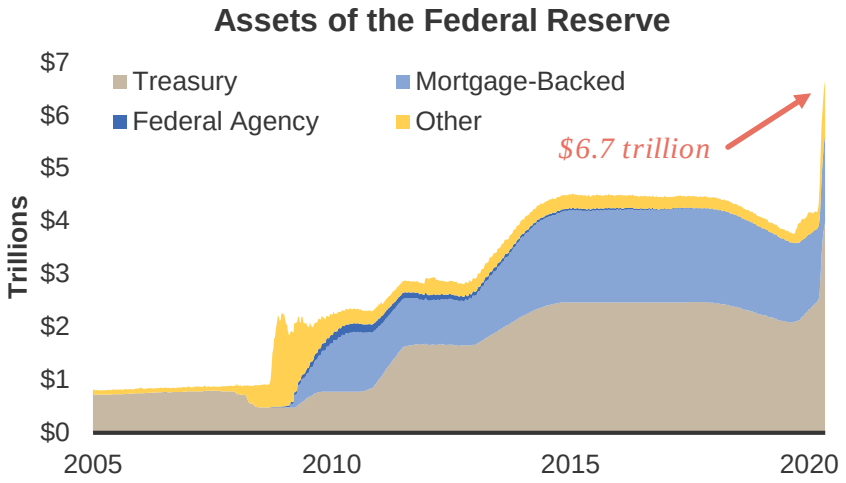
Pending Stimulus Plan*



Source: Wall Street Journal, as of April 23, 2020. *Passed by the Senate.

Federal Reserve Broadens Tool Kit to Support Markets

- **Zero Interest Rates**
  - *Cut rates by 150 bps at two emergency meetings in March*
- **Asset Purchase Programs**
  - *Unlimited Treasury and agency MBS purchases*
- **Repurchase Agreements**
  - *Increased amount and term options to primary dealers*
- **Discount Window**
  - *Decreased rate and extended term of loans*
- **Bank Regulatory Relief**
  - *Lowered reserve requirement to 0; capital & liquidity flexibility*
- **Liquidity Support**
  - *Funding for CP, ABS, MMFs, corporate bonds and more*
- **U.S. Dollar Swap Lines**
  - *Increased access to U.S. dollars to foreign central banks*
- **Paycheck Protection Program**
  - *Support for financial institutions issuing PPP loans*
- **Main Street Lending Program**
  - *Purchasing loans to small- and mid-size businesses*



Amount Allocated to Fed's Liquidity Programs	
Facility	**Holdings (billions)**
Discount Window	$31.8
PDCF	$33.4
MMLF	$46.3
CPFF	$3.4
PPPLF	$19.5
Swap Lines	$439.0
Repurchase Agreements	$158.2

Source: Federal Reserve, as of 5/04/2020.

Powell Reiterates Commitment to Support Economy and Markets

"I would say we have a number of dimensions on which we can still provide support to the economy, as you know our credit policies are not subject to specific dollar limit. They can be expanded, and we can do new ones."

"Let me just say we are going to not be in any hurry to withdraw these measures or lift off. We are going to wait until we are quite confident that the economy is well on the road to recovery."

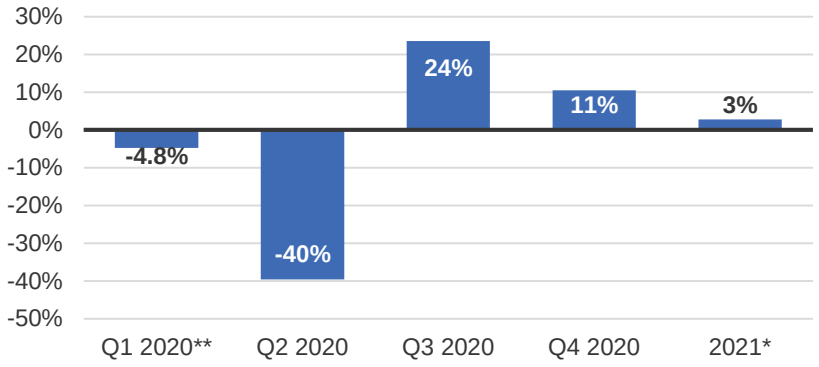
"We are going to be very patient, that means we are not going to be in any hurry to move rates up."

Message: Rates likely at zero through 2021

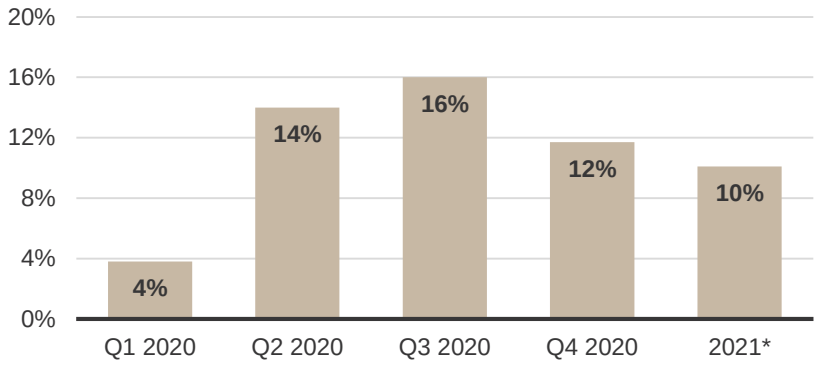
Source: Federal Reserve Bank, as of 4/29/20.

CBO Projections of Key Economic Variables

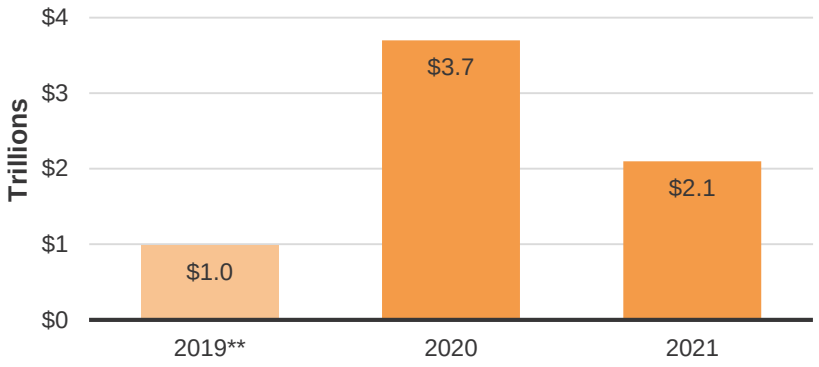
Real GDP (annualized rate)



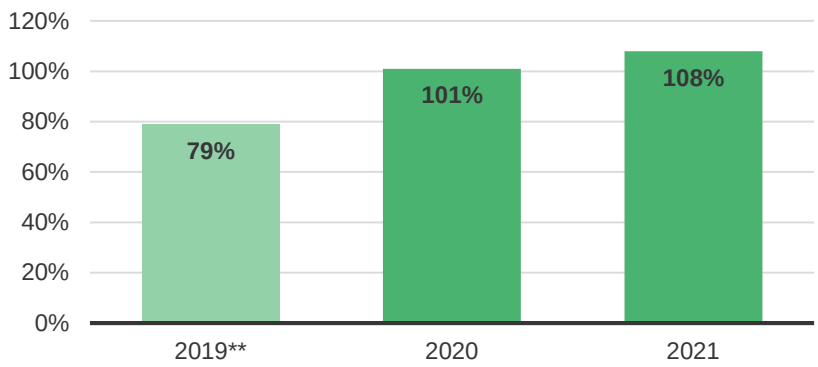
Unemployment Rate



Federal Deficit



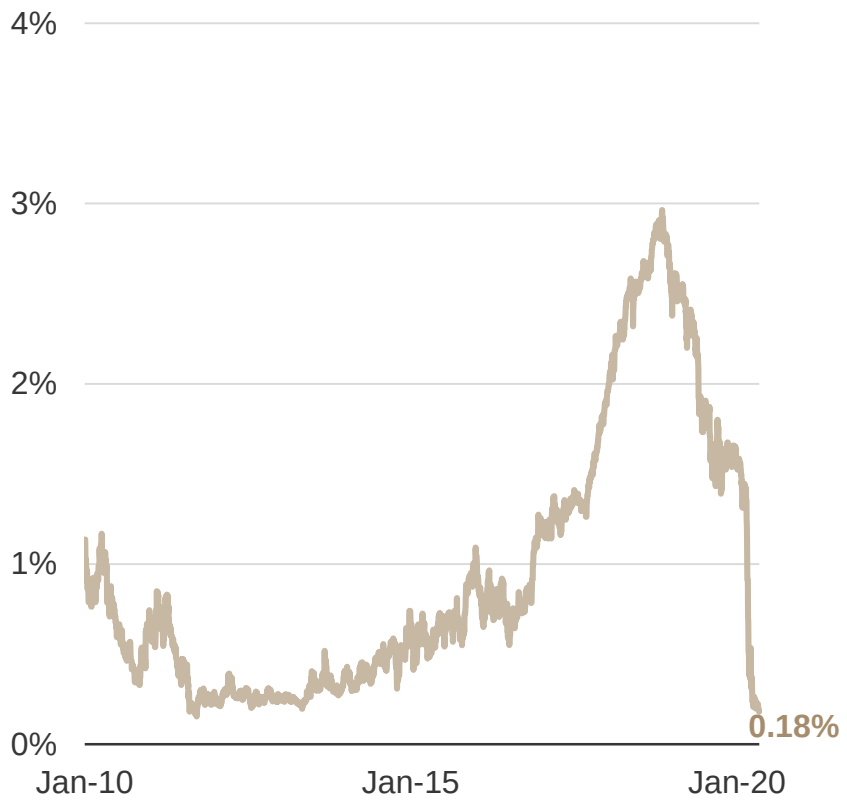
Debt Held by Public as % of GDP



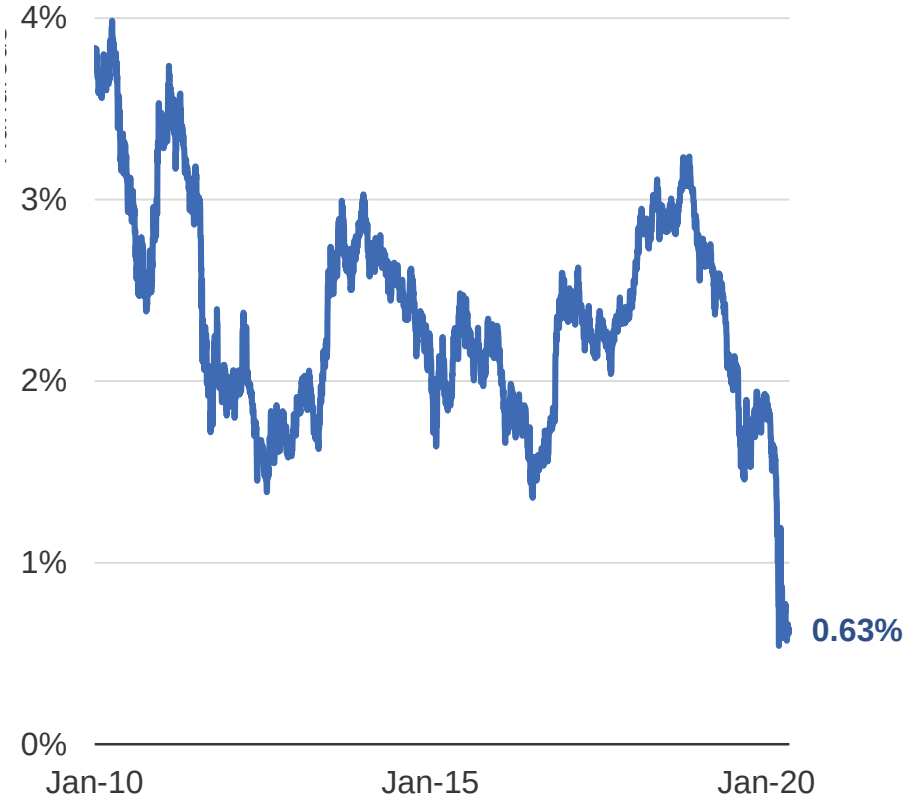
Source: Congressional Budget Office, as of 5/04/2020. *Average for year. **Actual results.

Treasury Yields Fall to New Lows

2-Year Treasury Yield

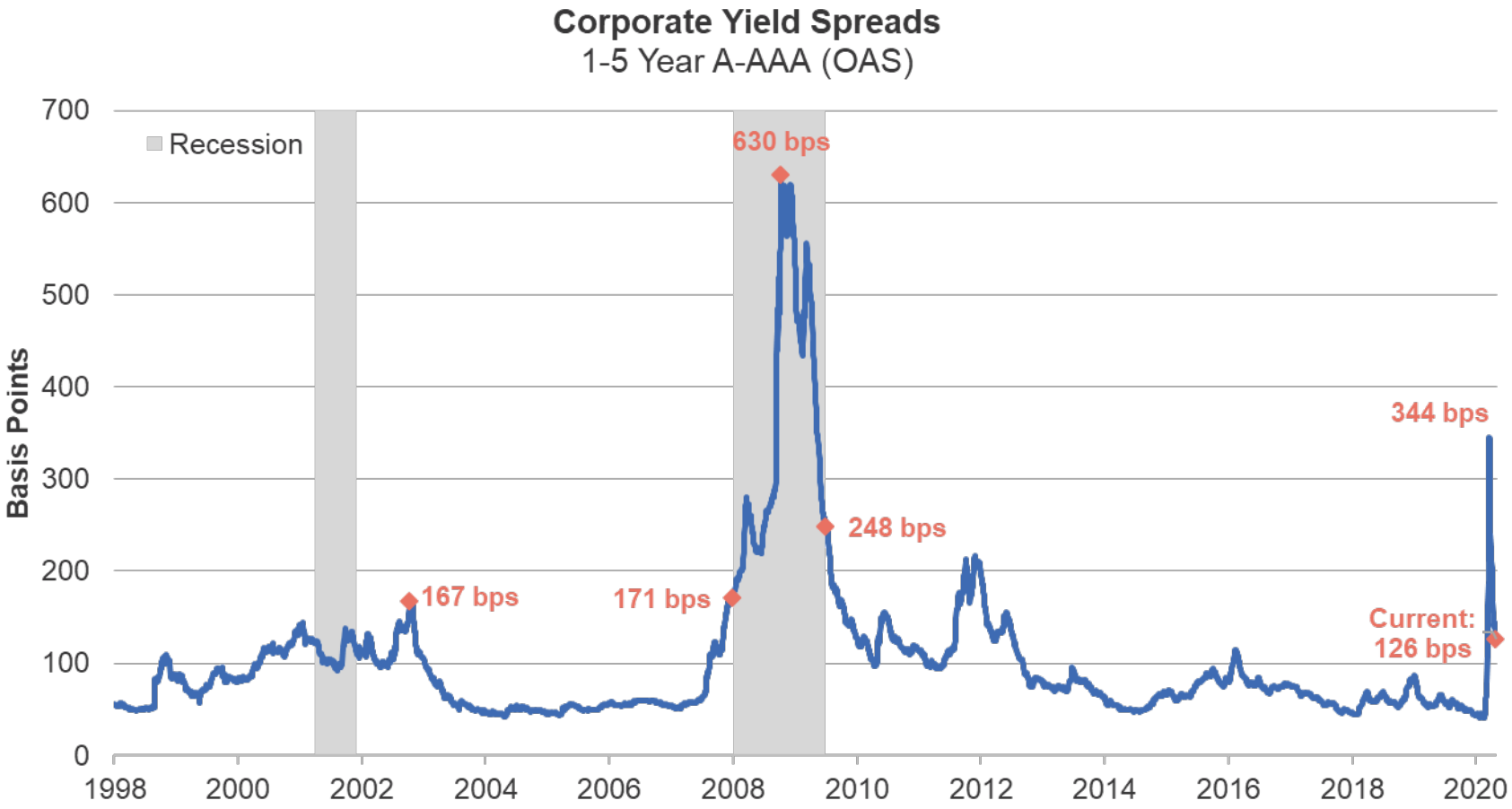


10-Year Treasury Yield



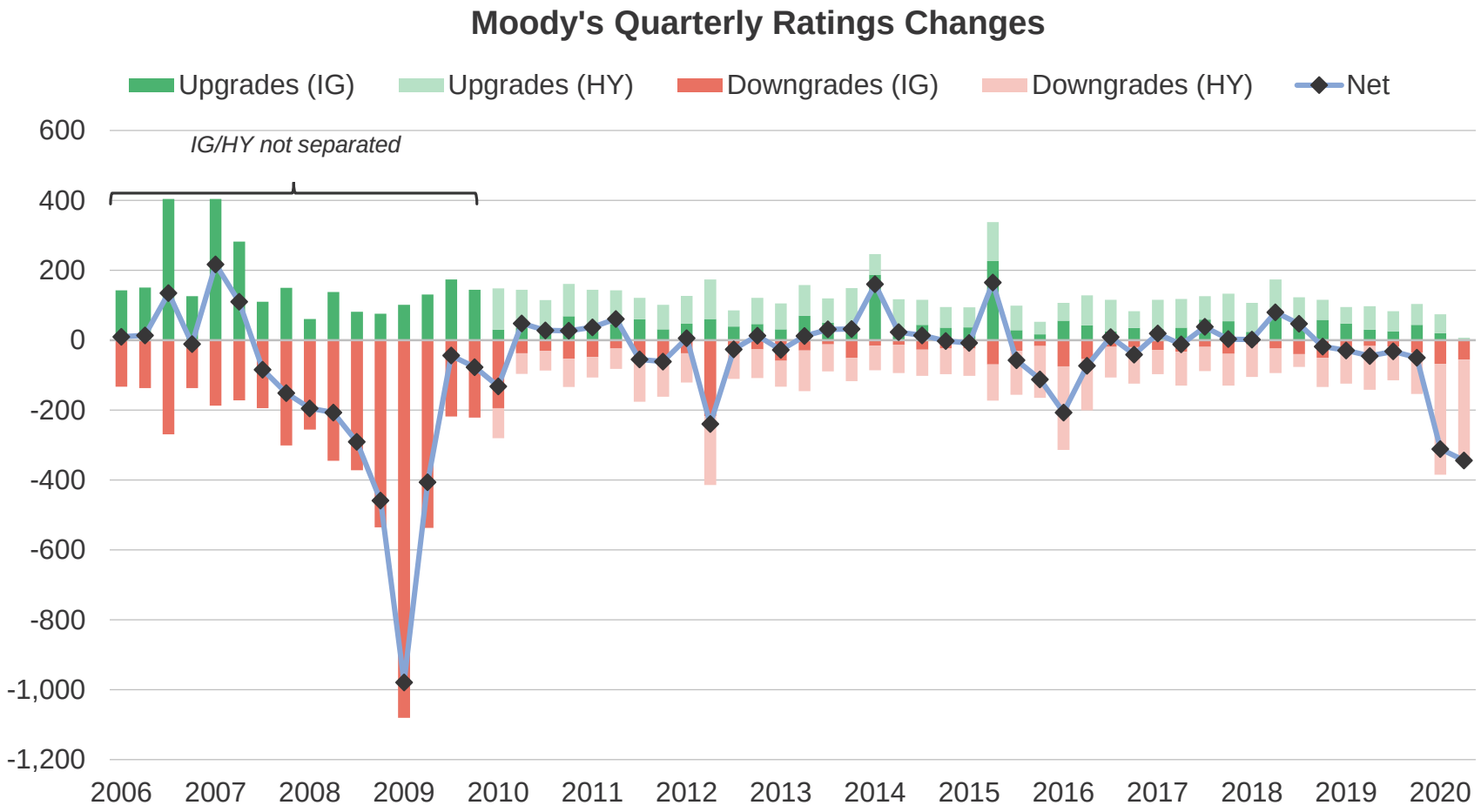
Source: Bloomberg, as of 5/04/2020.

Corporate Spreads Normalize Amid Fed Stimulus



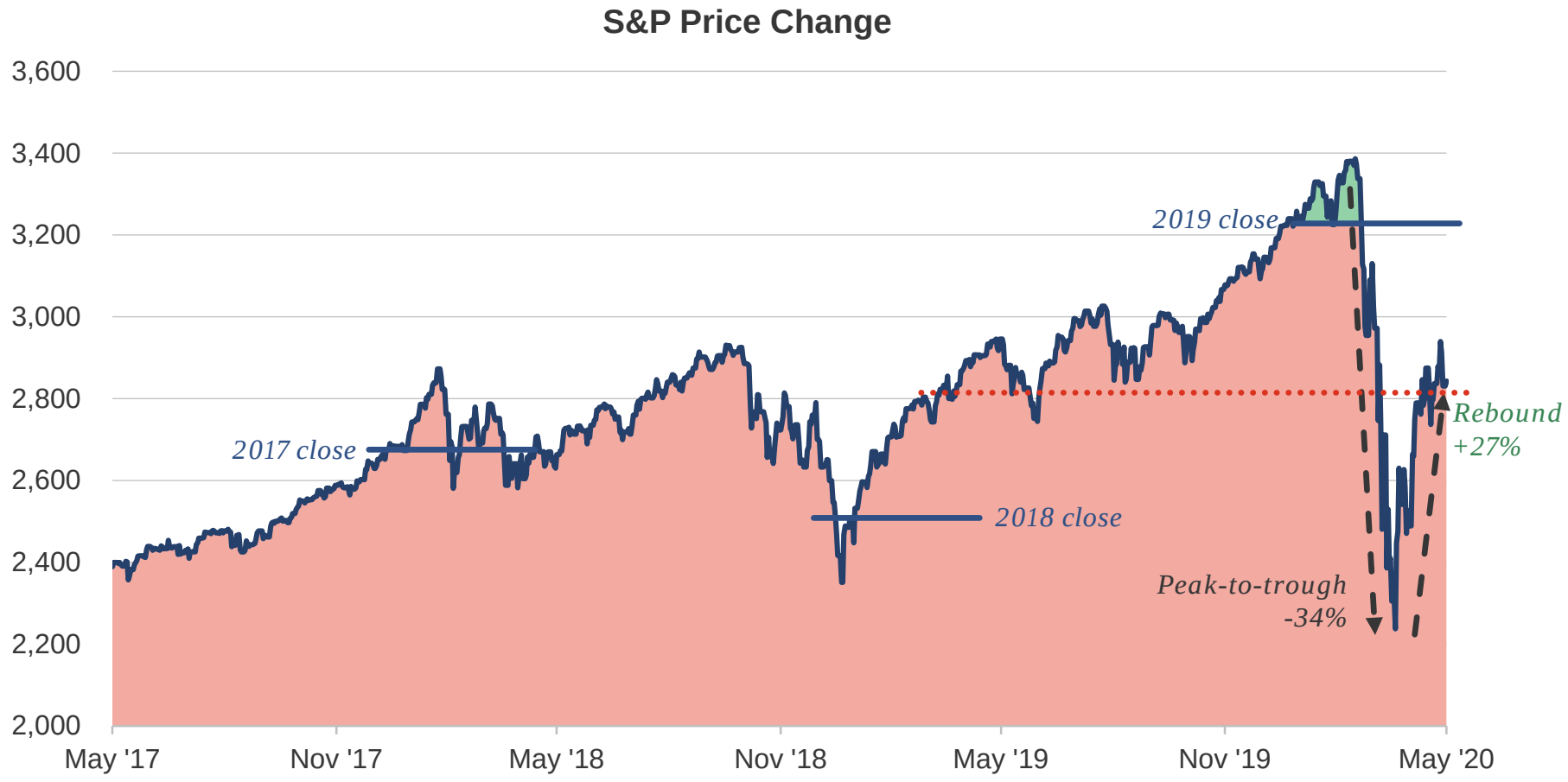
Source: Bloomberg, as of 5/04/20. Recession period derive from the National Bureau of Economic Research (NBER) based recession indicators.

Rating Downgrades Likely to Accelerate, Focused in High Yield



Source: Bloomberg, as of 4/29/20.

Stocks Rally But Remain Down From February Highs



Source: Bloomberg, as of 5/04/2020.

Disclosures

This material is based on information obtained from sources generally believed to be reliable and available to the public, however PFM Asset Management LLC cannot guarantee its accuracy, completeness or suitability. This material is for general information purposes only and is not intended to provide specific advice or a specific recommendation. All statements as to what will or may happen under certain circumstances are based on assumptions, some but not all of which are noted in the presentation. Assumptions may or may not be proven correct as actual events occur, and results may depend on events outside of your or our control. Changes in assumptions may have a material effect on results. Past performance does not necessarily reflect and is not a guaranty of future results. The information contained in this presentation is not an offer to purchase or sell any securities.

PFM is the marketing name for a group of affiliated companies providing a range of services. All services are provided through separate agreements with each company. Investment advisory services are provided by PFM Asset Management LLC, which is registered with the SEC under the Investment Advisers Act of 1940. For more information regarding PFM's services or entities, please visit www.pfm.com.

Director Comments and Discussion

T. Milford Harrison
President

Paul Kielhold
Vice President

Susan Longville
Treasurer

June Hayes
Director

Gil Navarro
Director

Staff Recommendation

Receive and file.

Discussion Item 5.2 (Pg. 24)

Heather Dyer, M.S., M.B.A - General Manager

Consider Establishment of Specific Committees to Facilitate District Negotiation on Key Issues

Staff Recommendation

Discuss the recommended Committees and provide direction to Staff on how to proceed.

Water Code

WATER CODE - WAT

DIVISION 20. MUNICIPAL WATER DISTRICTS [71000- 73001],

CHAPTER 2. The Board [71270 - 71314],

ARTICLE 2. Powers and Duties [71300- 71314]

71300. All powers, privileges, and duties of a district shall be exercised and performed by the board. *(Added by Stats. 1963, Ch. 156.)*

71301. Any executive, administrative, and ministerial powers may be delegated and redelegated by the board to any of the offices created by this part or by the board. *(Added by Stats. 1963, Ch. 156.)*

71305. The board may create any necessary offices and establish and re-establish the powers, duties, and compensation of all officers and employees.

Board Handbook
Policy Guidelines

- The Board provides policy direction and leadership for the District
- The Board exercises authority collectively as a Board
- The Board seeks to provide leadership in local, regional, state, and national issues that have relevance on the operations of the District and the communities of interest
- The President appoints all committees – standing and Ad Hoc
- The President may create a new committee or abolish an existing committee with majority approval of the Board
- Any member of the Board may propose the establishment or abolition of a committee at a Board Workshop to ascertain whether a majority of the Board agrees
- Committee The President coordinate the efforts of the committees, integrates committee work with that of the Board and defines committee relationships

Propose Specific Committees

AD HOC COMMITTEE

- Exists for a specific purpose
- Once that purpose or objective is achieved the Committee dissolves

STANDING COMMITTEE

- Longer period of service so that members can invest time and effort to build relationships and grow expertise in the subject matter. Recommended 2-year terms

Proposed Ad Hoc Committees

SAN GORGONIO PASS WATER AGENCY AND YUCAIPA VALLEY WATER DISTRICT AGREEMENT(S)

- Resolve various issues related to long-term water supply reliability and cost in the region
- Ad Hoc would facilitate Board-level discussion amongst the agencies to come to agreement on how to collaborate in the future

Ad Hoc Committees

FOREST HEADWATERS RESILIENCY PARTNERSHIP WITH THE SAN BERNARDINO NATIONAL FOREST

- Facilitate conversations with San Bernardino National Forest leadership on potential measures to protect and promote resilience of our headwaters located on the Forest
- Identify opportunities to partner on a local-state-federal level to facilitate and implement proactive forest management activities that reduce risk of catastrophic megafire and damage to the important ecosystems of the headwaters

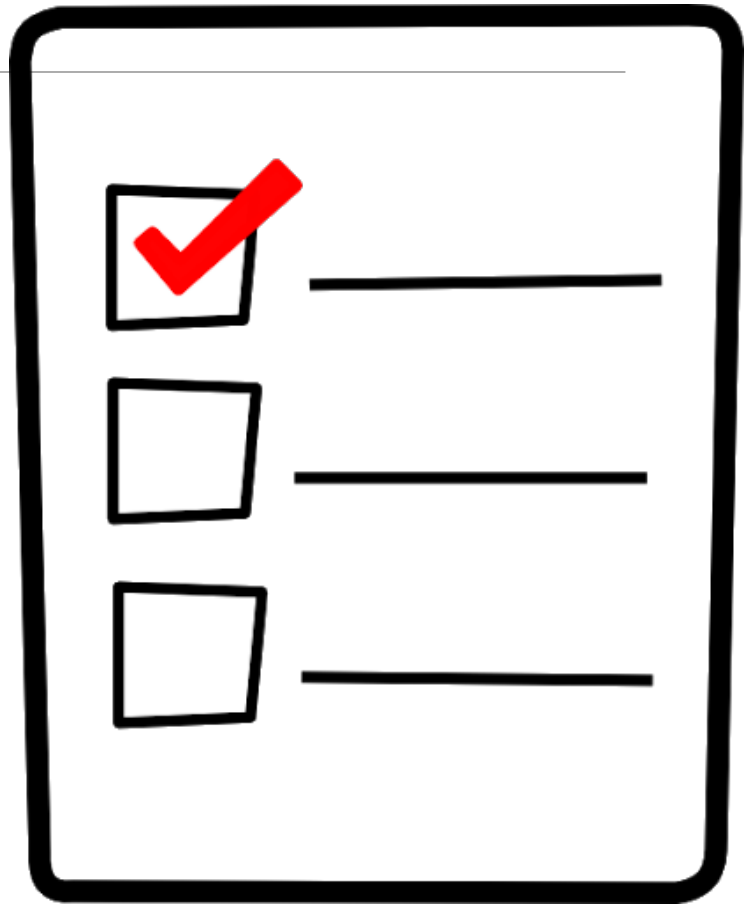
Proposed Standing Committee

LEGISLATIVE ACTION TEAM

- Proposed as a standing Committee with a two-year term
- Members would work closely with Staff and lobbyists to establish legislative priorities
- Members would participate in meetings with legislators in the district, Sacramento, and Washington D.C., as needed

Goals

- Demonstrate District commitment to an issue early and receive Board-level feedback throughout discussions with partners and legislators
- Advance conversations more quickly and progress through negotiations
- Provide opportunities for focused discussions on complicated topics
- Promote development of strong relationships with partner agencies and elected officials



Director Comments and Discussion

T. Milford Harrison
President

Paul Kielhold
Vice President

Susan Longville
Treasurer

June Hayes
Director

Gil Navarro
Director

Staff Recommendation

Discuss the recommended Committees and provide direction to Staff on how to proceed.

Discussion Item 5.3 (Pg. 26)

Kristeen Farlow, Manager of Water Use Efficiency/External Affairs

Discuss Legislative Program Update

Staff Recommendation
Receive and file.

State Legislative Highlights

SCHEDULE

Assembly returned week of May 4

Senate returned week of May 11

Budget Deadline is June 15

Deadline to get Measures on November ballot is June 25

State Legislative Highlights (cont.)

OTHER LEGISLATION: ASSEMBLY

AB 3256 – Wildfire Prevention, Safe Drinking Water, Climate Resilience, Drought Preparation, and Flood Protection Bond Act of 2020

SENATE

SB 1052 – Water quality: municipal wastewater agencies

SB 1188 – Updates to the California Water Plan

State Legislative Highlights (cont.)

OTHER

Estimated $54.3 billion budget deficit

Water Resilience Financing Act of 2020

Federal Legislative Highlights

TIMELINE

- Pro Forma Sessions
- Senate reconvened the week of May 4
- House has no date for return

Federal Legislative Highlights

LEGISLATION

COVID-related:

- HR 6525 – the Reopen America Act of 2020

Federal Highlights (cont.)

DRAFT BILLS FROM THE SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE

- America's Water Infrastructure Act of 2020
  - $17 billion
  - Goal for Army Corp of Engineers
- Drinking Water Infrastructure Act of 2020
  - $2.5 billion

Federal Highlights (cont.)

- Revised Waters of the U.S. (April 21 update)
- FUTURE Drought Act (Huffman)
- Negotiations for 2021 Appropriations

Director Comments and Discussion

T. Milford Harrison
President

Paul Kielhold
Vice President

Susan Longville
Treasurer

June Hayes
Director

Gil Navarro
Director

Staff Recommendation

Receive and file.

Adjournment