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April 4, 2023

ELECTRONIC FILING

Mr. Adam J. Teitzman, Commission Clerk
Office of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Docket 20230023-GU, Petition for Rate Increase by Peoples Gas System, Inc.

Dear Mr. Teitzman:

Attached for filing on behalf of Peoples Gas System, Inc. in the above-referenced docket is the Direct Testimony of Dr. Richard K. Harper, PhD. and Exhibit No. RKH-1.

Thank you for your assistance in connection with this matter.

(Document 8 of 18)

Sincerely,

A handwritten signature in blue ink that reads 'J. Jeffry Wahlen'.

J. Jeffry Wahlen

cc: Charles J. Rehwinkel, Public Counsel
Jon Moyle, FIPUG
Major Thompson, OGC
Ryan Sandy, OGC

JJW/ne
Attachment

BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 20230023-GU

IN RE: PETITION FOR RATE INCREASE
BY PEOPLES GAS SYSTEM, INC.

PREPARED DIRECT TESTIMONY AND EXHIBIT
OF
DR. RICHARD K. HARPER
ON BEHALF OF
PEOPLES GAS SYSTEM, INC.

TABLE OF CONTENTS
PREPARED DIRECT TESTIMONY AND EXHIBIT
OF
DR. RICHARD K. HARPER

EDUCATIONAL BACKGROUND AND EXPERIENCE..... 1
PURPOSE OF DIRECT TESTIMONY..... 3
FLORIDA’S POPULATION GROWTH AND ECONOMIC GROWTH OVER TIME..... 6
RECENT TRENDS IN INFLATION..... 11
BENEFITS TO FLORIDA OF GROWTH IN UTILIZATION OF NATURAL GAS... 18
ECONOMIC AND DEMOGRAPHIC FORECASTS FOR PEOPLES GAS LOCATIONS.. 20
SUMMARY..... 21
EXHIBIT..... 23

1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**
2 **PREPARED DIRECT TESTIMONY**
3 **OF**
4 **DR. RICHARD K. HARPER**
5 **ON BEHALF OF PEOPLES GAS SYSTEM, INC.**
6

7 **EDUCATIONAL BACKGROUND AND EXPERIENCE**

8 **Q.** Please state your name, address, occupation and employer.

9
10 **A.** My name is Dr. Richard K. Harper, PhD. My business address
11 is 516 E. Zaragoza St., Pensacola, FL 32502. I am self-
12 employed.

13
14 **Q.** Please describe your duties and responsibilities in that
15 position.

16
17 **A.** I conduct a variety of studies for public and private clients
18 using the tools of economic analysis.

19
20 **Q.** Please provide a brief outline of your educational background
21 and business experience.

22
23 **A.** My current curriculum vitae is included as Document No. 1 of
24 my exhibit. I received a BA in Economics from Guilford College
25 in 1978, and an MA in 1986 and a PhD in 1989, both in Economics

1 from Duke University. I worked as a professional economist
2 from 1980 - 1984 at Research Triangle Institute in Research
3 Triangle Park, North Carolina, and at the University of West
4 Florida ("UWF") from 1989 until retiring in 2017.

5
6 From 1996 - 2011 (except during a sabbatical and other time
7 away) I served as the Director of UWF's Haas Center for
8 Business Research and Economic Development, conducting
9 numerous studies of the local, regional, and state economies
10 and economic sectors. I then served as Executive Director of
11 the UWF Office of Economic Development and Engagement,
12 overseeing activities of the Haas Center and of the State
13 Director's Office of the Florida Small Business Development
14 Center Network. I served as the Senior Policy Advisor for
15 Economic Affairs for the Florida Senate from 2012 until 2014.
16 I then returned to UWF as Assistant, then Associate, Vice
17 President for Research and Economic Development and served as
18 the University's Chief Research Officer during 2015 and 2016.

19
20 I have offered expert economics testimony in litigation and
21 served as the economic expert for the State of Florida from
22 inception until completion in its economic damages litigation
23 with BP. Since retiring from UWF in 2017, I have worked as a
24 consultant in economics, performing a variety of studies of
25 economic issues for public and private clients. I currently

1 serve as the Economic Advisor to Triumph Gulf Coast, Inc.
2 ("Triumph"), providing advice and support to the Triumph
3 Board of Directors as it seeks to distribute \$1.5 billion in
4 Deepwater Horizon damages funds to projects that will grow
5 and diversify the Northwest Florida economy.
6

7 **Q.** Have you provided testimony before the Florida Public Service
8 Commission?
9

10 **A.** Yes. I have provided testimony supporting growth trends in
11 Florida and the benefit of natural gas use in Florida from an
12 economic perspective for Peoples Gas System, Inc., in the
13 company's 2020 base rate proceeding in Docket No. 20200051-
14 GU.
15

16 **PURPOSE OF DIRECT TESTIMONY**

17 **Q.** What are the purposes of your prepared direct testimony in
18 this proceeding?
19

20 **A.** My prepared direct testimony will comment on past and future
21 growth trends in Florida, with emphasis on future strong
22 growth in population and economic activity that will drive
23 growth in natural gas demand as described in the prepared
24 direct testimonies of Peoples Gas System, Inc.'s ("Peoples"
25 or the "company") witnesses Eric Fox and Timothy O'Connor. I

1 will describe the recent trends in inflation and the impact
2 on the company's customers and cost of service. I have also
3 been asked to comment on the benefit of natural gas use to
4 the State of Florida and its citizens from an economic
5 perspective. These benefits include the value for
6 residential, commercial and industrial customers through
7 economical energy prices that allow and promote additional
8 job creation. They also include environmental benefits
9 relative to traditional energy sources, such as coal and oil.

10
11 **Q.** Did you prepare any exhibits in support of your prepared
12 direct testimony?

13
14 **A.** Yes. Exhibit No. RKH-1 was prepared under my direction and
15 supervision. My exhibit consists of 20 documents, as follows:

16
17 Document No. 1 Curriculum Vitae of Dr. Richard K. Harper
18 Document No. 2 Endnotes for the Prepared Direct
19 Testimony of Dr. Richard K. Harper
20 Document No. 3 Population Growth in Florida by Decade,
21 1970-2059
22 Document No. 4 Total Nonfarm Payrolls in Florida and the
23 Nation
24 Document No. 5 Annual GDP Growth Rate, Florida and the
25 Nation, 1988-2021

| | | |
|----|-----------------|---|
| 1 | Document No. 6 | All Transactions House Price Index, |
| 2 | | Florida and the U.S. |
| 3 | Document No. 7 | Producer Price Index, Residential |
| 4 | | Construction Inputs |
| 5 | Document No. 8 | Measures of Inflation |
| 6 | Document No. 9 | Cumulative Increase in Household Costs |
| 7 | | for PGS Customers |
| 8 | Document No. 10 | Cumulative Increase in Business Costs for |
| 9 | | PGS Customers |
| 10 | Document No. 11 | Cumulative Increase in Relevant PGS |
| 11 | | Business Costs |
| 12 | Document No. 12 | Typology for Homebuyer Net Migration |
| 13 | | Based on Metro Population Size |
| 14 | Document No. 13 | Total Population Indexed to 2020- |
| 15 | | Charlotte, FL |
| 16 | Document No. 14 | Total Population Indexed to 2020- |
| 17 | | Collier, FL |
| 18 | Document No. 15 | Total Population Indexed to 2020- Duval, |
| 19 | | FL |
| 20 | Document No. 16 | Total Population Indexed to 2020- Bay, FL |
| 21 | Document No. 17 | Total Population Indexed to 2020- |
| 22 | | Broward, FL |
| 23 | Document No. 18 | Total Population Indexed to 2020- Miami- |
| 24 | | Dade, FL |
| 25 | Document No. 19 | Total Population Indexed to 2020- Lee, FL |

FLORIDA'S POPULATION GROWTH AND ECONOMIC GROWTH OVER TIME

Q. What are the Florida growth trends that are relevant to natural gas service expansion and reliability projects?

A. Florida has historically seen population and economic growth rates much greater than those for the nation overall. Demographers note that Florida's population growth rates have ranked among the top eight states in each of the ten decades since 1920, and in most decades ranked in the top four.ⁱ In 1920, New York had a population of 10.38 million, while Florida had 0.97 million. Over the next ten decades, New York grew by 95 percent to reach a population of 20.2 million, while Florida grew by 2,124 percent over the same period to reach a population of 21.54 million in 2020.ⁱⁱ

Florida's current population (in 2023) is approximately 22.3 million and is expected to swell to 24.14 million permanent residents by 2030, an increase over this period of 1.84 million people.ⁱⁱⁱ The migration of people from places both domestic and international into Florida has had profound effects on the state's population and on Florida's economy.

1 Today, as a result of the 2020 Census, Florida has 28
2 representatives in the 118th Congress, while New York has 26,
3 a share that is proportional to their current populations.^{iv}
4 Population forecasts suggest that Florida will continue to
5 gain seats over time, and that New York will continue to lose
6 them. This is the continuation of the long-term trend as
7 Americans migrate from the Northeast and Midwest to the South.
8 As late as 1953, the Florida delegation to the 435-person
9 U.S. House of Representatives was 6 representatives, while
10 the state of New York sent 45.^v

11
12 The U.S. Census released information in December 2022 showing
13 that Florida was the fastest growing state in the nation, at
14 1.9 percent per year from July 2021 through July 2022. Net
15 migration of 444,484, or 1,218 more people per day moving
16 into Florida above and beyond those moving out of Florida,
17 was the largest among the 50 states.^{vi}

18
19 Forecasts for the coming years suggest that the U.S. will
20 have grown by a total of 18.8 percent between 2020 and 2050.
21 During that same period, Florida is expected to grow by 37.4
22 percent, almost double the country's overall percentage
23 increase, or by a total of almost 8.1 million new residents.^{vii}
24 If Florida were instead to grow over that period at the
25 projected nationwide growth rate, the 8.1 million expected

1 new residents would be reduced by 4.01 million. These large
2 projected population changes will increase the number of
3 households seeking natural gas service. Meeting the needs of
4 these new households via natural gas affords additional
5 benefits per Florida household.^{viii}
6

7 **Q.** Haven't Florida population growth rates been declining in
8 recent decades?
9

10 **A.** Yes. Population growth for Florida over the four past decades
11 and expected growth over the coming four decades can be seen
12 in Document No. 3 of my exhibit. While growth in the most
13 recent decade, at 2.7 million people, is not as large as the
14 3.2-million-person growth attained over the 1980 - 1990
15 period, it exceeds the growth of all states except Texas.
16 Further, strong growth in the number of domestic and
17 international tourists to the state has created additional
18 demand for lodging, restaurants, retail establishments, and
19 other tourism amenities that can be met efficiently via
20 natural gas.
21

22 **Q.** Does economic activity growth at local, state and national
23 levels mirror the respective population growth trends?
24

25 **A.** Economic growth trends closely resemble those of the

1 population growth trends. The Florida economy in recent
2 decades continues to grow at a substantially faster rate than
3 the national economy. This is true even when considering the
4 larger than national average impact to Florida of the Great
5 Recession of 2007 to 2009. Using January 2000 employment as
6 a base, the cumulative growth in nonfarm employment in Florida
7 as of November 2022, at 37.7 percent, is more than twice as
8 large as employment growth in the nation as a whole over the
9 last twenty years. This is shown in Document No. 4 of my
10 exhibit.

11
12 Florida's faster growth is also reflected in higher growth
13 than for the nation in gross domestic product ("GDP"). GDP is
14 the most commonly reported measure of economic activity and
15 represents the dollar value of production of goods and
16 services during any particular quarter or year. It is reported
17 quarterly by the U.S. Bureau of Economic Analysis for the
18 nation and for individual states.

19
20 Over the most recent decade Florida's GDP grew by a cumulative
21 75.3 percent, while that of the nation as a whole grew by
22 54.7 percent. This can be seen in Document No. 5 of my
23 exhibit. But for the effects of the Great Recession of 2007
24 - 2009, that growth differential would likely have been even
25 greater. Florida suffered particularly during this housing-

1 driven recession because Florida's construction sector is
2 about 25 percent larger than the national average. This is
3 due to the need to accommodate both the high rates of inbound
4 migration of people from other states and other countries as
5 well as to accommodate the strong demand for vacation housing.

6
7 **Q.** Is the damage inflicted on growth and the housing market by
8 the Great Recession now over?

9
10 **A.** Yes. Housing prices have substantially recovered in Florida
11 and returned to the long-run housing price trends, and now
12 exceed the peak reached during the "housing bubble" before
13 the Great Recession. Setting the January 2000 price of a home
14 at \$100,000, the average price nationally had risen to
15 \$270,900, while it had risen to \$382,400 in Florida. This can
16 be seen in Document No. 6 of my exhibit.

17
18 Current supply side constraints in housing, including limited
19 availability of housing inventory as well as increased
20 building input prices, such as lumber and labor, have been
21 primary drivers of price increase seen in the 2021 - 2022
22 price run-up. A chart of this cost inflation in housing is
23 presented in Document No. 7 of my exhibit. As can be seen, in
24 February 2023, the price index for residential construction
25 inputs had only begun to decline from its highs of mid-2022

1 and is still 49 percent higher than in January 2015.

2
3 **RECENT TRENDS IN INFLATION**

4 **Q.** Please describe recent trends in inflation and how they will
5 likely change over time.

6
7 **A.** Inflation is defined to be the change in prices of goods and
8 services in the economy. The most commonly reported measure
9 of inflation is the Consumer Price Index for All Urban
10 Consumers: All Items, generally referred to as the ("CPI").
11 The CPI is reported every month by the U.S. Bureau of Labor
12 Statistics. It is a price index of a basket of goods and
13 services paid by urban consumers representing roughly 88
14 percent of the total population. Prices are collected monthly
15 from about 4,000 housing units and 26,000 retail
16 establishments across 87 urban areas.^{ix} The path of CPI
17 inflation over the past decade shows a peak in mid-2022 at
18 almost nine percent before beginning to fall throughout the
19 second half of the year, as is shown in Document No. 8 of my
20 exhibit.

21
22 Among the measures of inflation, one that is often referred
23 to in policy discussions by the Federal Reserve (the "Fed")
24 is the Personal Consumption Expenditure Price Index (the "PCE
25 Index"). The PCE Index captures inflation or deflation across

1 a wide range of consumer expenses while also reflecting
2 changes in consumer behavior. For example, if the price of
3 beef rises, consumers may buy less beef and more chicken.
4 Such behavioral changes are not captured in the CPI, which
5 assumes a constant weight for each of the many items in the
6 index.* The recent path of the CPE Index is also shown in
7 Document No. 8 of my exhibit.

8
9 For both the CPI and the PCE Indexes, versions which exclude
10 food and energy prices are published, and are referred to as
11 "core inflation." This "core" distinction is important
12 because it is thought that the Fed's interest rate policy-
13 setting tools will have little effect on food prices and on
14 energy prices. Food prices may be heavily influenced by
15 weather conditions and other factors (e.g., avian flu may
16 influence the price of eggs) that are outside the control of
17 the Fed, while energy prices may be heavily influenced by
18 global geopolitical conditions and other factors (e.g., the
19 Russian invasion of Ukraine) that are also outside the control
20 of the Fed. The core PCE is also shown in Document No. 8 of
21 my exhibit.

22
23 The mandate of the Fed is to ensure price stability and full
24 employment. The Fed's price stability target is an inflation
25 rate at about two percent.^{xi} As can be seen in Document No. 8

1 of my exhibit, inflation rates over the past decade have
2 fluctuated slightly above or below two percent until Quarter
3 two of 2021, at which time inflation accelerated to a rate
4 not seen in the U.S. since the 1970s and 1980s.

5
6 Current market expectations are for economic growth rates
7 across the nation to slow, perhaps leading to recession in
8 late 2023 or in 2024. Timing estimates derived from bond
9 markets and Fed estimates suggest that a return to the two
10 percent rate of inflation will be attained, but is unlikely
11 to be achieved before 2024.

12
13 **Q.** What has been the rate of inflation to the company's
14 residential and commercial customers?

15
16 **A.** The increase in average monthly bills for gas services has
17 been substantially below overall rates of price increase of
18 other commonly purchased goods and services used by
19 households and businesses. This can be seen in the charts
20 attached in Documents No. 9 and 10 of my exhibit.

21
22 **Q.** What is the impact of higher inflation rates on the ability
23 of utility service providers to deliver their services?

24
25 The prices of the inputs used in system expansion, operations,

1 and maintenance have increased, and these price increases
2 cannot be absorbed without provision for the revenue
3 increases needed to finance them. As can be seen in Document
4 No. 11 of my exhibit, the price of key inputs of the type
5 used by the company in supplying services has increased at a
6 faster rate than has company revenue.

7
8 **Q.** Will this need for higher revenues to cover costs persist?

9
10 **A.** Yes, although the rate of inflation is expected to abate and
11 return to the Fed's target two percent rate, it is almost a
12 certainty that the prices of key inputs, including both labor
13 and materials, will not fall back to their previous price
14 levels. Instead, the new higher price levels would simply
15 come to reflect a lower rate of price growth (i.e., inflation
16 will return to its normal two percent rate).

17
18 **Q.** Will the trend of higher growth in Florida than in the nation
19 overall continue over the longer term or does it just reflect
20 the recovery from the Great Recession that hit Florida harder
21 than the rest of the nation?

22
23 **A.** Yes, this trend will continue. Population growth rates
24 reflect ongoing demographic trends, with the peak birth years
25 from the "Baby Boom" (1946 - 64 birth years) giving way to

1 subsequent lower birth rates. Generation X (1965 - 79) was
2 followed by the millennials (1980 - 1994) who have become the
3 largest population group in the nation as the baby-boomer
4 generation ages. However, Florida still expects 8.1 million
5 new residents between 2020 and 2050. Slower national growth
6 rates notwithstanding, since the time of the Great Recession,
7 Florida population growth has substantially exceeded the
8 national population growth rate, with Florida growing almost
9 twice as fast - a cumulative 20.4 percent versus 10.6 percent
10 for the nation over the 2008 - 2023 period.^{xii}

11
12 **Q.** Why will Florida continue to be a top destination for people
13 moving from other states?

14
15 **A.** Florida's high population growth trends appear to likely
16 continue into the future. Some of the primary drivers of
17 relocation decisions by those who come from other states into
18 Florida are longstanding, and include job opportunities,
19 desire for a warmer climate, year-round outdoor activities,
20 and an affordable lifestyle.

21
22 Since the passage and implementation of the 2017 Tax Cuts and
23 Jobs Act, there is also a change in the relative cost of
24 living driven by the attractiveness of Florida's tax
25 structure. Because of Florida's lack of a state income tax,

1 its relatively modest property tax burden, and its modest
2 level of state expenditures per state resident, Florida's
3 attraction for inbound migration from other states continues
4 to be strong. However, the recent several year run-up in house
5 prices, combined with property insurance challenges
6 exacerbated by Hurricane Ian, are now posing challenges to
7 Florida's traditional housing affordability advantage. While
8 this will serve to moderate Florida's recent inbound
9 migration surge, Florida population growth will continue to
10 exceed the national average rate.

11
12 Even though national population growth rates are falling due
13 to the demographics of the post-war generations, the
14 cumulative growth in the number of residents of Florida means
15 that a somewhat slower rate of growth will still attract close
16 to the same number of new households as had been seen during
17 previous decades.

18
19 **Q.** Will the Coronavirus have any significant negative long-term
20 effects on the growth trends you have just described?

21
22 **A.** No. The Coronavirus has negatively affected economic growth
23 in Florida and throughout the country in a way that we have
24 never seen before; however, the data now document an
25 acceleration in the growth differential in favor of Florida.

1 This was driven in the short term by the strong recovery in
2 leisure and hospitality sector as Florida was open for
3 business when other states were not. Strong demand for housing
4 created by record numbers of new residents also contributed
5 to that growth.

6
7 **Q.** Have there been other likely effects of the Coronavirus on
8 natural gas markets in Florida?

9
10 **A.** Yes, there have been other effects. The pandemic has
11 intensified an existing trend towards migration away from
12 cities with the highest population density. People have voted
13 with their feet, leaving New York and other densely populated
14 top 25 urban areas and they have come to Florida. This can be
15 seen in Document No. 12 which presents 2022 migration data
16 from Freddie Mac, (the Federal Home Loan Mortgage
17 Corporation, which buys home loans from issuers). Because it
18 has information on both the origin and destination of families
19 with new mortgages, it can provide more up to date information
20 than is available from the U.S. Census Bureau.

21
22 Further, an effect of the pandemic has been to increase at-
23 home activities, including working, dining, shopping, and
24 entertainment, relative to historical patterns. While some of
25 this is transitory, evidence suggests that these activities

1 are likely here to stay. This would naturally increase
2 consumer demand for increased amenities in the home.
3 Additionally, the pandemic exposed fragility in supply chains
4 of intermediate and final products from toilet paper to milk
5 to meat, to automobiles and steel. Consumers may wish, for
6 purposes of risk diversification and redundancy of key home
7 attributes, to have access to natural gas, whether for
8 emergency home electricity generators or simply for the
9 convenience and amenity value of hot water and cooking even
10 when the electricity is out. In this way, increased
11 availability of natural gas distribution systems will be a
12 benefit to purchasers of new and existing homes.

13
14 **BENEFITS TO FLORIDA OF GROWTH IN UTILIZATION OF NATURAL GAS**

15 **Q.** What are the benefits to further growth in the use of natural
16 gas in Florida?

17
18 **A.** The benefits of natural gas relative to other energy sources
19 are well-understood. Among the most important is the multi-
20 year and ongoing trend for affordability relative to
21 alternate fuel sources.^{xiii} Another is the decrease in
22 greenhouse gas emissions relative to other fossil-fuel
23 resources, and the concomitant decrease in noxious pollutant
24 emissions.^{xiv} These have led to quantifiable decreases in
25 morbidity and mortality and associated increases in economic

1 output across the nation.^{xv}

2
3 In Florida, the switch to natural gas over time has been more
4 rapid than in most states and our state has already benefitted
5 substantially from increased use of natural gas to meet energy
6 needs in the home, in businesses, and in electricity
7 generation. Across key industries, from electricity
8 generation to construction, health care, food service,
9 transportation, HVAC, and other applications, natural gas has
10 provided reliable, inexpensive, and environmentally friendly
11 energy to power Florida's economic growth.

12
13 According to recent data from the EIA, in Florida, about 86.7
14 percent of natural gas use (measured by BTU) in the first 10
15 months of 2022 was in electricity generation, with 7.8 percent
16 industrial use, 3.9 percent in the commercial sector, about
17 0.3 percent in transportation, and 1.2 percent in the
18 residential sector.^{xvi} This share of usage in electricity
19 generation is higher than for any other large state in the
20 nation.^{xvii} It is indicative of Florida's warm climate, its
21 large share of leisure and hospitality businesses, retail
22 establishments, and service sector activity, and low share of
23 industrial activity. It is also indicative of the transition
24 that Florida has made over time away from traditional fossil
25 fuels of coal and oil into cleaner burning natural gas.

1 Q. Will the growth of renewable energy resources impact growth
2 trends for natural gas usage in Florida?

3

4 A. No. While the share of renewables in power generation is
5 growing, natural gas is economic even as renewables usage
6 increases, and natural gas will play a significant role in
7 energy solutions to customers. Renewables have not solved
8 the problems of morning and evening demand peaks in the daily
9 load (the "duck curve"), and mandated use of renewables would
10 drive energy prices to levels likely to be unacceptable to
11 Florida consumers and voters. Even in the future, the
12 affordable cost, rapid dispatch, and backup capabilities of
13 natural gas mean it will be an essential part of any set of
14 sustainable energy policies.

15

16 **ECONOMIC AND DEMOGRAPHIC FORECASTS FOR PEOPLES' LOCATIONS**

17 Q. Have you prepared specific demographic and economic forecasts
18 for the geographic locations served by Peoples?

19

20 A. Yes, economic and demographic descriptors for each of the
21 counties that are served by Peoples can be seen in the county-
22 specific chart packages in Documents No. 13 through 20 of my
23 exhibit.

24

25 Q. What are your conclusions in respect to these areas?

1 **A.** Florida Population growth is expected to exceed the national
2 average rate of growth. This means that there will be an
3 increase in demand for natural gas. Florida's long-held
4 advantage over other states in providing an environment where
5 people want to live will continue. This advantage may be
6 increasing over time in terms of economics as the tax penalty
7 to households of staying up North was increased by the 2017
8 changes to the federal tax code, the pandemic driven changes,
9 and the changing political environment.

10

11 The projects in which Peoples' has invested and will continue
12 to invest in are representative of the diversity of the state
13 insofar as they meet the needs of some of the counties with
14 fastest residential housing growth, areas with the greatest
15 planned industrial growth, and areas that will be expected to
16 accommodate a greater share of Florida's future growth.

17

18 **SUMMARY**

19 **Q.** Please summarize your prepared direct testimony.

20

21 **A.** The system growth presented by Peoples' in this matter is
22 supported by the increased demand that has occurred and will
23 continue to occur as it is driven by population growth and
24 economic activity growth in the State. Use of low-priced
25 American natural gas to meet the energy needs of these new

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households and businesses will allow Florida citizens to enjoy greater purchasing power by spending less of their incomes on energy. This new spending will ripple far beyond the energy sector, allowing new employment and income to be spread broadly across the Florida economy.

Q. Does this conclude your prepared direct testimony?

A. Yes.

DOCKET NO. 20230023-GU
WITNESS: HARPER

EXHIBIT

OF

DR. RICHARD K. HARPER

ON BEHALF OF PEOPLES GAS SYSTEM, INC.

Table of Contents

| DOCUMENT NO. | TITLE | PAGE |
|--------------|---|------|
| 1 | Resume of Dr. Richard K. Harper | 26 |
| 2 | Endnotes for the Prepared Direct Testimony of Dr. Richard K. Harper | 31 |
| 3 | Population Growth in Florida by Decade, 1970-2059 | 33 |
| 4 | Total Nonfarm Payrolls in Florida and the Nation | 34 |
| 5 | Annual Real GDP Growth Rate, Florida and the Nation 1988-2021 | 35 |
| 6 | All Transactions House Price Index, Florida and U.S. | 36 |
| 7 | Producer Price Index, Residential Construction Inputs | 37 |
| 8 | Inflation in Housing Market | 38 |
| 9 | Cumulative Increase in Household Costs of PGS Customers | 39 |
| 10 | Cumulative Increase in Business Costs of PGS Customers | 40 |
| 11 | Cumulative Increase in Relevant PGS Business Costs | 41 |
| 12 | Typology for Homebuyer net Migration Based on Metro Population Size | 42 |

| | | |
|----|--|----|
| 13 | Total Population Indexed to 2020 - Charlotte, FL | 43 |
| 14 | Total Population Indexed to 2020 - Collier, FL | 44 |
| 15 | Total Population Indexed to 2020 - Duval, FL | 45 |
| 16 | Total Population Indexed to 2020 - Bay, FL | 46 |
| 17 | Total Population Indexed to 2020 - Broward, FL | 47 |
| 18 | Total Population Indexed to 2020 - Miami-Dade, FL | 48 |
| 19 | Total Population Indexed to 2020 - Lee, FL | 49 |
| 20 | Total Population Indexed to 2020 - Nassau, FL | 50 |

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EDUCATION

Ph.D., Economics, Duke University, 1989
Areas of specialization:
Industrial Organization, International Trade, and Public Choice.
M.A., Economics, Duke University, 1986.
B.A., Economics and Spanish. Guilford College, Greensboro, NC, 1978.
Facultad de Filosofia y Letras, Universidad de Sevilla, Spain, 1976-77

FELLOWSHIPS, AWARDS AND SERVICE

Florida Chamber of Commerce Council of Business Economists 2017 - present
Director, then Senior Research Fellow, Studer Community Institute, 2014 - 2016
Florida Chamber of Commerce Econometrics Council, 2009 - 2016
Florida Tax Watch Council of Economic Advisors, 2008 - present
Advisor to Florida Senate Select Committee on Florida's Economy, 2008 - 2010
Florida Governor's Council of Economic Advisors, 2001 - 2006
Gabor Company, UWF Faculty Member of the Year, 2002
President, Gulf Coast Economics Club, 2000 - 2002
Director, Association for University Business and Economic Research (AUBER), 1999 - 2001
E.W. Hopkins Summer Research Award, 1996
Florida Teaching Incentive Program Award, 1997, 1994
UWF MBA Association Outstanding Graduate Program Instructor, 1994-95
UWF Student Government Association Distinguished Teaching Award, 1994
UWF Summer Research Award, 1993, 1990
UWF Outstanding Undergraduate Teaching and Advising Award, 1993
UWF Task Force on Undergraduate Education, Curriculum Development Award, 1992
UWF College of Business, Dyson Faculty Excellence Award, 1991
Carnegie Foundation, for study of economic sanctions, 4/86-11/87
Center for International Political Economy, Duke University, Summer, 1987.

EXPERIENCE

TRIUMPH GULF COAST, INC. Economic Advisor 12/17 - present
Advise and support the Board of Directors of Triumph Gulf Coast, Inc. as it evaluates funding requests, makes funding decisions, and monitors program performance for the \$1.5 billion dollar fund intended to grow and diversify Florida counties disproportionately affected by the BP oil spill. Position reports to Executive Director.

THE UNIVERSITY OF WEST FLORIDA Associate Professor 8/95 - 12/17
Dept of Marketing, Supply Chain Logistics, and Economics
Pensacola, Florida 32514 Assistant Professor 8/89 - 8/95
Teaching responsibilities include undergraduate and graduate courses in economics and business.

THE UNIVERSITY OF WEST FLORIDA
Associate Vice President for Research and Economic Opportunity. 7/15 - 12/16
Advise university administration on economic issues, serve in University President's Cabinet. Direct UWF Office of Economic Development and Engagement. Position reports to University Provost.

THE FLORIDA SENATE Senior Policy Advisor for Economic Affairs
Suite 409, The Capitol, Tallahassee, FL 7/12 - 5/14
Advise Florida Senate on all issues related to economic affairs, including bill drafting, program analysis,

development and administration of economic development incentives, and other issues as needed. Oversight of and liaison with associated Senate committee staff directors. Position housed in Senate President's Office and reports to Chief of Staff of Florida Senate.

THE UNIVERSITY OF WEST FLORIDA

Executive Director, Office of Economic Development and Engagement 1/11 – 12/16
Pensacola, FL 32514-5752

Direct activities of economic development office, including development of community partnerships and programmatic activities related to economic development. Oversee activities of Haas Center and Florida Small Business Development Center Network. Administer economic development funding programs. Position reports to University Provost.

THE UNIVERSITY OF WEST FLORIDA

Haas Center for Business Research and Economic Development Director 8/98 – 3/03, 8/04 – 1/11
Pensacola, FL 32514-5752 Interim Director 8/97 - 8/98

Direct activities of research center providing socioeconomic and demographic data and research studies. These include economic impact studies, regional economic research reports, labor market studies and economic forecasting, as well as survey research, marketing research and other business-related topics.

UNIVERSITY OF NORTH CAROLINA AT GREENSBORO Visiting Lecturer
Greensboro, NC 8/1/88 - 8/89

DUKE UNIVERSITY Research/Teaching Assistant
Durham, NC 8/84 - 8/89

RESEARCH TRIANGLE INSTITUTE Assistant Economist
Research Triangle Park, NC 10/79 - 8/84

Duties included assisting in all phases of various funded research projects, including data collection and analysis, report writing, proposal preparation and project management. On-site courses in use of microcomputers for public budgeting taught in Spanish to municipal officials from Costa Rica, Panama, Ecuador, Peru.

PUBLICATIONS

Chakraborty, K. & Harper, R. K. (2017). Measuring the Impact of Socio-economic Factors on School Efficiency in Australia. *Atlantic Economic Journal*, 45 (2), 163-179, doi: DOI 10.1007/s11293-017-9542-x.
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Richard K. Harper and Richard Hawkins. "Hurricanes and the Local Sales Tax Base: Evidence from the 2004 Florida Hurricanes," *State Tax Notes*. Vol 40, No 5, 2006 [Changes in sales tax collections]
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Richard K. Harper and Alfred Cuzan. "Economic Systems," in Hillman, Richard, ed., *Understanding Contemporary Latin America*, Lynne Rienner Publishers, 3rd ed. 2005. [Description of Latin American economic structure and issues]
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Rick Harper, Phyllis K. Pooley, Michael Schiebe. *Florida Defense Industry Economic Impact Analysis*. Commissioned by Enterprise Florida. January 2011.

Rick Harper. *Economic Impact of a Statutory Teaching Hospital in Escambia County, Florida*. Prepared for Sacred Heart Health System. December 2009.

Rick Harper. *Economic Impact of a Proposed Community Park*. August 2009.

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Kristine M. Artilles, Rick Harper, Kelly J. Mershon, Christine K. Smith. Economic Impact of Military Activity in the I-10 Technology Corridor. Prepared for Economic Development Council Okaloosa County, Florida. July 1999.

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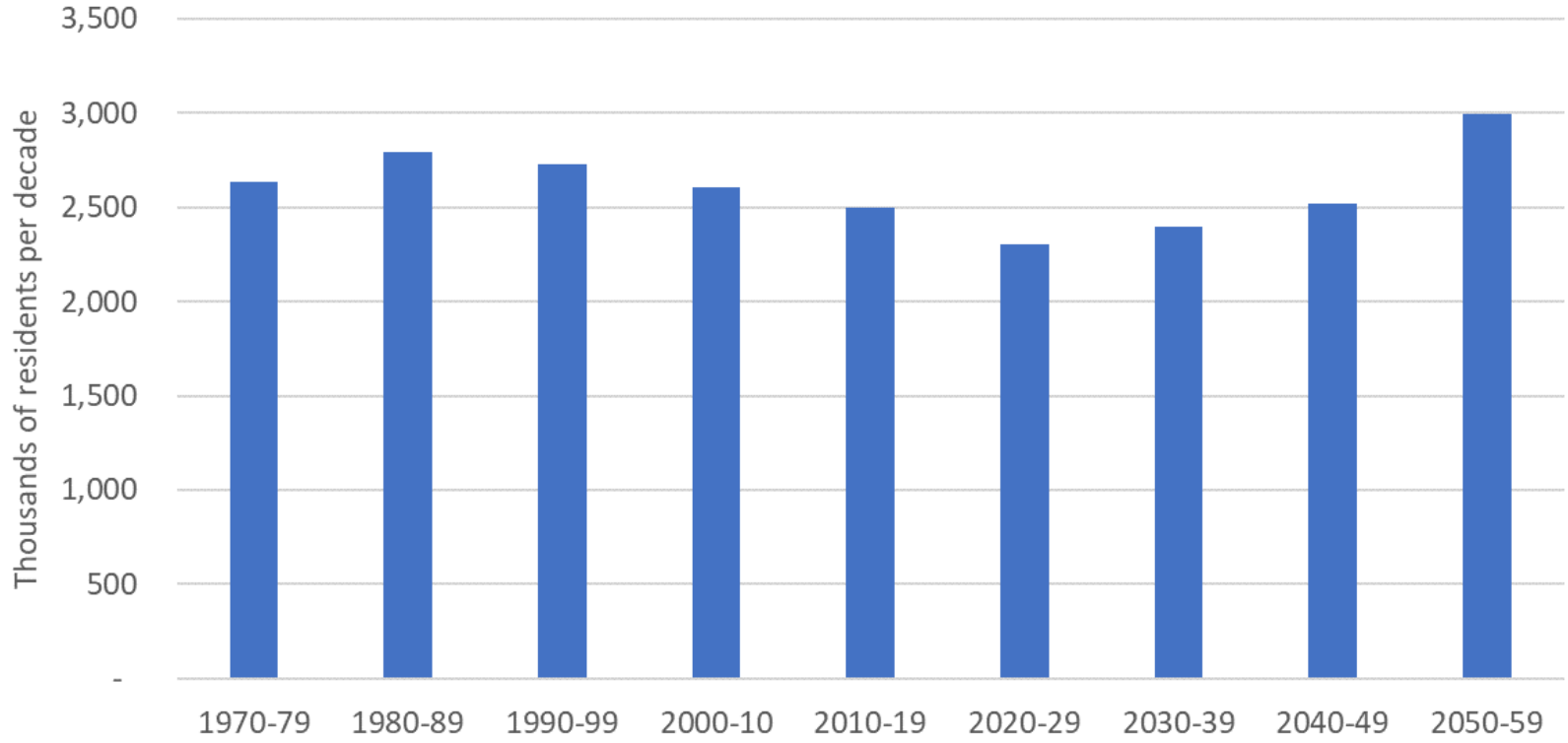
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Endnotes

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- ⁱ United States Census Bureau. "Historical Population Change Data (1910 - 2020)", <https://www.census.gov/data/tables/time-series/dec/popchange-data-text.html>
- ⁱⁱ United States Census Bureau. "Historical Population Change Data (1910 - 2020)", <https://www.census.gov/data/tables/time-series/dec/popchange-data-text.html>
- ⁱⁱⁱ Woods & Poole Economics. Complete Economic and Demographic Data Source (CEDDS), Florida Profile, 2022.
- ^{iv} <https://www.house.gov/representatives>
- ^v <https://history.house.gov/Congressional-Overview/Profiles/82nd/>
- ^{vi} <https://www.census.gov/newsroom/press-releases/2022/2022-population-estimates.html>
- ^{vii} Woods & Poole Economics. Complete Economic and Demographic Data Source (CEDDS), Florida Profile, 2022.
- ^{viii} See, e.g., Harper, R. "The Economic Impact of Natural Gas in Florida," prepared for the Florida Natural Gas Association, October 2020. These benefits include lower consumer prices and health benefits.
- ^{ix} The prices that are monitored include food, clothing, shelter, fuels, service fees, and sales taxes. See, e.g., <https://www.bls.gov/cpi/>.
- ^x A more detailed explanation of the CPE Index can be found at <https://www.bea.gov/data/personal-consumption-expenditures-price-index>.
- ^{xi} A discussion of the Federal Open Market Committee's maximum employment, stable prices, and moderate long-term interest rate goals, and an inflation rate that averages 2 percent over time, can be found at: https://www.federalreserve.gov/monetarypolicy/files/fomc_longerrungoals.pdf
- ^{xii} Woods & Poole Economics. Complete Economic and Demographic Data Source (CEDDS), Florida Profile, 2022.
- ^{xiii} The February 2023 Short Term Energy Outlook from the Energy Information Administration ("EIA") forecast shows natural gas prices declining to pre-Russian / Ukraine war levels. EIA forecast the natural gas price at the Henry Hub will average \$3.40/MMBtu in 2023. <https://www.eia.gov/todayinenergy/detail.php?id=55539>
- ^{xiv} See, e.g., Harper, R. "The Economic Impact of Natural Gas in Florida," prepared for the Florida Natural Gas Association, October 2020.
- ^{xv} Stephen Holland, et al. "Decompositions and Policy Consequences of an Extraordinary Decline in Air Pollution from Electricity Generation," NBER Working Paper 25339, December 2018. More specifically, for generation plants in 2017 versus 2010, some \$31bn in reductions were achieved by retiring coal plants, \$32bn from reduced emissions from existing coal plants (due to lower usage rates), and \$5.3bn from switching existing coal-fired plants to gas. While the total contribution of gas to pollution increased \$6.8bn due to greater usage due to new capacity, this was offset by reducing about 10 times as much pollution from coal-fired plants.
- ^{xvi} The Florida Natural Gas Summary is available at https://www.eia.gov/dnav/ng/ng_sum_lsum_dcu_sFL_m.htm

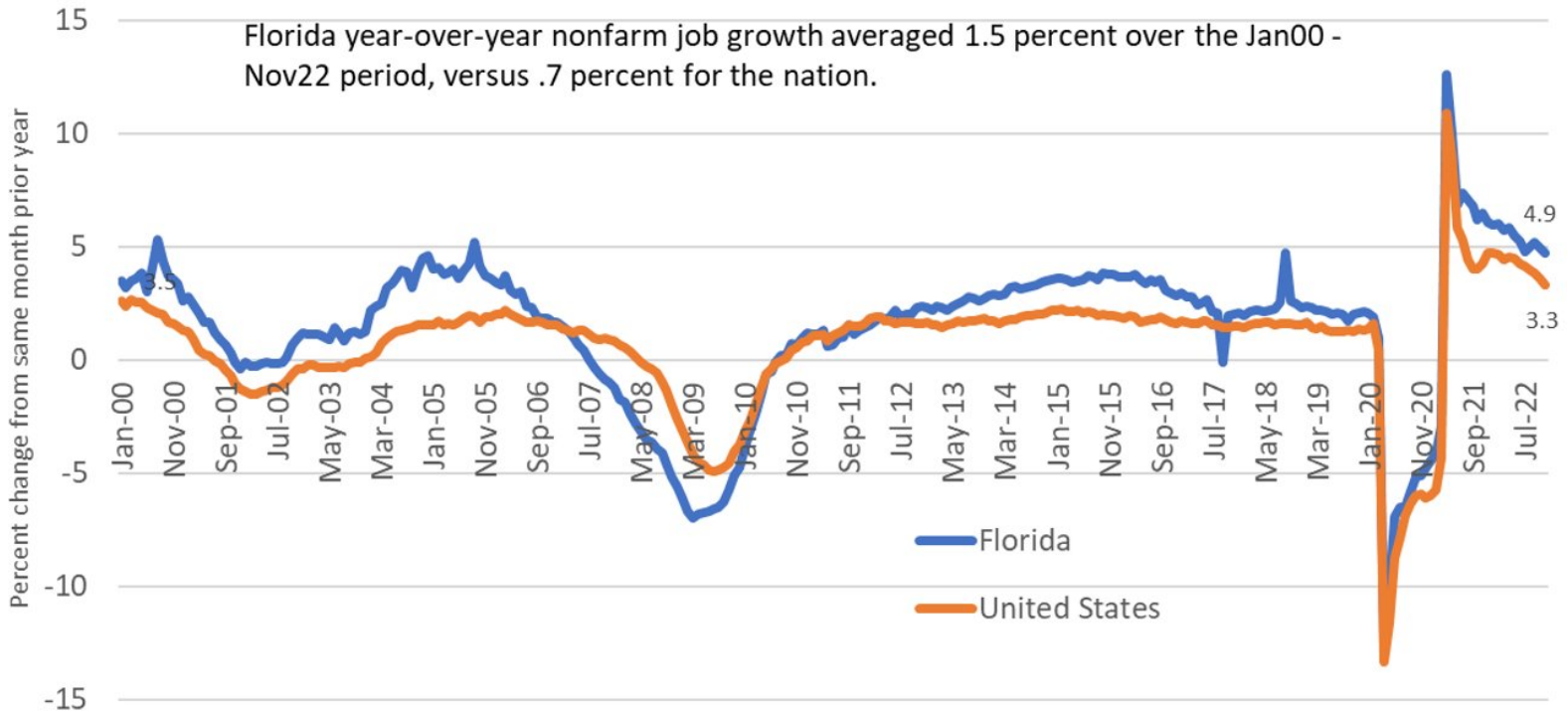
^{xvii} The U.S. Nuclear Energy Institute reports that in 2021, only Delaware, Massachusetts, and Rhode Island had a higher share of net electricity generated within their borders than Florida.
<https://www.nei.org/resources/statistics/state-electricity-generation-fuel-shares>

Population Growth in Florida by Decade, 1970 - 2059



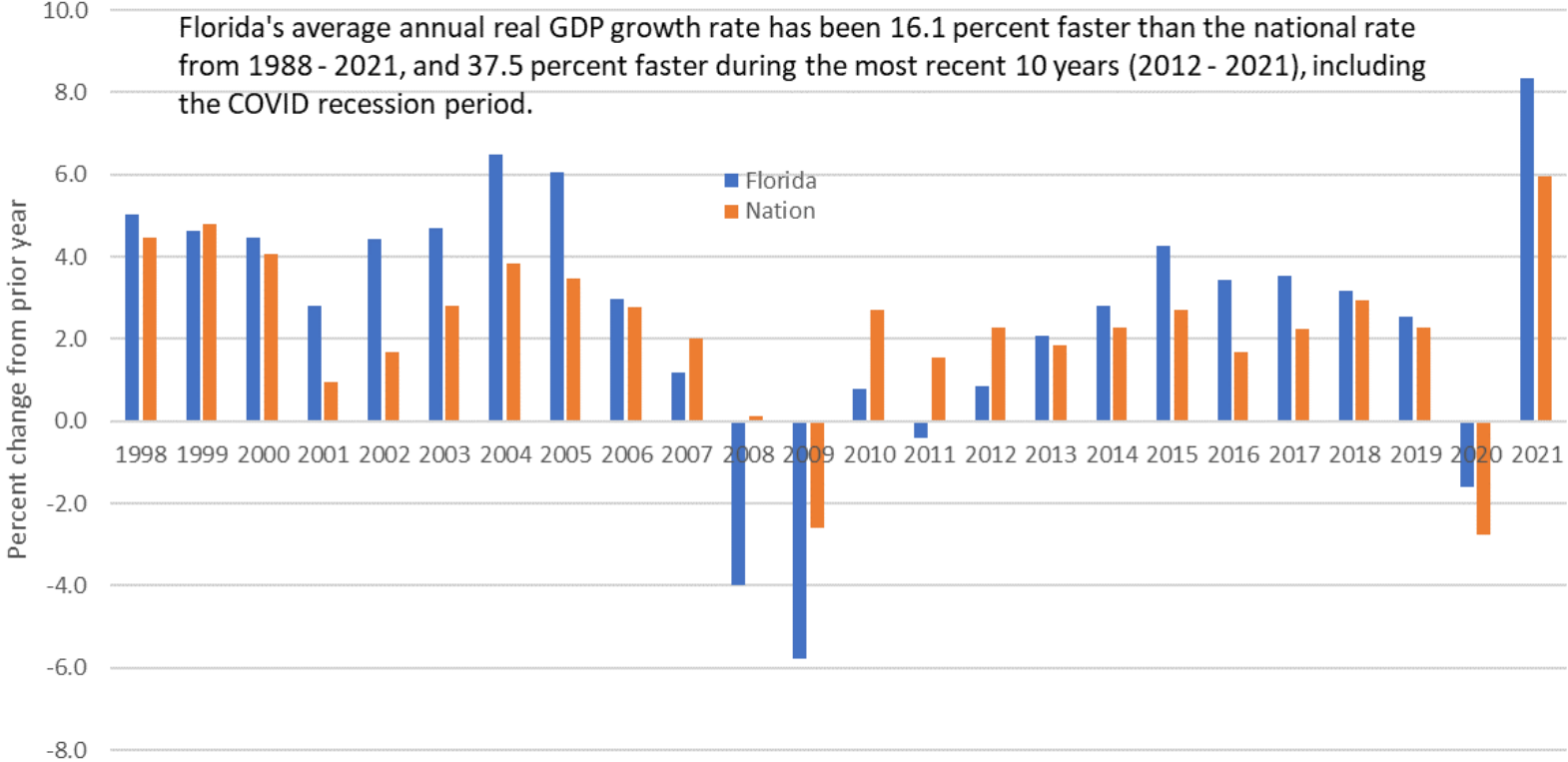
Source: Woods & Poole Economics, CEDDS, 2022

Nonfarm Payroll Jobs, Florida and U.S., Jan00 - Nov22, Seasonally Adjusted, Percent Change from Same Month Prior Year



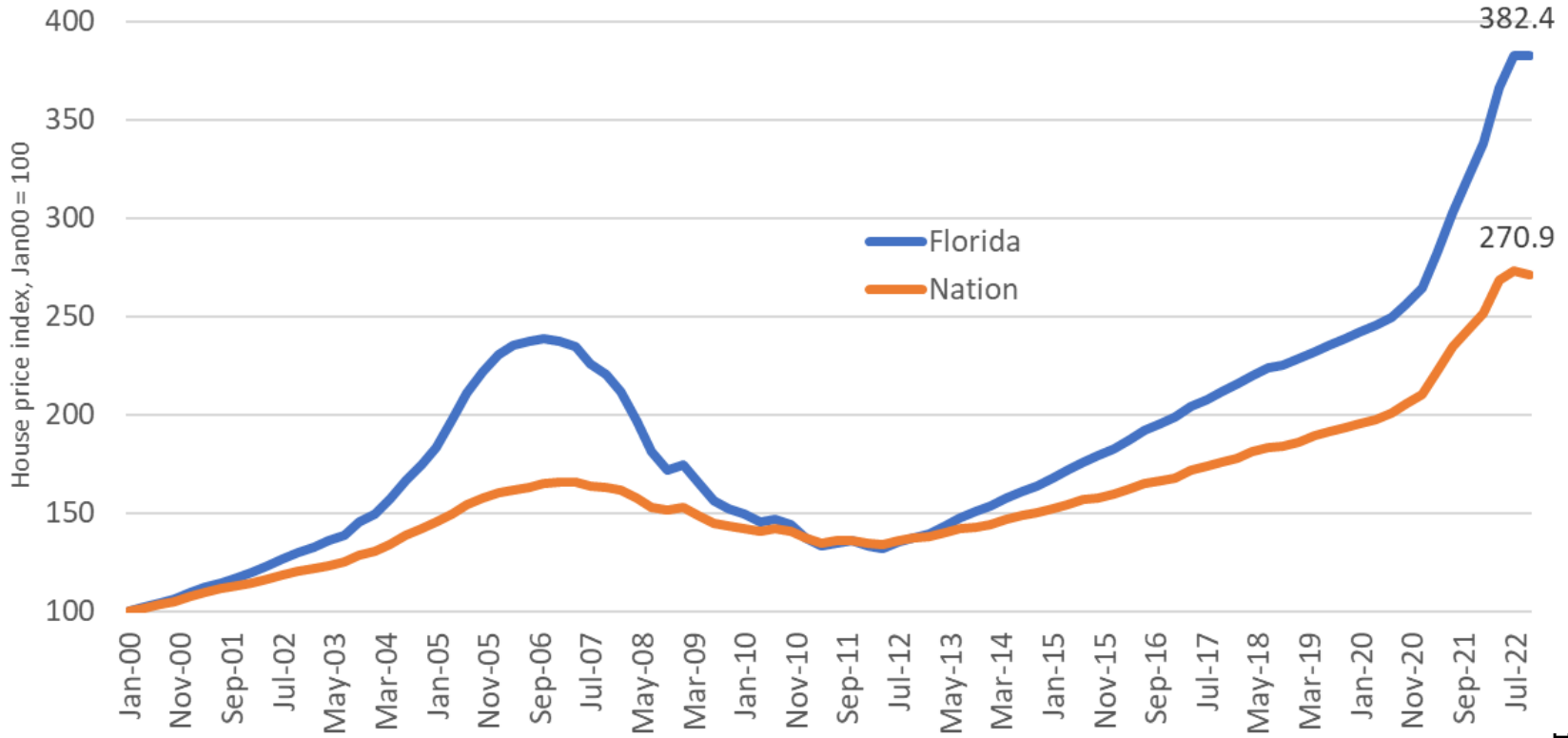
Source: U.S. Bureau of Labor Statistics, via Federal Reserve Economic Data (FRED)

Annual real GDP Growth Rate, Florida and the Nation, 1988 - 2021



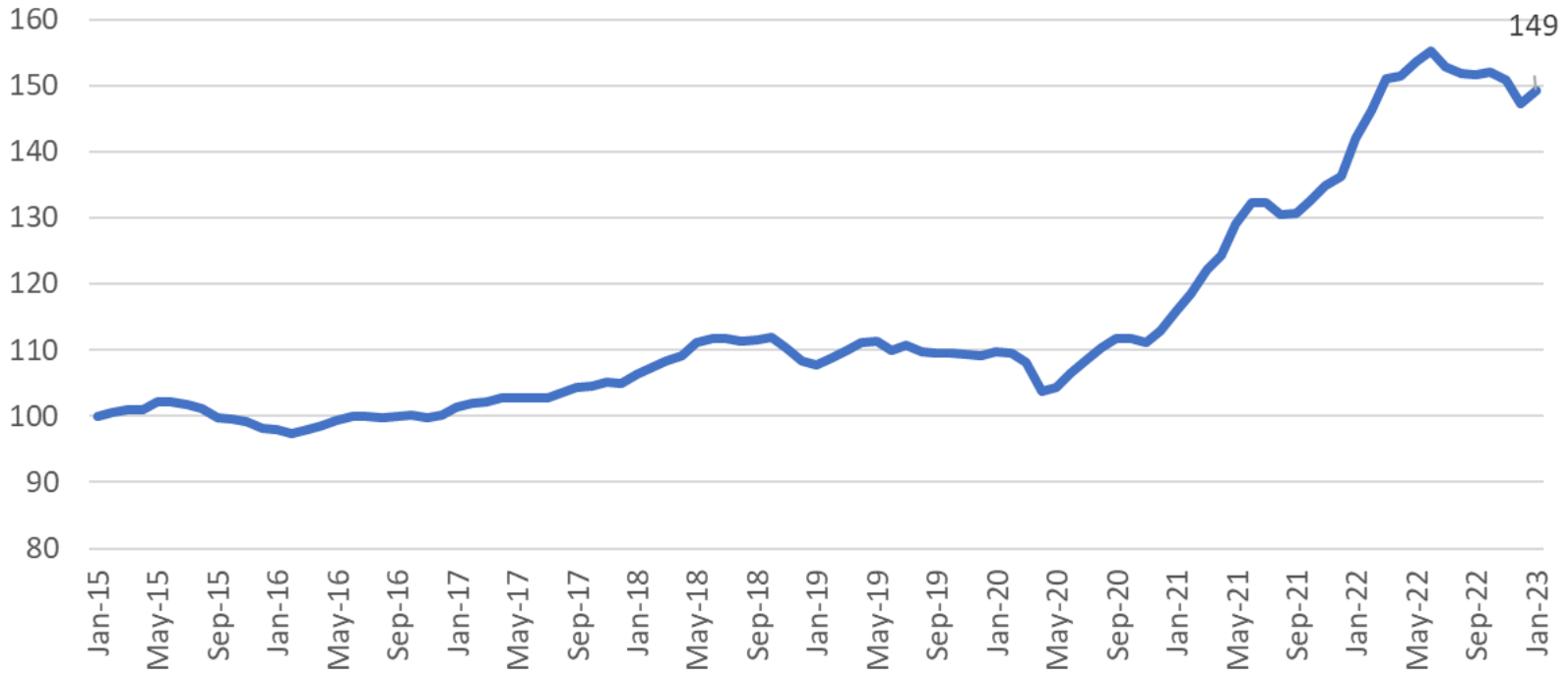
Source: U.S. Bureau of Economic Analysis, via Federal Reserve Economic Database (FRED)

All Transactions House Price Index, Florida and U.S., Jan00 - Oct22



Source: U. S. Federal Housing Finance Agency

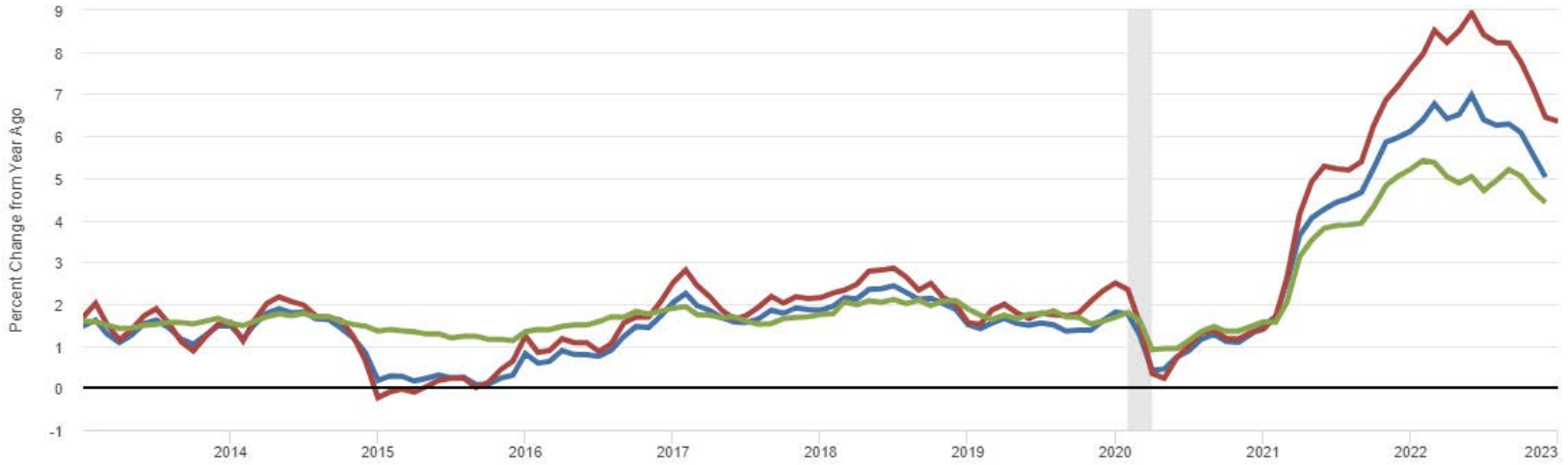
Producer Price Index, Residential Construction Inputs, Jan15 - Feb23,
Jan15=100



Source: U.S. BLS, series ID WPUIP2311001

FRED

Personal Consumption Expenditures: Chain-type Price Index
Consumer Price Index for All Urban Consumers: All Items in U.S. City Average
Personal Consumption Expenditures Excluding Food and Energy (Chain-Type Price Index)

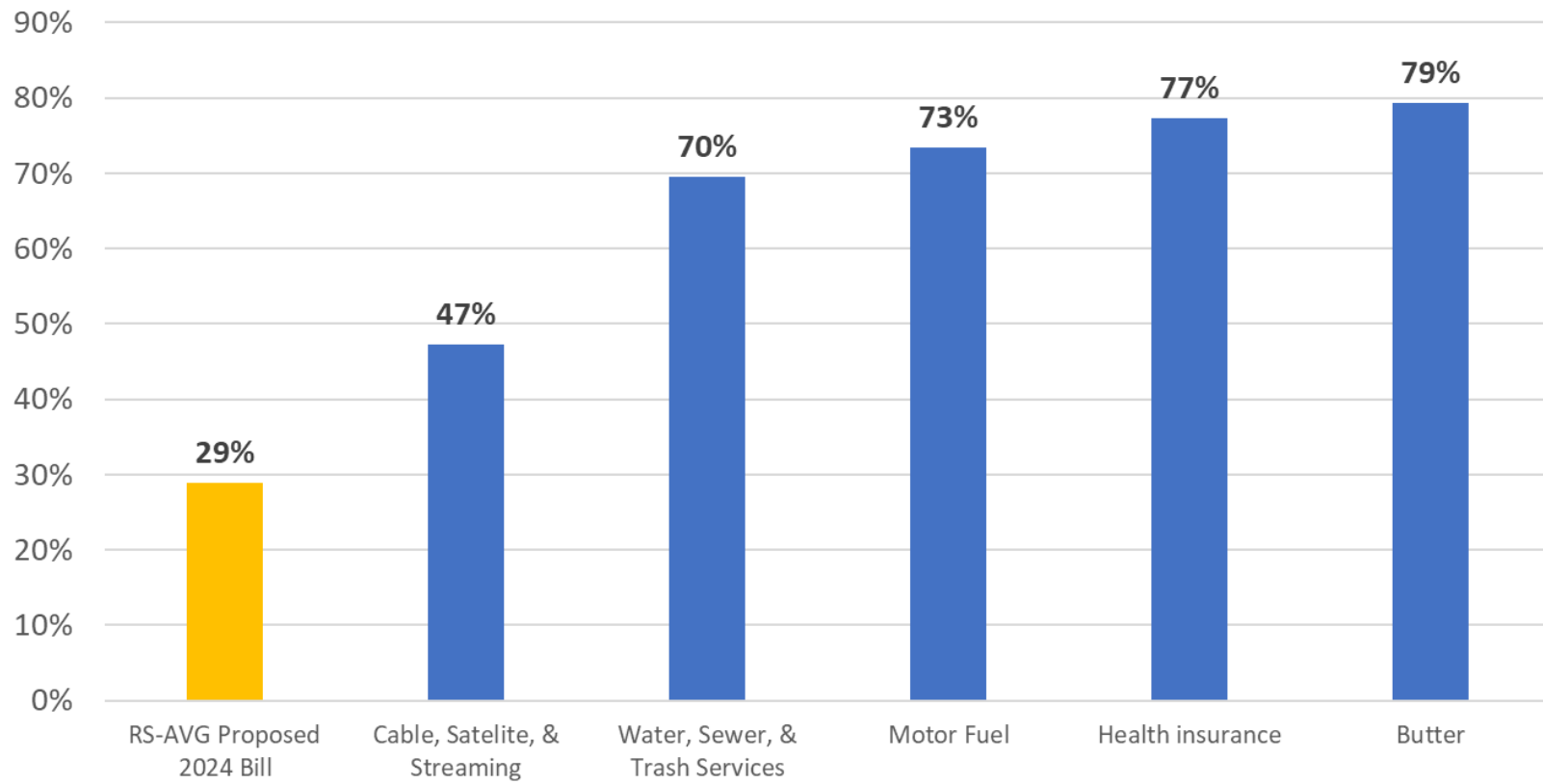


Shaded areas indicate U.S. recessions.

Sources: BEA; BLS

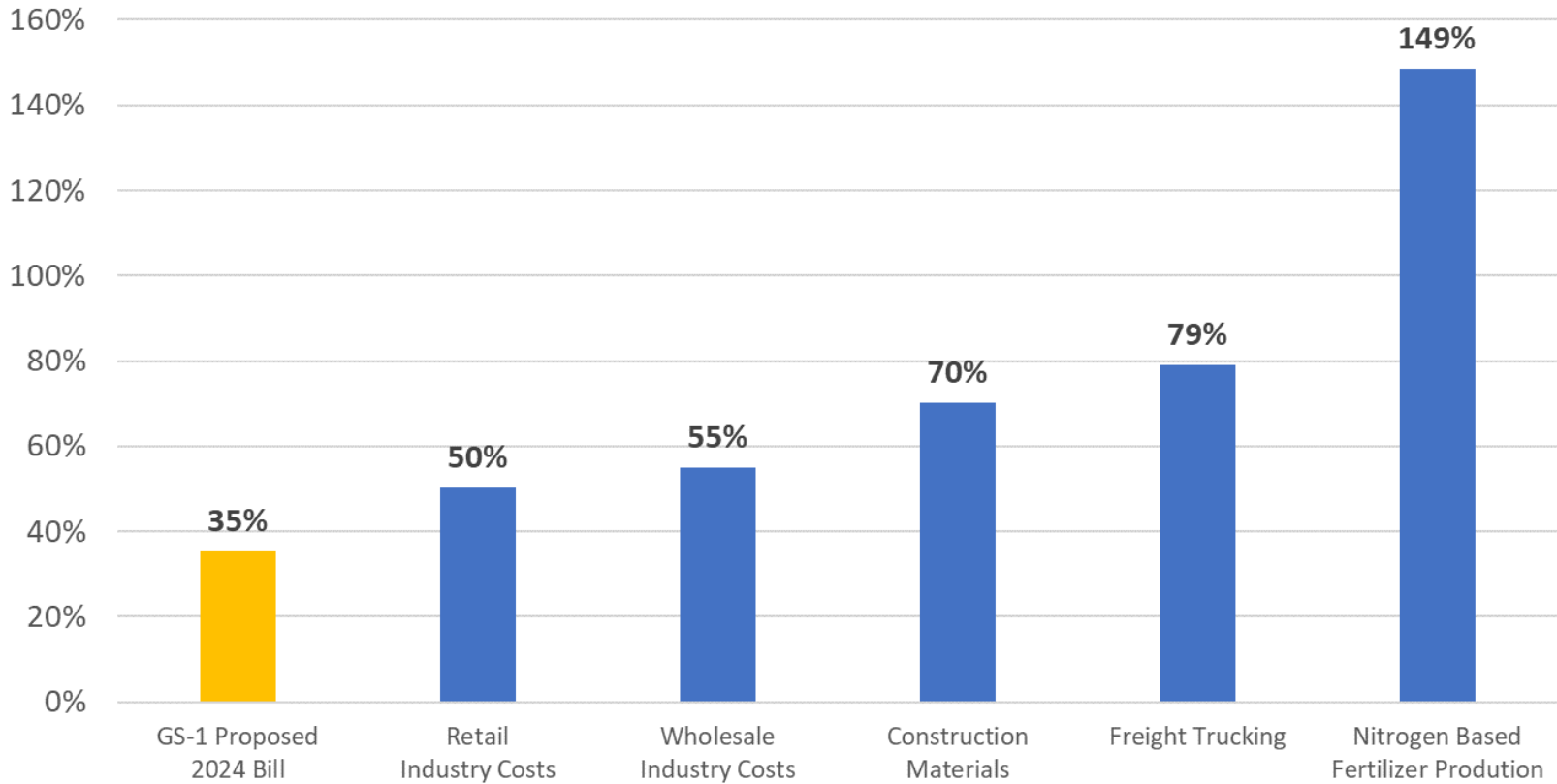
fred.stlouisfed.org

Cumulative Increase in Household Costs for PGS Customers



Residential metrics retrieved from BLS Consumer Price Indexes (CPI) for 2009 through 2022. Proposed bill impacts are calculated from our 2009 bills compared to our proposed 2024 bills.

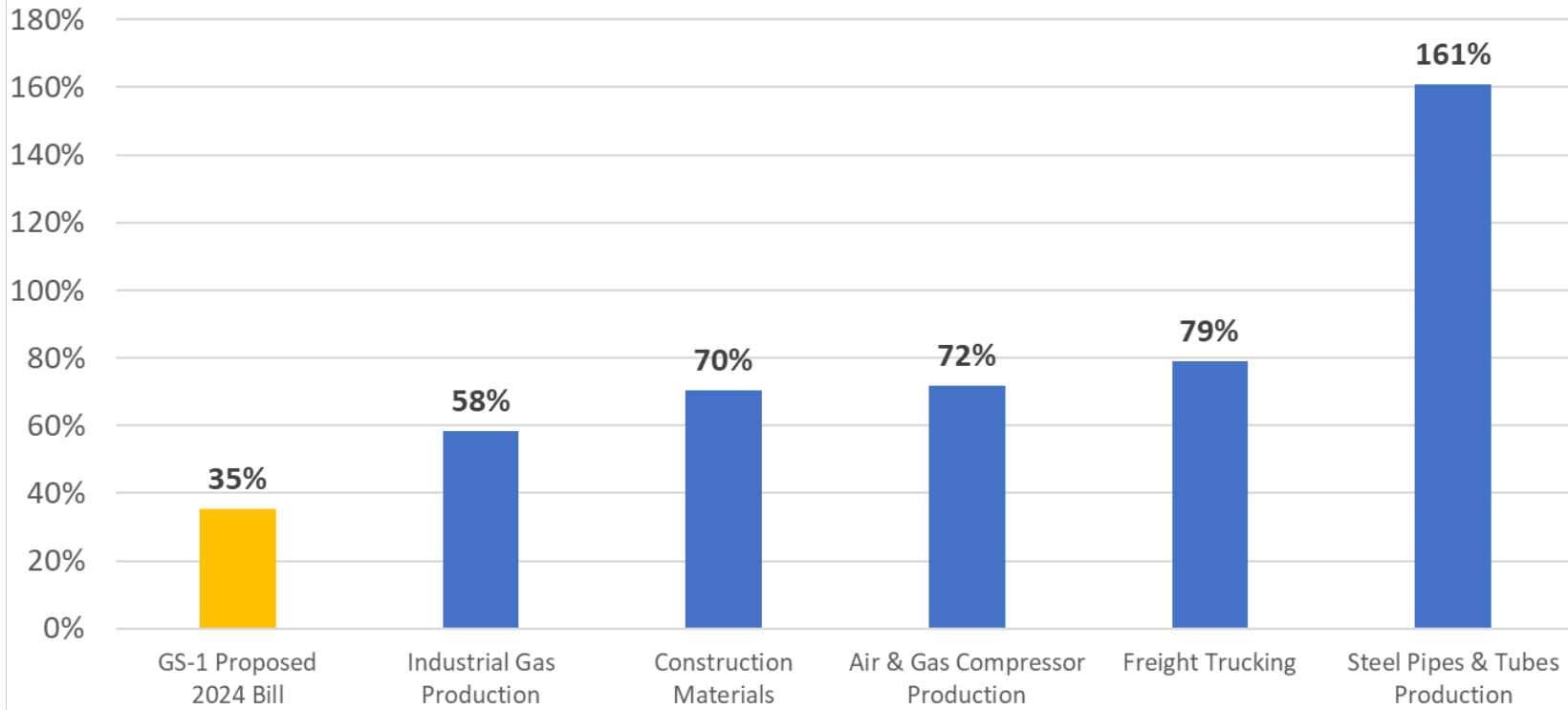
Cumulative Increase in Business Costs for PGS Customers



Commercial metrics retrieved from BLS Producer Price Indexes (PPI) for 2009 through 2022. Proposed bill impacts are calculated from our 2009 bills compared to our proposed 2024 bills.

DOCKET NO. 20230023-GU
EXHIBIT NO. RKH-1
WITNESS: HARPER
DOCUMENT NO. 10
PAGE 1 OF 1
FILED: 04/04/2023

Cumulative Increase in Relevant PGS Business Costs

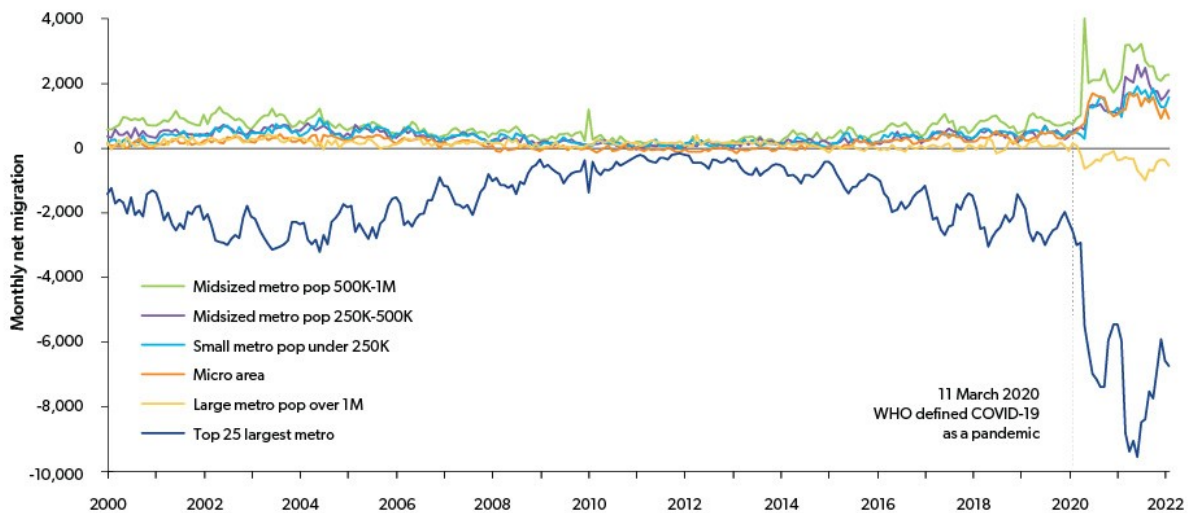


Commercial metrics retrieved from BLS Producer Price Indexes (PPI) for 2009 through 2022.
Proposed bill impacts are calculated from our 2009 bills compared to our proposed 2024 bills.

EXHIBIT 1

Typology for homebuyer net migration based on metro population size

The COVID-19 pandemic resulted in a rapid acceleration of existing homebuyer migration flows out of the country's largest metro areas and into less densely populated areas.



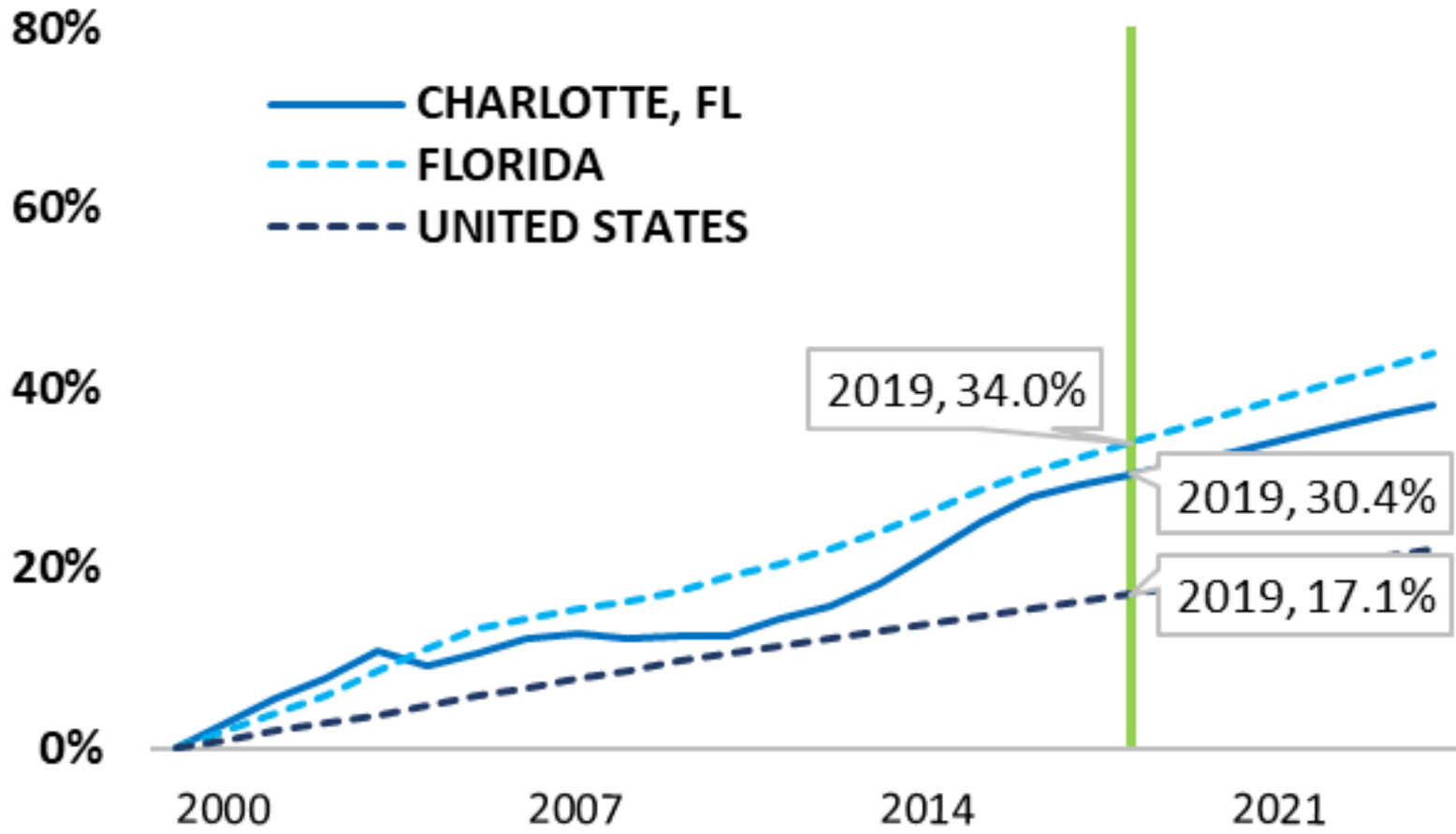
Sources: Freddie Mac Loan Product Advisor®

U.S. Census Bureau, "Metropolitan and Micropolitan Statistical Area Population Estimates and Estimated Components of Change: April 1, 2010 to July 1, 2019 (CBSA-EST2019-alldata)," retrieved from <https://www.census.gov/data/tables/time-series/demo/popest/2010s-total-metro-and-micro-statistical-areas.html>.

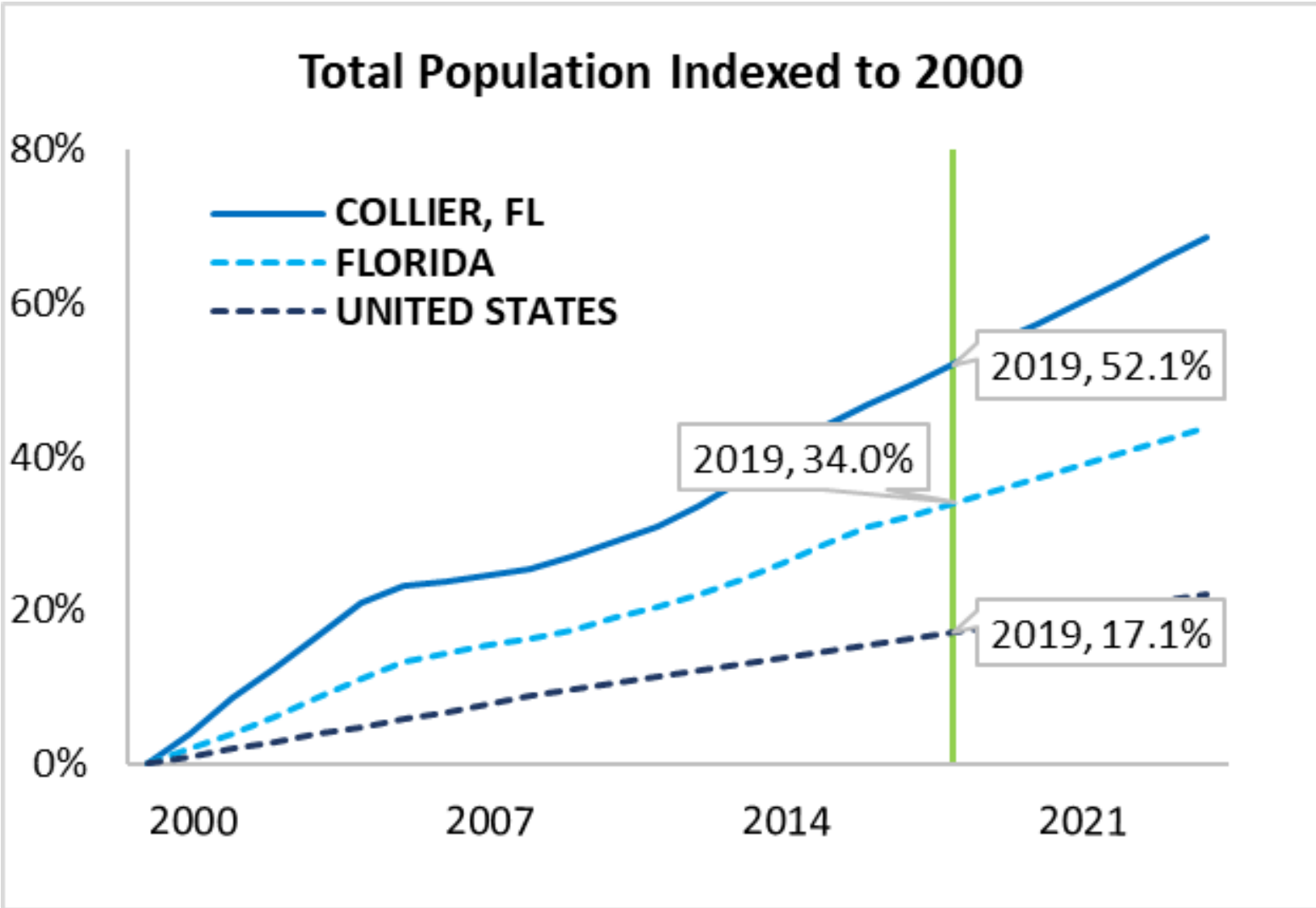
Source: FreddieMac, June 22, 2022 "In Pursuit of Affordable Housing: The Migration of Homebuyers within the US Before and After the Pandemic

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 PAGE 1 OF 1
 FILED: 04/04/2023

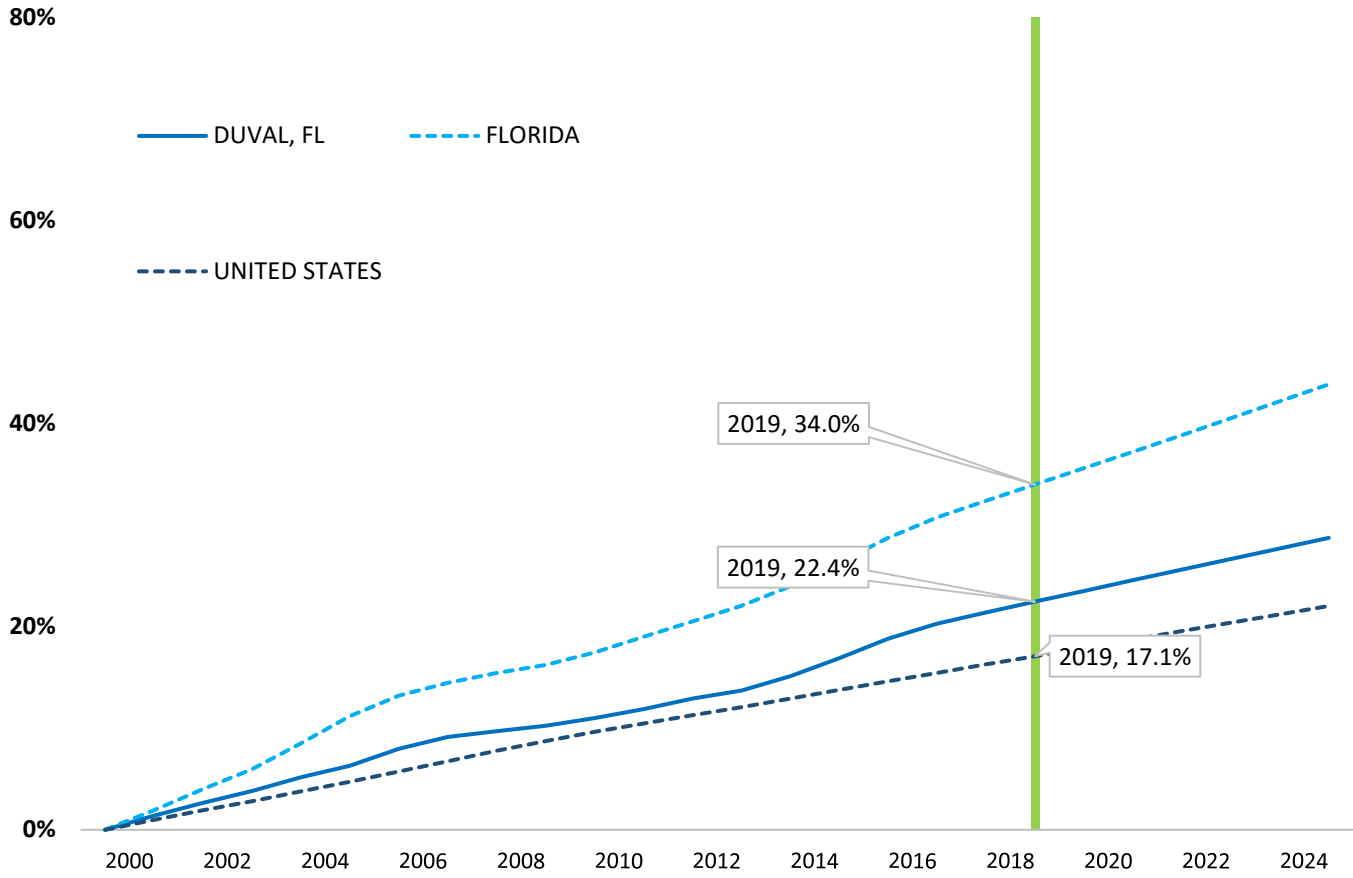
Total Population Indexed to 2000



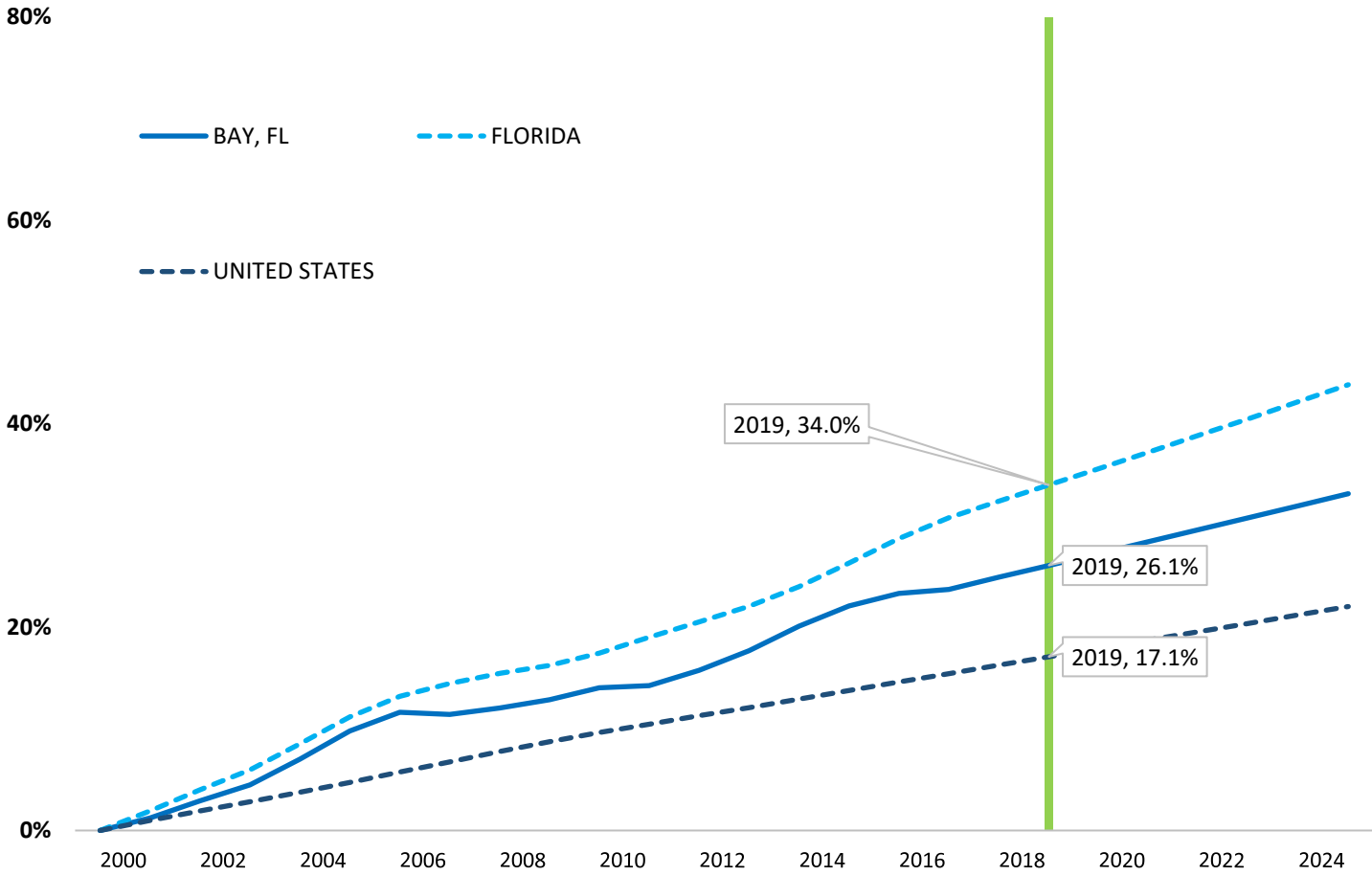
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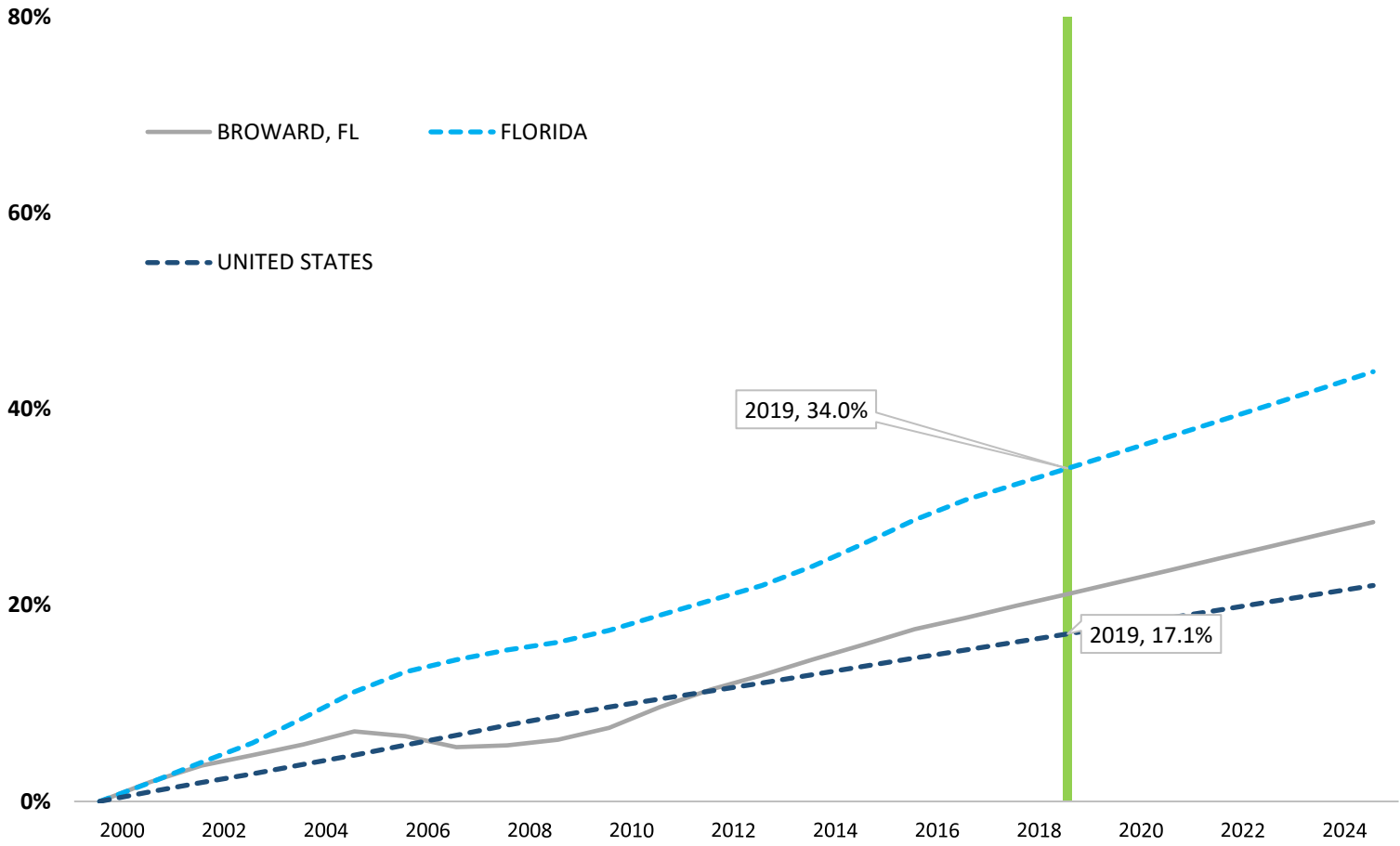
Total Population Indexed to 2000



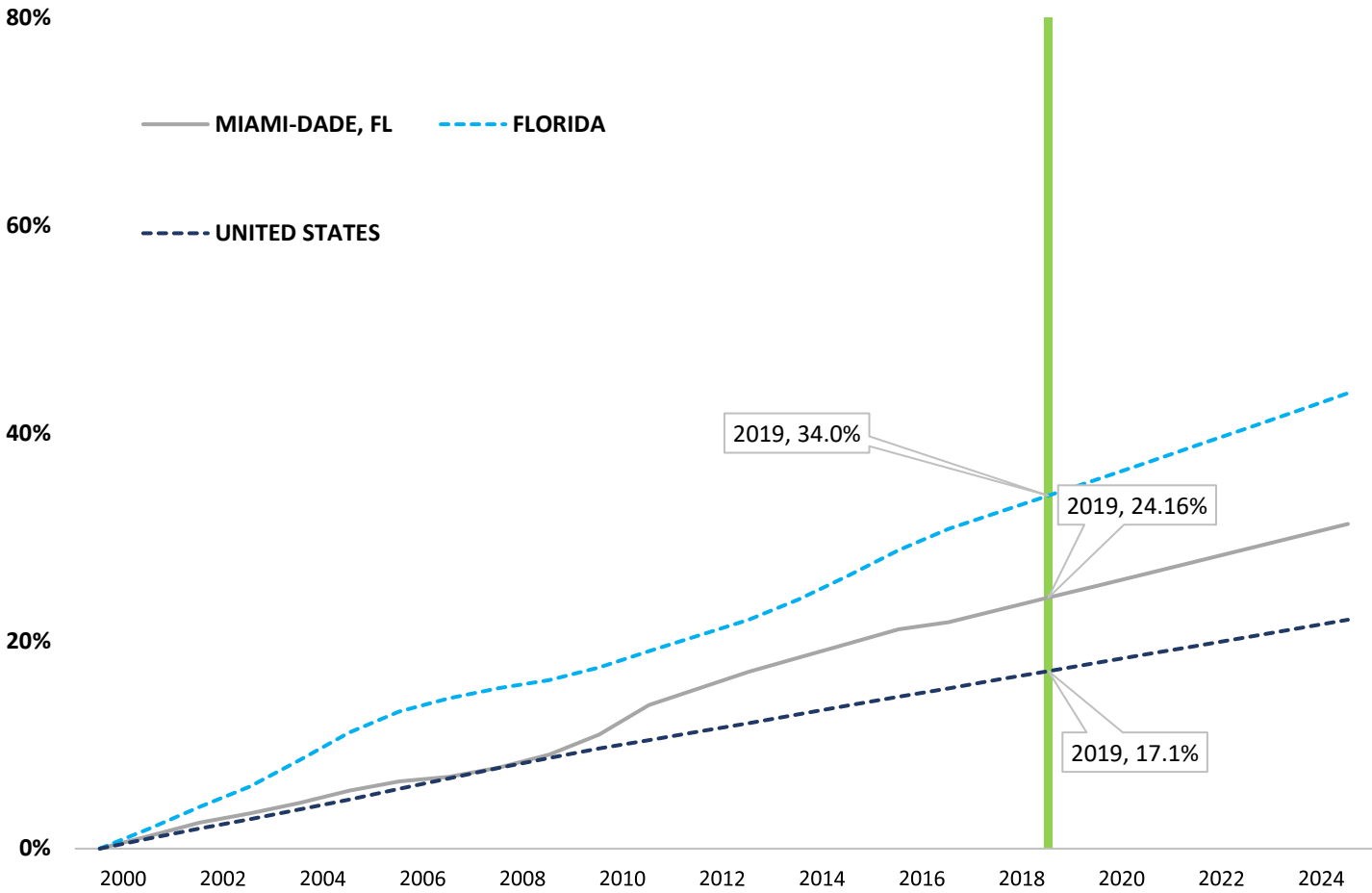
Total Population Indexed to 2000



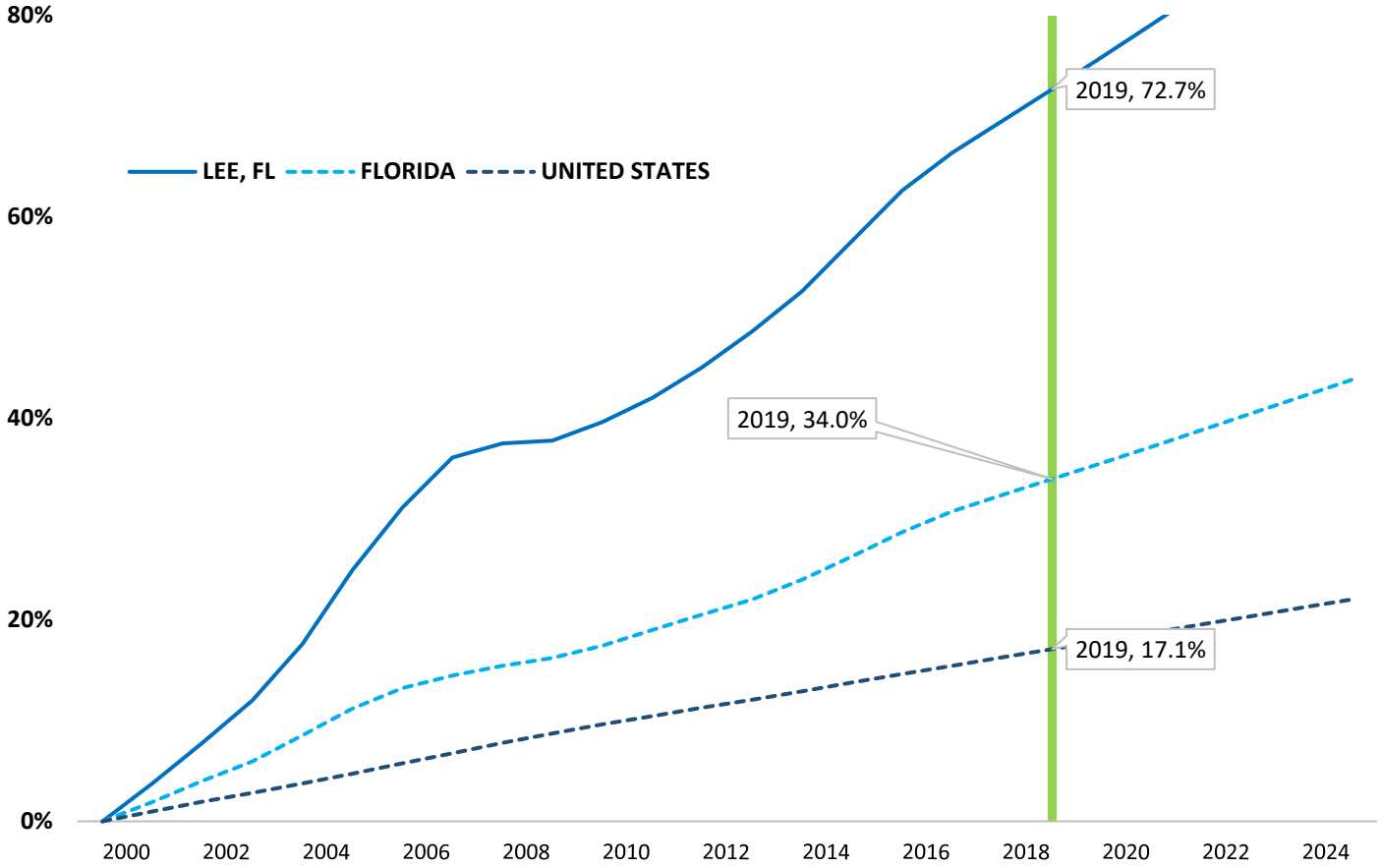
Total Population Indexed to 2000



Total Population Indexed to 2000



Total Population Indexed to 2000



Total Population Indexed to 2000

