We want to recognize the generous support of the Dragas Family Foundation and Helen Dragas, CEO of the Dragas Companies.

The Dragas Center for Economic Analysis and Policy now bears the name of the Dragas family in recognition of its support of our mission to contribute to the rational discourse on making Hampton Roads an even better place to live.
In Memoriam

- We honor the memory of Anne Shumadine, a tireless advocate for children and the people of Hampton Roads

- She was a consummate professional who sought out to improve the public good

Anne B. Shumadine
The Strome College of Business and Old Dominion University continue to provide important support for the *State of the Region* report. However, the report would not appear without the vital backing of these donors, who believe in the power of rational discourse to improve our circumstances.

Richard F. Barry III
The Aimee and Frank Batten Jr. Foundation
Ramon W. Breeden Jr.
Chartway Federal Credit Union
George Dragas Jr.
David and Susan Goode
Thomas Lyons
Anne B. Shumadine (in memoriam)

Jane Batten
R. Bruce Bradley
Arthur A. Diamonstein
Dragas Family Foundation
Helen Dragas
Edward L. Hamm Jr.
Patricia and J. Douglas Perry
Dr. Jitendra Swarup
We acknowledge the efforts of LEAD Hampton Roads in making today’s presentation possible.

Over the course of the last 30 years, LEAD Hampton Roads has sought to make our region a better place to live by educating and supporting regional leaders.
The presentation materials and commentary do not constitute an official viewpoint of Old Dominion University, its President, John R. Broderick, the Board of Visitors, the Strome College of Business, or the generous donors who support the activities of the Dragas Center for Economic Analysis and Policy.
Is it Morning Again?
Nominal and Real Gross Domestic Product (GDP)
Hampton Roads, 2002 – 2018*

<table>
<thead>
<tr>
<th>Year</th>
<th>Nominal GDP</th>
<th>Real GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>$57,558</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>$69,410</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>$70,000</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>$70,000</td>
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<td>2006</td>
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<tr>
<td>2016</td>
<td>$70,000</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>$70,000</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>$70,000</td>
<td></td>
</tr>
</tbody>
</table>

Growth in Real Gross Domestic Product
Hampton Roads, 2003-2018*

Index of Real GDP, 2006 – 2018*
Hampton Roads, Virginia, and the United States

Employment of Individuals
Hampton Roads, January 2007 – August 2018

Source: Bureau of Labor Statistics and Old Dominion University Economic Forecasting Project. Seasonally adjusted data. Data for July 2018 are preliminary. Trough was November 2009. Next update: November 6, 2018
Headline Unemployment Rate (U3)
Hampton Roads and the United States, January 2007 – August 2018

Sources: Bureau of Labor Statistics and Dragas Center for Economic Analysis. Seasonally adjusted monthly data. Next update: November 6, 2018
Total Nonfarm Employment (Jobs)
Hampton Roads, January 2007 – August 2018

+ 52,300 Jobs

Sources: Bureau of Labor Statistics and Old Dominion University Economic Forecasting Project. Seasonally adjusted data. Trough was February 2010. Next update: November 6, 2018
Change in Annual Covered Employment (Jobs) by Selected Industry
Hampton Roads 2007 to 2017

- Education and Health Services: 19,291
- Federal Government (Civilian): 10,513
- Leisure and Hospitality: 6,128
- Professional and Business Services: 1,885
- Information: -4,684
- Local Government: -4,728
- Manufacturing: -5,533
- Financial Activities: -5,631
- Trade, Transport, Utilities: -9,850

Personal and Family Financial Situation in Hampton Roads
Life in Hampton Roads Survey, 2018

Percentage of Respondents

<table>
<thead>
<tr>
<th></th>
<th>Personal Finance Today</th>
<th>Personal Finance Next Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better off</td>
<td>34.6%</td>
<td>42.5%</td>
</tr>
<tr>
<td>Same</td>
<td>56.2%</td>
<td>50.3%</td>
</tr>
<tr>
<td>Worse off</td>
<td>8.1%</td>
<td>4.3%</td>
</tr>
<tr>
<td>DK/Refused</td>
<td>1.1%</td>
<td>2.9%</td>
</tr>
</tbody>
</table>

Business Conditions in Hampton Roads
Life in Hampton Roads Survey, 2018

<table>
<thead>
<tr>
<th>Business Conditions Today</th>
<th>Business Conditions Next Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better off</td>
<td>28.7%</td>
</tr>
<tr>
<td>Same</td>
<td>51.6%</td>
</tr>
<tr>
<td>Worse off</td>
<td>15.5%</td>
</tr>
<tr>
<td>DK/Refused</td>
<td>4.1%</td>
</tr>
</tbody>
</table>

Defense Spending in Hampton Roads
Department of Defense
Discretionary Budget Authority, FY 2010 – FY 2023

Delays in Department of Defense Appropriations, FY 1970 – FY 2019

Average Delay = 68 days

Days from End of Last Fiscal Year

Sources: Center for Strategic and International Studies, Todd Harrison, and Dragas Center for Economic Analysis and Policy
Estimated Direct Department of Defense Spending
Hampton Roads, 2000 to 2018*

Military and Federal Civilian Employment
Hampton Roads, 2001 - 2016

Sources: U.S. Bureau of Economic Analysis and Dragas Center for Economic Analysis and Policy.
• Good news as defense spending increases in FY 19

• Increases in ship building and maintenance are included in the FY 2019 appropriations bill

• Federal deficits will exceed $1 trillion in FY 19 (and beyond)

• Interest on the debt may exceed $800 billion annually by FY 26

• Position Hampton Roads now to win in the coming BRAC round
The Port of Virginia
General Cargo Tonnage
Port of Virginia, 2007 to 2018*

Sources: Virginia Port Authority and Old Dominion University Economic Forecasting Project. *2018 represents our forecast.
Twenty-Foot Container Equivalents (TEUs)
Port of Virginia, 2007 to 2018*

Millions of TEUs

Sources: Virginia Port Authority and Old Dominion University Economic Forecasting Project. 2018 represents our forecast.
• Increases in defense spending will raise economic growth

• An immediate challenge: Finding the right labor at the right time for employers

• The long-term challenge: Labor force participation rates have not recovered, difficulty moving disaffected back into workforce

• The opportunity: Improving collaborative efforts among cities to retain/attract businesses while defense spending is increasing
The Hotel Industry
Average Available and Occupied Hotel Rooms
Hampton Roads, 2007 - 2017

Thousands of Rooms

Nominal and Real (Inflation-Adjusted) Hotel Revenue
Hampton Roads, 2001 - 2017

Millions of Dollars

2001 2003 2005 2007 2009 2011 2013 2015 2017

Revenue Real Revenue

Growth in Hotel Revenue and Revenue Per Available Room
2007 to 2017

Source: STR Trend Report January 2018 and the Dragas Center for Economic Analysis and Policy at Old Dominion University.
Airbnb Revenue as Percentage of Total Hotel Revenue
Hampton Roads, October 2014 to July 2018

Sources: STR Trend Reports and AirDNA data received in September 2018 excluding shared rooms. Selected data points are July of each year. July 2018 = $7.3mil.
Monthly Revenue of All Airbnb Properties
Hampton Roads, January 2015 to July 2018

Source: AirDNA data received in September 2018, excluding shared rooms
Single Family Housing in Hampton Roads
### Median Sale Price of Existing Residential Homes for Selected Cities
#### Hampton Roads, 2007 and 2017

<table>
<thead>
<tr>
<th>City</th>
<th>2007</th>
<th>2017</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chesapeake</td>
<td>$250,100</td>
<td>$245,000</td>
<td>-2.0%</td>
</tr>
<tr>
<td>Norfolk</td>
<td>$195,000</td>
<td>$183,500</td>
<td>-5.9%</td>
</tr>
<tr>
<td>Portsmouth</td>
<td>$165,500</td>
<td>$140,000</td>
<td>-15.4%</td>
</tr>
<tr>
<td>Suffolk**</td>
<td>$257,500</td>
<td>$240,000</td>
<td>-6.8%</td>
</tr>
<tr>
<td>Virginia Beach</td>
<td>$245,000</td>
<td>$247,750</td>
<td>+1.1%</td>
</tr>
<tr>
<td>Hampton</td>
<td>$180,000</td>
<td>$155,000</td>
<td>-13.9%</td>
</tr>
<tr>
<td>Newport News</td>
<td>$199,250</td>
<td>$170,000</td>
<td>-14.7%</td>
</tr>
<tr>
<td>Williamsburg*</td>
<td>$284,450</td>
<td>$283,000</td>
<td>-0.5%</td>
</tr>
<tr>
<td>Hampton Roads</td>
<td>$223,000</td>
<td>$219,000</td>
<td>-1.8%</td>
</tr>
</tbody>
</table>

Source: Real Estate Information Network and Dragas Center Economic Forecasting Project. Information deemed reliable but not guaranteed.
* Williamsburg represents Williamsburg, James City County, York County and Gloucester County. ** Median price in Suffolk peaked in 2006 at $263,950.
## Median Sale Price of Existing Residential Homes for Selected Cities
### Hampton Roads, YTD August 2017 and YTD August 2018

<table>
<thead>
<tr>
<th>City</th>
<th>2017</th>
<th>2018</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chesapeake</td>
<td>$245,000</td>
<td>$255,000</td>
<td>4.08%</td>
</tr>
<tr>
<td>Norfolk</td>
<td>$182,000</td>
<td>$193,000</td>
<td>6.04%</td>
</tr>
<tr>
<td>Portsmouth</td>
<td>$137,000</td>
<td>$150,000</td>
<td>9.49%</td>
</tr>
<tr>
<td>Suffolk</td>
<td>$240,750</td>
<td>$245,000</td>
<td>1.77%</td>
</tr>
<tr>
<td>Virginia Beach</td>
<td>$249,900</td>
<td>$254,000</td>
<td>1.64%</td>
</tr>
<tr>
<td>Hampton</td>
<td>$151,564</td>
<td>$166,329</td>
<td>9.74%</td>
</tr>
<tr>
<td>Newport News</td>
<td>$167,950</td>
<td>$179,000</td>
<td>6.58%</td>
</tr>
<tr>
<td>Williamsburg*</td>
<td>$280,000</td>
<td>$294,900</td>
<td>5.32%</td>
</tr>
<tr>
<td>Hampton Roads</td>
<td>$218,000</td>
<td>$225,000</td>
<td>3.21%</td>
</tr>
</tbody>
</table>

Source: Real Estate Information Network and Dragas Center Economic Forecasting Project. Information deemed reliable but not guaranteed.

* Williamsburg represents Williamsburg, James City County, York County and Gloucester County. ** Median price in Suffolk peaked in 2006 at $263,950
Estimated Months of Supply of Existing Homes
Hampton Roads, January 1996 – August 2018

Average = 5.56 months

Source: Real Estate Information Network and Dragas Center Economic Forecasting Project. Information deemed reliable but not guaranteed.
Source: Real Estate Information Network and Dragas Center Economic Forecasting Project. Information deemed reliable but not guaranteed. Distressed properties are short-sales or bank-owned.
Multifamily Housing
Homeownership Rates in the United States
1st Quarter 1965 to 1st Quarter 2018

Homeownership Rate
Average Rate (1965-2018)

Homeownership Rates in Hampton Roads and Virginia
1st Quarter 2005 to 1st Quarter 2018

• Marriage and a birth of the first child, which are often considered the indicators of the transition from rental housing to single-family residential housing, are increasingly delayed.

• Homeownership by age cohort is falling, younger generations are less likely to own a home:
  • 52 percent of those born between 1956 and 1960 owned a home by the time they were 30 to 34 years old.
  • 46 percent of those born between 1981 and 1985 owned a home by the time they were 30 to 34 years old.

• Student debt, stagnant real wages, and changing preferences for residential housing appear to play a role.
Multifamily Units Available and Occupied
Hampton Roads, 2006 - 2022

Number of Units

Source: Co-Star and Dragas Center for Economic Analysis and Policy. Values for 2018 to 2022 represent Co-Star's forecast.
Multifamily Vacancies
Hampton Roads and the United States, 2006 – 2022*

Vacancy Rate

Source: Co-Star and Dragas Center for Economic Analysis and Policy. *Values for 2018 to 2022 represent Co-Star's forecast.
Craft Brewing in Hampton Roads
Apparent Alcohol Consumption Per Capita
Ages 14 and Older, United States and Virginia, 2016

Equivalent Gallons of Ethanol

<table>
<thead>
<tr>
<th>Beverage</th>
<th>Virginia</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beer</td>
<td>1.1</td>
<td>1.0</td>
</tr>
<tr>
<td>Wine</td>
<td>0.4</td>
<td>0.5</td>
</tr>
<tr>
<td>Distilled Spirits</td>
<td>0.8</td>
<td>0.7</td>
</tr>
<tr>
<td>All Beverages</td>
<td>2.4</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Source: National Institute on Alcohol Abuse and Alcoholism (2018), based on population ages 14 and older. Alcohol consumption measured in per capita ethanol terms.
Total Beer Production and the Share of Craft Brewing Production
United States, 2004 - 2017

• **Craft brewers are “small, independent, and traditional”**
  • Small: 6 million barrels or less brewed annually
  • Independent: The craft brewer has majority ownership or control in the company
  • Traditional: The craft brewer uses ingredients that follow the Reinheitsgebot of 1516 or is using unique flavors in innovative ways (Garlic beer, anyone?)

• **Craft beer drinkers tend to be:**
  • **Higher income** - 66% earn $75k or more
  • **Younger** - Over 80% are Gen Xers or Millennials
  • **Male** - 75% are men
  • **White** - 60% are White, 10% are African American, and 21% are Hispanic

• **Craft beer’s untapped market:**
  • 51% of the population are women
  • Only 25% of surveyed women reported drinking craft beer weekly

Source: Dragas Center for Economic Analysis and Policy and Brewers’ Association of America. 10,000 people nationally surveyed in 2016.
• **Virtuous** cycle of development

• Craft breweries can create a culture that attracts tourists, who spend money elsewhere in the economy

• Breweries **displace consumption** that would have occurred in restaurants and bars

• Rapid growth has also meant volatility, example of Green Flash being replaced by New Realm

Source: Dragas Center for Economic Analysis and Policy. Photo credit Big Ugly Brewing, Chesapeake, Virginia.
Hampton City Schools: The Next Generation of Learning
• Hampton City Schools has partnered with Ford Next Generation Learning

• The objective is to create ‘Academies’ in each high school

• The Academies allow students to select a career path rather than ‘one size fits all’

• In 2018, all students are enrolled in an Academy

<table>
<thead>
<tr>
<th>BETHEL HIGH SCHOOL</th>
<th>HAMPTON HIGH SCHOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Governor's Health Sciences</td>
<td>Academy of Law and Public Safety</td>
</tr>
<tr>
<td>Academy</td>
<td></td>
</tr>
<tr>
<td>Academy of Transportation,</td>
<td>Academy of Media, Arts and Design</td>
</tr>
<tr>
<td>Analytics, Information and Logistics</td>
<td></td>
</tr>
<tr>
<td>HAMPTON HIGH SCHOOL</td>
<td></td>
</tr>
<tr>
<td>Academy of Technology and Engineering</td>
<td>The International Baccalaureate Program</td>
</tr>
<tr>
<td>Academy of Health, Human and Financial Services</td>
<td>The Maritime Academy</td>
</tr>
<tr>
<td>KEHOUGHTAN HIGH SCHOOL</td>
<td></td>
</tr>
<tr>
<td>The Governor's STEM Academy of</td>
<td>Academy of Teaching, Education and</td>
</tr>
<tr>
<td>Architecture, Environment and</td>
<td>Learning</td>
</tr>
<tr>
<td>Engineering</td>
<td>On Stage: Performing Arts Academy</td>
</tr>
<tr>
<td>Academy of Entrepreneurship and</td>
<td></td>
</tr>
<tr>
<td>Information Design</td>
<td></td>
</tr>
<tr>
<td>PHOEBUS HIGH SCHOOL</td>
<td></td>
</tr>
<tr>
<td>Academy of Cybersecurity,</td>
<td>Academy of Hospitality and Tourism</td>
</tr>
<tr>
<td>Engineering and Robotics</td>
<td></td>
</tr>
<tr>
<td>Academy of Digital Video Production</td>
<td>Academy of Advanced College Experience</td>
</tr>
</tbody>
</table>

Sources: Hampton City Schools and Dragas Center for Economic Analysis and Policy
# Hampton City Schools’ First Cohort Results 2015-2016 Academic Year

<table>
<thead>
<tr>
<th></th>
<th>Total Students</th>
<th>Percent African – American</th>
<th>Percent White</th>
<th>Percent Other Race</th>
<th>Percent Eligible for Free or Reduced-Price Meals</th>
<th>Virginia On-Time Graduation Rate</th>
<th>Dropout Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academy Students</td>
<td>407</td>
<td>60%</td>
<td>27%</td>
<td>14%</td>
<td>29.4%</td>
<td>100%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Non-academy students</td>
<td>5655</td>
<td>63%</td>
<td>25%</td>
<td>12%</td>
<td>53.6%</td>
<td>89.8%</td>
<td>2.8%</td>
</tr>
</tbody>
</table>

Sources: Hampton City Schools and Dragas Center for Economic Analysis and Policy
• Students in the pilot Academies outperformed non-Academy students

• Academies are aligned to workforce projections and industry input

• If successful, Academies will produce students who are college-ready and/or employable in the workforce

• Steep learning curve awaits

• The challenge: maintain and replicate the Academies model
Medicaid Expansion in Hampton Roads
• Medicaid in Virginia currently **does not allow childless adults** to enroll, but this changes on January 1\(^{st}\), 2019

• **Medicaid eligibility is complicated**
  • Eligibility is on a case-by-case basis
  • Income eligibility is determined relative to the Federal Poverty Limits (FPL)
  • Aged, blind, and disabled are a class of individuals who may be eligible
  • Pregnant women are another class of eligible individuals
  • The parents of families with children may also be eligible

• **Income eligibility limits in Virginia are relatively strict**
  • In 2018, the parents of a family of three in Hampton must earn less than $10,536 annually to even be considered for Medicaid
  • If the family moved to Newport News with the same income, the parents would no longer be income eligible as the income limit is $7,968
Health Care Coverage Types for All Individuals
United States, Virginia, and Hampton Roads, 2016

Percentage Reporting Health Care Coverage Types for All Individuals
United States, Virginia, and Hampton Roads, 2016

Source: U.S. Census, 2016 ACS microdata and Dragas Center for Economic Analysis and Policy. Percentages may not sum to 100 percent as individuals may have more than one type of health insurance.
Uninsured as a Percentage of Total Population
Cities in Hampton Roads, 2012-2016

<table>
<thead>
<tr>
<th>City</th>
<th>Percent Uninsured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Williamsburg</td>
<td>5.2%</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>8.3%</td>
</tr>
<tr>
<td>Suffolk</td>
<td>9.1%</td>
</tr>
<tr>
<td>Virginia Beach</td>
<td>9.4%</td>
</tr>
<tr>
<td>Hampton</td>
<td>10.7%</td>
</tr>
<tr>
<td>Newport News</td>
<td>12.4%</td>
</tr>
<tr>
<td>Portsmouth</td>
<td>12.5%</td>
</tr>
<tr>
<td>Norfolk</td>
<td>14.6%</td>
</tr>
</tbody>
</table>

Sources: U.S. Census, 2012-2016 ACS 5-Year Estimates and Dragas Center for Economic Analysis and Policy. Total population is the civilian noninstitutionalized population.
Estimated Insured and Uninsured in Hampton Roads, 2016

91.8% Insured
8.2% Uninsured

Sources: Dragas Center for Economic Analysis and Policy. 2016 American Community 1-Year Survey Microdata.
Insured and Uninsured Hampton Roads, 2016

- Insured: 91.8%
- Uninsured: 8.2%

Eligible and Ineligible Adults Hampton Roads, 2016

- Income Eligible: 59%
- Income Ineligible: 41%

Sources: Dragas Center for Economic Analysis and Policy. 2016 American Community 1-Year Survey Microdata. Adults must earn less than 139 percent of FPL to be income eligible.
Estimated Impact of Medicaid Expansion on Adults in Hampton Roads, 2019 - 2022

New Adult Enrollees

Under 100 Percent of FPL
- Low Estimate: 13,276
- Medium Estimate: 17,184
- High Estimate: 19,505

100 to 138 Percent of FPL
- Low Estimate: 6,509
- Medium Estimate: 6,758
- High Estimate: 7,671

Sources: Dragas Center for Economic Analysis and Policy. 2016 ACS Microdata. Estimates represent adults ages 19-64 who are without health insurance and who are projected to enroll in Medicaid expansion.
• 20,000 to 27,000 newly eligible adults in Hampton Roads will enroll

• 100,000 working age adults will remain uninsured after expansion

• Positive impacts
  • Health outcomes will improve for new enrollees
  • Work effort will increase for current and new enrollees
  • Uncompensated care costs have decreased in Medicaid expansion states
  • Expansion will likely have positive impact on the state budget (in the short-term)

• Risks
  • Enrollment and administration costs could be higher than expected
  • Work requirements may deter or reduce enrollment
  • If the federal government reduces the reimbursement rate (or block grants Medicaid), costs to Virginia could increase significantly
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• Follow CEAPODU on Facebook, LinkedIn, and Twitter for up-to-date information to help you understand new economic developments.

• You’ll receive absolutely up-to-date economic information the same day it is released by the Bureau of Labor Statistics, the Bureau of Economic Analysis and other major data providers. And, we will put it in context so that you can better understand the numbers.