

**Report on  
Local Vulnerability Analysis**



**Independent Research**

*By*

**Department of Housing and Community Development (DHCD)**

**Presented to**

**Commission on Local Government**

**Commonwealth of Virginia**

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## Background and Concept

The ongoing COVID-19 pandemic has imposed significant strain on local government capacity and resources. Not only has there been an increase in certain local service demands, but some local revenue sources are also expected to significantly decrease. Significant job losses in a variety of vulnerable industries will intensify those circumstances. The combination of these factors could create obstacles so significant that they will be difficult for local communities to address independently or with existing resources. Additionally, these challenges may afflict previously stable communities – including those that have not traditionally and/or consistently sought state and/or federal assistance for relief.

Traditionally, the Fiscal Stress Index has been a standard resource for identifying local relief needs for programs at the VA Department of Housing and Community Development (DHCD) and other state agencies (e.g. Department of Education, Compensation Board, Virginia Auditor of Public Accounts (APA), Department of Environmental Quality, Tobacco Commission, etc.). Because the COVID-19 pandemic will have a unique and unprecedented impact on local capacity and the economy and because the Fiscal Stress Index uses lagging indicators (i.e. data is normally 2 calendar years old), consideration of additional factors may be helpful for a more targeted economic recovery response by the Commonwealth. This could be of particular benefit to state agencies that are making funding decisions based on community need, especially as it relates to direct and indirect needs related to COVID-19.

Therefore, staff at DHCD have identified and analyzed additional indicators that could be used in addition to the Fiscal Stress Index to identify where effects from COVID-19 may be more pronounced. Overall, this analysis uses the same general methodological concept as the Fiscal Stress Report by indexing each locality's values to the statewide average, which is set to 100. Depending on how far each locality deviates from the statewide average, they are either classified as (1) low, (2) below average, (3) above average, or (4) high for the corresponding category.

A summary of each indicator used in the analysis is provided below, and more details on the methodology are provided on the first page of the attached Appendix. Additionally, as each indicator is discussed below, references to corresponding tables and thematic maps in the Appendix are made to help visually present and summarize the corresponding results.

- **FY2018 Local Fiscal Stress Index (Table 1, Map 1):**
  - As previously stated, this measures a locality's ability to generate additional local revenues from its current tax base relative to the rest of the Commonwealth. It equally weighs three variables:
    - Revenue Capacity per Capita (the theoretical ability of a locality to raise revenue if it taxed its population at statewide average rates),

- Revenue Effort per Capita (a ratio of actual tax collections by a locality to its computed revenue capacity), and
  - Median Household Income
  - This information is only available at the city and county level because of shared tax bases between counties and towns.
- **Local Tax Revenue Dependence (Table 2, Map 2):**
  - Three local tax revenue sources are anticipated to be most affected by COVID-19 circumstances: local sales and use, transient occupancy, and meals taxes. These sources were then calculated as percentage of total local revenue to identify the extent to which each community relied on these sources.
  - Staff did evaluate the tax dependence for towns with a population of 3,500+ because this data was available through the APA. This analysis is not included in the report but is available upon request.
- **Local Economic Vulnerability (Table 3, Map 3):**
  - In terms of economic indicators, staff used a nationwide analysis of economic job vulnerability produced by Chmura Economics and Analytics and isolated the data to focus on the Commonwealth of Virginia. This analysis forecasts some cities and counties to be more heavily affected by COVID-19 based upon a region's mix of industries.
- **Composite Local Vulnerability Index (Table 4, Map 4)**
  - All three indicators were aggregated and equally weighted to produce a final score for cities and counties. Any locality with a score greater than the statewide average (based on standard deviations) was classified as above average or high vulnerability.

## Results and Findings

Overall, based on the Composite Local Vulnerability Index, 19 localities (18 cities, 1 county) are classified as having high vulnerability. Of those 19 localities, 11 were also classified as high on the FY2018 Local Fiscal Stress Index. **Map 5** in the Appendix identifies those localities classified as high on the FY2018 Fiscal Stress Index, Composite Local Vulnerability Index, or both. Furthermore, there is significant variation between the two scoring systems' most stressed/vulnerable localities. Nine localities on the FY2018 Local Fiscal Stress Index and nine localities on the Composite Local Vulnerability Index do not appear among the top 20 localities for the other respective index. Comparative rankings among the two indices also vary as seen in the following two tables on the next page that list the top 20 localities for each index.

VA Department of Housing and Community Development  
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Locality	Fiscal Stress Rank	Composite Local Vulnerability Index Rank
Emporia City	1	2
Franklin City	2	13
Martinsville City	3	21
Bristol City	4	6
Petersburg City	5	25
Buena Vista City	6	51
Lynchburg City	7	15
Hopewell City	8	35
Covington City	9	22
Galax City	10	8
Portsmouth City	11	33
Radford City	12	30
Norton City	13	4
Norfolk City	14	24
Danville City	15	10
Harrisonburg City	16	5
Roanoke City	17	17
Lexington City	18	12
Hampton City	19	28
Newport News City	20	20

Locality	Composite Local Vulnerability Index Rank	Fiscal Stress Rank
Williamsburg City	1	47
Emporia City	2	1
Colonial Heights City	3	34
Norton City	4	13
Harrisonburg City	5	16
Bristol City	6	4
Bath County	7	130
Galax City	8	10
Fredericksburg City	9	53
Danville City	10	15
Waynesboro City	11	22
Lexington City	12	18
Franklin City	13	2
Winchester City	14	31
Lynchburg City	15	7
Staunton City	16	26
Roanoke City	17	17
Salem City	18	29
Charlottesville City	19	49
Newport News City	20	20

Staff also looked at the unrestricted fund balances (as reported to the APA) for those localities classified as high on the FY2018 Fiscal Stress Index and/or on the Composite Local Vulnerability Index. While this information is based on FY2018 data, it could still serve as a useful indicator to identify acutely vulnerable localities with limited local resources available to remain viable during sustained economic shocks from the COVID-19 pandemic. Based on FY2018 data, eight localities were identified as being able to only sustain two or fewer months of general fund expenditures through their unrestricted fund balances. Staff are currently adding data on trends and averages in unrestricted fund balance levels over time to better identify which localities may be at greater risk. **Table 5** in the Appendix and **Map 6** in the slide deck provide more quantitative and geographic information on this information.

Staff have shared the results of our findings with various state government officials and staff in addition to representatives from the Virginia Association of Counties (VACo) and the Virginia

VA Department of Housing and Community Development  
Local Vulnerability Analysis

Municipal League (VML). Based on their feedback, the report's methodology will remain the same, but we may revisit the report's findings and compare those to actual outcomes as new local data is made available at the state level.

Staff also shared this report with the Commission on Local Government, a five-member board of gubernatorial appointees whose mission is "to promote and preserve the viability of Virginia's local governments through positive intergovernmental relations." Overall, the Commission endorsed the report's findings and encouraged staff to share it with others. In accordance with their recommendation, this report has been prepared in an effort to share with other individuals and organizations who may find it useful. Staff at DHCD are available to provide a presentation on this analysis if so desired.

## Appendix

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## Computation Methodology

### Vulnerable Tax Bundle Index

The three taxes that comprise the vulnerable tax are local sales and use tax, meal tax, and lodging tax. Vulnerable tax as a percentage of total revenue is the ratio of total vulnerable tax divided by total local revenue. Vulnerable tax as a percentage of total local revenue are computed as follows:

$$\begin{array}{l} \text{(Local Sales \& Use Tax)} \\ + \text{(Lodging Tax)} \\ + \text{(Meal Tax)} \\ \hline \text{Total Local Revenue} \end{array}$$

A relative vulnerable index is computed as follows:

$$\left( \left( \left( \frac{(\text{Vulnerable Tax as \% of Total Revenue}) - \mu(\text{Vulnerable Tax as \% of Total Revenue})}{\sigma(\text{Vulnerable Tax as \% of Total Revenue})} \right) \times 5 \right) + 100 \right)$$

$\mu$  = statewide average;  $\sigma$  = standard deviation

### Vulnerable Tax Bundle Index Combined With Fiscal Stress

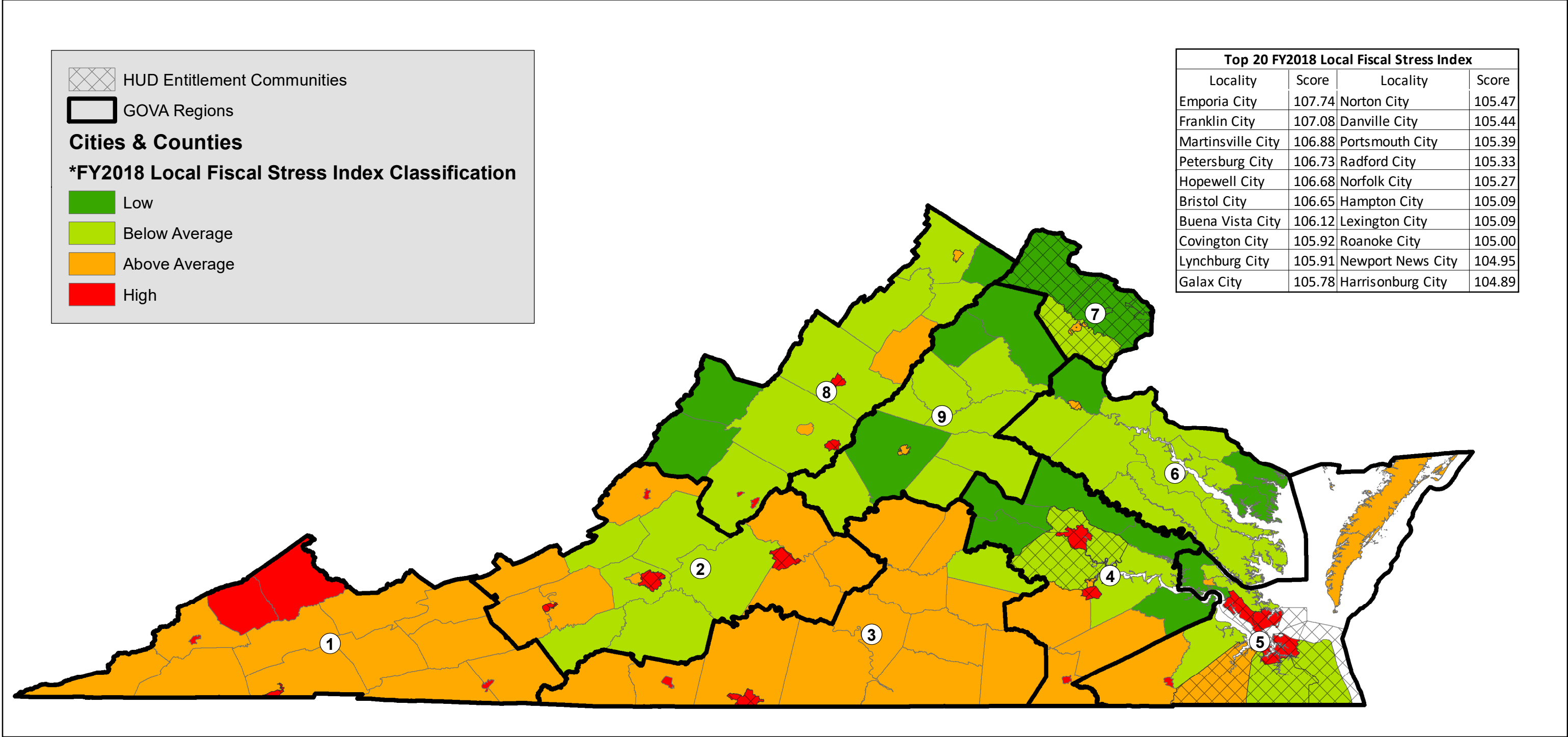
It is simple average of vulnerable index and fiscal stress index.

$$\left( \left( \left( \frac{(\text{Vulnerable Index}) + (\text{Fiscal Stress Index})}{2} \right) \right) \right)$$

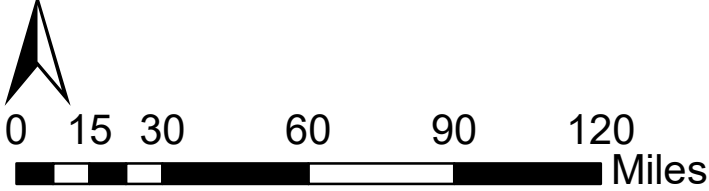
**Table - 1**  
**FY2018 Fiscal Stress Index**

Locality	Score	Classification	Locality	Score	Classification	Locality	Score	Classification
Emporia City	107.73	High	Williamsburg City	101.57	Above Average	Culpeper County	98.53	Below Average
Franklin City	107.14	High	Lunenburg County	101.48	Above Average	Augusta County	98.21	Below Average
Martinsville City	106.98	High	Charlottesville City	101.46	Above Average	King William County	98.20	Below Average
Bristol City	106.83	High	Manassas Park City	101.45	Above Average	Fluvanna County	98.20	Below Average
Petersburg City	106.71	High	Grayson County	101.25	Above Average	Chesterfield County	98.12	Below Average
Buena Vista City	106.17	High	Wythe County	101.24	Above Average	Warren County	97.99	Below Average
Lynchburg City	106.06	High	Fredericksburg City	101.23	Above Average	Gloucester County	97.88	Below Average
Hopewell City	105.89	High	Montgomery County	101.21	Above Average	Frederick County	97.83	Below Average
Covington City	105.79	High	Suffolk City	101.01	Above Average	Nelson County	97.58	Below Average
Galax City	105.59	High	Patrick County	100.99	Above Average	Madison County	97.55	Below Average
Portsmouth City	105.57	High	Nottoway County	100.89	Above Average	Botetourt County	97.46	Below Average
Radford City	105.53	High	Halifax County	100.78	Above Average	Bedford County	97.37	Below Average
Norton City	105.44	High	Pittsylvania County	100.67	Above Average	Spotsylvania County	97.18	Below Average
Norfolk City	105.33	High	Amherst County	100.65	Above Average	York County	97.12	Below Average
Danville City	105.31	High	Campbell County	100.64	Above Average	Louisa County	97.07	Below Average
Harrisonburg City	105.13	High	Southampton County	100.60	Above Average	King George County	97.00	Below Average
Roanoke City	105.11	High	Appomattox County	100.59	Above Average	Middlesex County	96.87	Below Average
Lexington City	105.10	High	Washington County	100.44	Above Average	Poquoson City	96.85	Below Average
Hampton City	105.05	High	Accomack County	100.43	Above Average	Mathews County	96.81	Below Average
Newport News City	104.99	High	Brunswick County	100.42	Above Average	Prince William County	96.39	Below Average
Buchanan County	104.23	High	Page County	100.31	Above Average	James City County	96.28	Below Average
Waynesboro City	104.11	High	Northampton County	100.30	Above Average	New Kent County	96.21	Low
Richmond City	104.03	High	Dinwiddie County	100.30	Above Average	Highland County	96.16	Low
Dickenson County	103.87	High	Buckingham County	100.28	Above Average	Albemarle County	96.02	Low
Sussex County	103.72	Above Average	Rockbridge County	100.05	Above Average	Stafford County	95.97	Low
Staunton City	103.69	Above Average	Manassas City	100.04	Above Average	Lancaster County	95.93	Low
Greensville County	103.42	Above Average	King and Queen Count	99.91	Below Average	Northumberland Count	95.87	Low
Smyth County	103.25	Above Average	Chesapeake City	99.77	Below Average	Powhatan County	95.64	Low
Salem City	103.16	Above Average	Prince George County	99.75	Below Average	Hanover County	95.21	Low
Carroll County	102.59	Above Average	Virginia Beach City	99.69	Below Average	Alexandria City	94.66	Low
Winchester City	102.57	Above Average	Roanoke County	99.66	Below Average	Clarke County	94.45	Low
Henry County	102.55	Above Average	Essex County	99.57	Below Average	Surry County	94.32	Low
Lee County	102.54	Above Average	Craig County	99.48	Below Average	Fauquier County	94.00	Low
Colonial Heights City	102.35	Above Average	Floyd County	99.44	Below Average	Rappahannock County	93.97	Low
Scott County	102.33	Above Average	Richmond County	99.38	Below Average	Fairfax City	93.30	Low
Russell County	102.25	Above Average	Caroline County	99.08	Below Average	Fairfax County	92.92	Low
Pulaski County	102.16	Above Average	Shenandoah County	98.98	Below Average	Loudoun County	92.56	Low
Tazewell County	102.04	Above Average	Isle of Wight County	98.89	Below Average	Bath County	92.01	Low
Alleghany County	102.04	Above Average	Charles City County	98.87	Below Average	Goochland County	92.01	Low
Wise County	101.86	Above Average	Rockingham County	98.86	Below Average	Arlington County	91.19	Low
Mecklenburg County	101.77	Above Average	Franklin County	98.82	Below Average	Falls Church City	89.96	Low
Giles County	101.74	Above Average	Henrico County	98.77	Below Average			
Charlotte County	101.71	Above Average	Greene County	98.71	Below Average			
Prince Edward County	101.61	Above Average	Amelia County	98.69	Below Average			
Cumberland County	101.60	Above Average	Orange County	98.66	Below Average			
Bland County	101.60	Above Average	Westmoreland County	98.58	Below Average			

# Map 1: FY2018 Local Fiscal Stress Index\*



\*Fiscal stress measures ability to generate additional local revenues from tax base relative to state average using three components: revenue capacity per capita, revenue effort and median household income.



Sources: VA Department of Housing and Community Development, Commission on Local Government  
VA Auditor of Public Accounts, FY2018 Local Comparative Report

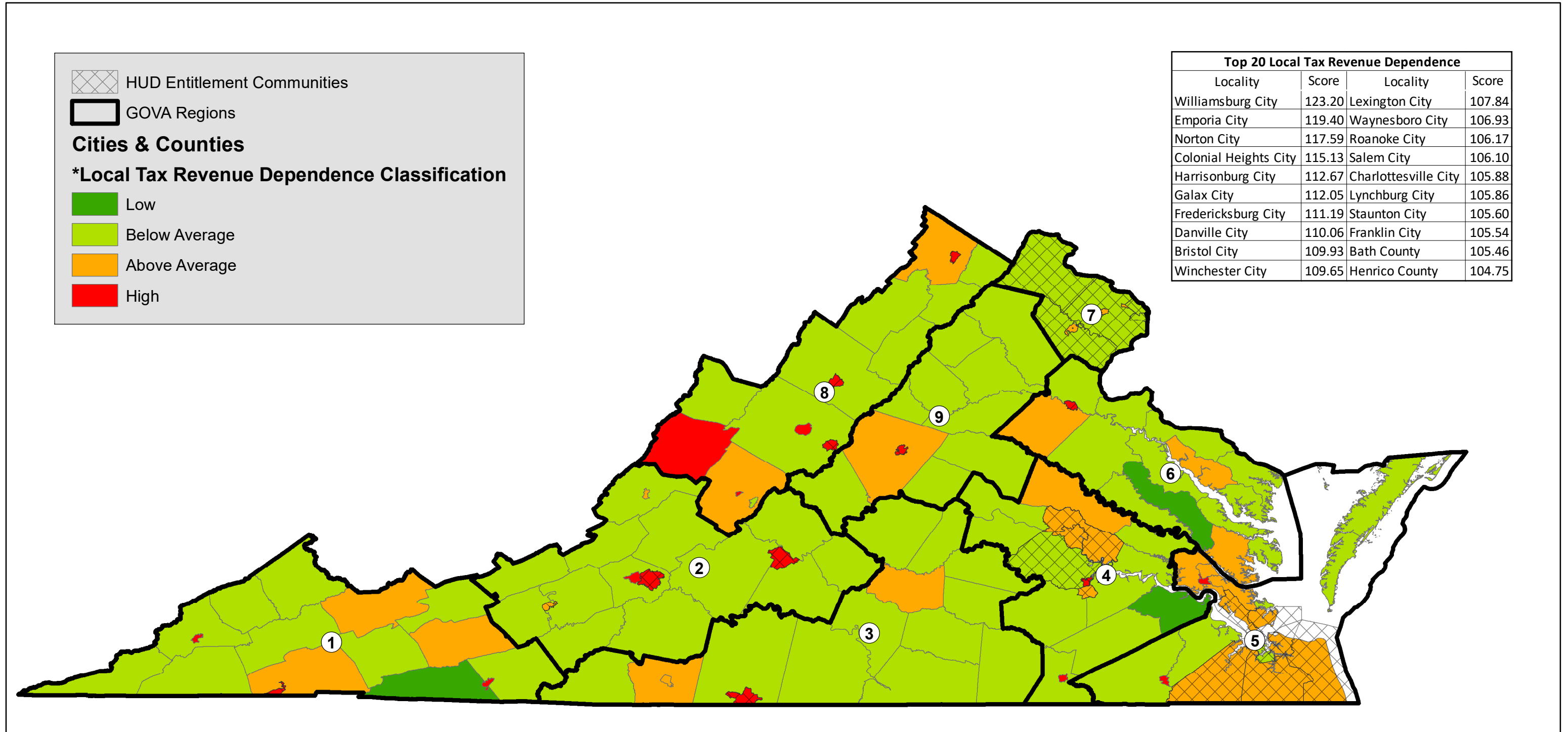


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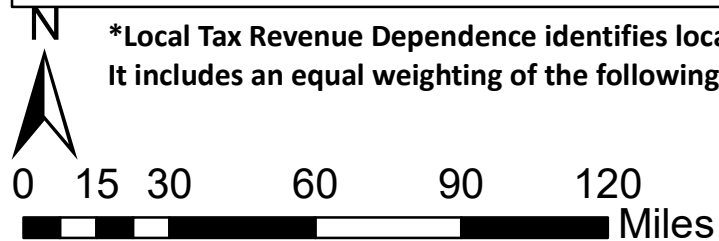
**Table - 2**  
**Local Tax Revenue Dependence**

Locality	Score	Classification	Locality	Score	Classification	Locality	Score	Classification
Williamsburg City	123.20	High	Falls Church City	100.09	Above Average	Giles County	97.50	Below Average
Emporia City	119.40	High	Manassas City	100.03	Above Average	Prince William County	97.50	Below Average
Norton City	117.59	High	Hopewell City	99.96	Below Average	Shenandoah County	97.47	Below Average
Colonial Heights City	115.13	High	Greene County	99.94	Below Average	Rockingham County	97.47	Below Average
Harrisonburg City	112.67	High	Nelson County	99.75	Below Average	Appomattox County	97.41	Below Average
Galax City	112.05	High	Amherst County	99.69	Below Average	Goochland County	97.38	Below Average
Fredericksburg City	111.19	High	Augusta County	99.66	Below Average	Russell County	97.38	Below Average
Danville City	110.06	High	Greensville County	99.61	Below Average	Smyth County	97.18	Below Average
Bristol City	109.93	High	Alexandria City	99.59	Below Average	Mecklenburg County	96.95	Below Average
Winchester City	109.65	High	Pulaski County	99.57	Below Average	Pittsylvania County	96.92	Below Average
Lexington City	107.84	High	Bedford County	99.53	Below Average	Alleghany County	96.88	Below Average
Waynesboro City	106.93	High	Prince George County	99.52	Below Average	King William County	96.88	Below Average
Roanoke City	106.17	High	Roanoke County	99.49	Below Average	Poquoson City	96.80	Below Average
Salem City	106.10	High	Botetourt County	99.45	Below Average	Floyd County	96.75	Below Average
Charlottesville City	105.88	High	Page County	99.32	Below Average	Loudoun County	96.72	Below Average
Lynchburg City	105.86	High	Nottoway County	99.30	Below Average	Craig County	96.72	Below Average
Staunton City	105.60	High	Lee County	99.27	Below Average	Fauquier County	96.62	Below Average
Franklin City	105.54	High	Chesterfield County	99.26	Below Average	Amelia County	96.56	Below Average
Bath County	105.46	High	Arlington County	99.21	Below Average	Sussex County	96.54	Below Average
Henrico County	104.75	Above Average	Essex County	99.03	Below Average	Fairfax County	96.47	Below Average
Norfolk City	103.83	Above Average	Accomack County	99.03	Below Average	Bland County	96.36	Below Average
Fairfax City	103.72	Above Average	Stafford County	99.00	Below Average	Mathews County	96.33	Below Average
Covington City	103.39	Above Average	Portsmouth City	98.89	Below Average	Rappahannock County	96.15	Below Average
Martinsville City	103.25	Above Average	Franklin County	98.89	Below Average	Brunswick County	96.07	Below Average
Virginia Beach City	103.17	Above Average	Campbell County	98.84	Below Average	Fluvanna County	96.00	Below Average
Chesapeake City	102.45	Above Average	King George County	98.84	Below Average	Buchanan County	95.99	Below Average
York County	102.31	Above Average	Northampton County	98.72	Below Average	Southampton County	95.87	Below Average
Rockbridge County	102.22	Above Average	Halifax County	98.64	Below Average	Buckingham County	95.80	Below Average
Newport News City	102.21	Above Average	Culpeper County	98.58	Below Average	Charlotte County	95.78	Below Average
Hampton City	102.00	Above Average	Lancaster County	98.50	Below Average	Isle of Wight County	95.75	Below Average
Henry County	101.74	Above Average	Patrick County	98.48	Below Average	Lunenburg County	95.70	Below Average
Richmond City	101.59	Above Average	Madison County	98.39	Below Average	Charles City County	95.60	Below Average
Prince Edward County	101.55	Above Average	Caroline County	98.39	Below Average	Clarke County	95.59	Below Average
Petersburg City	101.50	Above Average	Warren County	98.39	Below Average	Cumberland County	95.49	Below Average
James City County	101.50	Above Average	Montgomery County	98.27	Below Average	Westmoreland County	95.30	Below Average
Gloucester County	101.46	Above Average	Buena Vista City	98.12	Below Average	Dickenson County	95.27	Below Average
Frederick County	101.45	Above Average	Orange County	98.05	Below Average	Northumberland County	95.15	Below Average
Spotsylvania County	101.14	Above Average	Wise County	98.04	Below Average	Highland County	95.10	Below Average
Hanover County	101.14	Above Average	Middlesex County	97.99	Below Average	Grayson County	94.89	Low
Wythe County	101.07	Above Average	Scott County	97.97	Below Average	Surry County	94.47	Low
Albemarle County	100.55	Above Average	New Kent County	97.91	Below Average	King and Queen County	94.18	Low
Tazewell County	100.51	Above Average	Dinwiddie County	97.87	Below Average			
Suffolk City	100.49	Above Average	Manassas Park City	97.81	Below Average			
Radford City	100.35	Above Average	Louisa County	97.69	Below Average			
Washington County	100.26	Above Average	Powhatan County	97.66	Below Average			
Richmond County	100.22	Above Average	Carroll County	97.54	Below Average			

# Map 2: Local Tax Revenue Dependence\*



\*Local Tax Revenue Dependence identifies localities with a greater dependence on certain local tax revenues. It includes an equal weighting of the following three taxes that are indexed to the statewide average: local option sales and use tax, transient occupancy tax, and meals tax.



Sources: VA Department of Housing and Community Development, Commission on Local Government  
VA Auditor of Public Accounts, FY2018 Local Comparative Report

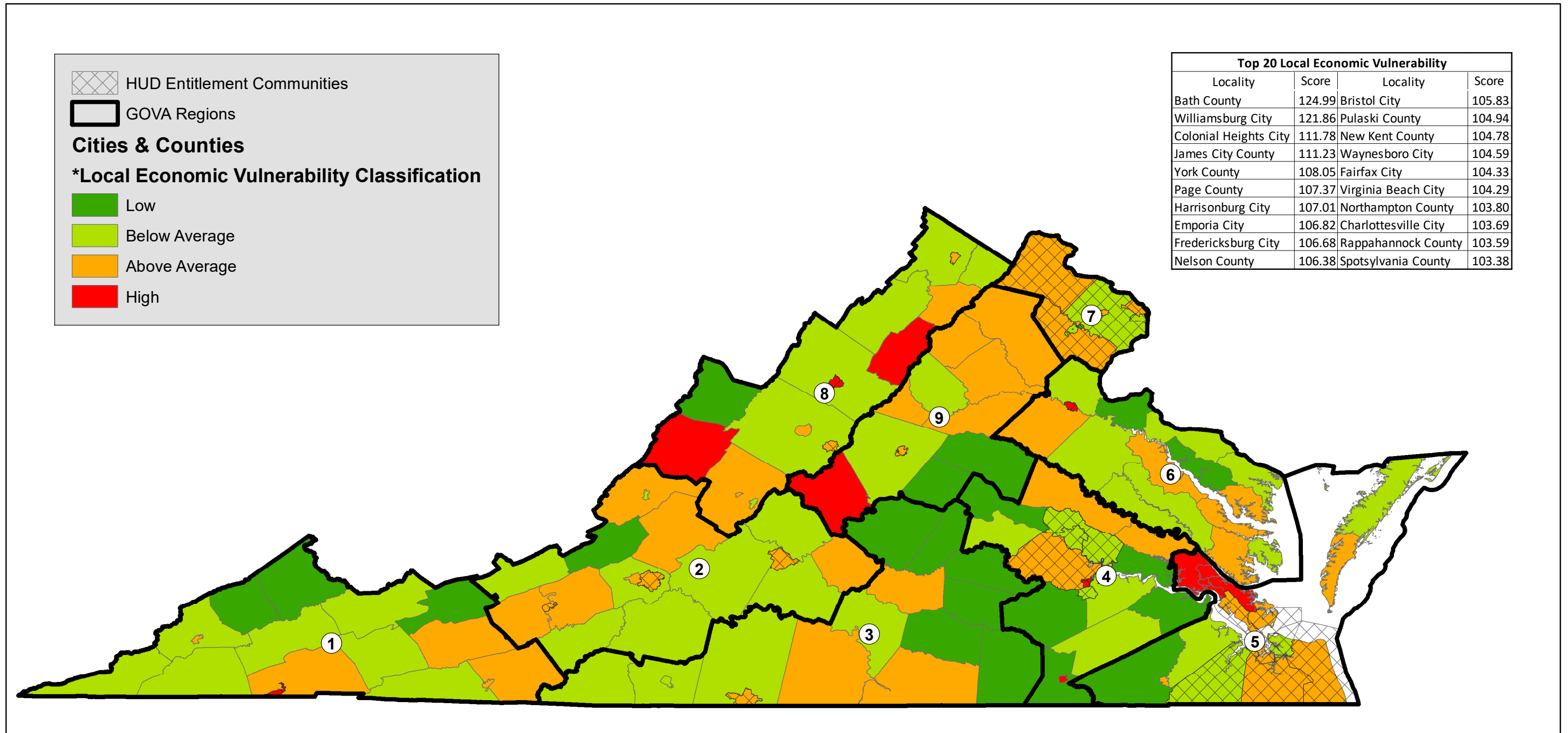


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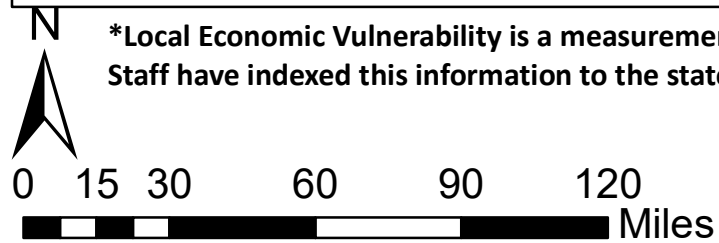
**Table - 3**  
**Local Economic Vulnerability**

Locality	Score	Classification	Locality	Score	Classification	Locality	Score	Classification
Bath County	124.99	High	Rockbridge County	101.00	Above Average	Giles County	97.89	Below Average
Williamsburg City	121.86	High	Lynchburg City	100.97	Above Average	Floyd County	97.87	Below Average
Colonial Heights City	111.78	High	Roanoke City	100.95	Above Average	Manassas City	97.76	Below Average
James City County	111.23	High	Radford City	100.82	Above Average	Powhatan County	97.67	Below Average
York County	108.05	High	Greene County	100.72	Above Average	Alexandria City	97.63	Below Average
Page County	107.37	High	Chesapeake City	100.66	Above Average	Pittsylvania County	97.47	Below Average
Harrisonburg City	107.01	High	Mecklenburg County	100.52	Above Average	Augusta County	97.37	Below Average
Emporia City	106.82	High	Culpeper County	100.43	Above Average	Grayson County	97.31	Below Average
Fredericksburg City	106.68	High	Orange County	100.42	Above Average	Prince George County	97.28	Below Average
Nelson County	106.38	High	Middlesex County	100.33	Above Average	King and Queen County	97.24	Below Average
Bristol City	105.83	High	Arlington County	100.25	Above Average	Northumberland County	97.16	Below Average
Pulaski County	104.94	Above Average	Chesterfield County	100.24	Above Average	Madison County	96.82	Below Average
New Kent County	104.78	Above Average	Fauquier County	100.17	Above Average	Buena Vista City	96.65	Below Average
Waynesboro City	104.59	Above Average	Halifax County	100.17	Above Average	Wise County	96.27	Below Average
Fairfax City	104.33	Above Average	Appomattox County	100.05	Above Average	Patrick County	96.13	Below Average
Virginia Beach City	104.29	Above Average	Hampton City	100.04	Above Average	Russell County	96.00	Below Average
Northampton County	103.80	Above Average	Covington City	99.95	Below Average	Clarke County	95.84	Below Average
Charlottesville City	103.69	Above Average	Westmoreland County	99.91	Below Average	Fairfax County	95.82	Below Average
Rappahannock County	103.59	Above Average	Albemarle County	99.90	Below Average	Charlotte County	95.65	Below Average
Spotsylvania County	103.38	Above Average	Norfolk City	99.83	Below Average	Dickenson County	94.91	Low
Staunton City	103.24	Above Average	Accomack County	99.79	Below Average	Dinwiddie County	94.85	Low
Newport News City	103.19	Above Average	Rockingham County	99.70	Below Average	Greensville County	94.79	Low
Wythe County	103.16	Above Average	Bedford County	99.69	Below Average	Louisa County	94.74	Low
Poquoson City	103.07	Above Average	Smyth County	99.64	Below Average	Craig County	94.73	Low
Galax City	102.75	Above Average	Shenandoah County	99.58	Below Average	Amelia County	94.59	Low
Danville City	102.73	Above Average	Petersburg City	99.56	Below Average	Charles City County	94.53	Low
Prince Edward County	102.69	Above Average	Amherst County	99.33	Below Average	Southampton County	94.50	Low
Essex County	102.66	Above Average	Henrico County	99.29	Below Average	Brunswick County	94.14	Low
Gloucester County	102.32	Above Average	Suffolk City	99.27	Below Average	Goochland County	94.03	Low
Falls Church City	102.23	Above Average	Franklin County	99.23	Below Average	Nottoway County	93.74	Low
Norton City	102.16	Above Average	Tazewell County	99.21	Below Average	Fluvanna County	93.64	Low
Prince William County	102.14	Above Average	Martinsville City	99.06	Below Average	Buchanan County	93.63	Low
Loudoun County	102.09	Above Average	Roanoke County	98.78	Below Average	Lunenburg County	92.89	Low
Botetourt County	102.07	Above Average	Mathews County	98.54	Below Average	Buckingham County	92.76	Low
Winchester City	102.03	Above Average	Hopewell City	98.50	Below Average	Cumberland County	92.69	Low
Carroll County	102.00	Above Average	Isle of Wight County	98.46	Below Average	Richmond County	92.19	Low
Franklin City	101.93	Above Average	Richmond City	98.42	Below Average	Manassas Park City	91.32	Low
Salem City	101.89	Above Average	Frederick County	98.33	Below Average	Bland County	90.99	Low
Lexington City	101.74	Above Average	Caroline County	98.27	Below Average	Highland County	90.04	Low
Montgomery County	101.73	Above Average	Henry County	98.25	Below Average	Surry County	89.96	Low
Warren County	101.73	Above Average	Scott County	98.22	Below Average	King George County	89.51	Low
Hanover County	101.49	Above Average	Stafford County	98.20	Below Average			
Portsmouth City	101.32	Above Average	King William County	98.09	Below Average			
Lancaster County	101.22	Above Average	Campbell County	98.07	Below Average			
Alleghany County	101.14	Above Average	Lee County	97.92	Below Average			
Washington County	101.09	Above Average	Sussex County	97.92	Below Average			

# Map 3: Local Economic Vulnerability\*



\*Local Economic Vulnerability is a measurement of the negative impact that the coronavirus crisis can have on employment based upon a region's mix of industries. Staff have indexed this information to the statewide average rather than nationwide average.



Sources: VA Department of Housing and Community Development, Commission on Local Government  
Chmura Economics & Analytics, JobsEQ



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**Table - 4**  
**Composite Local Vulnerability Index**

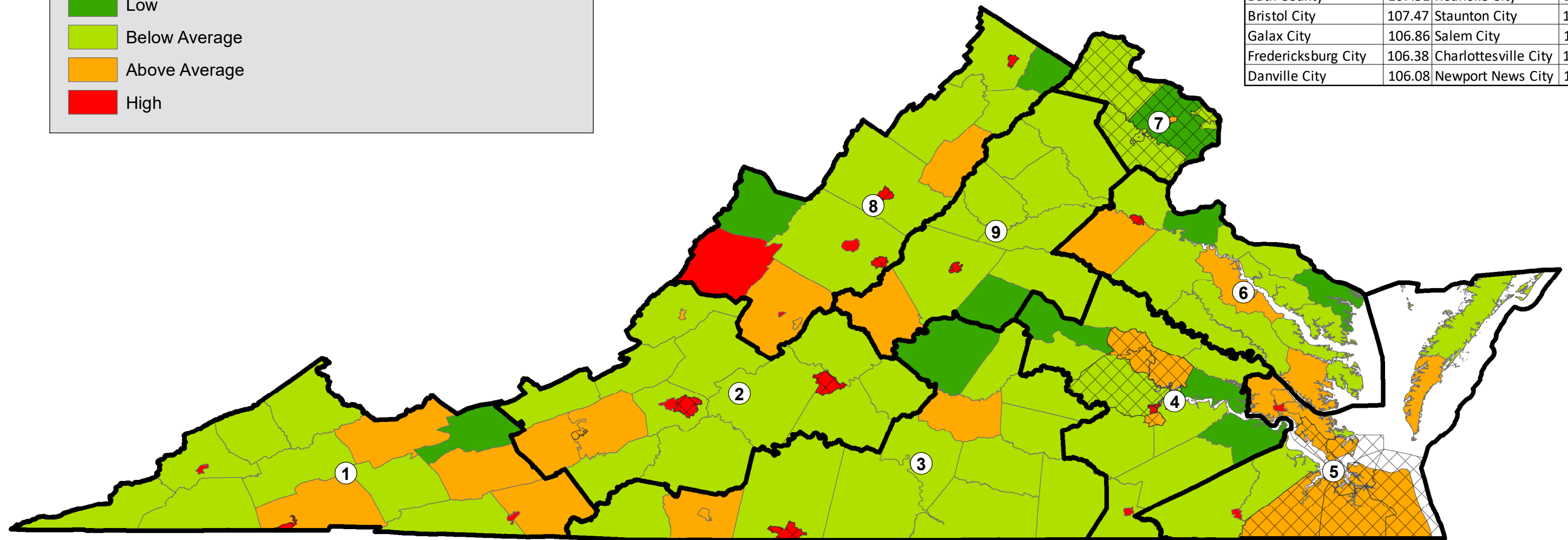
Locality	Score	Classification	Locality	Score	Classification	Locality	Score	Classification
Williamsburg City	115.54	High	Gloucester County	100.55	Above Average	Floyd County	98.02	Below Average
Emporia City	111.32	High	Fairfax City	100.45	Above Average	Dickenson County	98.02	Below Average
Colonial Heights City	109.75	High	Essex County	100.42	Above Average	Nottoway County	97.98	Below Average
Norton City	108.40	High	Montgomery County	100.40	Above Average	Buchanan County	97.95	Below Average
Harrisonburg City	108.27	High	Buena Vista City	100.31	Above Average	Westmoreland County	97.93	Below Average
Bristol City	107.53	High	Suffolk City	100.26	Above Average	Rappahannock County	97.90	Below Average
Bath County	107.49	High	Smyth County	100.02	Above Average	Grayson County	97.81	Below Average
Galax City	106.80	High	Alleghany County	100.02	Above Average	King William County	97.72	Below Average
Fredericksburg City	106.37	High	Lee County	99.91	Below Average	Stafford County	97.72	Below Average
Danville City	106.03	High	Amherst County	99.89	Below Average	Charlotte County	97.71	Below Average
Waynesboro City	105.21	High	Halifax County	99.86	Below Average	Isle of Wight County	97.70	Below Average
Lexington City	104.89	High	Greene County	99.79	Below Average	Dinwiddie County	97.67	Below Average
Franklin City	104.87	High	Mecklenburg County	99.75	Below Average	Madison County	97.59	Below Average
Winchester City	104.75	High	Accomack County	99.75	Below Average	Falls Church City	97.43	Below Average
Lynchburg City	104.30	High	Botetourt County	99.66	Below Average	Alexandria City	97.29	Below Average
Staunton City	104.18	High	New Kent County	99.63	Below Average	Richmond County	97.26	Below Average
Roanoke City	104.08	High	Scott County	99.50	Below Average	Mathews County	97.22	Below Average
Salem City	103.72	High	Sussex County	99.39	Below Average	Loudoun County	97.12	Below Average
Charlottesville City	103.68	High	Warren County	99.37	Below Average	King and Queen Count	97.11	Below Average
Newport News City	103.47	Above Average	Appomattox County	99.35	Below Average	Powhatan County	96.99	Below Average
Martinsville City	103.10	Above Average	Roanoke County	99.31	Below Average	Southampton County	96.99	Below Average
Covington City	103.04	Above Average	Hanover County	99.28	Below Average	Craig County	96.98	Below Average
James City County	103.00	Above Average	Manassas City	99.28	Below Average	Fauquier County	96.93	Below Average
Norfolk City	103.00	Above Average	Greensville County	99.27	Below Average	Arlington County	96.88	Below Average
Petersburg City	102.59	Above Average	Chesterfield County	99.20	Below Average	Brunswick County	96.88	Below Average
York County	102.49	Above Average	Frederick County	99.20	Below Average	Manassas Park City	96.86	Below Average
Virginia Beach City	102.38	Above Average	Campbell County	99.19	Below Average	Lunenburg County	96.69	Below Average
Hampton City	102.36	Above Average	Culpeper County	99.18	Below Average	Amelia County	96.61	Below Average
Page County	102.33	Above Average	Orange County	99.04	Below Average	Cumberland County	96.59	Below Average
Radford City	102.24	Above Average	Giles County	99.04	Below Average	Louisa County	96.50	Below Average
Pulaski County	102.23	Above Average	Franklin County	98.98	Below Average	Charles City County	96.33	Low
Prince Edward County	101.95	Above Average	Poquoson City	98.91	Below Average	Bland County	96.32	Low
Portsmouth City	101.93	Above Average	Bedford County	98.86	Below Average	Buckingham County	96.28	Low
Wythe County	101.83	Above Average	Prince George County	98.85	Below Average	Northumberland Count	96.06	Low
Hopewell City	101.45	Above Average	Albemarle County	98.82	Below Average	Fluvanna County	95.94	Low
Richmond City	101.35	Above Average	Wise County	98.72	Below Average	Clarke County	95.30	Low
Nelson County	101.24	Above Average	Shenandoah County	98.68	Below Average	King George County	95.12	Low
Rockbridge County	101.09	Above Average	Rockingham County	98.68	Below Average	Fairfax County	95.07	Low
Chesapeake City	100.96	Above Average	Prince William County	98.68	Below Average	Goochland County	94.47	Low
Northampton County	100.94	Above Average	Caroline County	98.58	Below Average	Highland County	93.77	Low
Henrico County	100.94	Above Average	Lancaster County	98.55	Below Average	Surry County	92.92	Low
Henry County	100.85	Above Average	Russell County	98.54	Below Average			
Carroll County	100.71	Above Average	Patrick County	98.53	Below Average			
Washington County	100.60	Above Average	Augusta County	98.41	Below Average			
Tazewell County	100.58	Above Average	Middlesex County	98.39	Below Average			
Spotsylvania County	100.57	Above Average	Pittsylvania County	98.36	Below Average			



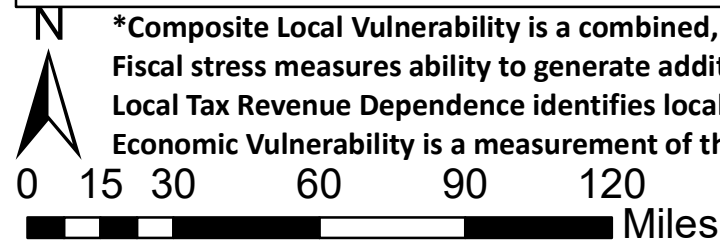
# Map 4: Composite Local Vulnerability Index\*

 HUD Entitlement Communities  
 GOVA Regions  
**Cities & Counties**  
**\*Composite Local Vulnerability Index Classification**  
 Low  
 Below Average  
 Above Average  
 High

Top 20 Composite Local Vulnerability Index			
Locality	Score	Locality	Score
Williamsburg City	115.49	Waynesboro City	105.27
Emporia City	111.32	Lexington City	104.89
Colonial Heights City	109.80	Franklin City	104.85
Norton City	108.41	Winchester City	104.77
Harrisonburg City	108.19	Lynchburg City	104.25
Bath County	107.51	Roanoke City	104.04
Bristol City	107.47	Staunton City	104.04
Galax City	106.86	Salem City	103.74
Fredericksburg City	106.38	Charlottesville City	103.72
Danville City	106.08	Newport News City	103.45



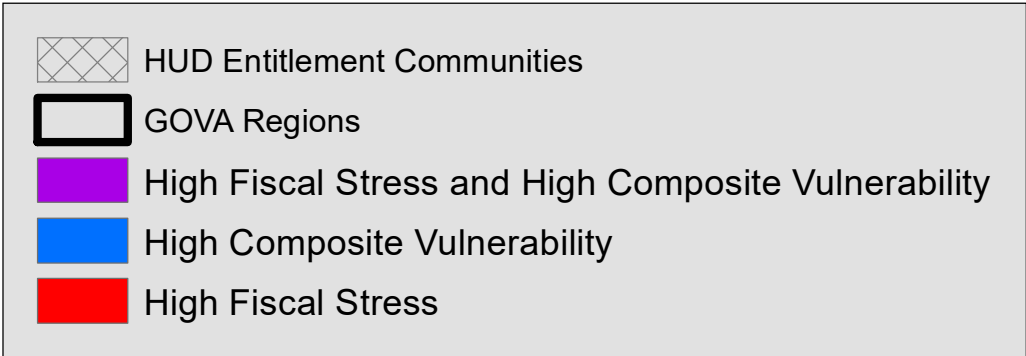
\*Composite Local Vulnerability is a combined, equal weighting of the following three indices: Local Government Fiscal Stress, Local Tax Revenue Dependence, and Economic Vulnerability.  
 Fiscal stress measures ability to generate additional local revenues from tax base relative to state average using three components: revenue capacity per capita, revenue effort, and median household income.  
 Local Tax Revenue Dependence identifies localities with greater dependence on local option sales and use tax, transient occupancy tax, and meals tax relative to the statewide average.  
 Economic Vulnerability is a measurement of the negative impact that the coronavirus crisis can have on employment based upon a region's mix of industries.



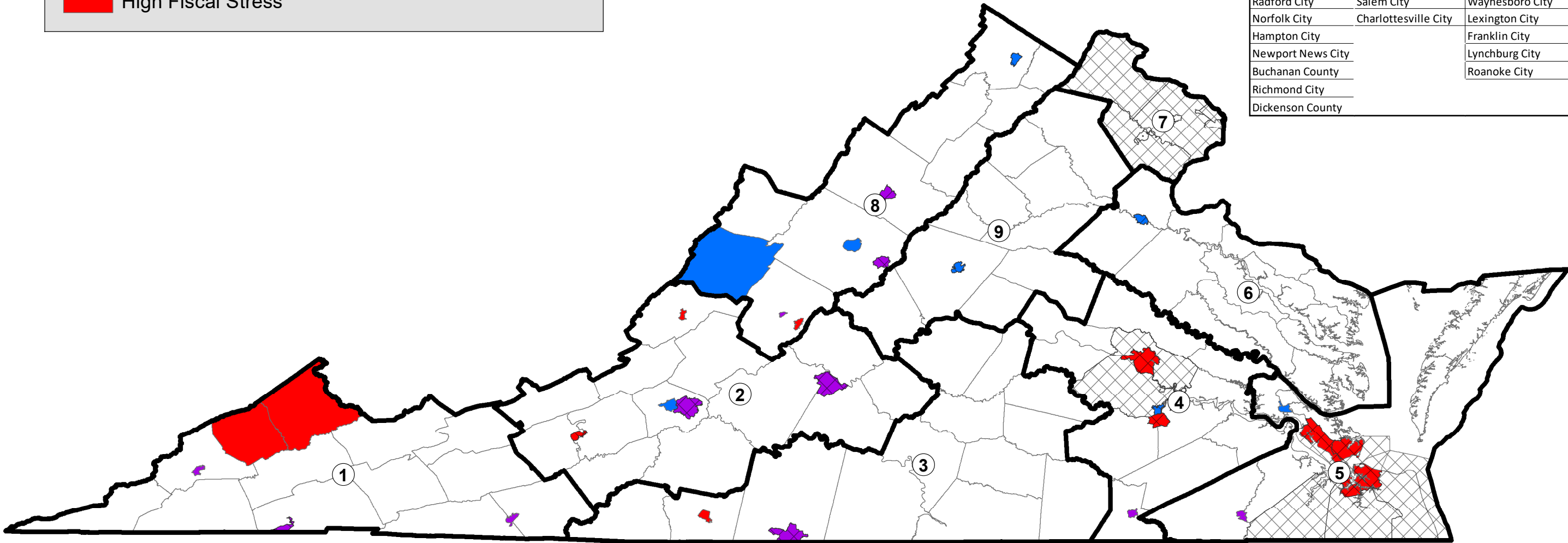
Sources: VA Department of Housing and Community Development, Commission on Local Government;  
 Chmura Economics & Analytics, JobsEQ; VA Auditor of Public Accounts, FY2018 Local Comparative Report

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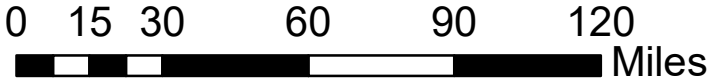
# Map 5: High Local Fiscal Stress Index and/or Composite Vulnerability Index\*



High Fiscal Stress only (Sorted by corresponding score)	High Composite Vulnerability only (Sorted by corresponding score)	High Fiscal Stress & High Composite Vulnerability (Sorted by Composite score)
Martinsville City	Williamsburg City	Emporia City
Petersburg City	Colonial Heights City	Norton City
Buena Vista City	Bath County	Harrisonburg City
Hopewell City	Fredericksburg City	Bristol City
Covington City	Winchester City	Galax City
Portsmouth City	Staunton City	Danville City
Radford City	Salem City	Waynesboro City
Norfolk City	Charlottesville City	Lexington City
Hampton City		Franklin City
Newport News City		Lynchburg City
Buchanan County		Roanoke City
Richmond City		
Dickenson County		



\*Composite Local Vulnerability is a combined, equal weighting of the following three indices: Local Government Fiscal Stress, Local Tax Revenue Dependence, and Economic Vulnerability.  
 Fiscal stress measures ability to generate additional local revenues from tax base relative to state average using three components: revenue capacity per capita, revenue effort, and median household income.  
 Local Tax Revenue Dependence identifies localities with greater dependence on local option sales and use tax, transient occupancy tax, and meals tax relative to the statewide average.  
 Economic Vulnerability is a measurement of the negative impact that the coronavirus crisis can have on employment based upon a region's mix of industries.



Sources: VA Department of Housing and Community Development, Commission on Local Government;  
 Chmura Economics & Analytics, JobsEQ; VA Auditor of Public Accounts, FY2018 Local Comparative Report



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**Table - 5**  
**Unrestricted & Unassigned Fund Balance Analysis**

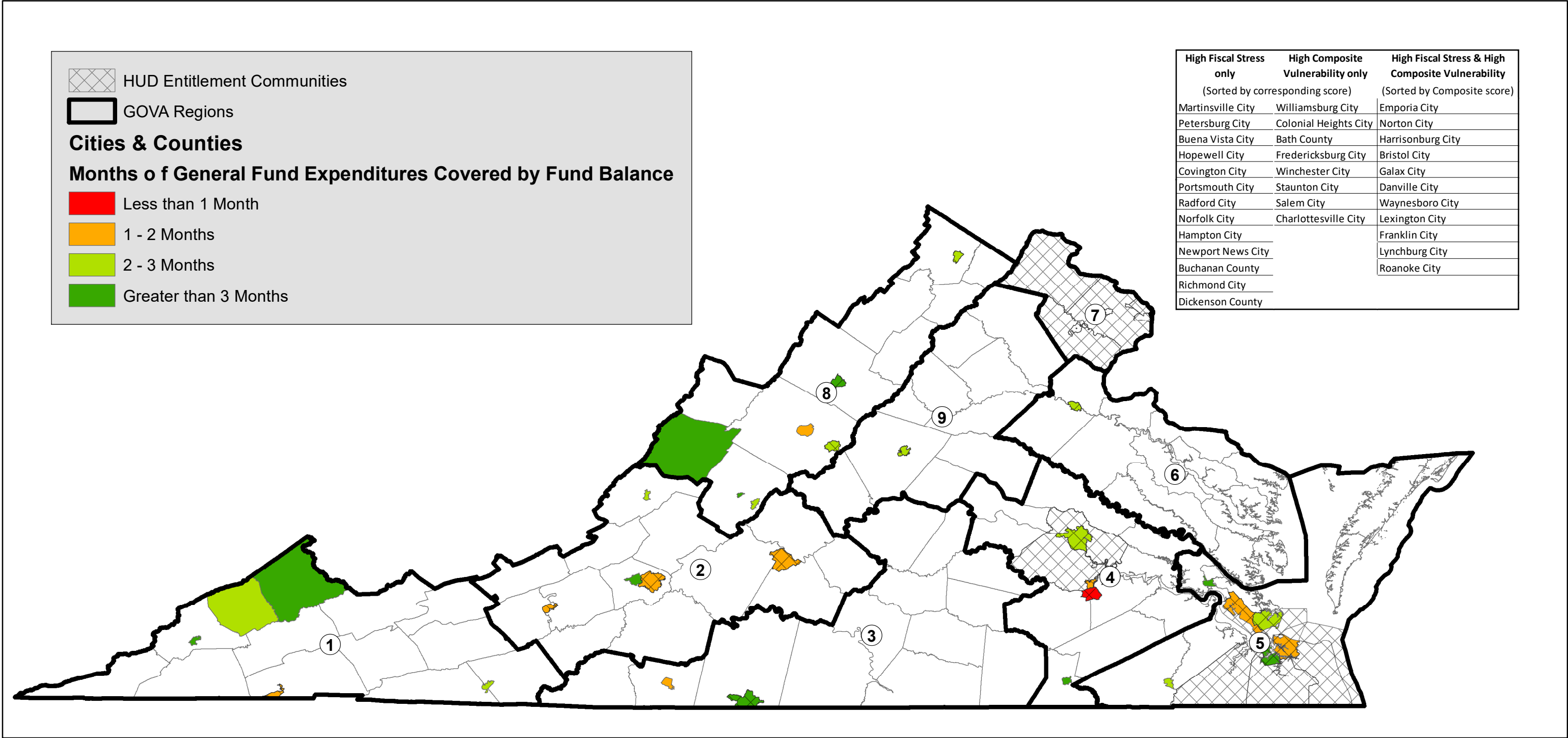
Locality	Unrestricted GF Fund Balance	FB as % of Total Expense	Months Expenditure Covered by FB	Total GF Expenditure	High FS or Composite Index or Both
Petersburg City	\$2,803,522	4%	0.49	\$68,319,064	High Fiscal Stress
Staunton City	\$4,605,965	9%	1.11	\$49,984,265	High Composite Index
Radford City	\$2,922,813	12%	1.39	\$25,237,443	High Fiscal Stress
Norfolk City	\$70,962,327	13%	1.51	\$564,085,992	High Fiscal Stress
Roanoke City	\$34,854,168	13%	1.59	\$263,151,527	Both
Newport News City	\$56,876,979	14%	1.63	\$417,587,522	High Fiscal Stress
Martinsville City	\$4,660,378	14%	1.73	\$32,409,549	High Fiscal Stress
Bristol City	\$14,168,992	15%	1.85	\$91,684,832	Both
Hopewell City	\$6,800,408	16%	1.88	\$43,294,388	High Fiscal Stress
Lynchburg City	\$29,197,526	16%	1.97	\$177,528,161	Both
Colonial Heights City	\$9,227,574	17%	1.98	\$55,879,502	High Composite Index
Galax City	\$3,544,068	18%	2.18	\$19,518,787	Both
Buena Vista City	\$2,434,483	18%	2.18	\$13,379,360	High Fiscal Stress
Richmond City	\$108,511,921	18%	2.20	\$592,633,153	High Fiscal Stress
Dickenson County	\$5,314,538	19%	2.28	\$28,003,990	High Fiscal Stress
Franklin City	\$4,189,190	19%	2.33	\$21,558,675	Both
Fredericksburg City	\$16,944,452	21%	2.57	\$79,065,057	High Composite Index
Charlottesville City	\$30,502,351	21%	2.58	\$142,011,208	High Composite Index
Waynesboro City	\$9,511,888	22%	2.59	\$44,102,212	Both
Covington City	\$4,424,555	22%	2.70	\$19,691,215	High Fiscal Stress
Hampton City	\$61,531,835	23%	2.71	\$272,553,509	High Fiscal Stress
Winchester City	\$19,545,641	24%	2.88	\$81,469,966	High Composite Index
Sussex County	\$5,952,073	26%	3.18	\$22,463,372	High Fiscal Stress
Williamsburg City	\$12,912,770	28%	3.39	\$45,666,673	High Composite Index
Harrisonburg City	\$31,239,773	29%	3.49	\$107,435,800	Both
Norton City	\$2,772,802	30%	3.55	\$9,373,816	Both
Portsmouth City	\$56,699,726	31%	3.75	\$181,677,276	High Fiscal Stress
Danville City	\$30,066,455	32%	3.88	\$93,054,692	Both
Salem City	\$28,803,322	43%	5.16	\$67,049,388	High Composite Index
Buchanan County	\$8,432,772	46%	5.56	\$18,203,518	High Fiscal Stress
Bath County	\$7,918,047	50%	5.96	\$15,948,494	High Composite Index
Lexington City	\$8,625,068	50%	6.04	\$17,132,779	Both
Emporia City	\$11,816,073	65%	7.81	\$18,162,298	Both

\* Data Source: FY2018 CAFR except for the City of Hopewell as they are delinquent. FY2017 CAFR data has been used for Hopewell.

\* Unassigned/Unrestricted Fund Balance - Exhibit - 3 or C or A-3.

\* Total General Fund Expenditure - Exhibit - 4 or 5 or A-3 or A-4 or D or E.

# Map 6: High Local Fiscal Stress Index and/or Composite Local Vulnerability Index and FY2018 Fund Balance Coverage of General Fund (in Months)\*



High Fiscal Stress only (Sorted by corresponding score)	High Composite Vulnerability only	High Fiscal Stress & High Composite Vulnerability (Sorted by Composite score)
Martinsville City	Williamsburg City	Emporia City
Petersburg City	Colonial Heights City	Norton City
Buena Vista City	Bath County	Harrisonburg City
Hopewell City	Fredericksburg City	Bristol City
Covington City	Winchester City	Galax City
Portsmouth City	Staunton City	Danville City
Radford City	Salem City	Waynesboro City
Norfolk City	Charlottesville City	Lexington City
Hampton City		Franklin City
Newport News City		Lynchburg City
Buchanan County		Roanoke City
Richmond City		
Dickenson County		

HUD Entitlement Communities  
 GOVA Regions  
**Cities & Counties**  
**Months of General Fund Expenditures Covered by Fund Balance**  
 Less than 1 Month  
 1 - 2 Months  
 2 - 3 Months  
 Greater than 3 Months

\*Composite Local Vulnerability is a combined, equal weighting of the following three indices: Local Government Fiscal Stress, Local Tax Revenue Dependence, and Economic Vulnerability.  
 Fiscal stress measures ability to generate additional local revenues from tax base relative to state average using three components: revenue capacity per capita, revenue effort, and median household income.  
 Local Tax Revenue Dependence identifies localities with greater dependence on local option sales and use tax, transient occupancy tax, and meals tax relative to the statewide average.  
 Economic Vulnerability is a measurement of the negative impact that the coronavirus crisis can have on employment based upon a region's mix of industries.

0 15 30 60 90 120 Miles

Sources: VA Department of Housing and Community Development, Commission on Local Government; Chmura Economics & Analytics, JobsEQ; VA Auditor of Public Accounts, FY2018 Local Comparative Report



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