THE SHARING ECONOMY

IMPLICATIONS FOR LOCAL GOVERNMENT LEADERS

July 2015

A joint publication of the Virginia Municipal League and the Center for State and Local Government Leadership at George Mason University
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>4</td>
</tr>
<tr>
<td>The Sharing Economy: An Overview</td>
<td>5-7</td>
</tr>
<tr>
<td>Taxation</td>
<td>8-11</td>
</tr>
<tr>
<td>Regulation</td>
<td>12-13</td>
</tr>
<tr>
<td>Social Equity</td>
<td>14-16</td>
</tr>
<tr>
<td>Economic Development</td>
<td>17-19</td>
</tr>
<tr>
<td>What’s Next?</td>
<td>20-21</td>
</tr>
<tr>
<td>Definitions</td>
<td>22-23</td>
</tr>
</tbody>
</table>
Perhaps one of the greatest challenges of local leadership is to earn the trust of citizens – trust that must be earned not just individually, but also by one’s city or county. Now the explosion of the sharing or disruptive economy is creating heretofore unknown challenges and opportunities for local leaders — to local tax revenues, to economic development, to public safety, to harnessing new tools to help increasing numbers of elderly Virginians who will no longer be able to drive.

This breathtaking evolution of technology is making it easier than ever before in American history for constituents to access information, but even harder to sustain jobs that offer pension and health care options that will protect them in retirement — perhaps creating looming issues and challenges for cities and counties throughout the Commonwealth.

How would your citizens react if a young child were molested in an Airbnb residence in your jurisdiction? What might they think if a car sharing service were to agree to work with your city or county to provide deeply discounted charges for transporting elderly or handicapped citizens who cannot drive themselves and have limited access to public transportation? How many calls might you receive if a room-sharing service was key to bringing in significant numbers of visitors to your city or town — visitors who would use your restaurants and enhance your local economy — and reputation? What would they think — as some in Washington appear interested in doing — if Congress were to preempt your authority as a local elected leader to address these extraordinary changes that could offer exceptional opportunities, but also risks to your citizens?

A key part of local leadership — and local government — is earning the trust of citizens and taxpayers that you can both see and steer your community through unprecedented changes and challenges in a way that will not just promise, but provide for a more secure future.

This publication is an effort to ensure Virginia local leaders and their governments can understand and help lead their communities through the profound economic changes created by this fast-developing digital sharing/disruptive economy: to help you demonstrate to your citizens how very, very good local governments can be — especially at a time of wrenching changes. This is a guide, resource book, intended to help ensure effective and responsible local leadership — leadership that garners the trust of all your citizens.

It is a product of a most dedicated cohort, who have worked not just tirelessly, but also with unrelenting determination to provide you with a resource tool kit and guide for what promises to be an unprecedented road ahead which will affect every family and every business in your community. We hope it will serve you, your citizens and businesses, and your community.

Frank Shafroth  
Director of the Center for State and Local Government Leadership at George Mason University
The members of George Mason University’s Northern Virginia Public Service Fellows Program, Cohort 10, would like to sincerely thank Professor Frank H. Shafroth and all the officials and individuals without whom this document would not be possible:

- Matthew Alfele, City Planner, City of Charlottesville
- Michelle L. Attreed, Director of Finance, Prince William County
- Barry Biggar, President and CEO, Visit Fairfax
- Sharon Bulova, Chairman, Fairfax County Board of Supervisors
- Ross W. D’Urso, Commissioner of the Revenue, Fauquier County
- Nick Evers, Planning Division Chief - Zoning Administrator, Prince William County
- Chuck Floyd, Assistant Chief of Development Services, Fauquier County
- Mark Flynn, General Counsel, Virginia Municipal League
- John Foust, Dranesville District Supervisor, Fairfax County Board of Supervisors
- Michael Frey, Sully District Supervisor, Fairfax County Board of Supervisors
- Kevin Greenleaf, Director, Department of Tax Administration, Fairfax County
- Susan Hafeli, Department of Cable and Consumer Affairs, Fairfax County
- Richard B. Kaufman, Town Attorney (retired), Town of Herndon
- Megan E. Kelly, Senior Assistant County Attorney IV, Prince William County
- Christopher E. Martino, Deputy County Executive, Prince William County
- Richard W. Noble, First Sergeant, Police Department, Prince William County
- Melissa S. Peacor, County Executive, Prince William County
- Juan Rengal, Department of Tax Administration, Fairfax County
- Susan L. Rotsch, Deputy County Executive, Prince William County
- Marcus B. Simon, Member of Virginia House of Delegates, 53rd District
- Philip G. Sunderland, Vice President and General Counsel, Metropolitan Washington Airports Authority
- R. Holder Trumbo, Jr., Scott District Supervisor, Fauquier County Board of Supervisors
- Shawn M. Williams, Broad Run District Supervisor, Loudoun County Board of Supervisors

Special Recognition to Steve Jeffrey, Director, Vermont League of Cities and Towns, and Chris McKenzie, Director, California League of Cities.
As recently as five years ago, travel to a city for business or pleasure was a relatively straightforward proposition. Need a place to stay? Hotels and inns offered a range of accommodations, amenities and price points. Need transportation? Taxis were the mode of choice to get from point A to point B, with rental cars an option for longer term stays. Travelers’ needs were met, businesses thrived, and local economies benefited. Local governments’ role in these traditional models was straightforward as well; businesses were appropriately zoned and licensed, relevant taxes were collected, and economic development benefits were leveraged.

Enter the “sharing economy,” the rise of which has created entirely new ways of conducting business throughout the United States – unregulated businesses that compete against incumbent, municipally regulated and taxed businesses in localities all across the Commonwealth. Initially emerging during the recession at the end of the last decade, the sharing economy – sometimes referenced as the disruptive economy, access economy, gig economy, or collaborative consumption – is, simply stated, a trend towards renting or borrowing goods as opposed to owning them.

Companies at the forefront of this new economy follow the same basic model: strangers share goods or services, connecting through a website or an online application that is facilitated by a third party business. The central tenet driving the sharing economy is elimination of the need to incur ownership costs for items or services that may be rented cheaply and easily. At the same time, owners of underused assets gain additional income by sharing items not currently in use or by sharing time in ways that are convenient to their schedules. The sharing economy may include the sharing of ideas, production, distribution, products or services through peer-to-peer networks.

Businesses that are managing these new sharing economy websites typically require payment of either a fee or a portion of the transaction price in exchange for using the service. Among the businesses that are successfully capitalizing on this new economy are Uber, the car-sharing service founded in 2009 and worth as much as $50 billion today, according to CNN Money; and Airbnb, the home-sharing service that the Center for Policy Studies estimates has grown by 750 percent in just five years.

The exponential growth of these companies in such a short period indicates a clear demand in the marketplace for quick access to borrowed goods and services. However, it has also resulted in significant disruption to traditional business models – and to the traditional role of local governments to tax and regulate.

This guide explores, describes, and assesses options for local government leaders to address key issues related to taxation, regulation, social equity and economic development. It offers analysis and resources to help govern in this time of rapid change affecting local communities. It suggests ways in

---

which localities might be able to partner with these emerging sharing services to provide public services in your community at affordable prices.

An important caveat: the sharing/disruptive economy is dynamic and evolving. New companies are launching every day and new models are being developed. While this guide is intended as a comprehensive resource, it is also a snapshot in time. Some information may be quickly outdated. Local officials are advised to monitor the issues raised in this guide and to be ready to adapt and adjust their strategies accordingly.

Why Local Governments Should be Paying Attention

The economic recession played a tremendous part in the inception of the sharing economy; however, technology and the Internet are responsible for its present-day success. Companies such as Uber and Airbnb, as well as smaller but growing competitors such as Lyft or Sidecar, work because service providers can easily connect online with consumers and financial transactions can take place on secure websites. GPS technology via smartphones can quickly determine a person’s location, how long it will take an Uber driver to get to that location, and how close a person is to an available Airbnb room rental. That can mean convenience and savings for citizens, as well as extra income opportunities; it can also mean significant disruption for traditional, tax-paying lodging and taxi/limo providers, as well as apprehensions about public safety.

Although business in the sharing economy is conducted almost entirely online, many companies actively promote the value of personal connection between service providers and service users. For instance, Uber drivers and passengers are encouraged to rate their experiences in online forums; positive or negative reviews can impact drivers’ abilities to get jobs and passengers’ access to rides. These peer-to-peer interactions build trust in Uber’s services and a sense of community among Uber users, creating an emotional connection that is a distinct characteristic of the sharing economy.

However, it is the quick and easy access to these services that has overwhelmingly led to their success, increasingly to the detriment of traditional industries such as lodging and taxi services. This has far-reaching implications, the most important of which involves localities and must be addressed by local government leaders and officials, to the degree they are empowered by their state legislatures. Questions to be answered include: How can these sharing economy businesses be taxed, in a manner that is equitable to existing businesses offering similar services? How should they be regulated for land use, issues of public safety, and to ensure against discriminatory practices? How do local officials respond to constituent complaints regarding these businesses, such as neighbors complaining about a home-sharing rental in their community? And, importantly, how can this be accomplished in a manner that recognizes the economic development potential represented by these businesses considering consumers like using them? Many residents want to have these options available in the communities in which they live, work, and visit.

In fact, businesses in the sharing economy frequently offer equal
or better services for less, when compared to traditional companies subject to regulations. Local governments, seeing how popular these services are, may be disinclined to impose too many restrictions on their operations. Proactive localities can engage sharing economy businesses by creating collaborative agreements for service provision while working with existing companies to ease current regulations or provide transitional relief opportunities.

The **Dillon Rule** is a legal doctrine followed in the Commonwealth that limits powers of localities to those that are 1) specifically conferred by the legislature, 2) necessarily or fairly implied from a specific grant of authority, and 3) essential to the purpose of government.

**Virginia General Assembly: 2015 Action**
In the Commonwealth of Virginia, the impact of the sharing economy on localities is not lost on state legislators. In fact, the initial burden of regulating these businesses has been assumed by the Commonwealth. In 2015, the Virginia General Assembly addressed one of the largest segments of the sharing economy, **transportation network companies (TNCs)**, the category that includes Uber and Lyft.3 The 2015 legislation allows registered ride-sharing services to operate legally in Virginia.

Governor Terry McAuliffe recently approved bills that subject TNCs to state regulations aimed at addressing safety measures for passengers and drivers. TNCs are now required to pay the Commonwealth an initial licensing fee and annual service fees to operate within the state. They are also required to conduct all driver background screening, to include verification of a registered driver’s age, criminal and driving history, as well as status on the national sex offender registry. TNC drivers must purchase and provide verification of $1 million in liability insurance before being certified to operate in Virginia. The Department of Motor Vehicles (DMV) is responsible for certification and licensing of TNC drivers and will conduct periodic audits of TNCs to ensure compliance with the Commonwealth's regulations. Registration and licensing fees are expected to offset the Commonwealth’s cost to monitor this program.

While the 2015 legislation is important, it only begins to address the issues represented by the sharing economy and its impact on localities. The Commonwealth of Virginia is a **Dillon Rule** state, which may inhibit government officials from exploring solutions to these issues on their own. The reality is that local governments must address these issues directly so that they are in a position to help craft regulations that benefit their localities. Local governments across Virginia need to understand and advocate with their state legislators for consumer protections as well as the ability to appropriately regulate and tax sharing economy businesses. This guide offers information and insights designed to facilitate this understanding and start these important conversations.

**Airbnb**, the most popular home-sharing service, already has 350,000+ hosts and 15 million guests served in 190 countries and 34,000 cities around the world.

**In Virginia, there were 1,237 Airbnb listings** as of July 2015, including 340 in Arlington, 243 in Charlottesville, and 177 in Richmond. See the map below for more details.

Source: imagonline.com

---

The “disruptive economy” is an apt description when considering the impact these businesses have on local taxation, in both policy and practice. **Sharing economy companies have developed at a pace beyond the ability of all levels of government to pass laws and regulations** to capture tax revenues from either the corporate entities, such as Uber or Airbnb, or the service providers who drive the cars and rent out the rooms.

Further complicating matters for Virginia officials is the fact that none of the larger sharing economy companies are located within the Commonwealth, which makes it difficult to collect taxes from them through existing laws.

One such existing tax law from which many localities derive significant revenue is Business and Professional Occupational License (BPOL) tax. The Virginia Code authorizes localities to adopt BPOL fees and taxes. However, the enabling legislation for BPOL taxes defines businesses subject to the tax very specifically. Unless a sharing economy-related business rises to a level earning a livelihood with “a continuous and regular course of dealing,” as defined in the Code, it is not subject to BPOL taxation. An additional requirement is the existence of a “definite place of business,” which requires regular and continuous business activity for 30 consecutive days or more. Due to the irregular nature of business in the sharing economy model, this may not apply in most cases.

Specific complications apply to TNCs, in which service provision may not occur in the locality that the TNC partner resides and, in fact, could occur in multiple localities. With home-sharing services, which are typically classified as residential rather than lodging, they are not subject to the BPOL tax unless the locality adopted a rental property BPOL tax prior to January 1, 1974.

---

5. Code of Virginia § 58.1-3700.1.3 (definition of “business”)
6. Code of Virginia § 58.1-3700.1.3 (definition of “definite place of business”)
7. Code of Virginia § 58.1-3708.A
Finally, localities with BPOL taxes typically have a threshold of minimum gross receipts that are required before the taxes are due. Businesses that do not meet the minimum gross receipts pay a minimal license fee, often $50 or less. Most sharing economy activity does not generate the minimum gross receipts necessary before BPOL tax would be due. While the current statutes do not clearly impose BPOL taxes on sharing economy businesses, it is unlikely there will be any legislative amendments to BPOL authority anytime soon. In recent years the Virginia General Assembly has proposed many bills that would repeal BPOL tax authority, and the current legislature has a strong “no new tax” platform.

A further examination of the two largest categories of sharing economy businesses, TNCs and home-sharing businesses, illustrates the complexities related to local government taxation.

**Taxing TNCs**

As part of its 2015 TNC legislation discussed earlier, the Virginia General Assembly amended the Motor Vehicle Code to define vehicles used within these sharing networks as personal vehicles, which are taxable by the locality where they are normally garaged or parked. The challenge for Virginia assessors is not whether these vehicles are eligible to be taxed, but whether they qualify for tax relief pursuant to the Personal Property Tax Relief Act of 1998 (PPTRA). This act created personal property tax relief for qualifying privately owned or leased vehicles that are only used for nonbusiness purposes.

As indicated, the 2015 TNC legislation requires registration of each TNC partner vehicle with DMV. That information is stored in the DMV database and is available to assessing officials. However, the TNC legislation requires that Commissioners presume that TNC partner vehicles are used for nonbusiness purposes to prevent disqualification from PPTRA. The legislation goes even further and requires that in order to disqualify a TNC vehicle from tax relief, assessing officials must have clear and convincing evidence that the vehicle is predominantly used for business purposes.

The 2015 TNC legislation does not cover vehicle-sharing services that operate more like rental car arrangements, such as Relayrides. Traditional rental cars have rental use license plates and are not subject to personal property tax; rather, the rental transaction is subject to a tax (four percent state tax, four percent local tax, and two percent state fee) collected by the Virginia Department of Taxation based on the rental cost. The four percent local portion of this tax is passed on to the localities in which cars are rented.

Vehicles involved in sharing economy car rental services, however, do not qualify for rental tags, as they are not exclusively used for rental purposes. They do not fit squarely into the Commonwealth’s codes and regulations that require them to collect and remit rental tax. This benefits local governments, as the personal property taxes are likely to be higher than the four percent local share of the rental tax. However, since these vehicles are not distinguished in DMV records and there is not a statutory requirement that information regarding the usage and mileage is collected and maintained, obtaining evidence to determine disqualification through PPTRA is a challenge.

In 2005, the PPTRA was amended to fix the amount reimbursed to localities through the program for all future years. Accordingly, during years in which the total assessed value of vehicles in a locality increases, the actual tax relief provided by the Commonwealth that is applied to each taxpayer declines.

By eliminating vehicles predominantly used for business purposes, localities may collect the total amount of assessed personal property tax from the owner and a larger portion of the Commonwealth’s fixed distribution is available to offset other qualifying vehicles. Issues of equity and fairness to citizens may motivate officials to be aggressive in enforcement programs to find and disqualify vehicles used for profit-making purposes, thereby preserving a larger portion of the block grant funds for other taxpayers.

---

9. Code of Virginia § 46.2-2099.50.A.1
11. Code of Virginia § 46.2-2099.50.A.7
12. Code of Virginia § 46.2-2099.50.B
Clearly, these issues are complex. However, tax assessors do have available tools that help determine whether vehicles should be disqualified from tax relief eligibility:

- **Self-reporting on personal property tax returns:** Taxpayers may be required to certify on their annual tax return filings that their vehicles meet eligibility.\(^{15}\) For localities that do not require annual returns, a change in status of a vehicle to predominately business use would trigger the requirement to file a return.\(^{16}\)

- **Audit letters:** Correspondence may be sent to taxpayers who are identified as having vehicles used in sharing economy related businesses. TNC vehicles can be identified from DMV records. These audit letters can request further information or documentation that would be helpful in determining tax relief status.

- **Commissioners’ summons:** Commissioners of the Revenue have the power to summon taxpayers or any other persons who may have information to answer questions under oath about any individual’s tax liability.\(^{17}\) A list of required documents that would be helpful in making a determination may be provided and served with the summons. (Note: It is difficult to enforce a summons on out-of-state parties.)

### Taxing Home-sharing Companies

Like trying to fit a square peg into a round hole, taxation of home-sharing businesses is challenging because these Internet-based companies do not fit squarely into any of the Commonwealth’s traditional taxation statutes. Drafted before the advent of the Internet, the enabling legislation for the Commonwealth’s transient-occupancy tax (TOT) is clearly intended for traditional lodging establishments.\(^{18}\)

The current political environment in the Commonwealth suggests that a legislative amendment to require collection of TOT by home-sharing businesses such as Airbnb is unlikely, at least in the near term. Therefore, localities with a significant enough stake in either appeasing equity concerns of existing hotel businesses or collecting TOT from users of home-sharing services may need to initiate enforcement action, either individually or as a group.

Currently, cities and towns have broad authority to establish taxes and may establish their own criteria for TOT;\(^{19}\) counties’ authority is comparatively limited.\(^{20}\) The challenge with TOT is not necessarily its application to home-sharing stays, but who is required to collect and remit the tax. Airbnb is a San Francisco, California, based company and is responsible for all monetary transactions related to stays. As outlined in a recent article published in the *University of Chicago Law Review*, Airbnb argues that it is not an entity offering guest rooms for rent; it is just “a platform for hosts and guests to privately contract for available accommodations.”\(^{21}\) Assessing a Virginia local tax and collecting it from a California entity is a substantial challenge. Although consistent with Airbnb payment policies and the possibility to require homeowners to collect and remit TOT,\(^{22}\) localities would be faced with collecting small amounts of tax from a large number of taxpayers. Like lost sales tax revenue

According to a 2013 University of Tennessee report, in 2012 the Commonwealth lost more than $422.7 million in tax revenues due to electronic, Internet-based transactions.

*Source: National Conference of State Legislatures*  
[www.ncsl.org/research](http://www.ncsl.org/research)

---

15. Code of Virginia § 58.1-3518  
16. Code of Virginia § 58.1-3518.1  
17. Code of Virginia § 58.1-3110  
18. Code of Virginia § 58.1-3819  
19. Code of Virginia § 15.2-1104  
from Internet retail business, the costs to collect would likely exceed recovery amounts.

An additional consideration for assessing officials is whether rental use affects real estate tax assessments. In determining the fair market value of property for assessment purposes, property must be valued at its “highest and best use.” The ability to rent multiple rooms within a dwelling, or an entire dwelling on a regular short-term basis, may be a consideration in determining highest and best use. In assessing property, there are three widely accepted approaches: cost, sales and income.

In some cases, it is apparent that initiation of investigatives or enforcement actions prompted the agreement by Airbnb to collect taxes. In New York City, the company’s petition only came after New York’s attorney general subpoenaed the company’s records, seeking a total of $33.4 million in taxes owed to the city. The initiation of action to enforce TOT collectively by all Virginia localities or by some of the larger stakeholders in the market, e.g., Northern Virginia or Eastern Shore localities, may motivate Airbnb and other home-sharing services to begin the conversation about collection and remittance of these taxes.

24. Kaplan, supra
In Virginia Beach, an Uber driver was accused of assaulting a 13-year-old girl he picked up as a passenger. In Hampton, city officials were targeted by the Virginia American Civil Liberties Union (ACLU) for entering Airbnb homes illegally, in violation of the Fourth Amendment. These cases illustrate the importance of regulation: how it is developed and how it is applied in a fair and uniform manner that protects citizens and localities. The regulatory issues impacting TNCs and home-sharing businesses are examined here.

### Regulating TNCs

As indicated, much of the regulatory burden of TNCs has been assumed by the Commonwealth. All requirements necessary for TNCs and their drivers to operate in Virginia are included in the DMV Transportation Network Company Manual, available on the agency’s website. This document further addresses registration, permitting, insurance and enforcement measures that have been enacted to ensure safe operation of ride sharing vehicles.

In Virginia, therefore, the regulatory issues related to TNCs appear resolved – for now. However, just as the sharing economy is dynamic and evolving, so too are the regulatory challenges it poses, particularly as related to insurance and liability issues. Some states, such as Washington and Illinois, allow individual localities to impose their own regulations as appropriate, leading to a wide variety of opinions on who is responsible for insurance coverage of cars used in TNCs and how much liability policies should be worth.

According to a report issued by the National League of Cities, Dallas, Texas, developed three different “ride phases,” each identifying a specific level of coverage and responsibility. The requirements are outlined below:

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
<th>Insurance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TNC driver is driving, but the app for his/her company is not turned on (he/she is not seeking a passenger)</td>
<td>Partial insurance</td>
</tr>
<tr>
<td>2</td>
<td>TNC driver is driving and the app for his/her company is turned on (he/she is seeking a passenger)</td>
<td>Company-provided contingent insurance</td>
</tr>
<tr>
<td>3</td>
<td>TNC driver has accepted a ride and is either driving to pick up passenger or has passenger in car</td>
<td>Primary commercial insurance</td>
</tr>
</tbody>
</table>

This model is designed to alleviate some of the liability issues that came to light after a six-year-old San Francisco girl was struck and killed by an Uber driver. In this case, the family of the deceased filed suit against Uber, claiming the driver was working for them at the time of the accident. Uber declined coverage based on the driver not being engaged in providing services to a customer, as well as not actively using the app. The driver’s personal insurance carrier did offer to pay the limits.

---

of his personal coverage. Of course, his personal coverage was minimal compared to a commercial insurance policy.

To use one’s vehicle for livery is a typical exclusion to most personal auto insurance policies. The model provides a clear distinction of when the service provider’s insurance is expected to apply and when the TNC’s insurance should be primary. Other jurisdictions that have either enacted or proposed language to require a level of coverage for TNCs have adopted the Dallas model.

The majority of states and cities that are regulating TNCs, including Virginia, are requiring TNC drivers to carry motor vehicle liability coverage of at minimum $50,000 per person, $100,000 per incident for death and bodily injury, and at minimum $25,000 for property damage; these levels apply when drivers are not transporting passengers (Phase 1, in the Dallas model). Once drivers accept ride requests via TNC apps, the TNC’s insurance becomes primary to drivers’ policies and must provide $1 million coverage for death, bodily injury, and property damage.

**Regulating Home-sharing Companies**

Home-sharing company models represent an increasingly complex set of problems for local government officials. As rental activity in homes increases, so does the need for attentiveness to zoning issues. Problems with short term rentals can result in accidents, theft, fire, or property destruction, as well as lawsuits and negative publicity.

Local governments are just beginning to address the zoning issues raised by home-sharing services. Should off-street parking requirements be tightened? Are maximum occupancy limits adequate to allow these businesses to operate profitably but not to infringe upon neighborhood integrity? Do homes that offer short term rentals comply with fire safety measures, and are utility services to neighborhoods with home-shares adequate to accommodate increased use? These are some of the questions and complaints that localities receive, often from neighbors of home-sharing participants who are frustrated by parking problems, garbage, noise and an overall concern for safety among frequent transients.

There is no simple one-size-fits-all solution to address zoning issues for short term rentals. Communities across the country have zoning rules that run the full gamut: from an outright ban, such as in Richmond, Virginia, to no zoning regulations at all. Local officials are challenged to find the right balance that best addresses the needs of residents and the community as a whole.

A zoning text amendment proposed in the City of Charlottesville provides an illustrative case study. Under the proposed amendment, a property owner seeking to rent out rooms through Airbnb or a similar service must apply for a provisional use permit authorizing a home-sharing business, or “transient lodging facility.” The permit requires verification of a city business license for purposes of transient occupancy tax collection. Property managers/owners are required to maintain a presence within 10 miles of the unit and they must comply with fire codes that are comparable to similar businesses. Adjacent property owners must be notified of the home-sharing proposal. The permit must be renewed annually and may be revoked by the city administrator for non-compliance with permitting specifications or for general disruptions to the neighborhood. At the time of this publication, Charlottesville’s proposed amendment is still under review; however city officials have worked with stakeholders on all sides of the issue to develop regulations that will serve homeowners, neighborhoods and the city.

---

The difficult regulatory issues related to zoning enforcement and insurance protection are of primary concern to local government officials, but other issues must be considered as well. Specifically, matters of fairness in provision of services as well as classification of workers may require local officials to either enact innovative policies or lobby state officials to ensure that these issues are adequately addressed.

**Accessible TNCs**
In many cities across the country there is a shortage of accessible transportation for people with disabilities. The emergence of TNCs presents an opportunity to help alleviate this shortage. While TNCs have thus far been disinclined to voluntarily provide wheelchair-accessible transportation, some jurisdictions have developed policies that help meet accessibility needs and also allow TNCs to market themselves as socially conscious enterprises dedicated to serving marginalized populations.

In Virginia, the 2015 TNC legislation defines TNCs’ responsibility for providing wheelchair accessibility, requiring that TNC drivers refer those needing accessible transportation to other venues should they not have the capacity to provide it. As this law is newly enacted, there is no data yet available to understand its impact and how regulations may be adjusted to promote the greatest possible level of equity.34

Certainly, there is more that the Virginia General Assembly can do to require that TNCs, as well as other sharing economy companies, give back to the communities in which they operate. On a very basic level, lawmakers may be encouraged to craft regulations that ensure enforcement costs do not become a fiscal burden to local government. Additionally, they may be lobbied to establish an accessible for-hire transportation trust fund, with revenues allocated locally to ensure redistribution of benefits.

**Worker Classification**
An official at PolicyLink, a national research and action institute advancing economic and social equity, posted on the organization’s blog that 34 percent of workers, or 53 million Americans, are freelancing to make a living, with an expected increase to 40 percent by 2020.35 Access to full-time stable employment with livable wage earnings and benefits is no longer a given for many workers. During the recession, traditional employment opportunities began giving way to “gig employment,” defined as short-term, flexible work available through sharing economy businesses.

Unfortunately, while the sharing economy may provide supplemental income to help offset living expenses for those who are underemployed or retired, it is unproven as full-time stable employment. The viability of gig employment as a full-time option centers on the worker classification debate. Service providers in the sharing economy model are not typically classified as employees; they are considered business partners or independent contractors. As such, they have none of the traditional benefits often enjoyed by workers in traditional business models.

34. Transportation Network Companies Legislation of 2015, supra
When there is a disruption in service, whether caused by seasonal fluctuations in the market, illness, or family obligations, there is an impact on a provider's ability to earn income. For service providers in the sharing economy model there are no sick days, no personal leave days, and no unemployment benefits. In addition there are no employer-provided health insurance benefits, workers compensation, or retirement packages. Providers are not protected by anti-discrimination laws, nor are they guaranteed minimum wage. They are responsible for paying their own payroll taxes and do not always possess the financial management skills or knowledge needed to successfully administer what are essentially their own businesses.

The trend toward disaggregation between employer and worker that has increasingly transferred risk to employees started before the emergence of the sharing economy. But the rise of sharing economy businesses and the opportunities they represent for gig employment have exacerbated the need for innovative policies to protect this growing segment of workers, especially with powerful pro-business lobbying efforts.

It is unclear at this time how the debate surrounding worker classification will be resolved. There is a lot at stake. The current success of Uber, for instance, is largely attributable to the fact that they have hundreds of thousands of drivers internationally and are currently exempt from the substantial costs associated with traditional human resource management. A recent ruling by the California Labor Commission that required the company to compensate one of its drivers for incurred expenses is already under appeal; Uber says the ruling applies only to the driver in question and will likely remain steadfast in its position that it is not an employer but a “logistics company,” facilitating the connection between service providers and consumers wishing to make private transactions.36

If this debate persists without resolution, policy makers may need to consider a third worker classification that better captures the realities of workers and companies in the sharing economy. This emerging class of workers, which does not have access to traditional pensions or health care benefits, lives in communities — communities that might not be prepared for a tsunami of citizens unprotected by traditional health and Social Security/pension and health care provisions. Efforts to classify workers using traditional parameters may no longer be effective as workers migrate from traditional jobs to those in the sharing economy.

**Equal Participation**

The sharing economy provides services to consumers often at a better-than-market rate. But do those services reach all sectors of the community? Are TNC drivers as likely to pick up passengers in low-income areas as in affluent neighborhoods? Are investors impinging on the stock of affordable housing, as they purchase homes to market as short-term rentals? Are taxi drivers or hotel employees at risk of losing jobs and income, as the marketplace shifts in response to consumer preferences for sharing economy services?

“Experience shows that new tech platforms will not automatically plug low-income communities and communities of color into their regional economies. Connecting the most vulnerable to this newfangled form of capitalism in positive, beneficial ways — and preventing the deepening of exclusion — can only come about through targeted strategies, policies, and campaigns.”

*Sarah Teuhaft, PolicyLink*

---

A recent study commissioned by Living Cities suggests that disadvantaged populations face multiple barriers, both financial and structural, to using shared services. Many users of shared economy services gravitate to them because of cost, convenience, and their “hipness” factor; in contrast, those in low-income environments may be motivated toward them due to a very real dearth of personal resources. It is a contrast of option versus necessity. The question that naturally arises, therefore, is how can the sharing economy be tweaked to allow for participation by marginalized communities?

**Access to the sharing economy must be prevalent in all communities in order to promote equity.** There is typically not a high demand for home-sharing rentals in disadvantaged communities. This fact is clearly elucidated in New York City, where the majority of Airbnb rentals are in Manhattan rather than in the less affluent outer boroughs. Further, it has long been established that, in many cities, taxis do not provide the same level of service in low-income, high-crime neighborhoods, even though residents in these communities arguably have the greatest need. Reliable data on similar practices among TNCs is not yet available; however, it will be important to study whether similar patterns emerge in the future.

The mantra that “access is the new ownership” supports the notion that all communities, including those in low-income areas, have much to gain from the sharing economy. But as a report by a researcher at the MIT Center for Civic Media illustrates, it must also be understood that a fundamental principle of the sharing economy is that providers are monetizing existing assets. Therefore, there may be significant barriers to participation on the provider side of the spectrum for lower-income people who do not own assets such as a vehicle or a home with rooms available for rent.

In the 2010 book in which they coined the phrase “collaborative consumption” to describe the sharing economy, authors Rachel Botsman and Roo Rogers identified guidelines for success. In addition to practical guidelines related to asset usage and peer review systems, the authors underscore the importance of “belief in the commons,” or the point at which participation in a sharing economy platform adds value and social validation, making newcomers less hesitant to join in. An article by researchers from the University of Michigan and the University of Maryland expands on Botsman and Rogers’ guidelines to specifically address questions related to disadvantaged communities, including a general culture of mistrust that impedes their participation in the sharing economy.

The question here is whether or not all communities experience inclusion in, and access to, sharing economy services. While the marketplace has an appropriate and necessary role in determining where and how services are delivered, it is incumbent upon local government officials to monitor these services to ensure that they are provided in an equitable, non-discriminatory manner and that the benefits represented by the sharing economy are readily accessible to all.

---

The sharing economy presents a unique test to current structures of local government and their various forms of taxation and regulation. But an added dimension represented by the sharing economy is its potential for boosting localities’ economic development profiles and prospects. Home-sharing businesses create more rooms for visitors, and TNCs increase transportation options. New enterprises are established, new jobs are created, and potentially new sources of tax revenue are generated.

Equally important, however, is the impact that sharing economy businesses may have on existing, traditional businesses. This impact, and the importance of creating a level playing field for all, must be carefully considered by local government officials. How these economic development issues are affected vary greatly from jurisdiction to jurisdiction, but there are some common denominators from which local leaders can learn.

Economic Development and TNCs
The emergence of TNCs is already having a significant and positive impact on communities nationwide. Increasingly, travelers are opting to use services such as Uber and Lyft because they are more reliable and less expensive than more traditional alternatives. The gig employment model, while subject to many of the inherent risks previously discussed is nevertheless a viable way for the unemployed or underemployed to earn income. In addition, as governments wrestle with the tax and regulatory issues already discussed, the potential for new streams of revenue represented by TNCs is becoming clearer.

The primary challenge, then, when considering TNCs’ emergence in the marketplace, is the creation of a level playing field between these new companies and their more traditional competitors. Taxi cab companies in particular are advocating for policies to ensure that competing drivers for companies such as Uber and Lyft are regulated in a similar fashion and are not cutting into their profits. A look at case studies in metropolitan areas around the country illustrates some of the challenges, as well as potential solutions:

- Many cab companies in large cities are required to purchase medallions through their jurisdiction as proof that they followed required protocols and standards. In Boston, for example, the Boston Taxi Owners and two taxicab license owners sued the city. They argued that standards established for TNCs, which are not required to purchase medallions, are less strict than those for the more traditional companies. The plaintiffs contended that by allowing Uber and similar businesses to operate without the medallions, officials were depriving taxis of their right to operate exclusively in the city. Despite the arguments, the court ruled on behalf of the TNCs, primarily because of...

In June 2015, Delaware became one of the most recent states to announce an agreement with Uber that will allow the TNC to operate with clear rules. Uber had been operating in the state illegally for at least a year, which led to regulated taxicab drivers criticizing state officials and complaining about unregulated services stealing their customers.

Under the new memorandum, Uber drivers are prohibited from soliciting riders in designated areas, such as train stations and airports, and they will be subject to frequent comprehensive audits. Their minimum insurance coverage will also exceed the amount required for taxis.

Source: Delaware Online

Equally important, however, is the impact that sharing economy businesses may have on existing, traditional businesses. This impact, and the importance of creating a level playing field for all, must be carefully considered by local government officials. How these...
the difference in the way that sharing economy companies operate. Technology and the digital communication between the customers using TNCs was a key factor in the decision, according to an article in the North Carolina Journal of Law and Technology.\textsuperscript{41}

- **Washington, D.C. uses a free-market approach** and does not require taxis to purchase medallions. The Vehicle for Hire Innovation Act of 2014 legalized Uber, but only implemented safety and insurance requirements already in place by the company.\textsuperscript{42} The act led to competition for D.C. taxi companies and raised many complaints over the issue of fairness.

- **The Virginia General Assembly protected airports** as part of their 2015 TNC legislation, stating that “No transportation network company or TNC partner shall conduct any operation on the property of or into any airport unless such operation is authorized by the airport owner.”\textsuperscript{43} The Metropolitan Washington Airports Authority (MWAA) is currently considering allowing Uber and other similar services to begin operating at Ronald Reagan Washington National Airport and Dulles International Airport. Traditional taxi companies must receive a permit to operate at the airports, but Uber drivers have thus far been transporting passengers with few to no consequences, prior to the new State legislation being passed. The new proposal under MWAA consideration would require Uber, Lyft, and other shared services to acquire permits as well; additionally, they will be charged a $5 fee every time they pick up or drop off a passenger.\textsuperscript{44}

- **In San Francisco, Uber, Lyft, and Sidecar signed agreements** in 2014 that are similar to the MWAA proposed agreement. Those TNCs, which were originally banned from transporting passengers to and from San Francisco International Airport, are now able to get permits and follow similar rules that have been outlined for the traditional taxi companies.\textsuperscript{45}

### Economic Development and Home-sharing Services

As is the case with TNCs, home-sharing services are proliferating in communities nationwide as travelers seek them out as plentiful and cheaper alternatives to traditional lodging, and homeowners recognize them as potential sources of added income. However, these services share with TNCs the challenges of encroachment on existing businesses as well as ill-defined regulations that result in an uneven playing field between traditional and sharing economy businesses.

A recent study by the Boston University School of Management shows that in Austin, Texas, which has a significant supply of Airbnb rentals, the negative impact on hotel revenues is roughly 8 to 10 percent. The study predicts that the trend towards an increased supply of Airbnb rentals will only continue, resulting in fewer hotel rentals and the same percentage or more in lost revenues, especially in larger jurisdictions. Lower-end hotels and hotels not catering to business travelers appear to be the most vulnerable to the shared economy services market.\textsuperscript{46}

> The hotel industry in Portland, Maine, is booming, with several new hotels opening in 2015. However, Airbnb room rentals are significantly impacting revenues. Greg Dugal, executive director of the Maine Innkeepers Association, says, “It just isn’t fair. Airbnb creates a playing field that isn’t level.”

Government officials from Portland, however, have said they are not too concerned about the competition and will monitor the situation closely. “We have a policy of realism, like other municipalities,” said the city’s planning and zoning director. “If there are problems, we’ll get involved.”

*Source: Bangon Daily News*

---

41. Shuford, supra.
43. Code of Virginia § 46.2-2099.48 L
45. Bond, supra.
Many states and localities are studying the best ways to ensure a level playing field between sharing economy businesses and their traditional counterparts. A Revenue Laws Study Committee in North Carolina examined the fairness issues surrounding the sharing economy in the state and expressed concern with the under-compliance of short-term rental hosts in remitting taxes to state and local governments. State law outlines that owners of private residences who rent out their homes for less than 15 days per year do not need to pay state taxes, but once the 15 days has been exceeded then taxes must be remitted. According to an article in the North Carolina Journal of Law and Technology, the committee’s recommendation to fix the issue was to require the sharing economy companies to remit the tax on behalf of the users.47 This North Carolina model has been effective elsewhere in the country. Portland, Oregon, and San Francisco, California, were two of the first jurisdictions to sign tax agreements with Airbnb, which puts the home-sharing company more in line with the hotels against which it is competing. San Francisco had previously banned short-term rentals of less than 30 days in multi-unit buildings. A new law reverses that position but also mandates that Airbnb must collect the city’s 14 percent hotel tax on behalf of its home-sharing providers. City officials estimate that the new agreement will net approximately $11 million annually in new tax revenue.48 Smaller jurisdictions are facing similar changes but have adapted in different ways, mainly because tourism revenues are not as high. In 2012, officials in Cape Elizabeth, Maine, adopted an ordinance that requires property owners with fewer than nine tenants to go through a permitting process before renting out space for less than 30 days. According to an article in the Bangor Daily News, permits are only granted after a town inspector determines whether the property has adequate fire protection, sanitary waste disposal, appropriate exits, parking and evacuation plans. This action was taken, in part, to level the playing field between home-shares and area hotels.49

47. Shuford, supra.
In a 2015 National League of Cities survey of its members, cities were asked how they perceive benefits of the sharing economy. Among the respondents, 22 percent said they offered improved services, 20 percent said they increased economic activity, and 16 percent said they increased entrepreneurial activity. Conversely, the survey also found that 61 percent of respondents have concerns about public safety, lack of insurance and general safety concerns.  

Many of these concerns have been addressed in this guide, as have questions related to taxation, regulation and social equity. While this new economy certainly presents challenges, it also creates opportunities for policy makers and government leaders. State and local governments are encouraged to harness the innovation, convenience and collaboration represented by the sharing economy to ensure that certain services are made accessible to all residents and the free flow of resources is available under fairly-enacted laws and regulations.

It is evident that the sharing economy is here to stay and will continue to grow and change. Local government officials may consider the following strategies to capitalize on this growth to the benefit of their communities:

• **Utilizing taxation and revenues generated by sharing economy businesses to target specific social benefits.**

As cited earlier, Washington D.C.’s Vehicle for Hire Innovation Act has resulted in creation of a fund used by the city to purchase and operate wheelchair-accessible for-hire vehicles and to train drivers. Also in Washington, D.C., the city has a contract with Uber to transport university victims of sexual assault to hospitals. Similar workable models may include using TNC services to transport elderly or other populations, or earmarking revenues raised through taxation of home-sharing services toward an affordable housing fund.

• **Incorporating TNCs or home-sharing services during times of crisis/emergency management to transport or house essential personnel or evacuated residents.** In an emergency, it is often necessary to pull from many different resources to meet the vast needs of impacted citizens. Local jurisdictions may consider negotiating with home-sharing properties to provide housing for emergency management personnel who are coming from other jurisdictions to help, or contracting with TNCs to provide transportation services for citizens needing to get to emergency shelters.

• **Supporting sharing economy businesses as part of a strategy to relieve traffic congestion and to preserve green space.** By definition, sharing economy businesses maximize existing resources and restrict the need for new resources. Incentivizing the use of TNCs in lieu of owning a car, for example, results in less traffic congestion, more parking and a cleaner environment. Home-sharing options may be encouraged in a jurisdiction so that additional development is mitigated and vacant land is preserved.

---

50. Hirshon, supra.

Applying the sharing economy model to foster more government to government and non-profit to non-profit sharing opportunities. Particularly in tough budgetary times, sharing resources can often be a win-win for governments and non-profits. For example, some school districts and local governments are now sharing personnel that perform human resources, procurement, budget and finance, information technology, and other functions. Some jurisdictions also share emergency services to ensure that the fire truck that is closest to a crisis responds first, regardless of the jurisdictional lines. Non-profits, many of which struggle to afford vans to transport clients or to rent space for certain services, are finding that sharing resources allows them to offer a wider range of services at lower costs.

Learning from the technology developed by sharing economy businesses. Clearly, the readily-accessible, user-friendly technology platforms used by sharing economy businesses are key to their success. Local governments may find ways to integrate similar technologies into their operations. For example, a jurisdiction may develop integrated, real-time data systems showing all available transportation connections. Such an application would greatly improve the ability of residents and travelers to navigate a town, city, or urbanized county.

These ideas are presented as a springboard for local officials in Virginia cities, towns, and counties to strategize on ways they can capitalize on the sharing economy to benefit their communities. It is highly recommended that local officials create collaborative teams of key governmental officials to have open dialogue and frank discussion as these formative models evolve.

People have always bartered and traded services, but the usability of this process — matching supply and demand — is unprecedented. The sharing economy, despite its unique challenges, offers great promise for localities large and small. Local government leaders can maximize this promise by being nimble in their regulatory responses and by meeting business innovation with policy innovation. Sharing is the way of the future. Local governments, as well as their citizens, are poised to reap the economic benefits.

The following are practical ways that local government officials might stay on top of the ever-changing sharing economy and capitalize on its potential community advantages:

- **Activity Monitoring** — Assign at least one public employee to monitor websites for local home-sharing rentals and emerging online business trends that may affect local taxation and regulation. Regular reports should be provided to a locality’s economic advisory committee, attorney’s office, and zoning and revenue departments.

- **Statute Review** — On an ongoing basis, legal advisors should review local, state and federal statutes related to the sharing economy and discuss potential applicability with elected and appointed officials.

- **Academic Partnerships** — University partnerships may result in training for government employees as well as citizens about technology issues and the sharing economy. University partners could also assist in developing evaluative studies that examine the feasibility, risks and benefits of regulation.

- **Intra-Governmental Collaboration** — Make sharing resources and implementing technological tools effectively a priority for all locality operational departments. Reward programs could be set up for individual or departmental efforts to create online applications, develop innovative inter-departmental sharing strategies or otherwise using technology in a way that enhances productivity.

- **Inter-Governmental Collaboration** — Develop partnerships with regional, state and federal governmental agencies to address and study sharing economy issues. Partner with regional decision makers to share services and implement collaborative approaches to service delivery.

- **Public Private Partnerships** — Solicit web-based business participation in public-private partnerships. Develop opportunities for sharing economy businesses to support the communities in which they operate through funding of specific projects.
**Access Economy** — Provides consumers with access to goods and services for rental or use in a convenient manner utilizing technology. It allows consumers to avoid the responsibility of ownership and allows owners to profit from ownership. Consumers and owners typically do not know each other. It involves a third party distributor that also benefits from coordinating the transaction.

**Collaborative Economy** — Also referred to as collaborative consumption. The sharing of goods or services by a group. Collaborative consumption is different from standard commercial efforts in that the cost of goods or services are divided across a larger group. This economic model involves public and private sectors of the economy working together for gain or benefit. Involves connecting individual interests through social media and technology access. May involve renting or reusing items instead of purchasing newly manufactured goods.

**Crowd Funding** — Refers to the process involving social media allowing many people to participate through a digital platform with the purpose of achieving mutually beneficial goals.

**Digital Literacy** — The awareness of, and ability to use tools and mechanisms available through technology such as computers or online websites available through internet access. Implies the ability to understand and integrate systems from digital environments.

**Digital Divide** — The difference between individuals able to navigate online platforms and those that cannot or do not have these skills. The ability to access technology efficiently and comfortably through online and mobile devices allows certain individuals to access goods and services benefiting financially and possibly improving quality of life. The inability to access technology may create a lack of access and potential social inequity issues for older individuals or for those living close to the poverty line who do not understand how to navigate the technology.

**Disruptive Economy** — Technology and business process that drastically change the manner in which business is conducted. The disruption occurs within the way consumers access services or products and creates new ways in which revenue is generated as well as changing career opportunities. The accelerated rate of change occurring in a disruptive economy may significantly interfere with government regulation and taxation. The disruptive economy can lead to well established business becoming obsolete as was seen with Blockbuster being disrupted by Netflix and Borders bookstores being disrupted by Amazon.

**Disruptive Innovation** — A term used by Harvard Business School’s Clayton Christensen in the 2011 book “The Innovator’s Dilemma”. The term refers to innovators or entrepreneurs developing new markets by accessing customers in unique ways that disrupt the manner in which business has previously been conducted. The recent disruption to standard business practices has occurred as a result of new technology and exploitation of older technology in new ways.

**Demand Elasticity** — This economic term reflects how demand for a product or service will change if other factors in the economy change.
**Gig Economy** — Services that connect labor with consumer demand in a manner that allows workers to set nontraditional working hours of availability. This implies a great deal of flexibility allowing for other employment, attending school or raising a family. Allows for small businesses or startups to offer low-cost services with small amounts of capital.

**Idle Capacity** — The presence of unused goods or services that are not used. In the access economy, this may be: a personal car sitting unused, extra space in a residence or a vacation home rarely used, or products like clothing and tools that are sitting in a close. This represents resources that provide an opportunity to profit by sharing or trading the personal resource.

**On Demand Workers** — Also referred to as micro-entrepreneurs. Workers or professionals who are freelance labor for the sharing economy. Workers provide services for consumers when requested allowing for choices on when to work and what jobs to take. Service for workers are typically requested through Internet. These positions offer great flexibility but do not have the typical access to worker benefit plans, unemployment insurance or tax and social security withholding.

**Peer Economy** — (P2P) Another term frequently interchanged with sharing economy. Popularized in the 1990s by music sharing on the website Napster — the idea of peer sharing opportunity and access for direct transfer of goods or services. The term suggests a peer economy is based on a model of decentralized activity where two individuals interact or buy and sell goods directly from each other without a third party business.

**Transportation Network Companies** — The companies that provide transportation for money utilizing technology for computer or cell phone “app” based access. Companies utilize an online/web based platform to connect passengers with drivers using personal or non-commercial vehicles willing to provide transportation. Some examples of companies include Uber, Lyft, Sidecar, Wingz and Haxi. These companies provide the same services as taxis but utilize a unique business model that generally involves less government regulation, private automobile owners and the capacity for the driver and consumer to rate each other.

**Shadow Economy** — The portion of the unregulated economy that exists alongside the country’s traditional economy involving unregistered economic activities. Transactions are often cash or direct pay online that make tracking the activity by traditional means difficult. Typically no taxes are collected on shadow economy activities. May involve black-market or illicit activities.

**Social Salary** — Workers participating in an access economy are increasingly dependent not only on the immediate fee they receive but also on the online reviews that increases the legitimacy of the quality of the work product. The collaborative economy alters the way people work and earn money. The distinction between internal and external workers is increasingly less defined. Workers will have a more diversified portfolio of income sources as they build reputation by bringing in their assets and workforce into social collaboration platforms. Potential earnings will be influenced by online ratings and reviews creating a ‘social salary.

**Sharing Economy** — The system of accessing products services, transportation, travel or other resources for the purposes of reusing, renting or sharing. This economic effort is supported by digital technology and website availability that matches the consumer with the business provider. The sharing economy allows for cost savings for consumers and business opportunities for entrepreneurs as well as supporting community efforts to reduce waste and a smaller carbon footprint.

**Web Based Service Company** — Connecting part-time, freelance, contingent workers with jobs using technology available online through web services.
Contact:
Frank Shafroth
Director of the Center for State and Local Government Leadership at George Mason University
fshafrol@gmu.edu
703-993-8560