RICHMOND HUMAN PROGRESS AND HUMAN SERVICES 2035 SCENARIOS

Institute for Alternative Futures

with

The Richmond Office of Community Wealth Building

May 2018

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INTRODUCTION

What will human progress, human need and human services be in Richmond, Virginia in 2035? What implications does it have for today's strategies for public and private human service providers and community partners? The Richmond Human Progress and Human Services 2035 Scenarios offer a tool for the human services community to explore these questions for Richmond in order to better inform future-oriented, long-term strategies and efforts. For this purpose, these scenarios consider a range of forces, challenges, and opportunities shaping human services and offer a plausible set of expectable, challenging, and visionary pathways for how human services and human service providers may change over the years to 2035.

These scenarios will be used at a Scenario Workshop on May 23, 2018, where participants will consider how successful their current directions and strategies would be in each scenario, what adjustments are needed and develop recommendations focused on the near term and the long-term future.

These Richmond Human Progress and Human Services 2035 scenarios are an important part of a larger project on the futures of human services– conducted by the Institute for Alternative Futures (IAF) and supported by the Kresge Foundation. In addition to developing scenarios for the human services community in six cities and counties and two states, IAF has developed a set of national human service scenarios. The national scenarios and these Richmond scenarios will allow human service leaders, practitioners and partners to consider their own work in the context of these alternative futures, to challenge their assumptions about the future, to identify emerging risks and opportunities, and to formulate more robust strategies with a greater potential to advance their mission over the decades to come.

WHY SCENARIOS?

The future is uncertain. However, scenarios – different stories describing how the future may unfold – can be used to bound that uncertainty into a limited number of paths. These paths help us think about different probabilities in a larger space of possibilities. Scenarios also force us to consider the systems surrounding our topic and to clarify our assumptions. People who work with scenarios find more creative options than those who plan based only on the past and present. Strategies, plans, and actions can also be "future tested" against the different scenarios to assure robust initiatives rather than continued efforts based on outdated assumptions. Scenarios are thus a powerful method for systematically addressing the uncertain future.

The Richmond Human Progress and Human Services 2035 scenarios presented on the following pages were developed by IAF with the Richmond Office of Community Wealth Build (OCWB), other city agencies and community partners. In creating these scenarios, we reviewed human services programs and activities, plans and documents and did interviews with human service providers and partners. We explored "driving forces" and developed preliminary forecasts for the city, its economy, employment, the environment, technology, as well as trends within specific areas of human services (aging, behavioral health, child family and adult, disability, housing and income supports). We used those forecasts in three days of scenario development session, February 20, 21 and 22, where more than 40 human services leaders gathered to review and refine the preliminary forecasts and develop the distinct scenarios presented below.

We used IAF's unique "Aspirational Futures" approach which calls for exploring and developing scenarios in each of three zones (see **Figure 1** below):

- A "zone of conventional expectation" reflecting the extrapolation of known trends, the expectable future (scenario 1); What is the "most likely" future for Richmond and human services?
- A "zone of growing desperation" which presents a set of plausible challenges that an organization or field may face, a challenging future (scenario 2); What are key challenges over the next 15 years and how might they play out for city residents and their wellbeing? and
- A "zone of high aspiration" in which a critical mass of stakeholders pursues visionary strategies and achieves surprising success (scenarios 3 and 4). Given key forces, including job loss to automation, changing attitudes and values and accelerating technology change, how is poverty eliminated or drastically reduced; how would human services evolve in these scenarios with reduced demand, more effective technology while being more "generative"?
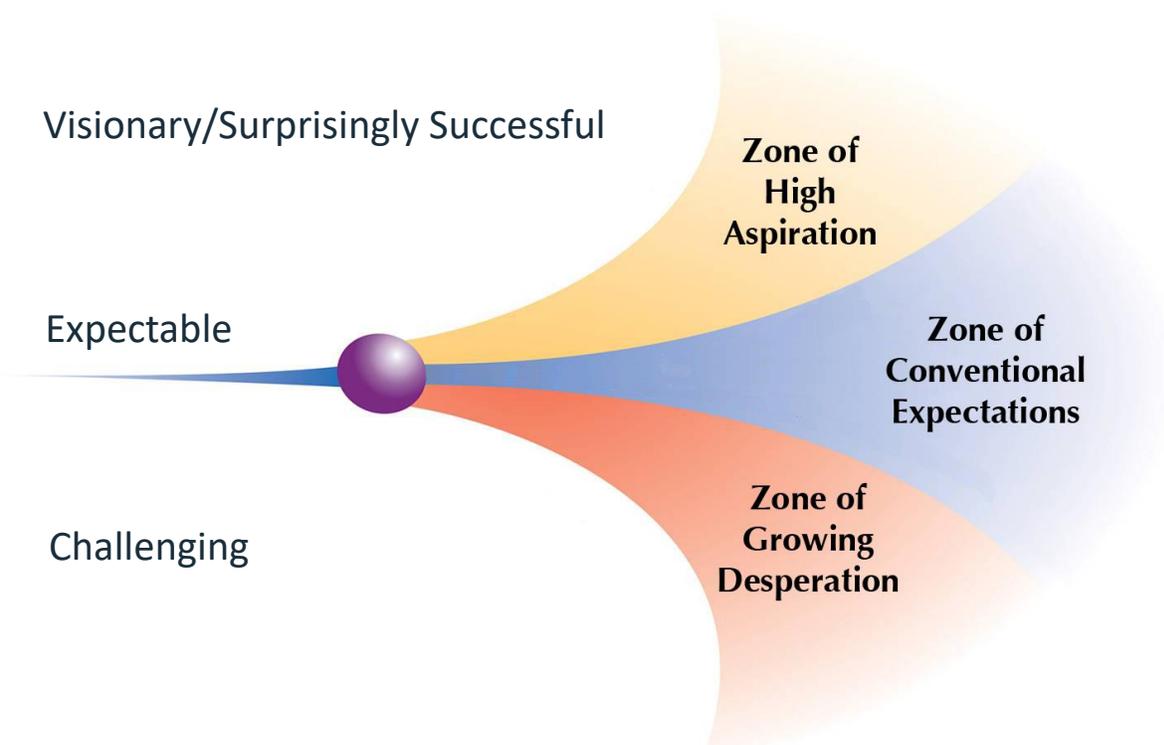
Visionary/Surprisingly Successful

Zone of High Aspiration

Expectable

Zone of Conventional Expectations

Challenging

Zone of Growing Desperation

Figure 1: Scenario Zones for IAF's "Aspirational Futures"

As we developed the scenarios there were aspects of the driving forces, key changes, that call for greater explanation than the scenario narratives allow. This larger explanation is given in the relevant end notes at the back of this scenario report:

- Abundance advances – a cluster of technologies that, if applied appropriately can lower the cost of living by providing in-home and in-community production of food, energy, and many home goods. (in Scenarios 3 and 4)[i]
- Job loss to Automation –up to 47% of U.S. jobs could be lost to automation by 2030 (in all Scenarios)[ii]
- Options for Increasing Low Income Housing Stock – options include expanded government funding; increasing neighborhood density; encouraging accessory dwelling units; low cost 3D printed homes. (various options across the Scenarios)[iii]
- Guaranteed Basic Income – faced with permanently high unemployment, a Guaranteed Basic Income would give $12,000 a year to each adult and $4,000 for each child (in Scenario 3)[iv].
- Equity Rising - "equity rising" is a fundamental trend that is occurring as a growing awakening to fairness or equity, including health equity. Differences among races, income classes, or other groupings that are avoidable and unfair are getting more and more attention. This change in attitude to support equity or fairness can greatly influence community cohesion and policies.[v]

As you read these consider how likely each is. And consider how preferable each is – which would you want to take place?

The decades leading to 2035 were turbulent, with average national economic growth of 1 to 2%, interspersed with mild recessions. Richmond's economic growth mirrored national trends with slight job growth in several sectors. But, in the 2020s, automation led to significant job loss – a net reduction of 7% of jobs by 2025 and significantly more by 2030. However, loss did in Richmond did not parallel trends across the U.S. Richmond rather experienced a 1-2% net gain in jobs from automation - but, these new jobs were primarily in higher skilled positions, and often not accessible paths out of poverty.

As economics evolved, so did Richmond's demographics. The population grew to more than 240,000 in 2030. Hispanics grew faster than other population groups – coming close to the number of non-Hispanic whites in the 2030s[1]. Immigration from many regions of the world into Richmond continued to grow but was periodically met with strong hostility. The population 65 and older increased to 13.48% of the total population in 2030[2], reaching over 32,000. This change brought challenges, but Richmond was a leader in celebrating the value that people of all ages can bring to the community and economic development.

Demand for human services was influenced by population changes, economic shifts, and poverty levels. Poverty levels in the City and surrounding suburban areas were high in the 2010s. The community, led by the City's Office of Community Wealth Building (OCWB) avidly pursued their poverty reduction goals by focusing on education, employment, housing and transportation. The OCWB used multigenerational approaches to address concentrated poverty, successfully developing more mixed income housing/neighborhoods.

There was an increased understanding of racism as a barrier to better quality of life. In the 2020s, there were efforts to address gerrymandering, voting rights and criminal justice; although, progress moved slowly. Political representation better reflected the diverse needs of Richmond's population. Racial and ethnic health disparities were somewhat reduced but persisted.

Demand for services was also influenced by climate change, including: hurricanes and extreme storms, heat waves, smog pollution and droughts[3]. The kind of flooding seen along the James River in the aftermath of Hurricane Gaston occurred again in the 2020s. These weather events particularly impacted elders, the homeless and those living in poverty. There were efforts to enhance emergency response and preparedness, but often people were without insurance and sufficient resources.

Another area that transformed people's lives was the growth of the information environment and technology. Virtual reality became ubiquitous. Intelligent agents in education, medical care, and behavioral health became smarter and increasingly more effective. Public reception of these virtual teachers, doctors, and counselors improved, but human interactions and services remained important.

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[1] Church Hill People's News, *Richmond's Population Expected to Become 1/3 Hispanic, Top 250,000 by 2040*, https://chpn.net/2017/07/03/richmond-population-expected-to-become-13-hispanic-top-250000-by-2040/
[2] Richmond Times-Dispatch, Virginia's Aging Population: By 2040, 1 in 5 Virginians will be over 65. See how that plays out in the Richmond area. http://www.richmond.com/news/virginia/virginia-s-aging-population-by-in-virginians-will-be-over/article_1dd0e1b7-6e41-5986-b45e-f9fb4f081726.html
[3] Environment Virginia, What Global Warming Means for Virginia, https://environmentvirginiacenter.org/page/vac/what-global-warming-means-virginia

Technology made life easier for most people but did take away many jobs, led to greater isolation for some and, in some cases, reinforced polarization.

Human services influenced by need and funding, evolved in their delivery, becoming more integrative and collaborative. During the 2017-2020 Federal administration, human service funding was flat or decreased; some programs were eliminated altogether. Work requirements increased for many programs. In the 2020s, federal funding periodically rebounded.

In the RVA region, human services enhanced their collaboration with schools, businesses and community partners, allowing resources to be distributed by need rather than jurisdiction. This was crucial during periods of funding cuts. Regionalism was also used as a lens for planning for job creation, workforce preparedness and housing opportunities. This regional planning for public transportation expanded bus schedules and routes.

Data integration and cross-agency partnerships became more common and important. Predictive analytics enabled human services to better prioritize or triage services when funds were tight. And, in many cases, predictive analytics enabled human services to anticipate and prevent incidents. Accountability around data was defined and regulated and protocols developed to prevent predictive analytics operating as a tool for profiling.

Many social service jobs were automated or done by expert systems – this ranged from 80% of secretaries and receptionists to 10% of social workers[vi]. There was some automation, especially in processing benefits.   Human workers remained and community health workers provided peer support and lived experience.

AGING SERVICES 1

By 2030, the percentage of Richmond's population aged 65 and older had grown to 13.48%[4].   This came with higher rates of Diabetes and Alzheimer's. One in ten adults over the age of 65[5] had Alzheimer's, or some form of cognitive dementia. The many factors related to dementia – diagnostics, age bias, medical causes, substance abuse, racial disparities, behavioral health conditions, and trauma – became better understood. There were major public education outreach efforts around how to respond and communicate effectively and compassionately with someone with dementia. Diabetes impacted 12% of Virginians in the 2010s[6]. Increased diabetes resulted in more kidney failure and a higher demand for dialysis centers.

Attitudes around aging evolved, with Richmond leading the way in embracing and celebrating older years of life. In the early 2020s the short-staffed office of aging and persons with disabilities struggled

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[4] Richmond Times-Dispatch, Virginia's Aging Population: By 2040, 1 in 5 Virginians will be over 65. See how that plays out in the Richmond area. http://www.richmond.com/news/virginia/virginia-s-aging-population-by-in-virginians-will-be-over/article_1dd0e1b7-6e41-5986-b45e-f9fb4f081726.html
[5] Alzheimer's Association, *2016 Alzheimer's Disease Facts and Figures*, http://www.alz.org/facts/
[6] American Diabetes Association, *The Burden of Diabetes in Virginia*, http://main.diabetes.org/dorg/PDFs/Advocacy/burden-of-diabetes/virginia.pdf

to meet these needs of many seniors wanting to remain engaged in the community. By the late 2020s, social services developed a stronger infrastructure for providing people with services. Richmond further integrated their services into public housing complexes as residents aged there. Other senior services were spread into community sites and services, including libraries, schools and churches.

Seniors remained in the workforce longer, both for the money and for their sense of personal contribution. This was sometimes difficult due to job loss to automation. However, 70 became the more typical age for retirement in the 2020s as the age for receiving full Social Security benefits was raised.

Cultural and economic situations varied across Richmond, which influenced patterns of familial care. Historically, African American families had more elder care provided by the family. As ratio of family and friends to elders declined from 7 to 1 in 2015 to 4 to 1 in 2030, more human service clients were without family members to act as caregivers. For many, human service providers became like family to older adults in the community.

Working in the aging services field was promoted through efforts from the health care providers, entrepreneurs and investors, and community colleges. Still, there was a deficit in workforce; particularly in certified nurse aides. The strains felt by serving as caregivers whether by family members or CNAs, sometimes negatively influenced the quality of care. Much elder care, when it was paid, remained "gig work", without benefits.

Housing for seniors in Richmond remained an issue. In the 2020s, zoning and regulations changed - to encourage accessory dwelling units (ADU) added to a home or built in the yard. While not aimed exclusively at seniors, many seniors took advantage of these ADUs to downsize and age in place, often family members moved into the elders' original home on the property.

Medicaid saw cuts in payment levels in the late 2010s, with rebounds in the 2020s. Medicaid providers used technology, when possible, to optimize care. In the 2020s there were some medical advances that slowed disease progress and disability, but the most significant of these advances were too costly to be covered by Medicare and Medicaid.

Nutrition remained a major area of care for elders. Feed More and Senior Connections delivered meals to homes, even during times of federal funding decline. The "HomeEc in the Hood" program expanded to help more seniors have healthful cooked meals. Food pantries expanded their infrastructure and reached to better ensure those with disabilities were connected to services.

Other services, such as aiding adults with disabilities to become more self-sufficient and preventing elder abuse and neglect, also became more inclusive and culturally sensitive. State legislation passed requiring stiffer sentences for elder abuse.

BEHAVIORAL HEALTH SERVICES 1

The need for behavioral health services in Richmond increased due to the stress and trauma of economic downturns, social and economic exclusion, extreme weather events, increased opioid and other substance abuse, neighborhood and domestic violence, and particularly adverse childhood experiences (ACEs).

Behavioral and primary health care integrated across several phases. Primary care physicians increasingly addressed lower level behavioral care through basic screening during physical exams. Primary care and behavioral health providers collocated, sharing physical spaces with the ability to share electronic health records and prescription tools.

The Medicaid expansion in the 2020s came with some complications. State wide programs were impacted by changed Medicaid rules, which drove up costs and closed some programs. The number of quality providers, both not-for-profit and for-profit, declined as larger provider systems expanded. The behavioral health field was strained and faced workforce challenges, decreasing reimbursement rates and increased regulatory requirements.

RBHA was challenged with expanding while containing costs. RBHA integrated some AI delivery, for those with simpler conditions, but not for those with severe mental illness. Ethics and confidentiality guidelines were strictly developed around the application of these AI tools and HIPPA secured platforms for their use. AI was beneficial in engaging some to talk about their health problems and removed some fear of stigma around service, though some smart devices and tools remained too costly for RBHA to use.

Medicaid remained the largest provider of behavioral health care, often through managed care, which placed limitations on behavioral services. Health care expansion in the 2020s helped remove some lack of access to care, which addiction treatment services, particularly as more people qualified for Medicaid.

Even with healthcare expansion, Richmond did not have enough health care providers available and disparities persisted. To address some of the disparity, there were efforts to increase nurse practitioners in the area and their authority to write prescriptions.

Funding for prevention and treatment efforts for the growing opioid abuse problem was cut in the late 2010s. There was a slight rebound in funding in the early 2020s, with some success, though opioid and other substance abuse remained a major behavioral health issue throughout the 2020s. Pharmaceuticals to treat addictions expanded. Jails and prisons increased efforts to support rehabilitation upon release, although often with limited resources.

Incarceration rates increased during periods of economic downturn; rates continued to be disproportionately higher for African Americans and Hispanics. A significant percentage of those in jail had behavioral health issues and the jail remained a major site for delivering behavioral health care.

CHILD AND FAMILY SERVICES 1

Funding for child and adult services dropped during the late 2010s and in the 2020s during periods of economic decline. During periods of federal spending cuts, Richmond struggled to fill the gap. Delivery of services changed due to greater integration of data and communication across providers and service sectors. Richmond put resources towards understanding ACES, generational poverty and racism. This informed child and family services and helped Richmond to better plan for challenging times.

Poverty continued to be a driver of need for services with the impacts of children growing up in poverty felt into the 2020s and beyond. The rates of child abuse and neglect fluctuated, influenced by economic downturns, substance abuse, and other factors.

The OCWB was influential in addressing generational poverty and need for child and family services with the success of BLISS (Building Lives to Independence and Self-Sufficiency) which used a family-based approach. Partnerships for more effective child and family services – and success -- grew.

Data integration, with privacy protections, across local agencies (schools, police, health care) allowed better awareness of each child's and family's needs. This allowed human service providers to use predictive analytics to determine what services would best improve outcomes and set priorities. Those accessing this information ensured it was used appropriately and not as a tool for profiling.

At the same time, demographics in Richmond changed as the number of Asian and Hispanic children grew. Unaccompanied minors coming to Richmond – at times, as many as 20 per week entering the school system – overwhelmed teachers and resources. The path to citizenship continued to be a precarious road, but official work often relied on this process.

Despite federal setbacks, Richmond pursued various efforts to increase education and equity. This included partnerships with Richmond Public Schools to improve early education, and the RVA Reads program to increase literacy. RVA Future was successful in increasing college and career readiness for some Richmond students.

Early childhood programs for low income children with the same creativity, engagement and quality as the best programs on the market. In the 2020s, training for early child program providers improved and the 200 previously unfilled spots for early childhood program positions were filled.

Through automating some of the tasks, child and family providers became more effective. In some agencies, the number of child and family service providers was reduced by 10%. Although technology improved, some workers were able to 'catch up' but most remained unable to get ahead of work and caseloads. Human services were intentional about not allowing technological applications to remove the human spirit of customer service and relations; but, some clients were dissatisfied or frustrated with dealing with technology.

DISABILITY SERVICES 1

Budget stress brought about increases in disability payroll taxes, reductions in federal Social Security Disability Insurance (SSDI) payment levels, and tougher eligibility standards.   State and local services – such as housing and home modification assistance, transportation services, and job services- were also negatively impacted.

The percentage of people with disabilities grew- fueled by higher structural unemployment, more severe weather events, and growing chronic disease. Psychological stressors and trauma led to increased mental health problems.

Among chronic diseases, the largest contributors to increased disabilities were diabetes and Alzheimer's. By 2030, there were 39,179 cases of diagnosed and undiagnosed diabetes in Richmond City. There were 4,613 instances of diabetes related disability; 1,671 of those cases impacted elders[7].

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[7] Institute for Alternative Futures, Virginia Diabetes Data & Forecasts, http://www.altfutures.org/pubs/diabetes2030/VIRGINIADataSheet.pdf

There were ongoing racial and income disparities in the rates of these conditions, with Black and Hispanic populations experiencing the highest instances.

Developmental disabilities grew in the 2020s, fueled by parental drug abuse and lack of prenatal care. Programs to help provide recovery for substance-abusing mothers increased. Screenings for drug use were disproportionately conducted on low income populations. While by the mid to late 2020s some congenital conditions could be addressed in utero, and some after the person was born, these were expensive procedures, not covered by Medicaid and Medicare.

The ability to lessen the impact of intellectual developmental disabilities decreased as special education funding and the number of specialized teachers and therapists were reduced. The racial and income segregation in the city persisted and drove further inequality as students with greater educational and medical needs who live in higher income neighborhoods received services while many in low income neighborhoods did not.

There were technological and medical advances that removed disabilities or lessened their impact (e.g. advanced digital assistants, self-driving cars, 3-D printed prosthetics and orthotics, home robots, and neuro-enhancements). Low income families had access to some of these by the second half of the 2020s. Intelligent agents that link health data with health care and provide effective behavioral counseling were available from some Medicare, Medicaid and other health care plans (particularly capitated plans).   However, the technology tools that were most affordable were often the least reliable.

INCOME SUPPORTS 1

Income supports were influenced by changes in economics and policy. TANF (Temporary Assistance for Needy Families) and VIEW (Virginia Initiative for Employment Not Welfare) had cuts in benefits or administrative costs during the Trump Administration. In the 2020s, funding and payment levels rebounded and were adjusted for inflation.

The Federal Earned Income Tax Credit (EITC) maintained its bipartisan support in Congress and continued to aid low income families by reducing or eliminating their federal taxes. Federal EITC payment levels were held flat during the late 2010s and grew slightly above inflation in the 2020s. However, job loss to automation included many low wage jobs, particularly in fast food restaurants and retail sales. This reduced the number of people earning enough to pay taxes that would get refunded by the EITC.

Food and nutrition income support programs evolved as well. The number of families receiving SNAP and other programs was reduced as funding was cut. And cuts to programs like WIC decreased the number of places, mostly child care centers, where low income children received daily meals. Higher barriers to qualifying further limited the number of kids getting food. Changes to SNAP brought on stricter limitations such as a 3-month limit for unemployed and childless clients, a ban on drug felons, and requiring photo IDs.

The downturn in SNAP funding was reversed in the mid-2020s. Total funding levels for SNAP were increased and applying for SNAP was made much easier and quicker. Better information systems linked individuals and their data with other government programs. Once an individual or family is at or below a

certain income level they are automatically qualified for SNAP and other relevant programs. SNAP's Employment and Training programs worked effectively with other employment programs.

As with TANF, SNAP benefits continued to require proof of actively looking for work. Employment training targeted jobs that would not be automated and for which the person had the relevant capacities. But even after their training, job shortages in the Richmond area prevented some from getting work and some of the people offered jobs did not have reliable transportation.

Online application for benefits became the norm, but in-person contacts remained for those that required additional guidance. AI was used to monitor benefit recipients, as looking for work or mandated volunteering remained a condition of benefits.

Health and human service agencies began coordinating their care and services with SNAP; as did state and federal programs. For example, a Medicaid participant who would benefit from certain foods or nutritional supplements can be encouraged and aided towards buying those foods. Personal, financial, and community data was included by the early 2020s, once protections for privacy, security and discrimination were in place.

Child care programs generally maintained bipartisan support and continued to be important to families working towards self-sufficiency; however, as job loss to automation increased, the demand for daycare and the workforce evolved.

HOUSING SERVICES 1

Gentrification continued across Richmond with many impacts. Gentrification impacted public health and displaced large numbers of people as rent and home values increased beyond the affordability of those who had historically lived in the neighborhood. Richmond residents were further pushed out to nearby areas of Henrico or Chesterfield Counties, causing concentrated poverty and low-income housing populations in those areas to increase.

Poverty had changed its address. The social support infrastructure – friends, informal child care, known clinics and food programs- were all disrupted as populations moved into areas without these established networks. Although efforts were made to improve transportation, many people had trouble coming into Richmond for services. So, services expanded into the surrounding counties, sometimes using virtual tools.

Under the 2017-2021 federal administration, HUD funded housing efforts at 58% - a major decrease from 78% funding in 2016. The public housing units in Richmond had old infrastructure that was unable to be repaired during funding reductions. This was worsened by the elimination of the LIHEAP and Community Development Block Grant programs. Capital improvement money was also eliminated, furthering leaving the housing infrastructure without needed resources for updates. Public private partnerships became more important for increasing mixed income housing as governmental programs were cut or reduced.

Housing choice voucher programs continued, and surrounding cities and counties absorbed 500 vouchers for those looking for affordable housing outside of the city. However, some affordable housing units were filled by college students, and were not accessible to those who needed it most. Demand for

affordable housing grew faster than the supply. Waiting lists for public housing and vouchers remained long.

Housing insecurity increased with the 2017-2021 federal cuts and job loss to automation. Demand for housing grew throughout the 2020s. Supply grew little, though Richmond and the region did experiment with several options to increase the stock of low income housing, including:

- Raising the number of unrelated people who could live in a home;
- Allowing secondary dwelling units to be built onto an existing home or in its yard;
- Allowing and encouraging more group homes for elderly or special needs individuals;
- Expand multi-unit public and affordable housing;
- RRHA redeveloped some facilities into mixed income complexes

Admission standards for those transitioning out of public housing into mixed income settings evolved to better serve those with different backgrounds, including those with criminal backgrounds and other barriers. This helped more people get public housing and to succeed as they left public housing.

Richmond pursued land trusts as areas for conservation, following the example of the successes of Ed Walker and Maggie Walker Community Land Trusts. By 2035, some trusts had up to 20 homes on the land. These land trusts preserved affordable housing, where tenants paid a subsidized lease. This shared equity arrangement allowed individuals to lease the homes, but the land remained in a trust.

Some trusts built additional housing on the land, where tenants could 'move up' towards home ownership. This helped preserve affordable housing and deconcentrate poverty as Richmond rapidly gentrified but did not fully build individual wealth and assets as profits from home sales were limited. Another path to home ownership came through efforts to deploy community advocates across the health installations at housing complexes, which helped transition people from housing assistance to housing independence.

Richmond was a "tale of two cities". Inequities – social, economic, and political- continued to worsen across the City and surrounding areas. For many, hardships in the 2020s worsened. For the affluent, wealth and health grew. Richmond made major efforts to bring shared prosperity, but unemployment, poverty, homelessness, and hardship from extreme weather events all grew.

The U.S. economy overall grew slowly for most of the two decades to 2035, with periodic recessions. The Great Recession of 2023 had the greatest impact on employment, tax receipts, and human service spending. Meanwhile, the digitization of life continued with virtual reality, artificial intelligence and cognitive computing becoming widespread in the 2020s. These improved many aspects of life and learning, but for those unable to access technologies, it furthered their disadvantage. Technology and advanced AI also led to job loss to automation. These were in addition to the significant job losses during a severe recession.

Climate change brought more frequent and severe storms, heat waves and droughts, all while the federal government was stretched thin in providing relief funds. In the Richmond area, flooding as extreme as with Hurricane Gaston happened twice in the 2020s, along with significant drought in intervening years. By the late 2020s sea-level rise had affected the Newport News areas, causing groups of people to seek temporary refuge or relocate to the Richmond area. This further strained resources, particularly housing. Other problems included shortages in clean water and periodic outbreaks of infectious diseases.

These challenges did lead to an increase in self-sufficiency efforts, particularly family and community food production as well as the trading of services and other resources in low income communities. And Richmond developed actions for crisis management and consequence management. These enhanced efforts to anticipate or prevent disasters, but still many challenges were felt across Richmond.

Human services need and delivery were shaped by these challenges. During 2017-2020, federal human service programs were cut or eliminated, and often applied more stringent work requirements or other barriers to access. In 2021, after the 2020 election, there was some rebound in human services spending, until the cuts caused by the Great Recession of 2023, followed by another slight rebound after 2026.

Poverty and inequality increased, which worsened educational outcomes. Child poverty was always higher and even more so after the 2023 recession.   Adverse childhood experiences (ACEs) compounded their need for in the 2020s and beyond.

Diseases of despair- including opioid and substance addiction, depression, and suicide- grew, not only among the population in many low-income neighborhoods, but among the laid off human service workers.

Despair contributed to increased hostility; tensions which boiled over into outbreaks of violence in different forms. Some violence was a result of desperation, as people resorted to crime for their survival. Some violence stemmed from protests, driven by emotional pain and exasperation of increased inequity and oppression. And some violence was a result of domestic terrorism, with technology empowering the spread of radicalization of certain dangerous nationalist groups' agenda. Richmond

leaders were moved to do more to address these actions, but still many sectors of the community were further isolated and the overall sense of community dissolved.

Along with increased stress and hostility, the cuts to human services seemed like hurricanes to many. The need for most types of human services grew while resources were being reduced. Governmental cuts sometimes meant that many turned to local non-profits, foundations and churches, but these organizations were often struggling as well. Human service organizations were forced to "do less with less." Human services automated what they could, collaborated to ensure that the funds and services provided were deployed most effectively for unique needs, and reinforced their overworked and underpaid employees on the importance of their mission.

 Many human service non-profit organizations went out of business. As funding for safety net programs decreased and regulations increased, more services were rationed. Overall about 15% of human service jobs were lost to automation and cognitive computing in the 2020s.

Some collaboration of nonprofits increased, but conversely so did competition between nonprofits. Many nonprofits in the Richmond area had relatively low operating budgets and were unable to operate on the same level as national organizations. Many collaborated and consolidated to remain in service. State resources continued to be spread thin. Engaging the wealthy Richmond population was a key strategy to ensure funding and sustainability. Across the years, churches in and around Richmond survived, repeatedly stepping up and continuing to manage donations and volunteers.

AGING SERVICES 2

Need for aging services compounded, and Richmond struggled to keep up. Services were curtailed and many senior centers were closed. In response, there was a greater reliance on informal and unregulated services.

There was a workforce crisis for aging services. There were not enough people entering the field, and many direct care workers were not well-trained. Many workers went for long periods without raises in their already low-paying jobs. Non-profit organizations remained tenuous, periodically paying employees late, losing contracts and laying off workers. Aging service agencies, both government and private, encouraged more family and community care. This worked in some communities but left low income and minority elders disproportionately without adequate care.

The economic downturn impacted the family members of seniors, particularly stressing families with multiple generations under the same roof, which made up a larger percentage of families in Richmond. During times of economic challenge, particularly around the Great Recession, elder abuse grew. In Richmond, the stress epidemic increased. This coincided with a 'compassion fatigue' in which ability to respond to suffering is exhausted. As compassion fatigue increased so did elder abuse.

Diabetes and Alzheimer's in seniors across Richmond worsened. Alzheimer's impacted more than 3,200 seniors. Diabetes impacted 478,000 or 30% (up from 309,000 in 2015) Virginians over 65 in 2030[8]. In Richmond, the percent was slightly higher.

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[8] Institute for Alternative Futures, Diabetes 2030 Forecasts, 2015, Virginia Diabetes Data & Forecasts, http://www.altfutures.org/projects/diabetes-2030/

Frequency and severity of weather events increased, including big storms and flooding. Human services were ill prepared to respond to disasters. The immediate act of removing people from danger was often not followed by sufficient long term medical care and housing services. In some low-lying areas, community members – including those living with dementia- went extended periods of time without electricity, leading to extreme stress and deaths.

During the 2020s and 2030s, there were great medical and technological advances. But, these were expensive and not covered by Medicare or Medicaid. Many of low income seniors continued to rely on family members when they could. (Even as the ratio of family and kin to elder changed from around 7 to 1 in 2010 to 4 to 1 in 2030). When family members did fill the role of caregivers, there were often difficult emotional, financial, and physical impacts.

Technology evolved while the economic gap widened. Ability to access technology was increasingly polarized. Some technology aids, accessible through a smartphone, were accessible to low income seniors in the 2020s. Some in Richmond were unfamiliar with technology, and this discomfort was exasperated as technologies advanced. Libraries partnered with universities and other organizations to help one-on-one training to make computers more accessible and user-friendly.

BEHAVIORAL HEALTH SERVICES 2

Behavioral health services decreased dramatically due to budget cuts even while the evidence accrued to show these services reduced cost in the long run. Poverty grew, along with increased family instability and suffering. Drug abuse, including opioids, continued its increase with growing harm while funding for treatment became scarcer. Health care reform left more uninsured and there were cuts in Medicaid enrollees and in service/payment levels; this was a major barrier to accessing care. Untreated mental health conditions worsened physical health and increased morbidity.

Behavioral health expert systems – "virtual counselors," delivered via smart phones, did become very effective by the mid- 2020s but they are only available to the affluent or those with expensive health insurance and some managed care plans (this did include Virginia's Medicaid managed care plans).

In 2020s, human services used predictive analytics to help behavioral health providers triage the population when budget cuts meant people must be cut from programs. These cuts took a toll on providers as well as their clientele.

As economic and social conditions deteriorated across Richmond, there were more incidents of public unrest and higher levels of homelessness among untreated mentally ill. More people were forcibly removed from the streets and placed in jails, but not provided care and rehabilitation – so, the cycle of illness and arrest continued. Corrections became the hub for behavioral health services as mental health was effectively criminalized. Black and Hispanic populations' arrest rates remained higher and their sentences longer than for the White population.

Immigrants faced negative health impacts as more families were separated and strained by the threat of discrimination and deportation. A large portion of Richmond's Latino population were wary of seeking out much needed services.

Increased poverty, racial and ethnic disparities, and cuts to human services were factors increasing need for child and family services, along with increased child abuse and neglect, domestic abuse, addiction, teen pregnancy, housing insecurity, food insecurity and depression. For kids, these led to more ACEs which would negatively affect their gene expression for years to come. And the need for foster care grew, but in most years, the need for placements outpaced the ability to recruit foster care homes.

Richmond became more racialized, and the separation and animosity between racial groups increasingly bubbled over into violent outbursts. The racial conflict that plagued Richmond's history continued, in ways often made worse by technology and the rapid spread of harmful information via the Internet.

Opioid and heroin addiction, already problems in Richmond, continued to increase in the 2020s, and became a major contributing factor harming children and young adults directly and through their parents' addiction.

In many low-income neighborhoods disconnected youths, those who were not in school or working, increased. Job loss to automation and economic downturns made jobs scarcer, and failure to adequately raise the minimum wage kept many individual full-time workers, and even couples, well below the self-sufficiency level.

Other programs that experienced cuts, or elimination, included: child care subsidies, programs to provide school clothing, transportation assistance, home repair funding, and job training. Faith-based, philanthropic and other community groups increased their efforts to address some of these unmet needs.

Philanthropic donations decreased during the economic recession. The philanthropy of wealthy families that Richmond had historically relied upon diminished.   Churches and faith-based organizations lost some of their "core" funding, and many were unable to serve those in need. Long established institutions such as the Rotary Club fell. There were fewer places for people to turn for child and family services.

The workforce for child and family services was increasingly strained. The turnover rate for child protective workers increased. Despite setbacks, child and family service workers remained committed to their mission and repeatedly stepped up to the plate. And human services made some adjustments to attract workforce, including increased flexibility and more accessible workplaces. Still, many providers were exhausted and no longer motivated by their mission.

The number of people with disabilities grew year after year. The largest increases in disability came with the increase of seniors, accompanied by the rise in diabetes and Alzheimer's and their accompanying disabilities. Black and Hispanics populations were disproportionately impacted[9].

Disabilities were exacerbated by the impacts of the Great Recession, the ongoing higher structural unemployment, and more severe weather events.   Psychological stressors and trauma led to increased mental health disabilities.

Developmental disabilities grew in the 2020s, fueled by parental drug abuse and lack of prenatal care. Unplanned pregnancies to single mothers rose while prenatal care diminished for many low-income mothers. Programs to help provide recovery for substance-abusing mothers increased. While by the mid to late 2020s some congenital conditions could be addressed in utero, and some after the person was born, these were expensive procedures, not covered by Medicaid and Medicare.

There were technological and medical advances that removed disabilities or lessened their impact, but most people with low-income could not afford many of the technological advances (e.g. self-driving cars, 3D printed prosthetics and orthotics, home robots, neuro-enhancements and direct brain control of limbs) and most of these advances were not covered by Medicare or Medicaid, especially as coverage was reduced. These new technologies heightened the differences between those who are sufficiently well off to be newly enabled rather than disabled, versus those negatively impacted by their disabilities.

Low income families had access to some technologies, such as those delivered via smart phones and their successors, by the second half of the 2020s. However, the technology tools that were most affordable were often the least reliable.

INCOME SUPPORTS 2

During the 2017 – 2020 Administration, TANF, VIEW, SNAP and all other cash assistance programs, experienced greater cuts and limitations- and some were fully eliminated. These cuts worsened during the 2020s as the job categories TANF and VIEW recipients could seek were narrowed, further limiting the ability of recipients to find employment. And the 2023 Recession intensified the crisis. Many families were less able to meet their basic needs and resorted to extreme measures or did without.

For many families, the only means for survival came through the informal or underground economy as neither paid work nor adequate government assistance could be found. This underground economy included legal and illegal efforts. By 2035, a growing number of the population in prison were former TANF recipients who had resorted to crime for survival. Those convicted of a drug felony were ineligible for TANF, reinforcing the cycle of underground activity for survival and incarceration.

Food costs continued to increase between 2.5 and 5% each year, yet wages and family incomes declined, and the SNAP program suffered significant cuts. Food insecurity and food deserts, which had long been a problem in Virginia and in Richmond, worsened. Inability to access healthy food

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[9] NPR, *Stress and Poverty May Explain High Rates of Dementia in African-Americans*, http://www.npr.org/sections/health-shots/2017/07/16/536935957/stress-and-poverty-may-explain-high-rates-of-dementia-in-african-americans

exacerbated as more stores closed and the cost of fresh produce increased with economic and environmental shocks.   Some families and communities responded with increased home and community gardening and food production.

Shifting SNAP into a block grant further reduced its economic and nutritional impact, disproportionately harming low income populations. While there were periods of supportive Administrations and SNAP-friendlier Congresses in the early 2020s which reversed, or slowed SNAP's decline, it continued until the late 2020s. Then, despite overt need, the SNAP program ended all together.

HOUSING SERVICES 2

The conservative administration of 2017-2021, more hostile Congresses, and economic downturns led to a great decline in housing assistance levels.   There were some rebounds in the late 2020s and 2030s, but housing services often had large numbers of eligible families not getting any services.

Loss of a job was a frequent cause for loss of housing. Other contributing factors to housing instability such as domestic violence and disabilities were increasing as well. More people lost their homes while human services had little to offer in response. Homeless populations soared while spending on them dropped.

Gentrification slowed but continued, reinforcing segregation. More and more families that had resided in Richmond for generations were pushed out as neighborhoods became too costly, or they faced housing discrimination. Economic and social regression led to increased crime and homelessness, along with greater racial tensions. Structural discrimination increased. More and more 'tent cities' sprung up around the city.

Repeatedly, the faith community of Richmond stepped up, providing meals and other needed services. Mobile shelters emerged across the city. And more and more churches served as shelters. Police drove homeless from nearby areas of Henrico and Chesterfield into Richmond, which further strained community resources.

In the 2020s it was more common to have more family members and generations living under one roof, despite housing authority and zoning restrictions.

Richmond did try to allow more unrelated individuals to share housing units and to permit secondary dwelling structures in yards or attached to existing homes. But in many neighborhoods, existing residents were hostile to those who were changing the demographics of the neighborhood.

Other barriers to Richmond creating affordable housing included:

- The options for private developers to support affordable housing narrowed as the economy declined
- Regional collaboration ended; localities became more defensive of their own resources and less inclined to share resources
- Blight increased which made Richmond a less attractive destination for tourists and new businesses.

Growth in inequities in the late 2010s set up major changes in the 2020s. Human Services and human progress were redefined and transformed through a national and local focus on equity. Nationally, policy changes were put in place in taxation, universal access to health care (Medicare for All), public safety, education, housing, and the environment. Given the rising structural unemployment, including the loss of many middle-income and high-income jobs to automation, an unconditional Guaranteed Basic Income (GBI) for all citizens was put in place. This income largely eliminated cash transfer programs, such as SNAP, TANF, and others, but positively impacted most communities as families gained stability and some independence.

Along with the national equity movement, Richmond brought to light their hidden history. They took control of the narrative around Richmond's systemic racism, while celebrating human resiliency and embracing a more honest dialogue and equitable future. Persistent poverty, discrimination and differences in opportunity came to be viewed as truly wrong, offensive and inhibitive, and people across demographic lines demanded change. While Richmond's past was undeniable, their future was definable – and so leaders across sectors and community members took action.

Richmond stood tall in their efforts of pursuing equity. Their successes served as both examples for areas across the nation and "monuments" of how Richmond had progressed and excelled. Richmond built community wealth through connecting under-employed to new opportunities and developing more economic opportunities, whether through paid work (jobs or "gig work"), self-sufficiency through self production, and co-producing or trading services), that were accessible to those in high-poverty neighborhoods. Early education was improved, along with college, career, and contribution preparedness – for all Richmond residents. Other barriers to employment, such as lack of transportation and child care, were better addressed. Investing in housing environments and education in areas with high concentrations of poverty, and growing mixed income neighborhoods, helped foster stability and allow systemic changes in employment and dramatic decreases in poverty.

Simultaneously, there were advances in technology that made living less expensive. Low cost solar energy production and storage was enabled by breakthroughs in solar panel efficiency and storage technology. Food production was enhanced in urban agriculture, community and in-home food production. Aeroponics and other low cost, high tech growing supported much vegetable production. Cultured meat joined 3D printed food, increasing access to sustainable protein sources. 3D printing also allowed families to manufacture many of their home goods whether the printer was at the local library, the housing complex, or in their home. 3D printing even produced small homes, including many backyard "accessory dwelling units", as low cost. These advances supported self-sufficiency and were known as "abundance advances."

While human service providers worked with communities to facilitate the appropriate and equitable use of abundance advances, they were not applicable to every lifestyle. And that was okay. Those who embraced abundance advances and those who did not, or could not, often collaborated to share resources. These technologies were helpful and affordable tools that lowered costs of basic goods, fostered community wealth building and allowed community members to find meaning and contribution in new ways.

Human services supported prevention and individual and community self-reliance. Human services moved beyond self-sufficiency to support this wellness and thriving. Making a personal contribution, though raising a family, caring for elders, volunteering, or paid work was part of thriving. Health care became universal and moved towards prevention and wellness as well.

Human services, including the OCWB, provided training on the wealth and financial literacy needed for families to successfully manage their GBI, to optimize use of "abundance advances," and to have each family member pursue their contributions to the community.

Within human services, predictive analytics was used effectively to anticipate individual and family needs while avoiding racial profiling. Many human service tasks were automated (including the case manager's analysis of available programs, client eligibility, and determining the most effective communication style and language to motivate the client). Human service workers specialize in providing human touch when needed and in doing quality assurance for the automated services. Human services attracted new workers, increased the skills of all their workforce and increased their satisfaction and sense of personal contribution.

AGING SERVICES 3

Human services, supported by policy shifts and technology, helped elders to thrive and contribute to the community. The guaranteed basic income "topped up" those 65+ whose Social Security income was less than $12,000 annually (these were adjusted annually for inflation, as were Social Security payments).

Richmond was a leader in embracing and celebrating the unique value of all ages. Senior activities and senior services integrated into libraries, schools, churches, cafes, and other settings. More seniors volunteered, co-produced and traded goods and services. Child care sometimes occurs in the same building as senior services. Schools and libraries integrated seniors receiving services and volunteering, while respecting the different needs of different ages. Mixed used community centers increased.

Senior group living and co-housing grew steadily through the 2020s, as did "smart homes" for virtually all seniors. Smart home features play many roles- a friend, bookkeeper, secretary and counselor. Many smart homes support in-home food and energy production. NORCs (Naturally Occurring Retirement Communities) were surrounded by all the resources needed to support a healthy lifestyle, and had an intergenerational capacity, making them inclusive of the entire family.

Universal design became widespread in the late 2020s. Transportation to and from activities was made easier as self-driving car services became ubiquitous and inexpensive, either as Uber-like services or shared ownership by senior coop groups. The cost of these networks of self-driving cars (many are wheelchair friendly) was shared among state and local Human Services departments, Health departments, health care providers, and other stakeholders.

Health care evolved, improved in quality, and focused on extending healthy years. Prevention and treatments were found by the mid-2020s for Diabetes, Alzheimer's, and many cancers. Health care was re-reformed to a single payer program (Medicare for all) which negotiated prices for these advances to ensure they are accessible to all.

In the late 2020s, in some communities, food deliveries for the Older Adult Nutrition Program were made by small drone-copters. Nutrition programs became more customer focused, including optimizing the person's meals for their nutritional needs (informed, where the senior agreed to the data sharing, by the person's medical records). They often used locally produced food – whether from community gardens or higher tech urban agriculture.

Elder abuse and neglect declined, though some remained and the guaranteed basic income payments provided additional targets for financial abuse. But, financial elder abuse was alleviated as power of attorney laws were better defined and less subject to abuse.

BEHAVIORAL HEALTH SERVICES 3

Many behavioral health problems were prevented in the 2020s by economic and social changes, and there was an increase in behavioral health literacy that destigmatized getting behavioral care. This led to much greater acceptance of differences among people and of people seeking treatment and being able to talk about it.

Medicaid rolled into the Medicare for All system, giving parity to physical and behavioral health. In Richmond, RBHA and others continued to serve adults and children, including in-school programs. With greater upstream efforts and access to primary care, the need for the emergency and medical services of RBHA were somewhat reduced.

Richmond expanded more supportive housing, promoting independent living with wraparound services. Housing models moved away from group homes and institutionalization. Permanent supportive models included lease subsidies with supportive services wrapped around. Some houses were linked with video for virtual wellness check-ins. In some homes, residents do home food production (from conventional gardening to high tech approaches) and generally use technology as a tool for self-reliance. Health care and human service agencies supported social enterprises that develop and manage these homes.

But behavioral health issues remained, caused by genetic conditions, accidents, trauma, abuse and neglect, neighborhood violence; and the impacts of adverse childhood experiences in the 1980s and 1990s (when the current 40 and 30-year-olds were children).

Behavioral health services were influenced by advances in understanding ACEs and genetic and environmental contributors to behavioral health. Genetic interventions proved successful for some conditions. Care became more accessible through technology; effective and inexpensive "virtual counselors" proved helpful for many. Across Richmond providers, telehealth expanded. Medicare for All covered or provided these advances.

The behavioral health workforce evolved. As behavioral health morbidity was significantly reduced demand for care dropped. Virtual counselors displaced some human therapists. The ones that remain focus on the more challenging behavioral health conditions as well as oversee the automated systems.

CHILD AND FAMILY SERVICES 3

Preventative measures were prioritized across all child and family services as they were shown to be the most effective way to improve health and prosperity for families and communities. Education, housing,

transportation and child care evolved to better enable those in low-income neighborhoods across Richmond to build their wealth and wellbeing.

GBI payments were consistent and led to greater family stability, a reduction in domestic violence and child abuse, and contributed to lower teen pregnancy rates and increased high school graduation rates. GBI support led to volunteering by those not doing paid work so that all contributed. Human-based financial and wealth literacy programs were provided to help families use their income most effectively and understand the wrap-around services they need. Abundance advances lowered the cost of living and helped provide family security.

The commitment to equity and inclusion in Richmond made low-income and minority children and families feel less isolated and decreased discrimination. The development of more mixed income neighborhoods physically integrated families. All of this effected the emotional, physical and economic wellbeing of children and adults, reducing domestic violence and child abuse.

But while reduced, opioid and other substance abuse and addiction and behavioral health issues persisted and the need for child and family services remained. The $4,000 GBI payment per child helped more families, including extended families and kin to take foster children. Foster care was better regulated and carefully improved with predictive analytics. Richmond monitors each foster family's effectiveness with their foster children.

Human service providers enhanced their partnerships with health care, public safety, education, and the business community. Data was developed and integrated, with privacy and discrimination protections, that enabled advanced analytics. This served to identify at-risk individuals, vulnerable communities, and specific circumstances that prompted preventative actions.

Throughout the 2020s child services were rigorously evaluated for outcomes, enabling both quality improvement and cost reduction in the human services delivered. Services better engaged the client, making families and children a part of their own solutions. Regional cooperation increased aided by enhance partnerships.

The child care subsidy was discontinued after the basic income was fully implemented, except in instances of child disability or other costly services. More parents and communities had informal child caring networks. Head Start and Pre-K were made universally available. And all children have access to after-school activities and summer programing. The impact on learning was enhanced by better trained day-care providers and the widespread use of engaging learning technology and increased accessibility of neighborhood parenting and cooperative day care programs.

Immigration reform took place in the 2020s. Services for these individuals and families came from federal, state, local, and private programs with blended funding streams. The isolation of immigrants and refugees and their service providers and neighbors was somewhat reduced using effective, low cost, culturally sensitive language translation apps.

DISABILITY SERVICES 3

Disability, or its impacts, were reduced during the 2020s. This was due to many factors, including the slowing or reversal of chronic diseases, particularly diabetes, arthritis, Alzheimer's, and some cancers.

There were safer and healthier lifestyles and work environments. Developmental disabilities were reduced somewhat with reduced poverty, consistent prenatal care, and safer environments. By 2030, the number of children born with preventable disabilities was reduced by half. Prenatal care increased, as well as lifelong access to health care. This increased health equity in Richmond.

GBI payments led to the elimination of disability payments to many. Some individuals with more severe disabilities continued to receive payments for these.

There were remarkable medical and technological advances affecting disabilities, including:

- 3D printing of home equipment and even smart prosthetics; wheelchair customization and customizable materials like trays
- Sophisticated home monitoring and home care robots
- Friendly intelligent agents that act as helper, guide, counselor, therapist, translator, speech and hearing enhancer. These personal intelligent agents also communicate with family members, care givers and medical personnel
- By the mid-2020s direct brain control of limbs for paraplegics was available; reversal of diabetes and Alzheimer's; and vision and hearing restoration for some
- By the late 2020s genetic analysis could predict disabilities and in-utero testing and gene level repair was available for some conditions.
- Self-driving cars and other vehicles increased mobility.

Mental and developmental disability screening became more accessible. It was routinely included in primary care annual exams and in-school testing. This increased the number of people who sought and received care. Physical and mental services were customized for each person with a disability, and they were better guided through a continuum of care providers.

Data was used as a tool for empowerment. Human service agencies could share and integrate data to understand the degrees of disability, the genetic proclivity, or environmental promoters of disability among family members and could do predictive analytics to optimize the services clients received. This family-focused data, along with community data, and data on effectiveness of services and technology allowed more effective priority setting for what services to provide.

Equity reshaped neighborhoods across Richmond, including homes for persons with disabilities. Universal design was adopted, allowing greater mobility and more aging in place and ultimately saving costs.

Health care and human service agencies supported the social enterprises that develop and manage group homes where people live well in a common environment of support. These management organizations provide property management, cleaning, home health care aides and other services needed to keep the home's residents independent. And each home included a real or virtual manager that helped ensure the applications of the abundance advances, learning technology, assistive technology and social media are optimal for each resident. These homes have residents of various ages, income levels and abilities.

Income support programs were reduced during the late 2010s (and some eliminated altogether). But the programs were redefined in the 2020s with the creation of the federal guaranteed basic income (GBI). This provided a low but stable income to all citizens. Given the guaranteed income payment, EITC, TANF, SNAP and associated programs were largely eliminated.

Some programs such as emergency and medical assistance were continued as well as additional payments (above the $12,000 yearly amount) for persons with disabilities. And a major focus of human services is aiding individuals and families in seeking and making contributions, whether through paid work, caring for children or older adults, or volunteering. More traditional paths of contribution and achievement, such as through paid work and education, remained important and relevant. Simultaneously, abundance advances lowered the cost of living for energy, food and goods. Training in effective use of abundance advances, as well as wealth literacy/financial management were part of human services as well.

While the GBI displaced SNAP payments, food insecurity in Richmond was significantly reduced by self-production of food in homes and in communities utilizing both traditional and technology assisted growing including hydroponics, aeroponics, vertical agriculture, 3D printed foods, cultured meat and other advances. Community food production efforts led to the emergence of community leaders that help build well-being and implement evidenced-based best practices for food and nutrition security. Food production expanded as an area of community empowerment, but many community members chose to fulfill their contribution in other ways. Equity drove Richmond to better allow all residents to not only survive but to thrive – and to thrive in the places and paths of their choosing.

Child daycare payments were reduced because of the GBI. Some low-income parents stopped working and developed cooperative day care. These informal providers were trained to make this shared care useful for each child's development.   Other low-income parents used part of their GBI payments to pay for childcare if they continued to work. Some federal child care funding remained available in the case of disabled parents or children with special needs.

HOUSING SERVICES 3

GBI payments, which were steady but fixed, did lead to a migration across Virginia to lower cost areas outside of more expensive city centers and suburbs, including to rural communities where families could also produce more food and be more self- and community reliant. There was some outmigration from dense areas of concentrated poverty in Richmond, but important housing developments also kept people in the city.

Housing services joined the OCWB and other human services in the City in using OCWB's matrix that defined each person or family's path to thriving and developed a unique plan for the family.   For example, some clients need a monetary stipend, some need stipend and job training and other services, and some need those plus parenting training.   Many agencies provided a continuum of services where people easily flow in, out, and across the spectrum per their needs.

RRHA transformed their approach, which better transformed communities. The ability for developers to collaborate with RRHA expanded, and the CBDG funds made a great impact; RRHA better enabled

mortgages and other paths to ownership. A federal program matched low income persons' mortgage savings.   Some land trust programs for public housing included a path to ownership, including rent to own.

Nonprofit housing providers dramatically expanded, along with producers of affordable housing across sectors. LITECH, the public subsidy, continued and expanded. Affordable housing units were managed to ensure they housed a variety of residents and did not just cater to students.

Public transportation expanded routes and aided vertical, mixed use and mixed income development along the transportation routes. Public transport in the 2020s included fleets of self driving vehicles that, like Uber, increased transportation flexibility. Efforts were made to ensure that public or affordable housing units were not isolated from resources, such as good schools and access to healthy food. As communities integrated, there were higher and more equitable tax bases to fund schools.

Overtime the major public housing complexes were redeveloped as mixed income, attractive neighborhoods – urban high-rise villages. Some redevelopment was not urban high rise, but rather garden-style apartments. These duplexes and triplexes fit the aesthetic of Richmond nicely. And the community worked to deconcentrate poverty by stimulating small and multi-unit low income housing throughout Richmond.   Accessory dwelling units were promoted, following California and Arlington's lead. Given the rise in support for equity and inclusion middle and upper income neighborhoods welcomed new entrants to the community and figured out how to deal with traffic increases.   Some ADU's were built on carriage houses in the Fan District, but many others were built across the city. And some of these were 3D printed as sustainable, energy efficient, low cost but attractive units.

Equity as an integrated value helped alleviate discriminatory real estate practices, and there was better racial and socioeconomic integration across the city, regardless of whether residents operated with 'middle class values'. There were ongoing protections and neighborhood welcoming practices to ensure that those who relocated to new areas of the city, for public housing or other opportunities, were well adjusted.

Households became more generative of some of their needs as they produce and co-produce food and other necessities. This included solar and wind energy harvesting, efficient energy storage. RRHA, apartment building owners, Dominion Energy, HUD and the City worked to refurbish and make units more energy efficient, but also to install solar and wind power and to develop in-building and in-community energy storage; with the cost savings going to the renters. Households and communities grew more of their own food. And 3D printing done with printers in the RRHA complexes could, at low cost, provide many needs.

Homelessness remained but was drastically reduced. The basic income served to alleviate portions of chronic homelessness, but crisis related homelessness persisted. Integrating mental and behavioral health with health care, and having these services be more accessible, lessened the homelessness among those with severe behavioral health.

Basic financial security from GBI; self- and community production of some needs; the acceptance of all because of the sense of equity and inclusion; the transformation of neighborhoods, particularly public housing complexes into smart, safer, healthy villages; robust health care and mental health programs led to improved quality of life where individuals and families were more empowered to define and achieve their vision of wellness, thriving and contributing.

The 2020s saw accelerated change in attitudes, economics, and policies. The 2017 Administration had ridden into office on a wave of discontent with the economy and government. The economy grew during this administration as did unemployment, income inequality, and gridlock in Washington. Wages grew little, while much labor was shifting from jobs to piece work or consulting on the "gig economy" (with no employee benefits) and millions of jobs were lost to automation by 2020.   The Affordable Care Act was reformed but millions lost access to health insurance, and the cost of insurance for those who had it, kept rising.

Growing inequities heightened a deeper value shift in the U.S. that had been growing, toward more empathy, equity, inclusion and sustainability. The 2020 election nationally focused these concerns and was a landslide for those supporting inclusive policies, nationally and in Virginia. Over the next few years there was significant federal policy change in taxation, education, public safety and justice, the environment (including combating climate change), immigration, health care, human services and a national minimum wage. Because of high job loss to automation, income support programs became more secure, with higher payment levels.

In low income populations and their communities there was a recognition of the limits on what employment, human services and income support programs could provide. These communities responded by enhancing family and community self-sufficiency, aided by the right kinds of technology and community integration.

Technology advanced to support equity and sustainability in energy, food, local manufacturing, and low-income housing. These were effectively "abundance advances," supporting family and community self-sufficiency. Part of the work of human service providers was supporting low income families in the effective use of these advances.

Human services shifted towards a wellness model, addressing the physical, mental, and emotional well-being of individuals and families. This included classic human services, plus coaching and assistance in using "abundance advances" and in enhancing everyone's personal sense of meaning and contribution, as well as supporting the community's movement to greater community self-reliance. Human services became more integrated, automated, efficient and effective.

Richmond focused on wealth building and was successful in improving educational attainment and success rates, pursuing workforce development for jobs that were new or not likely to be automated, long-term job creation through partnerships, and improving housing. Low and unequal rates of education attainment were confronted to stimulate Richmond's ability to grow economically and attract and retain businesses.

Richmond improved early childhood education and literacy rates and helped high schoolers successfully continue higher education or effectively enter the workforce. Furthermore, across the region, resources were directed to schools with greatest need, which helped to reduce classroom size, attract talented

teachers and improve school materials available[10]. Neighborhoods that had historically had the most concentrated poverty were better supported and invested in. These combined efforts led to Richmond surpassing their goal of reducing the poverty rate by 40%. By 2035, Richmond has transformed in a place where people can pursue their own version of the American Dream. Richmond is thriving with the welcoming attitude of – "come one, come all".

Programs were coordinated across Federal, State and City/County levels, with accelerated eligibility determination and enrollment, data integrated across agencies and sites and customized care with predictive analytics. Human services intertwined with economic development plans, transportation, housing, public safety and recreation, along with churches and other community organizations. Human services operated across a continuum of lifespan, addressing needs across ages and stages and for entire families.

Masterful navigators help clients find what they need in very timely ways. Many of these navigators are virtual, though there are always qualified humans working with them to offer the special touch that people need. Integrated service teams formed around clients and include the client, their family and friends. The integrated service teams overcome the limitations that in the past led to burnout, annoyance and unconscious bias which negatively affected clients who sought services.

While in many communities, human needs exceeded human service funding, generally human services were more consistently funded, including competitive salaries for the reduced number of human service staff and prompt payment and adequate overhead for human service organizations.

Many human service tasks were automated (including the case manager's analysis of available programs, client eligibility, and determining the most effective communication style and language to motivate the client).   Human service workers specialize in providing human touch when needed and in doing quality assurance for the automated services.

Human services, and human service providers, were regarded as valuable and that extended to all levels of providers, including increased esteem for direct care providers. This helped attract more people to the field.

AGING SERVICES 4

Aging services accelerated its movement towards more integrated, customized, and generative services. There was greater integration of data across various providers which increased the ability to aid in addressing physical, social and spiritual needs. In the 2020s Virginia became a "blue zone" of exceptional health and longevity.

Formal, informal, and virtual senior centers all grew, integrating senior services into libraries, schools, churches and other settings while engaging multi-generations. Seniors shared and traded services and goods, sometimes using technology to organize.

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[10] The Commonwealth Institute, *Increasingly Separate and Unequal in the U.S. and Virginia Schools*, 2016, http://www.thecommonwealthinstitute.org/2016/11/04/increasingly-separate-and-unequal-in-u-s-and-virginia-schools/

As Richmond became more inclusive and welcoming to people of other cultures and countries, the culture of family connection expanded. Kin care helped reduce social isolation, alleviate the stress epidemic and increase inclusion. The data around 'have and have nots' became a more accurate representation of disparity, allowing these disparities to more meaningfully be understood and addressed.

The Richmond 300 plan incorporated community-based planning which dictated land use for more inclusive neighborhoods. Senior group living, co-housing and "smart homes", and "smart villages" increased. Attitudes shifted away from considering aging in one's original home being the best option, and there are more options that enhance inclusion and socialization. ADUs (Accessory Dwelling Units) were developed to accommodate seniors of different functional levels and were done as smart homes that reduce isolation and foster engagement. Still, across Richmond, many seniors favored group living and shared housing. For those seniors staying in their homes, it became common to rent a room in the house.

Technology evolved to be more equitably usable and aided seniors in many aspects of their lives. Smart phone-linked tools advanced and coordinated with smart home applications. The tools could translate and enhance words, communicate with doctors and family, and coordinate services for the user. Predictive analytics avoided profiling and aligned with Richmond ideologies favoring independence and autonomy. Technologies were better able identify and remove scams and unfair marketing and protect seniors using these tools.

Universal design became widespread in the 2020s; all new developments, multi-unit housing, and many individual homes, were wheelchair accessible and community facilities were designed to be accessible for all. Transportation to and from senior activities was made easier as self-driving car services became ubiquitous and inexpensive.

Health care evolved, improving in quality and its success in extending healthy years. Prevention and treatments were found by the mid-2020s for diabetes and Alzheimer's.   Medicare for All, the universal health care of the 2020s, covered these and other medical advances. Much elder health care is delivered remotely or in virtual space. Prevention, senior activity and healthier living and the breakthrough treatments led to healthier elders, most of whom delayed the frailty and disability of their final years.

Employment training for the elderly, which was often virtual, focused on   jobs not likely to be automated. Senior Connections and AARP continued as leaders in employment services for elders, including expanded apprenticeship programs.

Aging protective services used predictive analytics and integrated data (from health care, police, schools, other human services) to anticipate potential abuse and neglect. Elder abuse and neglect declined, though some remained, with the enhanced income support payments providing additional targets for financial abuse. Adult protective services had the ability to anticipate abuse, intervene earlier and prevent much trauma. Virginia was the second state to develop an elder abuse forensic center.

BEHAVIORAL HEALTH SERVICES 4

Behavioral health issues and care evolved as value shifts toward inclusion and equity touched many low income and marginalized communities. This removed some felt social isolation. It became more

acceptable and common to seek behavioral care and to receive it. Universal health care gave parity to physical and behavioral care. Technology significantly accelerated behavioral care as effective and inexpensive software providers proved to be very successful in the 2020s.

Technology counseling tools were kept updated as information evolved and by 2030 incorporated each person's genomic information in their assessment. The growing power of genomics produced a large knowledge base of associations between genes and the environment, which enabled an explosion of epigenetic research showing how environments effect gene expression. With privacy and discrimination protections in place human service providers used predictive analytics to both identify people at risk and to triage their efforts.

Social determinants were largely addressed, and genetic contributors to behavioral health were better treated. With these preventative approaches, behavioral health morbidity was significantly reduced. Enhancing environments and health reduced the opportunity for predisposition to develop into disposition.

Organizations partnered with behavioral health homes, addressing many stressors from prenatal to primary care while incorporating technology. Group homes for those with behavioral health diagnoses used virtual reality and abundance advances tools to foster self efficacy. Health care and human service agencies support the social enterprises that develop and manage these homes.

Some severe mental illness and intellectual and developmental disability remain, though it was reduced. Some is cared for by the services from the Medicare for All system. RBHA continued to provide services including psychiatric assessment, emergency services, in-school supports, supportive living programs, substance abuse treatment, care coordination and other efforts. Jails and prisons continued as sites for meaningful behavioral health care and rehabilitation. Criminal justice and law enforcement personnel were trained to operate in a way that is trauma informed.

CHILD AND FAMILY SERVICES 4

Children and family services evolved, driven by national, state and local equity movements. Richmond made strides in addressing segregation and oppression. Community leaders and members became intentional about reducing the opportunity gap. All human service work operated in culturally sensitive ways while working to reduce opportunity gaps. The need for child and family services was also influenced by the rise of the minimum wage to a living wage and abundance advances which helped provide greater family stability.

The OCWB and others worked to promote education and workforce preparedness for all community members, while stimulating new work opportunities in the area. Efforts included the Center for Workforce Innovation, which connected residents to new work or jobs not likely to be automated. The City of Richmond's social enterprise strategy encouraged community strengths to supporting local job creation.

Richmond developed a more communal and centralized effort to address child and family services, pulling resources together and using predictive analytics to set performance measures and goals, and develop prevention and intervention services. Child and adult services were integrated and coordinated, consolidating some agencies. Outcomes were rigorously evaluated.

There was data integration across many agencies involved in child and family services. During home visits, human service workers could access the history of the family's enrollment in services and screen for other services the family might benefit from. Data sharing systems had effective firewalls, data encryption and privacy and discrimination protections that respected families' decision on information sharing.

Integration of data and predictive analytics identified at-risk children, allowing for early intervention. This helped keep more children in their homes. Cases were addressed in a way that worked with a customized plan, specific to children and family members. Multi-generational strategies proved impactful across the city in addressing poverty and racial injustices. One outcome of holistic approaches to family services was that across Richmond, education levels of new mothers increased, with more and more children being born to mothers with a GED, high school graduation, or more.

Health care and human services developed meaningful partnerships with schools, public safety, and employers.   Human services identified communities and circumstances that prompt preventative actions, and direct people towards the most appropriate services. These services are rigorously evaluated for outcomes, enabling both quality improvement and cost reduction throughout the 2020s.

As child abuse and neglect was reduced, the need for foster care by 2035 was reduced greatly because families and communities grew stronger. There were more resources helping children stay in-home or with family members in healthy environments. And there were sufficient foster families as more families were willing and able to take foster kids into their homes.

In the 2020s, funding returned so that early childhood services, such as Head Start and Pre-K, were made universally available. The impact of these programs on child development and preparation for school was enhanced over the decade by better trained and more engaging child care providers aided by widespread use of effective learning technology. Prenatal and early childhood, aged 0-3, care and programing increased, preventing some potential challenges later in life.

DISABILITY SERVICES 4

Disability, or its impacts were reduced, driven in part by: reductions in drug use, consistent pre-natal care, better genetic screening, slowing or reversal of chronic diseases and safer and healthier work places and work styles. Developmental disabilities were reduced somewhat with reduced poverty, consistent prenatal care, and safer environments.   The social determinants health and health disparities, were better addressed with equity as a guiding value. Each person had access to health care and the opportunity to be empowered through their own sense of personal contribution.

Health and human services integrated, sharing data and developing partnerships across all levels of delivery. Mental and developmental disability screening took place with physical health care exams which increased the number of people who sought and received care. Physical and mental services were customized for each person with a disability, and they were better guided through a continuum of care providers, including city/state agencies and non-profits.

Data integration helped care givers understand genetic proclivity or environmental promoters of disability among family members and do predictive analytics to optimize the services they provided. Case managers were better informed through data to engage with pregnant mothers and best address

health and wellbeing. This more holistic approach included getting the home secure, older children into preschool, and getting the mother to prenatal care. Trust between client and caseworkers increased. Healthy family programs increased.

Caseworkers are not necessarily in one area, but rather have the tools to help families move across the nine dimensions of the City's BLISS matrix. Data is securely shared across agencies and there is 'no wrong door' for embracing services. Services better integrated to address the entire family, and pursue multi-system involvement: the justice department, OCWB, Social Services, RBHA and others all closely work together.

Disability screening is integrated into primary care and school systems. School systems improved use of technology with curriculum catered to everyone's needs and engagement levels. This was coupled with social programs for well-rounded growth.

Predictive and preventive measures worked in combination with remarkable medical and technological advances affecting disabilities. This included:

- Self-driving cars enhanced mobility;
- 3D printing of home equipment and even smart prosthetics;
- Sophisticated home monitoring and home care robots;
- Friendly intelligent agents that act as helper, guide, counselor, therapist, translator, speech and hearing enhancer.
- By the mid-2020s direct brain control of limbs for paraplegics, reversal of diabetes and Alzheimer's and vision and hearing restoration was available for many.
    - As the medical advances were proven effective and safe, and their initial costs dropped, they were covered by Medicare for All and Medicaid.

Human service agencies provided some services directly and helped families chose among providers or vendors.

Many homes evolved with special smart home technology geared to resident's various needs. These technologies changed the role of human service workers, as they served more in providing oversight. Residents do home food production and use virtual reality. These homes are incorporated into Richmond, and homes from persons with disabilities are not separate from typical group homes. All homes have the capacity for smart home features.

INCOME SUPPORTS 4

In the 2020s, income support programs became, more flexible and better coordinated. The work requirements for supports were broadened to include education or training and volunteer efforts. This better reflected the changing economy as job loss to automation accelerated. Structural unemployment grew, so many key income supports are no longer temporary. Other policies included raising the minimum wage, efforts to slow job loss to automation, to protect "gig workers" and to increase their minimum pay levels.

Self-sufficiency was understood in a new way, that better reflected Richmond and its community's efforts to address structural oppression and inopportunity. The city moved faster than national policy,

and developed as a compassionate city. Rather than demanding higher levels of resiliency from people, Richmond developed a culture of equity which allowed people to live, work, communicate and define and pursue their own paths towards thriving. At the same time, technology continued to evolve and programming and AI were developed to reflect compassion and used as tools of empowerment.

The EITC was affected by the increase in the minimum wage. This led to cost increases and inflation, disproportionately affecting low income workers. The federal "poverty level" was adjusted accordingly, and incorporated local variations in cost. EITC was amended to apply proportionately to single individuals and childless couples as it had to those with children and EITC income ceilings were raised.

SNAP and other nutrition programs rebounded in the 2020s; expanding their incentives to buy fruits and vegetables, particularly from local sources. This reduced food insecurity, as did in-home and in-community food growing.

TANF payment levels expanded, as did the length of time they could be received. "Temporary" was removed from the programs name as it became Aid to Families (AF). VIEW job training and placement focused on jobs that were not likely to be automated soon and jobs that had been created as technology advanced. Training also focused on how to increase family self-sufficiency by making effective use of the various "abundance advances".

Some of the caseworker assistance for those in the VIEW program was provided by artificial intelligence. These virtual caseworkers could arrange day care assistance, transportation, job training and other needed services while determining eligibility for other programs and automatically enrolling. However, some preferred human caseworkers and the balance between human and technology was customized for each person.

The regulations for income support programs, both federal and state, were adjusted to allow integration of support payments for an individual or family – this allowed both an aggregation of the funds and broader choice on how the funds were spent.

HOUSING SERVICES 4

Gentrification continued across Richmond but was restructured through more equitable value shifts in the structural power of race and class. Affordable housing was preserved and expanded, while gentrification power dynamics were leveraged as a tool for more equitable communities and community structures.

Those who had historically lived in an area undergoing gentrification were positioned to define the spirit of the neighborhood and retain the traditional culture. Mixed income neighborhoods were consciously developed to be beneficial to all regardless of whether residents were new or longstanding.

Richmond became a place where people wanted to remain; the opportunity was created across many different neighborhoods where people could achieve their own "American dream" in their own area. As people stayed in their neighborhoods and developed, schools in the area improved and so communities were enriched across generations.

Federal, state and local policies took advantage of a growing movement for equity and inclusion to build more dense, mixed income housing with ample very low-income units. Local regulations changed to

allow more secondary dwelling units built onto homes or in yards; and to allow more unrelated individuals in housing. While there were initial objections in some communities, the increased commitment to social inclusion and equity led most neighbors to support this greater density in the neighborhood. Virginia and Richmond governments provided incentives and regulations to have landlords or utility companies install low cost energy production and storage and pass the savings on to renters.

The City, RRHA and partners over the 2020s were able to redevelop most of the East End complexes into thriving mixed income high rise villages. And transportation expanded, allowing for more equal access to resources and jobs across all neighborhoods.

Meanwhile, households became more generative of some of their needs as they produced and co-produced food and other necessities. This included solar and wind energy harvesting, efficient in-home and in-neighborhood energy storage technologies, and low-input high-yield home and community food production.

Homelessness was reduced because of more consistent work with higher minimum wages, better income support for those not employed, increases in low and very low-income housing stock, and more consistent access to behavioral health services. The remaining homeless persons and families received more personal attention and services from local agencies. There was better awareness of the services available, and how to access them. Other aspects of housing services included: aiding aging in place, combining wellness focused medical services and education with housing, and involving landlords in prevention strategies.

[i] Abundance Advances

Technologies that can help families and communities meet some of their basic needs and increase self-sufficiency are arriving and will become more widely used in the 2020s. These include technologies for low cost energy and storage, food production, and 3D printing of home goods, electronics, and even homes. In each of these areas, the innovations need to become real, and to become widely available at affordable costs. This is feasible, though not certain. Futurist Jeremy Rifkin, has argued that the engines of innovation that will yield these advances will lead to "The Zero Marginal Cost Society" as distributed manufacturing and related developments reduce the marginal cost of producing the next "widget" (or whatever) to nearly zero. Peter Diamandis and Steven Kotler argue in "Abundance: The Future is Better Than You Think", that "a variety of advances will enable us to make greater gains in the next two decades than we have in the previous two hundred years. We will soon have the ability to meet and exceed the basic needs of every man, woman and child on the planet. Abundance is within our grasp." And that is before nanotechnology, as Erik Drexler argues, will enable "Radical Abundance". See, Peter Diamandis and Steven Kotler, *Abundance: The Future is Better Than You Think*, 2012, New York, Free Press.

For these Human Services 2035 Scenarios, in Scenarios 3 and 4 we call these collectively "Abundance Advances". In terms of applying these advances to reduce poverty and increase equity, additional work, policies, and community commitments will be needed to ensure success. For example, for low cost energy production and storage it will be necessary to require and/or incentivize landlords to install solar or other low-cost forms of production and storage and pass the savings on to renters. Likewise, energy utilities will need to shift from sellers of energy to infrastructure providers and insurers of consistent and cost-effective energy supply while fostering higher levels of home and community self production.

In the sections below, we identify some of the forecasts for energy abundance, 3D Printing/Distributed Manufacturing, and Food Production that support the potentials for these "Abundance Advances".

Energy Abundance

A variety of advances in energy production and storage are likely to lower the cost of this basic item. This includes solar, hydrogen, nuclear and even fusion energy. An important aspect of low cost energy is the potential to transform lives of low-income communities.

The e-lab leap initiative, from the Rocky Mountain Institute, brings together government representatives, housing authorities and property owners, NGOs and others towards the goal of empowering low income communities with clean and affordable energy. Access to energy is crucial for economic empowerment and economic development and this group sets out strategies for making this happen in communities. See more here: https://rmi.org/our-work/electricity/elab-electricity-innovation-lab/elab-leap/.

Details of energy types are detailed below:

Low cost solar energy production and storage is likely in the 2020s. There are many potential avenues for this. Some solar cell technologies are nantennas, kerovskite and perovskite materials that will provide highly effective solar cells. Energy storage costs are decreasing and are projected to continue to become less expensive.

Other forms of sustainable energy may develop, such as scale cell fusion that produces low cost energy may become available. According to a 2016 article published on Energy Central, fuel cell technology will change daily

lives in five ways. These are: cleaner vehicles with less or no carbon emission, more reliable power for homes and buildings, enhancing mobile phone charge and design, incorporation into fossil fuel design to bridge the gap with renewables, and freedom from the grid towards independent and individual energy production. (See: http://www.energycentral.com/generationstorage/solar/articles/3359/Top-5-Ways-That-Fuel-Cells-Will-Impact-the-Way-We-Live-in-the-Future/).

The cost of solar energy is declining, and there are forthcoming improvements in solar technology. As reported by the Solar Energy Industry Association (SEIA), from 2010-2017, the cost to install solar energy declined by 70% while solar grew in terms of installation and share of energy capacity across the United States. Labor costs, permitting and installation fees and supply chain costs related to solar likewise declined. (see, SEIA, "Solar Industry Data", https://www.seia.org/solar-industry-data). As projected by Green Tech Media, prices of solar are project to continue to decline at the rate of 4.4% for a 27% reduction by 2022. (see, Green Tech Media, *Solar Costs are Hitting Jaw-Dropping Lows in Every Region of the World*, https://www.greentechmedia.com/articles/read/solar-costs-are-hitting-jaw-dropping-lows-in-every-region-of-the-world).

Technological advancements lowering the cost of solar energy includes a new manufacturing process which claims the ability to reduce the cost of silicon wafers, "the platform for a solar power cell", by half. (see, E&E News, *Closing in on a solar power breakthrough*, https://www.eenews.net/stories/1060044628).

Fusion power has the potential to produce nearly four times the energy as nuclear fusion with very low carbon emission and could prove necessary for producing accessible, clean energy. See: Futurism, *Mini Reactors Could Make Affordable Fusion Power a Reality by 2030*, https://futurism.com/mini-reactors-could-make-affordable-fusion-power-a-reality-by-2030/. Related to this and more relevant to community level energy is small scale fusion, a form of energy production in which atomic nuclei release energy, capable of powering a small town using a unit the size of a flatbed truck. (see, 21st Century Tech, *Fusion Reactors Two Steps Closer to Reality*, http://www.21stcentech.com/fusion-reactor-step-closer-reality; and, Energy Fanatics, *Small-Scale Nuclear Fusion: Very Little Radiation and Limitless Energy*, http://energyfanatics.com/2017/01/05/small-scale-nuclear-fusion-very-little-radiation-limitless-energy/). This is less expensive than solar and other energy forms, and serious investors in small scale fusion include prominent figures such as Jeff Bezos and Peter Thiel (see, http://fortune.com/2015/09/28/jeff-bezos-peter-thiel-fusion/).
Small scale nuclear power stations are being proposed and in 2018 one developer argued they would be online in 8 years – by 2026. See: Bloomberg, *First Small-Scale Nuclear Reactor May Be Just Eight Years Away*, https://www.bloomberg.com/news/articles/2018-04-10/first-small-scale-nuclear-reactor-may-be-just-eight-years-away

Hydrogen fuel has been proposed as a clean source of energy.   Though it has been costly to develop the feedstock for hydrogen, recent research published in the Journal of Catalyst has found that ammonia can be used to stimulate hydrogen fuel. See: *Futurism, Cheap Hydrogen Fuel Was a Failed Promise – But its Time May Have Arrived*, https://futurism.com/ammonia-hydrogen-fuel/

3D Printing/Distributed Manufacturing

3D printing of goods may disrupt global supply chains and allow local and customized production of goods, often using sustainable and upcycled materials. 3D printing has the potential to impact the lives of low income communities, including 3D printing of transportation, homes and medical devices such as prosthetic limbs. (see: Borgen Magazine, *Five Ways 3D Printing Can Help Alleviate Poverty,* http://www.borgenmagazine.com/3d-printing-alleviate-poverty/).   This includes better prosthetics and implants (see, United States Food and Drug Administration *Medical Applications of 3D Printing,*

3D printing of homes and multiunit buildings has already begun. For example, San Francisco based company Apis
Cor built an entire small 400 square foot home through 3D printing in 24 hours with workers completing touches
such as painting and some manual installation. https://www.engadget.com/2017/03/07/apis-cor-3d-printed-
house/. In 2018 the Texas based company ICON in cooperation with New Story created a 650 square foot 3D
printed home that costs $10,000; took 24 hours to complete; and meets the building codes of the City of Austin
where it was built. New Story intends to lower the price to $4,000 to build one of these in developing countries. .
See Fortune, *This Company will 3D Print a House for $10,000*, http://fortune.com/2018/03/12/sxsw-2018-3d-
print-home-icon/. And
https://austin.curbed.com/2018/3/14/17116504/tiny-home-austin-sxsw-3d-printed-affordable

Food Abundance

While conventional agriculture is being challenged by climate change – particularly drought, higher temperatures –
but also floods and fires, it will be challenged by in-community and in-home food production, both conventional
gardening and more high-tech forms such as hydroponics and aeroponics. In addition, 3D printing and cultured
meat could change food patterns.

Advances in food production include aeroponics and hydroponics (growing plants in an air, mist or water
environment) to produce nutritious food in large amounts quickly and sustainably. This can be done in urban
environments using vertical farms and in-home or apartment techniques.

According to the National Gardening Association, more Americans are growing food in their homes. Their 2013
report called "Garden to Table: a 5 Year Look at Food Gardening in America" found that 35% of Americans were
growing food in their homes or in community gardens. There was a 17% increase between 2008 and 2013 with
millennials being the fastest growing portion of the food growing demographic. Millennials nearly doubled the
amount they spend on food gardening, reaching $1.2 billion in 2013. The report found that households with
children were increasingly growing food. Participation in community gardening increased 200%, and gardening in
urban areas increased 29%. There was a 38% increase in food gardening for households earning incomes lower
than $35,000. See. http://garden.org/about/press/press.php?q=show&id=3819&pr=pr_nga Accessed 20 June
2016.

As explained in the 2017 article "Future food-production systems: vertical farming and controlled-environment
agriculture" vertical farming, which grows food usually with hydroponic or aeroponics methods in stacked layers,
offers a more sustainable year-round crop production with high yields and climate resiliency. There are
employment opportunities including with engineers and workers in maintenance. The article explains "as process
automation proceeds, new job requirements will include systems analysis and software development." See: Benke,
K. & Tomkins, B. (2017). Future food production systems: vertical farming and controlled-environment agriculture.
Sustainability: Science, Practice and Policy, 13, 13-26.

A 2015 CNBC article reported on the trend of vertical farming. The article interviews David Rosenburg, CEO of
AeroFarms, who is quoted as explaining that they are able to grow produce in around half the length of time
observed in a field, using 95% less water, around 50% less fertilizer, and no herbicides, fungicides, pesticides. See:
CNBC, *Vertical farming: The Next Big Thing for Food- and Tech,* https://www.cnbc.com/2015/06/24/vertical-
farming-the-next-big-thing-for-food-and-tech.html.

Cultured meat is progressing in taste and affordability and may be a sustainable and accessible source of
producing protein. A 2015 article in the Science Explorer titled "You Could Be Eating Lab-Grown Burgers by
2020" quotes Peter Verstrate from the company Mosa Meat. Verstrate aims to produce a lab grown burger with
no taste or texture difference from a traditional one and feels confident that the product will be attractive to large

numbers of consumers for ethical reasons. See: http://thescienceexplorer.com/technology/you-could-be-eating-lab-grown-burgers-2020.

Verstrate and Mosa Meat are mentioned in a 2016 NewsWeek article called "Lab-Grown Beef Will Save the Planet-And Be a Billion Dollar Industry." In this, Verstrate explains that Mosa Meat can currently produce meat that costs $27 to $45 per pound, and they will enter the market with a premium priced product in five years (thus, around 2021) and that in another five years (around 2026) the prices will be competitive to what people currently pay for beef. The lower competitive price, combined with a convincingly real taste and sensation, and environmental and animal rights motivations, may allow for widespread production and consumption of cultured meat; this may be consumed by people who are already educated on, or sympathetic to, certain issues and curious about new technologies. See: http://www.newsweek.com/2016/03/11/lab-grown-beef-will-save-planet-and-be-billion-dollar-business-430980.html

By 2018 Impossible Foods was selling cultured meat used in hamburgers and meatballs by the Clover chain – sold at the same price range as Clover's regular beef hamburgers. And Impossible Foods (https://www.impossiblefoods.com/) is only one of several companies that are producing fully plant-based meats and cheeses. Futurist Thomas Frey after reviewing these developments forecasts that "by 2025 industrial grown meats will become the world's cheapest food stocks" http://www.futuristspeaker.com/job-opportunities/the-coming-meat-wars-17-mind-blowing-predictions/ .

There are many issues and questions about nutrients, micronutrients, bacteria/microbiome contributions of this cultured meat; as well as its cultural relevance in relation to traditional meat. But it is on the market and recent growth suggests it could be widely used in a decade.

Radical Abundance

And nanotechnology expert K. Eric Drexler, argues that in the 2030s the full flowering of nanotechnology will allow us to do nano-manufacturing of most of our needs at relatively low costs – hence the title of his book: *Radical Abundance*. See: Drexler, K. Eric. (2013). *Radical abundance*. New York: Public Affairs.

For example:
- Molecular biology and chemistry will enable many of the items we use daily to be built with atomic precision.
- Transportation, construction, manufacturing, water and food production will become easier to do and so more accessible and beneficial to more people globally.

ii Job loss to automation

Job loss to automation and cognitive computing will have a major impact on the economy, family income, and the need for human services in the years ahead. We believe it has been happening and it will eliminate more jobs through the 2020s. As in past disruptions of this type, new jobs will be created. Some of these are identified in the sources below. And there will be teaming of AI and human workers (in 2017 the best chess competitors are teams of humans, without grand master chess champions and multiple computers, no supercomputer as often used for IBM's Watson). Yet the new jobs are likely to be far fewer than the jobs lost.   The range of job loss by 2030 range from 9% to 47% of the US workforce. For these human services scenarios, we have used the estimate of a net loss of 7% of the US

workforce by 2025, with increasing job loss in the years after that.   In our state and local Human Services 2035 scenario efforts we have worked with human service experts to apply and check forecast for specific human service jobs as well. Here are highlights of the forecasts which indicate the range from which we developed the forecasts we are using in our scenarios.

- Within a few years, robots and so-called intelligent agents will eliminate many positions in customer service, trucking and taxi services, amounting to 6 percent of jobs, according to a Forrester report. "By 2021, a disruptive tidal wave will begin," said Brian Hopkins, VP at Forrester, in the report. "Solutions powered by AI/cognitive technology will displace jobs, with the biggest impact felt in transportation, logistics, customer service, and consumer services." http://www.cnbc.com/2016/09/12/ai-will-eliminate-six-percent-of-jobs-in-five-years-says-report.html

- Forrester forecasts in the report "The Future of White-Collar Work: Sharing Your Cubicle With Robots" that cognitive technologies such as robots, artificial intelligence (AI), machine learning, and automation will replace 22.7 million (or 16%) of U.S. jobs, while 13.6 million will be created — a net loss of 7% of U.S. jobs by 2025. Office and administrative support staff will be the most rapidly disrupted. Newly created jobs will include robot monitoring professionals, data scientists, automation specialists, and content curators: See, Forrester referenced in Fast Company, *Robots will Take Your Job, But First They'll be Your Annoying Co-worker,* https://www.fastcoexist.com/3050428/robots-will-take-your-job-but-first-theyll-be-your-annoying-co-worker

- McKinsey Global focuses on probability of tasks within occupations being automated, and determined that 49% of time spent on tasks could be automated with current technologies, but only 5% of total jobs in the report "A Future that Works: Automation, Employment, and Productivity; Harnessing Automation for a future that works" http://www.mckinsey.com/global-themes/digital-disruption/harnessing-automation-for-a-future-that-works.

- The Bain report "Labor 2030" forecasts that from 2020 onward nearly 2.5 million jobs will be lost each year, with an inferred reabsorption rate of around 0.7 Million jobs per year. This represents labor displacement that is two to three times more rapid than the previous transformations (agriculture to industrial farming; manufacturing; construction); Bain Labor 2030: Collision of Demographics, Automation & Inequality. http://www.bain.com/publications/articles/labor-2030-the-collision-of-demographics-automation-and-inequality.aspx

- An OECD policy brief "Automation and Independent Work in a Digital Age" forecasts that an average of 9% of jobs are at high risk for automation; these are jobs for which 70% of the tasks could be automated. http://www.oecd.org/employment/Policy%20brief%20-%20Automation%20and%20Independent%20Work%20in%20a%20Digital%20Economy.pdf.

- A study by the UK office of PWC analyzed the workforce in several countries. In terms of specific sectors, it found different degrees of risk for automation: transportation and storage (56%), manufacturing (46%) and wholesale and retail (44%), but lower in sectors like health and social work (17%). For specific countries, the total percentage of jobs at high risk of automation by the

early 2030s are U.S. (38%), Germany (35%), UK (30%) and Japan (21%). PWC, *Will robots steal our jobs? The potential impact of automation on the UK and other major economies, PWC UK Economic Outlook, March 2017, pg 30,* https://qz.com/941163/pwc-study-automation-risk-is-higher-for-american-jobs-than-for-workers-in-germany-the-uk-and-japan/

- Oxford University researchers Frey and Osborne project about 47% of total U.S. employment is at risk for automation in the 2013 report "The Future of Employment: How Susceptible are Jobs to Computerization?"
http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

New Jobs Created

There will be new jobs created. The Forrester study cited above, and others, identify some of these: Forrester forecasts in the report "The Future of White-Collar Work: Sharing Your Cubicle With Robots" states that 9% of overall jobs (8. 9 million) will be created.

The cognitive era will create new jobs, such as robot monitoring professionals, data scientists, automation specialists, and content curators: Forrester forecasts 8.9 million new jobs in the U.S. by 2025. Forrester forecasts Artificial intelligence (AI) will be a $47 billion industry by 2020. The top ten AI technologies are: natural language generation, speech recognition, virtual agents, machine learning platforms, AI optimized hardware, deep learning platforms, semantic technology, biometrics, image and video analysis, and robotic process automation.

Gartner forecasts that by 2020, 20% of businesses will have workers that monitor and guide neural networks. (See "The Disruptive Power of Artificial Intelligence" http://www.gartner.com/smarterwithgartner/the-disruptive-power-of-artificial-intelligence/)

IBM CEO asserts that ultimately AI will create jobs- including programmers, developers, and jobs that manage the relationship between AI and humans (See Business Insider, "IBM CEO says AI and automation will create jobs" http://www.businessinsider.com/ibm-ceo-says-ai-and-automation-will-create-jobs-2017-1)

Forrester Research, a marketing research company, projects that 15 million new jobs will created in the U.S. over the next decade, resulting from automation and artificial intelligence. The report explains that most new jobs will be in the fields of software, engineering, design, maintenance, support and training. Newly specialized lawyers will be needed to regulate the interaction between humans and robots, and new human resources positions in guiding staff as robots enter the workplace (See "This is how many U.S. jobs robots will create over the next 10 years", Jacob Passy for Marketwatch.com, 2017, http://www.marketwatch.com/story/this-is-how-many-us-jobs-robots-and-automation-will-create-over-the-next-10-years-2017-04-04)

Other future jobs include avatar designers, synthetic acting casting agents, roboticians, fluid interface engineers and programmable surface designers.

iii Developing low and very-low income housing options

Housing will remain a major human need. Housing insecurity brings a series of other needs. Communities around the country are and will use a variety of approaches to increase the stock of low and very low income housing, including:

- Rezoning to allow secondary living units on the property of single family homes and encouraging building on empty space in the yards around homes;
- Allowing a higher number of unrelated individuals to live in the same house;
- Encouraging sustainable, energy efficient, low cost construction of new units;
- Fostering neighborhood parking and driving regulations to dampen traffic from increased residents;
- Taxing unoccupied homes;
- Prohibiting or taxing AirBnb and related uses of rental properties or taxing that use to provide a fund to make other properties available;
- Require or incentivize landlords to accept housing vouchers;
- In addition to federally funded vouchers create state or locally funded vouchers;
  - This serves to help alleviate concentrations of poverty by giving voucher holders more options of where to live.
- Tax construction profits to add to the funds for low income housing development;
- When low cost solar and other sustainable energy production and storage becomes available, require or incentivize landlords to install this and pass the savings on to renters;
  - Or enable, through loans from utilities or others, to install this equipment; paying the loans off with the energy savings.
- Adjust regulation to support fast construction of safe, sustainable and energy efficient new developments that include very low-income housing;
- Support and encourage alternative construction, including 3D printing of housing components and repurposed materials, using modular and "tiny homes";
  - use of local 3D printing of home parts with quick on-site assembly will be available in many communities in the 2020s
- Use various combinations of these approaches to deconcentrate poverty.

iv The Guaranteed Basic Income

The guaranteed basic income, also called the Universal Basic Income, the Negative Income Tax, the Citizen's Income, and the Basic Income Guarantee, has been proposed by conservatives and liberals in the U.S. for decades. Richard Nixon proposed the Negative Income Tax.

Leading conservative Charles Murray supports basic income to help keep the United States competitive during labor market transformation to robotics and replace the current welfare program (see Murray, "A Guaranteed Income For Every American," Retrieved from: https://www.wsj.com/articles/a-guaranteed-income-for-every-american-1464969586).

Support by liberals and conservatives offered different rationales. For example, some conservatives, like Charles Murray, favor reduced government spending, eliminating duplicative programs and staff,

through an effective way to reduce poverty (see The Atlantic, "The Conservative Case for a Guaranteed Basic Income" 2014, https://www.theatlantic.com/politics/archive/2014/08/why-arent-reformicons-pushing-a-guaranteed-basic-income/375600/).

Basic income is presented as a way to make welfare programs more impactful, challenge ideas of safety nets, adapt to technological change and evolve the relationship between work, income and identity. See, Flowers, Andrew (Apr 25, 2016). *What Would Happen If We Just Gave People Money?* Retrieved from: http://fivethirtyeight.com/features/universal- basic-income/

Basic income experiments have taken place across the world. In Canada and Namibia, both of their GBI experiments saw a reduction in poverty and other positive impacts. The Canadian province Manitoba piloted basic, minimum income- referred to as "mincome"- in the mid-1970s. Although the program was removed after a few years, it yielded positive results including higher rates of remaining in school, lower rates of hospitalization, and hardly a change in work rates (see Surowiecki, James. "Money For All". *The New Yorker*. N.p., 2016. Web. 7 July 2016). The amount of money recipients received was determined by need (see Lum, Zi-Ann. "A Canadian City Once Eliminated Poverty And Nearly Everyone Forgot". *The Huffington Post*. N.p., 2016)

Finland is currently piloting a basic income, which aims to cut red tape and reduce poverty and unemployment. (See, The Guardian, "Finland trials basic income for Unemployed," https://www.theguardian.com/world/2017/jan/03/finland-trials-basic-income-for-unemployed.)

Hawaii has become the first state to pass a bill in its State Legislature to study a universal basic income, (UBI) bill HRC89. Hawaii has experienced job declines in their agricultural sector and service jobs being automated. The bill sets up a working group to explore options for a state UBI, involving members from State House and Senate, director of human services, Chamber of Commerce and University of Hawaii's Economic Research Organization. This group will develop policy recommendations. (See, Vox, "Hawaii is considering creating a universal basic income", https://www.vox.com/policy-and-politics/2017/6/15/15806870/hawaii-universal-basic-income and Business Insider, "Hawaii just became the first U.S. state to pass a bill supporting basic income" http://www.businessinsider.com/hawaii-basic-income-bill-2017-6).

There has been growing support in recent years as the forecasts for job loss to automation have grown. The projections for total job loss by roughly 2030 in the United States range from: 47% (Frey and Osborne), 38% (Price Waterhouse Cooper), to 9% (OECD).

While there are a range of levels for GBI payments that have been proposed e.g. $10,000 income plus $3,000 for health insurance, up to $32,000 yearly in Switzerland; the level used in Scenario 3 of these Human Services 2035 Scenarios is $12,000 yearly for adult citizens and $4,000 per child is proposed by Andrew Stern (see Stern, Andy and Lee Kravitz. *Raising The Floor: How A Universal Basic Income Can Renew Our Economy And Rebuild The American Dream*. 1st ed. New York: Public Affairs, 2016. Print.) That is $12,000 in 2015 dollars. We assume that that level would be adjusted for inflation to the year it is instigated and yearly therafter.

The costs of a GBI would be roughly 3 trillion yearly. Stern argues that an income of $12,000 for every adult, would cost between $1.75-$2.5 trillion in federal funds each year. The $4,000 for each person

under 18 would add another $296 billion. Stern's book proposed several ways to pay for the UBI. His list along with other approaches supported by other experts include:

- Ending all or many of the current 126 welfare programs[iv], which cost $700 billion in government and $300 billion state government
    - Eliminating food stamps (save $76 billion), housing assistance ($49 bil.), and EITC ($82 bil.)
- Adjusting long term retirement policy for future generations, but not changing Social Security for those who have already been contributing to the system
- Creating a new and more cost effect non-employer based healthcare system
- Some redirection of government spending and taxation
    - Raise revenue by eliminating all or some of the federal governments $1.2 trillion in tax expenditures; do away with reductions such as investment expenses, preferential treatment of capital gains, foreign taxes, charitable contributions, mortgage interest, and accelerated depreciation.
- Increased revenue from new sources
    - Consider a value added tax (VAT) of 5 to 10% on the consumption of goods and services, with all revenue funding basic income
- Implement a Financial Transaction Tax (FTT) (also known as the "Robin Hood Tax" and "Tobin Tax") a tax on financial transactions, such as a federal tax on stock sales
- Wealth tax, a levy on the total value of personal assets, including housing and real estate, cash, bank deposits, money funds, stocks, etc.
- Look at trimming expenditure on the federal budget, such as reducing military budget (current $600 million), farm subsidies ($20 billion), or subsidies to oil and gas companies ($30+ billion)
- Carbon Tax, which at a rate of $15/ton of CO_2 would bring $80 billion in annual revenue, or about $250 per U.S. resident
- A "common goods tax" such as the one placed on oil to fund the Alaska Permanent Fund

[v] Equity Rising

Equity is a value that has been driving movements for social, political and economic changes – particularly entering dialogues in recent decades and is likely to shape U.S. attitudes and policies in the future.

There are indicators of this trend toward equity, in official definitions and goals; for example, the Millennium Development Goals and the successor Sustainable Development Goals (SDGs) included health equity among the globally accepted audacious goals. (https://www.un.org/sustainabledevelopment/sustainable-development-goals/).

Another example is the federal government's health goals set with the "Healthy People" process. In the late 1990s, the nation set its Healthy People 2010 Objectives for the Nation, including two overarching goals: "increase quality and years of healthy life" and "eliminate health disparities." For 2020, these goals were amended to say "achieve health equity, eliminate disparities, and improve the health of all groups." The draft 2030 overarching goals include "eliminate health disparities, achieve health equity, and attain health literacy to improve the health and well-being of all."

Society has changed its mind on issues and humanity has evolved and matured with time. Now society is changing its mind about equity or fairness more broadly. In the 20th century the Civil Rights Movement had to overcome the segregation and discrimination of Jim Crow and the decades that followed the ending of slavery. Likewise, women's rights – voting, education, employment, and pay were put in place in the 20th century. More recently the relatively rapid establishment of gender rights and gay marriage was put in place. In these cases, the unfairness did not totally disappear. But it was no longer legally acceptable. **Drivers and present challenges to equity:**

Below are examples of drivers to the equity movement, notable movements and the role of public policy. These are examples of inequities which are increasing in severity and impact, drawing attention and action to address them.

- Health inequality
    A 2017 report by Health Affairs entitled "The United States Leads Other Nations In Differences By Income in Perceptions of Health and Health Care" (See: https://www.healthaffairs.org/doi/abs/10.1377/hlthaff.2017.0006) which found that health divides between the highest and lowest income populations in the United States are some of the worst in the world.

- Wealth and income disparity
    Wealth inequality is worsening in the United States. According to a 2017 article in the Washington Post "the richest 1 percent now owns more of the country's wealth than at any time in the past 50 years". See more: https://www.washingtonpost.com/news/wonk/wp/2017/12/06/the-richest-1-percent-now-owns-more-of-the-countrys-wealth-than-at-any-time-in-the-past-50-years/?noredirect=on&utm_term=.c5d137c95748.

    Wealth and income disparity are even more marked between racial groups in the United States. The 2018 article "The Racial Wealth Gap: Addressing America's Most Pressing Epidemic", published on Forbes.com, identifies the problem of racial wealth inequity and sites the following statistics:

    > For every $100 in white family wealth, black families hold just $5.04 (see The New York Times, *Whites Have Huge Wealth Edge Over Blacks (but Don't Know It),* 2017, https://www.nytimes.com/interactive/2017/09/18/upshot/black-white-wealth-gap-perceptions.html).

    Higher than one in four black household have zero or negative net worth, in contrast to the less than one in ten white families without wealth or net worth (see The Economic Policy Institute, *The Racial wealth gap: How African-Americans have been shortchanged out of the materials to build wealth*, 2017, https://www.epi.org/blog/the-racial-wealth-gap-how-african-americans-have-been-shortchanged-out-of-the-materials-to-build-wealth).

- Incarceration Rates

    The Civil Rights organization NAACP has a "Criminal Justice Fact Sheet" (http://www.naacp.org/criminal-justice-fact-sheet/) which details incarceration trends in America, stating:

    Hispanics and African Americans make up around 32% of the US population but comprised 56% of all incarcerated people in 2015

    African Americans and whites use drugs at similar rates, but the imprisonment rate for African Americans for drug charges is nearly 6 times that of whites

See more: University of San Francisco, *The Importance of Social Equity in Public Administration*, https://onlinempadegree.usfca.edu/news-resources/infographics/the-importance-of-social-equity-in-public-administration/

Examples of Current Equity Movements:

Black Lives Matter is a national movement with more than 30 chapters which utilized social media to leverage political advocacy promoting racial justice and action against violence inflicted upon African American communities. See more: https://blacklivesmatter.com/about/herstory/

The "Me Too" is a national movement which has gained momentum in supporting survivors of sexual assault and promoting the end of sexual violence. See more: https://metoomvmt.org/

The Dreamers Movement and United We Dream movements support immigrant rights and have had success in influencing national policy. See more: https://unitedwedream.org/

Equity in Public Policy and Social Services:

Equity is an important value within public policy and social services delivery. Many local governments are the "first responders", so to speak, to meet the needs of community members (see more: Governance Matters, Local Government: Social Equity 'First Responders' http://journals.sagepub.com/doi/pdf/10.1177/0160323X17720268).

Many of the states and local Human and Social Service providers that participated in the Human Progress and Human Services 2035 exhibited different ways of embracing and integrating equity as a value into service delivery.

Human services job loss to automation

For most jobs, there are tasks that can be automated rather than the whole job. For human services the tasks most like to be automated include:

o   Most levels of human service workers will have their work on eligibility dramatically reduced by automation of information gathering and eligibility determination.
o   Low cost language translation, reflecting cultural, religious, and personal sensitivities of the person/client will be instantly available for any language between 2020 and 2025.

Specific human service job categories will have more of their tasks automated during the 2020s leading to reductions in jobs in that category. Using estimates, based on the above references, particularly from Osbourne and Frey, and McKinsey, led us to this higher bound estimate of human service job loss:

o   80% reduction of secretaries, administrative assistants, receptionists and information clerks (where these were not already reduced, as many human service agencies did in the 2010s)
o   50% reduction of accountants and auditors
o   10% reduction of personal and home care aides (Many of the physical tasks required by personal and home care aides, such as lifting and cleaning patients, will remain difficult and costly to automate) (though the Japanese are providing leadership in developing personal care robots; their "Robear" robot can perform some of the tasks of home care aids now).
o   10% reduction of social workers – (though many Social Worker tasks will be automated or accelerated including: Home risk assessment - periodic physical inspection is needed but intermittent inspection can be done by smart phone and from data from smart home systems; Generation of case records and reports will be expedited or fully automated; Some assessments of a child or of family conditions can be done by interviews by intelligent agents that generate recommendations or prescriptions that are ultimately approved by the social worker or physician/licensed prescriber; Virtual reality and holographic advances allow social workers to interview, interact, counsel without traveling once rapport is established; Assessment of physical abuse on the skin can be assessed by deep learning algorithms reviewing images of skin bruises taken by a smart phone; Genetic and epigenetic testing will be done routinely on children and considered in assessments;   Repeated blood and genetic testing will allow identification of some types epigenetic changes caused by adverse childhood events.
o   50% reduction of human service assistants – (and secretarial and administrative tasks will be automated; use of self-driving cars will perform transportation tasks; though human service assistants or others will still perform the "escort" role or tasks for those who are frailer or persons with disabilities).