Jefferson County Progress and Human Services 2035 Scenarios

By
The Jefferson County Department of Human Services
and
the Institute for Alternative Futures,

Supported

by the Kresge Foundation

May 17l 2017

Table of Contents

Introduction

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

These preliminary scenarios will be used at a scenario workshop hosted by the Jefferson County Department of Human Services held at Community First Foundation, in the "Change maker" Room on May 16, 2017, where participants will consider potential human service goals and strategies for the future, as well as implications for the "robustness" of their current strategies considering the various scenarios. Participants will also develop recommendations.

These Jefferson County 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 is also developing a set of national human service scenarios. These national scenarios and these Jefferson County scenarios will allow human service leaders, practitioners and partners to consider their own work in the context of these alternative futures, to challenge their own 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.

Methodology

IAF partnered with United Way of the Mid-South and community partners to develop the scenarios using the "Aspirational Futures" approach (see **Figure 1** below) which IAF has evolved over the last three decades. This technique develops forecasts and scenarios in three zones:

- A "zone of conventional expectation" reflecting the extrapolation of known trends, the expectable future (scenario 1);
- A "zone of growing desperation" which presents a set of plausible challenges that an organization or field may face, a challenging future (scenario 2); and

- A “zone of high aspiration” in which a critical mass of stakeholders pursues visionary strategies and achieves surprising success (scenarios 3 and 4).

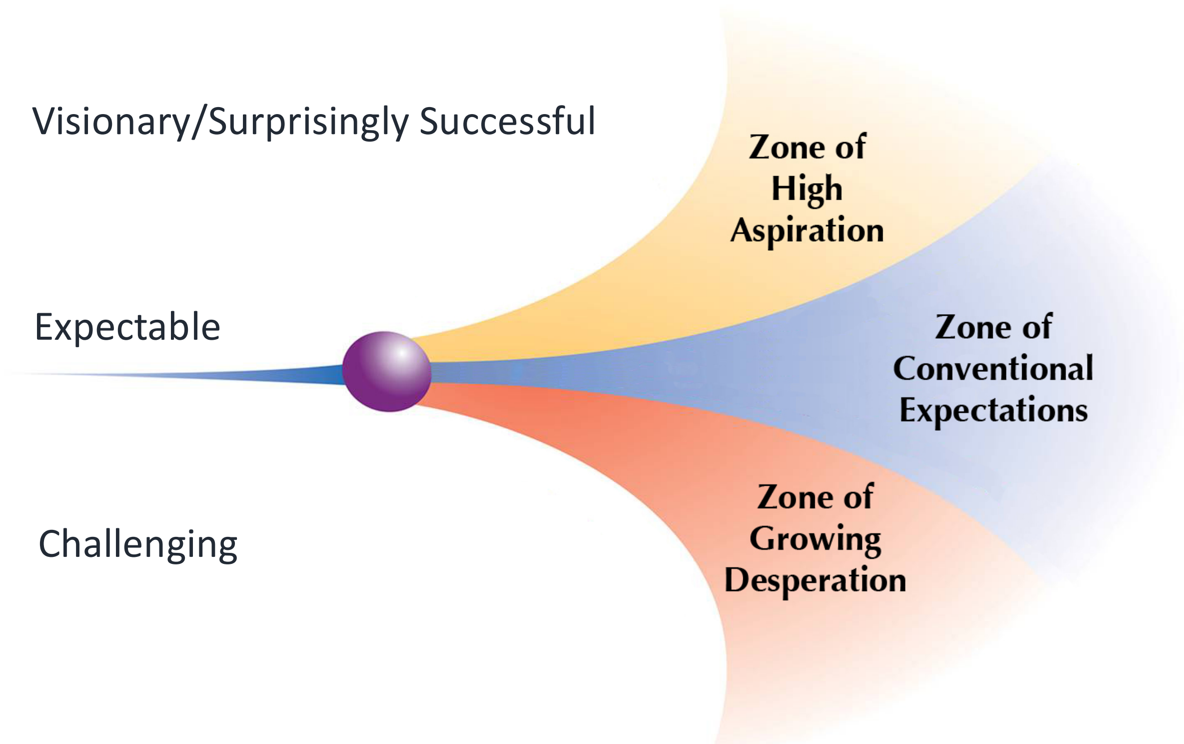

Figure 1: IAF’s “Aspirational Futures” Technique

The Jefferson County Human Progress and Human Services 2035 scenarios presented on the following pages were developed based on a review of human services programs and activities, plans and documents, and interviews with human service providers and partners. We explored “driving forces” and preliminary forecasts for the community, the economy, employment, the environment, technology, as well as trends within specific areas of human services (aging, behavioral health, children youth and family, disability, food and nutrition, housing and homelessness, income supports). After two days of forecasting meetings with 65 human service professionals, 19 human service and community leaders assembled on April 21 to review the preliminary forecasts and develop the distinct scenarios presented below. The scenarios presented below will be used at the May 16th Scenario Workshop.

The first scenario is “expectable” or “most likely” given current trends. The second is challenging and considers some key things that “could go wrong” (including another great recession, flooding, funding cuts). The third and fourth are visionary. The third explores human progress in attitudes, technology, and policy – particularly a guaranteed annual income. The fourth explores surprisingly successful employment, technology, and policies. As you read these consider how likely each is. And consider how preferable each is – which would you want to take place.

Jefferson County Human Progress and Human Services 2035 Scenarios

Scenario 1: The Good, the Bad and the Ugly

The U.S. economy had slow economic growth, at 1 to 2% each year between 2015 to 2030, with downturns for recessions and higher growth in the years just after the recessions. Leading up to 2035, Colorado maintained a growth rate slightly higher than the U.S. national average. Employment continued to transform. Full time employment in "jobs" was being replaced for many workers by piece work or consulting on the "gig" economy. For workers in jobs, the federal minimum wage rose slowly. Colorado had its $12.00 an hour minimum wage in place by 2020, and adjusted for cost of living onward using the Consumer Price Index for Colorado. In the U.S. and Colorado structural unemployment grew significantly, driven by job loss to automation and cognitive computing. Jobs in manufacturing, retail trade and fast services restaurants were increasingly automated; but so were knowledge workers, middle and high income jobs including accountants, lawyers, some physicians, and investment advisers. This led to a loss of 6% of jobs by 2025[1] and significantly more by 2030. Population increased due to net migration and natural increase, with Jefferson County population growth averaging about 1.5% each year through 2025. The elderly population- those aged over 65 and those aged over 85- increased dramatically. Human services overall[i] became more efficient and productive, integrated and collaborative - internally and externally. There were significant decreases in spending during the Trump Administration combined with the growth of block grants. Funding rebounded in the 2020s. The federal government encouraged data integration to track recipients and eligibility. Income support programs added more stringent work requirements, even as job loss to automation was affecting Jefferson County, making it more difficult to find employment. Regulations across different sectors – including human services - were adjusted to allow more flexibility in how people work, live and play. As the gig economy increased, payment protections for gig workers and independent contractors were strengthened. Education practices adjusted to better train students for jobs that would not be automated. Colorado continued as a leader in implementing two and multi-generational approaches to human services. The JeffCo Prosperity Project established successful collaboration with Jefferson County Dept. of Human Services, schools, businesses and community partners. This positively impacted the community and alleviated or prevented some cyclical poverty. The Prosperity Project proved crucial during periods of funding cuts for human services, as the partnerships allowed for better resource sharing and impact. As technology advanced and people connect virtually, Jefferson County was intentional about avoiding isolation and not losing human touch and interaction. Human services worked hard in integrated, collaborative activities and developed a more generalized staff able to break down barriers across sector.

Specific human service areas in Scenario 1

In Jefferson County, the 65 and older population grew to 115,200 by 2030[1]. The fastest growing segment of the **senior population** was those over 85. Diabetes and Alzheimer's in seniors across the country worsened. Alzheimer's impacts 1 in 10 adults over the age of 65[2]. By 2035, around 13,200 seniors had Alzheimer's in Jefferson County. A considerable portion of Jefferson County is rural and the needs of elders aging in place in the rural and mountainous areas of the County posed challenges, including difficulty accessing services and social isolation. Public transportation remained an issue as, despite need especially in rural areas, bus routes remained thin. The Senior Resource Center provided some transportation for elders, but this type of escort service required training and time commitments that could not always be accomplished. Some of these door-to-door transportation assistance positions were filled by elder volunteers. There was a significant workforce deficit for elderly caregivers. As millennials became a larger share of the overall workforce, there were efforts to promote caring for elders as desirable positions despite the difficulty of the work and the low pay. The situation was further complicated as many baby boomers had not saved enough and faced complications with health care, long term care, and disability insurance.
Jefferson County increased their number of senior centers and integrated senior services into libraries, schools, churches, cafes, and other settings. The adult day care centers in the County became more popular and expanded by linking with schools, churches and neighborhoods. There are also some that are run by the government and are connected to existing facilities such as community centers. There was a focus on providing seniors with meaning and relationships. By 2035, schools have a much greater role within the community and for elders. Schools house community clinics that hosted both school children and elders. There are often large numbers of retired people at the school participating in running school gardens and greenhouses, often using new technologies such as hydroponics. These programs have physical and psychological benefit. This helped to consolidate funding and resources, which had been dwindling for both schools and adult services.
Informal group homes increased. Communities developed Naturally Occurring Retirement Communities, NORCS, where the goal is for seniors to be able to age in place. Residents pay a membership fee to participate, and this went partially towards paying a service coordinator who served as a community advocate, identifying contacts and connections. Zoning changed to allow accessory dwelling units (ADU) and more group living. People began to build ADUs onto their homes and properties, then elders moved into the smaller unit to age in place. Villages and informal group homes were shaped by technology as Baby Boomer and their predecessors spent more time in virtual reality in the 2020s. Marijuana tax revenue was used as a resource for helping low income populations, including helping seniors access and use newer technologies.

Behavioral health needs encompass emergency or crisis management, wellness programs, treating mental illness, and behaviors detrimental to overall health and relationships such as substance abuse or gambling addiction. Services include counseling and transitional services. Colorado focused on integrating physical and behavioral health. Receiving behavioral health services generally became less stigmatized as research showed it to be cost effective and people became more accepting of it. Community mental health centers took on a larger load of treating those in need. Increased use of

---

[1] The over 65 population in Colorado increased from 555,000 in 2010 to more than 1.2 million by 2030[1], increasing by 125% Colorado Department of Human Services and Commission on Aging, *Colorado Aging Framework: A guide for Policymakers, Providers, and Others for Aging Well in Colorado.* This figure determined through applying Jefferson County's share of the state population at 9.6%

[2] Alzheimer's Association, *2016 Alzheimer's Disease Facts and Figures*, http://www.alz.org/facts/

primary physicians focused on behavioral health needs, which led to improved diagnoses and lowered the number of incorrect diagnosis.

Despite these improvements, behavioral health services decreased periodically due to budget cuts, even while the evidence accrued to show these services reduce cost in the long run. Yet the need for behavioral health services increased due to the stress and trauma of economic downturn and natural disasters, but the availability diminished year after year. Abuse of substances such as opioids increased with growing harm to individuals, families and communities. Jefferson County used predictive analytics and data sharing to send alerts across the health system when someone was flagged as obtaining too many prescriptions.

Behavioral health prevention included reducing poverty and its effects, and creating physical and social environments needed to promote good health. Despite prevention efforts pursued through the 2020s, the poverty rate nationally increased in pocketed areas. Jefferson County's poverty rate was generally lower than the state, but this poverty was concentrated in certain neighborhoods. Children in those high poverty neighborhoods continued to grow up in environments that contribute to behavioral health problems. Jefferson County worked to create a continuum of rehab and restorative services.

After "virtual visits" and AI councilors had been proven effective and were well received, many school clinics and counseling services were operated with little or no on-site human provider. Benefits of these tools included greater perceived privacy and anonymity; the generations of digital natives (born after 1985) generally preferred these tools.

Technology was initially used towards improved diagnoses; but then advanced to be able to provide counseling and care. This included multilingual avatars and apps that provide counseling covered by certain health care providers. These helped bring care to individuals that were more isolated, such as those living in rural areas of the County. In addition to aiding individuals, these behavioral health apps assisted family support systems and communities or neighborhoods. However, these digital counselors did not replace human counselors for more challenging behavioral health issues (e.g. schizophrenia) and the balance between technology and human care is customized for each person.

Child, youth and family services include programs for child care, child protective services and foster care, domestic and family violence prevention and aid, kinship support, adult protective services, and juvenile justice programs. Drivers of the need for services such as substance abuse, domestic violence, behavioral health issues, juvenile delinquency and generational poverty have been reduced slightly over the period to 2035, still persist. Other changes including more multigenerational homes and economic shifts such as the rise of the 'gig' economy and job loss to automation also shaped the need for child and family services. State and County funding increased for some of the services that were reduced or dropped during the Trump administration and community efforts partially filled the void. Funding rebounded in the 2020s, with periodic fluctuation. Child and family services changed in their delivery through increased use of cognitive computing, digital counselors (often accessed via mobile devices) and some additional task automation. Yet fundamentally, while delivery is more effective and efficient, agencies struggled to meet the need. Substance abuse grew as a problem and was worsened by gaps in access to primary and behavioral health care. Jefferson County responded by working to prevent substance abuse and address poverty as a root cause of child welfare problems.

By the 2030s, Jefferson County had greatly increased the instances of placement with kin for children removed from their homes. This included psychological and biological kin.

Justice programs were impacted as self-driving cars reduced tickets and DUIs. This impacted county court, and those persons and financial resources were appropriated. This influenced juvenile justice services as there were fewer traffic cases to process and some resources were redirected to juvenile justice programs.

Outcomes for youth were also through parenting classes that are evidence informed and culturally appropriate. Parents participating in these were incentivized by a small reduction in County taxes for completing the classes.

Data became more organized and in the 2020s. Jefferson County integrated their own data within the agency, shared data securely with relevant stakeholders. ICPC, the Interstate Compact for Placement and Child Welfare, built a national data system for child welfare. Child welfare workers were able to access crime data bases more directly rather than going through the sheriff or another third party. A Colorado data base which provided resources for elders and those with disabilities was created. Police were trained in detecting elder abuse, and partnered with human services and the community. Given this enhanced community attention and family supports and advances in home technology, more adults could live safely in their own homes longer.

During periods of increased foster care needs, private partnerships became much more important to continue to have children live in family settings, further reducing congregate care. To unburden government programs, local non-profits more frequently handled lower risk cases. Still, some foster children moved from family to family until they age out of the program, but Jefferson County worked to provide stable housing, educational and employment supports. Studies continued to show that a high proportion of foster children have lower earnings, poorer health status and less stable family lives than children who did not go through foster care. The CFCP expanded its foster care network.

There was an increased need for bilingual services; this was addressed between 2020 and 2025 as low cost or free language translation apps for most languages were used by child and family service providers.

Programs for **persons with disabilities** include supportive housing, education, habilitation and rehabilitation, personal assistance, assistive technology, employment supports, temporary and long-term relief for families of persons with disabilities, emergency response systems, and home and vehicle modification assistance. Funding varied with the fiscal health of the national and state economy, with reductions particularly around recessions. Generally, disability services grew more focused, benefit levels were reduced, eligibility requirements stiffened, even while disability increased. In 2022, the Social Security Disability Insurance (SSDI) trust fund reduced benefit levels, and raised eligibility requirements and increased barriers to access.

Disability services evolved as technology became more advanced, including self-driving cars; intelligent digital agents; 3D printing of smart prosthetics; home monitoring and home care robots.

Education adjusted in different ways across Jefferson County to meet the needs of children with disabilities. School funds continued to be under strict state mandates, which limited expenditures for disabilities and schools. Disability determinations increased and there would have been more diagnoses if all children on the permanently long waiting list for screening had been seen. Families looked for more choices in education and other settings. Care varied greatly between schools across Jefferson County.

By 2030, there were over 7,400 people in the County with some form of complication related to diabetes[3]; typically, visual impairment, renal failure, or leg amputation. Disabilities services demand also increased as the population of the County aged. Where possible, Colorado moved towards individual-directed services, coordinated care, consolidated waivers, and changed entry points for eligibility.

Employment in Metro Denver was affected by automation and cognitive computing. Forecasts had called for growth; however, these forecasts were disrupted as jobs across many sectors were partially or

---

[3] Institute for Alternative Futures, http://www.altfutures.org/pubs/diabetes2030/COLORADODataSheet.pdf
Applying Jefferson County share of Colorado population

fully automated. Jefferson County typically had low unemployment. For much of the 2010s the unemployment rate in the County was 3% but that was not maintained. Job loss was felt during the Trump administration and continued from there. By the end of the 2020s the unemployment rate in the County was moderately high in comparison with the rest of the country. There was some job creation due to innovation and technology advances, but an overall a growing net loss. Income support programs enhanced their requirements for having work or active job seeking; even as work opportunities were decreasing.

Jefferson County Human Services employment services and the American Job Center worked with employers to help them estimate their future needs and ensured that the training was preparing the person for a job with longer term prospects. Jefferson County focused on educating young people towards finding employment in entry level, mid-skill jobs which had been a gap in employment. This was important as Colorado had many young people migrating into the area. Some high schools began training students for technical and otherwise specialized careers, and vocational schools increased. More charter schools focused on science and technology, while public schools became more technical and vocational. Career technology programs centralized, and worked primarily with community colleges, linking career advisory groups, employers, and others. Youth apprentice programs became more common and proved beneficial. Jefferson County explored senior apprenticeship programs, but with less support and success. Higher education shifted towards encouraging degrees and pathways that led to viable employment. There were more work programs which alleviated student debt for employment. Generation Z, and many millennials, contributed to the economy in different ways as they were more involved in the gig economy and offered many technology based skills and capacities.

The aging population impacted the economy with housing preferences, healthcare spending, and demands for services and goods. Jefferson County focused on more employment options for the elderly, or “mature” job seekers. Jefferson County put a lot of energy into counseling more mature workers towards career paths. This was partially successful, but met obstacles as more jobs became automated. As the 85 and older population of Jefferson County increased, there were more caregivers – formal and informal- many of whom were seniors themselves.

Marijuana was a growth sector of jobs, and increased the cost of commercial buildings as many more were rented for growing centers. Some smaller localities in the County saw a greater impact on their overall revenue from marijuana sales. More states legalized marijuana which took away some of Colorado’s competitive advantage, and some marijuana growth competed with food production for land and resources. Colorado encouraged some higher technology agriculture, including for marijuana growth, which provided some jobs.

Housing remained at the forefront of issues for Jefferson County. The high cost of housing and continued net migration contributed to more homelessness. Jefferson County was intentional and strategic about protecting housing and homeless funding despite pressures. The 17 affordable multi-unit housing properties in Jefferson County remained in high demand. The need for Section 8 housing vouchers outpaced availability and every time the lottery was opened, many residents applied. There was no growth in vouchers in Jefferson County during the 2020s, despite increasing need.

A growing group among the homeless were single elderly and those with disabilities. There was an even greater influx of family homelessness; in 2016, around 77% of the homeless population in Jefferson County had children and this increased across time. There were more ‘tent cities’ around Jefferson County. These were often viewed negatively by the rest of the community. The public-school system, already strained by overcrowded schools and a shortage of teachers, saw an increasing number of their students being homeless. The schools sometimes did not have the behavioral health and other services needed to help these children succeed academically. Another contributing factor to increasing

homelessness was the continuing opioid epidemic. This grew as a problem and there were not adequate treatment facilities.
More single persons and couples moved in with an elderly homeowner to trade service as caregiver for the elderly homeowner in exchange for a place to live. Some Jefferson County organizations facilitated these arrangements. This was especially helpful as the aging population grew dramatically in the Denver region.
Jefferson County took measures to improve housing availability[iii]. They encouraged sustainable and low cost housing, changing zoning to all secondary units in homes or construction of small homes on the property; encouraging the use of appropriate 3D printing and related construction approaches, creating local voucher programs and incentivizing landlords to accept vouchers.   The County adjusted the threshold for being able to sue a developer over construction issues.   Jefferson County worked to make their available services more visible and helped eligible people apply for and make use of services.

Income support programs in Jefferson County served people through supplying cash assistance; these programs include temporary cash assistance, food, child care and medical assistance. The Program Eligibility and Application Kit (PEAK) online system became more advanced and effective with better data sharing.
All income support programs fluctuated due to budget and need. Temporary Assistance for Needy Families (TANF) evolved during varying periods of economic downturn and environmental disruption throughout the 2020s and early 2030s. TANF refocused on empowering TANF recipients with education and skills training. There was an increase of concurrent enrollment programs with high schools and community colleges. This training considered which jobs would continue and expand versus being lost to automation in the County and increased skills needed for consulting and piece work on the gig economy.
Jefferson County's increased number of seniors impacted the state old age pension (OAP) program. Due to increased demand, the eligibility for the program was tightened to only being eligible at age 65 rather than age 60, however the funds received remain stagnant despite changes in cost of living.
Food and nutrition income support programs, such as SNAP evolved. SNAP moved to a block grant system, like TANF. The budget passed under the Trump administration hurt some nutrition programs, such as school meals and early childhood food. Cuts to programs like WIC decreased the number of places, such as child care centers, where low income children receive daily meals. Fewer school children received school meals because of these limitations and higher barriers to qualifying. Instances of high enrollment in SNAP remained concentrated in certain areas of the County. Health and human service agencies began coordinating their care and services with SNAP; as did state and federal programs. Community food banks and soup kitchens also checked with their customers to ensure that they were enrolled in SNAP. Some grant funding from the Food and Nutrition Service in the Food and Drug Administration and others to support community growing of fresh fruits and vegetables helped to fill the void left with SNAP reductions.
SNAP's Employment and Training programs worked to operate as a team with other employment programs. As with TANF, SNAP benefits became conditional on proof of actively looking for work or participating in job training, and benefits were shortened. Employment programs expanded in Jefferson County but not all people were offered a spot in the programs and some who were offered jobs did not have the needed transportation.
Child care support was modified so that payments from non-custodial to custodial parent went directly to the custodial parent and receiving these funds does not impact TANF or food assistance benefits.

Scenario 2: The Dark Side of the Moon

The need for human services grew, even though funding did not. The economy overall grew slowly for most of the two decades to 2035, with periodic recessions. The Great Recession of 2023, was particularly challenging to employment, tax receipts, and human service spending. The digitization of life continued for work and play – continuing the movement from the internet, social media and smart phones to virtual reality, artificial intelligence and cognitive computing. This improved many aspects of life and learning. However, as technology advanced, there was less face to face interaction lessening interpersonal skills and worsening isolation. Job loss to automation continued even through the Great Recession. The economic downturns, job loss and decreased income support led to increased self-sufficiency efforts, particularly family and community food production as well as the trading of services and other resources in low income communities. Schools in the rural areas and other employers provided on-site housing to their underpaid workers.

Homelessness grew as a major issue in Jefferson County. This was driven by many factors, including job loss, more immigration into the area (related to marijuana or otherwise) and more veterans suffering PTSD and unable to find work.

Climate change continued to hurt Jefferson County. Hotter temperatures; droughts and flooding; longer periods of mosquito and other insects spreading of disease; costly severe fires; periodic threats to water in the County made it difficult, particularly for low income families, the elderly and disabled. Water scarcity and 'water wars' impacted Colorado and areas across the country. There was rationing of water, and water that was available was very expensive and there were policy changes at the state level that prohibited selling water from the mountains to nearby areas.

There were cuts for human services at the federal, state and County level. Foundations and faith based organizations worked with government and business entities to help fill the gap left with governmental cuts. There was increased collaboration and the 'no wrong door' approach expanded out of necessity. There was some program prioritization as cuts occurred; the programs with the best outcomes and that were most sustainable were identified and continued, while others were not.

Human service organizations were forced to "do more with less;" to automate what they could; to collaborate to ensure that the funds and services provided were deployed most effectively for individual and family's unique needs; to reinforce their overworked and underpaid employees on the importance of their mission. Overall about 15% of human service jobs[iv] in Jefferson County were lost to automation and cognitive computing in the 2020s. Some members of the human services workforce who had experienced recurring challenges in their decades of work offered leadership and hope to fellow employees.

Specific human service areas in Scenario 2

The aging wave hit Jefferson County and impacted **aging services** Cases of Alzheimer's and dementia increased in number as the Baby Boomer population ages. Diabetes related problems increased across seniors. Black and Hispanic populations were disproportionately impacted. There were problems with isolation, and many elders with these conditions living alone. Isolation increases during extreme weather events – the heat, drought, flooding that periodically occurred. As more elders had no family or friends nearby, and many seniors were unable to access care and services. This was particularly challenging in the rural areas. Transportation systems were unable to meet the increased need. In instances where people wanted to move from the rural areas, they often could not afford the move.

Baby boomers turned to healthier aging as it grew clearer in the 2020s that funding for nursing and assisted living programs could not be sustained., state and local government budgets were cut, particularly during the bleak years from 2024-2027. Many cities and counties had to close their senior centers and curtail meals on wheels and other nutrition programs.
The affluent could afford smart homes, medical cures for Alzheimer's and Diabetes, and high tech and high touch home care, including increasingly effective home care robots that took care of the elderly and younger family members. However, those with low incomes were often unable to access these new technologies, and relied on familial relations for care when they could. The 2023 economic downturn disrupted families as some family members moved away for employment. When family members did fill the role of caregivers, there were great emotional, financial, and physical impacts.
Through the 2020s, the family members available to act as care givers, dramatically dropped. Each senior had an average of 7 family and close friends who could aid them in 2015. This decreased to four to each senior. Some people had to care for multiple family members, and this strained their employment. Workers in the aging services area (like other Human Service workers) who did not lose their jobs went for long periods without raises in their already low paying jobs.
In extreme cases of despair, assisted suicide became more common practice; particularly for depressed or infirmed elderly in instances where their family and community connections had dissolved.

Behavioral health services decreased dramatically due to budget cuts within all states even while the evidence accrued to show these services reduced cost in the long run. The need for behavioral health services increased due to the stress and trauma of economic downturn and job loss, housing problems and increased homelessness, more substance use and abuse, and natural disasters. Despite evidence from demonstration projects around the country showing that behavioral health can counter the epidemic of drugs, funding became scarcer during the 2020s. More prescription medication was given via telehealth sessions and so there was a stronger reliance on predictive analytics. There were significant technology advances in behavioral health. Behavioral health expert systems, delivered via smart phones, did become very effective by the mid- 2020s but the highest quality apps are only available to the affluent or those with expensive health insurance.
Colorado and Jefferson County rates of incarceration remained lower than the US average and many other states, yet the need for behavioral health services in jail was high. However, the Department of Corrections budget was cut, while more people were being incarcerated. Prisons were increasingly privatized. Jails and prisons failed to offer rehabilitation programs for released inmates, and incarcerated continued to have a high rate of recidivism after they are released.

Many stresses compounded the need for **family and child services**. Increased substance use and abuse, poverty, racial disparities, extreme weather events, the 2017-2021 federal cuts to human services. As with the 2008 Recession, during the 2023 Recession state funds remained at a flat rate; however, there was increased need without increased funds.
More children entered the welfare and foster system and there was difficulty meeting the need. Children remained in foster care longer and court cases took longer. Child protective service workers became increasingly overworked and strained through the 2020s. Social service providers used automation of tasks to deal with staff cuts, and by the late 2020s there were fewer people to meet directly with children and families.
Opioid and heroin addiction increased throughout the 2020s, and became a major contributing factor harming children. As people were excluded from the formal economy, more turned to the informal economy including self-sufficiency, as well as criminal activities for survival. This impacted both juveniles and adults.

Despite an increasing elderly population, funding for adult protective services decreased over these years as well. Fewer cases were processed and handled in a timely manner due to programs being understaffed, leaving vulnerable adults at risk.
Despite these challenges, there were instances where neighborhood and community networks– at times organized by faith based and community organizations- stepped up their help with child care, sharing of meals and resources, and at times providing shelter.

Budget stress brought about increases in what employers and employees pay for **disability** payroll taxes, reductions in federal Social Security Disability Insurance (SSDI) payment levels, and tougher eligibility standards. When a family member's benefits were reduced, it impacted the entire home. However, those with more severe disabilities, such as cognitive impairments, suffered less reduction. These government programs remained supportive services rather than comprehensive services; family remained primary care givers. Sometimes the family members that were in the caregiver role are aging and/or have their own disabilities, which causes an additional strain. Though there were intermittent additional support and aid for families with the greatest disability related needs.
The percentage of people with disabilities grew, fueled by higher structural unemployment, more severe weather events, and growing chronic disease (particularly diabetes and Alzheimer's); in addition to the major economic recession in 2023.
Increasingly more family members entered the positions of caregivers due to limited resources.
Public transportation systems were not able to meet the needs of persons with disabilities, especially those living alone or in rural areas of the County.
Eligibility for disability benefits was tightened for most programs. Fewer doctors would accept Medicaid in the 2020s and supportive services diminished as the reimbursement rates did not cover the costs of transportation and other services. Many care workers and care givers relied on Medicaid themselves. There were technological and medical advances that removed disabilities or lessened their impact, but Medicaid did not cover them and most low income people could not afford them.

Periods of job growth leading up to the 2020s were followed by **economic recession, job loss** to automation, and cuts to human service job training programs that resulted from the recession. The economy overall grew slowly for most of the two decades to 2035, with periodic recessions. The big one, the Great Recession of 2023, was particularly challenging to employment, inflation, tax receipts, and human service spending. Jobs were cut as sales and business declined. The construction industry was greatly hurt during the recession, and the housing market was hurt with increased foreclosures. Some Jefferson County businesses closed during the Great Recession. Government positions, which had been the third largest sector in the County, were reduced due to budget restrictions and automation. As unemployment rose, people turned to self-sufficiency options – particularly food production, as well as the informal economy.
The Jefferson County area was oversaturated with workers and did not have adequate jobs available, or jobs that met the income needs and expectations of the population. As with the 2008 Recession, the 2023 Recession impacted those aged 14-26 the hardest. And some in this age group had the burden of excessive student loans.
Another challenge faced was a shortage of teachers, driven both by increased school populations and declining number of young professionals entering the teaching field. During economic downturn, the public schools received less funding which added to the burden. Regarding education and workforce preparation, Colorado was continually stuck due to Tabor and other regulations. Given the inability to give raises and the low pay to begin with, some employers began offering housing on-site, particularly some rural schools.

In the 2010s, 30% of **homeless** in Jefferson County cited job loss as the reason for their homelessness; this increased dramatically as a driver during the Great Recession and because of ongoing job loss to automation. Jefferson County continued to have one of the largest homeless populations in the Denver metro area. Other contributing factors to housing instability were severe cost burden for rent, domestic violence, substance abuse, unemployment and disabilities. Each of these increased in the 2020s. During the Trump Administration, funding to housing services was cut. The Great Recession of 2023 increased the needs even while there were more cuts. Large numbers of people lost their homes while human services had little to offer in response. Because of the recession, residential construction and other construction drastically slowed. During periods of economic rebound, the construction was not enough to meet housing need and was too expensive for many.

As homeless populations soared, spending was reduced, or eliminated. Churches, synagogues, mosques and community groups repeatedly stepped up their efforts to temporarily meet some of the need, providing shelter and meals.

Due to funding cuts, Jefferson County Housing Authority had to reduce the amount of Section 8 vouchers available. From 2013 to 2015, 100 vouchers were cut and this trend gradually continued. The lottery for housing opened much less frequently despite feedback from residents asking for assistance. Many residents were forced into overcrowded conditions. Some residents left the JCHA Consortium region for more affordable areas, but many were unable to relocate. JCHA, Arvada Housing and West Housing Solutions – along with others- remained committed to serving the population of Jefferson County but were constrained by funding limitations and cuts.

Some well-intentioned efforts, such as building tiny homes and secondary units, had unintended consequences. These included overcrowding of schools and neighborhoods, which was already occurring due to more schools closing. Crime rates increased. Many neighbors resisted these new units, or were angry about the influx of homeless in the area. Many efforts were unable to be piloted due to zoning restrictions.

As community revitalization funds and programs were cut, blight began or increased in areas across the County. This started to erode the fabric of a community.

TANF, and other **income support programs**, experienced greater cuts and limitations- and some were fully eliminated- particularly under the Trump Administration and subsequent conservative political leadership. TANF restrictions worsened during the 2020s as the job categories TANF recipients could seek were narrowed, limiting the ability of TANF recipients to find employment. Many families were less able to meet their basic needs, and resorted to extreme measures, did without, or found alternative sources. For many families, the only means available in the 2020s came through the informal or underground economy as neither paid work nor adequate government assistance could be found. Federal TANF funds were cut drastically, and Colorado further limited the time and dollar amount of cash benefits. This disproportionately hurt women and children as single, mother-led households became more common. Harsh and ineffective penalties were continued – for example, when noncustodial parents did not pay their child support they were incarcerated, often leading to the loss of their job and diminished ability to pay any child support.

The old age pension program was overwhelmed with need as the aging population drastically increased. The eligibility standards were tightened and the benefit levels were reduced.

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

In response to cuts and other challenges, Colorado and Jefferson County agencies encouraged local non-profits to pursue grant funding to partially fill the gaps. Faith based organizations were leaders in helping the community as well. Private organizations prioritized health, wellness and family stabilization as areas of focus, and this included some aspects of income supports.

Scenario 3: Field of Dreams

The 2020s saw attitudes change, along with movements toward equity and inclusion, nationally and in Jefferson County. This support for equity had been growing for decades in the US and became visible and potent. Inequality had increased during the Trump Administration as the stock market did well, wages rose little, job loss to automation grew, tax reform benefited the wealthy, and health care access was reduced. Support for fairness grew from all economic strata, from both political parties and independent voters. The increase in support for equity in Jefferson County was infused with Colorado's historic community support, western values of independence and the culture of choice. Persistent poverty, discrimination and differences in opportunity came to be seen as wrong and offensive. Dialogues about inequality became more impactful, affecting many sectors: policing and public safety, economic policies, taxation, education, housing and health care.

The economy was transforming. Much work was moving to piece work and consulting on the "gig economy", rather than part-time or full-time jobs. This work and jobs were being affected by automation and cognitive computing. There was significant job loss to automation reaching 30% of jobs by 2030, including many middle skill and high skill and high paying jobs.

Nationally there was a range of policy changes in the 2020s: universal health care (Medicare for All), tax reform, education (enhanced PreK; free community college), environmentally sustainable policies, and a guaranteed basic income[v]. Universal health care was implemented in the 2020s and uses a single payer model. This included decreased access costs, and more virtual care and self-care. Healthcare moved to a focus on wellness and integrates more with human services.

There were advances in technology that made living less expensive – "abundance advances[vi]." Low cost solar energy production and storage, enabled by breakthroughs in solar panel efficiency, and alternatives to lithium for battery storage, in material advances that allowed electronic and other components to be manufactured from abundant raw materials. Food production was enhanced –in urban agriculture, community gardening and in-home food production. Aeroponics and other technology supported enhanced vegetable growing. Cultured meat and protein and 3D printed food became popular. Beyond food, 3D printing, or distributed manufacturing, allowed families to manufacture many of their needs. In the 2010s Jefferson County and the Denver area had seen an uptick in agriculture with the legalization of marijuana and the growth of the pot industry. In the 2020s, home food production and community gardens expanded, sometimes with veggies sharing the space and grow lights with marijuana.

Poverty was dramatically impacted. While reduced, problems such as child abuse, physical and mental disabilities, and homelessness persist. Human services address these more effectively, automating some of its work, supporting prevention and individual and community self-reliance. Human progress extends beyond survival, and focuses on how people can physically and emotionally thrive.

Human services offered courses in financial literacy and informing people of the ways their money can be used for preventative measures so they are able to make informed financial choices. There are more microloan programs to help foster equitable and environmentally friendly businesses.

There is a greater focus on valuing the environment. This is reflected nationally and locally. Nationally, there were more policies implemented to address sustainability. In Colorado, water laws were renegotiated to address new agricultural models and water filtering methods. As millennials and Generation Z enter leadership roles, they bring with them attitudes of consuming less and reusing and repurposing more. In Jefferson County, people value the land and reflected that in their actions; for example, when goods are 3D printed, they are done so sustainably and are recyclable.

Specific human service areas in Scenario 3

With an increased percentage of the **population aged 65 and older**, demand for innovative services forced changes in the way aging services were delivered so that they supported customized quality of life for elders. There was greater integration of data across various aging services- such as those addressing housing and nutrition- and with overall health and well-being. The ability to address physical, social and spiritual needs of people up to and through their dying days meant old age is a good time of life for a growing number of people. Human services supported elders in contributing: everyone can contribute to their community and no one is without a sense of purpose.

Senior centers became more common and more varied in their approach during the 2020s to accommodate the more engaged social lives elders seek in their final decades. There were both senior-specific centers and greater integration and less segmentation of population by age within all community centers. There were many different opportunities and environments for socialization. Jefferson County increased their number of senior centers and integrated senior services into libraries, schools, churches, cafes, and other settings, including homes and neighborhoods. Places such as memory care cafes expanded. Often, churches acted as informal senior centers. These all decreased social and physical isolation, and encouraged meaningful relationships.

Universal design became widespread in the 2020s. New transportation options such as self-driving cars helped serve all areas of the County.

Virtual reality and remote participation were increasingly easy; even those in their 70s and 80s spend time in virtual reality.

The IORA primary care model led the way for physical and social health of elders. These are medical providers that include senior nutrition classes, exercise courses, social events, care managers and social workers on site. The success of this model led to more insurance providers covering participation in these programs. Health care is accessible for all, and there are equal options within care.

The attractiveness of working in senior care grew. Jefferson County offered fellowships in the industry, worked with high school counselors to promote careers, and other efforts. The salaries remained low in these industries, but basic income gave workers more flexibility to choose a career they found meaningful. In addition, there were incentives for becoming a more qualified senior care worker, including free or reduced education and certain on-site benefits such as child care or housing.

With job loss and basic income, there is a new focus on developing and promoting meaning and contribution. Community leaders and human service workers promoted overall wellbeing and **behavioral health**. A component of basic income was the option to participate in financial literacy courses offered by human service agencies. These helped families and individuals understand the potential for their income and make informed choices. These policy changes were incorporated across Colorado in line with values of choice and self-reliance.

While addictive, violent and other damaging behavior occurred, it became more acceptable to be receiving behavioral care. Health care providers gave behavioral care parity with physical medicine. Technology significantly accelerated behavioral care; effective and inexpensive software developed and used by leading health care providers proved to be very successful in the 2020s. In addition, the intelligent agents that Apple, Microsoft, and Google had built for years could be instructed to give behavioral care. For most people who trust these tools they compete with their health care systems for behavioral care.

These programs were kept updated as information evolved. But these self-care tools do little to shape the social and community factors – the social determinants of health. These technologies did not replace interpersonal counseling and care, particularly for those with long-term and more severe mental illnesses. The balance between human and tech delivery was customized for each person.

Preventative measures were prioritized across all **child and family services** in the 2020s because they were shown to be the most effective way to improve health and prosperity for families and communities. A guaranteed basic income, although relatively low, was consistent and led to greater family stability, a reduction in family violence, increased educational obtainment, and fewer incidents of child abuse.

The guaranteed income (and widespread access to long-term contraceptive devices from health care providers) also contributed to lower teen pregnancy rates, and increased high school graduation rates, including among youth in foster care. There was also greater focus on enhancing meaning, dignity and contribution of community members and increasing housing options.

There was adequate and affordable substance abuse treatment for all, and prevention efforts in place to reduce the risk of addiction. There was access to physical and behavioral health, covered through universal access for health care. This led to a significant decline in demand for child welfare services. Despite these advances, the need for child and family services persisted, though at reduced levels. This allowed resources- both human and financial- to be delivered in a family specific, two generational manner. The predictive power that artificial intelligence programs provide human service workers also enabled far more effective case management and early interventions that help reduce issues such as family violence.

There were increased services in schools and community centers. There were integrated state data bases and secure information sharing. Human services identified vulnerable communities and circumstances that prompt preventative actions, and direct people towards the most appropriate services. All newborn babies received home nursery services and safe sleep environments, helping to decrease the infant mortality rate.

Adult protective services in 2025 focused on plans that enhance the vulnerable adult's choices with their services. Many cases of adult mistreatment were identified through primary care screenings, which enabled prompt intervention, often preventing or lessening recurring mistreatment. Studies showed that when caught early (e.g., before verbal abuse escalates to physical attacks) the stress levels and psycho-social damage is far less.

Disability, or its impacts were reduced in the 2020s. The slowing or reversal of chronic disease, particularly diabetes and arthritis; physical activity and weight loss among overweight and obese individuals; safer and healthier work places and work styles all contributed to the reduction. Many jobs were displaced by robots and computers. For the jobs that remain, most employers became more inclusive of workers with disabilities. This was largely due to rehabilitation services or programs which provided persons with disabilities job training and ongoing necessary supports individualized to their abilities and work goals.

Disability payments were affected by the implementation of the guaranteed basic income (GBI) in the 2020s. These GBI payments gradually reduced, and in some areas eliminated, disability payments. Some individuals with severe disabilities (i.e. they are dependent on costly caregivers) are eligible for disability payments in addition to the GBI. These additional benefits operate on a gradient of severity, similarly to the worker's compensation system. At times, the judgement of determining additional benefits was difficult. Financial literacy courses were offered by human service providers to help make basic income payments most beneficial. This involved moving beyond surviving and onto thriving. These were tailored to the unique needs of each person.

As there was increased use of cognitive computing tools and virtual reality, there was an effort to balance technology tools with human interaction. This was included in how the tools were designed and

used, and balancing their use with human to human connections. For people that have lower degrees of disability, these tools helped them live more independently; and those with greater needs continued to require human and other supports.
Mental and developmental disability screening takes place with primary health care exams. Behavioral health care became less stigmatized. This increased the number of people with various health issues who sought assistance. Supports and services are increased when needed, appropriate to the level of need. Universal access to health care included access to most disability reducing prosthetics or technology, including direct brain control of prosthetics. Schools became more inclusive of all children. National education policy provided a more cohesive approach and funding for integration of those with disability into school and activities.

Basic income served to drive **economics and job development** particularly in the younger generations, as they were given the financial freedom to explore their interests and work for meaning. There was more money flowing through the local economy. In addition to having the basic income, residents and their neighborhoods produced many of their needs. This self-sufficiency was aided by technology for enhanced community gardening and in-home food production and local manufacturing (3D printing). Along with basic income, there were more affordable and accessible options for housing and child care. Basic income provided an opportunity to better engage children in addressing generational poverty. These engagements were uniformly brought into schools across Jefferson County. Children grew up with greater financial security in their homes and on their horizon for the future with the basic income, and this allowed them to explore interests and passions. Many young people took advantage of apprenticeship programs. These were implemented in the 2020s, and the successes were being seen and felt in the 2030s. The Guaranteed Basic Income enabled many families to pay their rent consistently. GBI payments did lead to some migration to lower cost areas outside of the city centers, including to rural communities where families could produce more food and be more self- and community reliant. This shifting of populations helped lessen the burden on some public schools.

Housing policies were effective at stimulating the building of moderate and very low income housing units – usually in mixed income neighborhoods and new multifamily buildings. This included rezoning to allow for more group living and secondary units, 3D printing of low cost homes, and tiny homes.
The basic income served to alleviate portions of chronic homelessness, but crisis related homelessness (due to environmental emergencies, or violence) was less impacted. Integrating mental and behavioral health with physical health, and having these services be more accessible, served to alleviate homelessness for some through empowering people to access and maintain housing. So, resources were partially rerouted away from housing services towards prevention methods such as behavioral health services.

Basic income redefined **income support programs**. GBI payments were there during the emergencies of unemployment, which increased through job loss due to automation, providing a low but stable income to all citizens. Given the guaranteed income payment, TANF was largely eliminated along with SNAP and others, except when natural disasters brought emergency needs. Some programs such as emergency and medical assistance and resources for the disabled were continued through a commitment to compassion. Yet in most cases, GBI payments enabled people to have better lives in which they contribute to their communities and society.
Food insecurity has been significantly reduced by self-production of food in homes and in communities utilizing technological advances. These include hydroponics, aeroponics, and urban and vertical agriculture, 3D printed foods, cultured meat and other advances that were in widespread use in communities around the country by the mid-2020s. Community food production efforts, had been

promoted by local groups, such as Revision which was successfully spreading community gardening, job creation, and optimal nutrition practices. They were joined by the USDA promotion for community gardening. This helped build well-being and implement evidenced best practices for food and nutrition security. The role of food in forming community and spiritual connection with others was recognized as an important facet of providing people with security, and this was celebrated in community programs and supported by state and federal funding agencies, even as specific cash or income supports other than GBI diminished.

Scenario 4: Epic 14'er

Nationally and in Colorado there was a shift toward more empathy, equity, and inclusion. This became more visible near the end of the Trump Administration and remained a powerful force in the 2020s. The economy grew adequately with recession related dips and job loss to automation in the 2020s and onwards included millions of jobs. Nationally, there was an increase in the minimum wage and movement to be a living wage. Simultaneously pay protections were established for piece work and consulting on the "gig economy." Despite automation of tasks and jobs, there was a high degree of paid work – jobs at a living wage and "gig work" that paid adequately. But the need for income supports remained. There was a major change in production of food, energy, home goods, electronics and other necessities at low or no cost. "Abundance advances" provided highly productive in-home food growing, local manufacturing (3D printing) of many home goods and electronics. For new housing, local materials were fed into 3D printers to produce the components for rapid construction of quality, low cost homes. These technological advances included some risks, such as 3D printing used for the undetected production of weapons and increased cyber security threats as more of our life moved online and into virtual reality. These were better addressed in the 2020s, although an element of risk remained.

Human service regulations were streamlined, including greater latitude in how income support funds can and cannot be used. Clients worked with human service agents to identify their goals and develop a plan for how funds and other services can help achieve these goals. Goals included pursuing a better job, getting an education, accessing food, housing security, or moving towards a living wage. When the funds were proven to be aiding this goal, clients and their human service workers were protected from accusations of fraud or misuse of funds. As an example, if someone needed new tires on their car to drive to work, this can be proven as helpful and allowed. This helped people make dignified and personal choices.

Universal health care was put into place in the 2020s and included wellness techniques such as acupuncture and chiropractor services. Human services became more integrated, automated, efficient and effective. Programs were integrated across Federal, State and City/County levels, with accelerated eligibility determination and enrollment, data integrated across agencies and sites (e.g. school, work, medical care), customized care with predictive analytics. There were fewer human service workers due to automation' but they specialized in providing human touch when needed and in doing quality assurance for the automated services. There were adequate funds for human service programs, including higher salaries for the remaining human service staff and adequate overhead for human service organizations. Each client had a case manager/mentor who ensured that the client gets the most appropriate services as well as support and encouragement for self-reliance. Generally, human services are needed less often and for shorter periods of time. The turnover of clients served was faster, so more people were served. The trauma of being in poverty or without services for long periods of times was reduced.

Specific human service areas in Scenario 4

There was the implementation of universal health care, or "Medicare for all," which helped enhance the lives of **seniors** and those caring for seniors. Using the IORA primary care model, enhancing physical and social health of elders became common medical practice towards overall wellness. These primary care systems include senior nutrition classes, exercise courses, social events, care managers and social workers on site. Universal access to health care meant that not only do seniors have access to the original Medicare, but now that its "Medicare for All" there is more demand for this social model of primary care. Senior activities and activity centers were integrated across all aspects of the Jefferson County community, including in libraries, churches, cafes, exercise facilities and schools. The increased senior population – for both those 65 and older and 85 and older – live meaningful lives into their later years. Technology was a helpful tool used by all, including the elderly, as advances such as virtual reality became easier to use. This helped alleviate instances of physical or social isolation. More people entered paid and unpaid positions of caregiving for elders and received supports.
Senior volunteer opportunities and engagement increased for several reasons. Throughout the 2020s, more seniors were trained on using virtual reality, smart phones and the apps that connect them. More seniors wanted to give, to use their personal and professional skills in volunteer positions, and Jefferson County took advantage of this resource, developing more and flexible volunteer positions.
Senior group living and co-housing grew steadily through the 2020s, as did "smart homes" for many seniors. This made exchanging services within group housing easier, while smart home features play many roles- a friend, bookkeeper, secretary and counselor. Many smart homes also include food production – both aeroponic and hydroponic vegetable growth, cultured meat, and 3D printed food. These types of food production occurred in community settings as well.

Technology advances in coordination with human needs – including the needs for human engagement, cognitive stimulation, and meaning – towards helping all people, including those dealing with **behavioral health** problems. Apps and virtual reality are used to deliver therapy and support. Coloradans focused their values of choice and resilience towards taking advantage of the new technological and medical advances which help people to go down their own path towards their empowerment. Human service workers' roles adjusted to automation and the decreased need for crisis response, moving towards early intervention and helping community members achieve self-sufficiency.
Human services better integrated and workers used automation to their advantage. There was more 'bundling' of services which helps address all issues – housing, nutrition, behavioral health needs, etc. This helped provide stability which alleviated behavioral health problems, or provided a stable environment in which individuals can best address their behavioral health needs.

Two, or multi, generational strategies were implemented, focusing on preventative measures and addressing root causes of **child and family crises**, such as poverty and substance abuse; this lead to successful prevention and a reduction in crisis management. Integration of data and predictive analytics identified at-risk children, allowing targeted early intervention. This helped keep more children in their homes. Cases were addressed in a way that works with a customized plan, specific to children and family members.
Integrated data across agencies helped agencies share resources for the overall wellbeing of the child in addition to using predictive analytics to make interventions more effective. After putting in place stringent privacy protections and data sharing protocols, data for each child and family member, particularly those who have participated in child welfare programs, was accessible across stakeholders. This allowed for data on early detection of job loss, neighborhood violence and crime, school truancy, and other factors to predict needs for child service agencies and determine what services will best

improve outcomes. Health care and human services were more connected within the state, which enabled more sharing of data and resources. Predictive analytics enabled AI interfaces that empower families, care givers and payers to provide optimal care services.
A data system was developed for Colorado Adult Protective Services that contains information on nursing homes and other elder care providers, including data on client characteristics, services, perpetrator characteristics in cases of abuse or neglect, and key statistics on investigations and victims.
Communities are healthier, continuing Jefferson County and Colorado's commitment to health and living well. There were more affordable post-secondary education options, which led to good jobs with a livable wage, and more college debt reduction programs. This helped to strengthen and stabilize families and communities, reducing drivers of need for child and adult protective services.
National data systems that protect privacy, security, and prohibit discrimination, and allow tracking of outcomes and cost effectiveness, as well as best practices. Colorado and Jefferson County are part of these systems.

Disability services are comprehensive, focusing on helping all individuals to live meaningful and dignified lives. Universal access to health care combined with better integrated wraparound services helped achieve this. Most of the amazing disability-reducing technologies were covered by health care. This includes the cures for diabetes and Alzheimer's and the ability for those with spinal cord damage to control their limbs. Human services and health care integrated further and there is better coordination and 'bundling' of non-medical services based on outcome research, focused on the needs of each client. Individualized rehab plans, integration of technology and medical advances, integration into work, as well as family and care giver support were the consistent package for each client.

Jefferson County had been near a full employment level, and increased their **employment** to almost a completely employed workforce by 2030. What changed was a shift towards a living wage and beyond for employees. Although there was job loss to automation, Jefferson County was very intentional about the jobs they promoted through education and training, including preparing a workforce that was well equipped to interact with and benefit from technological advances. Education and job training identified likely changes in the workforce and improved their targeting of student's and adult's interests and capacities to help them find meaningful work. Most County employers were committed to hiring locally and ensuring their employees were treated well.
Employees received better wages to match their living costs. Additionally, "abundance advances" lowered the cost of basic need production. The promotion of very low income housing and mixed income neighborhoods, along with lower cost home construction options increased family wellbeing.

The policies[iii] that changed to allow more low cost **housing** in Jefferson County allow much of the need to be met. Neighbors, with a deepened sense of equity, were more open to changes such developing secondary units in homes or in the yards.
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 technologies, and low-input high-yield home and community food production. From 2021 onward, rebounding from the Trump Administration cuts, federal housing funding increased in response to growing need and lack of housing accessibility across communities. Federal, state and local policies accelerated building more, denser, mixed income housing with ample very low income units. Zoning laws changed enable to this. 3D printing proved a very important tool in creating low cost, sustainable homes. The funds for these came in part from partnerships formed with local developers. Housing services were well integrated, consumer focused, and use predictive modeling and advanced analytics to anticipate emergency

housing needs. Human service deliverers and their partners' systems know if there have been layoffs or other challenges and can check with families if they are at risk of missing utility or rent payments. Housing services used the Arizona Self-sufficiency matrix for each individual case to identify best, case-specific plans of action. For example, some clients need a monetary stipend, some need stipend and services, and some need a stipend and intensive services. Many agencies provided a continuum of services where people easily flow in, out, and across the spectrum per their needs.

The need for **income supports** were reduced because of high employment and higher wages in the County; increased low income housing; abundance advances that by the mid-2020s had lowered the cost of living. But unemployment does remain, stimulated by job loss to automation. The patchwork of Federal income support programs, EITC, TANF, SNAP and others remain, along with Colorado supplements to some. Colorado benefited from the healthy economy, high employment and the revenue from the marijuana industry.

Income supports were restructured to address the "welfare cliff." The JeffCo Prosperity Project helped lead the way to allow families and individuals to continue to advance financially without fear of sudden loss of all benefits. There was a system of graduated decrease in benefits relative to income. Clients worked closely with human service advisors to define their own goals and make informed choices about their future. Internships and apprenticeship programs evolved, which helped provide low or no cost experience towards meaningful employment. There was a national program for college debt forgiveness through work. There was some combining of funds, such as those for TANF and SNAP, which allowed dollars to best be allocated on a case by case bases to help people leave situations of poverty.

In addition to abundance advances such as home and community food production, there are more common co-op feeding cafes which allow people to work for meals or pay as much as they can. New transportation technology made it possible for residents to work outside of the metro area and still be within commutable distance, taking the strain from metro employers and expanding employment options. The dynamics of Jefferson County were influenced as marijuana was legalized nation-wide. This slowed and for some Denver metro neighborhoods, reversed, the migration to Colorado which had been motivated by legal marijuana.

END NOTES

[i] 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. For these human services scenarios, we have developed estimates across the scenarios, based on the references below. 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 five 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 16% of US jobs, while the equivalent of 9% jobs (8. 9 million) will be created — a net loss of 7% of US 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: Forrester forecasts 8.9 million new jobs in the US by 2025. 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.

- 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 countries overall, the 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 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 US 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 "IBM CEO says AI and automation will create jobs" http://www.businessinsider.com/ibm-ceo-says-ai-and-automation-will-create-jobs-2017-1)

[ii] Human Services Value Curve

In developing these scenarios, we looked for human service visions, or descriptions of their visionary states. One leading contender for the preferred future of the field is the Human Services Value Curve. Developed by Harvard's Technology and Entrepreneurship Center's Leadership for a Networked World With American Public Human Services Association (APHSA).
APHSA argues that the desired progression in value can best be described from the point of view of the consumer in this way:

- At the regulative level, consumers receive a specific product or service that is timely, accurate, efficient and easy to understand.
- At the collaborative level, consumers "walk through a single door" and have access to a complete array of products and services that are available "on the shelf."
- At the integrative level, products and services are combined into packages, and designed and customized with input from the consumer themselves, delivered in the most convenient ways, with the objective of best meeting the consumer's true needs and driving positive outcomes.
- At the generative level, those providing products and services are joining forces to

make the consumer's overall environment better for them, resulting in value that is broader and more systemic than an individual or family might receive

More information available:
http://www.aphsa.org/content/dam/aphsa/pdfs/Resources/Publications/TOOLKIT_Moving%20through%20the%20Value%20Curve%20Stages_.pdf

A group of local human service agency leaders within APHSA developed the "local vision" for the human services value curve in terms of what it would include, namely these core components:

- A resolute focus on a person-centered approach to casework and service delivery
- Testing and implementation of innovative evidence-based practices
- Partnering with other organizations and systems across sectors
- An integrated infrastructure, with information technology systems that enable and produce cross-system data; led first by the integrated health and human services information system.
- A workforce of "skilled tradespeople" able to build community well-being— with the competencies to deliver evidence-based practices
- Effective and efficient internal change management processes that enable leaders to continuously improve their organizations
- Accountability processes that clarify outcome measures and quantify impacts, including reduced health care costs, improved health, and greater self-sufficiency.

And these principles guiding human services:

- Solid prevention- and strengths-based orientation
- Two-generation and multi-generation approaches
- Holistic, person-centered, and customized service planning
- Both pre-trauma and trauma-informed strategies
- Sustained attention on fatherhood engagement
- Commitment to defining and tracking of a set of common indicators across all well-being and health domains.

See: A NEW PATHWAY TOWARD PROSPERITY AND WELL-BEING, *A Concept Paper by the* ***National Council of Local Human Service Administrators, May 16, 2016***

[iii] Developing low and very-low income housing options

Housing remains 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[1]
- Use various combinations of these approaches to deconcentrate poverty.

[iv] 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:

- Most levels of human service workers will have their work on eligibility dramatically reduced by automation of information gathering and eligibility determination.
- 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. Our estimates, growing from the references above, particularly from Osbourne and Frey, and McKinsey, led us to this 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).

[v] The Guaranteed Basic Income

The guaranteed basic income, also called the Guaranteed Annual 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. 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," https://www.wsj.com/articles/a-guaranteed-income-for-every-american-1464969586).

Support by liberals and conservatives offering different rationales. For example, some conservatives 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" https://www.theatlantic.com/politics/archive/2014/08/why-arent-reformicons-pushing-a-guaranteed-basic-income/375600/).

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 such as increased graduation rates and decreased hospitalizations and teenage pregnancies. 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.)
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 that the GBI has been proposed e.g. $10,000 income plus 3,000 for health insurance, up to $32,000 yearly in Switzerland; the level in this forecast $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.)

The costs of a GBI would be roughly 3 trillion yearly. Stern provides a "menu" to fund GBI (an income of $12,000 for every adult, which would cost between $1.75-$2.5 trillion in federal funds each year. Add another $296 billion when including $4,000 for all those under 18)

- Ending all or many of the current 126 welfare programs[1], which cost $700 billion in government and $300 billion state government
    - Eliminating food stamps (save $76 billion), housing assistance ($49 billion), and EITC ($82 billion)
- 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 CO2 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

[vi] 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.

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. Battery storage costs are decreasing, and are projected to continue to become less expensive (see, http://reneweconomy.com.au/tesla-already-forcing-down-battery-storage-prices-in-australia-57681/). Other forms of sustainable energy may develop as well, e.g. small scale cell fusion that produces low cost energy from sources in water may become available (see, University of Gothenberg in Science Daily, https://www.sciencedaily.com/releases/2015/09/150925085550.htm)

3D printing of goods may disrupt global supply chains and allow local and customized production of goods, often using sustainable and upcycled materials. This can include for better prosthetics and implants (see, United States Food and Drug Administration *Medical Applications of 3D Printing,* https://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/3DPrintingofMedicalDevices/ucm500539.htm). 3D printing of homes and multiunit buildings has already begun.

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 other techniques. Cultured meat is progressing in taste and affordability and may be a sustainable and accessible source of producing protein. Impossible Foods (https://www.impossiblefoods.com/) is 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 worlds cheapest food stocks"
http://www.futuristspeaker.com/job-opportunities/the-coming-meat-wars-17-mind-blowing-predictions/
See also, Peter Diamandis and Steven Kotler, Abundance: The Future is Better Than You Think, 2012, New York, Free Press; and K. Eric Drexler, Radical Abundance, 2013, New York, Public Affairs