



# Creating a Vision Toward a More Prosperous Future Through Healthier Built Environments

Avon, Colorado



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## Executive Summary

Livability refers to the quality of life of an area; it is directly affected by the quality of the built environment, especially the completeness of our transportation systems. Streets are attractive and safe for all users, or they are not. Streets encourage a variety of transportation options, including walking and bicycling, or they limit choices. Streets enable social interaction, or they do not. Streets put a person at ease, or they do not.

The Town of Avon has many community assets from its trails and parks and close-in neighborhoods to its burgeoning town center that celebrate the best of livability. There are also community assets that need to be stitched together, becoming more accessible by foot, by promoting human-scale design.

In July 2015, Blue Zones, LLC Dan Burden, director of innovation and inspiration and national walkability expert, and associate Samantha Thomas facilitated a Walkability Workshop in Avon, CO. The Walkability Workshop aims to help communities identify how to improve economic vitality and social connections and equity by addressing obstacles to walkability.

About 25 key stakeholders from the Town including the Mayor, several town council members, staff, residents and business and property owners took to their feet during a walking audit and collaborated during interactive sessions to identify the area's assets and opportunities. The primary goal of the workshop was to engage the community in transportation decision-making by walking together to evaluate existing conditions. Together, workshop participants determined next steps for encouraging active living and improving the quality of life through more walkable streets. This report provides a summary

of findings from the Walkability Workshop and provides recommendations to improve walkability and livability within the town core of Avon.

Key recommendations include:

- Integrate best practices and tools of Complete Streets, walkability, bikability, and placemaking into the redesign of West Beaver Creek Boulevard. This street is already in the Town's capital improvement plan, use this opportunity to create a model street within a short-term time frame.
- Build upon and enhance wayfinding systems.
- Adopt narrower--10-foot travel lanes--as the default.
- Mid-to long-term update current parking policies and create a parking management plan; and
- Lead a design charrette to right-size and improve safety and operation of Avon Road -- Avon's signature street.

Many positive signs and trends, including strong leadership, pride of place, access to nature, and a sense of community were found. There are many positive indications that people are ready to work together.

The initial recommendations outlined (in this document) are based on a short visit to the community and shouldn't be considered exhaustive. This report captures the findings, states opportunities and presents tools that provide a strong starting point to support the Town in applying new tools and principals to any future street or development project, paving the way for future projects that will improve health and well-being through better built environments.

## Introduction

The most energy efficient and least costly mode of transportation is muscle power.

People who live in neighborhoods with sidewalks and/or trails are 47% more likely than residents of areas without sidewalks/trails to be active for at least 39 minutes a day.

Source: "Neighborhood Environments and Physical Activity among Adults in 11 countries." American Journal of Preventive Medicine

A walking renaissance is upon us. We are walking more as a nation, for fun, health and to access daily goods and needs—grocery stores, coffee shops, pharmacies, friend's houses, or places of worship—in our neighborhoods. At least 80 percent of Americans now want walkable neighborhoods, according to the National Association of Realtors. However, we are still dealing with a legacy of roadways that fail to account for the safety and accessibility of people on foot or bicycle, and people of all ages and abilities.

Historically, we have applied advanced engineering to move more cars and to move them faster. The result: streets that accommodate cars and that deter people from active transportation. Land settlement practices—strip centers, cul-de-sacs, poorly sited schools, and single-use zoning—compound the problem, producing auto dependency. Our auto dependency is furthered by development patterns that have changed the form of communities from walkable, transit oriented, street grid systems to strip and single-family development accessed by regional automobile corridors. Level of Service focuses on vehicle mobility at the expense of all other modes. We generally do not consider acceptable Levels of Service for pedestrians, bicyclists and transit users.

Various trends are changing the projections for future travel demands; that is, they are changing our understanding of the type of transportation systems people will want and need in the future. Aging population, rising fuel prices, growing traffic problems, increasing health and environmental concerns, and changing consumer preferences are all increasing demand for walking, bicycling and transit.

The benefits of supporting active transportation, and thus improving walkability and livability, are numerous. They improve health and reduce health-care costs. Less parking is needed. They help alleviate pressure on roadways that are nearing saturation and have very little "grow room." They are the lowest-cost way to reduce vehicle-miles-traveled and thereby keep motorized traffic moving smoothly. Beyond that, on average more than 25 percent of all trips people take are within walking distance and 60 percent are within bicycling distance. This holds true for rural communities, too. In fact, a report by Rails-to-Trails Conservancy, *Active Transportation Beyond Urban Centers, 2011*, found that small towns (with populations of 2,500 - 10,000 people) have twice as many bike to work trips than their urban counterparts. Having the option to walk or bike – or move naturally – makes sense.

In fact, study after study shows that walkable, bikeable, and livable communities are also healthier communities, not only in terms of individual health, but also environmental and economic health. Consider that:

- A one-point increase in WalkScore is associated with a \$500 to \$3,000 increase in home values (CEOs for Cities in 2009).
- For every five-percent increase in walkability, a community could expect more than a 30-percent increase in "physically active travel" and nearly a quarter-point reduction in individual body mass index, which is a common indicator for obesity and health. The increase in walkability also was correlated with more than a five-percent reduction in air pollutants that are associated with vehicle travel (Journal of the American Planning Association in 2006).

- Installing sidewalks on all of a city’s streets would increase physical activity enough to offset weight gain in about 37 percent of the population, leading to health-care savings that could repay the cost of installing the sidewalks (Preventive Medicine in 2010).
- A majority of adults view neighborhood infrastructure as highly important to physical activity (Journal of Physical Activity and Health, 2011).

Other benefits of encouraging active transportation include:

- Protection of natural and cultural resources
- Increased economic development
- Reduction in crime and violence
- Opportunities for social connections and community building
- Reduced infrastructure costs
- Transportation equity
- Ability to age in place

We know that street design matters. Walkability is the measure of the overall conditions in an area, defined as the extent to which the built environment is friendly to the presence of people, and not just cars. Walkable streets may teem with people shopping, commuting by foot, or simply enjoying recreation and exercise.

Factors improving walkability include:

- **Destinations:** nearby land uses, such as retail shops located near offices and housing, and schools located within neighborhoods.
- **Connectivity:** Street connectivity, ideally in a fine-

grain grid or modified grid without unnecessary cul-de-sacs, and a network of sidewalks and trails.

- **Slow Streets:** road widths that contribute to slower vehicle speeds. Vehicle speeds affect walkability and livability: the wider a road or a vehicle travel lane is (or appears to the driver to be), the faster the driver tends to travel. The faster cars are traveling, the less safe and comfortable a person feels walking or bicycling next to them.
- **Safety, Comfort, Sense of Welcome:** A sense of security and “eyes on the street,” or feeling of comfort is created by orienting the homes and buildings toward the street, and providing transparency—occupied buildings and homes with windows and doors at the street level that have 70 percent transparency—so occupants can watch over the street.

The big dividend: if we design streets to not just be safer, but to also be more comfortable and inviting for people we see walking and bicycling, as well as business, increase. The benefits should not be minimized. Avon’s leadership is ready to continue to effect change so that healthy (active) transportation becomes a normal choice and routine part of every day.



Trails, like the Eagle River Trail in Avon, are important community amenities that help to spur economic development, and foster a high quality of life. From home owners choosing to live along a trail to bicycle tourists making their way from small town to small town, trails are important community facilities that attract people and dollars.



## Town of Avon: Overarching Observations

The Town of Avon is located in the “Heart of the Valley,” at the base of Beaver Creek Resort and along the Eagle River in Colorado, about eight-miles from Vail, making it a favorite summer and winter destination for recreation within the region. Avon is a linear town sandwiched between two mountain ranges, a river, a former working railroad, Highway 6 to the South, and Interstate 70 to the North, resulting in growth in an East/West line, with mountainside neighborhoods--Wildridge--that are disconnected from town.

Avon has many great achievements and assets —Nottingham Park, Main Street Mall (a pedestrian-only street), an outdoor gallery of bronze sculptures, and miles of hiking/walking/biking/skiing trails. The town center is compact and has the bones for human-scale village form. However, like many towns throughout the U.S., Avon suffers from an interstate highway that bi-sects part of the town, and has forced Avon Road (one of the only North/South corridors) to be overbuilt for one mode—the automobile. In turn, this has led to suburban style retail centers with large off-street parking lots and set-back big-box style buildings. Most problems needing to be addressed for Avon to become fully walkable came about by designing the center of the town around the car.

Avon led the U.S. with the introduction of roundabouts on Avon Road. However, transportation mistakes were made. The

roundabouts and road were overbuilt, which has resulted in unfriendly crossings for people on foot due to higher design speeds. Avon Road can be transformed into an area of great attraction and walkable form by amending the size, scale and performance of the roundabouts along the corridor, and by helping direct vehicle traffic in ways that honor walking as the preferred mode.

But, before tackling its biggest problem and opportunity the Town of Avon has many changes underway, including a streetscaping project along West Beaver Creek Boulevard to further transform this street into a safe, attractive, and inviting place that is a people- and business-friendly destination within the town core. The walkability workshop helped to validate the Town’s interest in improving pedestrian and bicycle connectivity within the town center and to/from neighborhoods North of Interstate 70 and to/from the Eagle River through enhanced connections (i.e. improved trail crossings) and wayfinding tools.

Avon is taking the steps to re-frame land use and transportation decisions centered on a “people-first approach.” To this end, the Town also has progressive language within their “Mobility and Connectivity” section of the code, including:

- Reduce dependency on the automobile;
- Reduce the number of daily trips by a single-occupancy vehicle and preserve the capacity of the existing roadways;
- Support the creation of highly connected transportation system with the Town

in order to provide choices for drivers, bicyclists, and pedestrians;

- Promote walking and bicycling, and connect neighborhoods to each other and to local destinations such as employment, schools, parks and shopping centers;
- Reduce vehicle miles of travel and travel times; improving air quality; and reducing emergency response times.

The move to put a cap on the growth of Vehicle Miles Traveled (VMT) places Avon as a top national leader for future transportation, health, sustainability, resiliency and quality of life.

By investing in and incentivizing the designs and places that make a visit or a lifetime in Avon pleasant, healthy and special, it is possible to imagine a more vibrant, relaxed, resilient and prosperous Town center. Avon is ready to build upon past successes, and to set a trend toward values driven, walkable placemaking.

## Process - Visioning Together

A project is more likely to succeed if motivated individuals set a course to accomplish their goals immediately. During the Walkability Workshop participants worked together to strengthen the vision for their town; a vision where streets are seen as public places that support healthy lifestyle choices, active living, thriving businesses, and an age-friendly community. Early successes provide the hand and toe-holds needed to pull the group from one achievement to the next. With this in mind, the following opportunities are arranged to allow for immediate wins that show a genuine commitment to supporting active modes of transportation and livability in Avon.





On July 17, 2015 twenty-five leaders from the Town of Avon came together to discover and discuss ways to continue improving the walkability and livability of the Town of Avon. Participants included Mayor Fancher, Council Member Burch, Council Member Smith-Hymes, Zoning and Planning Commission members, Town planners and engineers, police, residents, and key business and property owners. Dan Burden, national walkability expert and director of innovation and inspiration of Blue Zones, LLC led a walkability workshop, which included a walking audit--or on-street mobile tour. Following the walking audit, participants worked in tables to discuss next steps. The group gained consensus on the opportunity for West Beaver Creek Boulevard to serve as a model project for new street treatments, such as protected bike lanes and head-out angled parking. Two photo-visions were created to help illustrate the design options, as the Town's next step towards envisioning a different future for West Beaver Creek Boulevard; with a look to East Beaver Creek Boulevard in the future.

## Key Findings & Recommendations

“It surprised me to think Avon Road could become a two-lane road. This would change our entire feel of our town, making it feel more like a town. And, I loved the idea of more on-street parking so we would not need so many asphalt parking lots.”

- Mayor Fancher



*Current building set-backs and expansive off-street parking lots make active transportation--walking, biking, and transit use--less attractive and comfortable.*

Avon celebrates its town's location within the heart of the Eagle River valley. The area is distinctly defined by the Eagle River, surrounding mountains, Nottingham lake and park, and its pedestrian mall and streets lined with bronze sculptures, celebrating the areas unique arts and culture.

The Town of Avon is working towards transforming into a walkable and bikable town, as seen with newly posted signs proclaiming it as a walk/bike-friendly city. During the walking audit it was unanimously shared that Avon Road is a big barrier to people safely walking and biking due to high speeds from the overbuilt road (too many lanes) and roundabouts. Today, too much of the surrounding land has been designed primarily for the car with large off-street parking lots. During the walking audit, Mayor Jannie Fancher said, “It surprised me to think Avon Road could become a two-lane road. This would change our entire feel of our town, making it feel more like a town. And, I loved the idea of more on-street parking so we would not need so many asphalt parking lots.”

Every city/town is a living organism; Avon will continue



*Avon Road is an attractive gateway into the center of Avon with its landscaped medians and roundabout. The road however is overbuilt for one mode--the automobile.*

to evolve. In fact, there is funding for streetscape improvements to West Beaver Creek Boulevard, an opportunity to model new street tools such as head-out angled parking. During the walking audit and walkability workshop other clear opportunities emerged including enhanced wayfinding and new trail connections to connect Nottingham Park to the Eagle River Trail from Lake Street, for example.

As the Town continues to evolve into a more people-focused place and funding/investment opportunities become available the goal should be not to continue to grow vehicle traffic, but instead to cap vehicle growth at what it is today by creating an environment that makes moving naturally the easy, safe and unavoidable choice, while continuing to support those who choose to drive. This will include creating the right incentives, such as addressing a parking management plan with paid parking in the area. The following pages outline short- to long-term opportunities that will help advance the town center of Avon into a more vibrant, people-centered place, based on observations made during the walking audit and walkability workshop.

## Short-Term Recommendations

**Enhance Wayfinding.** Avon is focused on enhancing quality of life, focusing on designing and planning choices that support downtown walkability for people enjoying the town's many natural, cultural and commercial amenities. The town still desires an increased awareness of how accessible key destinations-- i.e. the river, park, library, grocery store, and restaurants--are by foot. Strengthening wayfinding is a short-term opportunity to encourage more people to walk when exploring the town's quarter-mile pedestrian mall, for example. Good wayfinding systems make people feel welcome and comfortable, reinforce the destination's essence, or core offering, and communicates to people what kind of experience they should expect when they visit. It is very important that the signage is based on an area's authentic offerings—the factors that truly make it a special place. Wayfinding should also point to where people are ("you are here" dot) and direct people to a destination based on how many minutes it will take to walk there. For a speedy, affordable alternative wayfinding system (while a more permanent system is being planned) implement a Walk [Your City] pilot program (learn more at [walkyourcity.org](http://walkyourcity.org)).

**Remove Yellow Centerline.** All streets in the town core should be designed for a target speed of 20 to 25 mph. On streets where traffic volumes are under 6,000 vehicles a day consider removing the yellow centerline, if it exists. Paint bold edge stripes (eight to 10 inches) leaving a driving space of 18 feet. Keep the centerline marking at intersections, hill crests, and curves. Centerline removal preserves the life of the road and provides cues to the motorist to give more room to a person walking, bicycling, parking or unparking. For example, Hurd Lane and Lake Street may be good candidates for this treatment.

**Transform West Beaver Creek Boulevard.** The Town has its sights (and funding) on further right-sizing West Beaver Creek Boulevard from Avon Road to Lake Street. This is a near-term opportunity to model Complete Streets (living streets) that are more people- and business-friendly through the addition of new street tools, including: narrowing travel lanes to 10-feet, maximizing on-street parking with head-out angled parking; creating well marked and protected crossings; adding gateway and placemaking treatments, such as a domed mini-circle; and emphasizing bike infrastructure. An option is to create two one-way protected bike lanes (cycle tracks).



*WalkNYC's wayfinding maps show people where they are and how long it will take to get to their destination on foot. Wayfinding signs helps to get more people walking.*



*College Street in Burlington, VT, successfully carries over 6,000 vehicles a day with no centerline.*



*Fairhope, AL is a leading city implementing centerline removal.*

Enhancing the street to prioritize and place the focus on people walking, biking and using transit will add value to surrounding land, priming the land for future redevelopment. As a next step, two conceptual design options were created to help the Town move from vision, into design, and then into implementation. The conceptual designs, also known as photo-visions start on page 21.

**Enhance Street Crossings.** Trail crossings and other street crossing areas, such as the crossing at Avon Elementary School, along West Beaver Creek would benefit from raised tables. Raised crossings are not only used in midblock locations, they are used at intersections. Crossings are designed to restrict all through speeds to 15-20 mph. Raised crossings at intersections can be used in snow country. The grade change is generally 1:16 to 1:20 when snow and ice are involved, but 1:12 in non-snow country. Color is often used. Features such as bollards, paver stones, colorized concrete or colorized asphalt are often specified. Raised crossings at intersections are used widely in snow cities such as Boulder, CO and Cambridge, MA. Raised table crossings paired with a crossing island also improves yielding behavior. Crossing islands should be another tool incorporated into future designs. Crossing islands are used on all categories of streets, and they have their highest return on investment when they create more courteous yielding behaviors by motorists. Well designed crossing islands achieve yielding rates above 80-percent. In addition, set the default minimum crosswalk width for 10 feet, and as appropriate increase this width for significant crossings. This makes crossing more visible and improves operations. A “Piano Keys” design can be used to reduce the volume of paint. Insetting markings can also help with year round maintenance.

**Enhance Connections to Eagle River Trail.** Identify and prioritize additional connections from the town center to the Eagle River Trail. One immediate opportunity is creating a connection from Lake Street to better connect Nottingham Park to the River.

**Complete the Pedestrian Mall.** Work with the adjacent property owners along Lake Street to fully close the off-street parking behind the Recreation Center, greening the space and carrying the pedestrian mall to meet the park.

**Add More Bicycle Parking.** Identify areas that need more bicycle parking, place racks in locations that have natural security (i.e. in front of buildings, near storefronts with windows).

**Identify Opportunities for Protected Bike Lanes or Cycle Tracks.** More and more cities



*Top Left and Right: Raised table crossing with crossing island in Aspen, CO; raised table crossing at a trail crossing in Boulder, CO. Below: a neighborhood-scale raised table crossing (left) and crossing island (right), which is colorized through use of different materials, to a motorist their travel lane reads 8-feet, in Golden, CO.*

across the U.S. are turning to integrating protected bike lanes as another tool to support people biking on their roadways. A protected bike lane is an opportunity for the length of Beaver Creek Boulevard, starting with the West Beaver Creek Boulevard section between Lake Street and Avon Road.

A protected bike lane or cycle track is a bike-only separated facility that runs alongside a street and is physically separated from people in vehicles and distinct from the sidewalk. Unlike bike lanes, cycle tracks are typically separated from automobile traffic by a physical barrier, such as parked cars, bollards, a landscaped buffer or a curb.

Cycle tracks may be one-way or two-way, at street level or raised to sidewalk level. If a raised cycle-track at sidewalk level, a curb or median typically separates them from traffic, while different pavement color and textures separates the cycle track from the sidewalk and points of conflict, such as driveways or street crossings. The separation of people biking from people driving with a protected bike lane helps make riding a bike more comfortable part of daily life for everyone. Protected bike lanes help eliminate perceived risk and fear of collisions of people biking; reduce the risk of dooring collisions; and add a level of predictability making streets safer for everyone. See more on protected bike design from National Association of City Transportation Officials (NACTO) at [NACTO.org](http://NACTO.org).

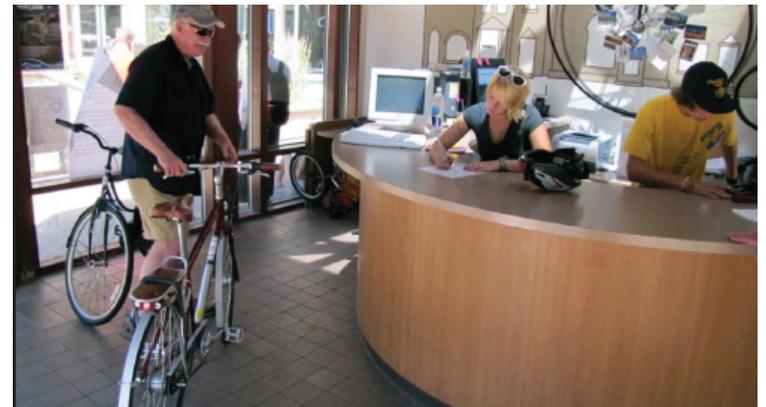
**Implement Bike Share or a Bicycle Library.** More and more cities and towns are creating public-private relationships in order to develop a bike share or bicycle library system. This may be an opportunity for the Town of Avon to partner with Beaver Creek Resort and/or bicycle shops to help make biking more accessible.

## Mid- to Long-Term Recommendations

**Right-Size Avon Road.** Conduct a charrette-driven design project to study and build Avon Boulevard into a key main street signature street for Avon. A likely new form will emerge that may include converting four of the five current roundabouts into single lane roundabouts from their current 2-3 lane sizes. This calls for setting up an upper level (maximum) carrying capacity operation. Why take this action? In off-peak hours a smoother vehicle flow will result from a people-friendly design. During near peak and on peak season demand, a bypass sign operation should go into effect. Each of two locations (Beaver Creek and I-70/SR 6) will have attractive, informative signs that predict the travel times of the Avon Road route or the other (more efficient route to



*A one-way protected bike lane (cycle track) in Missoula, MT; to add higher visibility to the bike lane conflict areas (i.e. driveways and intersections) are colorized green.*



*The City of Fort Collins, CO and partners are working to build from the success of the Fort Collins Bike Library, taking it to the next level by implementing a city-wide bike share system.*

the ski resort) along SR 6. SR 6 should be designed for an appropriate target speed of 30 mph; slow, but steady. For the upcoming West Beaver Creek Boulevard project, eliminate non-essential lanes at the roundabout at Avon Road (i.e. there is no need for three lanes entering the roundabout from West Beaver Creek and one of the right-only I-70 turn lanes can be eliminated immediately, as well). The full rebuild of Avon Road should focus on changes that make crossing simpler, safer and more attractive to pedestrians and bicyclists. In general, a two-way single-lane roadway only requires a single lane of entry. Traffic engineering analysis should determine exceptions, but today many of the approach legs are over-built for capacity, thus creating a divide.

**Address Complex Intersections.** In addition to fixing the roundabouts at Avon Road, consider the placement of domed mini-roundabouts at the intersection of East Beaver Creek Boulevard and Beaver Creek Place, as well as East Benchmark Road and Beaver Creek Place. A domed mini-roundabout maintains speeds to 15-20 mph 24 hours a day, while fitting into tighter existing conditions and still accommodates large semi-trucks. With the potential hotel development along West Beaver Creek Boulevard this is a treatment option that can be considered for this new intersection (see photo-vision).

**Increase On-Street Parking.** Opportunities exist for increasing on-street parking, for example ‘head-out angled’ parking or head-in angled parking can be indented along Lake Street, adjacent to Nottingham Park. Head-out angled parking is the safest form of on-street parking, while maximizing parking space. It offers multiple benefits, including creating a sight line between the people driving and other road users, such as people biking, when un-parking. For people driving with young children, seniors or others who need extra help, the open doors direct passengers to the safety of the sidewalk, not into traffic. Getting into a head-out angled parking spot is simple—a person driving signals their intention, slows, pulls past the spot and then backs into it, which is equivalent to making only the first maneuver of parallel parking.

**Create a Parking Management Plan.** “The cost of all parking spaces in the U.S. exceeds the value of all cars and may even exceed the value of all roads,” says UCLA urban planning researcher Donald Shoup. The lost opportunity cost can be high as well. The Town of Avon should consider shifting the cost of parking from the general public to the users, especially if a parking garage is to be built. The ideal parking garages are mixed-use garages that provide ground-level retail; then two or three stories of parking, with condos or apartments on the top floor. Such designs can provide an immediate supply, and then permit reductions over time. As the need for parking declines some or many



*As part of the road diet in Manitou Springs, CO, a domed mini-roundabout was installed.*



*Head-out angled parking allows an unparking motorist better see oncoming traffic, including bicyclists, as seen in Seattle, WA. Below: Head-out angled parking in Durango, CO.*



of the parking spaces can be converted into offices or living units. As the town works towards transforming from strip-style to town, mixed-use village a parking management plan is needed to identify on-street parking opportunities, change parking code, and a plan to manage parking (i.e. paid parking). Eliminate off-street parking requirements for most housing. Allow the market place to determine how many parking spaces are needed. Reduce maximum allowed parking.

**Honor and Turn Towards the River.** Enhance the connection to the river, and activate the trail by creating new landings and ways for people to further engage with the river. In 1998, the City of Golden, CO created a unique water park along Clear Creek for canoeing and kayaking, along with places for kids to dip their toes in or platforms for families to fish from.

**Buildings should Front the Street, Trails and Pedestrian Mall.** Buildings and homes should “front” the street—instead of being set back far from the street—to create a pedestrian-scale landscape and to put “eyes on the street” so that people feel watched over. Establish maximum allowable setbacks for mixed-use and commercial buildings in places of emphasis. Encourage placement of buildings and homes so that they create natural surveillance and maximize opportunities for people to meet or say hello. This practice is especially important near schools and parks, and within civic, retail, and commercial districts. Look for opportunities to support a developer in implementing linear buildings.

**Address the Vacant Railroad Tracks.** The old railroad line has been a point of conversation for many years within Avon and among other neighboring communities. The Town should not lose sight of potential near- and long-term opportunities, such as creating additional street connections, or placemaking features such as a “high-line” style park.

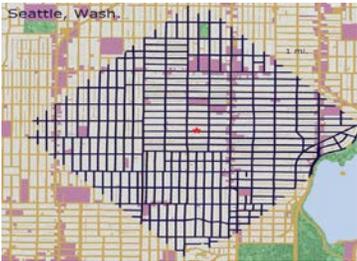
**Address Bus Pullouts.** Eliminate bus pullouts where dwell times are normally one minute or less.



*Clear Creek River Trail in Golden, CO has celebrated place by creating unique and playful ways to engage with the water from walking along the trail, kayaking the creek, to outdoor dining.*

## How to Get to Livability

It costs **\$2.8M** per year for **one fire station** with two apparatus. A **well connected** system covers **4.6 times more houses**. The annual cost per household in a **well connected** neighborhood is **\$159**.



**Poorly connected,** the annual cost per household is **\$740**.



Source: City of Charlotte, NC

Livability calls for combining transportation with land use. People will walk when we design places and streets to make walking a natural activity again. Sidewalks, bike lanes and crosswalks are not enough. We can start by providing people with destinations within reach and both safe and comfortable routes to get them there.

Generally, people will prefer to walk five-minutes to reach a destination; this is about a quarter-mile for the average person. If the built environment is well shaded, homes and shops watch over streets, and there are decent destinations, then a 10-20-minute walk (about one-half to a full mile) is acceptable to many people. Add to this bicycling. A bicyclist riding a leisurely 12 mph covers a mile in eight minutes, two miles in 16 minutes and three miles in about 24 minutes. When communities make moving naturally the easy choice a person is achieving a heart-healthy lifestyle.

Walkability and its associated placemaking is the source of future job growth. Walkability helps incentivize the placement of buildings, streets, parks and other infrastructure in ways that reduce the growth of traffic and ease congestion. In addition, walkability reduces environmental and economic costs associated with expanding roads, parking, and drainage. In short, walkable communities put people in healthy motion, and keep taxes low. Recent research reveals that sprawl-friendly Atlanta, Georgia had to increase its taxes 27% during a period where Portland, Oregon, more walkable in focus, reduced their taxes 21%.

Street connectivity is key increasing walkability, easing traffic congestion and improving emergency response time. For example, a well connected street system

keeps the cost of fire service down to about \$159 per household, where disconnected street patterns in neighborhoods force costs upwards of \$740 per household. Walkability makes sense, winning on almost every count.

### Where to Invest First?

To shift from a past over-emphasis on building the town core for (and rewarding) car trips, which has resulted in current sprawl and strip-style building practices, wider roads, and outdated parking policies the Town of Avon needs to continue to hold to its vision of investing in a people-centered town core, first.

*Invest from the town center (core) out.* Continue working from the town core out into surrounding neighborhoods. Implement early wins in the town center, such as West Beaver Creek Boulevard and wayfinding tools that enhance connections to the riverfront. Set in motion those actions that will achieve early wins. Most of them can be achieved with no other resource than paint and signage. Others enable youth, adults and seniors to make their own commitment, get their hands dirty, and engage in helping to make their community, their town even better.

Launch infill and connectivity projects to create the most community benefit. Attract the best developers and show bankers the successes of the new model of walkability and livability.

Meanwhile, any incentives that induce inappropriate growth must be identified and revised. New policies and practices that incentivize density need to be adopted, such as an urban design guide, street connectivity index for permitting developers, and removing parking minimums. In addition, new street design policies

and practices are needed, including adopting a Complete Streets or “Living Streets” policy, making narrower—ten foot—vehicle lanes the default, and adopting and adapting a street design guide. Living Streets are complete streets that are designed to incorporate economic, environmental and social considerations.

Avon is reinvesting in its town center, first, which is encouraging. Cities and towns that are doing this are attracting and retaining young professionals and growing their economic base. A recent study from Smart Growth America titled: *Core Values, Why American Companies are Moving Downtown*, further confirms what companies are looking for, in a community of any size:

- Walkable with close-by live/work/play neighborhoods;
- Convenient access by a range of transportation options;
- A welcome mat; and
- Clean, safe streets.

These overarching qualities validate the direction of Avon when it comes to built environment changes that are occurring in the town. Avon is taking the steps to connect to its natural surrounding and tourist industry while moving into tomorrow’s future of health and place-based innovation. Additional principles for building walkable, livable communities that Avon should continue to promote and implement include:

#### *Prioritize Active Transportation*

Prioritize development of trails, bike/pedestrian links, and streets that are multi-modal, providing residents of all ages and abilities, and all economic levels with safe, reliable, comfortable and economical transportation choices.

#### *Promote Safety*

Design streets where people walking, parking, shopping, bicycling, working and driving can cross paths safely, reducing serious injuries, decreasing crime, and ensuring accessibility for all. Streets in the town core should not be designed or posted over 20-25 mph.

#### *Design for Health: Invest in Great Streets, They Mean Business; and Embrace Streets as Civic Places*

Design, operate and manage streetscapes and public spaces as ecosystems or living streets. From previous pavements to street trees that provide shade and are critical to the health of cities, promoting active living by lessening the exposure to sun, air and noise pollution and water and soil contamination.

Streets are an economic asset as much as they are a functional element. Invest in transportation improvements, including operational improvements that support the economic health and competitiveness of the town’s businesses, and general welfare of its residents. People-friendly streets generate higher revenues for businesses and higher values for homeowners.

Streets should be regarded as important spaces for civic and social engagement by being designed to promote health, economic vitality and well-being while reflecting the town’s unique character, and maintaining movement and accessibility.

#### *Integrate Transportation and Land Use Planning*

To achieve reduction in VMT, keep more money in the local economy and boost health and environmental benefits Avon should continue to coordinate transportation infrastructure with land use and development.

The following pages outline overarching opportunities, principles and street treatments that can be applied. While some findings and recommendations will take greater community engagement (social capital) and financial capital to implement, the Town of Avon is well positioned to get several new models on the ground, including the immediate opportunity of West Beaver Creek Boulevard, illustrated in photo-visions on the following pages.

## Envision a Healthier Street: West Beaver Creek Blvd, Existing Conditions



### **NEED FOR 'EYES ON THE STREET,' AND SENSE OF ENCLOSURE**

West Beaver Creek Blvd recently went on a road-diet. However, due to suburban form--set back buildings and off-street parking--speeds remain high because there is a lack of enclosure. Sidewalks are also attached, which make walking less comfortable and attractive. Overall, this street lacks visual cues, such as buffered sidewalks, crossings, and seating that create place, signifying this is a place for people, not just cars.

### **NEED FOR A TERMINATING VISTA, AND TO OPTIMIZE CROSSING LOCATION**

Terminating vistas anchor destinations and establish a sense of place. Currently, this section of road does not help define, or create a sense of welcome, into the town core. The boulevard also lacks safe, well marked crossings.

### **NEED FOR ON-STREET PARKING**

Off-street parking takes up three times more space than on-street parking. On-street parking visually narrows streets and brings down traffic speeds, while providing the most affordable parking.

## Envision a Healthier Street: West Beaver Creek Blvd, Option 1



West Beaver Creek Boulevard is right-sized, becoming a place more supportive of people and businesses. The street is narrowed by reducing the two-travel lanes to 10-feet, adding curb extensions to inset the parking. Parking is increased with head-out angled parking (the safest way to park the car) on both sides of the street. Sidewalks are widened and two 6-foot bike lanes remain. The bike lanes provide space for motorists to pull out of the travel lane to allow an emergency responder to pass, an added benefit.

As pictured, the intersection becomes well-managed, improving the access, safety and efficiency for all users while creating a gateway (place) with the instillation of domed mini-roundabout. All major safety, capacity, noise, access and mobility challenges are removed. The roundabout will move 30%

more traffic while keeping speeds through the corridor 20-23 mph. The lower speed of traffic makes it easier to park a car, walk, bicycle, and located and approach a business. The truck apron plus domed center accommodates the thru-movement of the largest fire-truck, or semi-truck. The curb extensions in combination with the mini-roundabout reduces crossing distances for people on foot, from 62-feet to 20-24-foot crossings. Properly placed crosswalks are setback one car length from the circulating lanes.

This intersection becomes a gateway that welcomes people to the heart of Avon, and connects people to the river, Main Street Mall, parks, and the ski hill. Placemaking is improved through the intersection design and right-sizing of the road, setting the stage for new buildings and businesses that honor the street.

## Envision a Healthier Street: West Beaver Creek Blvd, Option 2



West Beaver Creek Boulevard is right-sized, becoming a place more supportive of people and businesses. In this option the street is still narrowed by reducing the two-travel lanes to 10-feet, adding curb extensions to inset the parking. Parallel parking and head-out angled parking buffer a protected bike lane (cycle track) on both sides.

Buffering the protected bike lane from the parked cars is a 2-foot “door zone” on the parallel parking side, and a 3-4 foot “trunk zone” with tree wells. The protected bike lane is recessed several inches below the sidewalk to keep complete separation. The one-way protected bike lanes are 7-feet, providing ample space and comfort for people of all ages to bike through this area.

Sidewalks are widened, allowing for a “landscape zone” (for bike racks, lamp posts, and trees), a “walk-talk zone,” and an “outdoor cafe zone.”

As pictured, the intersection becomes stop controlled. The curb extensions keep the intersection compact, reducing crossing distances for people on foot, from 62-feet to about 28-feet. Crosswalks are highly visible, and the bike lane is marked through the intersection to emphasize potentially conflict points.

Placemaking is improved through the protected bike lanes, street trees, street furniture, and on-street parking setting the stage for new buildings and businesses that honor the street.

## Overarching Opportunities

### 1 Design for Target Speed; Design for Safety

Fewer than one-third of drivers drive the speed limit; rather, they drive the “design” of the road, using cues such as lane width, street texture, the distance buildings and trees are set back from the street, and site-line distances. Streets should be designed for a “target” speed: the speed at which the designers want cars to travel with a particular focus on a standard lane width of 10 feet.

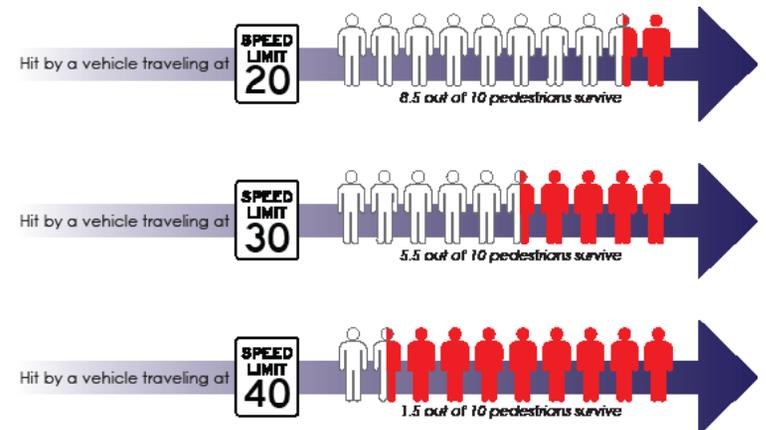
A general practice in the transportation profession has been to set design speeds higher than the target speed. It is now recognized that such actions tend to induce greater speeds, which can cause a significant rise in crashes, especially to the most vulnerable roadway users—children and older adults. Town center (places where people are expected) area design speeds should match the desired target speed. A lower target speed is a key characteristic of streets in walkable, mixed use, traditional town areas.

Half of all people hit by a car traveling at 30 mph will not survive, and of the survivors, many will suffer severe life-long injuries. About 85 percent of people hit at 40 mph will die, with others suffering incapacitating injuries. Enforcement of speed limits usually isn’t successful until the car is going at least 5 mph over the posted speed, so impact speeds often are higher than the posted speed.

Reduce speed limits and design for the target speed of 20 mph on all streets within Avon town core; Avon road should be designed to meet a target speed of 25 mph. In some areas, such as near schools, medical centers, transit stations, trail crossings and other places cars should go 15 mph.

To meet the desired target speed and improve safety, streets should be right-sized to include a combination of street treatments such as narrow travel lanes, bike lanes on-street parking, street trees, landscaped medians, curbs, and safer intersection treatments-- i.e. modern roundabouts, domed mini-roundabouts, mini-circles, curb extensions, table crossings, or short medians.

The graphic below shows a pedestrian’s likely survival rate if hit by a vehicle traveling 20, 30, 40 miles per hour.



Source: *Smart Transportation Guide, Planning and Designing Highways and Streets that Support Sustainable and Livable Communities*. Chapter 6. Designing the Roadway  
<http://www.state.nj.us/transportation/community/mobility/pdf/smartransportationguidebook2008.pdf>

## 2 Less is More: Narrow Travel Lanes; Create Compact Intersections

The wider a roadway, the faster cars tend to travel. Wide roadways also make for wide pedestrian crossings, increasing the amount of time a person is exposed to the threat of being hit by a car and the amount of time that cars are held back. The same is true with auto-to-auto crashes and bicycle crashes.

Throughout the Town of Avon, there are opportunities to reduce vehicle lanes to 10 feet wide. This should be the default lane width. If needed, such as when there are high numbers of large trucks on the road or where there are significant curves, permission can be given to build wider lanes, but the narrower lane should be the default. Several other lane width recommendations include:

- Keep driveway crossings to a minimum, even if some delay may result. As a best practice a one-way driveway can be held to 14 feet. A two-way driveway can be held to 24 feet.
- Keep street crossings, especially minor streets joining a principal street, to 28 feet wide. Allowances can be made when a turn lane is justified, but generally a short median on the entry approach can help keep crossing distances for pedestrians to a minimum exposure.

In addition to lowering vehicle speeds, narrowing travel lanes and keeping more compact intersections and other potential conflict points, saves on materials, reduces environmental impacts, and provides physical space for wider sidewalks, or bike lanes, or wider buffers between sidewalks and passing vehicles. Studies by the

Transportation Research Board reveal that there is slight improvement in safety when narrower (10 foot) lanes are applied. In many areas, the narrower lanes also make intersections more compact and add to vehicular efficiency and performance. Truly, when it comes to the width of vehicle lanes, less can be more.



*Route 62 or Main Street in Hamburg, NY is a major state truck route. In the street redesign travel lanes were narrowed from 12 feet—highway-size strips that invite drivers to go fast—to 10 feet. This and other street treatments helped Hamburg achieve their target speed of 20-23 mph.*

### 3 Apply Safer Intersection Treatments

Avon knows many of the benefits of roundabouts. However the roundabouts on Avon Road are overbuilt, often with too many entering and circulating travel lanes. The Town should look at making design and operational changes so Avon Road has a string of modern roundabouts that effectively control speeds to 25 mph, improving yielding behavior of motorists, and reallocating space to wider sidewalks, on street parking, or buffered bike lanes.

Right-sizing roads--narrowing travel lanes, eliminating travel lanes and adding new tools and treatments-- to truly meet the needs of all users works. In some places, including the Bird Rock neighborhood of San Diego, CA, single-lane roundabouts successfully carry 25,000 vehicle trips per day at 19 mph with hundreds of people walking biking, and parking (pictured on right). To keep the traffic volume moving smoothly a new tool--a nine-foot 'transition' lane--was invented to allow people to park/un-park without interrupting the main lane of travel. A double-lane roundabout in Clearwater Beach, FL roundabout is one of the busiest in the nation, handling 58,500 people driving daily at peak season, along with 8,500 people walking. For comparison, Avon Road carries between 18,000 and 23,000 vehicles per day.

Other intersections (i.e. East Benchmark Road and Beaver Creek Place, and East Beaver Creek Boulevard and Beaver Creek Place) are also strong candidates for safer intersection treatments such as a domed mini-roundabouts (pictured on page 14). Similar to modern roundabouts, but smaller in size, domed mini-circles are more efficient, safe and move more vehicles at slower speeds while providing a gateway that establishes place and a sense of welcome.



*La Jolla Boulevard in Bird Rock San Diego, CA was a five-lane road (pictured above).*



*Five intersections were replaced with roundabouts, reducing La Jolla Boulevard to two-lanes. Today, people in cars are getting home sooner, and crossing distances went from 78 feet down to 14 feet! Below: A nine-foot 'transition' lane was invented to allow space for people to park/un-park without interrupting the main lane of travel.*



## 4 Address Street Connectivity and Placemaking

Street layout determines how directly one can get from point A to point B. A grid of streets with relatively small blocks (300 to 600 feet) and frequent intersections suits pedestrians, bicyclists, motorists and transit users the best because every intersection presents a choice of routes. A higher number of intersections indicates better connectivity. Where blocks are long, walkable neighborhoods feature alternative routes for pedestrians and bicyclists that offer shorter trips or quite, safe respites from traffic, which often lead through courtyards, between buildings and other public places. An example of a pedestrian-only route in Avon is Main Street Mall.

Congestion increases with broken connectivity and it also forces all users onto a limited network of streets, which can make walkability and active transportation challenging. Avon has limited North/South street connectivity due to the former working railroad, river and highways.

In Avon current block patterns reduce walkability due to limited North/South street or trail connections and large off-street parking lots. Avon prohibits cul-de-sacs, and supports internal street connectivity for new development. [To further support walkable development and infill, Avon should look at passing a maximum block length policy \(between 300 to 600 feet\) and a link to node strategy for future developments to ensure short block lengths and intersection density, e.g. a minimum number of intersections per acre.](#)

Connectivity can come in the form of alleys, in spaces between buildings, and in other public trails and links that



bring added value to all buildings and homes in a town center. Placemaking, like interior decorating, must create a strong, compelling sense that makes time spent in these spaces rewarding and memorable. Consider the public and private realm of a town center as a public/private partnership. Places can be funky and relaxed, but they must be thoughtful, sensitive to place, and maintained.

Plaza spaces must be carefully crafted to bring about proper levels of enclosure, transparency, human scale, complexity, imageability and comfort. The Main Street Mall is Avon's great example of these elements coming together. Overtime, links to/from the mall can be strengthened and new buildings with more transparency and that help activate the space can be encouraged through a town design guide. As a placemaking tool, consider adding movable chairs and tables to promote gathering spots along the promenade and more lingering.

## 5 Design for Livability: Transform ‘Strip’ to Mixed-Use Village; Incentivize Density

In the past, cities were weakened as land use failed to integrate transportation. Many cities turned to suburban development—lower density, large single land use parcels, and hierarchal road networks that limited through streets in communities—and away from urban or mixed-use neighborhood pattern. This led to a devalued or compromised set of land uses and roadways.

Establish maximum allowable setbacks for homes and commercial buildings in places of emphasis. Encourage placement of buildings and homes so that they create natural surveillance and maximize opportunities for people to meet or say hello. This practice is especially important near schools and parks, and within civic, retail and commercial districts.

Incentivize and set new policies to support the highest density within the town core. Create many destinations near the highest-density development. The combination of higher-density housing in the core, or along select sections of Highway 6 near the base of the ski resort as an example, will yield the highest number of walking trips.

The Town should look at lightening parking requirements, and eventually implementing paid parking, which in turn incentivizes more walking, biking and transit use. Prioritize intersections, street target speeds and routes up to three miles in all quadrants for the greatest return on investment.

**A tool to help with suburban strip transformation: liner buildings.** The use of “liner” buildings—shallow-depth buildings typically 20 to 24 feet deep, built on the edge of parking lots—can transform setback commercial districts that have come to define areas with Avon’s town center. Liner buildings can re-activate both the street and community, infusing the street with pedestrian activity and incubator spaces that allow for “mom and pop” shops that create jobs and diversify the retail market. Converting strip-style centers to villages is a very important concept and practice. To ensure that this transition in development and planning can occur ordinances and zoning codes need to be in place. Revise codes and ordinances to allow for strip to village development through mixed-use and Form Based Code overlay areas.



*Even national chains will adapt to build-to requirements as practiced in Honolulu, HI.*



*Liner buildings transform a setback to a village in Kingston, WA.*



*The Town Maker’s Guide to Healthy Building Placement graphic, left, shows the different forms that are generated by using an automobile as the design vehicle (left) versus placing a person at the center of the design scale (right).*

## 6 Adopt and Adapt Leading Design Manuals

Avon is working to apply modern town-making tools, but not all tools are in place. Enhance healthy community development opportunities, improve the local economy, and help assure that only the best type of development is incentivized.

Municipalities depend on street design and urban design manuals as they retrofit or modify existing streets and land use to improve performance and encourage sustainable development. Street design and urban design manuals play a large role in determining form by providing guidance to agencies, property owners and investors.

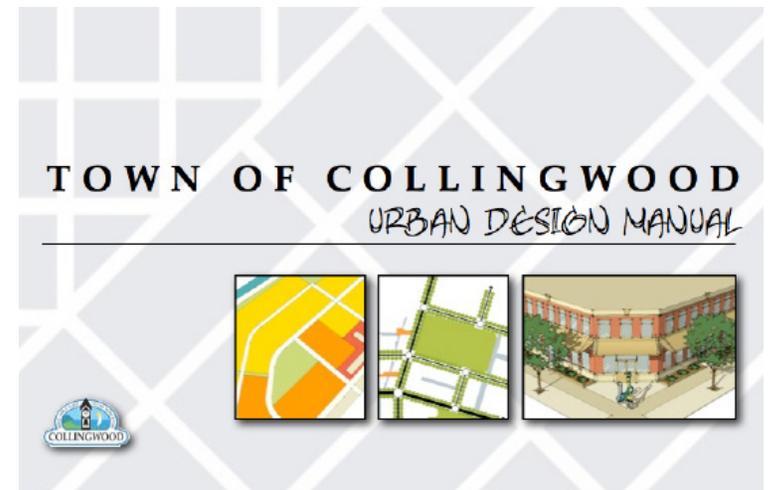
A manual should not prescribe how to design every segment of every street; rather, after clearly defining what a community wants to accomplish with its streets, designers can apply this framework along with the specific treatment guidance to ensure investment meets the community's goals.

A manual will need to be endorsed by the town council, enabling developers to use better land development practices. In time, a manual can be further customized for more specific application to Avon, meeting its scale, climate and context-specific needs.

Consider adoption and, then, adaptation of leading design manuals, including the Los Angeles County Living Streets Design Manual and Collingwood, Ontario Urban Design Manual, and provide government staff and consultants training in its use. Adopting a modern street-design guide also better protects local engineers and engineering firms now working to improve the quality of streets.

In addition, consider integrating a Complete Streets, context-sensitive, policy into the City's street standards.

*Model manuals to learn from or adopt include: the Town of Collingwood, Ontario: Urban Design Manual and Los Angeles County, California: Model Design Manual for Living Streets.*



## Concluding Thoughts

### Toward Implementation, Creating a Healthier, Prosperous Future

*The winds of change are strong. Keep up the vision, passion and work.*

We must change the way we approach transportation planning to ensure our communities are desirable places to live, learn, work, and play. Many parts of Avon are still over-built for cars and under-built for people. Some streets have unnecessary or overly wide vehicle travel lanes, to the detriment of adjacent businesses and people using other modes of travel. Additionally, walking routes get broken by off-street parking. Land-use and transportation decisions appear in many places within the town core to be out of sync with each other. We can, and we need, to do better.

Our future planning needs to recognize the significance of moving away from a car-centered way of planning. Residents and stakeholders who participated in the Walkability Workshop recognize that integrating transportation and land use planning improves safety, protects resources, improves health, encourages living in place, and provides opportunities for residents to interact.

The good news is that the challenges we face are opportunities. It is critical to remember that our communities are incredibly dynamic and ever changing, so this work takes patience, collaboration and vision. The Town of Avon staff, Mayor, Council Members, and other community partners, are ready to do just that. Together, resident advocates and government staff are ready to move forward the vision for West Beaver Creek Boulevard into designs and ultimately into implementation (construction). This model project will give the Town much needed lift, further building and strengthening its social capital and the town's people readiness to right-size Avon Road.

The Town of Avon already has in place progressive policies, reducing Vehicles Miles Traveled (VMT) and is ready to address parking and form-based code policies to unify future land-use and transportation planning for the entire city, spurring change and directing the type of growth the Town envisions. This document provides guidance as the Town takes steps towards a more walkable, livable, healthier, happier and more complete community.

At large, Avon has the opportunity to apply key concepts and principles, such as target speed, setting the default lane width to ten feet and many others shared in this document, and to apply them to the major capital improvement projects, or projects currently in the funding pipeline. It is also time for the Town to pass a Complete Streets, or Living Streets, Policy and create a town and street design guide to inform all new investment and set new design guidelines that will help create more sustainable and thriving community of the future.