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Colorado State University Transportation and Mobility Safety Task Force
Final Report - June 2020

Recommendations to Enhance Transportation Safety on Campus

Task Force Charge

On Aug. 26, 2019, the first day of Colorado State University's fall semester, freshman TJ Avery was tragically struck by a motorist while jogging on Main Campus. The crash, followed by TJ's death four days later, deeply saddened the university community and prompted CSU President Joyce McConnell to create a task force of university experts to study and assess safety regarding all modes of movement and transportation on the campus.

The Transportation and Mobility Safety Task Force was convened by Fred Haberecht, campus planner for Facilities Management, who assembled representatives from CSU divisions and departments to participate including Parking and Transportation, Facilities Management, CSU Police, University Communications, Resources for Disabled Students, ASCSU, and Housing and Dining. Martina Wilkinson, a city traffic engineer, also was invited to participate in the task force.

TJ's death was the catalyst for this task force and the charge for a broad examination of all mobility and safety related to pedestrians, cars, university work vehicles, bicyclists, skateboard riders, e-scooter riders and trains on and near the main CSU campus.

The task force collected data, evaluated and analyzed the following:

- Crash data (accident reports) from across campus for multiple years
- Enforcement statistics
- Two engineering consulting firms with expertise in traffic engineering and multi-modal planning (Kimley-Horn and Fehr Peers) were contracted to conduct the annual cordon study, evaluate infrastructure, complete a transportation behavior and traffic law compliance study, and provide a comprehensive inventory of existing intersections.

The task force used the data and analysis to identify specific trends, practices, compliance issues, and areas of heavy traffic, conflict, and mobility concerns, developing a. Guided by this insight, the taskforce developed holistic and comprehensive plan to support campus transportation mobility and safety for the future.

The aforementioned plan is divided into four main areas of opportunities and solutions to increase CSU community safety:

- Enforcement
- Infrastructure
- Policy and Standards
- Education

Additionally, the task force strongly recommends an annual transportation and mobility safety check of all 4 of the main areas of opportunity with an ongoing, quarterly status meeting.

Enforcement

The task force acknowledges the critical importance of enforcement towards the success of these categorical recommendations. In the absence of appropriate police officer staffing levels for a student and employee population of nearly 34,000, our educational recommendations, infrastructure investments, and policy initiatives are unlikely to yield our charge to improve transportation safety. Today, our limited officers are pulled from enforcing transportation safety goals due to the lack of officers for a "city" our size.

CSU Police Department is the integral enforcement arm for all University commuters. As part of a Platinum-Level Bicycle Friendly University, we abide by the League of American Bicyclists' Five E's: Education, Engineering, Evaluation, Engagement, and Enforcement.

Transportation enforcement enhances safe campus navigation while reinforcing our university culture of safety. Thirty percent of reported crashes on campus resulted in serious injury. Intermittent or seasonal enforcement introduces core concepts of stopping, yielding, and, for bike, longboard and e-scooter riders, signaling and dismounting. Ongoing enforcement provides predictable and consistent structure to ensure safe access to our campuses across transportation modes through word-of-mouth validation (that enforcement and safety are important at CSU). Data shows that 19% of bicyclists observed during a peak travel hour were non-compliant with traffic laws. Lack of enforcement, **due to inadequate law enforcement staffing,** may lead to increasing conflicts and provide a perception that some transportation modes are unsafe, discouraging individuals from walking, e-scootering, riding a bicycle, or other alternative transportation options that support our commitment to sustainability.

Recommendations for Improvement

- **Increase CSUPD officer positions**: CSU does not have adequate officer positions to support a current population of more than 34,000 students and employees along with major on-campus events for thousands of visitors. An appropriately staffed CSUPD would include a dedicated traffic enforcement team (see below) without the current reality of pitting one enforcement need against another. We recommend a base-level officer staffing at a ratio of approximately 1 officer per 1000 people, for a total of 45 officers, an increase from current CSU resources but still trailing the ratios reported by the United States Federal Bureau of Investigation, and other peer institutions such as CU Boulder.

  The FBI released a study reporting an average of 2.5 police officers per 1,000 students enrolled at universities. Universities close to CSU's enrollment had 1.7 officers per 1,000 students enrolled. The Community Oriented Policing Services division of the US Department of Justice released a publication Establishing Appropriate Staffing Levels for Campus Public Safety Departments. Multiple methods to calculate staffing levels are presented. One discusses that campuses with student enrollment over 15,000 students have 53 officers. Another model is based on the number of buildings the police department is responsible for and suggests that a campus with more than 100 buildings has 62 police officers. CSU has more than 180 buildings on CSU campuses.
- **Create a dedicated traffic enforcement team**: Assuming a fully staffed CSUPD as described above, we would recommend five full-time traffic enforcement officers with the following responsibilities

- Intersection enforcement – Ensure right of way is granted across transportation modes while enforcing those unwilling to stop or signal
- Dismount zone enforcement – Ensure dismounting and transitioning to pedestrian-status
- Traffic control – Provide traffic control of intersections during peak hours to ensure right of way is granted
- Speed enforcement – Enforce speed limits on roadways and reckless riding on trails consistent with CSU responsibilities
- Support for interpersonal safety outreach – Dedicated staffing paired with orientation, Rams Ride Right, and transportation events

- **CSU Police Department Recruitment Team**: A new department team was recently formed to help recruit, train, and retain new officers that reflect the unique culture of CSU. The goal is to increase general safety on campus which requires a skill set beyond writing tickets. This new approach is to acknowledge those skills necessary to operate in our culture. The opportunity to hire nine officers provides a chance to reinforce our culture. The Recruitment team has many goals to build CSUPD. Goals currently underway that support this proposal include recruiting officers who have the following strong skills:
  - Educator – Commuting is a life skill. An engaged police officer has the opportunity to enforce AND teach the value of safe commuting through repeated engagement with a primary audience of students who will spend four or more years on campus.
  - Negotiation – We suggest enhancing this skill set to recognize an ability to explain "why" someone is being stopped. An ability to negotiate and educate is a premium skill for a CSU police officer.
  - Traffic control – Demonstrated ability to manage traffic during peak commuting hours and major events.

Additional Considerations

E-bikes

E-bikes can achieve 40 miles per hour and allow an officer to quickly transition from foot to bike to catch someone riding through a stop sign. All traffic enforcement officers should be provided an e-bike and trained consistent with International Police Mountain Bike Association recommendations. Traffic enforcement officers should have a required number of hours on bike during their work week.

Safewalk and Saferide

- Utilize Safewalk program data to set new service standards, reducing current variation (40 minutes) from time officer is dispatched to when the request is closed, to support safety mobility on campus.

Recommended Budget Request

Shift Annual Training Expenses to Increased Salaries

CSUPD estimates an overall cost of $150,000 to train, equip, and pay a new officer, throughout their complete training program. This training requires, at least, 43-46 weeks of training before an officer is ready to serve CSU. As of January 2020, CSUPD is short 9 full-time employees, requiring $1.35 million to

train, equip, and pay officers who won't be fully trained officers until the second quarter of 2021. The task force requests a pro forma that increases CSUPD salaries to help retain employees leaving CSU for a payday at a local municipality. The increase would be funded by future training savings through employee retention (submitted previously to Administration). This would require a state classified policy change and retention of 2 years.

Infrastructure

Fehr & Peers supported the Safety Task Force by developing preferred "conceptual-level" intersection designs for eight (8) locations on the Main Campus. These intersections were identified to have pedestrian and bicycle safety concerns. The designs were informed by: multi-modal counts, crash data, field observations, and analysis of conflicts amongst users.

CSU's Main Campus transportation infrastructure was designed and constructed in the 1900s as a vehicular-based, roadway grid network. This infrastructure served well in the past; however, the campus has evolved from a place of service to a place of destination and a home to thousands of students. Our campus evolution brought with it a new multi-modal transportation hub. As the campus and City of Fort Collins populations have grown, challenges arise related to efficient mobility, infrastructure maintenance, and transportation safety.

Our historical infrastructure does not meet our current needs. Roadways have been converted, with nominal striping, to accommodate bicycles, scooters, skateboards, mobility devices, pedestrians, and transit operations. Additionally, the sidewalks, bike trails and roadway cross sections weren't designed for today's volume of people, evident from studies showing 25% of our intersections experience 40% vehicular non-compliance at crosswalks. The pure density of multi-modal movement on our narrowly converted pathways and bike trails have increased safety risks with 75% of crashes involving vehicle versus vehicle collisions and 60% of the thirty-one injury crashes involve a bicycle (August 2017 to October 2019 CSUPD crash data report). The pavement thicknesses weren't designed for the current frequency of transit loads on the system. Now is the time to bring our transportation system standards up to the $1.5B campus investment over the past 10 years, providing a sustainable, safe destination that supports learning and our continued growth.

Recommendations for Improvement

Group "A" Safety Improvement Projects (All modes of travel with vehicles)

- **Plum Street and Meridian Avenue (Roundabout Intersection)**
- **Meridian Avenue and University Avenue (Roundabout Intersection)**
- **Hughes Way and Old Meridian (STOP Controlled Intersection)**
- **Lake Street and Center Avenue (Signalized Intersection)**

Group "B" Safety Improvement Projects (Bicycle and Pedestrian Only)

- **University Avenue and Green Trail (Roundabout Intersection)**
- **Mountain Loop Trail and Morgan Trail (Roundabout Intersection)**
- **Pitkin Street and Mountain Loop Trail (Roundabout Intersection)**

- **University Avenue and Arthur Ditch Trail (Roundabout Intersection)**

Group "C" Other Intersections Associated with Meridian Village and New Meridian Avenue

- **Hughes Way and New Meridian Avenue (Signalized Intersection)**
- **Pitkin Street and New Meridian Avenue (Roundabout Intersection)**

Additional Considerations

Recommended Budget Request

- **Group "A" Projects** - $2.8M
- **Group "B" Projects** - $2.7M
- **Group "C" Projects** - $2.3M (Evaluated with the Meridian Village project and are dependent upon construction of New Meridian Avenue from Pitkin Street to Hughes Way)
- **See Attachment / Appendix XX (spreadsheet)** – The above projects were prioritized and assumed to be constructed over the next four (4) Fiscal Years (FY21 – FY24). The conceptual-level design and construction estimates are based upon FY21 pricing and are subject to a 3% per year inflation rate.
- **Intersection Designs** – Design fees have been included in the above $7.8M estimate. The Safety Task Force recommends early funding of $750,000 to advance the designs and refine construction cost estimates for all eight (8) of the Group "A" and "B" projects.

Policy and Standards

Establish policies, protocols, and standards that result in a transportation environment that is safe, accessible, and sustainable.

CSU must govern its roadways and trails as managed assets requiring recurring maintenance, code compliance, and "complete streets." The CSU annual Mode Split Survey demonstrates that transit and driving are primary modes of transportation for CSU students with walking and bicycling nationally recognized levels. Our transportation infrastructure must adapt as increases in enrollment mean more interaction amongst commuters across all modes of transportation.

Policies and standards acknowledge a leadership role for CSU. We can adopt policies to support international programs like Vision Zero and Complete Streets to ensure our campus evolves around safety for all campus users. Standards ensure we build roads and trails for longevity, safety, and compliance."

In some areas, the old infrastructure does not meet our current needs. Roadways have been converted, with nominal striping, to accommodate bicycles, scooters, skateboards, mobility devices, pedestrians, and transit operations. Additionally, in many cases, the roadway cross sections weren't designed for today's volume of people and the pavement thicknesses weren't designed for the current frequency of transit loads on the system.

Recommendations for Improvement

- **Adopt a Vision Zero Policy as a Transportation Safety initiative.** CSU reported ten serious injury crashes September 2017 through October 2019. Vision Zero is a world-wide initiative that

focuses on reducing the number and severity of crashes on the transportation system with the goal of zero deaths. The Vision Zero approach supports safe multi-modal access for our CSU community to predictably and consistently navigate streets, parking spaces, pedestrian facilities, protected bikeways, intersections, and transit infrastructure. Proposed changes and projects should all be reviewed against the Vision Zero effort.

- **Enact a "complete streets" as a CSU policy approach to infrastructure,** which accommodates and is accessible to all modes of travel (Americans with Disabilities Act compliant). Complete Streets would ultimately be housed in the CSU Master Plan and Aesthetic Guidelines.
- **Define, standardize, and codify CSU's transportation infrastructure design standards and regulations** to be based on national, state, and local standards and encompass current best management practices.
- **Define, standardize, and codify CSU's signage, striping, and pavement maintenance program** and develop an annual budget to maintain the program's implemented infrastructure
- **Update CSU Aesthetic Design Guidelines** to accommodate line-of-sight standards for landscaping trails, sidewalks, and crosswalks.
- **Amend CSU PD Safe Commuting Guidelines** (https://police.colostate.edu/files/2020/01/Safe-Commute-Rules-and-Regulations.pdf) by reducing or eliminating the number of days an impounded bicycle is held in impound before it can be sold by Surplus properties. Bicycles waiting to be clipped until spaces opens in the impound are considered an attractive nuisance for theft. CSU clips hundreds of bicycles a year that have been abandoned. The longer the bicycles waits to be seized, the less value the bicycle will have upon resale due to the lack of maintenance and weather elements on the bike. This recommendation does not include bicycles impound during routine traffic violations and seizure by an officer.

Additional Requirements

Signage, Striping, and Wayfinding:

The following items are CSU assets and should be tracked in an asset management database for purchase date, installation date, and anticipated replacement date.

- Intersection control (roundabout, signalized, stop, yield)
- Signage (regulatory, warning, informatory) – Tracked in asset management software for replacement scheduling
- Striping (road marking - pavement, curb, object, reflectors, buffered bike lane striping, permanent inset lane striping)
- Crosswalks (standard, enhanced, raised, signalized) and raised intersections/crossings
- Traffic bollards (removable, collapsible, fixed posts)
- Protected bicycle infrastructure (separated trails, physical barriers, delineators)
- Materials (concrete, asphalt, pavers, low-impact development)
- Vegetation that might possibly be obscuring views, signage, or infrastructure

Lighting:

The following items are CSU assets and should be tracked in FM's asset management database for purchase date, installation date, and anticipated replacement date.

- Infrastructure properly lit to meet CSU foot-candle standards

- Off-line action item (reassess current lighting level standards and locations for greater or lower lighting levels)

Work zones:

- Install temporary traffic control devices
- Provide detour routes which are ADA compliant
- Ensure traffic control is created to move modes separately, not just the movement of motor vehicles
- Improve contract language to ensure investments in traffic control and detour planning meets the unique needs of CSU

Recommended Budget Requests

- **Consultant Budget Request** - $50,000 to hire a consultant team to assist with design standards and evaluate a maintenance program
- **Signage and Striping Infrastructure Budget Request** - $150,000 over the next 3 years, to address aging signage and striping infrastructure across campus. Per our recently completed "Traffic and Safety Study" by Kimley-Horn and Associates, the University is seeing a high-rate of traffic rules compliance violations as observed at 10 key intersections across the main campus.
- **New Digital Pylon Signage** - $80,000 for two digital wayfinding signs (double sided) for placement on east side of Shields, adjacent to Ingersoll Hall parking lot and one near Lake Street and Meridian Avenue. Digital signs supporting initiative to reduce vehicular traffic on Hughes Way through parking occupancy conveyance. Hughes Way intersection reports over 1,000 movements through the intersection at Meridian Avenue (44% vehicle, 25% bicyclist, 30% pedestrians, reported by Kimley-Horn).
- **Walk Audit Program** - $5,000 annually for an infrastructure tracking app to be used during an annual walk audit conducted by Facilities and PTS staff, along with student representatives of the Student Disability Center, ASCSU and the Alternative Transportation Fee Advisory Board. This effort will track progress on infrastructure improvements and record new areas of concern. Three walk audits across main Campus have occurred over the past few years, with more than 20 areas of concern identified. In Spring 2019, a formal funding request of $386,000 from the State of Colorado was submitted for a variety of these areas of concern.

Education

Establish consistent, continuous educational outreach that supports safe use of the transportation system and invokes an increasing change in culture that recognizes everyone's individual responsibility to create a safe system for all.

With close to 7,000 new students arriving each school year, continuous education is critical to ensure that university community members safely navigate CSU's infrastructure. Many students come to Fort Collins excited to participate in its bike culture but without experience in riding on busy streets. In addition to many bikes, our campuses, especially main campus, are growing increasingly busy with vehicle traffic, long boarders, scooters, and pedestrians – who all need to understand the rules of the

road and basic travel safety information, particularly as they learn to interact with each other. Nearly 28% of young adult drivers reported waiting until they were 17 or older to get their licenses. Additionally, 50% of teens in large cities obtain their licenses after 18 and have a higher rate of being involved in a crash during their first year of driving. As a result, our younger road users may need additional education in order to be fully successful in using CSU's busy multi-modal intersections.

Recommendations for Improvement

- **Require CSU Moves for all incoming students** – This currently optional online training program educates incoming students about local transportation options and key strategies for navigating CSU campuses safely and efficiently. The task force recommends making completion mandatory for all incoming students beginning in the Summer of 2021 and making the training *available* to all incoming students in the Summer of 2020 through CSU's online orientation programming, supported by an email to all students with information about the training and its importance.
    - The Canvas course's animated videos were developed with a $45,000 grant from the city of Fort Collins, illustrating safety messages such as "be seen," "be heard," "be predictable," and "share the road."
    - Pilot studies and follow up surveys with incoming students in 2018-19 and 2019-20 suggest that the one-hour training has a lasting positive impact on students' knowledge of sharing the road and safe bicycling practices.
    - The taskforce recommends requiring this training for incoming CSU students, and mirroring the messages in the culture-building campaign after a non-mandatory period in the 2020-21 academic year to test delivery methods and student engagement.
    - Training completion rates and quiz results will be recorded in Canvas; surveys will gauge participant learning and retention of material. These metrics will be used to continuously update and improve material.
    - Possible barriers: Establishing a new requirement for incoming students will necessitate a process for enforcement of non-compliance. This process could be a registration hold (like Haven and Alcohol Edu online trainings).
- **Create a culture building communications campaign** that translates "Rams take care of Rams" to expectations for travel around CSU campuses. This campaign would include:
    - Key messages about infrastructure
    - Bike, pedestrian, scooter, vehicle and longboard travel best practices
    - How to navigate our campuses, such as where to access trails and sidewalks, along with sharing the road with vehicles and Transfort, etc.
    - A variety of tactics and strategies to reach students and employees about rules of the road including:
        - Temporary signs about rules of the road in safety bike, longboard, scooter and pedestrian hotspots
        - Social media through CSUPD/Public Safety Team accounts, ASCSU and student groups, official university accounts, college and unit social media account managers who are part of the university's social media committee, and partnering offices across the university and larger community who will share our messages including educational graphics and videos
        - Direct outreach through interpersonal contact with those traversing our campuses

        - Integration with student and employee orientation messages
        - Articles in the Collegian and SOURCE with safety messages and explaining new infrastructure
        - Informational and educational advertisements in student media, CSU Life and on Transfort buses
        - Handouts provided through interpersonal contact and travel training
        - Partnerships to help share the message through university and city offices including Off Campus Life, Housing and Dining, Residence Hall Association, student organizations and groups, ASCSU, Administrative Professional Council, State Classified Council, Transfort, Poudre School District (they have expressed interest in our messages due to the fatality outside of a school earlier this year), and other partners as they emerge
        - Audiences: students, employees, visitors
- **Increase Rams Ride Right outreach**
    - In 2018, the Campus Bicycle Advisory Committee piloted an outreach effort called Rams Ride Right which encourages safer and more lawful bicycling practices. It particularly focuses on students and employees on Main Campus. This outreach effort was a response to growing concern from the committee and other university stakeholders regarding hotspots of noncompliance to stop signs, dismount zones and other traffic laws across campuses. (19% average bicycle non-compliance at eight intersections reported by Kimley-Horn and 9 of 10 serious injury crashes involved a bicyclist).
    - Limited availability of officers at the CSU Police Department led to less bicycle enforcement than in prior years, and the pilot Rams Ride Right effort supplemented the push for additional enforcement with encouragement for bicyclists who are modeling lawful behavior.
    - The Rams Ride Right effort has evolved over the past two years to include funding from ASCSU's Alternative Transportation Fee Advisory Board, and presence from CSU police at many of the effort's events during which people on main campus are rewarded for their safe and lawful behavior.
    - The taskforce recommends funding Rams Ride Right as an ongoing effort focused on the first two to three months of the academic year and, as resources are available, reinforced in the spring when weather is warm again.
    - Number of bicyclists, skateboarders and scooter riders who are rewarded or ticketed will be tracked and reported, along with location. Locations will be reevaluated each season for maximum impact.

Recommended Budget Requests

- **CSU Moves Budget Request** - $5,000 for development and implementation of participant tracking system
- **Communications and Outreach Campaign Budget Request** - $12,000 including investment in design, graphics and videos, as well as message placement and ad purchases, to be refreshed every three years or as needed
- **Rams Ride Right Budget Request** - $10,000 for 2,000 x $5 RamCash incentive cards each year