

Blueprint for a Green Campus

Progress Report on Campus Transportation-related Practices

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As the precursor to the Blueprint for a Green Campus process, the series of annual Campus Earth Summits made a number of recommendations for the Boulder campus. The following is a brief review of the transportation-related recommendations from previous Campus Earth Summits. While these past Earth Summit recommendations are transportation-related, carrying them out is not necessarily within the jurisdiction or authority of Parking and Transit Services office. In some cases action is needed from other departments, interdepartmental cooperation may be indicated, or a campus or system-wide approach may be most appropriate. Except where indicated otherwise, the recommendations below are from the 1998 Campus Earth Summit:

1. 1997 - Create a safe, legal east-west bicycle route across campus YTBA (yet to be accomplished)
2. 1997 - Create a faculty/staff bus pass program Accomplished
3. 1997 - Hire a campus transportation coordinator Accomplished

Faculty/staff bus Pass - 1998 Earth Summit Recommendations

4. Start a strong marketing effort Started
5. Consider policies discouraging travel reimbursement for trips that could be taken by bus pass YTBA
6. Work w/RTD to use Buff OneCard as faculty/staff Eco Pass Accomplished
7. Develop flexible parking permits to encourage employees to give up full time permits Started
8. Consider increasing the share of f/s Eco Pass funding from parking revenues (increasing the cost of parking) to increase incentive to use alternate modes YTBA

Student Bus Pass - 1998 Earth Summit Recommendations

9. Consider modifying the student bus pass to allow full access to all RTD buses Accomplished
10. Consider combining all CU bus passes into one package YTBA

New Transit Services - 1998 Earth Summit Recommendations:

11. Work with the City and RTD to develop a campus shuttle linking campus properties Started
12. Work with the City and RTD to develop the new BOUND bus on 30th Street Accomplished

Master Plan / Land Use - 1998 Earth Summit Recommendations

13. Work with the City to limit increased travel demand by concentrating CU's growth in areas adjacent to the Main Campus. Started
14. Commit to preserving much of the Flatirons property as open space. YTBA (this recommendation from the Campus Earth Summit may be contrary to current University policy)

15. Consider adding enough student housing at Williams Village and Grandview Terrace to avoid any increase in the number of students living off campus. Started
16. Consider building more housing for faculty and staff to reduce travel demand. Started

Bicycle Issues - 1998 Earth Summit Recommendations

17. Create a safe, legal east-west bicycle route across campus with either a counter-flow lane and signage along Pleasant Street or by turning Pleasant Street into a bicycle/pedestrian mall. YTBA
18. Work with the City to create bicycle lanes along Colorado Avenue for safe travel between campus and the high-density housing along Colorado east of campus and along the 30th Street corridor. Started

Statewide Campus Transportation - 1998 Earth Summit Recommendations:

19. Collective bargaining for CU Eco Passes for all students and employees in the RTD region. TBA
20. The potential for pass programs at other universities in the state. Started
21. Cooperative planning with cities and transit agencies. Ongoing - needs more specific objectives
22. Parking pricing. YTBA
23. Policy initiatives to support alternative modes at schools across the state. YTBA HB 1329
24. What different campuses would like to get out of the Campus Transportation Network. Started

The Blueprint for a Green Campus states that, "CU-Boulder needs a clear vision and strategy for addressing the environmental challenges and opportunities ahead. The "Blueprint for a Green Campus" is intended to help us identify where we can improve our existing policies and practices in order to set an example of environmental responsibility as an institution. The Blueprint for a Green Campus is an environmental action plan which proposes solutions for a wide variety of issues that CU faces.

The Blueprint for a Green Campus sets forth the following goals:

- *Creating a climate-friendly campus by reducing greenhouse gas emissions by 7 percent below 1990 levels by 2010*
- *Growing without increasing traffic by capping traffic at today's levels*
- *Creating a safe and healthy campus by reducing hazardous waste and by minimizing exposure to toxic chemicals and pesticides*
- *Greening campus consumption and disposal habits by purchasing environmentally-responsible products and by capping solid waste going to the landfill at today's volumes."*

Campus transportation-related issues play a role in all of the four of the Blueprint goals or vision statements above. In addition to reviewing progress on earlier recommendations from the Campus Earth Summits, this report is to review campus activities in light of these four goal / vision statements and to make recommendations in each of the four areas.

Creating a Climate Friendly Campus

***The Vision:** CU commits to meet the emissions reduction targets of the Kyoto Protocol, which would reduce CU's greenhouse gas emissions by seven percent below 1990 levels by 2010.*

Transportation is one of the largest sources of greenhouse gas emissions. Parking and Transit Services (PTS) does not have control over the commuting behavior of CU affiliates but it does exert an influence. To the extent that we are successful in encouraging the use of alternate transportation modes in people's campus commutes and in the conduct of University business, we help reduce CU Boulder's contribution to climatic change. The Blueprint vision is for CU to meet the greenhouse gas emissions reduction target set in the 1997 Kyoto Protocol to the 1992 UN Framework Convention on Climate Change. That target is to reduce greenhouse gas emissions by seven percent below 1990 levels by 2010.

There are two key components to progress on this vision. The first is to clarify the benchmarks, set interim goals and establish and maintain a monitoring process. What greenhouse gases were produced by CU Boulder in 1990, from what sources and in what quantities? What would a seven percent reduction look like? Do we want to target a seven percent reduction in each greenhouse gas or is a net reduction of seven percent the real target, gaining reductions where ever we can? For PTS part in this goal we hope our programs will reduce the total greenhouse impact of CU Boulder-related travel by 7% of 1990 levels by 2010, at the least.

From the broadest brush perspective, some 30,000 to 40,000 people travel to and from the CU Boulder Campus every work/school day traveling an estimated 400,000 to 500,000 miles each day!¹ The quantity of greenhouse gases produced in this massive daily pilgrimage is tied to four variables: 1) the number of people traveling, 2) the distance traveled by each, 3) the sources of energy for that travel, and 4) the energy efficiency (btu/person/mile) of the travel modes employed. Progress toward the vision of meeting the Kyoto Protocol target requires that we make improvements on one or more of these variables; the more of them the better due to the potential for compounding. The actual programs or proposals that can reduce our collective greenhouse gas emissions are discussed below under the vision for growing without increasing traffic.

It should be noted that it is very important that CU work on this goal. Boulder is a center for atmospheric research - at the University, at UCAR/NCAR and at federal labs. The consensus of world-wide atmospheric research is that the world's climate is changing faster than previously projected – with impacts for Colorado's agricultural and recreation economies. There are also major impacts world-wide on physical and economic health as well as on international security issues. The Kyoto Protocol is only a small first step toward taking responsibility for industrial humanity's contribution to accelerating climatic chaos. Even so, the United States remains a greenhouse gas emissions outlaw - maintaining one of the highest outputs per capita while refusing to ratify the Kyoto Protocol. In the absence of leadership from the federal government, progress in this area must come from entities such as CU deciding to be social/environmental good neighbors. We can and should act in concert with the international scientific consensus² even in the absence of an international commitment from the federal government.

The second component to progress on this vision is the development and implementation of programs designed to actually reduce CU Boulder's greenhouse gas emissions from transportation-related sources. In addition to the TDM recommendations in the next section, greenhouse gas emissions would be reduced by the following actions. Some of these are recommended for implementation by PTS, others require action(s) beyond the (sole) jurisdiction or authority of the Parking and Transit Services office:

1. Provision of fuel-efficient vehicles, alternate fuel vehicles and/or hybrid-electric vehicles from State Fleet.
2. Department/Division purchase/lease of fuel efficient vehicles, alternate fuel vehicles and/or hybrid-electric vehicles.
3. Department/Division/Campus generation or purchase of wind generated electricity.
4. Increase Department/Division/Campus use of high-efficiency lighting.
5. Develop campaign to turn off lights, computers and monitors when not needed.
6. Purchase of alternate fuel vehicles for the campus STAMPEDE shuttle (Accomplished).
7. Replacement/retrofit of RTD and City diesel buses w/ particulate traps to burn low sulfur diesel (health issues).
8. Replacement of RTD and City diesel buses with non-fossil fuel buses (health and climate change issues).
9. Implementation of commuter rail service between Boulder and Denver.
10. Implementation of high-frequency bus service between Boulder/CU and Louisville, Lafayette, Longmont

¹ Based on responses to a 1999 campus transportation survey conducted by RRC Associates.

² As expressed by the Intergovernmental Panel on Climate Change and implemented through the Kyoto Protocol to the U. N. Framework Convention on Climate Change.

Growing Without Increasing Traffic

The Vision: CU caps traffic at today's levels by growing in such a way that there is no net increase in single occupant vehicle trips by students, faculty and staff.

There are two key components for progress toward this vision as well. First, we need to define what "today's levels" are and how they are to be measured. We need to design and implement a process to monitor single occupant vehicle trips and the overall modal split on an ongoing basis. Second, we need to design and implement an integrated travel demand management (TDM) program for the Boulder Campus.

Several studies have been conducted over the years looking at CU Boulder's transportation patterns. In most cases these studies have used different methodologies, leaving us with results that are not comparable over time. The one transportation monitoring instrument that has been used consistently is the survey of faculty/staff Eco Pass use from 1998 to the present. Some of the highlights from these surveys are appended.

Over the years, CU Boulder has been one of the leading campuses in the area of travel demand management programs. We have many of the pieces needed for a maximum effectiveness TDM program. What is now needed is an assessment of what more can be done and how best to integrate the different aspects. What we have in place:

Pedestrian

- An extensive network of pedestrian pathways and underpasses on campus and connecting campus with adjacent areas.
- Pedestrian activated crossing lights added in 2001 on Broadway Avenue and on Regent Drive.
- A workday pedestrian-transit mall in the center of campus to limit conflicts between automobiles and pedestrians, buses and cyclists in the campus core.
- Pedestrian right of way sign barrels added in 2001 on Regent Drive, Colorado Ave, University Ave. and 18th Street.
- A Night Ride / Night Walk program to provide night-time security for faculty, staff and students walking on campus after dark.
- Thirty-one emergency phones on campus.
- Curb extensions and a pedestrian refuge island were added on University Ave. in 2001.

Bicycle

- Bicycle dismount areas to reduce conflicts between pedestrians and cyclists in areas of high pedestrian traffic.
- Multi-use paths on Broadway with separate lanes for bicyclists and pedestrians to reduce modal conflicts.
- Seventeen underpasses³ on the periphery of campus separate bicyclists and pedestrians from cars.
- Thirty bicycle paths, lanes and routes⁴ connect the campus with the community.
- Approximately 7,000 bicycle parking spaces on campus.
- A bicycle registration program designed to assist in returning recovered stolen bicycles to their owners.
- An ad hoc bicycle facilities improvement group (01-02) prioritizing potential upgrades to campus bicycle facilities.
- The City now plans to add bike lanes on Colorado from Folsom to 30th Street between 2002 and 2004.

Transit

- Student Bus Pass Program. If "no free parking" is the stick, this is a big carrot. Students have twice voted in favor of a transportation fee to buy bus passes for every student (appx. 26,000).
- Faculty/Staff Eco Pass Program. This is another big incentive. All our continuing faculty and staff members (app. 6,250) have access to a free, unlimited-access transit pass.
- A high frequency shuttle (the Buff Bus) between the Main Campus and the Smiley Court and Williams Village housing areas.
- A high frequency bi-directional shuttle (the HOP) linking campus with the Hill, Newton Court Housing, Downtown, and the Crossroads Mall.

³ Located at: 1) Broadway & College, 2) Broadway at Kittridge, 3, 4 & 5) Baseline & US 36, 6) US 36 at Bear Creek, 7) Baseline & Bear Creek, 8) Colorado & 38th, 9) Discovery, 10) Drive & Skunk Creek, 11) Arapahoe * Boulder Creek, 12) 30th & Boulder Creek, 13) 28th & Boulder Creek, 14) 28th & College, 15) 28th & Aurora, 16) Folsom & Boulder Creek, and 17) 17th & Boulder Creek.

⁴ Bike paths, lanes and routes Bike facilities serving the CU vicinity include bike paths: 1) Broadway Boogie, 2) Pleasant to Colorado, 3) Folsom to 28th, 4) Old Folsom from Kittredge to Colorado, 5) Boulder Creek, 6) Kittredge to Aurora, 7) Kittredge to 28th along Baseline, 8) Baseline to Apache along US 36, 9) US 36 to Baseline along Bear Creek, 10) 30th to Foothills Parkway along Colorado, 11) Colorado to Arapahoe along Bear Creek, 12) 38th to Foothills Parkway along Arapahoe, 13) Colorado to Arapahoe along Foothills Parkway; 14) 30th to Pearl East on Pearl Parkway; bike lanes: 15) 6th to 55th on Baseline, 16) Baseline to Arapahoe on 30th, 17) Baseline & 27th Way to South Campus along Moorhead, 18) Manhattan to South Campus along South Boulder Road, 19) 6th to 17th along University, 20) Jay to Colorado along Folsom, 21) Marine to University along Broadway; and designated bike routes: 22) Kittridge Loop, 23) Euclid, 18th and Colorado through campus, 24) 28th Frontage Road Baseline to Arapahoe, 25) 28th to Mohawk on Aurora, 26) Baseline to US 36 on 30th and Apache, 27) Pine to University on 17th, 28) Macky and Pleasant on campus, 29) 6th to Broadway on College, and 30) Baseline to Colorado on 35th.

- A new high-frequency shuttle (the BOUND) linking Williams Village, Smiley Court and much private student housing to the East Campus, Crossroads Mall, the Base Mar Shopping Center, CU Credit Union offices and many other transit services.
- A new high-frequency shuttle (the LEAP) linking CU's Pearl-East offices with downtown, Main Campus (via the HOP and SKIP) and East Campus (via the Bound).
- The "STAMPEDE" shuttle starts service 8/26/02 on Colorado, connecting Broadway and the Main Campus with the BOUND shuttle on 30th St., the East Campus, the JUMP on Arapahoe, the Research Park and much student housing east of campus.
- The DASH shuttle starts 9/xx/02 on South Boulder Rd, linking Lafayette and Louisville to campus along Broadway.
- Thirteen transit information displays with bus schedules and maps in campus buildings in various locations.
- Eight transit information displays with transit maps in residence halls.
- A ski bus program providing low cost round trip weekend service to three ski resorts throughout the ski season.
- A campus parking map that also shows the location of the 80 bus stops on or near campus.
- A new employee orientation that explains the Eco Pass benefit to all new staff employees.
- A late night shuttle service (Night HOP I and II) providing service between campus and downtown until 3 AM on Thursday, Friday and Saturday nights.
- A changed habits in parking (CHIP) program to provide discounted one-day parking permits to regular parking permit holders who give up their unlimited access permits. Needs to be marketed as well as extended to all alt. Mode users.

Automobile

- No free parking on campus. This is a vital, central component of a TDM program. The price level determines the strength of the incentive created. Need to develop viable occasional parking options for persons using alt modes as their primary means of access.
- Effective parking enforcement. Without effective enforcement the incentive value of paid parking declines.
- A carpool parking permit that allows members of a carpool to share the cost of a single permit.
- RTD park-n-Ride facilities on US 36 expanded at Table Mesa and in Westminster in 2001.

General

- A Guaranteed Ride Home program providing faculty and staff who use alternate modes with a free taxi ride home in the event of an emergency.
- Commitment to a modal hierarchy. Two master plans, spanning eighteen years, have reinforced our intention that CU Boulder is designed first and foremost as a pedestrian campus. In order of priority after pedestrians, we are committed to supporting bicycling, transit and then automobiles. (do actual investment priorities follow the hierarchy?)
- A campus transportation directory on the web and in the campus phone directory.

The above is quite an impressive list! All of the individuals, offices and departments that have worked to create and maintain these programs and facilities deserve a big hand – including the City's Transportation Division. In spite of the impressive list above, there are many more things that can be done to help reduce traffic and parking congestion on campus. Several are discrete programs that can be added or improved, but parking pricing is perhaps the most important element because it creates the market and mind-set within which most campus people make their transportation choices on a daily basis.

The Campus Master Plan links additional Main Campus parking development to three requirements.⁵ One relevant here is, "Additional Main Campus parking will be developed at one or both of the two identified parking structures sites ... 2) if alternative mode programs do not provide adequate mobility". This language, along with the modal hierarchy⁶, seems to

⁵ **Goal**

Additional Main Campus parking will be developed at one or both of the two identified parking structures sites 1) if parking demand warrants an additional structure or structures or there is a loss of existing parking, 2) if alternative mode programs do not provide adequate mobility, and 3) if parking can be developed at an affordable price.

Guidelines

- Recognize that permit demand and supply will change, although currently in balance given the charges for permit parking on the Main Campus.
- Add visitor parking, for which demand currently exceeds the supply. Consider doing this by reallocating existing spaces.

Goal

Parking demand on East Campus, Williams Village, and CU-Boulder South will be met with surface lots during the planning period (to 2008). Campus Master Plan - Final Draft February 2000 p. 153.

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- Normally preferred modes of on-campus transportation are, in order: (1) walking, (2) bicycling, (3) transit, and lastly (4) driving. This encourages "environmentally friendly" transportation, meaning best use of land, minimizing air pollutants, and maximizing safety. A

establish a priority for alternate mode development, over and/or in advance of, automobile parking development. This suggests that the University define what its alternative mode programs will be; fully implement those; and then determine if there is "adequate mobility". If yes, no additional parking is needed, if no, additional Main Campus parking is warranted under this requirement. We need to define our view of CU Boulder's fully developed alternative mode programs and develop a timeline for their implementation. Once implemented, if we find that there is unmet demand; that we have the ability to provide additional parking affordably; and that we do not have adequate mobility; we will have satisfied the Master Plan requirements and be in the position to build additional Main Campus parking.

Overall Planning Recommendations:

- Fill the newly reclassified Transportation Marketing and Outreach Assistant position.
- Develop a parking and transportation micro-master plan for UCB.
 - Develop a TDM plan for UCB.
 - Conduct a survey on approaches to address a potential disparity between parking demand and parking supply. The circumstances around this issue have changed in light of both 1) elevated confirmation and retention rates resulting in more students than either Housing or PTS can accommodate, and, 2) proposals to further increase enrollments while removing additional parking supply and well in advance of our ability to address resulting parking supply/demand mismatch through TDM programs and/or parking construction. Participation from Housing and Admissions desired here.
 - Develop a range of parking and transportation scenarios examining the interaction of a variety of parking supply and travel demand management/modal shift options for UCB. Continue development of CU Inter-modal Transportation and Information Center project, with bus station, bike station, Broadway and Euclid underpasses and TEA-21 TIP funding request.
 - Examine the incentive structure created by the current parking pricing relationships.
 - Develop a clearer sense of what it costs the University to have a pedestrian, a cyclist, a transit rider, a car-pooler and an SOV user. If we set our pricing to reflect real costs to the University, to the extent that people respond to price signals, their choices will yield a more rational outcome for them and for the University.
 - Develop both policy and funding sources to better support the capital investment and operating budget enhancements needed to implement the priorities established in Master Plan's modal hierarchy.
 - Create a pedestrian facilities development plan.
 - Create a bicycle facilities development plan.
 - Create a transit facilities development plan.
 - Create carpooling, vanpooling and parking facilities development plans.

Recommended/Planned TDM additions:

- Increase flexibility, convenience and cost incentives of part-time parking options for UCB alternate mode users.
- Addition of regional bus service on 28th St. w/stops at Bear Creek/Willville, and 28th and College 2002/3 (?).
- High frequency STAMPEDE shuttle between Main and East Campus on Colorado. Scheduled to start 08/26/02.
- High frequency DASH shuttles from Boulder Walnut St. Station, along Broadway and South Boulder Road to Louisville and the Lafayette park-n-Ride. Scheduled to start early 09/2002.
- Increase park-n-Ride parking along transit routes serving UCB. 2001 & 2002
- Target outlying communities for UCB alternate modes commuting outreach events.
- Provide housing on campus and within Boulder on high frequency transit routes for a higher proportion of students, faculty and staff.
- Promote legislation to create funding for alternative mode transportation projects. Including proposals to create: a Multi-modal Transportation Capital Fund from TABOR surplus tax revenues; a 4/10 of one cent on the dollar increase to RTD's sales tax to fund needed metro-wide multi-modal transportation improvements not funded through CDOT ("FasTracks"); and creation of a Rail Transportation District (like BART) to build and operate a state passenger rail system.
- Examine CU's options to support programs to fund and implement the Locally Preferred Alternative + of the US 36 Major Investment Study.
- Consider joining the US 36 Transportation Management Organization.

pedestrian-oriented environment for the heart of the campus enhances the total learning experience. Vehicular trips may be necessary for longer distances, time-urgent needs, and movement of materials.

The order of preference for on-campus transportation does not apply for those persons who cannot viably walk the necessary distances due to health problems and/or mobility impairments. For people with disabilities, vehicular access and convenient parking may be especially important. Campus Master Plan - Final Draft February 2000 p. 133.

Creating a Safe and Healthy Campus

The Vision: Creating a safe and healthy campus by reducing hazardous waste and by minimizing exposure to toxic chemicals and pesticides

To fill out this vision in the transportation realm we need to touch on the health and safety aspects of the various modes of travel. For pedestrians, there is the threat of assault, robbery and rape, particularly at night. There is also danger to pedestrians from automobiles and bicyclists on campus and City streets and paths. All modes of travel face safety issues from snow and ice, particularly pedestrians and cyclists. The campus has admirable programs in place to address each of these issues and, in each case, there is likely to be room for improvement. These issues are listed because they bear on health and safety aspects transportation, even though it is not necessarily within the jurisdiction or authority of Parking and Transit Services to address them:

- The Night Ride / Night Walk Program provides an escort service for pedestrians on campus. The combined numbers using this program have grown substantially over the last four years.
- The campus has 31 emergency phones, 19 of which were installed in 1999 - a safety improvement for all campus users, pedestrians in particular.
- Lighting is provided in parking lots and on major pathways - ID any areas needing lighting safety upgrades.
- The mild exercise associated with walking, cycling and transit use contributes to health and stress reduction. Studies show a lower incidence of road rage in communities with well developed transit systems. Consider working these factors into alternative transportation education and outreach planning.
- Crosswalks along Regent Drive, particularly at the Fiske Planetarium, continue to be a serious safety concern due to heavy pedestrian and automobile traffic. Significant improvements have been made in this area with the addition of signage, area lighting and crossing lights. Cyclists traveling too fast in the crosswalks is of particular concern.
- To improve campus safety and to promote walking and cycling as the most environmentally friendly means of travel, the campus should consider ways of further improving pedestrian safety.
- Questions regarding human health effects of airborne carcinogens produced by diesel engines demand our attention.

Greening campus consumption and disposal habits

The Vision: Greening campus consumption and disposal habits by purchasing environmentally-responsible products and by capping solid waste going to the landfill at today's volumes."

1. PTS is probably average in terms of recycling office paper wastes and purchasing recycled/recyclable office products. As it is we do not really know where we stand in this regard (average, above or below). We would benefit from a campus-office environmental self-audit process to help with this assessment process and to use in monitoring progress.
2. Look into the relative environmental friendliness of cleaning supplies and janitorial practices in use in the PDPS building (facilities jurisdiction?). Check with campus Blueprint purchasing specialists for recommendations.
3. We currently use a non-recyclable envelope for our citations and issue citations on a non-recyclable plastic. Look for functionally appropriate alternatives that are recycled and/or recyclable.
4. Both our paper temporary permits and our regular plastic hang-tag permits are non-recyclable. Look for functionally appropriate alternatives that are recycled and/or recyclable.
5. The HVAC system in our building is so badly tuned that most employees have to use personal space heaters - even in the summer at times. Examine the potential to save energy and cut costs by having this fixed as energy costs increase.
6. 43% of our PTS computers and monitors are commonly left on overnight. Plan and implement a program to raise awareness about turning computers off and/or activating automatic power save modes.
7. With the exception of our bicycle-based lot count program, our vehicle operations are entirely fossil fueled. None of the vehicles is either fuel efficient (high mpg) or low emissions. Work with Transportation Services and State Fleet to create more environmentally friendly vehicle options for state agencies.
8. Another potential area for emphasis is the commuting and on-campus travel modal split within our division. Run a survey to see what the departmental modal split is, provide information on options, set a modest goal for improvement (link to Kyoto?) and then re-survey our in-house modal split periodically to check for progress.

These are eight areas that give us the potential for progress on this goal.