

IV. Bicycle Transportation Policy

This policy section is the heart of this document. It is arranged in alphabetical order by topic. As it will be updated and evolve as issues change, it is appropriate to start with a comment on writing policy.

Writing policy can be heady stuff—it is easy to become idealistic and try to right the wrongs of the world, or to become bombastic and write intricate legal pronouncements, or to let one's own politics show through.

Alberta Bicycle Association's bicycle transportation policies should make it easier, safer and more convenient to use a bicycle for transportation. They should not be so idealistic that they will be considered impractical by the public. And they should be written in clear, simple language.

Alberta Bicycle Association is a cycling association, not an environmental group or an anti-car lobby. While many of our members are environmentalists and cycle for environmental reasons, our role as members of the Recreation & Transportation committee is to be cycling advocates. We promote cycling; environmental benefits and fewer cars on the road are a welcome result, but they are not the primary goals. Likewise, we wish to have our rightful place on the road, but we respect the right of others to use the roads as well.

Air Quality

Because improvement in air quality is beneficial to cyclists, Alberta Bicycle Association supports programs, policies, and projects to improve air quality, and opposes any that will cause air quality to deteriorate.

All-Terrain Bikes (ATBs)

(see MOUNTAIN BIKING)

Analysis and Monitoring

Agencies and departments responsible for the design and construction of cycling facilities should monitor use of these facilities, and the demand for new facilities. They should also keep statistics of accident types and locations involving cyclists so that their causes can be addressed.

New designs should be subject to before and after studies to determine their advantages and disadvantages so that they can be optimized. Statistics and reports pertinent to cycling issues should be readily available to members of the public.

Barriers To Travel

Government policy should be to eliminate barriers to bicycle travel and to create new opportunities for bicycling. New public projects should not create additional barriers for cyclists. Where barriers to cyclists exist, an effective and convenient alternative should be offered.

Bicycle Encouragement Programs

Bicycling can improve the cyclists' cardiovascular system and help with weight control, and can reduce air pollution, energy consumption, urban congestion, and parking lot sprawl, as well as reducing surface water management problems (less pavement required). Provincial, regional, and local governments should each have ongoing programs to increase the use of bicycle transportation. The programs should coordinate the interests of community development, economic development, parks and recreation uses, touring and tourism, public health and safety, traffic demand management, and school and youth organizations.

Bicycle Facility Design

All facilities used by cyclists should meet or exceed current *Community Cycling Manual* (CCM) minimum standards, unless extenuating conditions warrant an exception. Facilities must be designed and built to standards that safely accommodate the anticipated volume and mix of users.

The design of bicycle facilities should be evaluated on the following criteria:

- **Access**—Consideration should be given to frequent and convenient access. This includes access for maintenance and emergency vehicles.
- **Accident Potential**—Many accidents are at least in part attributable to poor facility design. Therefore, new facilities should be designed carefully so as to minimize the likelihood of all classes of accidents and to reduce their severity. Any plans for changes to existing facilities need to be studied with similar care to avoid introducing new hazards.
- **Aesthetics**—Because many cyclists prefer to be away from motor vehicles, and/or in surroundings that are relatively more environmentally-friendly, views and landscaping should be elements of facility design.
- **Alignment**—Facilities should be routed around rather than through shopping centers (particularly the “Big Box Store” shopping plazas), transit stops, pedestrian corridors or recreation areas with substantial motor vehicle or pedestrian cross-traffic. The alignment should be safe and appropriate for the intended and expected uses. Facilities for utilitarian use should be direct and convenient. (see also BICYCLE FACILITIES DESIGN: SIGHTLINES)
- **Amenities**—Where the length, location, and expected use warrant: restrooms, emergency telephones, drinking fountains, pullouts, benches, parking, showers, lockers and campsites should be provided to accommodate expected user needs.
- **Bollards**—Bollards create a hazard for cyclists, especially those with child trailers. They should be installed only where the benefit is greater than the hazard they present to cyclists, and where there is a proven need to restrict motor vehicle access to bikeways that cannot be achieved by alternative design elements. When one bollard is used it should be placed in the centre of the facility, 3 m back from any intersection. If more than one bollard is used, they should be spaced at least 1.2 m apart. Bollards must be painted in conspicuous colours and fitted with reflective material.
- **Continuity**—Facilities should be continuous, of a consistent surface and require a consistent level of bicycle skill to use.

- Delays—Cyclists use their own energy to travel, and many like to conserve their energy. Too many delays, hills or an indirect routing may cause cyclists to avoid a route or to disregard traffic controls. Features that cause delay should be used only where necessary.
(see also TRAFFIC SIGNALS)
- Directness—Most bicycle trips have some utilitarian nature even if the purpose is exercise or training. Facilities should directly and conveniently connect major trip origins and destinations.
- Maintenance—Facilities should be designed to require minimal maintenance, to minimize hazards such as flooding, broken glass, and gravel, and to take advantage of solar melting. Regular surface cleaning, trash collection and removal, and control of vegetation, should be easy.
- Obstacles—Obstacles (signs, poles, abutments, etc.) that endanger or inconvenience cyclists are to be avoided. Unavoidable obstacles must be sign posted and/or painted in conspicuous colours and fitted with reflective material.
- Security—Bicycle facilities, in particular bike paths and bike parking, must be well lighted, and located and designed to reduce the likelihood of assault on users and of bicycle theft.
(see also LIGHTING)
- Sightlines—Visibility along vertical and horizontal sightlines should meet or exceed the minimum standards established by CCM.
- Surface Composition—Asphalt or smooth-jointed concrete make good medium to high-use transportation bikeway surfaces. Recreational facilities may use substances such as crushed limestone, hard-packed gravel or paving stones. Bare wood or metal are slippery when wet or frosty and require a high-friction covering if used in bicycle facilities.
(see also PAVEMENT SURFACE)
- Use Conflicts—Conflict between expected users can be minimized by good design.
(see also CONFRONTATIONS, SHARED URBAN NON-MOTORIZED FACILITIES, PATHWAY STRIPING)
- Width—Facility width should fit traffic volume, mix of use, alignment, slope, and type of facility.
(see also LANE WIDTH, PATHWAY WIDTH)

(see also ANALYSIS AND MONITORING, BIKEWAY, DRAIN GRATES, EDGE STRIPING, INTERSECTIONS AND INTERCHANGES, LIGHTING, PARKING – BICYCLE, PATHWAY STRIPING, PROTECTIVE BARRIERS, ROAD DESIGN STANDARDS, ROUNDABOUTS, SIDE SLOPE, VERTICAL CLEARANCE)

Bicycle Facility Projects

It is essential that plans for public projects with a bicycle component be reviewed by a bicycle transportation expert or bicycle advisory committee.

(see BICYCLE TRANSPORTATION SPECIALIST)

Bicycle Map Projects

Good bicycle maps encourage increased cycling. Effective maps are clear, regularly updated and widely available.

Bicycle Planning

An effective bicycle plan must address all of the *four Es* (engineering, education, encouragement, enforcement). A successful bike plan will recognize the special needs of the different bicycle user groups, primarily the distinctions between recreational and transportation use, and between those users who are capable and comfortable on arterial roads, and those who desire reduced traffic facilities. Plans need clear goals and defined criteria to measure their attainment.

Alberta Bicycle Association recommends that sources such as *The Community Cycling Manual* and the Ministry of Transportation and Highway's Cycling Policy be consulted in the formulation of any bicycle plan or bicycle-related project.

Embedding bicycle-friendly policy into planning decisions is vital. Alberta Bicycle Association encourages the establishment of a bicycle advisory committee at each government level. Until consideration of cycling needs becomes automatic in all departments, it is advisable to have a bicycle program manager or bicycle coordinator with responsibility for review and implementation of bicycle plans and projects affecting cyclists.

Minor engineering improvements, addressed through a spot improvement program, can make a big difference to levels of cyclist comfort and perceived safety. Priorities for cycling facility construction or major improvement should be predicated first on reducing accidents and conflicts, and second on convenience.

The following issues need to be addressed by Bicycle Planning:

- Roadway and bikeway segments with high accident or conflict rates;
- Roadway and bikeway segments with high levels of dangerous or unlawful cyclist or motorist behavior;
- Alignments which origin destination or public demand studies show have latent demand that is not met due to non-existent or inadequate facilities;
- Safe bypasses around congested traffic;
- Reconstruction inconvenient facility segments;
- Potential benefit; and
- Acceptance by adjacent residents.

(see also COMPREHENSIVE BICYCLE TRANSPORTATION PROGRAM)

Bicycle Transportation Specialist

A Bicycle Transportation Specialist must:

- a. be an experienced cyclist,
- b. have a good knowledge of current bicycle facilities standards and practices, and
- c. stay up-to-date on bicycling issues and initiatives both locally and elsewhere.

Bike Racks

(See also BIKEWAY, COMMUNITY CYCLING MANUAL, PARKING – BICYCLE.)

Bike Rooms

(See PARKING – BICYCLE.)

Bikeway Facility Classification

(See also BIKEWAY, THE *COMMUNITY CYCLING MANUAL, PARKING – BICYCLE.*)

Bridges

All bridges and similar structures (such as overpasses) need bicycle facilities and access routes that are safe, practical, and convenient.

(see also BARRIERS TO TRAVEL)

Building Code

Buildings should be designed and located so they are as convenient for bicycle users as they are for motor vehicle users. Alberta Bicycle Association recommends that equal-size, separate facilities be provided for men and for women, or in proportion to the current split in employment.

A sample parking policy follows:

- Parking—

| Application | Minimum number of spaces | |
|----------------------------------|----------------------------|----------------------------|
| | Class I: | Class II: |
| | residents/employees | patrons/visitors/couriers |
| multiple dwelling | 1.5/unit ² | =6 for 20 units |
| hotel | 1/20 rooms | |
| office | 1/750 m ² | =6 for 2000 m ² |
| retail/service restaurant in CBD | 1/750 m ² | =6 for 1000 m ² |
| restaurant outside CBD | 1/250 m ² | =6 for 1000 m ² |
| industrial | 10% of auto parking req'd. | =6 for 1000 m ² |
| cultural/recreational | 15% of auto parking req'd. | |
| institutional | case-by-case basis | |

notes: Area figures refer to gross floor area (GFA).

CBD is Central Business District.

Fast food outlets, convenience stores, fitness centres to provide 6 Class II spaces regardless of size.

- Clothing Lockers: Clothing lockers are essential for commuter cycling to have popular appeal. Size should be at least 90 cm x 30 cm x 45 cm (height x width x depth), but 180 x 30 x 55 is preferable.
- Other Amenities: Showers, washroom facilities should be provided for commuter use approximately as follows:

| number of bike spaces | number of facilities of each type |
|--------------------------|-----------------------------------|
| 2 to 9 | 1 unisex |
| 10 to 29 | 1 men's and one women's |
| each additional 32 bikes | add 1 men's and one women's |

(see also PARKING - BICYCLE)

Chip Seal

Chip seals are can be dangerous for cyclists. A chip seal project's width should be consistent with policy on resurfacing.

(see also RESURFACING)

Clean Air Legislation

(see AIR QUALITY)

Commuter Rail

(see INTERMODAL TRANSPORT ATION AND MASS TRANSIT)

Comprehensive Bicycle Transportation Program

Every province, regional district, and local government should have a bicycle transportation program. Such programs

- a. coordinate engineering, education, enforcement and encouragement programs for improving bicycling; and,
- b. that all project and development plans are reviewed for their impact on bicycling and adherence to requirements and guidelines for bicycle facilities.

(see also BICYCLE PLANNING)

Confrontations

Cyclists have a right to use roads and bikeways in safety. When another person's ignorance, impatience, insecurity, or general misanthropy create conflicts, Alberta Bicycle Association advocates finding peaceful, reasoned solutions wherever possible. Dangerous drivers or those who issue violent threats should be reported to police. Record the details of the incident, including the location, circumstances, and descriptions of the driver and vehicle (make, model, plate number, etc.) carry a notepad and pen or pencil. Check back with police to follow-up.

Counterflow Lanes and Pathways

Counterflow facilities along one-way roads give cyclists increased access. They are appropriate if they are well designed and if adequate signs or signals are used to warn opposing traffic, particularly at intersections.

Deposit Law

(see RETURNABLE BEVERAGE CONTAINERS)

Design Standards

(see BICYCLE FACILITY DESIGN)

Disruption of Service

(see MAINTENANCE AND REPAIRS)

Drain Grates

Drain grates and utility covers should be at grade and, if possible, outside of the expected area of cyclist travel. Acceptable grate designs have non-skid surfaces and do not capture narrow bicycle tires. Non-conforming drain grates should be replaced with bicycle-safe grates.

Edge Striping

Lane edges should be marked with striping rather than reflective raised pavement markers.

(see also STRIPING)

Education

Education is the most cost-effective way of improving cyclists' behaviour and should be used in conjunction with all other programs to improve bicycle safety. CAN-BIKE courses or an equivalent, tailored to different age groups, should be made available through the Ministry of Education, community centres, park departments and other agencies.

A requirement to successfully complete a CAN-BIKE course (or equivalent) may be an effective way to deal with cyclists found guilty of traffic offenses.

(see also ROAD SAFETY/DRIVER'S EDUCATION)

End-of-Trip Amenities

(see BUILDING CODE, PARKING - BICYCLES)

Enforcement

To be effective, enforcement programs should follow or be in conjunction with public education programs. Law enforcement efforts should be directed toward cyclists' behaviours that are most likely to lead to collisions, such as wrong-way riding and riding without lights at night. The Selective Traffic Enforcement Program (STEP) is one such program that addresses cycling violations likely to cause accidents.

Enforcement programs should target dangerous behaviours by all road users including pedestrians and motorists.

Inappropriate or unlawful bicycle operation is often due to inadequate facilities and lack of cycling skills and knowledge. Detailed records of enforcement activity can thus provide a valuable tool for improvements in engineering and education.

(see also OFFENDERS PROGRAM)

Guardrails

(see PROTECTIVE BARRIERS)

Handrails

(see PROTECTIVE BARRIERS)

Headphones

Headphones are prohibited in some jurisdictions (with good reason, as they can mask important auditory cues), but a single earphone is generally permissible (as it leaves one ear free).

Helmets

Voluntary helmet use is encouraged as a safety measure for all cyclists, and helmets are compulsory in all events sanctioned or insured through Alberta Bicycle Association. Helmet use can reduce the severity of head injuries. However, helmet use does nothing to prevent the accidents that cause the injuries in the first place. Since many adult cycling fatalities result from motorist error or unsafe facility conditions, and many child fatalities from lack of skills or improper use, these factors must be addressed as a priority.

Policies on helmet use should be equally applied to all age groups. Prior to establishing mandatory bicycle helmet use legislation, the following conditions must be met:

- a. A recognized bicycle helmet standard must be specified.
- b. An effective, province-wide educational program promoting safe cycling practices and bicycle helmet use must be in operation.
- c. Establishing effective methods of determining bicycle use, helmet use, and cycling related injury statistics, both before and after the proclaiming of mandatory bicycle helmet use legislation.
- d. Establishment of a province-wide enforcement program that addresses the traffic law violations by cyclists and other road users likely to lead to a serious accident or collision.

(ABA R&T has a different slant on this controversial policy that is closer to that of the original Cascade Bike Club policy. The R&T policy is controversial within the ABA but this document is not the place to hash out this issue.)

HOV Lanes

High Occupancy Vehicle (HOV) or bus lanes are traffic lanes set aside for specific types of vehicles (e.g. transit busses and passenger vehicles carrying several passengers) to give them priority over other traffic. On freeways and rural highways, cyclists travel on the paved shoulder and are unaffected by HOV lanes. However, on urban arterial streets, HOV lanes are typically located on the right hand side of the roadway nearest the curb; exactly where cyclists are directed by law and where motorists expect them to travel. Therefore, it is critical that cyclists be permitted to use HOV lanes in urban arterial settings and in any other location where shoulders are not provided.

Insurance

Third-party liability insurance is a recommended precaution. Subject to the terms in the fine print, it covers legal damages (not fines!) assessed against you on behalf of someone you are found to have injured, or whose property you are found to have damaged, as a result of your cycling. Liability insurance is included in Alberta Bicycle Association membership and may be included in home-owner's or tenant's policies (which may also cover theft of your bike). Contact the Alberta Bicycle Association office and your insurance agent for details.

Integration

Alberta Bicycle Association is committed to the principle that all roads are bicycle roads. However, special facilities such as on-street bike routes, bike lanes, and off-street bike pathways also have a role to play, in particular for cyclists who are uncomfortable on busy streets.

(see also SEGREGATION)

Intermodal Transportation and Mass Transit

Facilities for mass transit, including ferries and light rail, should provide convenient bicycle access to terminals and stations, and appropriate bicycle parking. Transit vehicles should be able to carry bicycles. Key interurban (if not all) transit vehicles, should be fitted with racks or permit bicycles as carry-on baggage. "Overflow" bicycles should be allowed on board when passenger load permits.

Priority should be given to carrying bicycles on or around routes which are difficult or hazardous to cycle (for example, over bridges and through tunnels).

(see also RAILROAD ACCESS, RAILROAD CROSSINGS, PARKING - BICYCLE)

Intersections and Interchanges

Since intersections are where most accidents happen, including cycling accidents, they must be designed to minimize the risks to cyclists.

Where designated bicycle facilities cross roadways at grade, the preferred approach is to give cyclists the right-of-way. Where this is impractical, roundabouts or four-way stops (low-volume road), or cyclist-activated signals or refuge areas (high-volume) improve cyclist safety.

Good bikeway design allows for smooth merges and diverges to and from other facilities. Merges onto shared roadways should be sign posted to warn motorists.

Intersections between bikeways and pedestrian facilities should be designed to minimize conflicts.

Obstructions such as fences, speed bumps, and barrier posts should not be used to force cyclists on bikeways to slow down at intersections—the hazard they introduce is greater than the problem they attempt to solve. A different surface (not a speed bump) 10 m from the intersection or a single conspicuous barrier post 3 m from the intersection, are more suitable to alert cyclists.

Where bikeways cross curbs, curbs should be cut the entire width of the bikeway.

Traffic control devices should allow a clearance time (the time between the start of the yellow phase and the start of the cross-traffic green phase) appropriate for the speed of a bicyclist: 15 km/h and slower on uphill.

(see also BICYCLE FACILITY DESIGN, ROUNDABOUTS, TRAFFIC SIGNALS)

Lane Width

Lane width is an important factor in the safety of vehicle operation. Note that the *minimum* widths specified are not necessarily the optimum ones for any particular facility, and do not include gutters.

All new facilities should be built to meet or exceed the following standards and wherever possible, existing facilities should be brought up to standard by resurfacing.

- Shared Roadway with design speed up to 50 km/h: the outside lane should be a minimum of 4.3 m wide, but no greater than 4.5 m (to discourage motorists driving two-abreast).
- Shoulder Bikeway: Generally, a width of 1.5 m or more is acceptable, if adjacent travel motor vehicle lanes are at least 3.6 m wide, though bikeway/lane widths must be increased for high cyclist use. An extra 0.3 m must be added if the facility is between two motor vehicle travel lanes, between the motor vehicle travel lane and the parking lane, or next to a rail, curb, wall, or fence.

Exceptions are:

1. Design speed (of roadway) 70 km/h (SADT Summer Average Daily Traffic > 5000): base width is 2.0 m min.
 2. Design speed > 80 km/h (SADT > 8000): lanewidth 2.5 m min.
 3. Expressways and freeways: lane width 3.0 m min.
- Bike Lane with roadway design speed < 70 km/h: As for shoulder bikeways.
 - Bike Lane with roadway design speed 70 km/h: 1.8 m minimum with additional 0.3 m if between two motor vehicle travel lanes, between motor vehicle travel lane and parking lane, or next to a rail, curb, wall, or fence.

Where existing substandard facilities of design speed > 50 km/h are not eligible for resurfacing, the following guidelines should be applied to restriping:

- Shared Roadways Three or more lanes without paved shoulder: Restripe to widen outside lanes to a minimum of 3.7 m (4.3 m preferred) by narrowing inside lanes (min. 3.0 m, 2.7 m for turning lanes).
- Paved Bike Lanes or Shoulder Bikeways Any number of lanes: Restripe to widen bike lane or paved shoulder to at least 1.5 m by narrowing traffic lanes: outside lanes, min. 3.7 m; inside lanes, min. 3.0 m (2.7 m for turning lanes).
- All Facilities
 - 1) If restriping cannot otherwise provide the required widths, either the number of lanes or the speed limit should be reduced; on hills, extra width should be accorded to the side headed uphill.
 - 2) Lane widths should be increased to account for higher speeds and volumes.
 - 3) Any potentially hazardous discontinuities in facilities (curb intrusions, narrowings, gaps) should be remedied.
(see also BIKEWAY)

Law Enforcement

(see ENFORCEMENT, OFFENDERS PROGRAMS)

Licensing

The equipment or activity being licensed as well as the needs being addressed and the benefits to be derived from the program must be clearly established before a mandatory bicycle or cyclist licensing program is initiated. Similarly, the cost of implementing such a program must also be considered. Programs should not unfairly discriminate on the basis of age.

Lighting

- Bicycle Lights: When riding between dusk and dawn, cyclists must use a white front light and should use a red rear light. Both should be easily visible for at least 150 m.
- Pedestrian Safety: Pedestrians should wear reflective clothing and/or lighting for safety and visibility when using a shared roadway or pathway between dusk and dawn.

- **Pathway Lighting:** For the security and safety of pathway users, lighting should be installed at public intersections, along corridors with high night-time use, and in tunnels that would otherwise be dark.

Maintenance and Repairs

Road, paved shoulder, and pathway surfaces should be free of potholes, dips, lips, ditches, longitudinal cracks, bumps, broken glass, gravel, leaves, branches, garbage, debris, and other obstacles that can cause bicycle accidents. Street cleaning, maintenance schedules and practices should be sufficient to assure this. In urban areas, asphalt surfaces exposed to heavy motorized traffic, particularly at intersections and where transit buses frequently stop, are in need of special attention, lest they become dangerously rippled or broken.

Dangerous conditions should be attended to promptly.

Fill materials should be compacted. Patch edges should be feathered.

Government departments, agencies, contractors, and utilities responsible for projects involving the disruption of normal cycling patterns should ensure that precautions are taken to minimize the risk and inconvenience to cyclists or pedestrians during or after the project. Covers used over excavations should have non-skid surfaces.

Snow removal should be mechanical rather than chemical, to avoid corrosion of bicycles. Where feasible, sand should be avoided due to its abrasive effects.

Maps

(see BICYCLE MAP PROJECTS, REST AREAS)

Mountain Biking (off-road cycling)

Off-road cycling is both a recreation and a sport. Requests for specifics of land-access policy, standards of competition, trail standards, and trail access advocacy should be referred to the Alberta Bicycle Association office.

Offender Programs

Offender programs for dangerous cyclists should be designed to correct the dangerous behaviour.

Overlays

(see CHIP SEAL, RESURFACING)

Overpasses

(see BRIDGES)

Parking—Bicycle

Bicycle parking facilities should meet user demand, in terms of quantity, convenience to building entrances or other destinations, and level of security.

- Bicycle Parking Facility Classes

- i.) *Class I*

- Long term parking, including protection of bike and components against theft and vandalism.

- Commonly provided by

- individual, fully enclosed, user-operated lockers;
 - Class II or better facilities with continuous supervision; or,
 - Class II facilities with access restricted to owners of bikes in this facility.

- ii.) *Class II*

- Medium- or short-term parking, consisting of a stationary object to which the user can lock the frame and both wheels with a user-provided lock, such as the popular U-locks. The facility should preferably be designed to protect the lock from physical assault.

- iii.) *Class III*

- Short-term parking, consisting of a stationary object to which the user can lock the frame and both wheels with a user-provided 1.9 m cable (or chain) and lock. This class is not recommended unless at least the frame and one wheel can easily be secured with the popular U-locks.

- Sitting of Bicycle Parking

Bicycle parking should be provided at stores, offices, parks, theatres, sporting venues, park-and-ride lots, transit freeway stops, transit centres, parking garages and public buildings (libraries, museums, etc.) Where parking averages are longer than one hour, weather-protected facilities should be provided. Locating bicycle parking near building entrances makes it visible and appealing to cyclists.

Bike parking needs to be well-lit, with design and location chosen so as to provide security for both bikes and users.

- i.) Class I bicycle parking should be provided at appropriate locations along transit routes, at employment centres, and in multiple-unit residential dwellings. Class I facilities (e.g., bike rooms, bike lockers) must be located at ground level \pm one storey, in close proximity to both main entrances and parking entrances (preferably no intervening stairs and the minimum number of doors commensurate with security), and elevators and corridors. They should be at least as convenient as the most convenient auto parking stall. Particularly in residential settings, design of parking facilities should also allow for a number of tandems, adult three-wheelers, and trailers to be adequately secured.
 - ii.) Bicycle parking facilities with public access should be in centrally located view corridors with good lighting to reduce theft and vandalism.
 - iii.) Generally, bicycle parking should not be located within pedestrian environments, but conveniently adjacent to them.

- Bike Room

Bike room design must provide security for both the bicycle (class I parking) and for the user.

Primary security is provided by a parking garage security gate (or other locked portal) and secondary security by the (unlabelled) door of the bike room itself. Restricting the maximum number of bikes to 20 per room (or lockable compartment within a larger room holding no more than 100 bikes) is essential to minimize attractiveness to thieves.

Walls must be opaque. The access door must be located where it cannot be blocked by parked cars and it must be vandal-resistant with the entire room visible from a security window. Racks (class II), horizontal or vertical, within the room provide additional security.

The provision of security cameras, intercoms, or panic alarms may be appropriate.

- **Bike Lockers**

Vandal-resistant lockers can provide acceptable security for class I bike parking (may comprise up to 80% of a building's class I parking). They must be weatherproof and opaque, grouped together and secured to substrata. Recommended dimensions:

| | |
|--------|---|
| width | 75 cm min. at door end, 25 cm min. at far end |
| length | 2.1 m |
| height | 1.2 m |

- **Bike Racks**

Good design emphasizes security, convenience of use, and minimal potential for accidental damage to bike parts and accessories (lights, fenders, derailleurs, etc.).

Racks must meet the following specifications in order to qualify as suitable class II bicycle parking:

- both wheels and frame to be secured, bikes individually removable and lockable with U-locks and other styles
- spacing between stalls to be 60 cm (or better), headroom ³ 1.9m, length of stall ³ 1.8 m, access aisle ³ 1.2 m
- support must extend high enough to prevent tipping of luggage-outfitted bike; support of bikes by wheels alone is not acceptable
- horizontal racks are preferred; if vertical, they must support the frame, not hang bike by wheels; ² 40% of a facility's racks may be vertical

Class III lockup facilities have limited applications in theft-prone urban environments but may be suitable for high-visibility, short-term parking applications.

(see also BUILDING CODE)

Parking Motor Vehicle

Vehicle Parking along Roads

Parallel motor vehicle parking along roadways can affect cyclists' safety. Sufficient space should be provided so that car doors are not opened into the usual path of cyclists.

Angle parking can be a significant cause of backing-out accidents. Adequate clearance, demarcation, and sight-lines should be provided.

Vehicle Parking Adjacent to Bicycle Facilities

Parking for cars should be located such that people going to and from their cars do not cross a bicycle facility in an uncontrolled way or in large numbers.

Pathway Safety

Pathway safety is a shared responsibility among all users. A major element of any pathway safety program is an education campaign that reflects this philosophy. If an education campaign does not achieve as much improvement as desired then it should be supplemented with enforcement that reflects this philosophy of shared responsibility. Elements of a balanced-pathway user behaviour code:

- a. All users keep right except when passing.
- b. All users travel in a consistent and predictable manner, looking ahead and behind before changing lane position.
- c. Groups, including pets, use no more than half the pathway width.

- d. Passing is to the left of slower traffic. Passers yield to oncoming traffic. Be alert to sudden lane switching by other users. A clear warning signal is given before passing.
 - e. Users entering and crossing the pathway yield to those on it.
 - f. Between dusk and dawn, all users should be visible by displaying front and rear lights.
 - g. Pathways are not to be used as a playground.
 - h. Pets should be kept on a short leash while on pathways.
 - i. Cyclists yield to pedestrians and both yield to equestrians.
- (see also BICYCLE FACILITY DESIGN, BIKEWAY LIGHTING, SHARED URBAN NON-MOTORIZED FACILITIES)

Pathway Shoulders

Except on bridges, bicycle facilities should have smooth, 0.6 m minimum at-grade shoulders before any upslope or walls, or at least 2.4 m of gentle downslope (< 10%), on each side. Good design avoids parallel or perpendicular deep ditches, exposed culverts, or other hard-to-see obstacles within 2.4 m of a bicycle facility.

(see also SIDE SLOPES, PROTECTIVE BARRIERS)

Pathway Striping

Striping is discretionary. If a facility is striped, each lane should meet standards for its designated use (for example: the minimum for a one-way bike lane is 1.6 m). If modes are separated by striping, a continuous yellow solid line should be used. It may not be desirable to achieve mode separation by striping as it can promote animosity between modes, even if crossing the line doesn't interfere with users of the other mode.

(see also SHARED URBAN NON-MOTORIZED FACILITIES)

Pathway Surface

Pathways may be paved or unpaved. The surface should be appropriate to the location and the kind and amount of use anticipated. Regardless of the kind of surface, it should be consistent for any given section of the facility. Any abrupt changes in pathway surface that constitute a significant increased risk to users should be properly signed. Unpaved surfaces will reduce speed but, in the case of shared pathways, are more difficult for pedestrians and wheel chair users.

(see also SIGNS)

Pathway Width Class I Facilities

Bicycle facility widths should meet CCM/AASHTO guidelines, subject to additional considerations for volume, user mix, alignment, and slope. Width should be increased for high use demand, greater mixed use, curves and steeper slopes. Note that the *minimums* specified will not necessarily be optimum for any particular facility.

Guidelines for cyclist-only use:

One Way: 1.6 m min.

Two Way: 3.0 m min.

Minimum pathway widths increase by 0.3 m:

- a. for each side adjacent to a rail, curb, wall, or fence (includes tunnels, bridges, and structures),

- b. for every 200 cyclists over 400 during the peak hour,
- c. for every 20% of user group different from the primary one, and
- d. for every 3% of slope over 5%.

(see also SHARED NON-MOTORIZED FACILITIES)

Pavement Surface

Pavement surface should be at least 7.6 cm of asphalt or 10 cm of concrete, over an appropriate subsurface, and must be free of potholes, dips, ditches, longitudinal cracks, raised traffic devices, bumps, and other surface irregularities that can be hazardous to cyclists.

Expansion and control joints should be located away from corners, cross the cyclists' path at right angles, and present only non-skid surfaces.

(see also DRAIN GRATES, MAINTENANCE AND REPAIRS)

Police Patrol of Non-Motorized Facilities

Police patrols of non-motorized (e.g., bicycle) facilities should be by non-motorized transportation when possible.

Political Candidates

Surveying political candidates for their positions on transportation and bicycle programs serves valuable purposes:

- a. it makes them aware of constituents' needs,
- b. it allows more informed voting, and,
- c. it gives them something to be accountable for if elected.

Protective Barriers

Protective barriers should be used where bicycle facilities are:

- i) above medium slopes (between 10% & 20%) with less than 0.6 m of shy distance,
- ii) above steep slopes (between 20% & 40%) with less than 1.8 m of shy distance,
- iii) above drop-offs (greater than 40%) with less than 3.0 m of shy distance.

If protective barriers, guardrails, or handrails are used along a bicycle facility, they should be at least 1.2 m high with a smooth rub rail at 0.9 m. Low guardrails are only acceptable when shy distance and sightlines are sufficient, and then only to separate the bicycle facility from another use that is stationary or slow-moving (e.g., between a pathway and a parking lot).

Public Works Project Design

All city, regional district, province and public utility projects, including but not limited to rail, open space, and pipeline and power line rights-of-way, should be reviewed for their impact on bicycle traffic. When possible, public works projects should be used to enhance bicycle access, especially projects on linear corridors. (see also COMPREHENSIVE BICYCLE TRANSPORTATION PROGRAMS)

Races

Cyclists should have the right to use roads for events and races in a lawful manner. Requests for specific racing policies, standards of competition, etc. should be referred to the Alberta Bicycle Association office.

Railbanking

Railbanking provides an excellent mechanism for converting rail corridors that are not currently being used as active railroads to multi-use trails. Railroads should be encouraged to put the inactive corridors into "savings" with a local government where practical. Local government should develop railbanked corridors for public use, where appropriate.

(see also RAILS-TO-TRAILS)

Railroad Access

Cyclists and bicycles should have convenient access to passenger rail and commuter rail service. The design of all rail transit projects should include convenient bicycle access and accommodation for bicycles on all trains, with enclosed, secure bicycle parking at all stations. Feeder bike service should be considered in the location and design of stations and approaches.

(see also INTERMODAL TRANSPORTATION AND MASS TRANSIT, PARKING - BICYCLE)

Railroad Crossings

Designated bikeways should avoid angled crossings, for example, by adding a gentle S-curve approach. Railroad crossings and especially angled ones on designated bikeways or in areas with moderate or heavy bicycle traffic should be fitted with rubberized pads and flange fillers.

(see also PAVEMENT SURFACE)

Rails-to-Trails

Suitability

Because railroads are built with gradual grades and shallow curves on continuous corridors in and out of urban areas, with few high-volume at-grade crossings, their alignments are excellent for linear recreation and bicycle transportation facilities. In addition, railroads often played a major role in the development of communities, so by keeping the corridor intact and providing public access, some of this heritage can be preserved for future generations to experience.

Abandonment

In most cases, opportunities to open railroad corridors to the public only come after railroad operations have ceased. The formal procedure is called "abandonment" and is governed by Railway Transport Agency (RTA), under the rules of the National Transportation Act, 1987 (NTA). The policy of the ALBERTA government is to acquire abandoned rights-of-way "whenever possible," usually through the Crown Lands Real Estate Services Branch of Ministry of Environment, Lands and Parks. The Ministry of Transportation and Highways, Properties Branch, has also become involved as a manager of former rail properties.

A rail corridor is most valuable if its entire length is protected for public purposes such as transportation and recreation.

The Rails to Trails Council of ALBERTA (contact through Outdoor Recreation Council of ALBERTA (ORC)) was assembled to develop a provincial strategy for converting abandoned railway lines to multi-use trails.

Legal Constraints

Federally chartered railways are generally considered to hold their land in fee simple and to thus be able to dispose of it as they please. The land used by certain provincially incorporated railways is supposed to revert to the Crown upon abandonment, but the individual charters should be examined in each case.

Raised Pavement Markers

Raised pavement markers can be dangerous in locations commonly used by bicycles.
(see also EDGE STRIPING, PAVEMENT SURFACE)

Rest Areas

Roadside rest areas should offer toilets, recycling and trash receptacles, telephones, and potable water, especially where no other public source is available within 20 km on the same route. Handbooks or maps should indicate rest areas that do and do not offer potable water.

Restriping

(see LANE WIDTH)

Resurfacing

Road resurfacing, whether overlay or chip seal, should be from lane edge to lane edge or include the full width of the shoulder. Resurfacing part or none of the shoulder is unacceptable.
(see also CHIP SEAL)

Returnable Beverage Containers

Financial incentives to encourage reuse and recycling may be effective in reducing litter and decreasing broken glass on roadways. Beverage containers should carry a refundable deposit charge.

Road Design Standards

All roads should be designed to be used by cyclists. Every jurisdiction should have a process to ensure that accepted design standards to accommodate cyclists are followed.

(see also BRIDGES, DRAIN GRATES, EDGE STRIPING, LANE WIDTH, MAINTENANCE AND REPAIRS, PAVEMENT SURFACE, PROTECTIVE BARRIERS, RAILROAD CROSSINGS, RESURFACING, TRAFFIC SIGNALS)

Road Safety/Drivers' Education

Road safety is the responsibility of all users. This concept should be incorporated into the province's Drivers' Handbook; driver education programs, driver testing, safety programs and public awareness campaigns.

(see also EDUCATION, ENFORCEMENT)

Road Surface

(see DRAIN GRATES, MAINTENANCE AND REPAIRS, PAVEMENT SURFACE)

Roundabouts

Roundabouts (also called circular intersections, traffic circles) can be dangerous to cyclists. The best have few arms, high traffic deflection on entering, a narrow roadway, low circulation speed, small outside diameter, and good visibility across the hub.

Roundabouts are acceptable under the following circumstances:

- a. On low-volume, low-speed roads, a regular intersection otherwise uncontrolled or controlled with stop signs may be replaced by a simple roundabout of the same outside dimensions.
- b. Roundabouts that substitute for traffic signals should be designed to enhance cyclist safety e.g. by providing automotive speed reducers at entrances and exits, and separate channelization of circulating and exiting cyclists.
- c. Sightlines must be good and grades gentle.

(see also INTERSECTIONS AND INTERCHANGES)

Safety

(see BICYCLE FACILITY DESIGN: ACCIDENT POTENTIAL, EDUCATION, MAINTENANCE AND REPAIRS, PATHWAY SAFETY, ROAD SAFETY / DRIVERS' EDUCATION, SHARE THE ROAD)

Security

(see BICYCLE FACILITY DESIGN, CONFRONTATIONS, LIGHTING)

Segregation

Segregation may be appropriate for recreational bikeways, but is inappropriate for transportation. An emphasis on segregated cycling facilities may marginalize the bicycle.

(see also INTEGRATION)

Share the Road

Alberta Bicycle Association's Share the Road campaign is designed to improve cyclist safety by increasing understanding, tolerance, and respect between cyclists and motorists.

(see also ROAD SAFETY / DRIVERS' EDUCATION)

Share the Trail

(see PATHWAY SAFETY)

Shared Urban Non-Motorized Facilities

Urban facilities expected to be shared by cyclists, pedestrians or other non-motorized users should meet design standards for the most demanding of the expected uses. In the back country, the reverse may be true.

Where high use is anticipated, physically separated urban facilities are preferred. An adequately wide single facility, with striping or signs to separate the different uses, may be acceptable.

(see also PATHWAY SAFETY, PATHWAY STRIPING, PATHWAY WIDTH)

Shoulders

(see BIKEWAY FACILITY CLASSES, LANE WIDTH, PATHWAY SHOULDERS, PROTECTIVE BARRIERS, RESURFACING)

Showers

(see BUILDING CODE)

Side Slopes

Side slopes along bicycle facilities should be within the following limits:

- a. unprotected side slopes within 1.2 m of a pathway edge should be less than 10%.
- b. unprotected side slopes within 2.4 m of a pathway edge should be less than 20%.
- c. unprotected side slopes within 3.7 m of a pathway edge should be less than 40%.

(see also PROTECTIVE BARRIERS)

Sidepath Laws

Mandatory sidepath laws requiring cyclists to use a sub-standard bicycle path where an adjacent roadway exists, are inappropriate. Sidepaths can be inadequate for the volume of use, poorly designed, inadequately maintained, or unsuitable for the destination of the cyclist.

Signs

Bicycle Routes: bicycle route signs should include the name or number of the route, directional arrows, a significant intermediate or final destination, and the distance to the identified destination.

Hazards: bicycle facilities should use standard hazard signs to indicate steep slopes, hidden intersections, changes in facility surface, changes in facility geometry, or any other features that increase risk to users.

Suitability: in areas where multiple routes are possible, signs along the route should indicate suitability of various routes taking into account: traffic, bicycle lanes, steepness of hills, etc.

Standards: signs should conform to the standards outlined in *The Community Cycling Manual*.

Striping

Non-skid striping materials should be used.

(see also EDGE STRIPING, LANE WIDTH, PATHWAY STRIPING, SHOULDERS)

Theft

Bicycle theft is a deterrent to cycling for transportation. Alberta Bicycle Association encourages

- a. provision of secure bicycle parking facilities;
 - b. efforts by law enforcement agencies to recover stolen bikes and to catch the thieves; and,
 - c. development of a systems to reduce theft and to help in the recovery of stolen bicycles.
- (see also BICYCLE FACILITY DESIGN, BUILDING CODE, PARKING - BICYCLE,)

Traffic Calming

Alberta Bicycle Association recognizes traffic calming as valuable and desirable for improving safety and aesthetics in residential areas, shopping districts, and along designated on-street bike routes. Calming street traffic often removes the need to lay down additional asphalt for bike lanes and bicycle pathways. The benefits are greatest when it is applied to entire neighbourhoods (or cities) rather than only to isolated streets.

Traffic calming measures should not introduce additional hazards to cyclists or otherwise make cycling less attractive relative to driving.

Traffic Signals

Traffic signals with automatic sensors (inductive pickup loops) should be bicycle-sensitive. Double pole (figure-8) loop designs are preferred. Both automatically and manually activated switches should be clearly marked (the most sensitive part of pickup loops should be shown with pavement markings) and be set with minimum delays so as not to discourage proper use.

Where a designated bikeway crosses a busy arterial and a signal is required, manual activation may be chosen so as not to be automatically activated by cars. In this case, a pushbutton must be located in a place that is convenient to cyclists; mounting the curb should not be necessary.

Train Access

(see RAILROAD ACCESS)

Transportation Policy

Alberta Bicycle Association endorses the decision by a growing number of local and regional governments to rank transportation priorities in the order of walking, cycling, public transit, goods movement, and finally private automobiles. To be effective, this policy must be embedded into every decision, plan, and strategy affecting transportation and land use.

Alberta Bicycle Association recommends that

- a. regional bicycle transportation networks be implemented;
- b. local transportation projects provide internal facilities for pedestrians and cyclists of all abilities;

(see also AIR QUALITY, BICYCLE ENCOURAGEMENT PROGRAMS, COMPREHENSIVE BICYCLE TRANSPORTATION PROGRAMS, GROWTH MANAGEMENT, INTERMODAL TRANSPORTATION AND MASS TRANSIT)

Tunnel Access

Bicycle facilities should be provided to allow cyclists safe and convenient access where a tunnel substitutes for a bridge.

(see also BARRIERS TO TRAVEL)

Utility Covers

(see DRAIN GRATES)

Vertical Clearance

For narrow overhead objects less than 2.0 m long, vertical clearance should be at least 2.5 m. Otherwise, it should be 3.0 m min.

Wide Curb Lanes

(see LANE WIDTH)

Zoning Code

Bicycle facilities should be included in any transportation study required for development.

- a. Safe and convenient facilities should
 - i.) connect every residential area to adjacent residential areas, commercial zones, local schools, and parks;
 - ii.) connect every commercial property to adjacent businesses and/or adjacent streets or arterial without crossing parking areas.
- b. Where practical, easements on utility corridors and shorelines should be obtained for public non-motorized access.
- c. All new or reconstructed roads should provide safe and convenient access for bicycles. (see also ROAD DESIGN STANDARDS)
- d. Signs, street furniture, landscaping, utility poles, and driveways should not create additional risk for non-motorized transportation users.
- e. Non-motorized facilities should be planned as a coordinated system with adjacent developments and jurisdictions.

(see also BICYCLE PLANNING, BUILDING CODE, TRANSPORTATION POLICY)

V. Glossary

Note: Some terms in the glossary are not used in this handbook but are commonly used elsewhere in reference to cycling.

Access

- 1) A bicyclist's general ability to travel to destinations in his/her community. Because this generally requires using an infrastructure designed for automobiles, it implies an evaluation of how bicycle-friendly the road infrastructure is.
- 2) Opportunities to get to and from a non-motorized facility.
- 3) The right to use forest access roads and trails for bicycling. Access can be threatened by a wide variety of legislative and government rule-making mechanisms and by physical barriers (see BARRIERS TO TRAVEL).

Accidents

Accidents, sometimes called *incidents*, reflect mistakes that result in collisions. In terms of cyclists, these collisions may involve the ground (i.e., a fall), a fixed object (e.g., tree, bollard), a pedestrian, another cyclist, a parked or moving motor vehicle, or an animal. They usually involve some mistake(s) on the part of the users and/or the facility designers.

Active Transportation

A subset of non-motorized transportation that includes all self-propelled modes, such as walking, kayaking, cycling, in-line skating, swimming, cross-country skiing, etc.

ALBERTA Transportation & Infrastructure (AIT)

The provincial ministry responsible for designing, upgrading, and maintaining provincial highways and freeways, and certain other designated roads, and inland ferries deemed to form part of the highway network. In practice, maintenance is contracted to private contractors. AIT is also the body responsible for creating and administering laws applicable to all users of provincial roads, including cyclists.

Alignment

The "line" that a facility follows; i.e., its route.

American Association of State Highway Transportation Officials(AASHTO)

This US organization produces a variety of publications detailing specifications and guidelines for paving, bridges, and other roadway facilities, including a *Guide for Development of New Bicycle Facilities*. The standards outlined are the minimum acceptable, not necessarily the optimum. Canadians may wish to use AASHTO material to supplement *The Community Cycling Manual* as necessary.

Attractiveness

The scenic, aesthetic value of a facility.

Barriers to Travel

Barriers are obstacles to through-traffic or access. They may be *natural*(hills, lakes, rivers) or *artificial* (e.g., freeways, bridges without appropriate lane widths or sidewalks, tunnels, neighbourhood traffic control devices).

Bicycle Access

The ability of cyclists to access roads and trails, sometimes including other amenities, facilities, and venues.

(see ACCESS)

Bicycle Advisory Committee

A group of citizens, officials, and staff liaisons officially sanctioned by a local, regional, or provincial government and given a mandate to provide recommendations on cycling issues to its various departments.

Bicycle Boulevard

A non-street bike route prioritizing cyclist safety and convenience; traffic calming and other techniques are used to reduce the speed, access, and flow of motorized traffic.

Bicycle Coordinator

(see BICYCLE PROGRAM MANAGER)

Bicycle Facility

A general term denoting improvements and provisions made to accommodate or encourage bicycling, including parking facilities, maps, and all bikeways.

Bicycle Parking Facilities

- 1) Class I
Long term parking, including protection of bike and components against theft and vandalism.
- 2) Class II
Medium- or short-term parking, consisting of a stationary object to which the user can lock the frame and both wheels with a user-provided lock.
- 3) Class III
Short-term parking, consisting of a stationary object to which the user can lock the frame and both wheels with a user-provided 1.9 m cable (or chain) and lock.

Bicycle Path

(see BIKEWAY)

Bicycle Plan

A document or series of documents that outlines what a given government is going to do to promote cycling or improve cycling conditions. A balanced plan will incorporate goals and mechanisms relating to each of the four Es.

Bicycle Program Manager (may be termed Bicycle Coordinator)

A person hired by a local, regional, or provincial government to ensure that cycling issues are taken into account in all applicable departments and projects, and to design and implement strategies and programs to make cycling safer, more convenient, and more appealing.

Bicycle Route

(see BIKEWAY)

Bicycle Transportation Specialist

A person trained in the planning and implementing of facilities and programs specifically for bicycle traffic and bicyclists.

Bikeway

Generic term for any transportation route accessible to cyclists, in particular, the following:

- 1) *Class I: Bicycle Pathway.* A non-motorized facility, paved or unpaved, physically separated from motorized vehicular traffic by means of open space or a barrier. Also called *bike path*, *bike trail*, *multi-purpose trail*, etc.
- 2) *Class IIa: Bicycle Lane.* A defined portion of a roadway designated by striping (or less-desirably by a physical barrier such as a curb), signing, and pavement markings as being for the preferential or exclusive use of bicyclists. Normally found on the right side of the rightmost through-lane on each side of a two-way road, with cyclist use in same direction as adjacent traffic. Additional lanes may be used to benefit cyclists turning right or left. Also called *bike lane*.
- 3) *Class IIb: Shoulder Bikeway.* On a rural road with open drainage, a smooth, paved shoulder that is signed and meets specified width and maintenance criteria, with cyclist use in the same direction as adjacent traffic.
- 4) *Class III: Bicycle Route.* Any segment of shared roadway designated by signs, without a defined portion of the road being demarcated for cyclist use. Bicycle routes are generally so designated because they are recognized as offering a preferred routing. Also called *bike route*, a term also sometimes loosely applied to mean any bikeway.
- 5) *Class IV:* A shared roadway not specifically designated or demarcated for the use of bicyclists, but nevertheless incorporating cyclist-friendly design standards for drain-grates, lane widths, etc.

Bollard

A wooden or metal post installed on a bicycle pathway, usually to restrict access by motor vehicles, but often inconvenient and/or hazardous to cyclists too.

Canadian Cycling Association (CCA)

The national body that addresses advocacy, competitive, educational, and recreational issues. It is the umbrella organization for all provincial cycling organizations.

CAN-BIKE Course

Generally, two CCA- and Alberta Bicycle Association-sanctioned courses with written and on-road components: CAN-BIKE SKILLS I to teach basic in-traffic riding skills and CAN-BIKE SKILLS II for advanced riders.

Chicane

A course that is a tight weave between fixed objects, such as offset sections offence across a pathway; sometimes used to prevent larger classes of users from entering a facility.

Chip Seal

An inexpensive and inferior alternative to an asphalt overlay, in which a tar base is sprinkled with rock chips or gravel and rolled, to give a very rough surface.

Community Cycling Manual

A book of specifications for the design of bikeways and other cycling facilities, published by the Canadian Institute of Planners.

Commuter Cycling

Cycling between home and work or school. A kind of transportation cycling.

Continuity

Pertains to

- 1) Physical continuation of a facility
- 2) Consistency in level of riding difficulty
- 3) Consistency in class of a facility

Counterflow Lane

A bike lane that allows cyclists to travel in the direction opposite to normal traffic flow on a one-way roadway. It is conspicuously visually segregated, and possibly physically segregated, with traffic on the cyclists' left.

Delay

Anything that interferes with continuous progress, such as waiting for a signal to change or for a break in traffic.

Directness

An evaluation of how efficient the alignment of a route is: the absence of detours.

Effective Cycling

A set of principles relating to safe and effective bicycle use, championed by John Forester, a cyclist and writer. Effective cycling is the basis of the CAN-BIKE program.

End-of-Trip Facilities

Any amenities found at a destination such as a workplace including secure parking, showers, lockers, etc.

Four Es

Short for *engineering, education, encouragement, and enforcement*: four vital and inter-related aspects of any bicycling plan. *Engineering* entails the design and implementation of any kind of bicycle facilities. *Education* is the process of teaching safe and practical cycling techniques and facility usage, either in person or through various media. *Encouragement* is the means whereby non-cyclists become occasional cyclists and occasional cyclists become frequent cyclists. *Enforcement* is the process of discouraging behaviour by cyclists or other facility users that, through ignorance or arrogance, is unlawful or dangerous; it is pursued through apprehension and the assessment of penalties if necessary.

High-Occupancy Vehicle (HOV)

Typically, a vehicle carrying three or more people, but in some definitions as few as two. The designation of HOV lanes is a technique of transportation demand management, to move more people with less congestion and pollution, without building new facilities.

Hotline or Bicycle Hotline

A phone number that the public can call to get information on cycling-related issues and events, or to express concerns, with the assurance that the call will be answered by an informed person with the authority and mandate to act or to transfer the request to the appropriate person.

Alberta Bicycle Association maintains a hotline to publicize upcoming events and changes. Your city hall may have a hotline deal with cycling-related concerns.

Incidents

(see ACCIDENTS)

Integration

The inclusion of cyclists on roadways rather than on segregated facilities such as bicycle pathways. Integration may take place on highways, arterioles, or secondary roads. *Enhanced local integration* refers to the creation of a Class III bikeway on a secondary road, entailing the application of traffic management techniques to reduce motorized traffic and encourage cyclists. The *bicycle boulevard* is a form of enhanced local integration.

Integration is also used more broadly to mean the inclusion of the bicycle in all aspects of planning and implementation of policies and projects affecting land-use, transportation, education, recreation, etc.

Inter-Modal Transportation

The use of more than one mode e.g., foot, bicycle, rail, bus, ferry between the origin and the destination of a trip. For cyclists, the preferred option is to be able to take their bikes onto railways, buses, and ferries so that they may be used at both ends. Secure bicycle parking at transit facilities promotes inter-modal transportation.

Lobbying

The process of attempting to persuade elected or appointed officials to act favourably towards your cause. Lobbying is best seen as a long-term strategy. State facts clearly, avoid threats, keep your promises, and persevere.

Long-range plan

(see MASTER PLAN)

Master Plan or Long-Range Plan, Strategic Plan

A five- or ten-year plan to guide an agency's activities as a whole or for a particular facility, such as a provincial park; they may include periodic explicit public involvement. Generally they will specify goals, operating budgets, and staffing levels.

Mountain Biking

A term loosely used to mean cycling on trails, logging roads, or other unpaved surfaces, for recreation or competition, using a bike especially designed for this purpose. Mountain bikes are often referred to as ATBs All-Terrain Bikes.

Non-Motorized Transportation

Any mode of transportation that does not use a motor, such as walking, cycling, sailing, skiing, in-line skating, horseback riding. In practice, motorized wheelchairs for those with mobility difficulties are usually also permitted on the same facilities.

Official Community Plan (OCP)

A periodically updated document used by cities, municipalities, and other local governments to set forth their intentions for land use and transportation facilities, including bikeways for transportation and recreation.

Open House

Like a public hearing, but with a tighter focus. Usually held to inform the public on selected options pertaining to a certain topic or project and determine which enjoys the most public support.

Origin-Destination Survey or Study

A technique in which (some of) the users of transportation facilities are questioned as to where they begin and end their trips, so that this information can be used in making improvements to facilities, building new ones, and determining alignments.

Parking Bicycle

(see PARKING - BICYCLE)

Public Hearing

A high-visibility forum in which members of the public are invited to express their views on a given issue. Public hearings are valuable for impressing officials with large numbers of cyclists, but are not a substitute for ongoing negotiations.

Railbanking or Landbanking

The preservation of unused rail corridors in case of future transportation needs. In the interim, a cycling or multi-user trail may be established.

Rails and Trails

The establishment of a cycling or multi-use trail on surplus right-of-way of an operating railway, adjacent to functioning tracks.

Rails to Trails

The conversion of abandoned railway rights-of-way to (typically) a multi-use trail.

Raised Traffic Devices

Disks or bars attached to pavement to channel traffic. May be called "buttons," "slugs," etc.

Roundabout

A circular intersection (also known as a traffic circle) in which traffic enters and circulates to the right (left in UK, Japan, etc.) around a central hub until the desired exit is reached. Traffic already in the intersection has priority. Small roundabouts are sometimes used to replace conventional uncontrolled or stop-sign controlled intersections as an element of traffic calming. Large roundabouts are uncommon in ALBERTA but are widely used in Europe. The number of arms can vary from three upwards.

Safety

Consideration of the threat of accidents.
(see ACCIDENTS)

Security

Consideration of threats to self or property through criminal activity.

Segregation

Segregation is the provision of separate facilities for each of cyclists, motorized traffic, pedestrians, equestrians, etc.

Shy Distance

A specified horizontal or vertical clearance required between a facility and any obstructions or hazards, such as trees, branches, poles, fences, curbs, guardrails, drop-offs, etc.

Sidepath Laws

Laws prohibiting cyclists' use of roadways where parallel segregated facilities exist.

Single-Occupancy Vehicle(SOV)

A motor vehicle being used to transport a driver but no passengers. This is generally considered to be inefficient and undesirable. (see also HIGH-OCCUPANCY VEHICLE)

Spot Improvement Program

The creation of a mechanism by a department or agency whereby the reporting of a straightforward concern (such as a pothole, broken glass, poor signal timing, etc.) by a member of the public results in prompt investigation and remedial action.

Street Furniture

Any unwieldy or fixed objects that can clutter a sidewalk or bikeway, such as paper boxes, fire hydrants, mailboxes, telephone booths, parking meters, sandwich boards, lighting fixtures, etc.

Trip Generator

Any destination, such as a school, hospital, university, employer, shopping district, etc., that attracts people, thus creating a demand for use of transportation facilities.

Traffic Calming

A philosophy of introducing measures to slow and reduce motorized traffic flow on a road or throughout a neighbourhood while enhancing quality of life and safety for residents, pedestrians, and cyclists. Techniques are steadily being fine-tuned for maximum efficacy, and may include shrub and tree plantings, roundabouts, lane narrowings, varied road texture, diverters, meanders, speed humps, reduced parking facilities, etc.

Traffic Circle

(see ROUNDABOUT)

Transportation Cycling or Utilitarian Cycling

Cycling with a primary purpose of moving the user from point A to point B, as distinguished from cycling motivated by desire for recreation, exercise or training. Includes commuting, doing errands, etc.

Transportation Demand Management (TDM)

The reduction of the number of trips made, length of trips, and their costs to society, both monetary and environmental. TDM is practiced through community planning, promotion of van- and car-pooling, and encouragement of modal shift towards more benign forms of transportation.

Use Conflicts

Encounters with other traffic on a facility that cause delays, or in extreme cases, collisions. May refer to real or perceived conflicts between users of different modes.

Utility or Utilitarian Cycling

(see TRANSPORTATION CYCLING)

Zoning

A process whereby a city or other jurisdiction will restrict certain areas of land to particular uses (e.g., single-family residential, apartments to a certain height and density, commercial, etc.), thus indirectly affecting transportation demand.