

# Portneuf Greenway Trail System



The purpose of these Design Guidelines is to establish a consistent pattern to the development of the Portneuf Greenway Trail System. The plan outlines design treatment and recommendations for various components including trail construction.

## Design Guidelines

**Appendix B of the 2008 Greenway Master Plan**

The Portneuf Greenway Trail System Design Guideline was developed as a cooperative effort of the Trails Working Group (TWG). The Trails Working Group is a collection of public and private agencies working together to develop and maintain a greenway system in the Portneuf valley. Members include various departments of the City of Pocatello, Portneuf Greenway Foundation, and Bannock Transportation Planning Organization.

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## *Appendix B*

### **Chapter 2 Introduction**

The purpose of design criteria is to establish a development pattern for the Portneuf Greenway Trail System. Design guidelines are important to simplify trail construction and provide a consistent design throughout the system and “branding” for the trail system. The design guidelines are intended to outline a consistent set of development standards so that the Portneuf Greenway trail system can be constructed to a uniform standard over time. It is important that design guidelines be established for safety and improved usability of the system and consistent standards be maintained throughout the system.

The recommendations found in this section consider cost, aesthetics, the environment, usability, ADA Accessibility Guidelines for Buildings and Facilities (ADAAG) accessibility guidelines, and American Association of State Highway Transportation Officials (AASHTO) design guidelines. When possible, the use of recycled materials is preferred.

Several of the design guidelines are recommendations or standards from other sources including ADAAG, AASHTO, and the City of Pocatello. When a design guideline lists these agencies, it is recommended that prior to completing the design, the agencies’ latest standards be checked.

Final design authority rests with the public agency responsible for managing the trail, usually the City of Pocatello. No trail should be constructed without such approval. Trail amenities are subject to available City funds and requirements.

### **Chapter 3 Path Construction and Alignment**

Paths should be constructed to allow the targeted user the best possible experience, while also establishing a system which is low maintenance and is useable by a wide variety of users.

#### ***Trail Cross Section***

Purpose: Trail Cross Section is the design specification describing the dimensions and materials used for trail construction. The trail should provide adequate clearance and surface for two-way traffic. The goal is to use a surface material that will last, not require a great deal of upkeep, and will best match the targeted primary user.

Location/Use: Throughout the entire trail system.

Description/Design Concept: The Greenway Trail System will be divided into two classes: Class I – Paved and Separated Trails and; Class II - Natural Surface Trails. The Class I Trails are multi-use trails (bicycle and pedestrian) and are paved and maintained regularly. The Class II Trails are generally unpaved and do not undergo as much

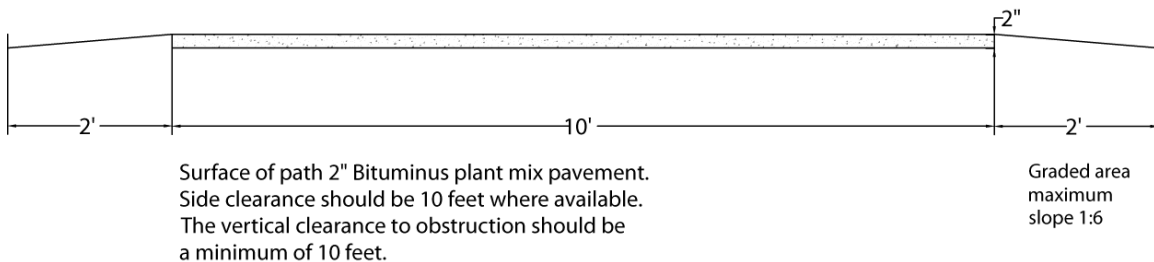
maintenance as the Class I Trails. The Trails Working Group will do its best to meet ADAAG recommendations for Class I trails. Most design standards and ADAAG standards will not apply to Class II Trails.

### **Class I Trails**

Purpose: To provide a connected set of trails separated from the road system between the community, the river, and public lands. The Class I Trails are further divided by location in the system (i.e. river trail and connecting trail)

Location/Use: Existing and proposed Class I Trails are throughout the entire trail system. For specific location see the master plan map.

Description/Design Concept: Figure 1 shows the typical cross section of Class I Trails.



**Figure 1: Typical Trail Section Class I**

**River Trail** - This is a 10 foot trail designed to accommodate a variety of trail users such as bikers, joggers, walkers, roller bladers and wheelchairs. The trail primarily follows the Portneuf River in the Pocatello area. The side clearing should be 8 to 10 feet wide. The vertical clearance should be at least 10'. The 2' graded area on the shoulder will help reduce any user conflicts and should be a 2-4% grade. The graded area can be grass or gravel.

**Connecting Trails** - This is generally a paved trail in an urban area which is separated from the road. It should be at least 10' wide with a 2' shoulder on each side of the trail. These urban trails should connect neighborhoods to the river trail, businesses, shopping areas, schools and to parks and public land trailheads in the Greater Pocatello area.

### **Class II Trails**

Purpose: To provide a set of natural surface trails which connect to the Class I Trail system. The natural surface trails or hiking trails serve to provide access to public land or to provide natural surface walking/biking paths within the cities of Pocatello and Chubbuck

Location/Use: Class II Trails are throughout the entire trail system. For specific locations, see the Master Plan map.

Description/Design Concept: There is no typical cross section for Class II Trails. The general rule is to provide a designated path through a natural setting. The paths grade,

surface, and obstacles all depend upon the difficulty of the specific trail. The Greenway has canal and hiking trails in the category of Class II trails.

**Canal Trails** - These trails will be graded, unpaved trails. They are located on the banks of irrigation canals and generally found in Chubbuck.

**Hiking Trails** – These trails are located in the foothills or mountains and sometimes within parks; paths generally are not paved. These usually are four to six-feet wide, made of a soft surface with no shoulders. Most users are hikers and mountain bikers. Paths should connect to a Class I Trail where possible, although many times a connection can only be provided on-street. These paths are not located on BLM or Forest Service lands.

### ***Trail Alignment***

Purpose: Trail alignment describes how the paths should be built to provide a continuous system of smooth and safe curves. Changing the alignment of the trail on very straight sections provides a changing landscape for the trail user and increased interest.

Location/Use: Whenever the trail changes direction greater than 45-degrees or where line of sight is less than ¼ mile.

Description/Design Concept: The path should be designed to complement the existing terrain and provide visual interest throughout the trail. Trails should not be straight for longer than ¼ mile where practicable. Design of curve radii on the trail where practical and possible should use AASHTO design standards. The design speed for the trail system is 12-mph. In instances where curve radii are substandard and sightlines inadequate for the trail, a change in speed is needed and curve warning signs and pavement markings should be installed.

Increasing the trail width by a couple of feet through curves with less than desirable radii can also improve safety.

### ***Trail Design Criteria/Grade***

Purpose: To minimize grades to reduce the effort required for traveling on the trail system and set stopping and sight distances.

Location/Use: Where possible throughout the trail system.

Description/Design Concept: Following ADAAG guidelines, the recommended trail grade should be no more than a 5% running slope or less than 8.33% for a max of 50 feet. The slope should be no more than 10% for a maximum of 30 feet. A 3% slope is the preferred average over long distances. Vertical changes in level should not exceed .25 inches. If the vertical change is higher than .25 inches, a bevel should be used. If the trail is not up to ADAAG standards, a sign should be posted at the trail head warning the user of possible trail difficulties. In this manner, individuals will be able to choose if the trail has too many obstacles. If the trail meets ADAAG guidelines, a symbol

should be provided on the signage at the trailhead. See the signage section for an example.

### ***Curb Ramps***

Purpose: To allow handicap access at street curbs and other grade change conditions along the trail system.

Location/Use: At streets, intersections, and parking lots where the path crosses a curb.

Description/Design Concept: All ramps must meet City standards (see Pocatello's Right of Way Design Standard, latest edition).

### ***Bridge***

Purpose: To span a physical obstacle (e.g. railroad, streets, river) in order to increase continuity and provide access along the trail system.

Location/Use: Along creek crossings or other physical obstacles that obstruct the continuity of the trail.

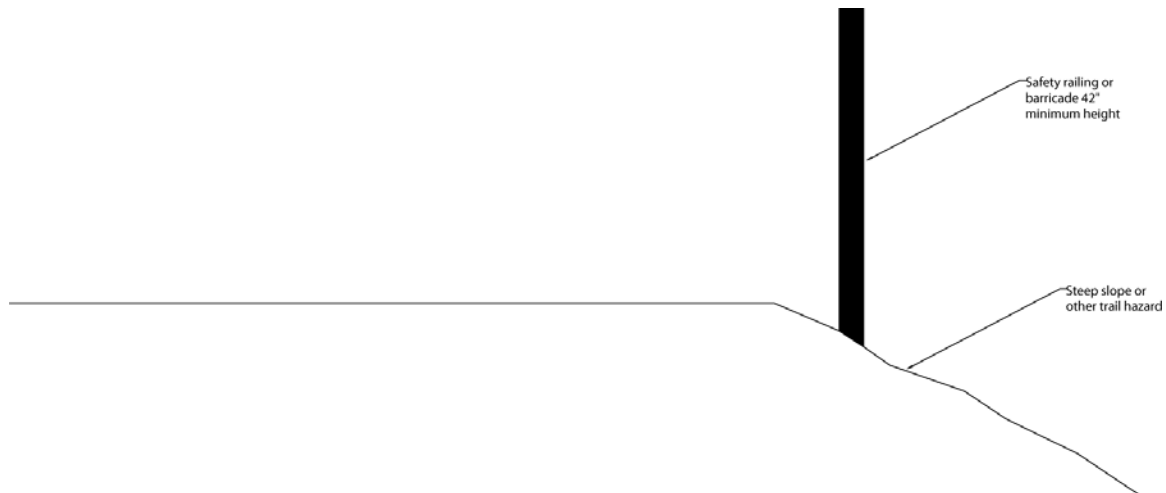
Description/Design Concept: The specific bridge layout and design will be guided and approved by the City Engineer. The bridge should blend into the natural environment. The characteristics of the bridge design should be: green or brown in color, have guard rails, wooded deck, and be a minimum of 8 feet wide.

### ***Safety Railing***

Purpose: To provide edge protection for safety.

Location/Use: To increase safety along trail systems where side slope conditions at trail edge have sharp, sudden grade changes within five feet of trail.

Description/Design Concept: The safety railing should be compliant with City of Pocatello's standards. AASHTO recommends a minimum of 42 inch height rails at dangerous trail locations to prevent cyclists from flipping over the top of the rail.



**Figure 2 Safety Railing**

### ***Retaining Wall***

Purpose: To allow for elevation changes along the trail system. Retaining walls prevent debris from building up on the trail surface and stabilize the width of the trail.

Location/Use: Where side slope conditions require the prevention of downward slope movement and erosion with a structurally reinforced wall.

Description/Design Concept: Retaining walls over 4 feet tall must be engineered and approved by the City of Pocatello Building Department.

## **Chapter 4 Environment and Landscaping**

### ***Security Fence***

Purpose: To provide a separation barrier between the trail system and adjacent properties.

Location/Use: Where physical separation is necessary for safety and security reasons, but visual privacy is not required.

Description/Design Concept: Follow City of Pocatello Municipal Code requirements for fencing and obtain a building permit.

### ***Privacy Fence***

Purpose: To provide physical and visual separation between the trail system and adjacent property.

Location/Use: Where the trail is close to adjacent property which requires both physical and visual separation.

Description/Design Concept: The fence should be made of wood or recycled materials. The height can be up to 7' tall. If the property owner will not accept a wooden fence, another material may be negotiated.

### ***Plant Material/Plant and Tree List***

Purpose: To enhance the overall appearance of the trail system and to prevent soil erosion.

Location/Use: Where possible throughout the entire trail system.

Description/Design Concept: Plants can be used to keep users on the main trail. Planting can screen undesirable views, provide shade, and emphasize natural features in the existing landscape.

Plants should be low maintenance and not need much water (xeric). Use of native species is encouraged. The City of Pocatello Re-vegetation Guide for Grasses, Forbs and Shrubs and Pocatello's Master List of acceptable Trees are both helpful resources for choosing plant material.

## **Chapter 5 Trail Directory / Informational Signs**

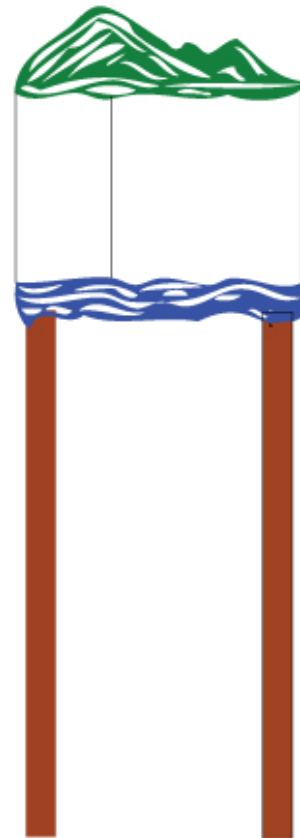
Signage - No sign will be placed on the trail without permission from the Portneuf Greenway Foundation and the Trails Working Group.

### ***Trail Directory***

Purpose: To convey information and location about the trail system.

Location/Use: The directory may be placed at major trailheads, intersections, and parking areas to identify, name, and provide information about specific trail sections.

Description/Design Concept: Description: 2x3' metal frame with artistic river and mountain scene attached on top and bottom. Frame is 3'x2' which allows for a 1x2' sign on left side (full trail map) and a 2x2' sign on right side (individual trail section information). The frame is powder coated (rust brown for legs/green for mountains/blue for river). Frames must be installed in concrete so that bottom of frame is 28-32 inches above ground height as recommended by the National Park Service in their signage guidelines.



**Figure 3 Example of Standard Greenway Sign**

### ***Class I Trail Section Markers***

Purpose: To establish a coordinated system for identifying different trail sections.

Location/Use: At beginning and end of each identified trail section.

Description/Design Concept: Each trail section for Class I Trails may have a travertine marker placed in front of it.

### ***Class II Trail Section Markers***

Purpose: To provide identification of Class II trailheads at parking lots and public streets, and provide information about the trail.

Location/Use: Trail markers should be placed at trail access points and at parking facilities or public streets.

Description/Design Concept: The bottom edge of signs should be 28-32 inches above ground. The signs should be mounted between two poles. The sign material should be UV and graffiti resistant. Each sign should be 24"x17", and the following information should be displayed:

- Name of Trail
- Map of entire trail system with "you are here" symbol.
- Trail information including: level of difficulty, approximate length, type of trail and cautionary notes.
- Trail Ethics

### ***Interpretive Sign***

Purpose: To provide information on natural or historic features along the trail system.

Location/Use: At unique natural areas or near a viewpoint or pullout. The exact location of any interpretive sign is to be determined by an evaluation by Trails Working Group.

Description/Design Concept: The signs should be embedded fiberglass or folia type. The Portneuf Greenway Foundation logo and managing public agency logo should be on all signs. Due to the material, signs should remain in good condition for at least 10 years. The bottom edge of signs should be 28-32 inches above ground.

### ***Mileage Marker***

Purpose: To produce a system for gauging distances throughout the trail system.

Location/Use: At every ¼ mile from a trailhead, park, or other landmarks.

Description/Design Concept: The signs will be a red/rust color and made out of caronite fiberglass stakes with a minimum height of 48-inches. Mileage markers should be located at the edge of the 2-foot wide graded shoulder. The Portneuf Greenway logo will be at the top of the stake and the mileage marking(s) below. For now, each non-connecting trail will start at 0. Markers should be signed on both sides for directional viewing.



Figure 3: Mileage Marker

### ***Directional Signs***

Purpose: To direct trail users along the trail system.

Location/Use: At forks in the road, gaps in connection or other areas or other places where directions are needed.

Description/Design Concept: The bottom edge of signs should be 28-32 inches above ground. The signs should be mounted between two poles. The sign material should be UV and graffiti resistant. Each sign can have multiple messages; the following information should always be displayed:

- Name of Trail
- Name of destination and distance
- Directional arrow

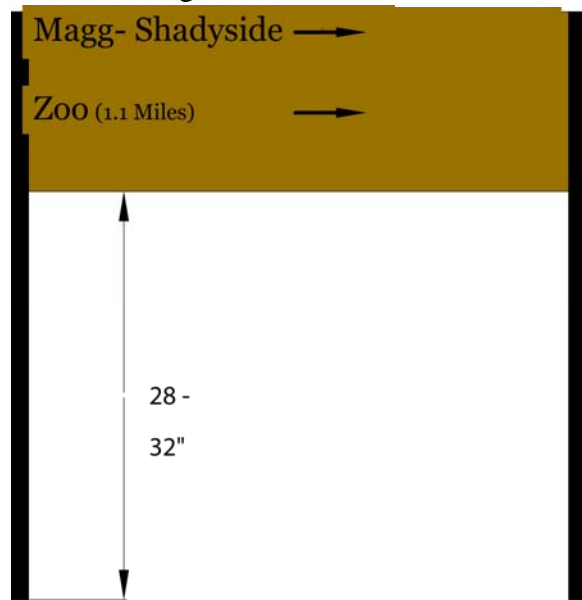


Figure 4: Directional Sign

## **Chapter 6 Roadway Crossings**

Purpose: To define the treatment of intersections of Class I Paths and public roadways.

Location/Use: Wherever the trail crosses a public roadway.

Description/Design Concept: Road crossings come in a variety of forms due to the unique characteristics each crossing. All crossings should be designed to promote safety. This includes: consideration of sight distance for vehicles and trail users; vehicle speed; width of road; predominate trail user; and type of intersection.

### ***Roadway Crossing Treatment***

The table below provides a recommended treatment based on the speed of the road and daily traffic volume. The standards, good and satisfactory, depend on the typical user. The more children and the elderly that use a crossing, “good” standards should be used rather than “satisfactory.” This table is intended to be a reference chart and planning

tool. The actual treatment should be based on an evaluation of the conditions at each individual crossing.

**Table 1 Roadway Crossing Treatment**

Posted Speed	Standard	Type of Crossing Depending on Speed and Volume of Traffic					
	Vehicular Volume (Average Daily Traffic)	2,000	4,000	6,000	8,000	10,000	12,000
45 mph	Good	Grade Separated (i.e tunnel or bridge)					
	Satisfactory	Traffic Signals					
40 mph	Good	Traffic Signals			Grade Separated		
	Satisfactory	Crosswalk - Median Refuge Island			Traffic Signals		
35 mph	Good	Crosswalk - Median Refuge Island		Traffic Signals		Grade Separated	
	Satisfactory	Crosswalk		Crosswalk - Median Refuge Island		Traffic Signals	

Source: Minnesota Department of Natural Resources Trails and Waterways - Trail Planning, Design, and Development Guidelines

### ***Trail Treatment***

Intersections and road crossings trails treatment are considered in the Greenway system. Intersection crossings are where the trail system crosses the street system at an intersection of two public roadways. Road crossings are where the trail crosses a public road at a location other than an intersection.

### **Intersection Crossing**

Purpose: To provide a safe trail crossing at an intersection.

Location/Use: Where a Class I Trail crosses the street system at the intersection of two public roads

Description/Design Concept: The Class I Trail should end prior to the intersection of the road. A bollard, trail marker, or fence posts should be used to mark the ends of the trail. Where visibility of the trail end is obscured, a trail end marker should be placed on the trail 100’ feet before its end. The actual crossing of the street will be at the intersection.

### **Road Crossing**

Purpose: To provide a safe crossing of the trail at a public road.

Location/Use: At the crossing of a Class I Trail and a public road.

Description/Design Concept: The design should be consistent with the Manual of Uniform Traffic Control Devices (MUTCD) Section 9B and AASHTO’s Guide for the Development of Bicycle Facilities 1999. For all crossings at local roads which are not maintenance or access roads, a stop or yield sign should be placed on the trail at the crossing.

## ***Bollards***

Purpose: To restrict vehicular access to the trail and adjacent open spaces where there is no fencing and to alert trail users they need to stop or yield at a given location.

Location/Use: At trail access points where there is a direct connection with a street, parking lot, or at a break in fencing where emergency vehicle access is necessary.

Description/Design Concept: The City of Pocatello makes the bollards. The bollards will be a red/rust color along the trail. There will be reflective tape along the top of the bollard. The bollard will have a flat top with no decoration.

ADAAG recommends that bollards should be 6" x 6" posts, but the Greenway bollards are poles. Bollards are necessary when there is no other access point to the trail. Bollards should be 72 inches apart for trails to allow comfortable access for bicycles

One bollard will be placed in the middle of the trail and the other two bollards will be just outside the trail somewhere on the 2' shoulder area. If a removable bollard is needed, it will be the bollard in the middle of the trail.

## ***Regulatory Signage***

Purpose: To inform users of rules, laws, and warn of hazards along or adjacent to the trail system.

Location/Use: Preceding hazards such as blind curves, road crossings, low underpasses, or low speed areas.

Description/Design Concept: Consistency in regulatory signage along the trail helps users more easily interpret signs at first glance. According to the Manual on Uniformed Traffic Control Devices (MUTCD), bicycle signs along the trail should be between 4 and 5 feet tall and 3'-6' off the side of the trail.

## **Chapter 7 Amenities**

Amenities are features such as bike racks, benches, and picnic tables throughout the system to provide for the comfort of trail users and add to the recreational experience.

### ***Bench***

Purpose: To provide resting areas/seating along the trail system.

Location/Use: At selected locations along the trail such as at interpretative stops, trailheads, and park areas. On longer trail sections benches should be spaced ½ mile apart.

Description/Design Concept:



Figure 5 Example of Bench

Benches chosen for use on the Greenway are prefabricated catalog items (or City constructed items) permanently fixed in a place with concrete. The Portneuf Greenway Foundation and the City of Pocatello have a preference for benches made with recycled materials. Most benches are provided with donated funds and are often dedicated or provided in someone's memory.

The United States Access Board recommends the pullout area have a minimum length of 60 inches and a width equal to or greater than the width of the trail segment leading to and from the resting interval. If possible, cross slope of the pull out area should be under 3 percent slope in any direction. The pull out area should have an improved surface and should be provided to meet all trail users' needs.

### ***Bike Rack***

Purpose: To provide a stationary fixture where a bike can be securely locked up to prevent theft.

Location/Use: When possible, at major trailheads and parking lots.

Description/Design Concept: The bike rack should be in a U or loop shape. Any color may be permitted. Other designs may be permitted with approval of the Trails Working Group.



**Figure 6 Example of Bike Rack**

### ***Picnic Table***

Purpose: For seating at picnic areas along the trail system.

Location/Use: In picnic shelters and open areas along the trail system. Tables should be 10 feet or more off the trail edge.

Description/Design Concept: Any low maintenance picnic table is acceptable. The design should be sturdy and of sound construction. Recycled material is preferred.

### ***Shelter***

Purpose: To provide trail users shelter and shade in rest areas along the trail system.

Location/Use: As needed along the trail system.

Description/Design Concept: The City of Pocatello's Parks and Recreation Department has a shelter design which should be referred to.

### ***Trash Container***

Purpose: For litter control along the trail system.

Location/Use: In conjunction with benches, trailheads, parking areas, picnic areas, and as needed throughout the trail system.

Description/Design Concept: The trash container should be easy to maintain, sturdy and able to withstand harsh weather conditions. Any style or type is acceptable with a preference for recycled material.

### ***Mutt Mitts Stations with Trash Can***

Purpose: To keep pet feces off the trail system and out of natural areas including Portneuf River and its tributaries.

Location/Use: Where possible throughout the trail system.

Description/Design Concept: As a general rule, a trash container should be as close to a Mutt Mitts station as possible. A suggested maximum distance is 25 feet.



Figure 7 Mutt Mitts Station

### ***Drinking Fountains***

Purpose: To keep trail users hydrated along the trail.

Location/Use: As needed and as feasible along the trail system.

Description/Design Concept: No design standard is in place, but the fountain should have the following features: Constructed of 3'16" steel pipe, stainless steel, or stone; surface mounted, stainless steel overlapping bowl; freeze resistant tubing; AADAG compliant; and with a pet option available.



Figure 8 Example of Drinking Fountain

### ***Public Art***

Purpose: To provide interest and beautification of the trail.

Location/Use: As needed and as feasible along the trail system.

Description/Design Concept: Projects within the City of Pocatello require design and placement approval by the Pocatello Arts Council and Pocatello City Council. Project within other jurisdictions require approval from that jurisdiction.

## **Typography/Colors**

Purpose: To establish consistency for the font and colors used on all signage and to present a unified appearance to promote reorganization of the Greenway as a unified system.

Location/Use: On all signage throughout the trail and on all printed greenway material.

Description/Design Concept: Blue and white, grayscale color theme, or full color versions of the Portneuf Greenway logo. Adobe Garamond font is used for main text. There is not a designated font for signs, although informational text on signs should use sans-serif fonts when possible.