

City of Willmar

Private Archery Range Safety Requirements

The Willmar City Council promotes safe archery within the community. Through the use of standard safety guidelines the Council will allow a citizen to construct and enjoy a private archery range which is balanced against the safety of other community members.

Since each range may be unique, the council would have discretion to approve and designate a privately owned archery range on an individual's personal property under City Code Sec. 10-55 (C)(3) so long as the range can be shown to meet a minimum of the safety standards determined for the different range designs (Range Design #1, Range Design #2, and Range Design #3) that follow.

The Application/Permit Process

All private archery ranges within the City of Willmar must obtain a permit through Council action.

There is no cost to the citizen to obtain a permit. A "Private Archery Range Permit" application form can be obtained at the Willmar Police Department, City Office, or found on the City website located at: www.willmarmn.gov.

1. First read the safety standards of the various approved range designs. Make sure the range design you are considering will meet the stated standards as outlined in this document.
2. Complete the application form in its entirety and include a detailed diagram.
3. Submit the application to the City Office to be placed on the next Public Works/Public Safety Committee meeting agenda. (It may be helpful to ask which Committee meeting date your application will be reviewed at so you can be present to answer any possible questions the Committee members may have).
4. Your application will be reviewed by the Public Works/Public Safety Committee. Upon approval, the Committee will make recommendation at the next City Council to approve the permit. Upon Council approval, you have permission to construct the range design you presented.
5. An approved application will be forwarded to the Willmar Police Department to be kept on file in Willmar Police records under the property owner's name for purposes of establishing compliance.
6. If the archery range application is approved, it is valid until either the submitted range design changes or the property is purchased by another person or business. It does not require yearly renewal.

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GENERAL RANGE SAFETY REGULATIONS

Arrow Tips – Only arrows tipped with what is commonly referred to as “blunt”, “field-point”, “bullet” or “target” tips can be used on approved private ranges. Arrows containing broad-head, razor, barbed, or explosive tips are prohibited on all approved ranges.

Range Length – is the furthest distance the archer (shooter) will be standing away from the target when discharging an arrow downrange at an intended target.

Range Location – No private range can include either publicly owned property or privately owned property of another in its design unless in the case of privately owned property the owner of such property has signed off on the permit application approving the use of their land in the range design being proposed.

Shooter (Archer) Position – The archer must always stand perpendicular to the approximate center of the target when shooting arrows downrange.

Target – A target must be a minimum of 18x18 inches in size. It must be constructed of a thickness to stop an arrow from completely penetrating and continuing through the target.

Target Position – The target must be placed on an imaginary line between the archers shooting position in relation to the approximate horizontal center within a range’s defined safety buffer zones or the constructed backstop.

INDOOR RANGE

Indoor Range – An archery range that is completely contained within a building in which no discharged arrow can escape. By their design an indoor range is not subject to any of the additional safety regulations listed under Range Designs #1, #2, or #3 and only the “Arrow Tips” above.

RANGE DESIGN #1

Downrange safety is provided through the use of an appropriately sized backstop matched to the range length. The backstop size accommodates the likelihood of stopping a potential errant arrow shot from a bow. Side range safety is managed by maintaining a 3° degree angle of offset between the archers shooting position and the backstop. In addition to the general range safety regulations, Range Design #1 requires the following additional safety standards to be adhered to.

Backstop – is also referred to in archery range terminology as the “target butt”. Your target is not considered to be a backstop but is independent of the backstop. The sole purpose of the backstop is to

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prevent the arrows discharged from the bow which happen to miss the target, from traveling further downrange and exposing either someone else or other property to a potential damage or hazard.

Backstop Height – The top edge of a backstop shall be maintained at seven (7) feet in height from the ground. The bottom edge of the backstop does not need to rest on the ground but can be no more than one (1) foot above ground level.

Backstop Length – The backstop must be of a length which covers a 3° degree angle offset on either side of the archers shooting position in relation to the backstop must be maintained. This 3° degree offset allows for margin of human error and/or proficiency upon release of an arrow. It also would allow protection for compensation of the effects of any crosswind that might be present.

The distance of the range stated in the applicant’s permit will determine the proper length for a required backstop. The table below shows what length your backstop must be when compared to the range length defined in your application. (For example: if your range is 140 feet in length a 3° degree offset would require your backstop to be 14.6 feet in length.)

Distance from shooter to backstop (Feet / Yards)	10	20	30	40	50	60	70	80	90
			10			20			30
Required backstop length (in feet)	1.0	2.1	3.1	4.2	5.2	6.3	7.3	8.3	9.4
Distance from shooter to backstop (Feet / Yards)	100	110	120	130	140	150	160	170	180
			40			50			60
Required backstop length (in feet)	10.4	11.5	12.5	13.5	14.6	15.6	16.6	17.7	18.8

Backstop Location – No backstop shall be placed closer than ten (10) feet to the property line.

Backstop Material – The backstop must consist of a substance (or combination of substances) which prevents the arrow being discharged from the bow from penetrating through the backstop. At any time backstops begin to allow pass-through arrows, the condition shall be corrected at once.

RANGE DESIGN #2

Both downrange and side-range safety is provided through the use of appropriately sized safety buffer zones which are open spaces behind a target and to each side of the shooting line between the archer and the target. This area is intended to provide safe buffer zones which would compensate for an errant arrow shot from a bow or the effects of any crosswind that might be present.

In addition to the general safety regulations, Range Design #2 requires the following additional safety standards to be adhered to.

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- A minimum of 15 yards/45 ft. (open space) on each side of the shooting lane.
 - A minimum of 25 yards/75 ft. (open space) behind the intended target.
 - A safe zone **may not** include streets, sidewalks or other public right of ways.
 - A safe zone **may** be reduced if the intended open area is protected by a structure (building, fence, embankment, etc.) capable of stopping an arrow and pedestrian traffic.
 - A safe zone behind the target **may** be reduced by 50% if an archer is shooting from an elevated position and the arrow path is 30 degrees or more from the horizontal plane.
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RANGE DESIGN #3

Downrange safety is provided through the use of incorporating a hybrid of safety features used in either Range #1 or Range #2 designs. In addition to the general range safety regulations, Range Design #3 requires the following additional safety standards to be adhered to.

This range design would typically be a design whereby the archer would shoot through an opening (garage or shed door, etc.) and into a building. The building would act as the intended backstop once an arrow enters through the opening accommodating the likelihood of stopping a potential errant arrow shot from a bow.

However, in this range design the archer must still plan for side range safety either by maintaining a proper 3 degree angle offset in Range Design #1 or using the stated side-range safety buffer zones in Range Design #2 up to the point just prior to opening where the arrow enters the building. Target placement can be anywhere inside the building opening.

The 10 foot minimum distance to property line is not a requirement as the arrow is being shot into a building. Essentially the inside of the building is acting as the backstop.

The archery range distance is dependent upon the size of the building opening which allows entry of the arrow into the building while still maintaining the 3 degree offset or side safety buffer zones. A larger opening would allow a longer distance of the requested range.