

WEST VIRGINIA LEGISLATURE

2018 REGULAR SESSION

Introduced

Senate Bill 580

BY SENATORS SYPOLT AND BOSO

[Introduced February 16, 2018; Referred
to the Committee on Government Organization]

1 A BILL to amend and reenact §1-1-5 of the Code of West Virginia, 1931, as amended, relating to
2 updating language for the West Virginia geodetic datum to match federal coordinate
3 systems.

Be it enacted by the Legislature of West Virginia:

ARTICLE 1. LIMITS AND JURISDICTION.

**§1-1-5. West Virginia coordinate systems; definition; plane coordinates, limitations of use;
conversion factor for meters to feet; official geodetic datum.**

1 (a) ~~The systems~~ The following acronyms used throughout this section have the following
2 meanings:

3 “FGDC” means the Federal Geographic Data Committee or its successor;

4 “NSRS” means the “National Spatial Reference System” or its successors;

5 “NGS” means the “National Geodetic Survey” or its successors;

6 “SPCS” means “State Plane Coordinate System” or its successors; and

7 “WVCS” means the “West Virginia Coordinate System”.

8 (b) The most recent system of plane coordinates which have been established by the
9 ~~National Ocean Service/National Geodetic Survey (formerly the United States Coast and~~
10 ~~Geodetic Survey) or its successors~~ NGS, based on the NSRS, and known as the SPCS, for
11 defining and stating the geographic position or locations of points ~~on the surface of the earth~~ within
12 West Virginia are to be known and are designated as the West Virginia Coordinate System. ~~of~~
13 ~~1927 and the West Virginia Coordinate System of 1983~~

14 (c) The plane coordinate values used to express the position or location of a point in this
15 system consists of two distances, expressed in U. S. Survey feet and decimals of a foot or in
16 meters and decimals of a meter. One of these distances, to be known as the x-coordinate, shall
17 give the position in an east-and-west direction. The other, to be known as the y-coordinate, shall
18 give the position in a north-and-south direction.

19 (d) The associated factor of one meter equals 39.37/12 U. S. Survey feet shall be used in

20 any conversion necessitated by changing values from meters to U. S. Survey feet.

21 ~~(b)~~ (e) For the purpose of the use of this system the state is divided into a North Zone and
22 a South Zone.

23 The area now included in the following counties is the North Zone: Barbour, Berkeley,
24 Brooke, Doddridge, Grant, Hampshire, Hancock, Hardy, Harrison, Jefferson, Marion, Marshall,
25 Mineral, Monongalia, Morgan, Ohio, Pleasants, Preston, Ritchie, Taylor, Tucker, Tyler, Wetzel,
26 Wirt, and Wood.

27 The area now included in the following counties is the South Zone: Boone, Braxton,
28 Cabell, Calhoun, Clay, Fayette, Gilmer, Greenbrier, Jackson, Kanawha, Lewis, Lincoln, Logan,
29 McDowell, Mason, Mercer, Mingo, Monroe, Nicholas, Pendleton, Pocahontas, Putnam, Raleigh,
30 Randolph, Roane, Summers, Upshur, Wayne, Webster, and Wyoming.

31 ~~(e)~~ (f) As established for use in the North Zone, the West Virginia Coordinate System of
32 ~~1927 or the West Virginia Coordinate System of 1983~~ shall be named and in any land description
33 map, survey, or geospatial product in which it is used it shall be designated the ~~West Virginia~~
34 ~~Coordinate System of 1927 North Zone or West Virginia Coordinate System of 1983~~ WVCS North
35 Zone.

36 As established for use in the South Zone, the West Virginia Coordinate System of ~~1927~~
37 ~~or the West Virginia Coordinate System of 1983~~ shall be named and in any land description map,
38 survey, or geospatial product in which it is used it shall be designated the ~~West Virginia Coordinate~~
39 ~~System of 1927 South Zone or West Virginia Coordinate System of 1983~~ WVCS South Zone.

40 ~~(d)~~ ~~The plane coordinate values for a point on the earth's surface, used to express the~~
41 ~~geographic position or location of the point in the appropriate zone of this system, shall consist of~~
42 ~~two distances, expressed in U.S. Survey feet and decimals of a foot when using the West Virginia~~
43 ~~Coordinate System of 1927 and determined in meters and decimals when using the West Virginia~~
44 ~~Coordinate System of 1983, but which may be converted to and expressed in feet and decimals~~
45 ~~of a foot. One of these distances, to be known as the x-coordinate, shall give the position in an~~

46 ~~east and west direction. The other, to be known as the y coordinate, shall give the position in a~~
47 ~~north and south direction.~~

48 ~~These coordinates shall be made to depend upon and conform to plane rectangular~~
49 ~~coordinate values for the monumented points of the North American Horizontal Geodetic Control~~
50 ~~Network as published by the National Ocean Service/National Geodetic Survey (formerly the~~
51 ~~United States Coast and Geodetic Survey) or its successors and whose plane coordinates have~~
52 ~~been computed on the system defined by this section. Any such station may be used for~~
53 ~~establishing a survey connection to either West Virginia Coordinate System~~

54 (g) Information and mathematical data for defining the WVCS, and previous versions
55 thereof, including, but not limited to, the West Virginia Coordinate System of 1927 and the West
56 Virginia Coordinate System of 1983, and information and mathematical data for translating or
57 converting coordinates between the WVCS and the previous versions thereof, are those
58 information and data published by the NGS for those purposes.

59 ~~(e) (h) For purposes of describing the location of any survey station or land boundary~~
60 ~~corner in the State of West Virginia, it shall be is considered a complete, legal, and satisfactory~~
61 ~~description of the location to give the position of the survey station or land boundary corner on~~
62 ~~the system of plane coordinates WVCS as defined in this section. Nothing contained in this section~~
63 ~~requires a purchaser or mortgagee of real property to rely wholly on a land description, any part~~
64 ~~of which depends exclusively upon either West Virginia Coordinate System.~~

65 (i) Any survey that establishes WVCS coordinates to express definite positions, to be used
66 by or relied on by any federal, state, or local government entity, or by the public generally, shall
67 be performed:

68 (1) By a professional surveyor or engineer licensed to practice surveying in West Virginia,
69 or by a person exempted from licensure under the provisions of this code,

70 (2) In compliance with all other laws, rules, or regulations governing surveying in the state
71 of West Virginia,

72 (3) In compliance with the Geospatial Positioning Accuracy Standards established and
73 published by the FGDC, and in effect at the time the survey is performed.

74 (i) In addition to any other requirements imposed by law, rule, or regulation, any map, plat,
75 report, description, or geospatial product that claims to report WVCS coordinates to express
76 definite positions, to be used by or relied on by any federal, state, or local government entity, or
77 by the public generally, shall show, or have attached thereto, metadata that meets the
78 requirements established by the FGDC, and in effect at the time the map, plat, report, description,
79 or geospatial product was produced, including a description of the methodology used to establish
80 the WVCS coordinate values reported, that is adequate for users to evaluate the accuracy of the
81 coordinates.

82 (k) For purposes of describing the location of any land boundary corner in West Virginia,
83 it is considered a complete, legal, and satisfactory description of the location to give the position
84 of the land boundary corner on the WVCS as defined in this section, in addition to other location
85 information as may otherwise be required by law, rule, or regulation.

86 This section does not require a purchaser or mortgagee of real property to rely wholly on
87 a land description, any part of which depends exclusively upon the West Virginia Coordinate
88 System.

89 (f) (l) When any tract of land to be defined by a single description extends from one into
90 the other of the coordinate zones specified in this section, the position of all points on its
91 boundaries may refer to either of the two zones. The zone which is being used specifically shall
92 be named in the description.

93 ~~(g)(1) For purposes of more precisely defining the West Virginia Coordinate System of~~
94 ~~1927, the following definition by the United States Coast and Geodetic Survey (now National~~
95 ~~Ocean Service/National Geodetic Survey) is adopted:~~

96 ~~The West Virginia Coordinate System of 1927 North Zone is a Lambert conformal conic~~
97 ~~projection of the Clarke Spheroid of 1866, having standard parallels at north latitudes 39 degrees~~

98 ~~and 00 minutes and 40 degrees and 15 minutes, along which parallels the scale shall be exact.~~
99 ~~The origin of coordinates is at the intersection of the meridian 79 degrees 30 minutes west of~~
100 ~~Greenwich and the parallel 38 degrees 30 minutes north latitude. This origin is given the~~
101 ~~coordinates: $x = 2,000,000$ feet and $y = 0$ feet.~~

102 ~~The West Virginia Coordinate System of 1927 South Zone is a Lambert conformal conic~~
103 ~~projection of the Clarke Spheroid of 1866, having standard parallels at north latitudes 37 degrees~~
104 ~~29 minutes and 38 degrees 53 minutes, along which parallels the scale shall be exact. The origin~~
105 ~~of coordinates is at the intersection of the meridian 81 degrees 00 minutes west of Greenwich~~
106 ~~and the parallel 37 degrees 00 minutes north latitude. This origin is given the coordinates: $x =$~~
107 ~~2,000,000 feet and $y = 0$ feet.~~

108 ~~(2) For purposes of more precisely defining the West Virginia Coordinate System of 1983,~~
109 ~~the following definition by the National Ocean Service/National Geodetic Survey is adopted:~~

110 ~~The West Virginia Coordinate System of 1983 North Zone is a Lambert conformal conic~~
111 ~~projection of the North American Datum of 1983, having standard parallels at north latitudes 39~~
112 ~~degrees and 00 minutes and 40 degrees and 15 minutes, along which parallels the scale shall be~~
113 ~~exact. The origin of coordinates is at the intersection of the meridian 79 degrees 30 minutes west~~
114 ~~of Greenwich and the parallel 38 degrees 30 minutes north latitude. This origin is given the~~
115 ~~coordinates: $x = 600,000$ meters and $y = 0$ meters.~~

116 ~~The West Virginia Coordinate System of 1983 South Zone is a Lambert conformal conic~~
117 ~~projection of the North American Datum of 1983, having standard parallels at north latitudes 37~~
118 ~~degrees 29 minutes and 38 degrees 53 minutes, along which parallels the scale shall be exact.~~
119 ~~The origin of coordinates is at the intersection of the meridian 81 degrees 00 minutes west of~~
120 ~~Greenwich and the parallel 37 degrees 00 minutes north latitude. This origin is given the~~
121 ~~coordinates: $x = 600,000$ meters and $y = 0$ meters~~

122 ~~(h) (m) No coordinates based on the West Virginia Coordinate System, purporting to~~
123 ~~define the position of a point on a land boundary, may be presented to be recorded in any public~~

124 records or deed records unless ~~the point is based on a public or private monumented horizontal~~
125 ~~control station established in conformity with the standards of accuracy and specifications for first~~
126 ~~order or better geodetic surveying as prepared and published by the Federal Geodetic Control~~
127 ~~Committee of the United States Department of Commerce. Standards and specifications of the~~
128 ~~Federal Geodetic Control Committee or its successor in force on the date of the survey apply.~~
129 ~~The publishing of the existing control stations, or the acceptance with intent to publish the newly~~
130 ~~established control stations, by the National Ocean Service/National Geodetic Survey is evidence~~
131 ~~of adherence to the Federal Geodetic Control Committee specifications. The limitations specified~~
132 ~~in this section may be modified by a duly authorized state agency to meet local conditions a~~
133 certification is attached thereto and, recorded simultaneously therewith, certifying the coordinates
134 were established in compliance with the laws, rules, and regulations governing surveying in West
135 Virginia by a professional surveyor or engineer licensed to practice surveying in West Virginia, or
136 by a person exempted from licensure under the provisions of this code.

137 (n) A plat and a description of survey purporting to define the position of a point on a land
138 boundary by the use of the West Virginia Coordinate System must show the following:

139 (1) The accuracy of the coordinates stated at the 95 percent confidence level and in
140 compliance with the Geospatial Positioning Accuracy Standards established and published by the
141 FGDC in effect at the time of the survey. The coordinate accuracies reported by the surveyor will
142 take into account the network accuracy of existing control, as well as additional systematic effects.

143 (2) The applicable datum, datum tag, epoch date, in a decimal year format, and the zone,
144 that is the basis of the coordinates. The datum, datum tag, epoch date, and zone shall be as
145 published by the NGS and shall be shown by an appropriate note, or by suffix such as "NAD83
146 (2011) epoch 2010.00, WVCS, South Zone".

147 (3) The signature and seal of the professional surveyor or engineer licensed to practice
148 surveying in West Virginia, or the person exempted from licensure under the provisions of this
149 code, who performed the survey.

150 ~~(i) (o)~~ The use of the term “West Virginia Coordinate System of 1927 North or South Zone”
151 or “West Virginia Coordinate System of 1983 North or South Zone” on any map, report, or survey
152 or other document shall be limited to coordinates based on the West Virginia Coordinate System
153 as defined in this section.

154 ~~(j)~~ A plat and a description of survey must show the basis of control identified by the
155 following:

156 ~~(1)~~ The monument name or the point identifier on which the survey is based;

157 ~~(2)~~ The order of accuracy of the base monument; and

158 ~~(3)~~ The coordinate values used to compute the corner positions.

159 ~~(k)~~ (p) Nothing in this section prevents the ~~recording~~ recording in any public record of
160 any deed, map, plat, survey, description or of any other document or writing of whatever nature
161 which would otherwise constitute a recordable instrument or document even though the same is
162 not based upon or done in conformity with the West Virginia Coordinate System established by
163 this section, nor does nonconformity with the system invalidate any deed, map, plat, survey,
164 description, or other document which is otherwise proper.

165 ~~(l)~~ For purpose of this section a foot equals a United States Survey foot. The associated
166 factor of one meter equals 39.37/12 feet shall be used in any conversion necessitated by changing
167 values from meters to feet.

168 (q) The official geodetic datums to which geodetic coordinates (including, but not limited
169 to, latitude, longitude, ellipsoid height, orthometric height, or dynamic height) are referenced within
170 the State of West Virginia is as defined for the NSRS.

171 (r) Any map, plat, report, description, or geospatial product that establishes or reports
172 geodetic positions referenced to the NSRS, to express definite positions, to be used by or relied
173 on by any federal, state, or local government entity, or by the public generally, shall comply with
174 the accuracy and reporting requirements set forth above for the WVCS.

175 (s) The provisions of this chapter do not prohibit the appropriate use of other coordinate

176 systems, datums, and other geodetic reference networks.

NOTE: The purpose of this bill is to update West Virginia code regarding coordinate systems.

Strike-throughs indicate language that would be stricken from a heading or the present law and underscoring indicates new language that would be added.