CLAIMS

1. A method of coding video data, the method comprising:

coding, by a video coder and via a coded video bitstream, a syntax element that explicitly specifies whether the coded video bitstream includes a plurality of syntax elements that specify parameters of a temporal motion vector prediction (TMVP) candidate derivation process, wherein the syntax element is a binary flag syntax element, wherein:

a first value of the binary flag syntax element, that explicitly specifies whether the coded video bitstream includes the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, indicates that the coded video bitstream includes the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, and

a second value of the binary flag syntax element, that explicitly specifies whether the coded video bitstream includes the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, indicates that the coded video bitstream does not include the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, and wherein the plurality of syntax elements that specify the parameters of the TMVP candidate derivation process comprise:

a syntax element that specifies a reference picture list for derivation of a collocated picture for derivation of the TMVP candidate;

a syntax element that specifies a reference index of the collocated picture; and

a syntax element that specifies a reference picture list for derivation of a motion vector candidate for derivation of the TMVP candidate;

where the binary flag syntax element has the first value explicitly specifying that the coded video bitstream includes the plurality of syntax elements:

coding, by the video coder, the plurality of syntax elements via the coded video bitstream; and

deriving, by the video coder and based on parameters specified by the plurality of syntax elements, a TMVP candidate for a current block of a current picture of video data;

generating, for the current block, a list of motion vector candidates, the list including the derived TMVP candidate; and

predicting, based on the list of motion vector candidates, the current block.

2. The method of claim 1, wherein:

the syntax element that specifies whether the coded video bitstream includes the plurality of syntax elements comprises a temporal_mvp_assigned_flag syntax element;

the syntax element that specifies the reference picture list for derivation of the collocated picture for derivation of the TMVP candidate comprises a col_pic_list_idx syntax element;

the syntax element that specifies the reference index of the collocated picture comprises a col_pic_ref_idx syntax element; and

the syntax element that specifies the reference picture list for derivation of the motion vector candidate for derivation of the TMVP candidate comprises a col_source_mvp_list_idx syntax element.

3. The method of claim 1, wherein coding the plurality of syntax elements comprises coding the plurality of syntax elements in a slice header syntax structure of the coded video bitstream.

4. The method of claim 1, further comprising, where the syntax element does not specify that the coded video bitstream includes the plurality of syntax elements:

inferring, by the video coder, parameters of the TMVP candidate derivation process; and

deriving, by the video coder and based on the inferred parameters, the TMVP candidate for the current block of the current picture of video data.

5. The method of claim 1, wherein the video coder comprises a video decoder, and wherein coding comprises decoding.

6. The method of claim 1, wherein the video coder comprises a video encoder, and wherein coding comprises encoding.

7. A device for coding video data, the device comprising:

a memory configured to store at least a portion of a coded video bitstream; and

one or more processors that are implemented in circuitry and configured to:

code, via the coded video bitstream, a syntax element that explicitly specifies whether the coded video bitstream includes a plurality of syntax elements that specify parameters of a temporal motion vector prediction (TMVP) candidate derivation process, wherein the syntax element is a binary flag, wherein:

a first value of the binary flag syntax element, that explicitly specifies whether the coded video bitstream includes the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, indicates that the coded video bitstream includes the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, and

a second value of the binary flag syntax element, that explicitly specifies whether the coded video bitstream includes the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, indicates that the coded video bitstream does not include the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, and wherein the plurality of syntax elements that specify the parameters of the TMVP candidate derivation process comprise:

a syntax element that specifies a reference picture list for derivation of a collocated picture for derivation of the TMVP candidate;

a syntax element that specifies a reference index of the collocated picture; and

a syntax element that specifies a reference picture list for derivation of a motion vector candidate for derivation of the TMVP candidate;

where the binary flag syntax element has the first value explicitly specifying that the coded video bitstream includes the plurality of syntax elements:

code the plurality of syntax elements via the coded video bitstream; and

derive, based on parameters specified by the plurality of syntax elements, a TMVP candidate for a current block of a current picture of video data;

generate, for the current block, a list of motion vector candidates, the list including the derived TMVP candidate; and

predict, based on the list of motion vector candidates, the current block.

8. The device of claim 7, wherein:

the syntax element that specifies whether the coded video bitstream includes the plurality of syntax elements comprises a temporal_mvp_assigned_flag syntax element;

the syntax element that specifies the reference picture list for derivation of the collocated picture for derivation of the TMVP candidate comprises a col_pic_list_idx syntax element;

the syntax element that specifies the reference index of the collocated picture comprises a col_pic_ref_idx syntax element; and

the syntax element that specifies the reference picture list for derivation of the motion vector candidate for derivation of the TMVP candidate comprises a col_source_mvp_list_idx syntax element.

9. The device of claim 7, wherein, to code the plurality of syntax elements, the one or more processors are configured to code the plurality of syntax elements in a slice header syntax structure of the coded video bitstream.

10. The device of claim 7, wherein, where the syntax element does not specify that the coded video bitstream includes the plurality of syntax elements, the one or more processors are configured to:

infer parameters of the TMVP candidate derivation process; and

derive, based on the inferred parameters, the TMVP candidate for the current block of the current picture of video data.

11. The device of claim 7, wherein the video coder comprises a video decoder, and wherein, to code the syntax element and the plurality of syntax elements, the one or more processors are configured to decode the syntax element and the plurality of syntax elements.

12. The device of claim 7, wherein the video coder comprises a video encoder, and wherein, to code the syntax element and the plurality of syntax elements, the one or more processors are configured to encode the syntax element and the plurality of syntax elements.

13. The device of claim 7, wherein the one or more processors comprise an application specific integrated circuit (ASIC).

14. A non-transitory computer-readable storage medium storing instructions that, when executed by one or more processors of a video coder, cause the one or more processors to:

code, via a coded video bitstream, a syntax element that explicitly specifies whether the coded video bitstream includes a plurality of syntax elements that specify parameters of a temporal motion vector prediction (TMVP) candidate derivation process, wherein the syntax element is a binary flag, wherein:

a first value of the binary flag syntax element, that explicitly specifies whether the coded video bitstream includes the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, indicates that the coded video bitstream includes the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, and a second value of the binary flag syntax element, that explicitly specifies whether the coded video bitstream includes the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, indicates that the coded video bitstream does not include the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, and wherein the plurality of syntax elements that specify the parameters of the TMVP candidate derivation process comprise:

a syntax element that specifies a reference picture list for derivation of a collocated picture for derivation of the TMVP candidate;

a syntax element that specifies a reference index of the collocated picture; and

a syntax element that specifies a reference picture list for derivation of a motion vector candidate for derivation of the TMVP candidate;

where the binary flag syntax element has the first value explicitly specifying that the coded video bitstream includes the plurality of syntax elements:

code, by the video coder, the plurality of syntax elements via the coded video bitstream; and

derive, by the video coder and based on parameters specified by the plurality of syntax elements, a TMVP candidate for a current block of a current picture of video data;

generate, for the current block, a list of motion vector candidates, the list including the derived TMVP candidate; and

predict, based on the list of motion vector candidates, the current block.

15. The non-transitory computer-readable storage medium of claim 14, wherein the instructions that cause the one or more processors to code the plurality of syntax elements comprise instructions that cause the one or more processors to code the plurality of syntax elements in a slice header syntax structure of the coded video bitstream.

16. A device for coding video data, the device comprising:

means for coding, via a coded video bitstream, a syntax element that explicitly specifies whether the coded video bitstream includes a plurality of syntax elements that specify parameters of a temporal motion vector prediction (TMVP) candidate derivation process, wherein the syntax element is a binary flag, wherein:

a first value of two possible values of the binary flag syntax element, that explicitly specifies whether the coded video bitstream includes the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, indicates that the coded video bitstream includes the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, and

a second value of the two possible values of the binary flag syntax element, that explicitly specifies whether the coded video bitstream includes the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, indicates that the coded video bitstream does not include the plurality of syntax elements that specify parameters of the TMVP candidate derivation process, and wherein the plurality of syntax elements that specify the parameters of the TMVP candidate derivation process comprise:

a syntax element that specifies a reference picture list for derivation of a collocated picture for derivation of the TMVP candidate;

a syntax element that specifies a reference index of the collocated picture; and

a syntax element that specifies a reference picture list for derivation of a motion vector candidate for derivation of the TMVP candidate;

means for coding the plurality of syntax elements via the coded video bitstream where the syntax element explicitly specifies that the coded video bitstream includes the plurality of syntax elements;

means for deriving, based on parameters specified by the plurality of syntax elements, a TMVP candidate for a current block of a current picture of video data;

means for generating, for the current block, a list of motion vector candidates, the list including the derived TMVP candidate; and

means for predicting, based on the list of motion vector candidates, the current block.