CLAIMS

1. A method for decoding video data performed by a video decoder, the method comprising: generating a shared candidate list using only neighboring blocks outside a current coding unit (CU) of a current picture, the source locations including: a first source location in the current picture above the current CU, a second source location in the current picture above right of the current CU, a third source location in the current picture above left of the current CU, a fourth source location in the current picture left of the current CU, and a fifth source location in the current picture below left of the current CU; and for each prediction unit (PU) in a plurality of PUs belonging to the current CU: determining, based on motion information indicated by a candidate in the shared candidate list, a motion vector of the PU; and using the motion vector of the PU to identify a reference sample for the PU.

2. The method of claim 1, wherein the shared candidate list comprises a merge candidate list, and wherein generating the merge candidate list comprises generating the merge candidate list based on motion information of PUs that are outside the current CU.

3. The method of claim 2, wherein the current CU is partitioned into the plurality of PUs according to a selected partitioning mode other than a 2Nx2N partitioning mode, the method comprises determining motion information of each of the PUs based on motion information indicated by a selected candidate in the merge candidate list, and the merge candidate list is the same as a candidate list that would be generated if the current CU had been partitioned according to the 2Nx2N partitioning mode.

4. The method of claim 1, wherein generating the shared candidate list comprises: generating a temporal candidate based on motion information of a collocated PU in a reference frame indicated by a default reference picture index; and including the temporal candidate in the shared candidate list.

5. The method of claim 1, wherein generating the shared candidate list comprises generating each temporal candidate in the shared candidate list based on motion information of PUs in reference pictures indicated by reference picture indexes of PUs that cover locations outside the current CU.

6. The method of claim 5, wherein generating the shared candidate list comprises, for each respective PU of the plurality of PUs: in response to determining that a reference index source location associated with the respective PU is within the current CU, identifying a corresponding location outside the current CU; generating a temporal candidate based on motion information of a collocated PU in a reference picture indicated by a PU that covers the corresponding location outside the current CU; and including the temporal candidate in the shared candidate list.

7. The method of claim 1, wherein generating the shared candidate list comprises, for each respective PU of the plurality of PUs: in response to determining that a reference index source PU is not available, searching for an available PU that spatially neighbors the current CU, the reference index source PU covering a reference index source location associated with the respective PU; generating a temporal candidate based on motion information of a collocated PU in a reference picture indicated by a reference picture index of the available PU; and including the temporal candidate in the shared candidate list.

8. The method of claim 1, wherein, for each respective PU of the plurality of PUs, generating the shared candidate list comprises: generating one or more candidates based on motion information of PUs that spatially neighbor the respective PU and are outside the current CU; and including the one or more candidates in the shared candidate list.

9. The method of claim 1, further comprising generating a reconstructed video block for the current CU based on the reference samples for the PUs.

10. The method of claim 9, wherein the shared candidate list is generated as part of using a merge mode inter prediction mode.

11. The method of claim 9, wherein the shared candidate list is generated as part of an Advanced Motion Vector Prediction inter prediction mode.

12. A video decoding device that comprises: a memory configured to store video data; and one or more processors configured to: generate a shared candidate list using only neighboring blocks outside a current coding unit (CU) of a current picture, the source locations including: a first source location in the current picture above the current CU, a second source location in the current picture above right of the current CU, a third source location in the current picture above left of the current CU, a fourth source location in the current picture left of the current CU, and a fifth source location in the current picture below left of the current CU; and; for each prediction unit (PU) in a plurality of PUs belonging to the current CU: determine, based on motion information indicated by a candidate in the shared candidate list, a motion vector of the PU; and use the motion vector of the PU to identify a reference sample for the PU.

13. The video decoding device of claim 10, wherein the shared candidate list comprises a merge candidate list, and wherein the one or more processors are configured to generate the merge candidate list based on motion information of PUs that are outside the current CU.

14. The video decoding device of claim 13, wherein the current CU is partitioned into the plurality of PUs according to a selected partitioning mode other than a 2Nx2N partitioning mode, the one or more processors are configured to determine motion information of each of the PUs based on motion information indicated by a selected candidate in the merge candidate list, and the merge candidate list is the same as a candidate list that would be generated if the current CU had been partitioned according to the 2Nx2N partitioning mode.

15. The video decoding device of claim 12, wherein the one or more processors are configured to: generate a temporal candidate based on motion information of a collocated PU in a reference frame indicated by a default reference picture index; and include the temporal candidate in the shared candidate list.

16. The video decoding device of claim 12, wherein the one or more processors are configured to generate each temporal candidate in the shared candidate list based on motion information of PUs in reference pictures indicated by reference picture indexes of PUs that cover locations outside the current CU.

17. The video decoding device of claim 16, wherein, for each respective PU of the plurality of PUs, the one or more processors are configured to: identify, in response to determining that a reference index source location associated with the respective PU is within the current CU, a corresponding location outside the current CU; generate a temporal candidate based on motion information of a collocated PU in a reference picture indicated by a PU that covers the corresponding location outside the current CU; and include the temporal candidate in the shared candidate list.

18. The video decoding device of claim 12, wherein, for each respective PU of the plurality of PUs, the one or more processors are configured to: search, in response to determining that a reference index source PU is not available, for an available PU that spatially neighbors the current CU, the reference index source PU covering a reference index source location associated with the respective PU; generate a temporal candidate based on motion information of a collocated PU in a reference picture indicated by a reference picture index of the available PU; and include the temporal candidate in the shared candidate list.

19. The video decoding device of claim 12, wherein, for each respective PU of the plurality of PUs, the one or more processors are configured to: generate one or more candidates based on motion information of PUs that spatially neighbor the respective PU and are outside the current CU; and include the one or more candidates in the shared candidate list.

20. The video decoding device of claim 12, wherein the one or more processors are configured to generate a reconstructed video block for the current CU based on the reference samples for the PUs.

21. The video decoding device of claim 20, wherein the shared candidate list is generated as part of using a merge mode inter prediction mode.

22. The video decoding device of claim 20, wherein the shared candidate list is generated as part of an Advanced Motion Vector Prediction inter prediction mode.

23. The video decoding device of claim 12, wherein the video decoding device is a mobile computing device.

24. A video decoding device that comprises: means for generating a shared candidate list using only neighboring blocks outside a current coding unit (CU) of a current picture, the source locations including: a first source location in the current picture above the current CU, a second source location in the current picture above right of the current CU, a third source location in the current picture above left of the current CU, a fourth source location in the current picture left of the current CU, and a fifth source location in the current picture below left of the current CU; and for each prediction unit (PU) in a plurality of PUs belonging to the current CU: means for determining, based on motion information indicated by a candidate in the shared candidate list, a motion vector of the PU; and means for using the motion vector of the PU to identify a reference sample for the PU.

25. A non-transitory computer readable storage medium having instructions stored thereon that, when executed, configure one or more processors to: generate a shared candidate list using only neighboring blocks outside a current coding unit (CU) of a current picture, the source locations including: a first

source location in the current picture above the current CU, a second source location in the current picture above right of the current CU, a third source location in the current picture above left of the current CU, a fourth source location in the current picture left of the current CU, and a fifth source location in the current picture below left of the current CU; and for each prediction unit (PU) in a plurality of PUs belonging to the current CU: determine, based on motion information indicated by a selected candidate for the PU in the shared candidate list, a motion vector of the PU; and use the motion vector of the PU to identify a reference sample for the PU.

26. A method for encoding video data performed by a video encoder, the method comprising, generating a shared candidate list using only neighboring blocks outside a current coding unit (CU) of a current picture, the source locations including: a first source location in the current picture above the current CU, a second source location in the current picture above right of the current CU, a third source location in the current picture above left of the current CU, a fourth source location in the current picture left of the current CU, and a fifth source location in the current picture below left of the current CU; and for each prediction unit (PU) in a plurality of PUs belonging to the current CU: identifying, based on motion information indicated by a selected candidate in the shared candidate list, a reference sample for the PU; using the motion vector of the PU to identify a reference sample for the PU.

27. The method of claim 26, wherein the shared candidate list comprises a merge candidate list, and wherein generating the merge candidate list comprises generating the merge candidate list based on motion information of PUs that are outside the current CU.

28. The method of claim 27, wherein the current CU is partitioned into the plurality of PUs according to a selected partitioning mode other than a 2Nx2N partitioning mode, motion information of each of the PUs is based on motion information indicated by a selected candidate in the merge candidate list, and the merge candidate list is the same as a candidate list that would be generated if the current CU had been partitioned according to the 2Nx2N partitioning mode.

29. The method of claim 26, wherein generating the shared candidate list comprises: generating a temporal candidate based on motion information of a collocated PU in a reference frame indicated by a default reference picture index; and including the temporal candidate in the shared candidate list.

30. The method of claim 26, wherein generating the shared candidate list comprises generating each temporal candidate in the shared candidate list based on motion information of PUs in reference pictures indicated by reference picture indexes of PUs that cover locations outside the current CU.

31. The method of claim 30, wherein generating the shared candidate list comprises, for each respective PU of the plurality of PUs: in response to determining that a reference index source location associated with the respective PU is within the current CU, identifying a corresponding location outside the current CU; generating a temporal candidate based on motion information of a collocated PU in a reference picture indicated by a PU that covers the corresponding location outside the current CU; and including the temporal candidate in the shared candidate list.

32. The method of claim 26, wherein generating the shared candidate list comprises: in response to determining that a reference index source PU is not available, searching for an available PU that spatially neighbors the current CU, the reference index source PU being a PU that covers a reference

index source location associated with the respective PU; generating a temporal candidate based on motion information of a collocated PU in a reference picture indicated by a reference picture index of the available PU; and including the temporal candidate in the shared candidate list.

33. The method of claim 26, wherein generating the shared candidate list comprises: generating one or more candidates based on motion information of PUs that spatially neighbor the respective PU and are outside the current CU; and including the one or more candidates in the shared candidate list.

34. The method of claim 26, wherein the shared candidate list is generated as part of using at least one of: a merge mode inter prediction mode or an Advanced Motion Vector Prediction inter prediction mode.

35. The method of claim 26, further comprising: for each PU of the plurality of PUs, generating a predictive video block of the PU based on the reference block for the PU; and generating residual data for the current CU by subtracting the predictive video blocks of the PUs of the CU from a video block of the CU.

36. A video encoding device that comprises: a memory configured to store video data; and one or more processors configured to: generate a shared candidate list using only neighboring blocks outside a current coding unit (CU) of a current picture, the source locations including: a first source location in the current picture above the current CU, a second source location in the current picture above right of the current CU, a third source location in the current picture above left of the current CU, a fourth source location in the current picture left of the current CU, and a fifth source location in the current picture below left of the current CU; and for each prediction unit (PU) in a plurality of PUs belonging to the current CU: identify, based on motion information indicated by a selected candidate in the shared candidate list, a reference sample for the PU; and use the motion vector of the PU to identify a reference sample for the PU.

37. The video encoding device of claim 36, wherein the shared candidate list comprises a merge candidate list, and wherein the one or more processors are configured to generate the merge candidate list based on motion information of PUs that are outside the current CU.

38. The video encoding device of claim 37, wherein the current CU is partitioned into the plurality of PUs according to a selected partitioning mode other than a 2Nx2N partitioning mode, and motion information of each of the PUs is determinable based on motion information indicated by a selected candidate in the merge candidate list, wherein the merge candidate list is the same as a candidate list that would be generated if the current CU had been partitioned according to the 2Nx2N partitioning mode.

39. The video encoding device of claim 36, wherein, for each respective PU of the plurality of PUs, the one or more processors are configured to: generate a temporal candidate based on motion information of a collocated PU in a reference frame indicated by a default reference picture index; and include the temporal candidate in the shared candidate list.

40. The video encoding device of claim 36, wherein the one or more processors are configured to generate each temporal candidate in the shared candidate list based on motion information of PUs in

reference pictures indicated by reference picture indexes of PUs that cover locations outside the current CU.

41. The video encoding device of claim 40, wherein, for each respective PU of the plurality of PUs, the one or more processors are configured to: identify, in response to determining that a reference index source location associated with the respective PU is within the current CU, a corresponding location outside the current CU; generate a temporal candidate based on motion information of a collocated PU in a reference picture indicated by a PU that covers the corresponding location outside the current CU; and include the temporal candidate in the shared candidate list.

42. The video encoding device of claim 36, wherein, for each respective PU of the plurality of PUs, the one or more processors are configured to: search, in response to determining that a reference index source PU is not available, for an available PU that spatially neighbors the current CU, the reference index source PU being a PU that covers a reference index source location associated with the respective PU; generate a temporal candidate based on motion information of a collocated PU in a reference picture indicated by a reference picture index of the available PU; and include the temporal candidate in the shared candidate list.

43. The video encoding device of claim 36, wherein, for each respective PU of the plurality of PUs, the one or more processors are configured to: generate one or more candidates based on motion information of PUs that spatially neighbor the respective PU and are outside the current CU; and include the one or more candidates in the shared candidate list.

44. The video encoding device of claim 36, wherein the shared candidate list is generated as part of using at least one of: a merge mode inter prediction mode or an Advanced Motion Vector Prediction inter prediction mode.

45. The video encoding device of claim 36, wherein the one or more processors are further configured to: for each PU of the plurality of PUs, generating a predictive video block of the PU based on the reference block for the PU; and generating residual data for the current CU by subtracting the predictive video blocks of the PUs of the CU from a video block of the CU.

46. The video encoding device of claim 36, wherein the video coding device is a mobile computing device.

47. A video encoding device that comprises: means for generating a shared candidate list using only neighboring blocks outside a current coding unit (CU) of a current picture, the source locations including: a first source location in the current picture above the current CU, a second source location in the current picture above right of the current CU, a third source location in the current picture above left of the current CU, a fourth source location in the current picture left of the current CU, and a fifth source location in the current picture below left of the current CU; and for each prediction unit (PU) in a plurality of PUs belonging to a current coding unit (CU) of a current picture: means for identifying, based on motion information indicated by a selected candidate in the shared candidate list, a reference sample for the PU; and means for using the motion vector of the PU to identify a reference sample for the PU.

48. A non-transitory computer-readable storage medium that stores instructions that, when executed, configure one or more processors to: generate a shared candidate list using only neighboring blocks outside a current coding unit (CU) of a current picture, the source locations including: a first source location in the current picture above the current CU, a second source location in the current picture above right of the current CU, a third source location in the current picture above left of the current CU, a fourth source location in the current picture left of the current CU, and a fifth source location in the current picture below left of the current CU; and for each prediction unit (PU) in a plurality of PUs belonging to the current CU: identify, based on motion information indicated by a selected candidate in the shared candidate list, a reference sample for the PU; and use the motion vector of the PU to identify a reference sample for the PU.

49. The video decoding device of claim 12, wherein the video decoding device comprises at least one of: an integrated circuit; a microprocessor; or a wireless handset.

50. The video encoding device of claim 36, wherein the video encoding device comprises at least one of: an integrated circuit; a microprocessor; or a wireless handset.

51. The video decoding device of claim 12, further comprising a camera configured to capture the video data.

52. The video encoding device of claim 36, further comprising a display configured to display decoded video data.