

III. ALTERNATIVES DEVELOPMENT PROCESS

A. METHODOLOGY

The process to develop alternatives began with the accumulation of ideas from the Working Group and general public. Beginning with the second Working Group meeting on July 14, 2004, ideas for a West Dover Connector were generated by breakout groups working with project study area maps. A total of twenty-five unique ideas were generated from these groups.

After review of these ideas and further discussions with environmental resource agencies concerning the natural and built environment within the project area at an August 31, 2004 quarterly agency meeting and field visit, these ideas were filtered into ten concepts. The ten concepts were presented to the Working Group at the September 22, 2004 Working Group meeting. At that meeting, Working Group members used breakout sessions to discuss the connector concepts, as well as their comments regarding the advantages and disadvantages of the concepts.

An eleventh concept, a TSM (Transportation Systems Management) concept, was added in response to Working Group members' comments about the possible improvement effects of addressing problematic traffic flow at existing intersections. TSM Concept #11 did not incorporate capacity improvements to area roadways but instead focused on flow improvements at a select number of intersections within the study area (signalization, addition of turn lanes, etc.).

The eleven (11) concepts, one of which included the No-Build alternative, were presented to the public at a Public Workshop on November 10, 2004 and comments from the public were sought on each concept. Documentation of the public comments received can be found in Appendix A-II.

Based on public comments received regarding concerns about minimizing impacts to the existing built environment along New Burton Road, Concept #12 was developed, which would relocate the Norfolk Southern Railroad to the west. Railroad relocation would enable New Burton Road to be improved to add capacity while avoiding or minimizing right-of-way and other impacts. In Concept #12, New Burton Road would be widened into the existing railroad right-of-way rather than impacting residences and businesses along the east side of New Burton Road.

Following the November 10, 2004 Public Workshop, public outreach efforts continued. The DeIDOT project team was invited to attend a meeting of the Rodney Village Civic Association on December 2, 2004. Team members gave a brief overview to the study, listened to comments from the community and had a question and answer session. The team handed out information identifying the study area and the 11 proposed concepts. Team members asked for ideas the community may have regarding a connector concept. Concept #13 was generated by the Rodney Village Civic Association Planning Committee. This concept consists of a roadway that would extend Saulsbury Road from its existing terminus, connect to Wyoming Mill Road, proceed west around and across Wyoming Lake, outside of the study area, and then proceed south and east to connect to US 13 in the vicinity of Briar Park, outside of the study area.

The project team also received e-mail correspondence from a Working Group member that posed additional ideas for a connector concept. This concept was labeled Concept #14 and consists of two separate ideas. The first idea, Concept #14A consists of widening existing roadways in the study area but would not provide for an extension of Saulsbury Road over the railroad. Concept #14B consists of providing an extension of Saulsbury Road that would connect to New Burton Road just north of

Wyoming Avenue and provide for the widening of Wyoming Avenue, Webbs Lane and New Burton Road.

Chapter IV describes the processes undertaken to evaluate the concepts for their performance in regard to the project Purpose and Need.

B. DESCRIPTION OF CONCEPTS

As noted, ideas that evolved from Working Group brainstorming sessions and the Public Workshop were developed into a set of concepts. Working Group members and the general public were encouraged to come up with additional ideas or concepts so that a full set of concepts could be evaluated. In all, 14 concepts, including some sub-concepts, were developed. These concepts are described on the following pages.

Concept #1: No-Build (Figure III-1)

Concept #1 is a 'No-Build' approach. In this concept, it was assumed that no transportation infrastructure improvements would be made within the project study area (apart from the improvements that have already been committed by DeIDOT in its Transportation Improvement Program).

Concept #2: Connection to New Burton Road Only

In Concept #2, Saulsbury Road would be extended from the Saulsbury Road/North Street intersection. The extension would initially follow the western boundary of the Eden Hill Farm parcel. It would connect only to New Burton Road with a grade-separated crossing of the Norfolk Southern (NS) Railroad. Based on the connection point with New Burton Road, Concept #2 has four sub-concepts:

Concept #2A (Figure III-2)

In Concept #2A, the new connector road (extension of Saulsbury Road) would connect to New Burton Road with almost a straight-line alignment. It would cross the NS Railroad with a grade-separated structure and connect with New Burton Road at an elevated T-intersection. In this sub-concept, access to New Burton Road from Holly Drive, Oak Drive and Blue Beach Drive would be closed to allow for the elevated T-intersection.

Concept #2B (Figure III-3)

In Concept #2B, the new connector road (extension of Saulsbury Road) would connect to New Burton Road north of Wyoming Avenue. The connector alignment would cross the NS Railroad and New Burton Road with a grade-separated structure and connect to New Burton Road via a looping ramp on the east side of New Burton Road. The intersection with New Burton Road would be at grade with and require some form of traffic control, and it would facilitate all traffic movements (i.e., to and from the new connector road, and to and from New Burton Road).

Concept #2C (Figure III-4)

In Concept #2C, the new connector road (extension of Saulsbury Road) would connect to New Burton Road south of Blue Beach Road. The connector alignment would cross a NS Railroad spur, Puncheon Run, the NS Railroad and New Burton Road with a grade-separated structure. It would connect to New Burton Road via a looping ramp on the east side of New Burton Road between Blue Beach Road and Kesselring Avenue. The intersection with New Burton Road would be at grade with and require some form of traffic control, and it would facilitate all traffic movements (i.e., to and from the new connector road, and to and from New Burton Road).

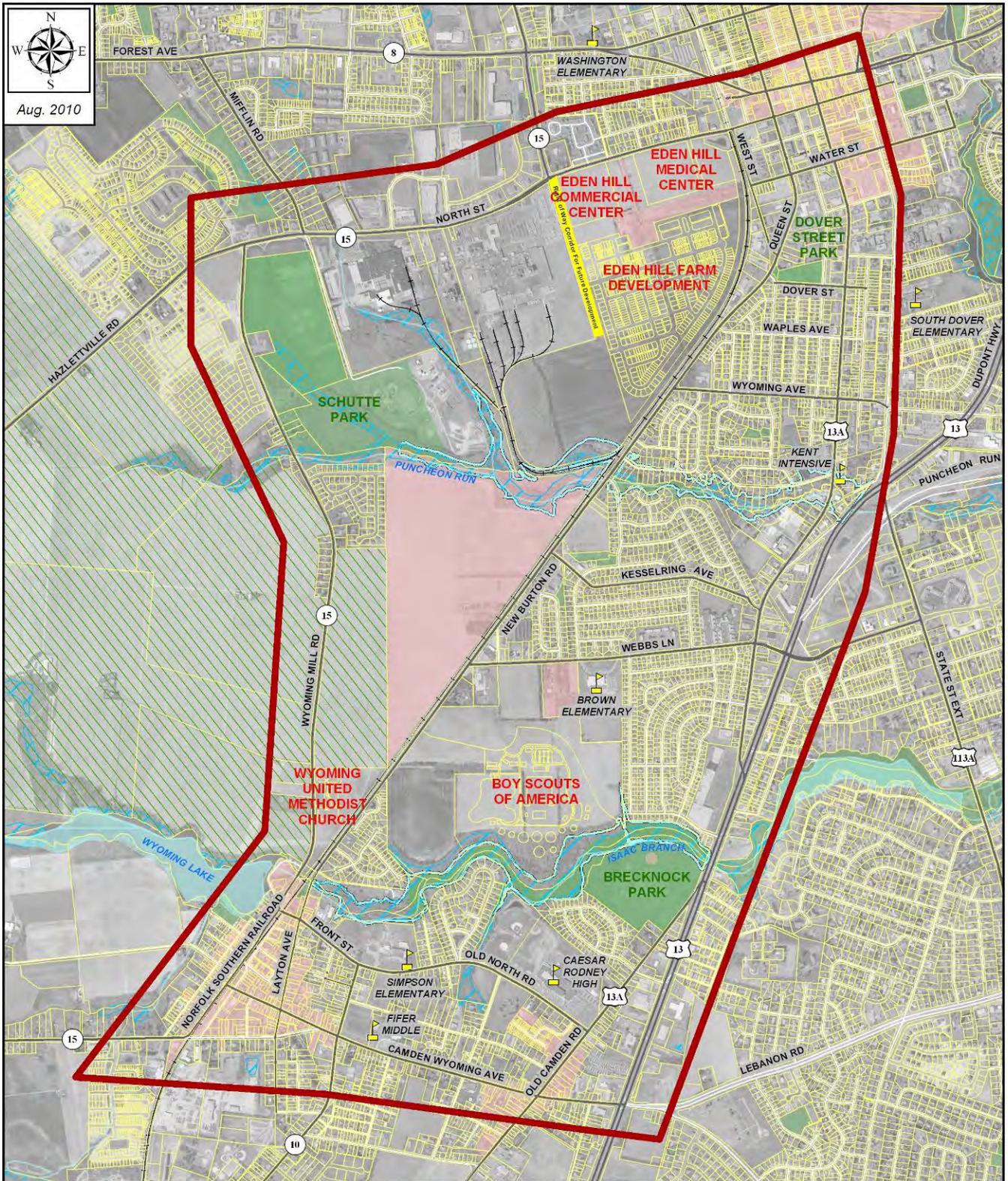


Figure III-1: Concept #1: No-Build

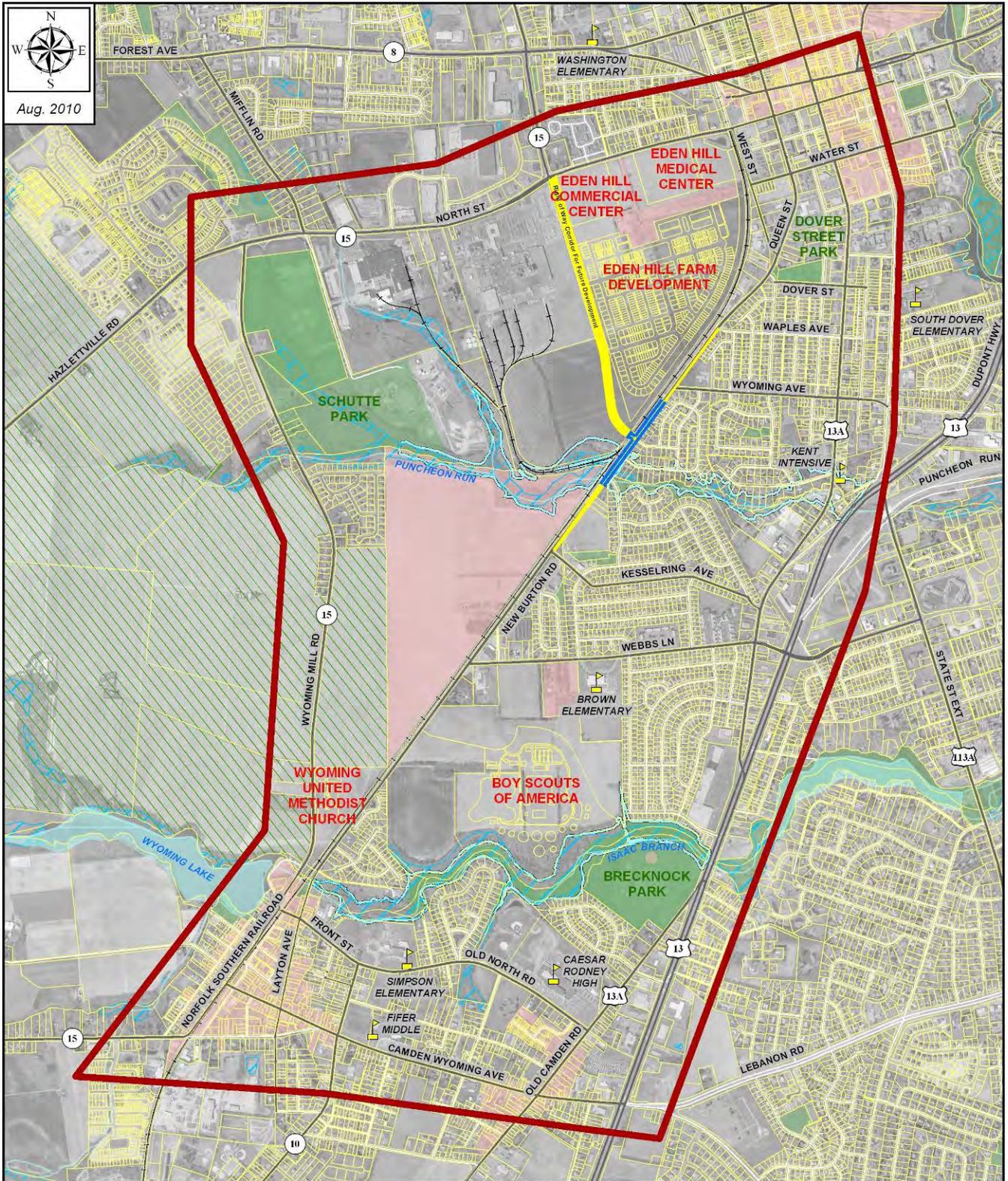


Figure III-2: Concept #2A: Connection to New Burton Road Only

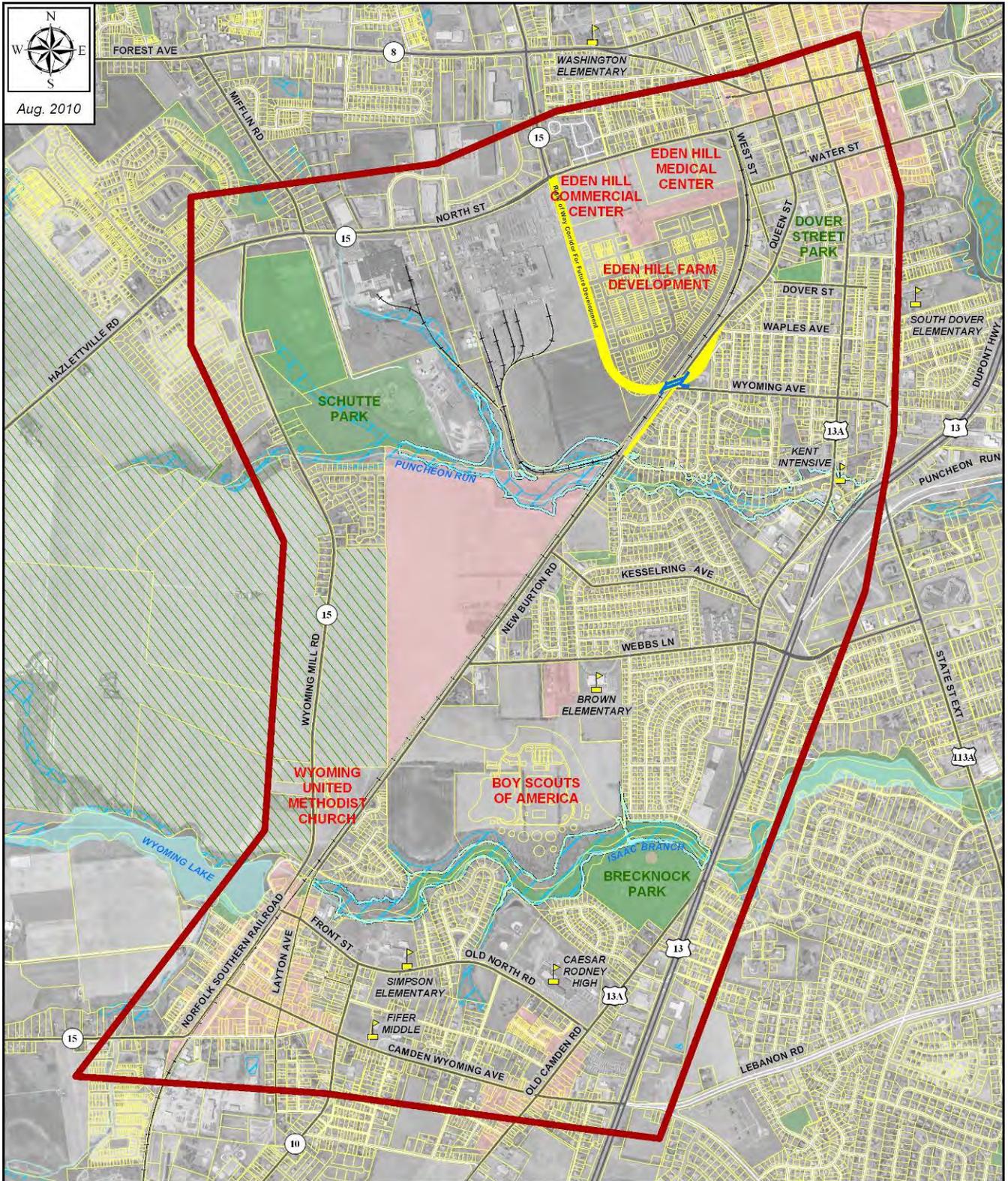


Figure III-3: Concept #2B: Connection to New Burton Road Only

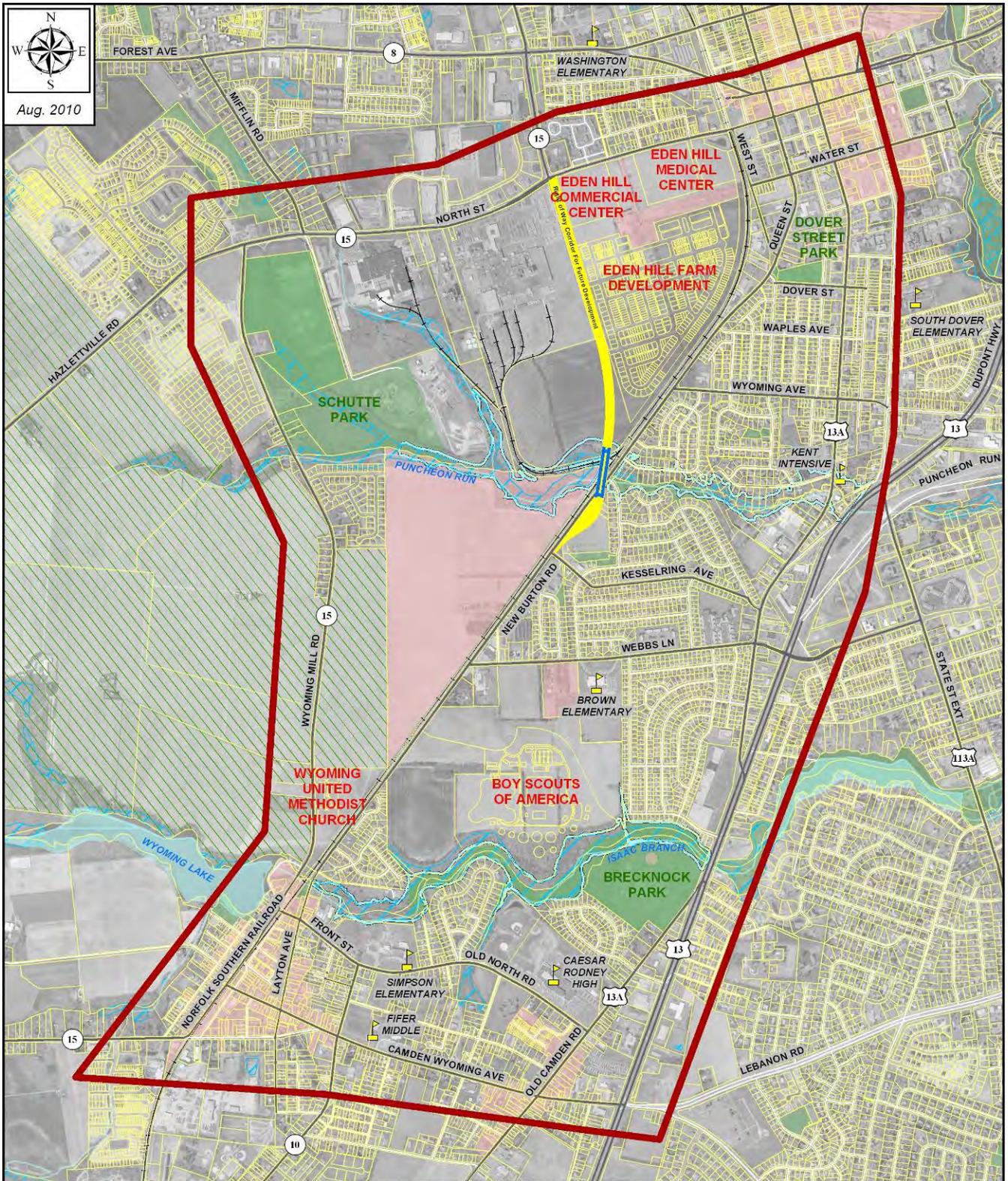


Figure III-4: Concept #2C: Connection to New Burton Road Only

Concept #2D (Figure III-5)

In Concept #2D, the new connector road (extension of Saulsbury Road) would connect to New Burton Road south of Webbs Lane. The connector alignment would cross a NS Railroad spur and Puncheon Run with a grade-separated structure, then continue on the west side of and parallel to the NS Railroad before crossing the NS Railroad and New Burton Road with a grade-separated structure south of Webbs Lane. The new connector would connect to New Burton Road via a looping ramp on the east side of New Burton Road on the farm property south of Webbs Lane, which is now under development by the Boy Scouts of America. The intersection with New Burton Road would be at grade with and require some form of traffic control, and it would facilitate all traffic movements (i.e., to and from the new connector road, and to and from New Burton Road).

Concept #3: Connection to Wyoming Avenue to US 13 (Figure III-6)

In Concept #3, Saulsbury Road would be extended from the Saulsbury Road/North Street intersection and would connect to US 13 using Wyoming Avenue. A grade-separated structure would carry the connector over the NS Railroad and New Burton Road. Wyoming Avenue and Roosevelt Avenue would be improved between New Burton Road and US 13 to handle traffic volumes drawn by the connector road. A connection to and from New Burton Road in both a north and south direction would be provided using Woodford Drive and a new ramp.

Concept #4: Connection to Webbs Lane to US 13; Auxiliary Connection to Wyoming Mill Road (Figure III-7)

In Concept #4, Saulsbury Road would be extended from the Saulsbury Road/North Street intersection and would connect to US 13 using Webbs Lane. The alignment would cross a NS Railroad spur and Puncheon Run with a grade-separated structure, then continue on the west side of and parallel to the NS Railroad before swinging around the building complex of the eligible Kesselring Farm located west of New Burton Road and crossing the NS Railroad and New Burton Road with another grade-separated structure to connect to Webbs Lane. Webbs Lane would be improved between New Burton Road and US 13 to handle traffic volumes drawn by the connector road. Both north and south connections to New Burton Road would be provided using Garton Road. Concept 4 also provides an auxiliary connection to Wyoming Mill Road from the connector.

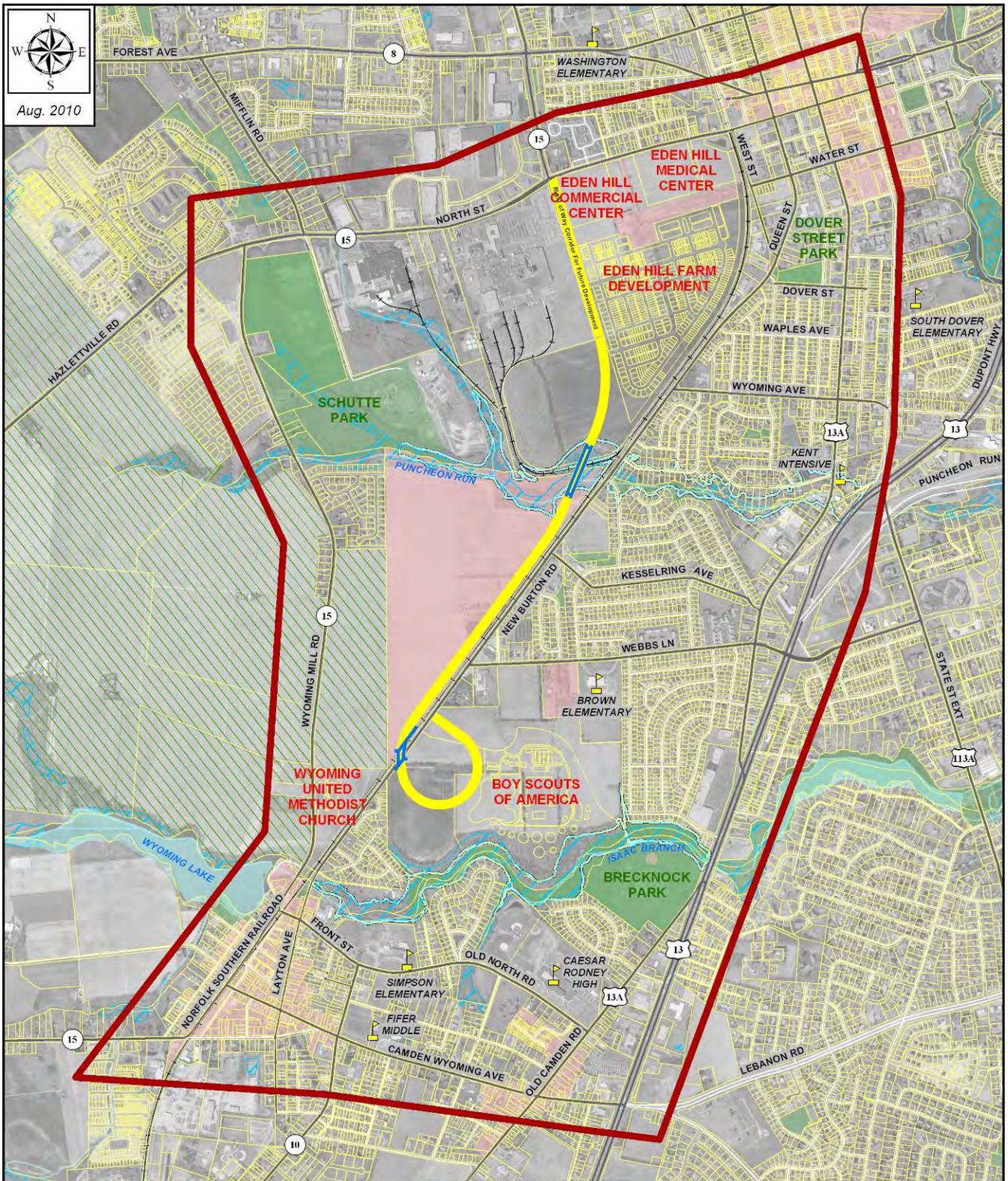


Figure III-5: Concept #2D: Connection to New Burton Road Only

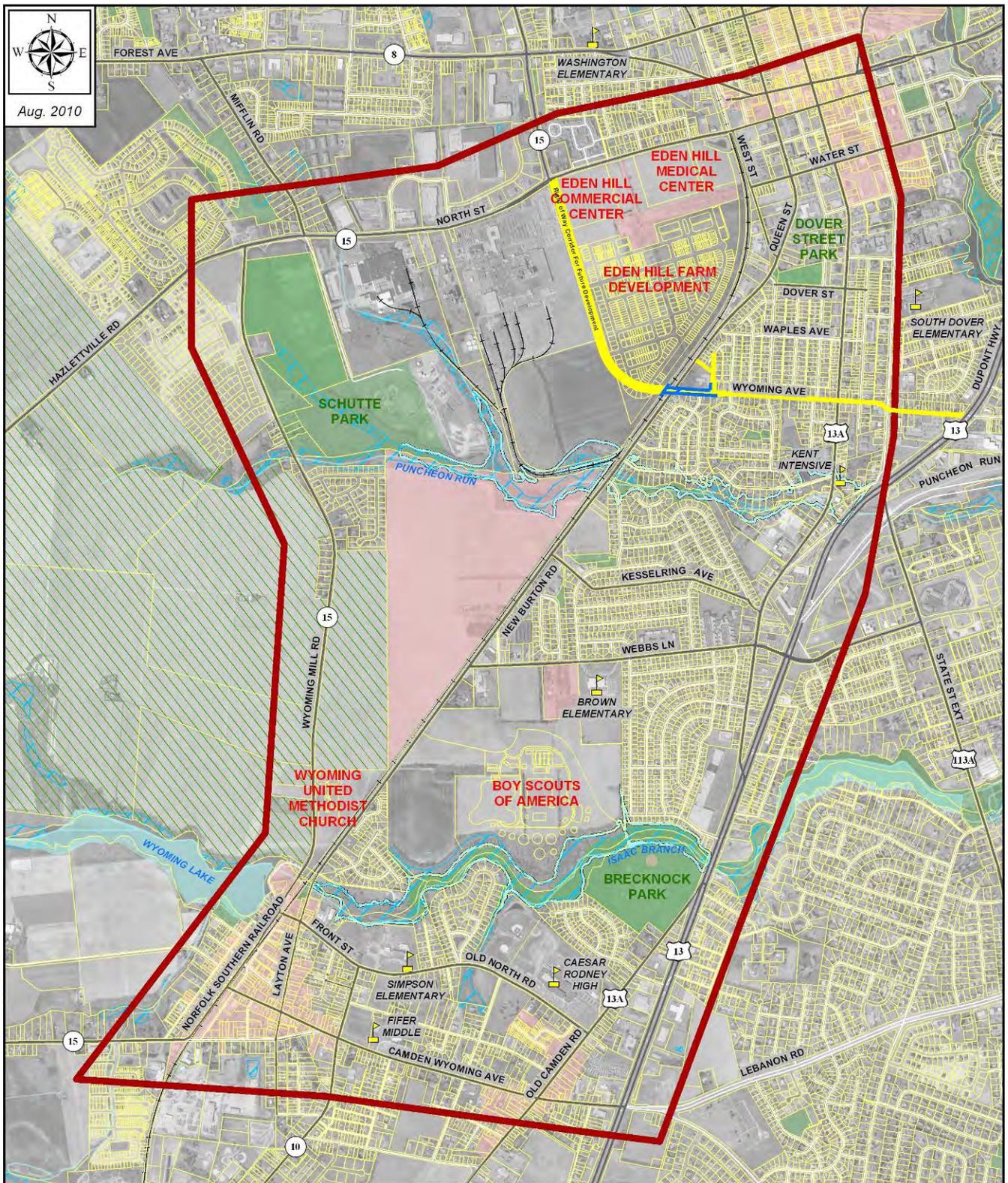


Figure III-6: Concept #3: Connection to Wyoming Avenue to US 13

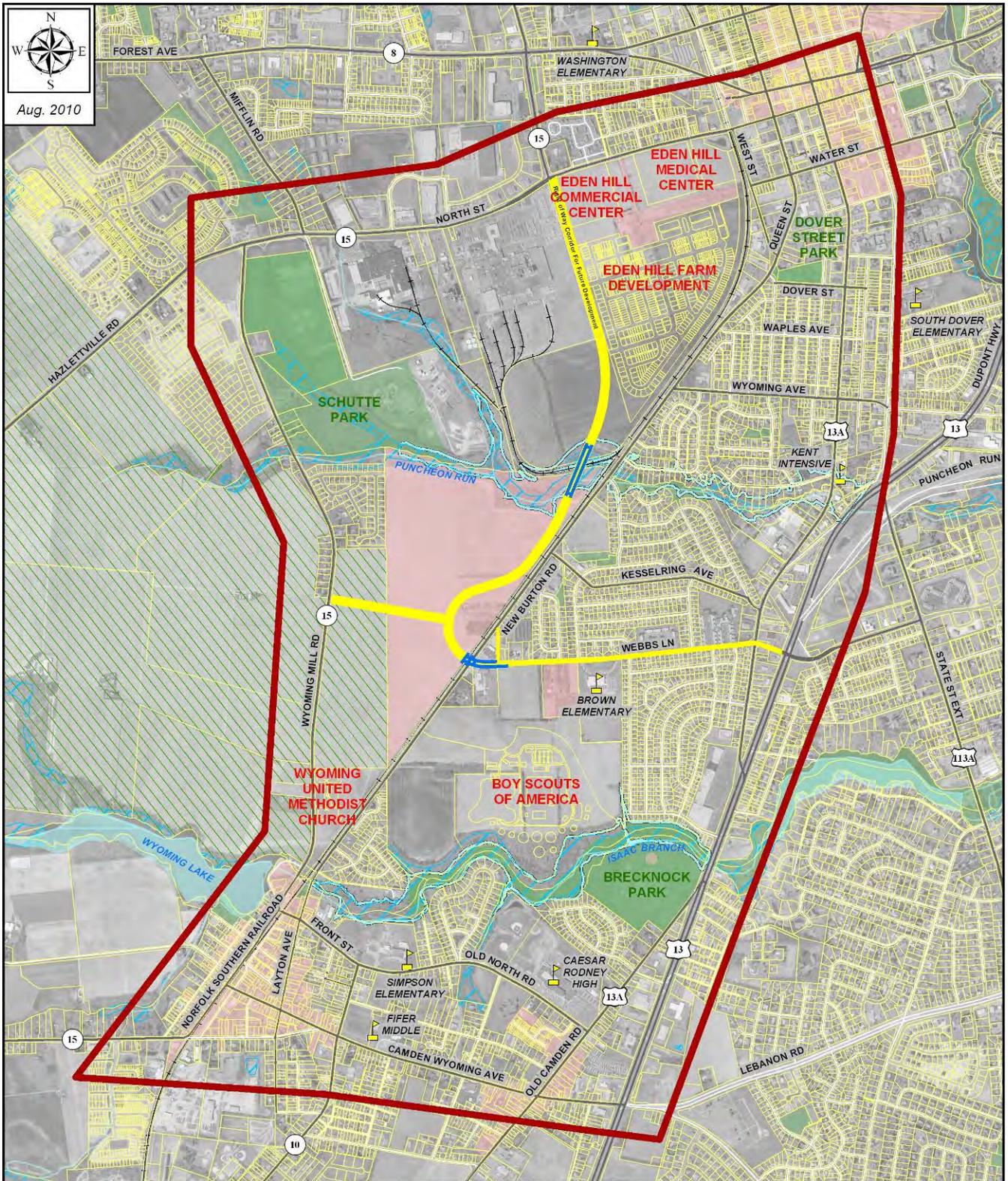


Figure III-7: Concept #4: Connection to Webb's Lane to US 13, Auxiliary Connection to Wyoming Mill Road

Concept #5: Connection to Charles Polk Road to US 13, Auxiliary Connection to Wyoming Mill Road

In Concept #5, Saulsbury Road would be extended from the Saulsbury Road/North Street intersection and would connect to US 13 using Charles Polk Road or in its vicinity. The alignment would cross a NS Railroad spur and Puncheon Run with a grade-separated structure, then continue on the west side of and parallel to the NS Railroad on the eligible Kesselring Farm located west of New Burton Road before crossing the NS Railroad and New Burton Road with another grade-separated structure. The connector roadway would connect to US 13 via Charles Polk Road or in its vicinity, and cross through the farm property on the east side of New Burton Road and south of Webbs Lane, which is now under development by the Boy Scouts of America. Charles Polk Road would be improved to handle traffic volumes drawn by the connector. Access to Rodney Village from the connector roadway would be provided. A north and south connection to New Burton Road would be provided using ramps, and an auxiliary connection would be provided to Wyoming Mill Road from the connector.

Concept #5 has four sub-concepts described below, based on the connection point with New Burton Road (5A, 5B, 5C) and with US 13 (5C spur):

Concept #5A (Figure III-8)

In Concept #5A, the new connector road would run parallel to the NS Railroad on the eligible Kesselring Farm located west of New Burton Road and would cross the NS Railroad and New Burton Road near Garton Road and then connect to Garton Road. The intersection of Garton Road and Webbs Lane would be signalized, and the new connector would continue through the farm property south of Webbs Lane, which is now under development by the Boy Scouts of America, to connect to US 13 via Charles Polk Road or in its vicinity. Webbs Lane would provide a connection with New Burton Road. Access to Rodney Village from the connector roadway would be provided.

Concept #5B (Figure III-9)

In Concept #5B, the new connector would run parallel to the NS Railroad on the eligible Kesselring Farm located west of New Burton Road and would cross the NS Railroad and New Burton Road just south of Webbs Lane and then connect to US 13 via Charles Polk Road or in its vicinity. The alignment would cross the farm property south of Webbs Lane, which is now under development by the Boy Scouts of America. Connection to New Burton Road would be provided via a ramp. Access to Rodney Village from the connector roadway would be provided.

Concept #5C (Figure III-10)

In Concept #5C, the new connector would run parallel to the NS Railroad on the eligible Kesselring Farm located west of New Burton Road and would cross the NS Railroad and New Burton Road farther south of the crossing proposed under Concept #5B and then connect to US 13 via Charles Polk Road or in its vicinity. The alignment through the farm property south of Webbs Lane, which is now under development by the Boy Scouts of America, would be toward the south and adjacent to Brecknock Park and Isaac Branch. Connection to New Burton Road would be provided via a ramp. Access to Rodney Village from the connector roadway would be provided.

Concept #5C Spur (Figure III-11)

The Concept #5C Spur is similar to Concept #5C except that the new connector would not connect to US 13 via Charles Polk Road but rather pass through Brecknock Park to connect to US 13 south of Charles Polk Road. The Spur would diverge from Concept #5C near the eastern boundary of the farm property, which is now under development by the Boy Scouts of America, with the Rodney Village development. At that point, the Spur would divert south via a new crossing of Isaac Branch and cut through Brecknock Park. Access to Rodney Village from the connector roadway would be provided.

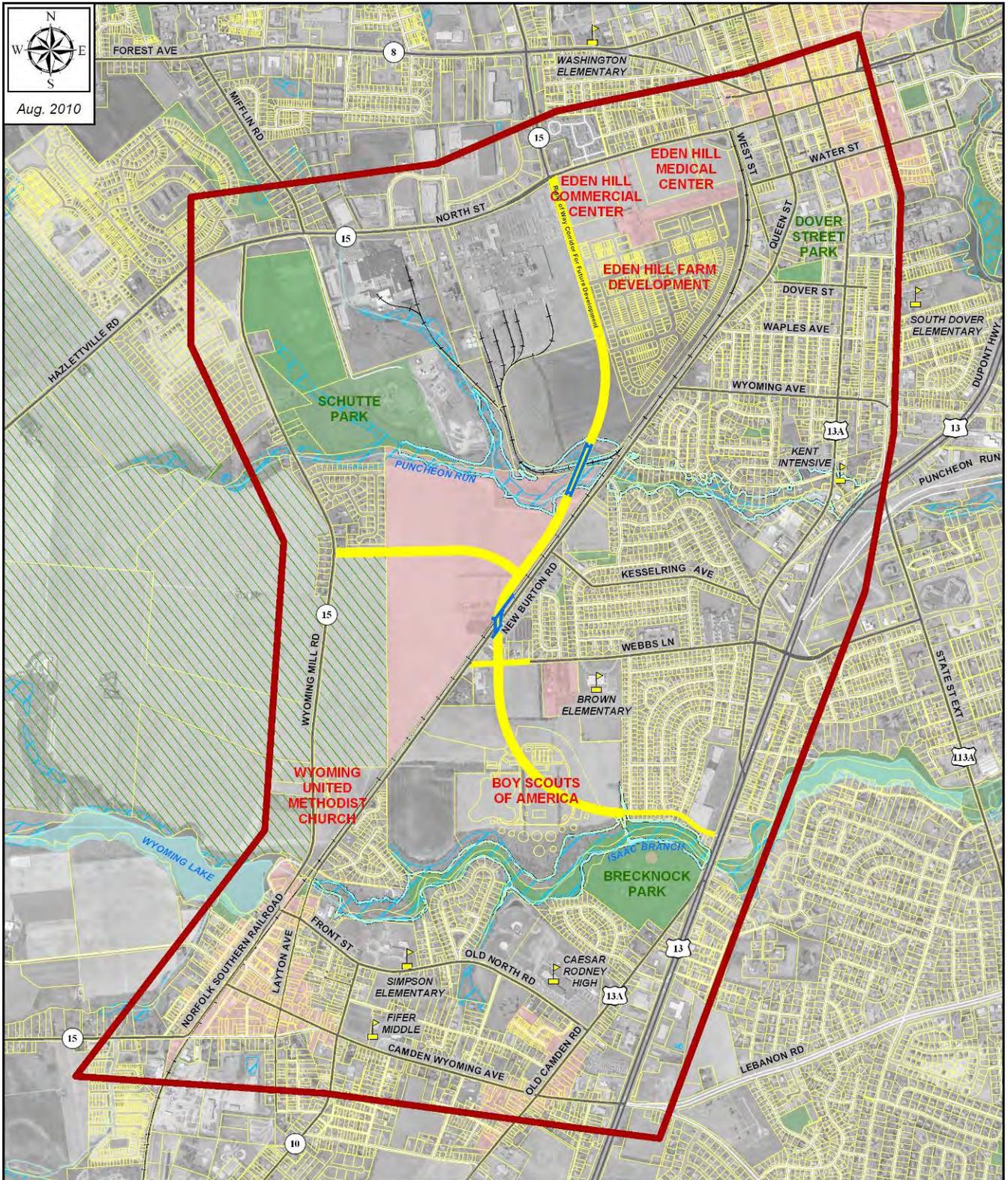


Figure III-8: Concept #5A: Connection to Charles Polk Road to US 13, Auxiliary Connection to Wyoming Mill Road

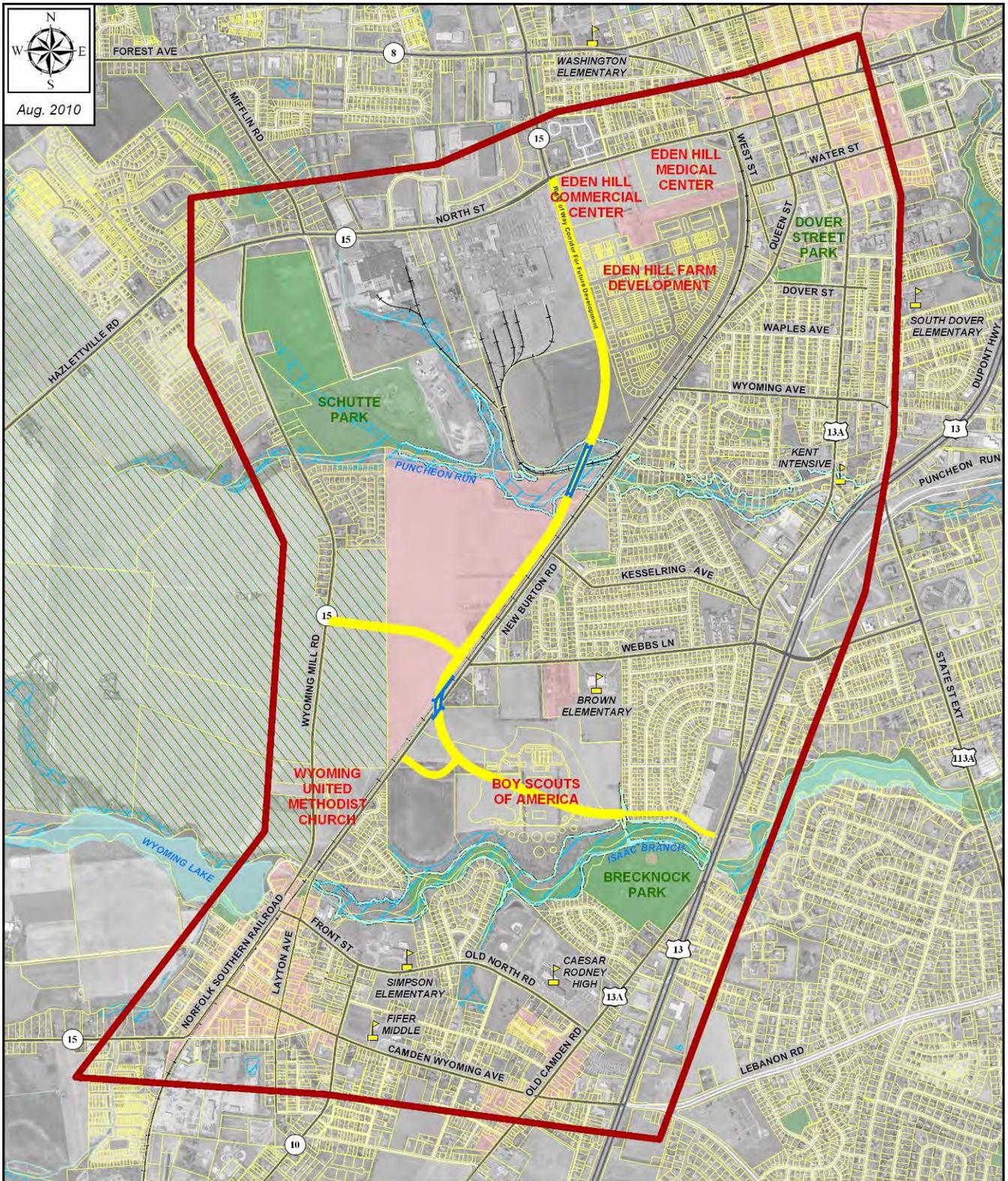


Figure III-9: Concept #5B: Connection to Charles Polk Road to US 13, Auxiliary Connection to Wyoming Mill Road

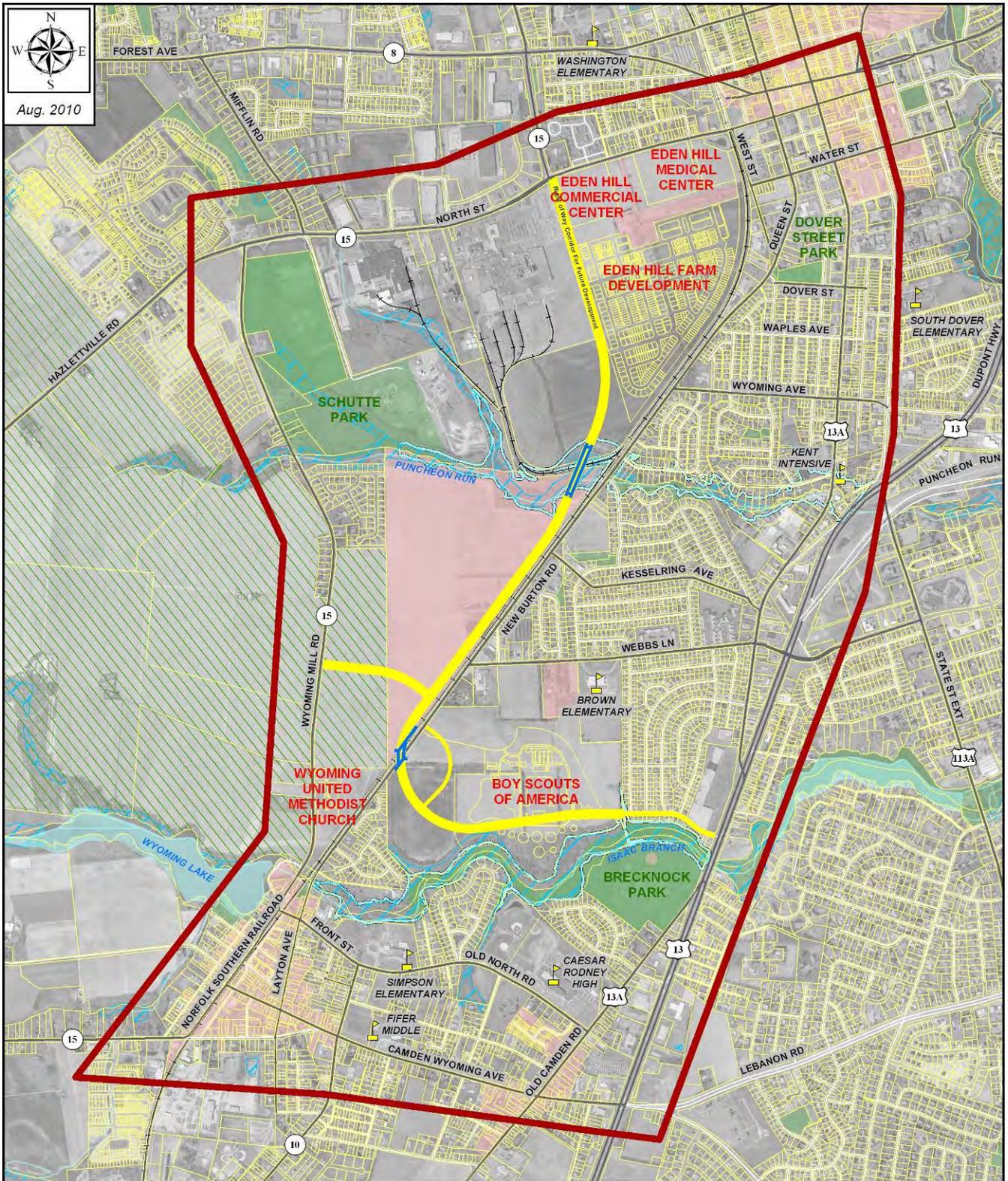


Figure III-10: Concept #5C: Connection to Charles Polk Road to US 13, Auxiliary Connection to Wyoming Mill Road

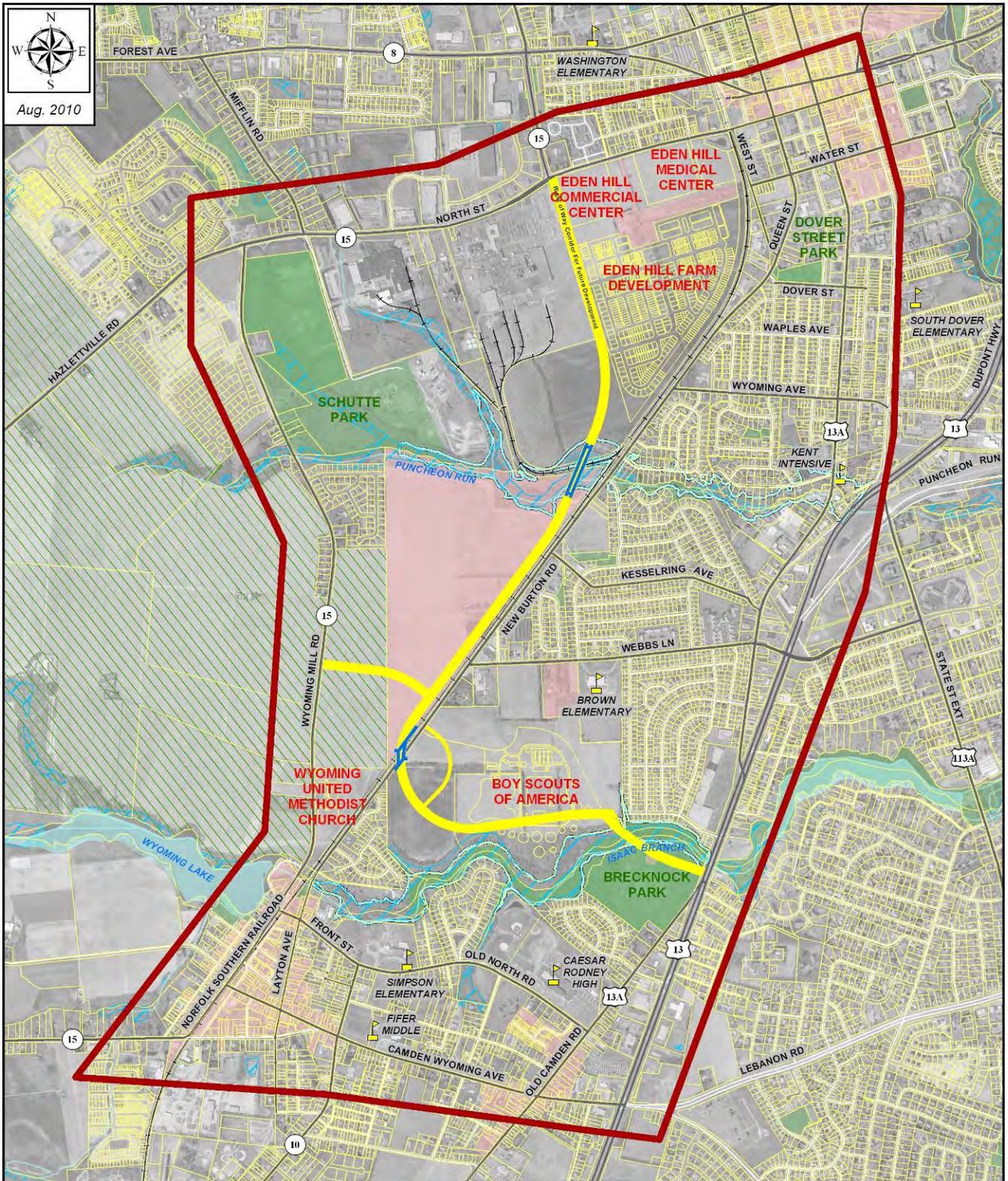


Figure III-11: Concept #5C Spur: Connection to US 13 via Brecknock Park, Auxiliary Connection to Wyoming Mill Road

Concept #6: Bypass around Towns of Camden and Wyoming (Figure III-12)

In Concept #6, Saulsbury Road would be extended from the Saulsbury Road/North Street intersection. The connector would cross a NS Railroad spur and Puncheon Run with a grade-separated structure, and then continue on the west side of the NS Railroad on the eligible Kesselring Farm located west of New Burton Road. The connector would have an at-grade intersection with Wyoming Mill Road and then it would bypass Wyoming Lake and the Towns of Camden and Wyoming to connect to US 13. The intersections of the connector road with all other existing streets south of the Towns of Camden and Wyoming would be made at grade.

Concept #7: Connection to New Burton Road to Charles Polk Road or Webbs Lane to US 13

In Concept #7, Saulsbury Road would be extended from the Saulsbury Road/North Street intersection and would connect to US 13 using New Burton Road and Charles Polk Road or Webbs Lane or in its vicinity. The alignment would cross the NS Railroad and New Burton Road with a grade-separated structure and connect to New Burton Road via a looping ramp on the east side. The intersection with New Burton Road would be at grade and require some form of traffic control. The connector would then use New Burton Road and the existing crossing of Puncheon Run. Improvements would be provided along the east side of New Burton Road, and the existing crossing of the Puncheon Run may have to be widened based on the required cross section for the improved New Burton Road. The new connector would connect to US 13 using either Charles Polk Road or in its vicinity or Webbs Lane. Access to Rodney Village from the connector roadway would be provided.

Concept #7 has five sub-concepts with sub-concepts 7A, 7B, 7C, and 7C Spur based on an alignment through the farm property, which is now under development by the Boy Scouts of America, on the east side of New Burton Road to Charles Polk Road or in its vicinity. Sub-concept 7D is based on an alignment on Webbs Lane.

Concept # 7A (Figure III-13)

In Concept #7A, the new connector would use New Burton Road and Garton Road. The culvert under New Burton Road at Puncheon Run would have to be widened. The intersection of Garton Road and Webbs Lane would be signalized, and Webbs Lane would provide the connection with New Burton Road from the connector. The new connector would continue through the farm property south of Webbs Lane, which is now under development by the Boy Scouts of America, to connect to US 13 via Charles Polk Road or in its vicinity. If necessary, improvements would be made along Charles Polk Road. Access to Rodney Village from the connector roadway would be provided.

Concept #7B (Figure III-14)

In Concept #7B, the new connector would use New Burton Road. The culvert under New Burton Road at Puncheon Run would have to be widened. The new connector would bisect the farm property just south of Webbs Lane, which is now under development by the Boy Scouts of America, and then connect to US 13 using Charles Polk Road or in its vicinity. If necessary, improvements would be made along Charles Polk Road. Access to Rodney Village from the connector roadway would be provided.

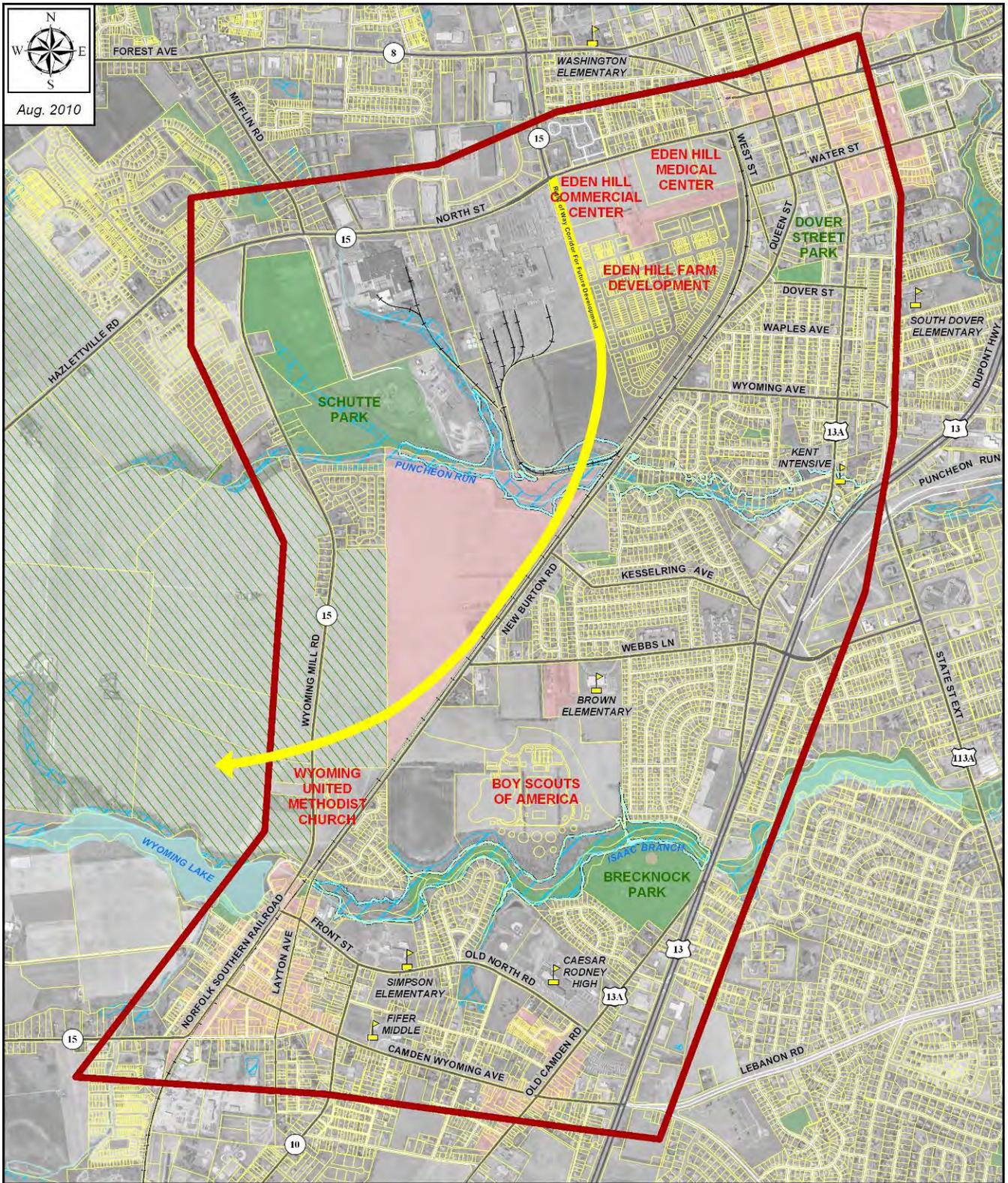


Figure III-12: Concept #6: Bypass around Towns of Camden and Wyoming

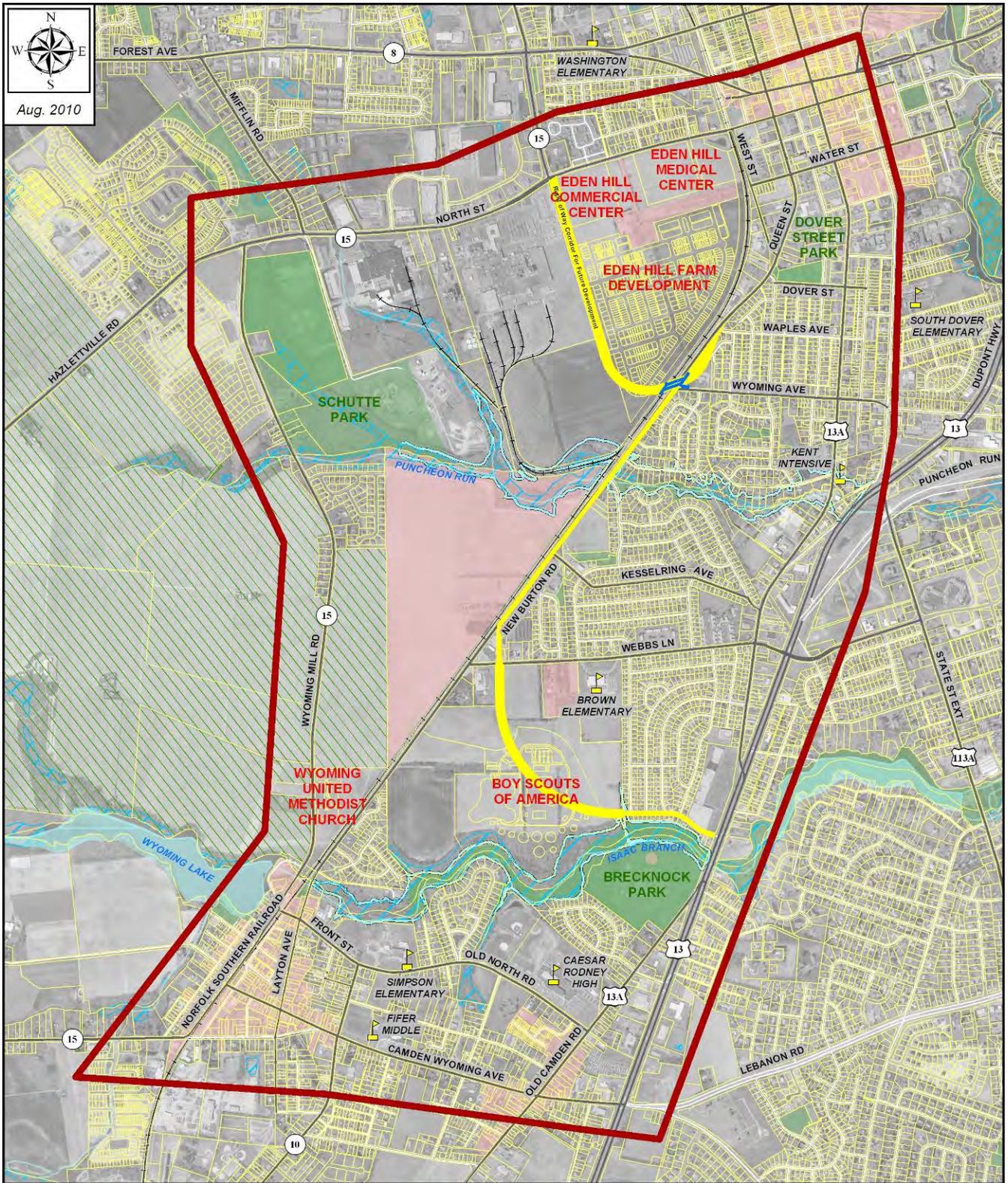


Figure III-13: Concept #7A: Connection to New Burton Road to Charles Polk Road to US 13

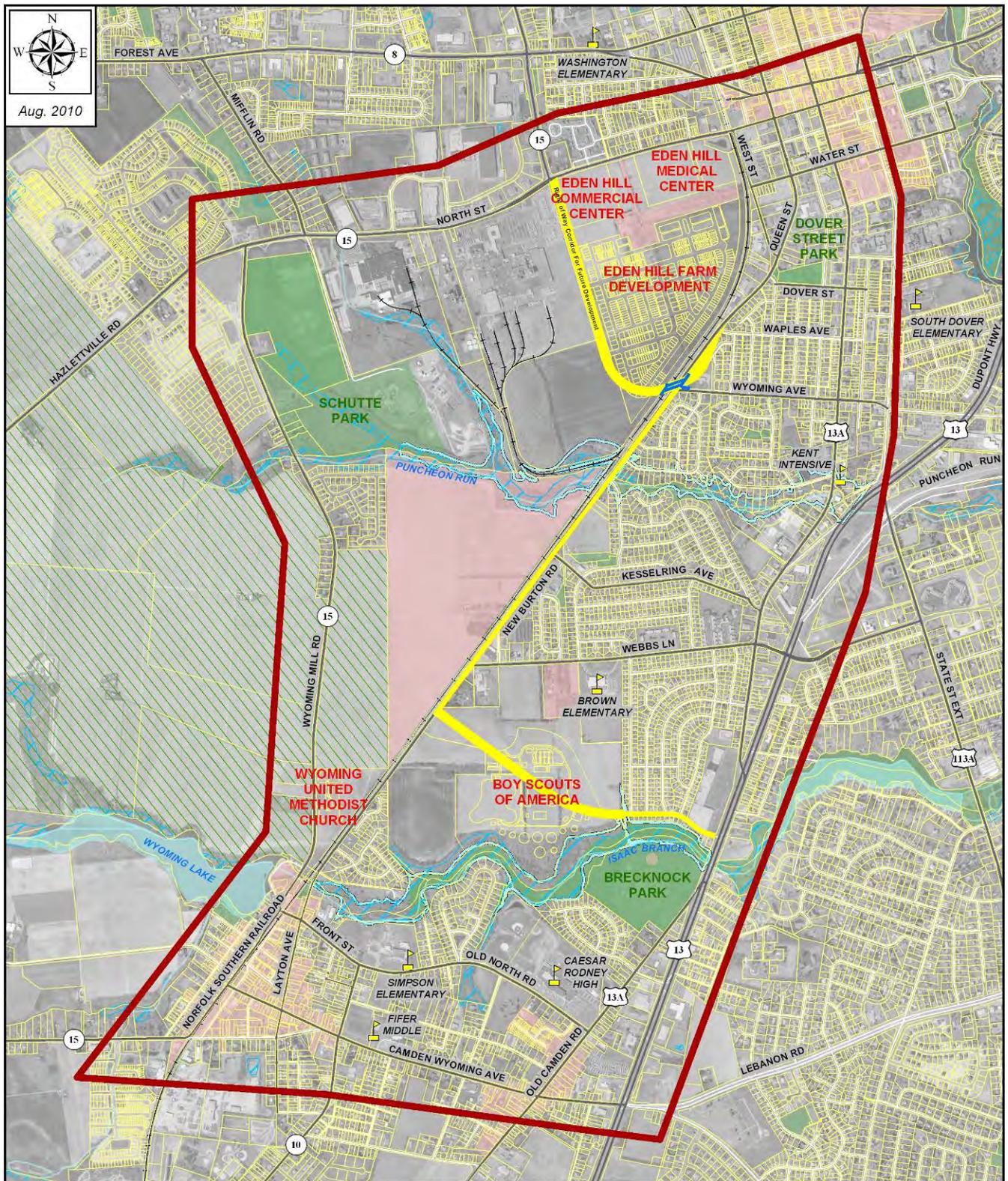


Figure III-14: Concept #7B: Connection to New Burton Road to Charles Polk Road to US 13

Concept #7C (Figure III-15)

In Concept #7C, the new connector would use New Burton Road. The culvert under New Burton Road at Puncheon Run would have to be widened. The new connector would cross through the farm property, which is now under development by the Boy Scouts of America, adjacent to Isaac Branch and Brecknock Park along the southern property line, and then connect to US 13 via Charles Polk Road or in its vicinity. If necessary, improvements would be made along Charles Polk Road. Access to Rodney Village from the connector roadway would be provided.

Concept #7C Spur (Figure III-16)

In Concept #7C Spur, the new connector would use New Burton Road. The culvert under New Burton Road at Puncheon Run would have to be widened. The Concept #7C Spur is similar to Concept #7C except that the new connector would not connect to US 13 via Charles Polk Road but would pass through Brecknock Park to connect to US 13 south of Charles Polk Road. The Spur would diverge from Concept #7C near the eastern boundary of the farm property, now under development by the Boys Scouts of America, with the Rodney Village development. At that point, the Spur would divert south via a new crossing of Isaac Branch and would cut through Brecknock Park. Access to Rodney Village from the connector roadway would be provided.

Concept #7D (Figure III-17)

In Concept #7D, the new connector would use New Burton Road. The culvert under New Burton Road at Puncheon Run would have to be widened. The connection to US 13 would be made using Webbs Lane. Improvements would be provided along Webbs Lane to accommodate additional traffic volumes drawn by the connector road.

Concept #8: Connection between Wyoming Mill Road and US 13 via Webbs Lane (Figure III-18)

Concept #8 would provide a new east-west connector from Wyoming Mill Road to US 13 via Webbs Lane, crossing through the eligible Kesselring Farm located west of New Burton Road. A new grade-separated crossing of the NS Railroad and New Burton Road would be provided and connections to New Burton Road would be provided via Garton Road.

Concept #9: Connection between Wyoming Mill Road and US 13 via Charles Polk Road (Figure III-19)

Concept #9 would provide a new east-west connector from Wyoming Mill Road to US 13 via Charles Polk Road through the farm, which is now under development by the Boy Scouts of America. A new grade-separated crossing of the railroad and New Burton Road would be provided and connections to New Burton Road would be provided via a ramp.

Concept #10: Widening of North Street from Saulsbury Road to Governors Avenue (Figure III-20)

Concept #10 would widen North Street from Saulsbury Road to Governors Avenue. The crossing of NS Railroad would be maintained at-grade.

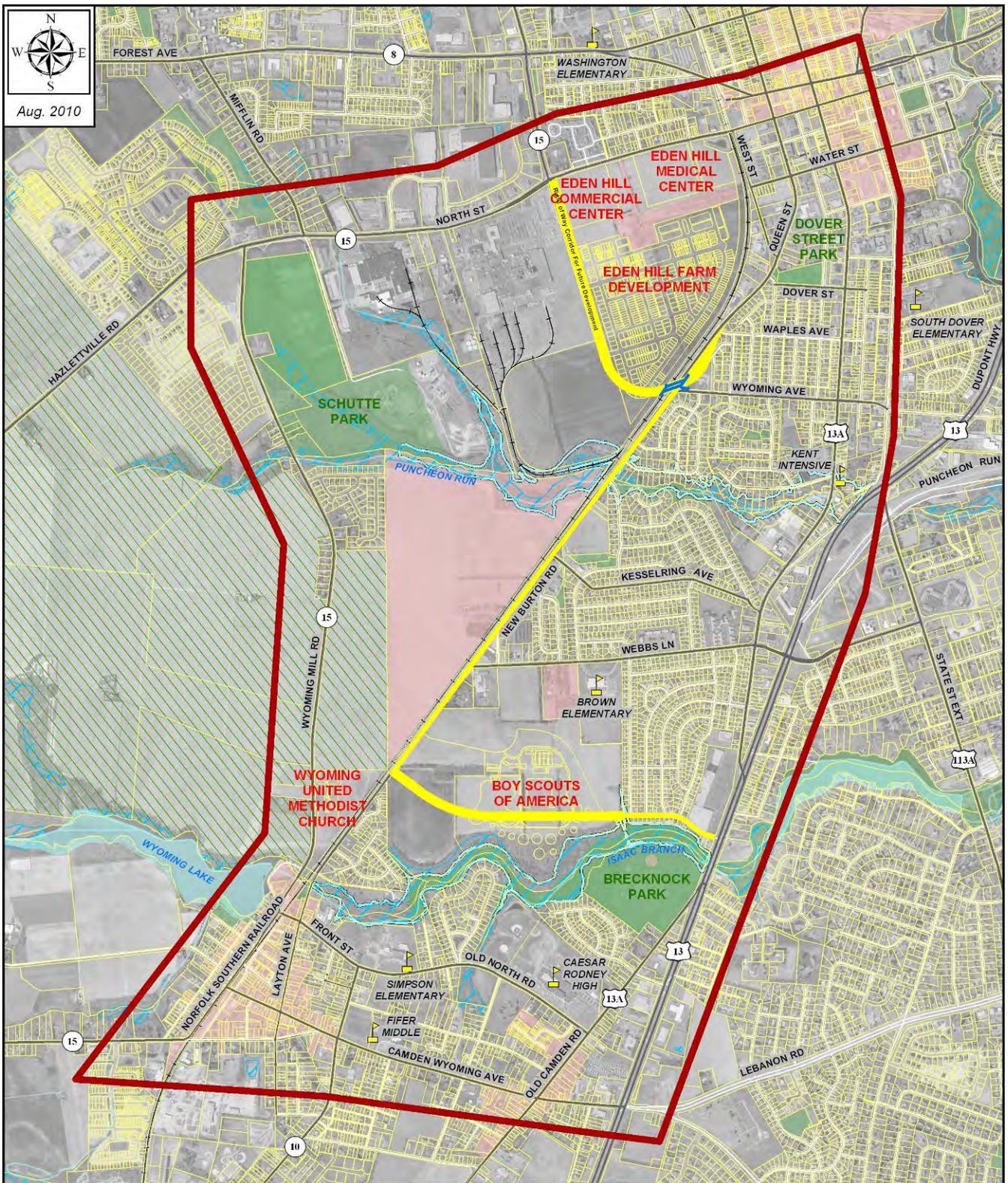


Figure III-15: Concept #7C: Connection to New Burton Road to Charles Polk Road to US 13

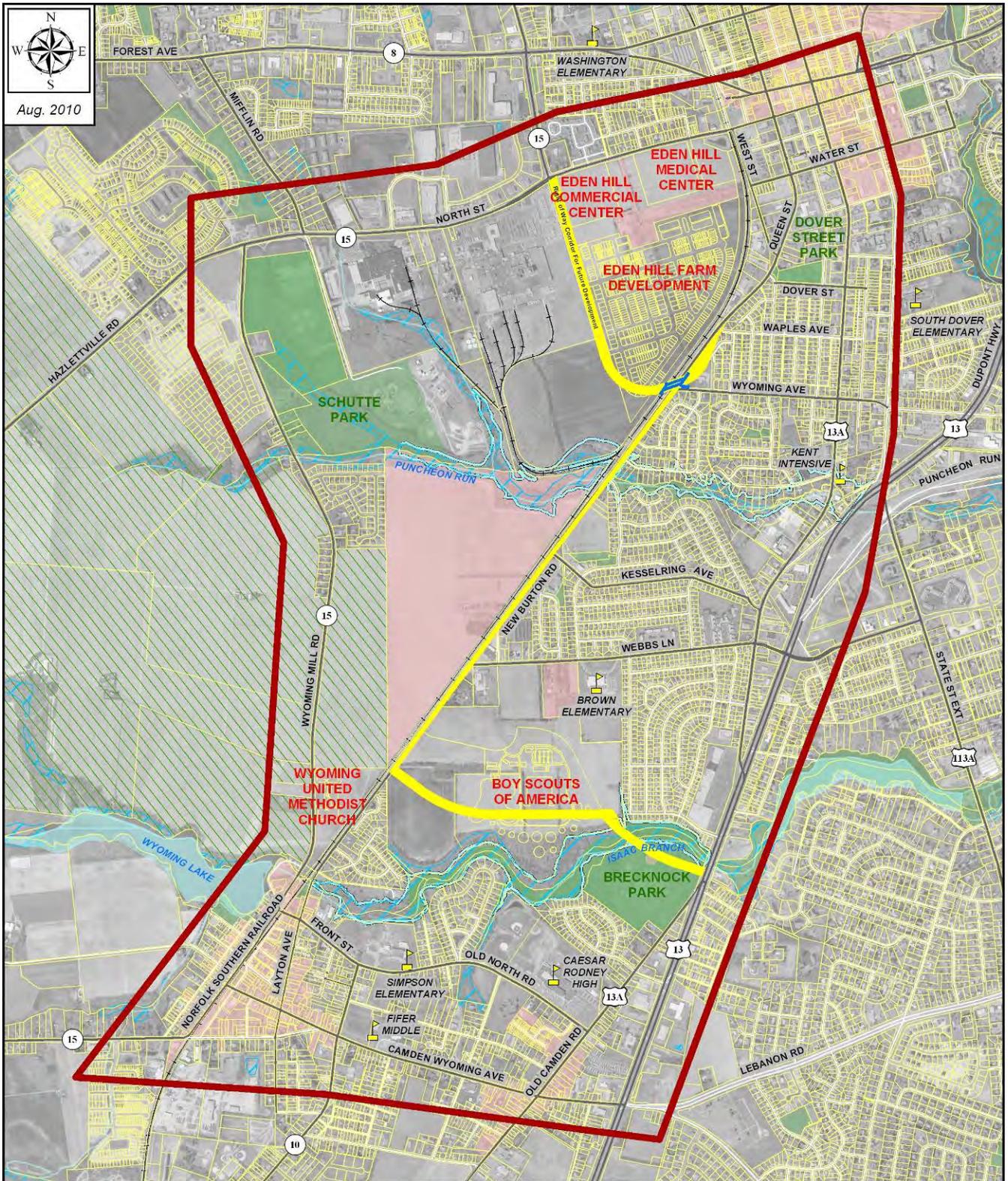


Figure III-16: Concept #7C Spur: Connection to New Burton Road to US 13 via Brecknock Park

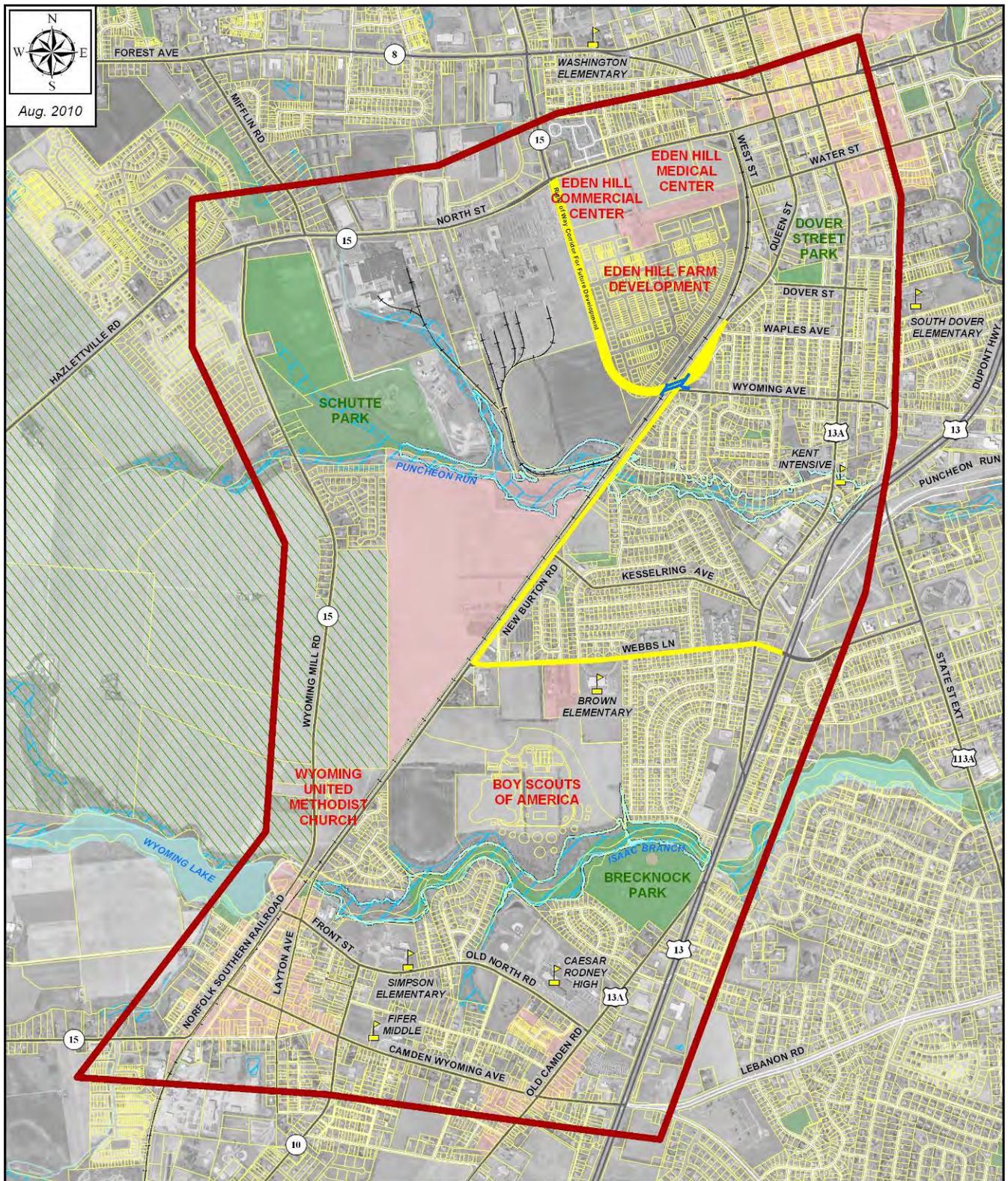


Figure III-17: Concept #7D: Connection to New Burton Road to Webbs Lane to US 13

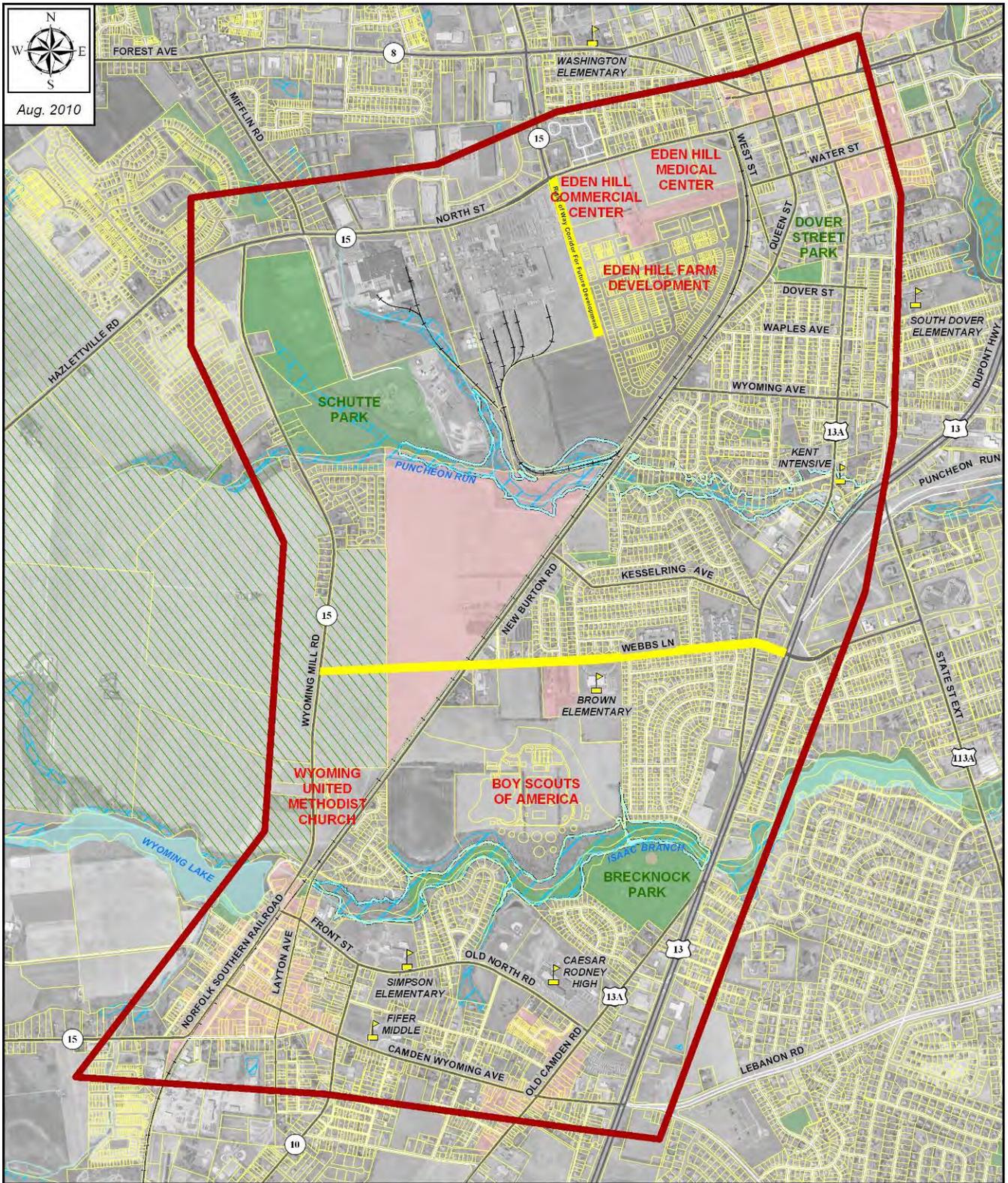


Figure III-18: Concept #8: Connection between Wyoming Mill Road and US 13 via Webbs Lane

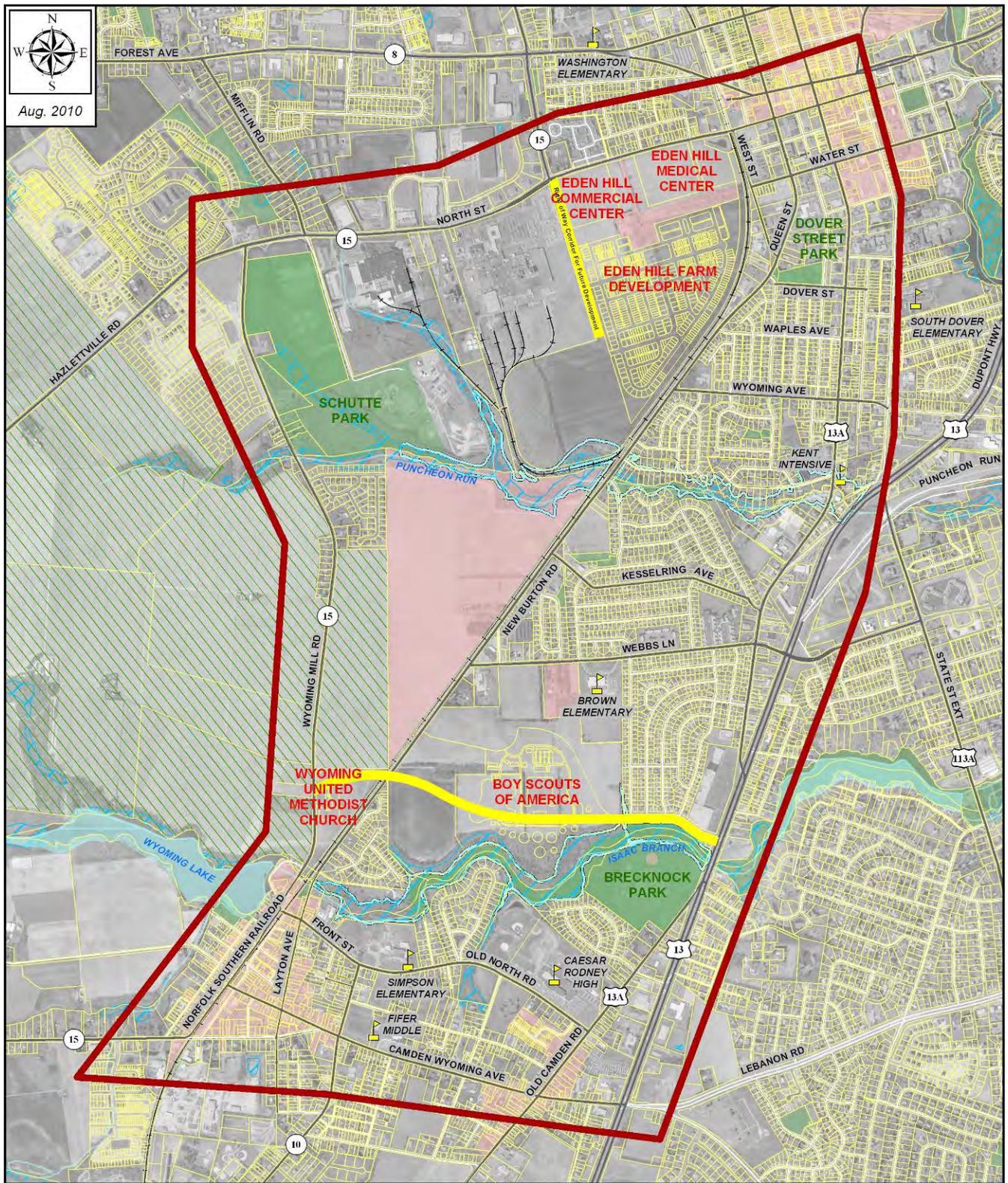


Figure III-19: Concept #9: Connection between Wyoming Mill Road and US 13 via Charles Polk Road

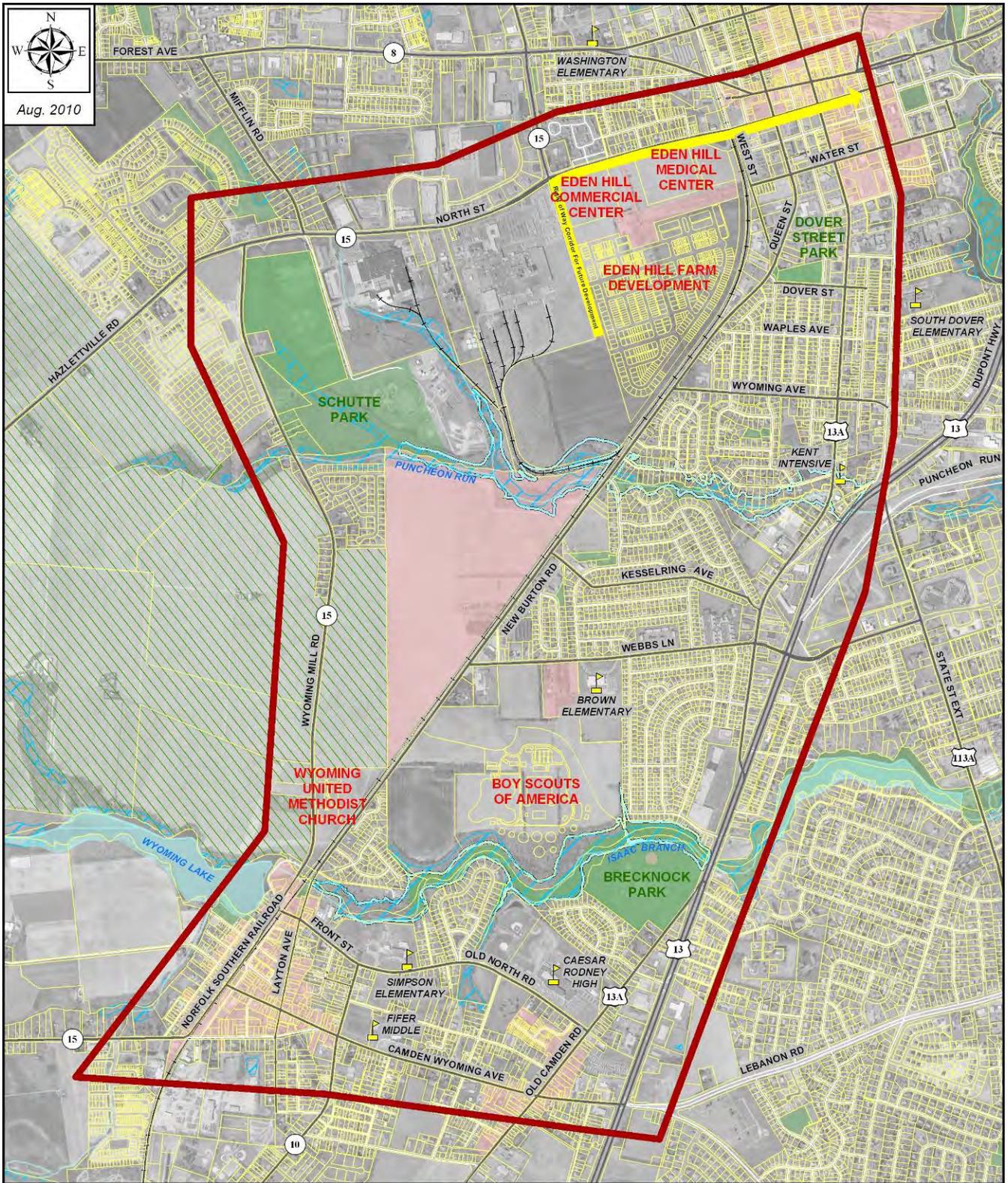


Figure III-20: Concept #10: Capacity Improvement along North Street between Saulsbury Road and Governors Avenue

Concept #11: Transportation System Management (TSM) Improvements (Figure III-21)

Concept #11 would provide Transportation System Management (TSM) improvements. TSM improvements are limited to extending existing turning lanes or providing new turning lanes, signal timing adjustments to optimize the operation of the intersections and the provision of a signal where an intersection meets the 8-hour signalization warrants as described in the *Manual on Uniform Traffic Controlling Devices (MUTCD)*. Year 2030 analysis of all 25 intersections in the study area determined that a measurable change in intersection performance could be achieved at only the following 14 intersections in the study area using TSM improvements and these intersections are shown on Figure III-21 with yellow circles.

- North Street/Wyoming Mill Road
- North Street/Mifflin Road
- North Street/West Street
- North Street/Governors Avenue
- Dover Street/Governors Avenue
- West Street/Queen Street
- New Burton Road/Wyoming Avenue
- New Burton Road/Kesselring Avenue
- New Burton Road/Webbs Lane
- New Burton Road/Front Street
- Camden Wyoming Avenue/Railroad Avenue
- Camden Wyoming Avenue/Caesar Rodney Avenue
- Camden Wyoming Avenue/Layton Avenue
- Front Street/Layton Avenue

Concept #12: Relocation of Norfolk Southern Railroad (Figure III-22)

In Concept #12, Saulsbury Road would be extended from the Saulsbury Road/North Street intersection. The new connector would cross a railroad spur, Puncheon Run and the NS Railroad near the existing crossing of Puncheon Run and connect to New Burton Road. To allow for the improvements along New Burton Road, the railroad would be relocated to the west and New Burton Road would be widened into the existing railroad right-of-way. Two possible railroad relocation options have been considered. The first would relocate the railroad slightly to the west where the new alignment would pass in front of the building complex of the eligible Kesselring Farm. In the second option, the railroad alignment would be relocated further west so as to pass behind the building complex of the eligible Kesselring Farm. Concept #12 has two sub-concepts described below, based on the location of the connection with US 13:

Concept #12A: (Figure III-22)

In Concept #12A, the connection to US 13 would be provided via Webbs Lane. Webbs Lane would be improved to handle the traffic volumes drawn by the connector road.

Concept #12B: (Figure III-22)

In Concept #12B, the connection to US 13 would be provided using Charles Polk Road or in its vicinity through the farm property south of Webbs Lane, which is now under development by the Boy Scouts of America. Charles Polk Road would be improved to handle the traffic volumes drawn by the connector road. Access to Rodney Village from the connector roadway would be provided.

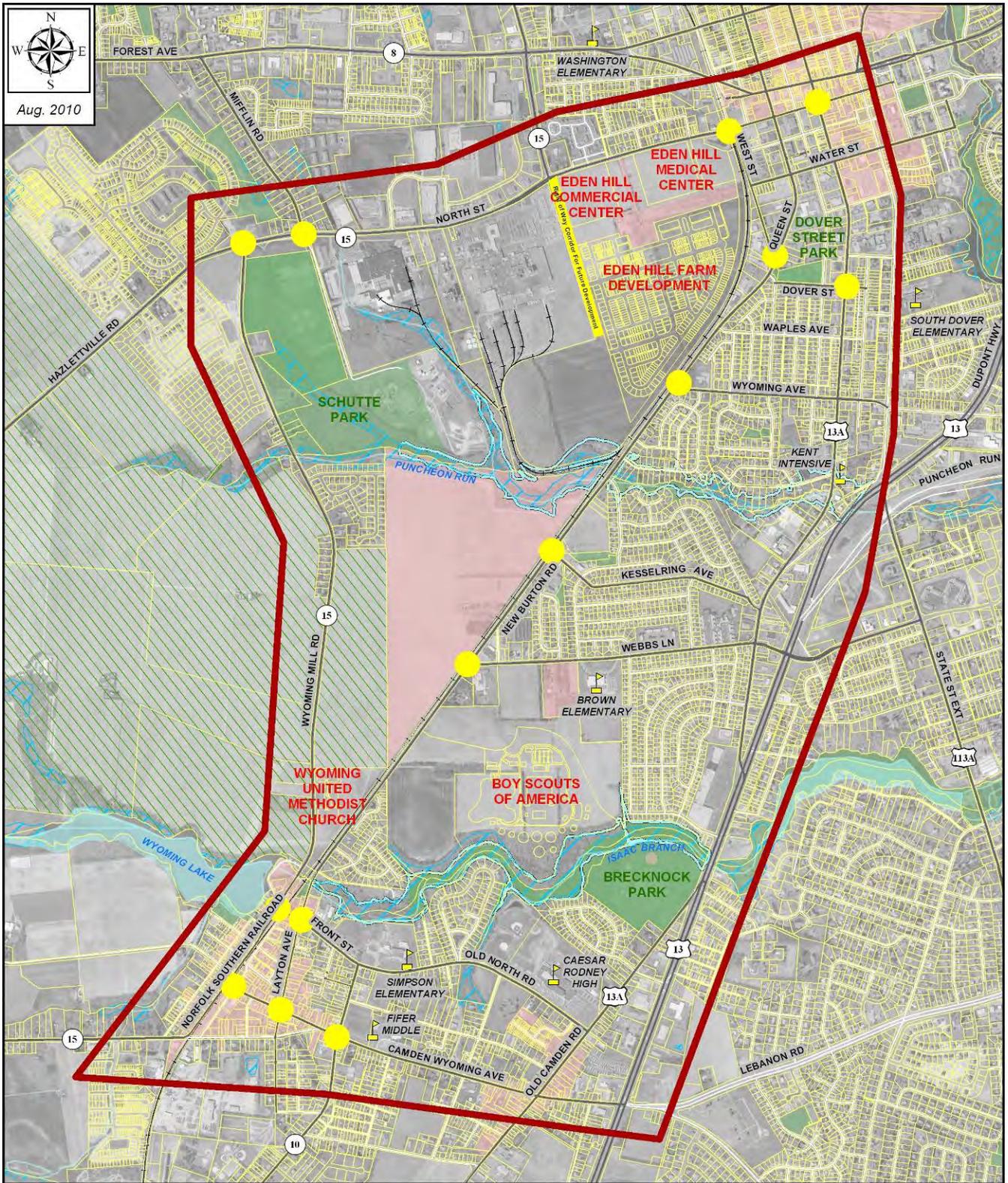


Figure III-21: Concept #11: Transportation System Management (TSM) Improvements

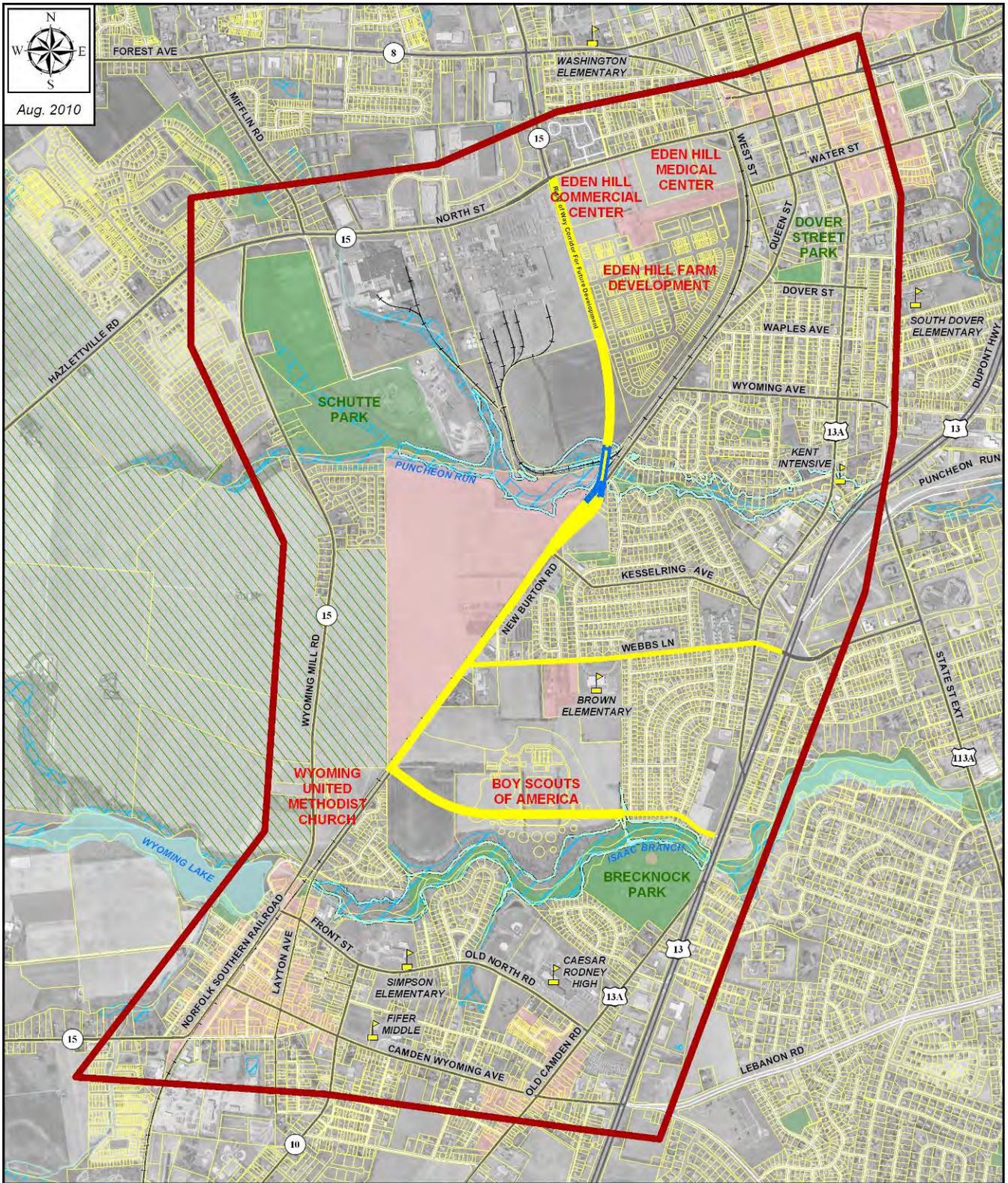


Figure III-22: Concepts #12A and 12B: Relocation of Norfolk Southern Railroad

Concept #13: Bypass around Towns of Camden and Wyoming to US 13 (Figure III-23)

In Concept #13, Saulsbury Road would be extended from the Saulsbury Road/North Street intersection. The alignment would cross a NS Railroad spur and Puncheon Run with a grade-separated structure, and then continue on the west side of the NS Railroad through the eligible Kesselring Farm. The connector would have an at-grade intersection with Wyoming Mill Road and then it would use Wyoming Mill Road before swinging west around Wyoming Lake, crossing Isaac Branch. Then it would head south, crossing Allabands Mill Road, across Route 15 (Westville Road) before swinging east to cross the NS mainline, Willow Grove Road (Route 10), and Alternate US 13 (Main Street South) to connect to US 13 in the vicinity of Briar Park. The intersections with all existing streets south of Camden and Wyoming have been assumed to be made at grade.

Concept #14A: Provision of Additional Capacity along Wyoming Avenue, New Burton Road and Webbs Lane (Figure III-24)

Concept #14A would provide additional capacity along Wyoming Avenue, New Burton Road and Webbs Lane.

Concept #14B: Extension of Saulsbury Road and Provision of Additional Capacity along Wyoming Avenue, New Burton Road and Webbs Lane (Figure III-25)

In Concept #14B, the new connector (extension of Saulsbury Road) would connect to New Burton Road north of Wyoming Avenue. The alignment would cross the NS Railroad and New Burton Road with a grade-separated structure and connect to New Burton Road via a looping ramp on the east side of New Burton Road. The intersection with New Burton Road would be at grade, require some form of traffic control, and it would facilitate all traffic movements (i.e., to and from the new connector and to and from New Burton Road). Additional capacity would be provided along Wyoming Avenue, New Burton Road and Webbs Lane.

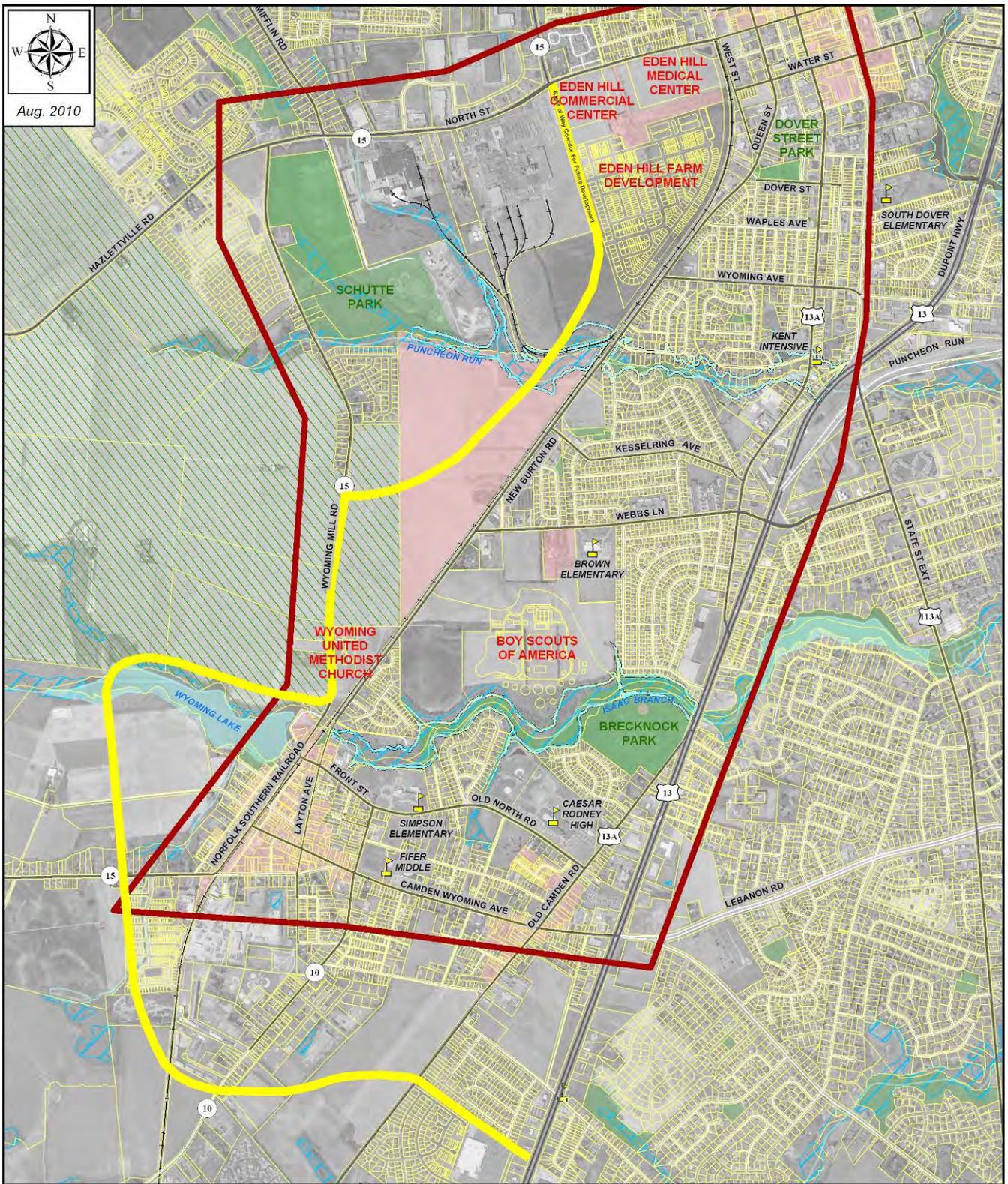


Figure III-23: Concept #13: Bypass around Towns of Camden and Wyoming to US 13

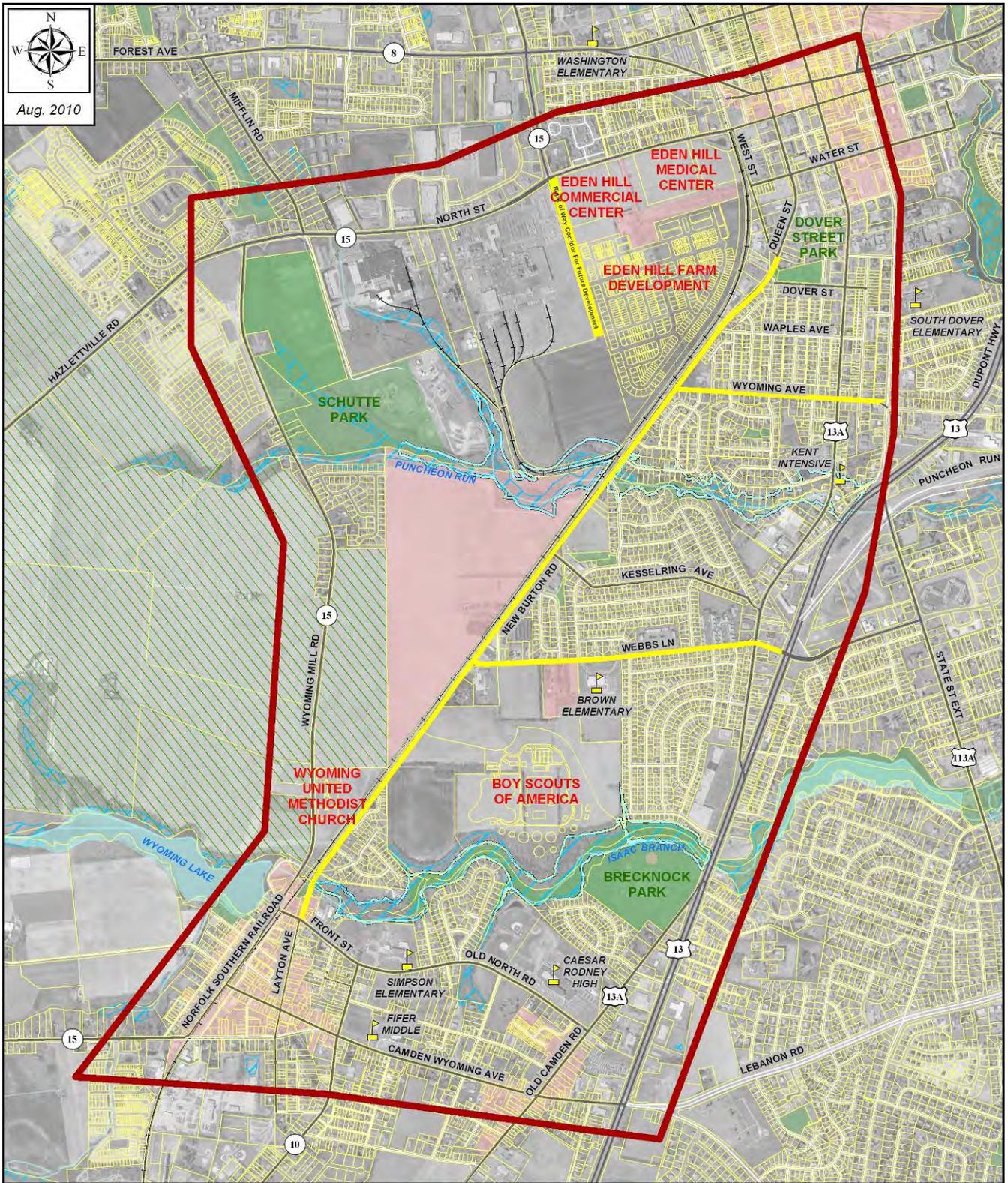


Figure III-24: Concept #14A: Provision of Additional Capacity along Wyoming Avenue, New Burton Road and Webbs Lane

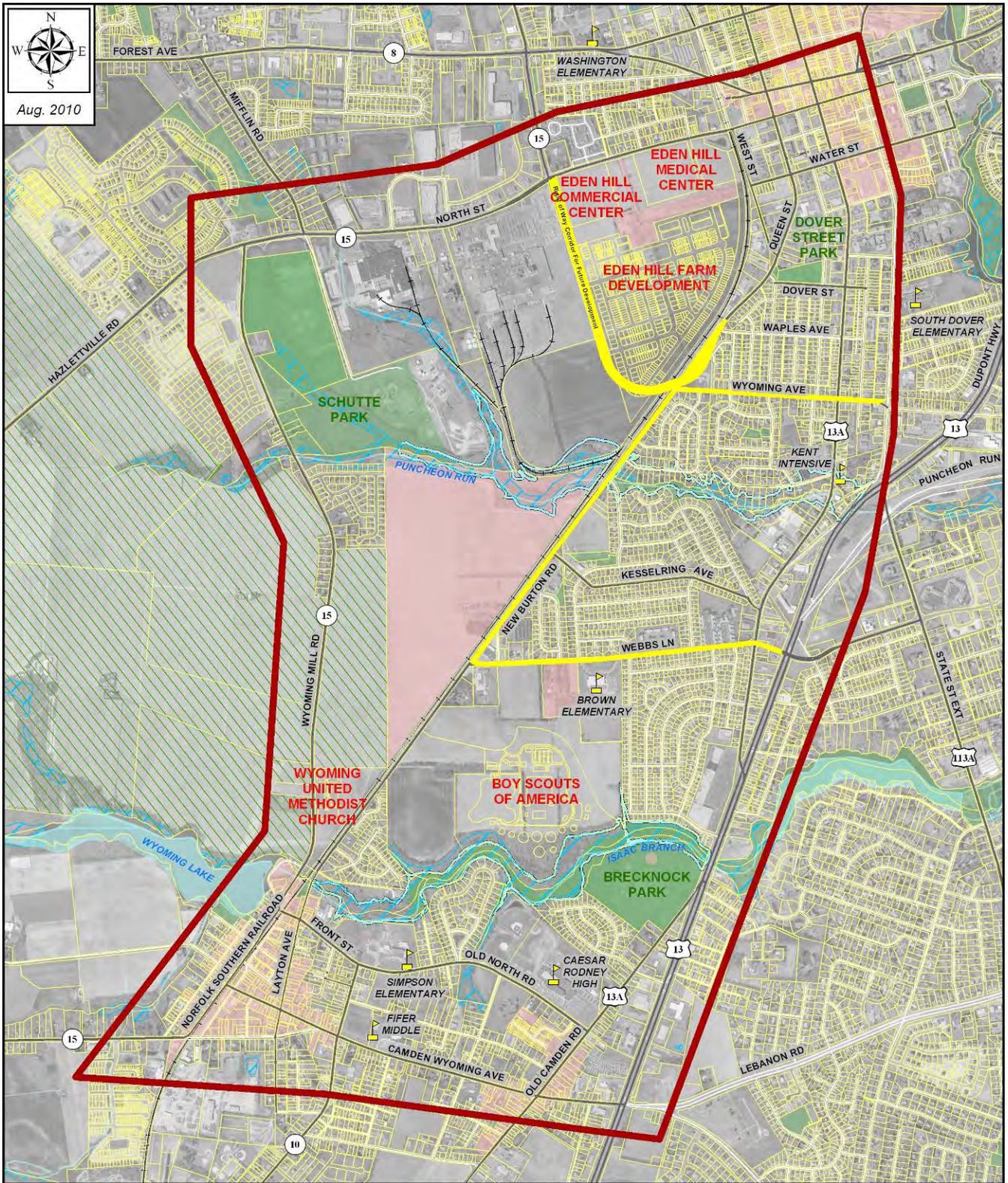


Figure III-25: Concept #14B: Extension of Saulsbury Road and Provision of Additional Capacity along Wyoming Avenue, New Burton Road and Webbs Lane

