

MEMO TO: Mayor Marchione and Members of the City Council

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DATE: April 3, 2012

SUBJECT: NEIGHBORHOOD CONNECTIONS: NE 31st COURT TRAIL

## Purpose

Update City Council on a new neighborhood connection and a new tool for measuring pedestrian connectedness (Neighborhood Connections).

# **Project Background**

In December 2010, three students from Audubon Elementary School wrote to Mayor Marchione asking for a pedestrian path along an existing easement between NE 31<sup>st</sup> Court and 173<sup>rd</sup> Court NE, which would shorten their walk to school. A few months later, City staff received another request from residents in the neighborhood who wanted a connection in the same location. After researching the situation, staff learned that a path had been planned for the corridor as part of the Charleston Place development over 20 years ago, but was never built. The right-of-way remained, but was steep and difficult to walk in its undeveloped state and, over time, had grown thick with trees, blackberries, and underbrush.

The project met the criteria for a high priority project, eligible for funding through the Sidewalk Program. Staff determined that if the trail were designed in-house, this project could be completed for approximately \$26,000. In 2011, Public Works staff designed the trail and hired a contractor to construct the connection. The NE 31<sup>st</sup> Court Trail was completed in December 2011 during winter break and was ready for the students when they returned to school in January 2012.

The NE 31<sup>st</sup> Court Trail is an important connection for the Idylwood neighborhood. It advances a City vision to connect neighborhoods and substantially improves pedestrian connectedness for 333 parcels in the surrounding neighborhood. This trail also provides a more direct route for Audubon Elementary School students who walk to school (See Attachment A). The following pictures show the before and after conditions:

# Looking north from 173 Court NE



# Mid-section of the path with adjacent property



Before After

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The NE 31<sup>st</sup> Court Trail is the latest in a series of projects intended to improve safety and connectivity in Redmond neighborhoods. Following are examples of similar projects, which were built with funding from the Transportation Safety Improvement Program (TSIP), the Localized Efficiency Action Program (LEAP), the Sidewalk Program, and the Bicycle Program.

Puget Sound Energy (PSE) Trail Stairway to Rose Hill Neighborhood. The Rose Hill Neighborhood Plan identifies connectivity as a high priority. The PSE Trail Stairway, constructed in 2008, meets that need by closing a gap in the trail by providing a more comfortable place to walk. This stairway created a continuous connection from Lake Washington to the Redmond Watershed Park, passing through Kirkland and Redmond. The stairs were also designed with a trough on both sides to facilitate bike transport.

NE 40<sup>th</sup> Street Sidewalk between 172<sup>nd</sup> Avenue NE and West Lake Sammamish Parkway. Completed in 2010 on the south side of NE 40<sup>th</sup> Street, this sidewalk strengthens the connection between the Idylwood Neighborhood and Idylwood Beach Park. Seven hundred feet of bicycle lane was also constructed as part of the project, improving safety and comfort for cyclists traveling between West Lake Sammamish Parkway and the Overlake neighborhood.

NE 90<sup>th</sup> Street Sidewalk between Willows Road and 154<sup>th</sup> Avenue NE. This sidewalk on the south side of NE 90<sup>th</sup> Street was constructed in 2011, and connects multi-family housing on Willows Road with Downtown Redmond. It also provides direct access to the Metro Rapid Ride B Line, a high-frequency bus service between Downtown Redmond and Downtown Bellevue. Prior to the construction of the sidewalk, some people used the eastbound bicycle lane as an informal pedestrian shoulder. The sidewalk improves safety and comfort by providing a walkway separated from traffic. The Transportation Improvement Board awarded Redmond with a grant of \$200,000 for this project based on the sidewalk's role in connecting the many residences and businesses in the area with the Downtown Urban Center and transit lines.

Willows Road at Overlake Christian Church. This mid-block crossing, constructed in 2011, provides a crossing of Willows Road for cyclists and pedestrians using the Sammamish River Trail. Digipen students and other employees along Willows Road now have a safer crossing to the bus stops along Willows Road and access to the trail.

178th Avenue NE at Bear Creek Park and Ride. This pedestrian crossing, constructed in 2010, provides safer access for adjacent land use and transit users. It was requested by local businesses and funded by the LEAP program.

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# New Technology for Measuring Connectivity

During 2011 staff began to develop a set of software tools to help the City better evaluate the benefits of connectivity projects like the ones identified in this memorandum. The initial development phase of those tools is now complete.

Following is an overview of the concept of connectivity and an introduction to the software that staff used to evaluate the accessibility benefits of the NE 31<sup>st</sup> Court Trail.

## Connectivity

Establishing the NE 31<sup>st</sup> Court Trail improved access to Audubon Elementary School. This trail also enhanced pedestrian connectivity for the surrounding homes by shortening effective distances among them. For example, a trip between two houses at each end of the street without the trail was about 1.5 miles long. With the trail that same trip is now less than 800 feet—a three-minute walk. By improving connectivity within this neighborhood, travel between parcels is more direct and the number of possible destinations that residents can reach by walking is increased. Improved connectivity is economically beneficial for residents who reduce trips by car. Travel times decrease and new opportunities for residents to socialize are created, particularly for neighborhood children and people who do not have easy access to a car.

In the past, accessibility benefits like these were usually described qualitatively ("Residents on the west side of the neighborhood have a shortened walk to Audubon Elementary School."). With the advance of Geographic Information Systems (GIS) technology, the City of Redmond Public Works Department can quantify and map the benefits of projects like the NE 31<sup>st</sup> Court Trail more quickly and more precisely than before.

## **Urban Network Analyst**

Using a new GIS-based software tool (Urban Network Analyst), Public Works staff analyzed how a new trail for NE 31<sup>st</sup> Court would affect pedestrian accessibility for the surrounding parcels. We used a metric called *Reach*, a function that assigns a number to each parcel based on the number of other parcels that are accessible from it within a given travel distance.

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Public Works staff will continue to use *Reach* and related Urban Network Analyst tools in the future to help evaluate and prioritize projects, and to communicate their impacts to the City Council and to the public.

#### Conclusion

The NE 31st Court Trail was a relatively low-cost project that improved walkability for students of Audubon Elementary School and other residents of the Idylwood neighborhood. Staff received photos of children using the trail and many thank you e-mails for completing the trail. Staff thanks the Mayor and City Council for their support, and we will continue to look for opportunities to improve neighborhood connections throughout Redmond.

#### Attachment

A. Walkability Analysis Map



