

**Report of the Milwaukee Department of City Development regarding
a proposed water service agreement with the City of Waukesha**

June 12, 2012

Milwaukee Common Council File Number 110438 "directs ... the Department of City Development to prepare and submit written analyses and reports as provided in the policies and procedures adopted by the Common Council in Resolution File Number 080457, relating to an anticipated proposal to provide drinking water to the City of Waukesha." Three reporting requirements are outlined for the Department of City Development (DCD) in Council File No. 080457 and the respective responses and analyses follow as items C-1, C-2, and C-3.

Overview

The City of Waukesha (Waukesha) is a growing municipality and plans for continued growth over the coming decades. This growth can occur by redeveloping and re-zoning land within its existing municipal boundaries or growing spatially into its "planned water service area," a defined area comprising partially developed, unincorporated areas in townships outside of the existing city boundaries. This planned water service area, defined by the Southeastern Wisconsin Regional Planning Commission (SEWRPC) and used in Waukesha's draft application for Lake Michigan water supply, is shown in the map on pages 8 and 9 of this report.

An improved source of high quality water at a reasonable price might facilitate the city of Waukesha's planned growth in the same way that other high quality and efficient infrastructure such as highways and power plants might facilitate growth. That is not to say that Waukesha will not grow without an improved water source, or that Waukesha's use of Lake Michigan water would give it a definitive comparative economic advantage, but the quality and costs of water are among a variety of factors affecting the economic attractiveness and positioning of the community.

"C-1: Whether the water can be used directly or indirectly to facilitate new residential, industrial, retail or commercial development in the community which has applied for water service, and the value of such development and the number of new jobs and residents that such development will generate."

The following analysis addresses the specific question: can the supply of Lake Michigan water be used directly or indirectly to facilitate new residential, industrial, retail or commercial development in Waukesha? A water service agreement providing Lake Michigan water to Waukesha would facilitate the community's plan. Waukesha's Comprehensive Plan recommends new development; therefore a water service agreement would logically facilitate new development.

DCD estimates the value of future Waukesha development in this analysis assuming that all development is facilitated by a single variable, that being supply of Lake Michigan water to Waukesha and the 2035 planned service area. However, it would be incorrect to claim that none of that development would occur without Lake Michigan water or that all of it will occur with an agreement. Obviously, the future is uncertain and many factors will influence the amount and type of development

that Waukesha experiences during the next decades. Furthermore, Waukesha has been developing to date without outside supply of water. Essentially, these estimates are for a hypothetical top of the range. ***They assume that all the acres of new development that could be achieved would be achieved, and that provision of Lake Michigan water by a neighboring community is the only variable in spurring development. The outcome under these assumptions is addressed in the next section, but any quantification of the value of development spurred by provision of Lake Michigan water to the City of Waukesha is highly speculative.***

Analysis

The following "Land Use Concerns and Weaknesses" are identified in Chapter 7, Land Use Element, of Waukesha's Comprehensive Plan, dated September 2009:

- "Waukesha's water supply is finite. The trends show that ground water supply and quality is declining.
- "Continued pressure for development in areas with medium to high susceptibility to groundwater contamination."

Waukesha made the case that it needs water for current and future development in its "Lake Michigan Water Supply: Draft Application" to the Wisconsin Department of Natural Resources. The "Water Supply Service Area Plan for the City of Waukesha" prepared for Waukesha, Wisconsin in April 2010 by CH2MHill, states that, "Lake Michigan Water supply is the only reasonable solution for the City of Waukesha."

If one accepts the conclusion of the comprehensive plan and preceding documents, namely that declining ground water supply and quality and susceptibility to groundwater contamination are land use development concerns and weaknesses, then it's logical to conclude that alleviating or mitigating these concerns and weaknesses through provision of Lake Michigan water would directly or indirectly facilitate new development in Waukesha.

Waukesha's 2035 planned water service area outlined in the draft application for Lake Michigan water supply extends considerably beyond its current municipal boundaries. The planned service area includes portions of the Town of Genesee, Town of Waukesha, Town of Delafield, and City of Pewaukee. The following analysis of acres of development includes acres of new development within the existing city boundary, and new development in the planned water service area outside of the existing city boundary.

According to Waukesha's 2009 comprehensive plan, the amount of industrial land available for development in the 2035 service area is projected to grow 914 acres. For the sake of comparison, this is 1.4 square miles. The City of Milwaukee has 7.1 square miles of industrial land use. Based on 2011 assessed valuation, full industrial build-out would increase property values by \$201,580,872. This figure is calculated simply by multiplying this number of acres by Waukesha's current assessed value of \$220,548 per acre of industrial property. Should full industrial build-out actually occur at all this

property, the number of jobs on this land in 2035 would be 7,312, using the industrial jobs/acre standard used by the Southeastern Wisconsin Regional Planning Commission.

Residential land developed is projected to increase by 3,444 acres, or 76%, in the 2035 service area. For comparison purposes this is 5.4 square miles. The City of Milwaukee has 31.3 square miles of residential land. The population is forecast to grow 13,937 persons, or 21%. The number of households is forecast to grow by 7,391, requiring development of additional housing by 2035. Based on the 2011 average assessed value of residential land, full build-out of this additional acreage would result in increased value of \$2,500,235,812.

Land available for commercial development (including retail, office, service activities, general business activities, research and development, and related off-street parking) is planned to increase by 80 acres within the service area by 2035. For comparison purposes this is 0.125 square miles. The City of Milwaukee has 5.1 square miles of commercial property. The current assessed value of an acre of fully developed commercial property in Waukesha is \$564,402. Assuming full build-out of the additional projected acreage, the 2011 value of this increase is estimated at \$45,152,160. Should full build-out occur, the number of jobs on this land would be 2,240, using the 28 jobs per acre standard used by the Southeastern Wisconsin Regional Planning Commission.

Land use	Projected growth in acres	2011 value/acre	Projected value at full build-out	Projected jobs at full build-out
Industrial	914	\$220,548	\$201,580,872	7312
Residential	3444	\$725,968	\$2,500,235,812	n/a
Commercial	80	\$564,402	\$45,152,160	2240

"C-2: Potential negative social and economic impacts on the City due to lost opportunities for attracting new businesses and jobs to Milwaukee, and the loss of businesses and jobs that exist in Milwaukee."

It is not unreasonable to expect that replacing well water with Lake Michigan water in the largest growing community in a county adjacent to Milwaukee will have some impact on Milwaukee. Respecting the context of this question, framed in the Council’s evaluation of a proposal to extend water service to Waukesha, the response below assumes the change in water source as the single factor affecting local business location decisions.

Many factors, including but not limited to the source and quality of local water, will influence the extent to which Waukesha achieves the degree of growth and development projected by its Comprehensive Plan. Similarly, locational choices made by employers in Milwaukee, Waukesha or elsewhere reflect a wide range of considerations. *Land availability, operating costs, infrastructure, labor availability, traffic counts, proximity to suppliers, location of modes of transportation needed by the business, and personal preferences of the owners are all part of the decision matrix.*

Given this complex mix of elements, the siting of a business in Waukesha does not necessarily represent a “loss” of that project to the City of Milwaukee. At 27.2 square miles, Waukesha occupies a relatively

small percentage of the 580 square miles of Waukesha County, and, as indicated earlier, its Comprehensive Plan includes parts of four townships. Depending on the requirements of a particular industry, an employer who rejects a Waukesha location because of issues related to water source and quality or any other reason might choose to locate in another part of Waukesha County, or the City of Milwaukee, or another part of the metro Milwaukee area.

Waukesha's Comprehensive Plan projects that industrial property in the City of Waukesha will more than double between now and 2035. The availability of additional green field sites in Waukesha, developed in accordance with the City's 2009 Comprehensive Plan, may prove attractive to industry. A narrow industry sector, water-intensive manufacturing firms, may find some of these new sites especially attractive because the water available at those sites is drawn from Lake Michigan rather than from wells.

The chart below indicates the types of industry most likely to have a large "water footprint." Among these water-intensive industries, two sectors - food and beverage – have historically located in metro Milwaukee. It is important to note that food and beverage companies are making significant strides in reducing their demand for water by reducing the amount of water used in their production processes.

FaB Milwaukee, the organization that oversees efforts to build a food and beverage industry cluster within the Milwaukee 7 region, has identified the top 25 food companies in the region by employment. FaB's data indicates that, to date, few large companies in this industry are located in Waukesha County. Fourteen of the top 25 firms are located in Milwaukee County, including 10 in the City of Milwaukee. None is located in the City of Waukesha, and only two are located anywhere in Waukesha County. While uncertainty about water may be partly responsible for this, it is possible that other factors, such as labor availability, relative cost, shipping access, individual site characteristics and historic location choice may be equally or more influential in the location decisions reflected by this data.

Table 3. Relative Water Footprint of Various Industry Sectors

	Raw material production	Suppliers	Direct operations	Product use/ end of life
Apparel				
High-Tech/ Electronics				
Beverage				
Food				
Biotech/Pharma				
Forest Products				
Metals/Mining				
Electric Power/ Energy				

Water drops indicate the value chain segments that have relatively high blue, green and gray water footprint intensities.

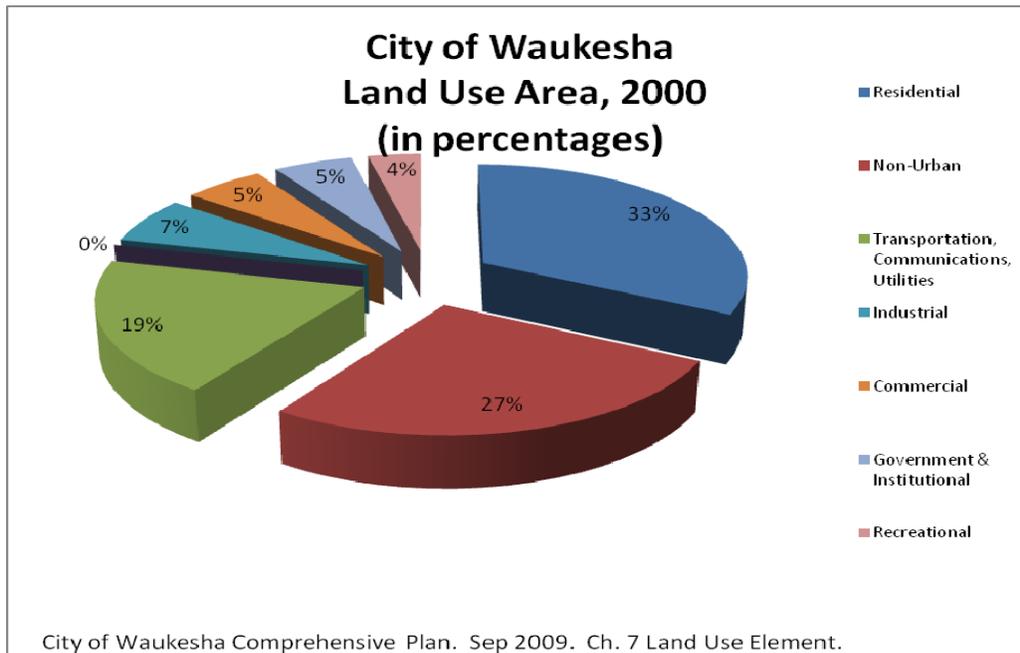
Source: "Water Scarcity and Climate Change: Growing Risks for Businesses and Investors," Pacific Institute, 2009

Should the provision of Lake Michigan water to Waukesha result in the migration of employers from Milwaukee, Milwaukee faces the prospect of lost tax base and at least short-term vacancy of commercial and industrial property. However, because businesses in the cities of Milwaukee and Waukesha draw employees from the same labor shed, it is likely that many individuals currently working at jobs in Milwaukee would commute to Waukesha. According to a 2010 analysis of local commuting patterns, about one-third of employees in metro Milwaukee currently commute to jobs in a nearby county. Without better available data on employee place of residence and inter-county commuting, the impact of any jobs moved to Waukesha on Milwaukee is difficult to quantify.

"C-3: The current land use patterns in the community which has applied for water service and expected trends in land use if Milwaukee provides water to the community."

Waukesha is located near the center of Waukesha County and is the 7th most populous city in State of Wisconsin. It has been a city since 1896. The city grew slowly in its first half century from 6,321 residents in 1890 to 19,242 in 1940. As the Milwaukee urbanized area grew in the post-World War II era, new rings of suburban and exurban development grew around the original city of Waukesha, increasing the population to 50,365 in 1980 and 70,718 in 2010.

The chart below reflects a diversity of land uses in Waukesha and its water service area. The non-urban wedge represents a mix of developable land and lands to be preserved for environmental reasons.



Current and projected growth trends in the city reflect its recent history as a growing suburban community. According to the City of Waukesha Comprehensive Plan (see graph below), residential land uses will continue to grow and become by far the largest land use by 2035. Industrial land use is projected to nearly double by 2035, but will remain a relatively modest proportion of overall land use. Non-urban uses as well as transportation, communications, and utility uses are declining. All other uses are growing at a moderate rate. The average, shown as a dashed purple line, shows moderate growth overall.

Conclusion

Waukesha is a growing community that has identified water as a constraint to its growth. The provision of Lake Michigan water to Waukesha may facilitate the growth of residential, industrial and commercial land use in the city and its water service area. However, water supply and cost will not, in themselves, determine the degree of economic expansion in Waukesha.

Sources

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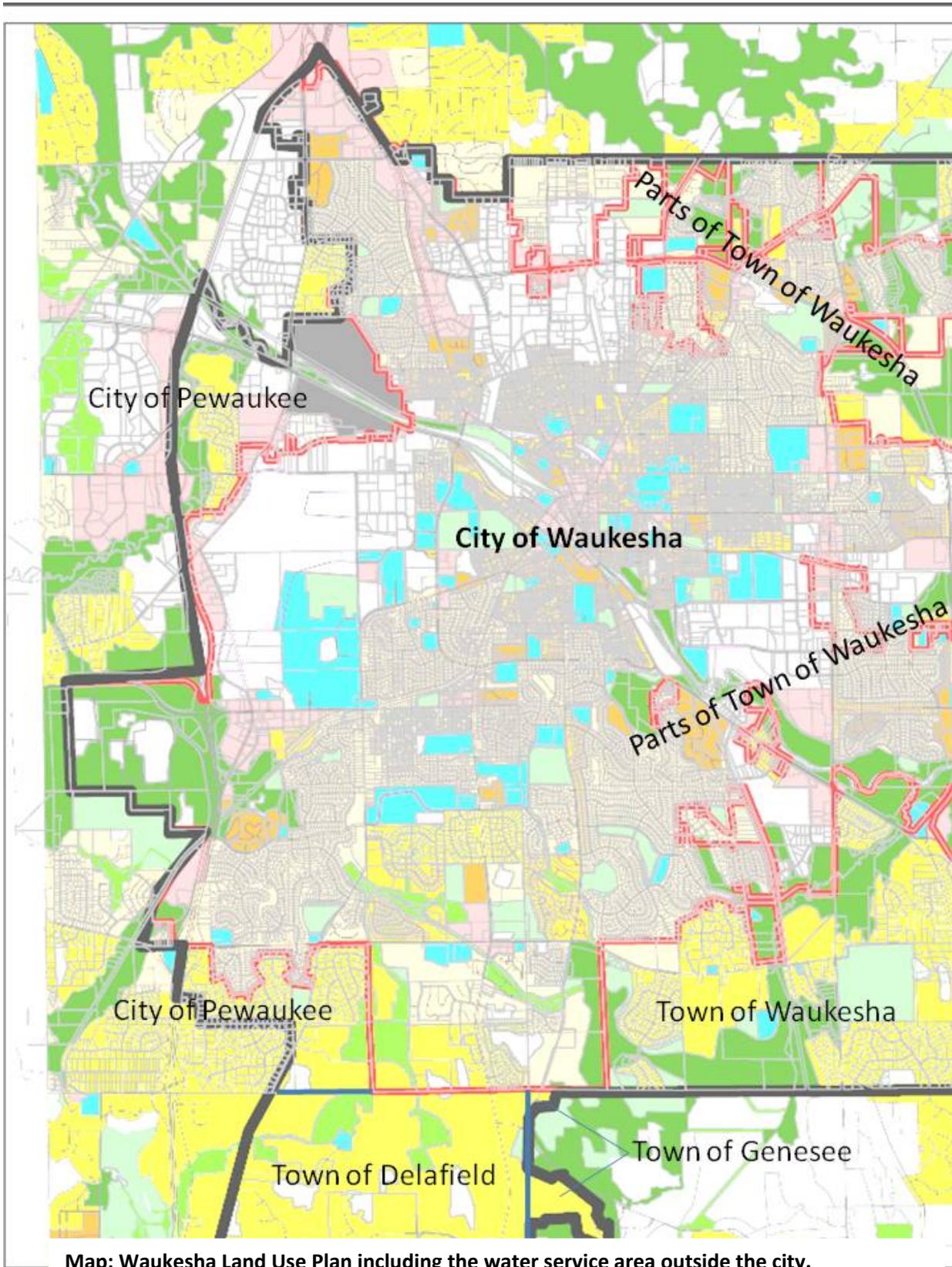
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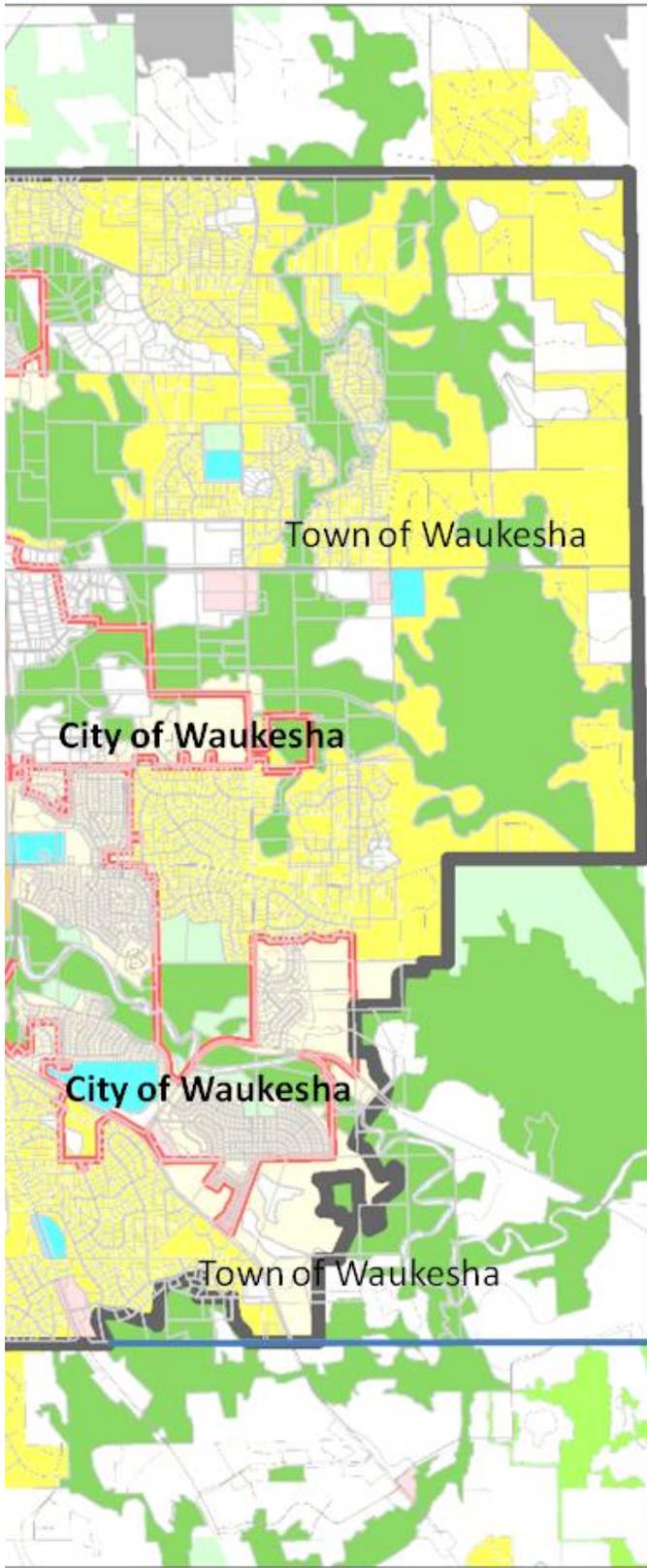
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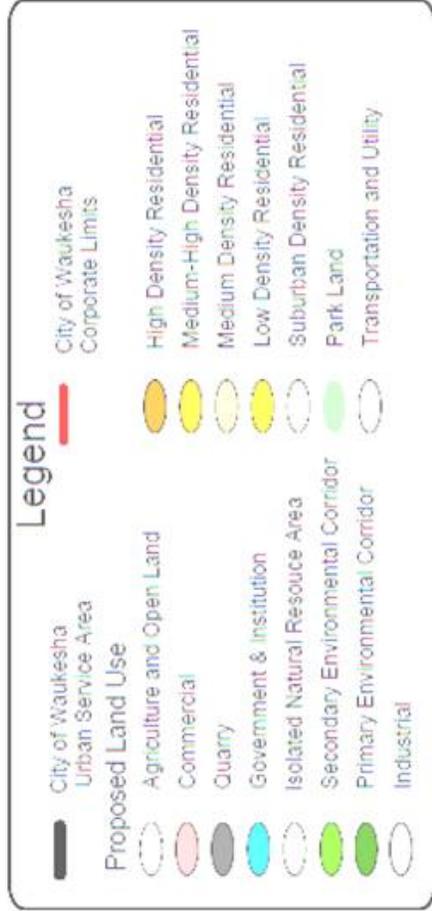
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Pages 8 and 9: City of Waukesha Land Use Plan including the water service area outside the city.





City of Waukesha Land Use Plan 2035



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August, 2009