7. URBAN SERVICES

7A. SANITARY SEWER SERVICE AND PUBLIC FACILITIES

The majority of the Nine Springs Neighborhood can be served by the proposed Syene gravity flow interceptor sewer. This sewer will access through City of Madison roughly along the Herman Road line to connect to the Madison Metropolitan Sewerage Districts Nine Springs Valley Interceptor. North of McCoy Road, the sewer line is intended to follow an old access road so as to minimize any disruption to the adjoining lands and vegetation. The far southwestern part of the proposed neighborhood, being some of the lands in sections 10 and 15, can be served by a connection to the Woods Hollow sanitary sewer extension. The plan area is already within the MMSD boundaries.

The generalized interceptor routes and connecting service lines are shown on the Sanitary Sewer Plan map.

7B. PUBLIC WATER UTILITY

The Nine Springs Neighborhood will be served with public water supply as part of the City's looped water utility system. The water service will enter the Nine Springs Neighborhood from the west via existing lines in Fitchburg Center and along Lacy Road. A possible new well site is located east of Syene Road and a proposed elevated storage facility site is located east of U.S. Highway 14, as shown on the Public Facilities Plan. However, other well sites, such as near the Eby property are being examined. In late October, 1998 the WIDNR informed the City that it needs to pursue additional well capacity. The Utility has been pursuing conservation measures, but such measures may not be sufficient to provide the water savings required to offset a new well.

Siting of the new well should be done in a manner that minimizes the hydrologic impact on the Nine Springs E-Way and Swan Creek.

7C. STORM WATER MANAGEMENT FACILITIES

The City of Fitchburg engaged Vierbicher and Associates in 1997 to undertake a storm water management plan for the Nine Springs neighborhood. The report, finalized in June of 1998, has as its purpose to minimize storm water runoff, maximize infiltration, prevent property damage and hazardous conditions, prevent erosion, reduce Storm water sediment and nutrient deposition in the Storm water conveyance system and waterways. The guiding principle is to enhance, protect and preserve the unique environmental character of the Nine Springs Creek E-Way corridor. To meet the principles and goals established, the report recommends unique measures. The plan proposes a combination of prairie grass channels and Storm water basins. Prairie grass channels of varying width are proposed as a main conveyance element. Stormsewers will still be required to collect Storm water, mainly from streets and deliver the Storm water to the swales. However, swales should be used wherever possible.

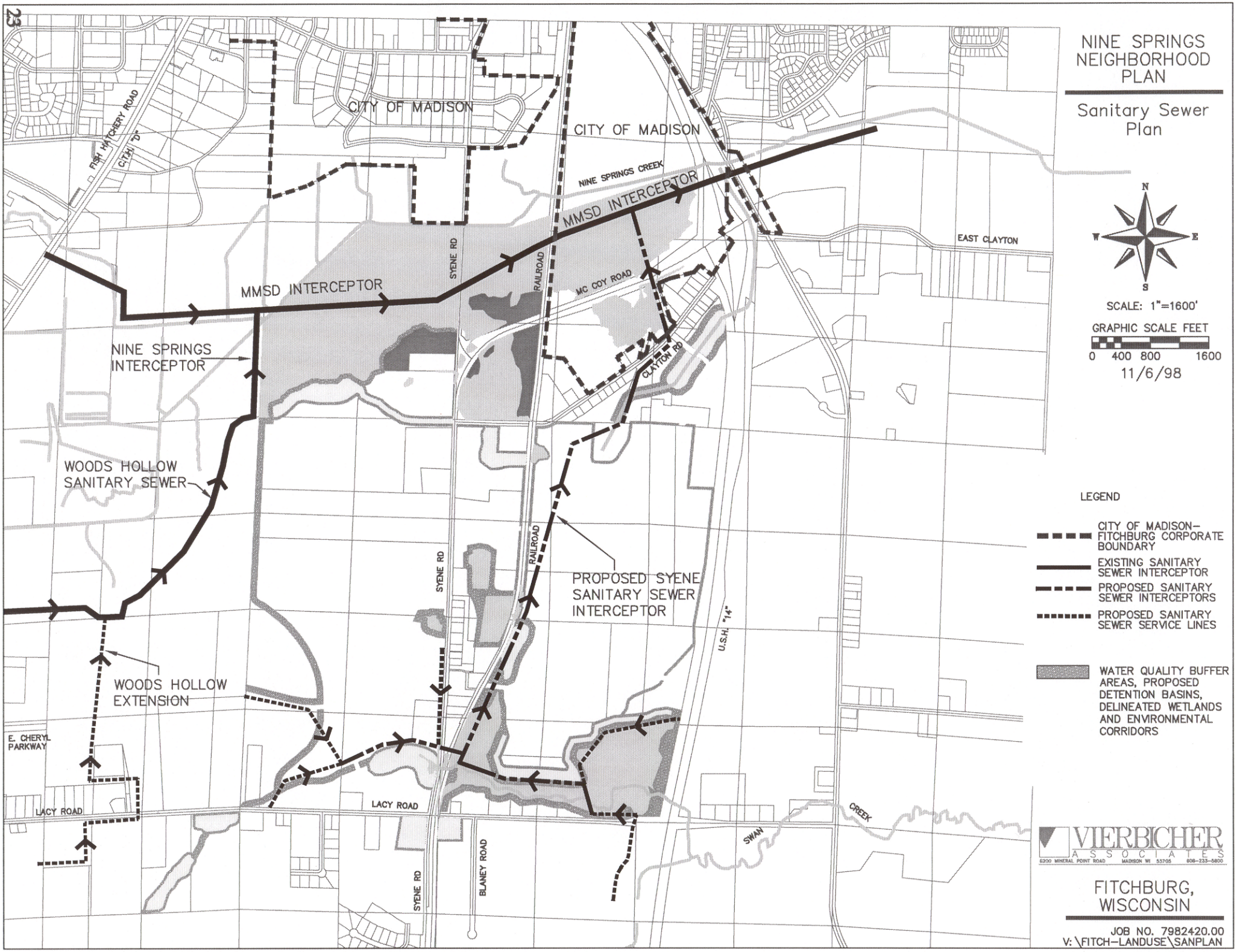
An analysis of vegetation types, accomplished by Vierbicher and Assoc., indicated that prairie grass infiltrates the greatest amount of Storm water. Vegetated filter strips planted with native ground cover and vegetation slow down runoff and allow the water to infiltrate. The infiltration is enhanced by the root depth of the prairie grasses and other macropores that result from earthworm activity. Not only does the native grass channel infiltrate Storm water runoff but it also can help trap water to reduce pollutants. In the land use plan of the Fitchburg Center project, Prof. Leo Jakobson noted that native grass channels can, depending upon the roughness coefficient, trap water borne pollutants up to a 95% efficiency level.

The next major aspect of the Storm water management system is the use of Storm water basins. The proposed basins, as outlined in the Vierbicher plan, will utilize wet detention ponds which improve the water quality, stabilize or recharge the groundwater table, and increase the water amenities in development for aesthetic, recreational, and wildlife habitat. The prairie grass channels will also provide linear connections, and habitat for the wildlife. To

provide added Storm water quality protection in areas where there may be land uses prone to spillage (e.g. gas station), such establishments should provide pre-treatment and on-site containment. The basin which is noted in the westerly portion of the McKeown property (northwest corner of the acquisition reserve area) may need to be located further east to avoid potential conflicts with the Capital City State Trail. Further study will be undertaken at the time of formalization of storm water studies to determine the basins optimum location. All pond locations should be considered conceptual and are subject to change as storm water plans are finalized.

Pond types, as recommended by Vierbicher, should be reevaluated during final development engineering when all factors effecting runoff, water quality, and seepage of the ponds have been determined.

With the proposed prairie grass collection and infiltration system there is expected to be an increase in Storm water infiltration from the current land use situation. Prof. Erhard Joeres has noted that runoff from an impervious surface routed to a area of highly permeable surface (e.g. prairie grass swales) can actually have a net increase in the overall infiltration. The increase of infiltration from the proposed Storm water plan will occur over a geographically diverse area so that infiltration occurs at many locations--the prairie grass swales and the Storm water ponds. On-site development methods, such as downspouts to grass areas, and sheet flow from parking areas can be simple measures to increase infiltration, and such activities should be strongly encouraged.



NINE SPRINGS NEIGHBORHOOD PLAN

Sanitary Sewer Plan

SCALE: 1"=1600'

GRAPHIC SCALE FEET

0 400 800 1600

11/6/98

LEGEND

- CITY OF MADISON–FITCHBURG CORPORATE BOUNDARY
- EXISTING SANITARY SEWER INTERCEPTOR
- PROPOSED SANITARY SEWER INTERCEPTORS
- PROPOSED SANITARY SEWER SERVICE LINES
- WATER QUALITY BUFFER AREAS, PROPOSED DETENTION BASINS, DELINEATED WETLANDS AND ENVIRONMENTAL CORRIDORS

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FITCHBURG, WISCONSIN

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