



CITY OF MONTROSE
STREET & TRAIL SWEEPING PLAN

May 2016

A handwritten signature in blue ink, appearing to read "John Harris", is written over a horizontal line.

John Harris,
Public Works Director

A handwritten signature in blue ink, appearing to read "Ryan Cushenan", is written over a horizontal line.

Ryan Cushenan,
Street Maintenance Division Superintendent

A handwritten signature in blue ink, appearing to read "John Malloy", is written over a horizontal line.

John Malloy,
Parks & Special Projects Division Superintendent

INTRODUCTION

The annual Street & Trail Sweeping Plan is managed by the Street Maintenance Division and Parks & Special Projects Division Superintendents within the Public Works Department. The program is responsible for sediment and debris removal on all municipal streets, alleys, parking lots, and concrete recreation trails within City of Montrose jurisdiction. The primary goal of the plan is to reduce sediment loading into the Uncompahgre River and contributing tributaries, while providing aesthetically pleasing transportation and recreation infrastructure for the Montrose community and visitors. Efficient, effective sweeping promotes community health and safety and instills community pride. Air and water pollution is reduced with comprehensive sweeping programs. It is estimated that the plan prevents approximately 900 tons, 20.25 tons/mile, of debris and particulate matter from becoming airborne or reaching natural watercourses.

The City maintains an active Municipal Separate Storm Sewer System (MS4) permit through the Colorado Department of Public Health and Environment – Water Quality Control Division (CDPHE-WQCD) allowing land disturbing activities associated with routine maintenance operations to be conducted without acquiring individual activity permits. Regularly scheduled sweeping is a regulatory requirement identified in this permit. The City is committed to meeting the environmental quality goals of the MS4 program.

The intent of this plan is to articulate to citizens the scope, frequency, and schedule of sweeping operations within the City. This plan will be a useful tool for providing feedback to City staff regarding the use of resources available for program management. Additionally, a formal Street & Trail Sweeping Program demonstrates the City's commitment to providing cost-effective services for Montrose citizens.

This plan is available for review and download on the Public Works Department webpage at www.CityofMontrose.org/157. Public Works Department staff will review and revise the plan, as necessary, at least annually. Specific sweeping routes and schedules will be reviewed and updated, as necessary.

PROGRAM OBJECTIVES AND PRIORITIES

The City of Montrose transportation network consists of approximately 20 centerline miles of major arterials, 35 centerline miles of minor arterials, 8 centerline miles of collector roads, 115 centerline miles of local roads, 2 centerline miles of paved alleys, and 15 acres of public parking lots. Scheduled sweeping of this network equates to approximately 750 pass miles. A pass mile is defined as one (1) sweeper pass along one (1) mile of transportation network.

The City of Montrose recreation trail network includes approximately 40 miles of concrete walking, jogging, and bicycling trails. Scheduled sweeping of this network equates to approximately 55 pass miles. Trail sweeping equipment is narrower than street sweeping equipment. Therefore, more pass miles are required to efficiently sweep trail areas than street areas of comparable size.

Street and trail cleanliness is subjective. Although widely accepted cleanliness standards do not exist, the City of Montrose has adopted best practices and established realistic sweeping routes and schedules to ensure program goals are met. Sweeping operations are weather dependent, but typically begin in late April and end in late November. During this season, major arterials are swept twice each month, minor arterials are swept once every month, collector roads are swept once every two (2) months, and residential streets are swept twice. Paved alleys and public parking lots are swept as necessary. Concrete recreation trails are swept once every four (4) months during this season. Fall sweeping, particularly in the older established residential neighborhoods, is scheduled to collect leaf debris from streets and curb flow lines. Residents are urged to collect the leaves that collect in their yard to help maintain street drainage, and never blow leaves into the roadway. Sweeping service levels ultimately determine program staffing and equipment requirements. Significant growth in the transportation network (streets and trails) reduces the service level unless staffing and equipment levels grow proportionately.

SWEEPING ORGANIZATION

The Street & Trail Sweeping Program is managed within the City of Montrose Public Works Department. The Street Maintenance Division Superintendent manages all elements of the plan, other than recreation trails. The Parks & Special Projects Division Superintendent manages plan elements associated with recreation trail maintenance.

The Street Maintenance Division includes one (1) Superintendent, two (2) Team Leaders, and sixteen (16) Workers. Supplemental employees are hired seasonally as needed. Employees are cross-trained to complete all functions assigned to the Division, including sweeping. The Division Superintendent reports directly to the Public Works Director and provides administrative support and supervision for the Division Team Leaders. The Team Leaders provide field support and supervision for the Division Workers. This organizational structure ensures efficient supervisory span of control. Field operations are generally executed by a single team consisting of three (3) sweepers/operators working together in designated areas. Each sweeper operator is required to maintain a valid Colorado Commercial Drivers License. Street Maintenance Division personnel are also responsible for snow and ice removal. During winter storms, sweeping operations cease and Division personnel participate in snow and ice removal operations.

The Parks & Special Projects Division includes one (1) Superintendent, three (3) Team Leaders, and three (3) Workers. Supplemental employees are hired seasonally as needed. Employees are cross-trained to complete all functions assigned to the Division, including sweeping. The Division Superintendent reports directly to the Public Works Director and provides administrative support and supervision for the Division Team Leaders. The Team Leaders provide field support and supervision for the Division Workers. This organizational structure ensures efficient supervisory span of control. Recreation trails are typically swept by one (1) Worker operating a small utility vehicle with a front rotary broom. Although not required for the operation of small utility vehicles, each Worker is required to maintain a valid Colorado Commercial Drivers License. Parks & Special Projects Division personnel also assist with snow and ice removal. During winter storms, sweeping operations cease and Division personnel participate in snow and ice removal operations.

Sweepers require a significant amount of maintenance; primarily the replacement of brushes. They operate continually in dusty, dirty environments. Nearly fifty percent (50%) of the Street & Trail Sweeping Program total annual budget is designated for maintenance and repair of sweepers. Minor maintenance, such as greasing, and daily cleaning are performed by the sweeper operators. Major repairs or maintenance are performed by city mechanics or outside

shops. Sweepers store water that is used to control dust while operating and must be stored indoors during the winter to prevent freezing. Staging and routine maintenance are typically performed at the Public Works facility located at 1221 6450 Road.

SWEEPING OPERATIONS

The Street Sweeping Team works together to clean designated areas of the City. This coordination and teamwork ensure operations are completed quickly and efficiently. When sweeper debris tanks are full, material is temporarily stockpiled at various City of Montrose owned sites. Each site is physically constructed to prevent debris migration during and after windy or erosive precipitation events. This material is stockpiled for no more than thirty (30) days before being permanently deposited at the Montrose County Landfill. The landfill maintains an active Colorado Department of Public Health and Environment (CDPHE) permit authorizing permanent storage of sweeping debris and its use as a daily cover. City employees are only authorized to permanently dispose of sweeper material at the Montrose County Landfill.

Although the entire city can be swept in approximately 50 working days, continuous sweeping operations are not cost-effective or typically warranted. Inclement weather significantly influences the Street & Trail Sweeping Program schedule. Ice and snow accumulation, particularly in residential areas, restrict sweeping activities to late spring through late fall months. Major arterial roads, such as Main Street, Townsend Avenue, and San Juan Avenue, are swept twice each month. Minor arterial roads, such as Park Avenue, Hillcrest Drive, and East Oak Grove Road, are swept once monthly. Collector roads, such as North 9th Street and Odelle Road, are swept once every two (2) months, and residential streets are swept twice each season. Paved alleys and public parking lots are swept as necessary. Concrete recreation trails are swept once every four (4) months.

Sweeping productivity is measured in pass miles swept, which is recorded remotely through an automated vehicle locating system (Zonar) installed on street sweepers. This system is not installed on recreation trail sweeping equipment. This system not only tracks miles each sweeper travels, but also records broom activation/deactivation. Productivity can be influenced by inclement weather, equipment malfunctions, and staffing shortages. Productivity is tracked annually and compared to previous years of productivity to create predictable trends. Typical annual pass miles are approximately 1,300 to 1,700. As the transportation network grows, the sweeping level of service will decline unless budget, staffing, and equipment grows proportionately.

Sweeping operations, by nature, are hard on equipment. For this reason, street sweepers are replaced more frequently than most fleet assets. New street sweeper prices vary between \$250K - \$400K. Operators and fleet mechanics maintain these assets meticulously to extend the service life of each as long as possible.

City staff makes every effort to inform residents and business owners of street sweeping schedules to encourage them to remove vehicles from streets prior to sweeping operations. The annual street sweeping schedule is posted to the City of Montrose website each year in January and is updated as necessary throughout the year. Reminders are posted on the City of Montrose website home page periodically. Announcements are made during televised City Council meetings prior to beginning street sweeping operations in a new portion of the city. Signs are posted at strategic locations to inform residents of upcoming street sweeping operations. Commercial, business, and industrial district streets are swept early in the morning to minimize business impacts. Streets sweeping operations are not effective when parked vehicles prevent sweepers from removing debris from curb flowlines and street surfaces. As a last resort, the Public Works Department has authority to implement, post, and enforce "No Parking" signage to clear streets of vehicles prior to street sweeping operations.

STREET SWEEPING ROUTES

The annual Street Sweeping Operation Schedule map divides the City into four areas: north, south, east, and west. Areas contain similar route mileage and can be swept in approximately the same length of time. All streets in each area are swept, including arterials, collectors, residential streets, municipal parking lots, and paved alleys. Sweeping to support special events is completed on an as-needed basis. The annual Street Sweeping Operation Schedule map and Recreation Trail Sweeping Operation Schedule map are available for review and download on the City of Montrose website at:

www.CityofMontrose.org/157

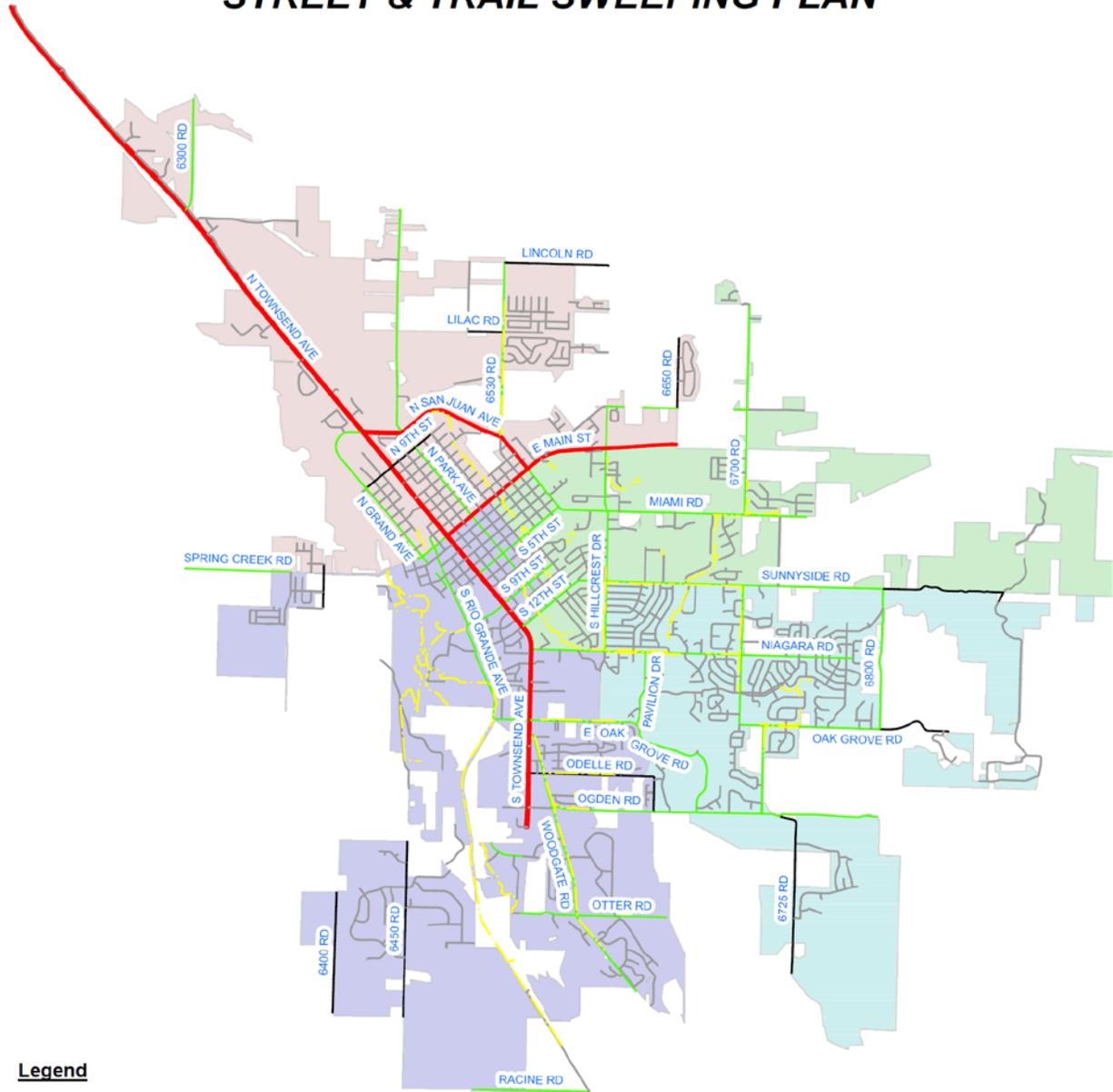
TRANSPORTATION NETWORK GROWTH

Growth and expansion of the transportation network are problematic if the sweeping operation fails to grow and expand accordingly. As additional streets and recreation trails are added to the transportation network, the completion of sweeping operations takes longer. Historically, the City of Montrose transportation network has grown, while budget constraints have prevented the sweeping operation to grow accordingly. This resulted in a noticeable decline in the level of service.

Development within the City's growth boundary has generally been to the south, while sweeping operations are staged from the Public Works facility near the north end of Montrose. As development continues south, sweeper travel time increases. In addition to increased sweeper operating costs associated with these additional travel times, fewer sweeper pass miles are completed daily. In the future, it will be necessary for the City to consider the construction of satellite facilities to efficiently provide sweeping services.

Prior to the economic recession of 2007 – 2009, the City's transportation network grew at an approximate rate of four (4) centerline miles and ten (10) lane miles each year. This network growth rate adds approximately one week to each sweeping cycle through the City. In recent years, growth has slowed, allowing the sweeping schedule to stabilize. Before growth resumes to pre-recession rates, additional sweeping operation staff and equipment will be necessary to continue providing a high level of service.

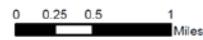
2016 STREET & TRAIL SWEEPING PLAN



Legend

- CONCRETE RECREATION TRAIL
- MAJOR ARTERIAL
- MINOR ARTERIAL
- COLLECTOR
- RESIDENTIAL
- SWEEP DISTRICT**
- APR/AUG
- MAY/SEP
- JUN/OCT
- JUL/NOV

STREET USE	NO. OF SEGMENTS	CENTERLANE MILES	LANE MILES
COLLECTOR	62	8	17
MAJOR ARTERIAL	153	18	43
MINOR ARTERIAL	410	35	72
RESIDENTIAL	1424	114	227



Date: 1/21/2016