
# High Diversion Mixed Waste Materials Recovery Facility (MRF)

## Western Placer Waste Management Authority

# About WPWMA

## Solid Waste Joint Powers Authority

- Established in 1978 through an exercise of joint powers between the cities of Lincoln, Rocklin, and Roseville and the County of Placer.
- Where all solid waste generated from the growing Western Placer County is received for recycling, composting, and disposal.
- Facilities include the only active landfill in the County, a mixed-waste Materials Recovery Facility, Construction & Demolition processing, composting, Household Hazardous Waste, public drop off, recycling buy-back, and energy creation.


WESTERN PLACE
WASTE MANAGEM
AUTHORITY


WPWMA
EST. 1978
PAYMENT METHODS
CASH
CHECKS
APPLE PAY, ANDROID PAY,
GOOGLE PAY
CREDIT CARDS
EXCEPT
AMERICAN EXPRESS


Peterbilt
New Tipping Fees Effective July 1, 2024
4th of July Hours 7am–3pm
HHW & Buyback Closed
ALL NON-ACCOUNT CUSTOMERS MUST PROVIDE A SECURITY DEPOSIT NO EXCEPTIONS
PAYMENT METHODS
CASH
CHECKS
APPLE PAY, ANDROID PAY, GOOGLE PAY
CREDIT CARDS
EXCEPT AMERICAN EXPRESS


WPWMA
SPALECK
SPALECK
United Rentals
ER 4 FINAL


SW MRF IMPROVEMENTS
ASTE MANAGEMENT AUTHORITY


3
3
2
30
30


0380

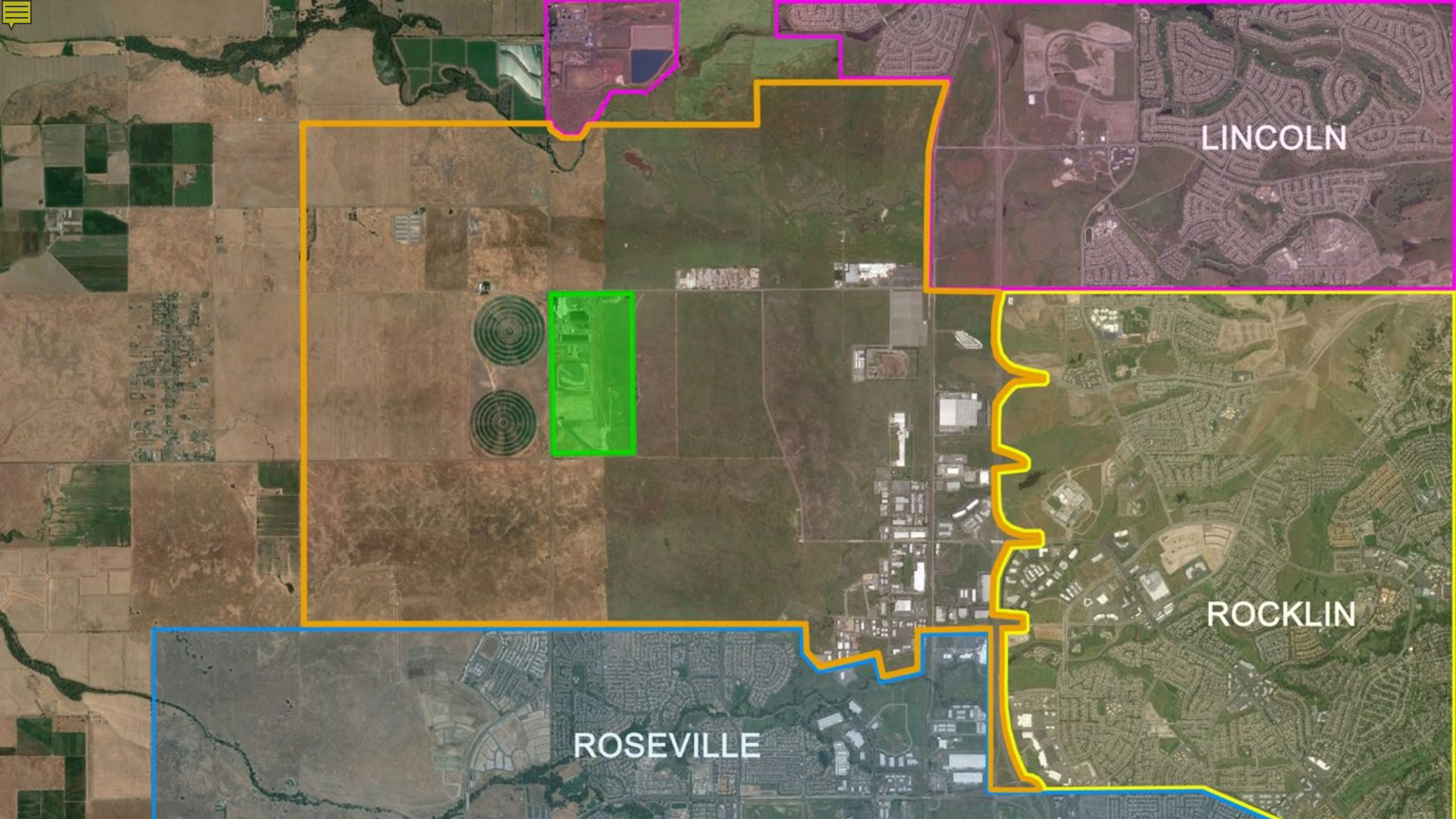

CAT
TRASH
TALKER

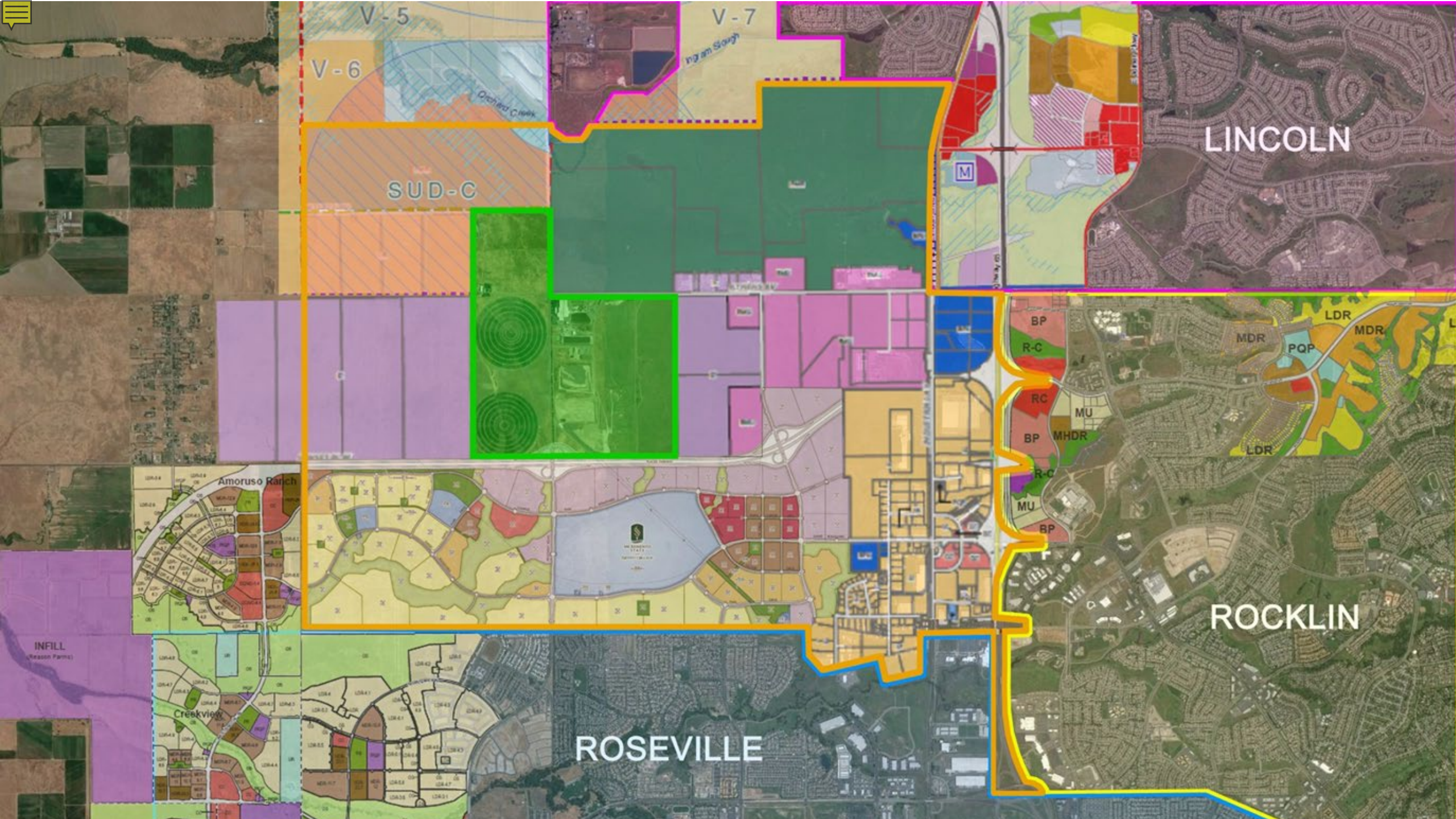

P.E.T
Western Conveyor


MICROBAN
24 HOUR
SANITIZING
SPRAY


Circular Economy
Innovation Competition
Innovating waste into repurposed value
Powered by
CARLSEN CENTER
CARLSEN CENTER
INNOVATION & ENTREPRENEURSHIP
SACRAMENTO STATE
DATE 4/24/24
PAY TO THE ORDER OF Fiber Global Inc.
$20,000.00
Twenty Thousand Dollars no/100
DOLLARS
FOR 1st Place


WPWMA
EST. 1978


LINCOLN
ROCKLIN
ROSEVILLE


V-5
V-6
V-7
Orchard Creek
Ingram Slough
SUD-C
LINCOLN
M
BP
R-C
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MHDR
LDR
MDR
PQP
Amoruso Ranch
INFILL
Creekview
ROSEVILLE
ROCKLIN


WPWMA


(FUTURE)
LANDFILL
MRF
C&D
PUBLIC
COMPOST
LANDFILL
(FUTURE)
COMPATIBLE
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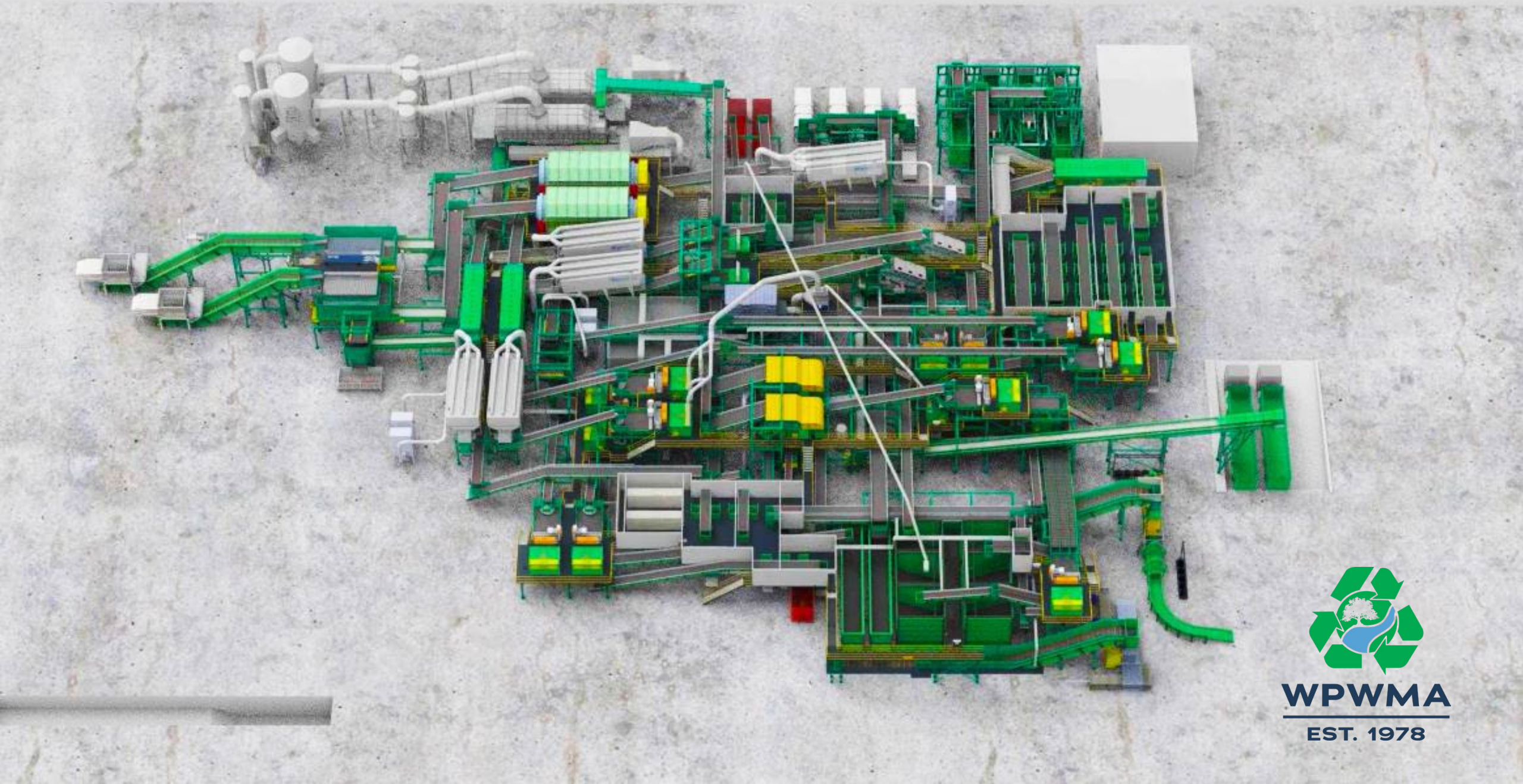
(FUTURE)
COMPATIBLE
MANUFACTURING


TEREX
United Rentals
SUNBELT RENTALS



WPWMA

EST. 1978

# High-Diversion MRF to Comply with SB 1383

## The WPWMA's path to compliance with no changes to the existing mixed-waste collection & processing

- While many communities are requiring their residents and businesses to source separate organic waste to comply with SB 1383, the WPWMA's jurisdictions will continue to utilize a mixed-waste collection and processing system for recyclables **and now for organic waste too**.

- This is to guarantee we are meeting the goals of SB 1383 (to reduce the amount of organic waste that is landfilled), placing the burden of regulatory compliance on the WPWMA not on the resident or customer.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Lincoln
ROCKLIN
CALIFORNIA
CITY OF
ROSEVILLE
CALIFORNIA
COUNTY
OF

# De-bagging, size reducing, and splitter screens

- Upon arrival at the MRF, material is loaded into **size reducers** (slow moving shredders) that rip open bagged material to liberate organics and recyclables.

- The **splitter screens** are positioned directly after the size reducers to target the liberated organics fraction:
  - Smaller than 2 – 3” organic rich “fines” are conveyed downstream for further processing and refining.

- Also, by removing a majority of the organic-rich material early in the process, the system also produces consistently cleaner recyclables.

# Trommel Screens

- These **3D trommel screens** help to separate materials into various sizes.
  - This machine is essentially a large, rotating barrel lined with holes.
  - The holes are 3-dimensional, only allowing material that is smaller than 16” x 16” x 16” to pass through, separating the larger than 16” material from the smaller for different sorting.

# Drum Screens (Anti-Wrap Screens)

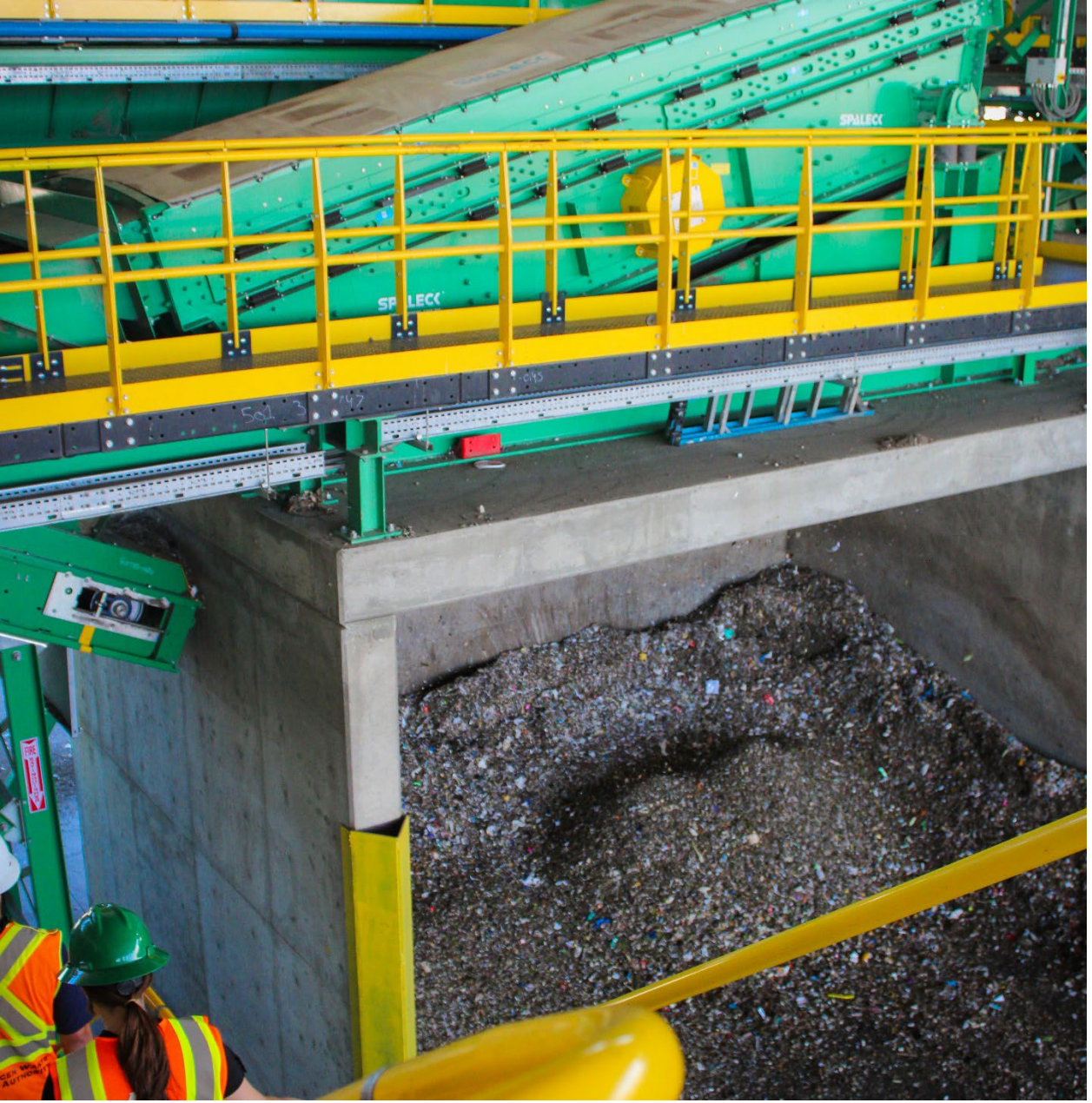
- These **drum screens** are positioned next to target the remaining organics in the material stream that were missed by the splitter screens.
  - Organic material falls between the rotating screen discs and other recyclable material glides along top.
- These screens also separate the larger than 5” non-organics from the smaller than 5” organics to produce cleaner streams overall.

# Air Density Separators

- These **air-powered density separation units** are positioned both on the larger than 5” fraction and the smaller than 5” fraction lines following the drum screens to recover wood and metal materials, in addition to isolating the remaining organic fractions (by density) to the correct downstream equipment for further recovery.
  - These look like large metal boxes where a jet-stream of air is immediately blown on the materials and lighter material floats inside the box with heavies immediately dropping.

# Eddy Currents & Magnets

- **Eddy current separators** give off an electric charge that attracts non-ferrous metals (aluminum), causing the attracted metal to leap off the line into the eddy current's storage bunker.
- The **cross-belt magnets** are positioned in six different locations to attract ferrous metals of various sizes and densities across the several stages throughout the system.



# 3D Vibrating Screens

- These **3D vibrating screens** are positioned on the 2 – 5” organics fraction line to remove remaining non-organics and generate a consistent organics-rich stream that combines with the smaller than 2 – 3” organics stream recovered from the **splitter screens** at the beginning of the process.
- The non-organic material passes along the top to additional sorting equipment.

# Elliptical Separators

- Two **elliptical separators** are positioned on the larger than 5” fraction of the material stream as a secondary sorting mechanism.
  - These screens separate 2D materials (including film plastic and paper) from 3D materials (including bottles, cans, and cardboard) using a circular motion like the exercise equipment.
  - These screens even separate additional organic fines that fall below the unit onto a collection conveyor belt.

- These units act as a redundant final recovery stage for upstream components to target any remaining materials that may have been missed by other components.

# Optical Sorters

- 14 **optical sorting machines** are positioned throughout the system to collect various material the machines are programmed to divert using either a positive sort (aiming for desired materials) or a negative sort (aiming to rid the materials stream of contamination).
  - These machines are powered using AI and extremely high-resolutions sensors (similar to a camera lens) that can accurately process in micro-seconds, determining whether to eject a material to a new sorting line, or not and allow the material to pass through.
  - These machines can sort between 200 – 600 items per minute and will be used to collect commodities including glass, fibers, various grades of plastic, and more.

# Covered Conveyor Belt & Covered Aerated Static Pile (CASP) Composting

- Once all the organic fines have been diverted from the material stream, they are combined on a covered conveyor belt and directed to the composting area of the WPWMA's campus.
- Once there, all MRF fines are immediately composted in a covered aerated static pile system to optimize composting timelines and reduce the potential for pungent odors from the fines.

# Densimetric Table

- After the MRF fines have completed composting (~4 weeks) the completed material will be run through a **densimetric table** to remove any remaining contaminants (that will have not composted/broken down like the organic materials), specifically targeting glass, stone, metal, hard plastics, and plastic produce stickers.
    - This system can effectively remove more than 98% of contaminants from the compost.
- The densimetric table is set on an incline and uses vibrating motion and air to separate compost from contaminant materials.


0050


United Rentals GS-1930
SJ3226
SKYJACK
XR 2450
F-126
Bollegraaf

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