# <image><image>

# LANDFILL

Biosolids fertilize grass fields and forest

NEW LEVEL OF SUCCESS Cold planer improves production by 40%

## **CATERPILLAR®**

9083

# INSIDE JOB

Switching attachments is a snap with hydraulic quick coupler

he hydraulic quick coupler option for select compact machines enables operators to engage attachments from inside the cab. The option is available on the 226D, 232D, 236D, 242D Skid Steer Loaders, 239D, 249D, 259D Compact Track Loaders and 257D Multi Terrain Loader. This means that attachments are switched quickly and easily every time.

The process is simple:

- The operator tilts the coupler forward, slowly drives into the attachment, then lifts and tilts the coupler back to enable the attachment to fully seat.
- Press and hold the quick coupler switch inside the cab to engage the pins.
- To make sure the attachment is secure, the operator tilts the attachment downward onto the ground, puts pressure on the attachment, and then back drags it on the ground to be certain there is no movement between the attachment and the coupler. The operator should also lift the attachment and visually check to determine that the pins are engaged.

That's all there is to changing an attachment. Within minutes, the machine is ready to tackle another job.

When engaging hydro-mechanical attachments, coupling of the attachment can be done inside the cab, but hydraulic lines from the attachment must be connected to the machine's auxiliary hydraulic connectors.

Be sure to consult the operator's manual for specific instructions for each type of attachment.

Visit our dealership or Cat.com/governmental

to learn how the hydraulic quick coupler option for compact machines enables your agency to quickly and easily change attachments to complete a wider variety of jobs. 🕸







All for One Manage a variety of machines through a single system: VisionLink®



#### On the Cover:

Randy Gray, residuals supervisor, Eugene, Oregon, Public Works and Wastewater Departments, utilizes a Cat® 586C Site Prep Tractor for a variety of jobs, including biosolids aeration, pruning branches and grinding stumps.

**8** More for Your Money

Attachments make multiple jobs possible with a single machine



#### **Right for the Job** 12

950 GC Wheel Loaders fuel efficient, reliable on the worksite

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#### Now You See Them

Technology easily, dependably improves ground personnel safety

**The Season Ahead** 

Snow wings increase motor grader versatility

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#### CAT.COM/GOVERNMENTAL

Cat.com/governmental includes specifications for all machines. Download them or contact our dealership. Check this out and more at Cat.com/governmental.

OF SUCCESS Cold planer improves production by 40 percent

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PM620

R&B DIST. 4



A Cat® PM620 Cold Planer milled two inches of existing pavement alongside the curb and gutter on a 780-foot stretch of Study Lane in Carrollton, Texas. In an instant, extensive alligator cracking disappeared. At the road's crown, three inches or more was milled, and an elevated, wavy, utility cut was gone.

After milling, the crew marked base failures that needed to be addressed. The cold planer excavated six inches deep for the repairs to be made.

The Dallas County Road & Bridge District 4 crew removed an estimated 350 tons of asphalt in a single day in preparation for an overlay to ready the street fronting R.E. Good Elementary School for the start of a new school year.

The cold planer, which was purchased last year, has improved production by approximately 40 percent. "You can turn up the drum motor a little bit faster, and it cuts cleaner because it has more teeth," says Michael Gonzales, Road Manager.

#### **Always Working**

The PM620, which has been as dependable as the sun rising in the east, replaced a cold planer that was more than 15 years old. "A machine that old, it's hard to predict when it's going to go down," notes Gilbert Aguilar, Road & Bridge District 4 Superintendent.

"When we first took delivery, one of the things that we noticed immediately was how quiet the machine is when it's milling. We've had instances in the past when we started early in the morning and citizens complained, so that is important," Aguilar says. "The other thing that we noticed, the dust levels are low. We've had no complaints about dust with the machine."

The machine mills concrete just as well as it does asphalt. "When it





When you mill, there can be a real rough road. With this machine, it's a lot smoother. It's a nice surface ride when we're done.

> MICHAEL GONZALES ROAD MANAGER DALLAS COUNTY ROAD & BRIDGE DISTRICT 4

(Continued on Page 6)

goes from asphalt to concrete, we really don't see a difference. When we got into concrete in the past, we'd hear it, feel it, and see it," Aguilar says.

The PM620 features stop-andgo lights to help truck drivers gauge their distance from the cold planer. This prevents trucks from bumping the machine, or milled material from missing the truck bed because it's too far away. "When the light turns green, they know they need to move up a little bit. If it is red, they are too far away," Gonzales says.

A standard rear view camera helps improve safety. The camera enables the operator to see workers on the ground, other machines, and cars that are behind the cold planer.

Cat Connect monitors machine health and performance, and alerts Cat dealership, Holt Cat, when there is a potential problem. "Cat Connect alerted the dealer that the air filters and some fluids needed to be changed," Gonzales says. "That helps minimize downtime."

The PM620 has improved the quality of milled surfaces, which in turn creates smoother driving surfaces. "When you mill, there can be a real rough road. With this machine, it's a lot smoother. It's a nice surface ride when we're done," Gonzales says.

The crew milled two to six inches off Study Lane, depending upon how many layers of asphalt had been placed. "This road has two or three layers of asphalt on it," Gonzales states.

All milled materials were recycled. "It cuts much cleaner than the old machine. Milling material that we send to be recycled is much finer, not big chunks like we used to send," Gonzales says.

After base failures were repaired, the crew paved. Type D asphalt, with 3/8-inch aggregate, was placed. A one-inch lift was laid, followed by a two-inch overlay.

#### DISTRICT SPECIALIZES IN ASPHALT WORK

The Dallas County Road & Bridge District 4 performs road work for a half dozen or so smaller cities within the county that don't have their own asphalt road maintenance crews.

The municipalities solicit bids for the road work, and District 4 bids on the jobs the same as private contractors. However, the district crew performs the work on an actual cost basis. "We do everything we can to complete the work within budget. We



**Gilbert Aguilar** 

reimburse whatever money is left over after we complete the project," says Gilbert Aguilar, Road & Bridge Superintendent.

Road & Bridge District 4 focuses strictly on asphalt work. "We do milling, sweeping, crack sealing, and overlays. We don't perform concrete paving work. Cities that we work for will contract that work out, whether it's curb and gutters or drive approaches," Aguilar notes.

Major jobs completed by the district crews range from approximately \$20,000 up to \$1.8 million. "We're currently working with a small city that passed a \$4 million bond program. Over the next three or four years we'll be performing all the overlays in that city until all the streets are milled and overlaid," Aguilar says.

Paving season lasts from spring through fall in Texas, which enables the district to run a paving crew. During winter months, the crew focuses on crack sealing and other maintenance activities.

#### **Lesson Learned**

When Dallas County Road & Bridge District 4 purchased the PM620, training on machine use was written into the specs. "We want to do everything that we can to be productive and have a safe piece of equipment as quickly as possible," Aguilar says. "Caterpillar and Holt Cat did a really good job."

Road & Bridge District 4 employees received 32 hours of classroom and field training. "They came out to our jobsite several times, and worked closely with our employees to put them at ease with the machine," Aguilar notes. "The guys became comfortable with the screens and computerized equipment a lot faster than I thought they would."

Crew members have found the new machine easier to use. "We're taking our work to the next level with this machine," Gonzales says. 🕏



# ALL FOR ON =

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Manage a variety of machines through a single system: VisionLink®

CATERPILLAR

New Cat<sup>®</sup> Connect hardware and software enables you to connect all your agency's machines—from large earthmovers and motor graders to trucks and utility vehicles. New Cat Product Link<sup>™</sup> technologies connect any brand and type of equipment, powered or non-powered, and all report through a single system: VisionLink<sup>®</sup>.

The new technologies provide multiple communications channels—cellular, satellite and Bluetooth—to best match the machine type and the needs of the agency. Systems are designed for easy installation using plug-and-play technology and apps for mobile devices. Battery backup for machine-powered devices and long-life batteries for units on non-powered assets help ensure reliable operation.

The new Product Link device for monitoring production machines has scalable features that enable increasing data collected as needed—from machine hours and location through machine health parameters, production numbers and fuel consumption.

In contrast, a new tracking device for non-powered assets, such as attachments and trailers, reports location only. The innovative device uses Bluetooth technology to connect with VisionLink, which enables managers to monitor equipment remotely using smart phones, tablets and desktop computers.

UTILIZATION

WORKING

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The new truck monitoring hardware can be retrofitted for all brands of light and heavy-duty trucks, including pickup trucks, service trucks and material haulers. Using cellular technology, the system can provide information to enhance driver safety and to assist both production and maintenance managers.

Consult the experts at our dealership or visit **Cat.com** to learn more about the ways VisionLink can help you better manage your agency's assets.  $\mathfrak{B}$ 



# MORE FOR YOUR MONEY

Attachments make multiple jobs possible with a single machine

Compact machines (skid steer loaders, multi terrain loaders, and compact track loaders) can be utilized in many different ways. Attachments increase this versatility, and enable your agency to complete multiple jobs with a single machine.

**Augers** – Cat<sup>®</sup> augers are available in different speed and torque options for work in a variety of soils. Auger bits (including tree bits and bolt-on rock head bits)



**Brooms** – Angle brooms move and windrow debris

aside. Pickup brooms gather

debris and feature a gutter

brush for close-to-the-curb

cleaning. Utility brooms

collect light debris.

enable efficient work in different materials.



**Forks** – Pallet forks quickly transport palletized items. Utility forks are perfect for pierce-able materials like brush.





**Hammers** – Cat hammers each feature an automatic shut-off and buffering system to reduce machine vibrations. Some models are fully enclosed to suppress noise.

**Rakes** – Landscape and power box rakes use hardened teeth to pulverize, aerate, level and condition soil. Landscape rakes collect debris in a hopper, while power boxes windrow debris for easy cleanup. Industrial grapple rakes gather larger materials.



**Stump Grinders** – Available in standard and high-flow models to best match your application. Cutting wheels feature bolt-on carbide teeth for industry leading wood-cutting and efficiency.



Visit our dealership or **Cat.com/governmental** to learn more about how the rental or purchase of attachments can increase the versatility and types of work that can be completed using your agency's compact machines. The second second

#### BUCKETS OF FUN AT BACKHOE LOADER ROADEO

The inaugural APWA National Roadeo held in Orlando, Florida, in conjunction with PWX, the American Public Works Association's annual Public Works Expo, attracted 67 participants from 17 states, many who had previously won their local or state competitions. Caterpillar co-sponsored the event, which featured winners from two backhoe competitions as well as an overall combined competition:

Overall Winner – Matthew Bishop, Adams Run, South Carolina Tennis Ball challenge – Robert Lyles from Ocala, Florida Pipe Lift Challenge – Nathan Alford of Sumter, South Carolina. The 2018 National Roadeo will be held in August 2018 in Kansas City MO.



#### **APWA CALENDAR**

Upcoming training and education programs from the American Public Works Association (APWA) include:

Oct. 19	The Click, Listen & Learn webinar, ChangeSuccessfully Navigating the Unknown, will be offered at no charge.
Dec. 7	The Click, Listen & Learn webinar, Climate Change: An Overview of Adaption Planning in Southern Ontario and Case Example, will be offered free of charge.

For more information or to register online, visit **APWA.Net/Events**. Questions? Call the APWA's Education Department at 800.848.2792.



#### **NIGP CALENDAR**

Training and educational programs offered by the National Institute of Governmental Purchasing (NIGP) include:

Nov. 1	The class, When Bad Things Happen to Bids: Strategies for Ensuring a Successful Public Construction Project, will be held in Moncks Corner, S.C.
Nov. 8-10	The course, Sourcing in the Public Sector, will be held in Albuquerque, N.M.
Dec. 4-6	The class, Developing and Managing Requests for Proposals, will be offered in Austin, Texas.

For additional information or to register online, visit **nigp.org.** More details are also available by calling 703.736.8900.

# LANDFILL ALERNAINE

Biosolids fertilize grass fields and forest

A Cat<sup>®</sup> 586C Site Prep Tractor pushed material from the Eugene/Springfield Oregon, regional wastewater treatment plant into 150-foot long windrows on an asphalt pad to facilitate drying for eventual use as fertilizer. Tight turns at each end of the windrows were made effortlessly.

Rather than landfilling, Eugene has been landapplying wastewater treatment plant biosolids since the mid-1970s. "This facility is part of the wastewater treatment process," says Randy Gray, residuals supervisor, Eugene Public Works and Wastewater Departments. "The alternative is the landfill. Ultimately, this is less expensive."

The Metropolitan Wastewater Management Commission (MWMC) treatment plant produces 4,800 to 5,000 dried tons of biosolids annually. Approximately 80 percent is used as fertilizer by local grass seed farmers, and the remainder fertilizes an adjacent tree farm called the Biocycle Farm.

Biosolids are pumped into four lagoons (each 6.25 acres and 13.5 feet deep) where the material is stored during the wet, cold months. In late spring and early summer, biosolids are dewatered, then trucked to nearby pads to be dried and processed for use as fertilizer. Windrows facilitate drying.

"Generally, we can apply the material on the fields in late July and early August. After they have harvested their first crop, the fields are ready for replanting," Gray says. "Our product is like dirt. You spread it thin. It has some nitrogen available immediately, but it also has slow release."

Because of the relatively short period of hot, dry weather in the Willamette Valley, biosolids material is mixed daily during warm months to help control odor.

Material is dried, stockpiled, and then hauled by dump trucks to application sites.

#### **Power and Maneuverability**

The 586C Site Prep Tractor replaced a machine that was a bit undersized for the work. "It has the hydraulic capacity and power to mix solids, and it maneuvers better in the drying beds," Gray says. "The operators tell me that it is quieter in the cab."

Mike Danielson, maintenance worker, says that the 586C turns much sharper than previous machines. He likes the cab's comfort, and ease of operation. "You can adjust the speed using your fingertips," Danielson notes. "It's very easy to adjust."

The machine can speed up or slow down, depending upon the thickness of the material.



# It has the hydraulic capacity and power to mix solids, and it maneuvers better in the drying beds.

RANDY GRAY RESIDUALS SUPERVISOR EUGENE PUBLIC WORKS AND WASTEWATER DEPARTMENTS

"It's an excellent machine for the job," Danielson says.

By switching attachments, the machine completes jobs as diverse as pruning branches, grinding stumps and snow removal. A Cat HM825 mulcher is used to mulch pruned branches and clear damaged trees at the Biocycle Farm. The machine's versatility enables it to be very productive, performing multiple tasks. "There are a lot of other uses for the machine," Gray says. "We haven't completely tapped into what we can do with it."

Purchasing the 586C through an NJPA (National Joint Powers Alliance) cooperative purchasing contract saved the agency an estimated \$10,000. The contract streamlined the process because it meets bid requirements, so the agency didn't need to conduct a local solicitation.

Reliability of other Cat machines in the fleet, including a 938K Loader and IT38 Loader, and the high quality service the agency has received from Peterson Cat played a role in the decision to purchase the 586C. "What keeps us coming back, the Cat machines work great and the service that we receive from the dealer," Gray says.

Grass fields and forests thriving adjacent to the plant are testament to the program's success. 🕏

## FOREST WITH A PURPOSE

The Biocycle Farm is a 600-acre poplar tree plantation owned by the Metropolitan Wastewater Management Commission. The farm is adjacent to the Biosolids Management facility in Eugene, Oregon, and is where approximately 20 percent of the biosolids produced at the facility are spread as fertilizer.

The site was purchased in 2000 to help ensure there is always a place to utilize biosolids. Poplar trees were planted beginning in 2004, and now encompass 400 acres. Poplar trees were selected because they are fast growing and have a high nitrogen uptake rate.

"Because the trees have a higher uptake rate, we can have a higher application rate than a grass field," says Randy Gray, residuals supervisor, Eugene Public Works and Wastewater Departments. "Trees will take up to 220 pounds per acre of nitrogen, where a typical rye grass field will be about 120. This saves time and money on application costs."

The Biocycle Farm's goal is to ultimately recoup the cost of planting and harvesting trees by selling wood products, such as chips and saw logs.

# **FOR THE JOB**

#### 950 GC Wheel Loaders fuel efficient, reliable on the worksite

A steady stream of dump trucks hauling gravel moved from the Town of Richford, New York, Highway Department's screening plant to the onemile section of township road under construction this summer.

As part of the construction of the oil and stone roadway, the highway department placed a 12-inch base course of two-inch minus gravel. A Cat® 950 GC Wheel Loader with a four and one-half foot general purpose bucket loaded gravel into the screening plant's hopper day after day to keep pace with the construction.

The wheel loader is much more fuel efficient than the machine that it replaced, says Michael Hunt, highway superintendent. The Engine Idle Management System, Engine Idle Shutdown and on-demand cooling fan provide the 950 GC with outstanding fuel efficiency.

When the highway department solicited bids for a new wheel loader, the 950 GC Wheel Loader was the low bid. The machine was delivered in July. "It has a smooth ride," says Hunt. "The operators like it."

In addition to loading the hopper at the screening plant, the highway department plans to use the wheel loader to load sand, salt and other materials into trucks. The 950 GC Wheel Loader's best-in-class 13-foot, nine-inch hinge-pin height and 12-foot loader arm provide ample clearance for loading high-wall truck beds/trailers and charging large hoppers. The loader is well-suited for utility work, material handling and a wide variety of other governmental applications.

Powerful Z-bar loader linkage, pilot hydraulic controls, and simplified gauge cluster help the machine fit within a governmental agency budget.

Additional 950 GC Wheel Loader features include:

- Load sensing hydraulics provide hydraulic flow and pressure on demand
- Performance Series buckets provide 10 percent higher bucket fill
- Standard rear-vision camera enhances safety
- 241 hp max power
- Cat C7.1 ACERT diesel engine Tier 4 Final compliant
- 41,644 lb operating weight

Visit our dealership or **Cat.com/governmental** to learn how the 950 GC Wheel Loader can improve your fleet's versatility and help you work within your agency's equipment budget. **S** 



#### Technology easily, dependably improves ground personnel safety

S afety is paramount for your governmental agency. When machines and ground personnel mix, this can be a challenge. Cat<sup>®</sup> Detect for Personnel is an easy way to help ensure that everyone goes home safely at the end of the day.

Radio Frequency Identification (RFID) technology is placed within protective equipment such as safety vests or hard hats, and an antenna is installed in equipment to communicate with the RFID tags.

If an operator reverses a piece of equipment installed with an antenna, they will be alerted inside the cab with a visual and audible alarm when a ground worker is behind them. The loud audible alarm outside of the cab also alerts the ground worker of their interference into the detection zone behind the equipment.

Cat Detect for Personnel Benefits:

• Any vehicle equipped with the system's antenna will detect any ground worker, on any jobsite, wearing a Cat Detect for Personnel-equipped safety vest or hard hat.

- Bright visual display and audible alarm warn operators when tagged personnel enter the detection zone.
- No false alarms. The system only detects objects that are tagged with RFID.
- The technology is highly accurate, and able to detect personnel when upright as well as crouching or bent over. The tags stay with ground personnel as they move, wherever they go.
- The system utilizes wireless communication between units, and is easy to install.
- Cat Detect for Personnel is low maintenance. Passive RFID technology requires no charging. Self-diagnostics ensure reliability. Tagged items are washable.

Visit our dealership or **Cat.com** to learn more about Cat Detect for Personnel and how it improves jobsite awareness between machine operators and ground personnel to improve your agency's safety. <sup>®</sup>





# PRETTY SLICK

Properly greasing your backhoe loaders is essential for keeping uptime high. Here are five tips to help ensure your machines are greased correctly:

- Backhoe loaders are joint-intensive machines with many pivot points. Refer to the operator maintenance manual and service plates to ensure that all grease fittings are serviced. Missing critical joints can gall pins and wipe out bushings or bearings.
- The backhoe swing system is typically the most highly loaded machine system. Consequently, swing system pins and bearings need special attention to avoid undue wear.
- Pins and bushings that work in the dirt must be greased daily.
- Use the specified type of grease to ensure long life of major wear areas. There are a

variety of greases to match the application and temperature of the geographic region where your agency is located. Make sure

that the grease your agency uses is right for your region and machine use.

• Improper greasing can create as many problems as it solves. Wipe grease zerks clean prior to greasing to avoid pumping dirt into the joint. Use the proper amount of grease. Dirt and dust stick to excess grease.



## THE SEASON AHEAD

Motor graders are an excellent tool for clearing snow. With attachments, Cat<sup>®</sup> motor graders can complete jobs as diverse as clearing and widening traffic lanes, benching along guard rails and cleaning up along parking areas and entrances. Attachments include snow wings, V-plows, angle blades, hydraulic angle snow blades, straight blades and U/V angling blades.

The form, fit and functionality of the Cat Mastless Snow Wing provides industry-leading capabilities with proven technology to create an ergonomic snow-clearing experience. The mastless snow wing has a compact transport position, folding up within the width of the grader. Eight arrangements are available for utilization in a variety of settings.

Visit our dealership or **Cat.com/governmental** to learn how snow wings and other snow removal attachments can help your agency utilize your motor grader fleet to more effectively clear snow this winter.



### LEASING PROVIDES FLEXIBILITY

When acquiring machines, there are many options available. Each has unique advantages. Leasing enables your governmental agency to obtain necessary equipment for a fixed monthly payment that lasts for a specified time period. This can be a great help when working with a tight budget. Additional benefits of leasing:

**Improved cash flow** – Leasing saves your agency from a major capital outlay. This frees resources for additional machines, projects and other expenses.

**Lower risk** – When the lease is complete, simply return the machine. This eliminates the risk of an aging machine in your fleet becoming obsolete and standing idle, depreciating in value.

**Increased flexibility** – Because your agency isn't committed to a machine past the life of the lease, you are free to upgrade equipment. This enables you to add more efficient and emissions-compliant machines to your fleet immediately.

**Control repair costs** – Warranty coverage typically lasts the duration of an agreement. If there are mechanical problems, your agency generally isn't responsible for repair costs.

**Minimize monthly payments** – A tax lease can reduce monthly payments. Your lender can work with your agency to structure a tax lease that fits your budget.

Contact our dealership or visit **Cat.com/governmental** to learn more about leasing and the other machine acquisition options available to help your agency operate cost effectively.



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### FLEET MANAGEMENT MADE SIMPLE

Fleet management is one of every agency's top goals. Cat<sup>®</sup> Product Link<sup>™</sup> is an easy, effective way to improve fleet management. The telemetric system provides accurate, timely, and useful information about the location, utilization, and condition of your machines.

Product Link transmits fleet information via cell and satellite. The corresponding web-based application, VisionLink<sup>®</sup>, enables customized health and utilization reports delivered to your computer, tablet and/or smart phone.

Visit our dealership or **Cat.com/governmental** to learn how to use Product Link and VisionLink to improve your agency's fleet management.



### **CATERPILLAR®**



### MEETING YOUR AGENCY'S FINANCIAL NEEDS

With flexible terms, up to 100 percent financing for qualified entities, nonappropriations clauses, and insurance support, Cat Financial helps meet the specific financial needs of governmental agencies. Whether you're buying equipment, protecting your investment, managing your accounts, or preparing for the future, the comprehensive financing and insurance solutions at Cat Financial can help make the most of your agency's resources.

Visit our dealership or **CatFinancial.com** to learn more about the services available to help reach your agency's budgetary objectives.