Washington State Department of Commerce

Priority Climate Action Plan (PCAP)

March 1, 2024

POLICY

Washington State Department of Commerce has partnered with the following individuals to produce this Priority Climate Action Plan (PCAP) to support investment in policies, practices, and technologies that reduce pollutant emissions, create high-quality jobs, spur economic growth, and enhance the quality of life for all Washingtonians. We thank you for your time, expertise, and commitment to climate action planning in Washington.

Acknowledgments

Washington State Department of Commerce

Sarah Vorpahl
Federal Policy and Program Alignment Manager
sarah.vorpahl@commerce.wa.gov

Dina Geiszler
Climate Pollution Reduction Grant Program Manager
dina.geiszler@commerce.wa.gov

1011 Plum St. SE
P.O. Box 42525
Olympia, WA 98504-2525
Tel: (360) 725-4000

www.commerce.wa.gov

Washington State Department of Ecology

Leonard Machut
Interim GHG Inventory and Transportation Section Manager
leonard.machut@ecy.wa.gov

Stacey Waterman
Climate Policy and Emissions Analyst
swat461@ecy.wa.gov

Ned Ende
Environmental Planner
ned.ende@ecy.wa.gov

Daniel Lawler
Climate Mitigation and Land Use Planner
daniel.lawler@ecy.wa.gov

Rylie Ellison
Environmental Specialist
rylie.ellison@ecy.wa.gov

Coordination and outreach
In the development of this PCAP, Washington collaborated with various tribal governments, state and local governments, and representatives of the entities, groups, and individuals who may be impacted by implementation of this PCAP. These included, without limitation:

- Tribal governments
- Other state agencies
- Metropolitan planning organizations
- Economic development organizations
- Environmental advocates
- Industrial associations
- Automotive associations
- Utilities
- Agricultural associations
- Waste management organizations
- Industrial organizations
- Consumer advocates
- Local elected officials
- Community-based organizations
- Chambers of commerce
- Residents of Washington state
- Other interested organizations

This project has been funded wholly or in part by the United States Environmental Protection Agency (EPA) under assistance agreement 02J30901 to Washington State Department of Commerce. The contents of this document do not necessarily reflect the views and policies of the EPA, nor does the EPA endorse trade names or recommend the use of commercial products mentioned in this document.

For people with disabilities, this report is available on request in other formats. To submit a request, please call 360-725-4000 (TTY 360-586-0772)

Contents

List of Figures

List of Tables

Key Terms, Abbreviations, Acronyms and Definitions

Climate: the "average weather" generally over a period of three decades. Measures of climate include temperature, precipitation, and wind.

Climate change: any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period of time (decades or longer). Climate change may result from natural factors and processes and from human activities that change the atmosphere's composition and land surface.

Climate Pollution Reduction Grant (CRPG): one of many federal funding opportunities created through the Inflation Reduction Act (IRA) and run through the U.S. Environmental Protection Agency (EPA). This program provides grants to states, local governments, tribes, and territories to develop and implement plans for reducing greenhouse gas (GHG) emissions and other harmful air pollution.

Commerce: The Washington State Department of Commerce**.**

Comprehensive Climate Action Plan (CCAP): a narrative report that provides an overview of the grantees' significant GHG sources/sinks and sectors, establishes near-term and long-term GHG emission reduction goals, and provides strategies and identifies measures that address the highest priority sectors to help the grantees meet those goals.

Environmental Justice (EJ): according to RCW 70A.02.010 (8) means the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, rules, and policies. Environmental justice includes addressing disproportionate environmental and health impacts in all laws, rules, and policies with environmental impacts by prioritizing vulnerable populations and overburdened communities, the equitable distribution of resources and benefits, and eliminating harm.

Ecology: The Washington State Department of Ecology.

Global warming: average increase in the temperature of the atmosphere, which can contribute to changes in global climate patterns. Global warming can occur from a variety of causes, both natural and human induced.

Greenhouse gas (GHG): any gas that absorbs infrared radiation in the atmosphere; examples include carbon dioxide, methane, nitrous oxide, ozone, and water vapor.

Low-Income/Disadvantaged Community (LIDAC): communities with residents that have low incomes, limited access to resources, and disproportionate exposure to environmental or climate burdens. EPA strongly recommends CPRG grantees use the Climate and Economic Justice Screening Tool (CEJST) and the Environmental Justice Screening and Mapping Tool (EJScreen) to identify LIDACs in their communities. These tools identify LIDACs by assessing and combining indicators such as: pollution exposure, climate change risks, environmental hazards, health impacts, socioeconomic factors, and more. Terms from Washington environmental justice laws include vulnerable populations and overburdened communities.

Metropolitan Statistical Area (MSA): metropolitan statistical areas as defined by the U.S. Census 2020 MSA population.

Overburdened Community: according to RCW 70A.02.010 (11) means a geographic area where vulnerable populations face combined, multiple environmental harms and health impacts, and includes, but is not limited to, highly impacted communities as defined in RCW 19.405.020.

Priority Climate Action Plan (PCAP): a narrative report that includes a focused list of near-term, high-priority, and implementation-ready measures to reduce GHG pollution and an analysis of GHG emissions reductions.

Vulnerable Populations: according to RCW 70A.02.010(14) means population groups that are more likely to be at higher risk for poor health outcomes in response to environmental harms, due to: adverse socioeconomic factors, such as unemployment, high housing and transportation costs relative to income, limited access to nutritious food and adequate health care, linguistic isolation, and other factors that negatively affect health outcomes and increase vulnerability to the effects of environmental harms; and sensitivity factors, such as low birth weight and higher rates of hospitalization. Vulnerable populations includes but is not limited to: racial or ethnic minorities; low-income populations; populations disproportionately impacted by environmental harms; and populations of workers experiencing environmental harms.

WSDOT: The Washington State Department of Transportation.

Executive Summary

The State of Washington (Washington) received funding through the U.S. Environmental Protection Agency (EPA) Climate Pollution Reduction Grant (CPRG) to develop plans to reduce greenhouse gas (GHG) emissions and other harmful air pollution. The CPRG planning grant enables states, metropolitan statistical areas (MSAs), and tribal governments to develop a Priority Climate Action Plan (PCAP), followed by a Comprehensive Climate Action Plan (CCAP) and Status Report (state and MSAs only), over a four-year period through 2027. EPA requires that all PCAPs include a GHG Inventory, quantified GHG reduction measures, a Low Income and Disadvantaged Communities (LIDAC) Benefits Analysis, as well as a review of authority to implement each measure.

Washington also received funding for an MSA grant. The Puget Sound Clean Air Agency (Agency or PSCAA) is serving as the Lead Entity for the Phase 1 CPRG Planning Grant on behalf of the Seattle-Tacoma-Bellevue MSA, which covers all cities and counties in the four-county region of King, Kitsap, Pierce, and Snohomish counties. Skamania and Clark counties are included in the Portland, OR metro area MSA grant.

The Washington PCAP presents a focused list of measures to reduce GHG emissions and harmful air pollution and maximize the benefits of climate action in overburdened communities in Washington. Many of the quantified priority measures contained in this PCAP are based on existing state, local and tribal, climate and clean energy plans and programs.

The Department of Commerce (Commerce) was responsible for developing the PCAP, in partnership with the entities named in the Acknowledgements section. Commerce is aware that that are many additional priority actions for each sector that could be included in this PCAP and acknowledges that the list of priority measures included in Section 2.2 is not intended to be inclusive of all possible priority actions available to tribes, state agencies and local jurisdictions. Instead, these priority actions focus on measures for which an eligible entity is planning to seek Phase 2 CPRG funding, rather than an exhaustive list of all possible priority measures available to reduce emissions in the state. Commerce and the Washington State Department of Ecology (Ecology) will develop a comprehensive list of GHG measures in the CCAP, based on informal comments received on the PCAP, as well as existing state plans and other sources. A summary of measures that will be explored further in the CCAP can be found in Appendix C. Commerce also coordinated closely with the PSCAA, state agencies, and the Governor's Office, in the creation of the PCAP.

This PCAP was informed by, and is a continuation of, the many climate planning efforts already underway by state, regional, county, and local jurisdictions across Washington. This PCAP serves as a resource and guide for implementing near-term priority GHG reduction strategies and actions in furtherance of CPRG Phase 2 Implementation Grants for tribes, state agencies and local communities in Washington.

1. Introduction

Washington is widely recognized for its leadership in climate and environmental practices. The Climate Pollution Reduction Grant (CPRG) offers an opportunity to enhance the state's climate action goals by identifying policies, practices and technologies to reduce greenhouse gas (GHG) emissions, address environmental injustices through community-driven solutions, stimulate the economy by creating high-quality jobs, and improve air quality for all residents. The Priority Climate Action Plan (PCAP) presented here marks the initial steps toward a state Comprehensive Climate Action Plan (CCAP), scheduled to be completed by the summer of 2025. Collaboration with state and local agencies, tribes, subject matter experts, and the public has been integral to identifying priority measures that are ready for implementation in the PCAP.

This section offers an overview of the CPRG, outlines the PCAP elements, and discusses the scope and development of Washington's PCAP.

1.1 Climate Pollution Reduction Program overview

The CPRG program provides $5 billion in grants to states, local governments, tribes, and territories to develop and implement ambitious plans for reducing GHG emissions and other harmful air pollution. Authorized under Section 60114 of the Inflation Reduction Act (IRA), this two-phase program provides $250 million for noncompetitive planning grants, and approximately $4.6 billion for competitive implementation grants.

Phase 1 of the CPRG program supports states, local governments, tribes, and territories regardless of where they are in their climate planning and implementation process. Planning grant recipients are using the funding to design climate action plans that incorporate a variety of measures to reduce GHG emissions from across their economies in six key sectors (electricity generation, industry, transportation, buildings, agriculture/natural and working lands, and waste management). The required deliverables include:

1. Priority Climate Action Plan (PCAP): due March 1, 2024
2. Comprehensive Climate Action Plan (CCAP): due Summer 2025
3. Status Report: due mid 2027

1.2 PCAP Overview

The Washington PCAP is focused on near-term, high-priority, implementation-ready measures to reduce GHG pollution and an analysis of GHG emissions reduction that could be achieved by 2030. The PCAP is not a comprehensive approach to Washington's GHG reduction strategy; that strategy will be addressed in the CCAP.

This PCAP is organized into the following sections according to the requirements from EPA:

1. Introduction
2. PCAP Elements
    a. Greenhouse Gas Inventory
    b. Greenhouse Gas Reduction Measures
    c. Low Income Disadvantaged Communities Benefits Analysis (including Community Engagement)
    d. Workforce Planning Analysis
3. Next Steps: Comprehensive Climate Action Plan

1.3 Scope of the PCAP

Washington's PCAP includes a list of GHG reduction measures collected from existing state plans and programs, identified as priority measures for the purposes of pursuing funding through CPRG implementation grants. These measures are not exhaustive of Washington's priorities; instead, these listed measures meet specific criteria, including:

- The measure is implementation ready: the design work for the policy, program, or project is complete enough that a full scope of work and budget can be included in a CPRG implementation grant application.
- The measure can be completed in the near term: all funds will be expended, and the project completed, within the five-year performance period for the CPRG implementation grants.
- The measure advances state greenhouse gas (GHG) reduction mandates in RCW 70A.45.020.

Public feedback on these measures was gathered through a survey from December 19, 2023 through January 12, 2024. For further details on GHG measures that were provided through public feedback, but not used in this PCAP, refer to Appendix C.

Details on Washington's authority for reducing GHG emissions related to these measures can be found in specific statewide laws, including:

- Statutory Emissions Limits
- Clean Energy Transformation Act
- Motor Vehicle Emission Standards
- Climate Commitment Act
- Healthy Environment for All (HEAL) Act
- Clean Fuel Standard
- Hydrofluorocarbons (HFC) Emission Reductions
- Move Ahead Washington
- Amending the Growth Management Act to address climate change and GHG emissions reductions

1.4 Approach to developing the PCAP

Initial GHG reduction measures were identified by surveying existing plans, laws, resources, and projects. Collaboration with state agencies, local governments, subject matter experts, tribes, and the public narrowed down the list to priority implementation-ready measures. The draft priority measures received public input, input from the Governor's office and other key state stakeholders and deeper collaboration with contributors to ensure competitiveness for EPA's Phase 2 CPRG Implementation Grant General Competition requirements. CPRG Implementation Grant General Competition provides more information on requirements.

1.5 State climate policies

Washington has an extensive body of legislative support and statewide strategies to mitigate and respond to climate change:

In 2020, the Washington Legislature set new GHG emission limits (RCW 70A.45.020) in order to combat climate change. Under the law, the state is required to reduce emissions levels:

- 2030: 45% below 1990 levels
- 2040: 70% below 1990 levels
- 2050: 95% below 1990 levels and achieve net zero emissions

Meeting these limits will be achieved through the following laws and programs:

On May 7, 2019, Governor Jay Inslee signed into law the Clean Energy Transformation Act (CETA) (Chapter 299, laws of 2019), which requires Washington's electric utilities to eliminate carbon emissions from their energy resources. CETA requires that all electric utilities eliminate coal-fired generation serving Washington state customers by the end of 2025, be GHG neutral by 2030, and generate 100% of their power from renewable or zero-carbon resources by 2045. This law helped set Washington on the road to becoming a national leader in climate action policies.

In 2020, the Legislature passed the Motor Vehicle Emission Standards directing Washington to adopt California's vehicle emission standards. This includes new requirements to gradually increase the number of new zero-emission vehicles (ZEV) sold in Washington, until all new vehicles meet the ZEV standard starting in 2035. In 2021, the Legislature adopted new zero-emission and low-emission vehicle standards which will take effect in 2024, with the release of model year 2025 vehicles.

The Climate Commitment Act (CCA) (Chapter 310, Laws of 2021) caps and reduces GHG emissions from Washington's largest emitting sources and industries, allowing businesses to find the most efficient path to lower carbon emissions. This program works alongside other critical climate laws and policies to help Washington achieve its commitment to reducing GHG emissions by 95% by 2050. The CCA also puts environmental justice and equity at the center of climate policy, making sure communities that bear the greatest burdens from air pollution today breathe cleaner, healthier air as the state cuts GHGs. Finally, funds from the auction of emission allowances support new investments in climate-resiliency programs, fund clean transportation, and address health disparities across the state.

The passage of the Healthy Environment for All (HEAL) Act (Chapter 314, Laws of 2021) was a groundbreaking step toward eliminating environmental and health disparities among communities of color and low-income households. It is the first statewide law in Washington to create a coordinated state agency approach to environmental justice. The law requires Commerce and the state departments of Agriculture, Ecology, Health, Natural Resources, and Transportation, and the Puget Sound Partnership to identify and address environmental health disparities in overburdened communities and for vulnerable populations.

In 2021, the Legislature also adopted the Clean Fuel Standard (Chapter 317, Laws of 2021) a law requiring fuel suppliers to gradually reduce the carbon intensity of transportation fuels to 20% below 2017 levels by 2034. The Clean Fuel Standard is designed to decrease the carbon intensity of Washington's transportation fuels by providing an increasing range of low-carbon and renewable alternatives that reduce dependency on petroleum and improve air quality.

Also in 2021, the Legislature passed the Hydrofluorocarbons (HFC) Emissions Reduction Law (Chapter 70A.60 RCW), which bans the sale and purchase of certain HFC refrigerants with high-global-warming potential. The law requires Ecology to establish maximum global warming potential (GWP) thresholds for new stationary refrigeration and air conditioning equipment sold in Washington and to establish a refrigerant management program to reduce HFC leakage.

In 2022, Washington enacted Move Ahead WA, a transformational 16-year package that creates a sustainable, achievable future for our transportation sector. The $3 billion funding package adds support to existing programs and creates new programs to reduce climate pollution, create jobs and improve public health.

In 2023, the Legislature signed a law (HB 1181) that adds a climate goal to the Growth Management Act (GMA, Chapter 36.70A RCW) and requires local comprehensive plans to have a climate element with resilience and greenhouse gas emissions mitigation sub-elements.

- The resilience sub-element must include goals and polices to improve climate preparedness, response and recovery efforts. This is mandatory for all counties and cities fully planning under the GMA and encouraged for others.
- The greenhouse gas emissions sub-element must include goals and policies to reduce emissions and vehicle miles traveled. This sub-element is mandatory for the state's 11 largest counties and the cities within those counties.
- Climate elements must maximize economic, environmental, and social co-benefits and prioritize environmental justice in order to avoid worsening environmental health disparities.

In addition to legislation, Washington has been directed by the Legislature to develop extensive plans to implement these laws and emissions limits. The following plans were used to develop the PCAP, including:

- Washington State Energy Strategy
- Transportation Electrification Strategy
- Washington State Transportation Carbon Reduction Strategy
- Use Food Well Washington Plan
- Refrigerant Management Program
- Washington Ferry Electrification Plan
- Green Transportation Capital grant program
- Washington State Active Transportation Plan

The 2021 State Energy Strategy is designed to provide a roadmap for meeting the state's GHG emission limits by using a "deep decarbonization pathway" analysis, which searches for the lowest cost path to reduce emissions based on known technologies, costs, and markets. The strategy is required to be updated every seven years and includes a Biennial Energy Report to track progress.

In 2022, the Legislature passed Move Ahead Washington, a 16-year transportation package that supports mode shift, electrification of major transportation modes, and reductions in vehicle miles traveled (VMT) along with associated emissions. It also established the Interagency Electric Vehicle Coordinating Council (EV Council) and a non-binding statewide target of reaching 100 percent new electric passenger vehicle sales by 2030. In 2023, the EV Council adopted the Washington Transportation Electrification Strategy (TES), which outlines policy recommendations and implementation timelines for meeting the state's clean transportation objectives.

In November 2023, WSDOT submitted the Washington State Transportation Carbon Reduction Strategy to the Federal Highway Administration. This strategy is required for the state to receive federal Carbon Reduction Program funds and builds on the SES by focusing on two ways to reduce transportation GHG emissions: move people and goods more efficiently and equitably and electrify vehicles and switch to low carbon fuels.

In February 2022, Ecology delivered the Use Food Well Washington (UFWW) plan, which is a roadmap to reduce food waste by 50% by 2030 and includes a strong plan to measure and track progress on this legislative requirement. The UFWW plan also guides the work of the Washington Center for Sustainable Food Management, which launched in January 2024.

In December 2023, Ecology initiated the Refrigerant Management Program (RMP), which requires facilities with refrigeration and air conditioning systems containing more than 50 pounds of refrigerant with a global warming potential GWP of 150 or more to conduct and report periodic leak inspections, promptly repair leaks, and keep service records on site.

The Washington Ferry Electrification Plan is a pathway for Washington State Ferries (WSF) to convert the state ferry system, the largest in the country, to hybrid-electric power by 2040 following mandates from the Washington legislature and Governor. The Green Transportation Capital grants provide funding to transit agencies for cost-effective capital projects that reduce the carbon intensity of the Washington transportation system. The larger WSDOT agency approach to active transportation on and across state highways is guided by the Active Transportation Plan 2020 and Beyond.

2. PCAP elements

2.1 Greenhouse Gas (GHG) Inventory

By law, Washington publishes its GHG emissions inventory every two years (RCW 70A.45.020(2)). The current inventory, published in 2022, included data from 1990-2019. The data used in the inventory is derived primarily from EPA's State Inventory Tool (SIT) and incorporates the most current EPA data available at the time the report is due. For the December 2022 publication, the most current EPA data available was through 2019. The inventory will be published again in December 2024 and is expected to include EPA data through 2021.

Washington does not presently generate emissions projections or uncertainties in addition to what EPA provides; however, the state plans to expand the GHG inventory team and incorporate non-EPA, state-specific data in the future. In the coming years, the state GHG inventory should more accurately reflect the emissions impacts of state climate policies.

Standard emissions accounting guidelines use production-based emissions, which are emissions occurring within state boundaries. However, Washington's official inventory departs from the production-based approach utilized in the SIT in the state's electricity sector, which reports the electricity consumed in state, as well as emissions associated with electricity production. To make this substitution, in-state electric power generation emissions are replaced with Fuel Mix Disclosure program data provided by Commerce. Washington also utilized data from the Washington State Department of Natural Resources to supplement SIT data on emissions from wildfires.

The Washington GHG inventory includes the following sectors and gases:

Sectors	Greenhouse Gases (across all sectors)
1. Electricity generation and/or use 2. Residential, Commercial and Industrial Energy Use 3. Transportation 4. Fossil Fuel Industry 5. Industrial Process 6. Waste and materials management 7. Agriculture 8. Natural and working lands	• carbon dioxide (CO_2), • methane (CH_4), • nitrous oxide (N_2O), • fluorinated gases (F-gases) including hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3)

Below, Tables 1 and 2 detail GHG emissions in million metric tons (MMT) of carbon dioxide equivalents (CO2e) for all economic sectors. Figure 1 displays Washington's emissions data by sector across the three decades. Totals may not sum due to independent rounding.

Table 1. Washington GHG emissions in MMT CO_2e by Sector

Sector	1990	2000	2010	2015	2016	2017	2018	2019
Electricity, net consumption-based	**16.9**	**23.3**	**20.9**	**19.2**	**17.1**	**16.9**	**16.5**	**21.9**
Coal	16.8	17.4	15.8	14.0	12.5	12.4	11.7	15.2
Natural gas	0.1	5.3	4.8	4.9	4.3	4.1	4.5	6.2
Petroleum	0.0	0.6	0.1	0.1	0.1	0.1	0.0	0.0
Biomass and waste (CH_4 and N_2O)	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.4
Residential, Commercial, and Industrial (RCI)	**25.3**	**28.9**	**23.5**	**23.8**	**24.3**	**25.0**	**24.8**	**25.3**
Coal	0.6	0.3	0.3	0.2	0.2	0.1	0.1	0.1
Natural gas	8.6	11.4	10.8	11.2	11.8	13.2	12.5	13.2
Oil	16.1	17.3	12.4	12.5	12.3	11.6	12.1	12.0
Wood (CH_4 and N_2O)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transportation	**35.5**	**41.9**	**35.2**	**36.5**	**38.9**	**38.6**	**39.2**	**40.3**
Gasoline (Hwy)	15.6	19.8	16.1	15.5	15.3	16.1	17.0	16.9
Non-Highway	16.6	16.7	11.8	14.1	17.7	16.4	15.4	16.7
Diesel (Hwy)	3.4	5.4	7.3	6.9	5.9	6.2	6.9	6.6
Alternative Fuel Vehicles	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
Fossil fuel industry	**0.8**	**0.8**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**
Natural gas industry (CH_4)	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Coal mining (CH_4)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Oil industry (CH_4)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Industrial processes	**4.9**	**6.5**	**4.7**	**5.0**	**5.0**	**5.0**	**5.1**	**5.3**
Carbon Dioxide Emissions	2.2	3.3	1.4	1.3	1.2	1.1	1.2	1.3

Sector	1990	2000	2010	2015	2016	2017	2018	2019
Cement Manufacture	0.0	0.4	0.3	0.3	0.4	0.4	0.4	0.4
Lime Manufacture	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1
Limestone and Dolomite Use	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Soda Ash	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Aluminum Production, CO_2	2.0	1.7	0.5	0.4	0.2	0.2	0.2	0.3
Iron & Steel Production	0.0	0.8	0.3	0.3	0.3	0.3	0.3	0.3
Ammonia Production	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2
Urea Consumption	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nitrous Oxide Emissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nitric Acid Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adipic Acid Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HFC, PFC, NF_3, and SF_6 Emissions	2.7	3.2	3.3	3.7	3.8	3.9	3.9	4.0
ODS Substitutes	0.0	1.1	2.3	2.9	2.9	3.0	3.0	3.2
Semiconductor Manufacturing	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Magnesium Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Power Transmission and Distribution Systems	0.8	0.4	0.1	0.1	0.1	0.1	0.1	0.1
HCFC-22 Production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aluminum Production, PFCs	1.9	1.7	0.8	0.7	0.7	0.7	0.7	0.7
Waste management	**3.1**	**2.9**	**3.5**	**2.4**	**2.4**	**2.5**	**2.4**	**2.4**
Solid waste management	2.6	2.2	2.7	1.6	1.6	1.6	1.5	1.6
Wastewater management	0.6	0.7	0.8	0.8	0.8	0.8	0.9	0.9
Agriculture	**6.9**	**6.7**	**6.5**	**7.0**	**6.8**	**6.7**	**6.8**	**6.2**
Enteric fermentation	2.7	2.7	2.4	2.6	2.6	2.6	2.7	2.7
Manure management	0.9	1.2	1.3	1.5	1.5	1.5	1.5	1.5
Agriculture soils	3.3	2.8	2.9	2.9	2.6	2.6	2.7	2.1
Total gross emissions	**93.5**	**111.0**	**95.0**	**94.6**	**95.1**	**95.3**	**95.5**	**102.1**

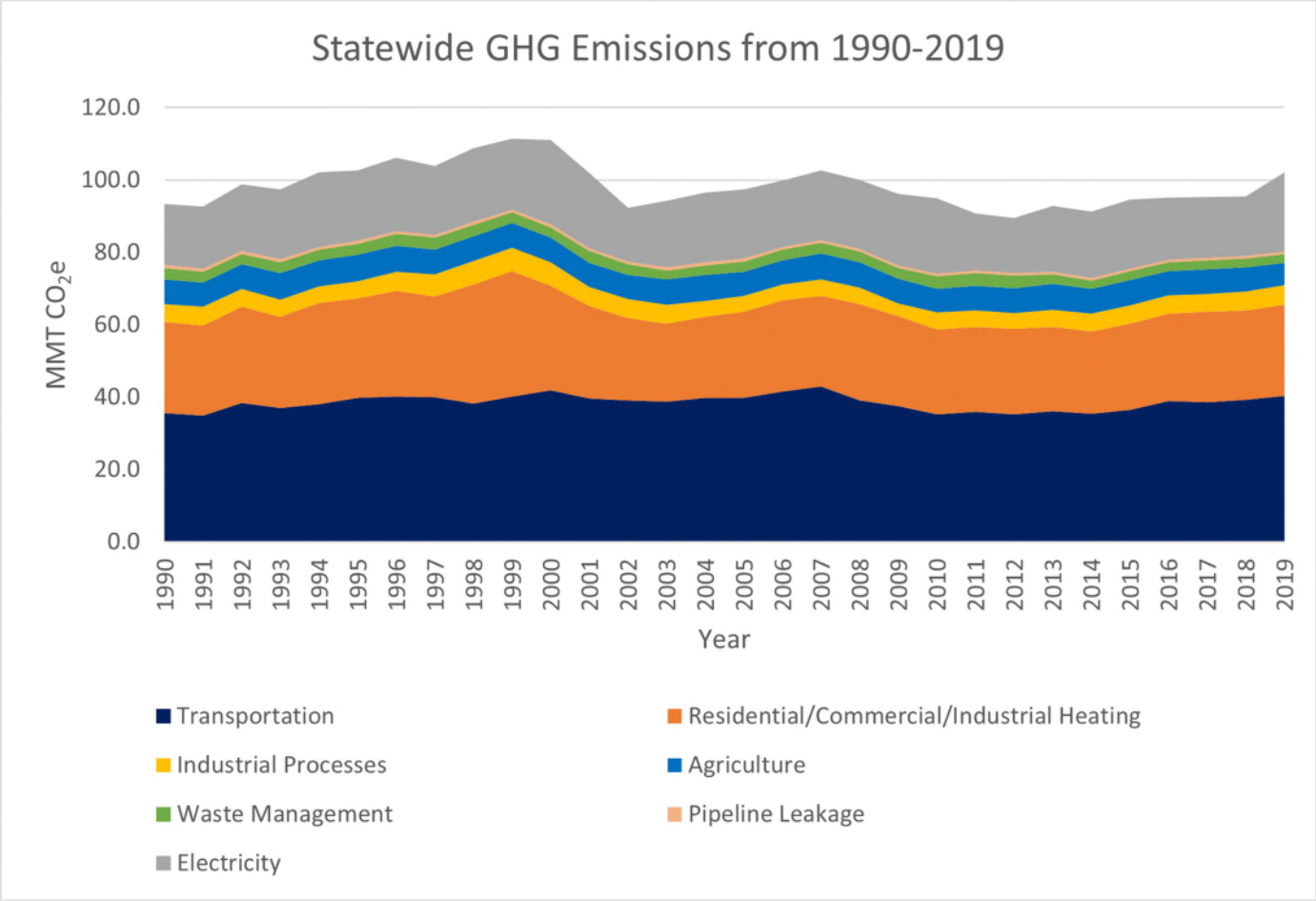
Table 2. Washington Natural and Working Lands Net CO_2 Flux (Carbon Stock Change, MMT CO_2e)

Land-Use Category	1990	2005	2015	2016	2017	2018	2019
Forest Land Remaining Forest Land	**(10.3)**	**(15.2)**	**(19.1)**	**(18.7)**	**(18.2)**	**(17.8)**	**(17.3)**

Land-Use Category	1990	2005	2015	2016	2017	2018	2019
Changes in Forest Carbon Stocks[1]	(10.3)	(15.2)	(19.1)	(18.7)	(18.2)	(17.8)	(17.3)
Land Converted to Forest Land	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**	**(3.0)**
Changes in Forest Carbon Stocks[2]	(3.0)	(3.0)	(3.0)	(3.0)	(3.0)	(3.0)	(3.0)
Cropland Remaining Cropland	**(0.5)**	**(0.3)**	**(0.4)**	**(0.7)**	**(0.7)**	**(0.6)**	**(0.6)**
Changes in Soil Carbon Stocks	(0.5)	(0.3)	(0.4)	(0.7)	(0.7)	(0.6)	(0.6)
Land Converted to Cropland	**0.5**	**0.6**	**0.7**	**0.6**	**0.6**	**0.6**	**0.6**
Changes in Ecosystem Carbon Stocks[3]	0.5	0.6	0.7	0.6	0.6	0.6	0.6
Grassland Remaining Grassland	**(0.0)**	**0.1**	**0.3**	**0.2**	**0.2**	**0.2**	**0.2**
Changes in Ecosystem Carbon Stocks	(0.0)	0.1	0.3	0.2	0.2	0.2	0.2
Land Converted to Grassland	**0.2**	**(0.0)**	**0.3**	**0.1**	**0.1**	**0.1**	**0.1**
Changes in Ecosystem Carbon Stocks[4]	0.2	(0.0)	0.3	0.1	0.1	0.1	0.1
Wetlands Remaining Wetlands	**(0.1)**	**(0.1)**	**(0.1)**	**(0.1)**	**(0.1)**	**(0.1)**	**(0.1)**
Changes in Organic Soil Carbon Stocks in Peatlands	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Changes in Ecosystem Carbon Stocks in Coastal Wetlands	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Land Converted to Wetlands	**0.0**	**0.0**	**(0.0)**	**(0.0)**	**(0.0)**	**(0.0)**	**(0.0)**
Changes in Ecosystem Carbon Stocks[5]	0.00	0.00	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
Settlements Remaining Settlements	**(2.6)**	**(2.7)**	**(2.9)**	**(2.9)**	**(2.9)**	**(2.9)**	**(2.9)**
Changes in Organic Soil Carbon Stocks	0	0	0	0	0	0	0
Changes in Settlement Tree Biomass Carbon Stocks[6]	(2.2)	(2.6)	(2.9)	(2.8)	(2.8)	(2.8)	(2.8)
Changes in Yard Trimmings and Food Scrap Carbon Stocks in Landfills	(0.5)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
Land Converted to Settlements	**2**	**2**	**2**	**2**	**2**	**2**	**2**
Changes in Ecosystem Carbon Stocks	2	2	2	2	2	2	2
Land Use, Land Use Change, Forestry (LULUCF) Net CO_2 Flux	**(13.8)**	**(18.2)**	**(21.8)**	**(22.0)**	**(21.6)**	**(21.1)**	**(20.6)**

[1] Includes the net changes to carbon stocks stored in all forest ecosystem pools. Harvested wood products are not estimated in the SIT at this time. This includes the net CO_2 flux from drained organic soils in both Forest Land Remaining Forest Land and Land Converted to Forest Land.
[2] Includes the net changes to carbon stocks stored in all forest ecosystem pools, but emissions from drained organic soils are included in the flux from Forest Land Remaining Forest Land because it is not possible to separate the activity data at this time.
[3] Includes changes in mineral and organic soils from all lands converted to Croplands/Grasslands, and the above- and below-ground biomass, dead wood, and litter from Forest Lands Converted to Croplands/Grasslands.
[4] Includes changes in mineral and organic soils from all lands converted to Croplands/Grasslands, and the above- and below-ground biomass, dead wood, and litter from Forest Lands Converted to Croplands/Grasslands.
[5] Includes carbon stock changes for land converted to vegetated coastal wetlands.
[6] Includes Lands Converted to Settlements.

Figure 1. Washington GHG emissions in MMT CO_2e by Sector



As the above inventory data demonstrates, total statewide emissions have held relatively steady in recent decades, despite significant economic and population growth. Washington has made notable progress in reducing its carbon intensity as measured in terms of emissions per capita or per economic output (Gross Domestic Product or GDP). Relative to 2005, the metric tons of CO_2e per million dollars of GDP declined 51 percent and the CO_2e per capita has declined 15 percent. The transportation sector, however, remains the largest source of emissions in the state at 40.3 MMT CO_2e in 2019. This is 4.8 MMT CO_2e increase over the 1990 baseline and a 2.8% increase over 2018 emissions for this sector.

These measurements clearly articulate the need to continue reducing GHG emissions in Washington, particularly in the transportation sector. Funding from federal programs such as the CPRG will be a critical factor in the ability to deploy effective GHG reduction measures and work toward the state's goal of net zero emissions.

2.2 GHG reduction measures

Table 3 is a list of Washington's PCAP priority measures. These measures were collected from existing state and local plans and programs and identified as priority measures for the purposes of pursuing funding through CPRG implementation grants. Each measure is explained in detail following Table 3.

This is not an exhaustive list of Washington's priorities. Instead, the selected priority measures included in this PCAP meet the following criteria:

- They are implementation ready; the design work for the policy, program, or project is complete enough that a full scope of work and budget can be included in a CPRG implementation grant application.
- They can be completed in the near term; all funds could be expended, and the project completed, within the five-year performance period for the CPRG implementation grants.
- They advance state GHG reduction mandates in RCW 70A.45.020.[7]

Feedback on these measures was provided through a public survey that was open December 19, 2023 through January 12, 2024. The CCAP will provide a holistic pathway analysis of the full suite of cost-effective measures to achieve the state's 2050 GHG emission limits. For further details on GHG measures that were provided through public feedback and will be used as a starting point of the CCAP, refer to Appendix C.

Additional details of Washington plans for reducing GHG emissions related to these measures can be found in the state laws and plans listed in Section 1.

Table 3. Washington Priority GHG Reduction Measures

Index	Sector	Priority Measure	Implementing Agency or Agencies
2.2.1.	Buildings	Refrigerant reduction	Washington State Department of Ecology
2.2.2.	Buildings	Decarbonizing campus energy systems	Higher education Local agencies School districts Tribes Utilities
2.2.3.	Waste, water, and sustainable materials management	Organics management	Washington State Department of Ecology
2.2.4.	Transportation	Scrap and replace fossil fuel powered commercial vehicles	Washington State Department of Ecology
2.2.5.	Transportation	Marine terminal electrification	Washington State Department of Transportation
2.2.6.	Transportation	Complete streets	Washington State Department of Transportation
2.2.7.	Transportation	Reduce emissions of fleets for rural and special needs transit	Washington State Department of Transportation
2.2.8.	Transportation	Enable decarbonization of rail infrastructure	Local agencies Tribes Ports
2.2.9.	Transportation	Electrify municipal and tribal fleets including expansion of electric vehicle charging	Local agencies Tribes

[7] Of note, the GHG emissions reductions stated in each of the following measures are estimates based on available data, which may be subject to revisions or updates as needed

Index	Sector	Priority Measure	Implementing Agency or Agencies
2.2.10.	Transportation	Mode shift from trucking to water transportation to reduce vehicles miles travelled	Local agencies Tribes Ports
2.2.11.	Electric power	Support tribal energy sovereignty through Tribal Clean Energy grants	Washington State Department of Commerce
2.2.12.	Agriculture	Fund anaerobic digesters	Washington State Conservation Commission Washington State Department of Commerce Tribes Local agencies School districts

Buildings sector

2.2.1 Refrigerant reduction

Implementing entity
Washington State Department of Ecology

Description of measure
Hydrofluorocarbons (HFCs) are a type of fluorinated gas commonly used in refrigeration and air conditioning. Over recent decades, these chemical compounds gained popularity as a replacement for ozone depleting substances (ODSs) that are being phased out under the terms of the Montreal Protocol. These refrigerants are short lived climate super pollutants that can be thousands of times more potent than carbon dioxide in the atmosphere. Due to increased global demand for cooling and refrigeration, HFCs are now the fastest growing category of GHG emissions in the world and are having a disproportionate impact on the climate crisis.

Nationwide, the average grocery store refrigeration system leaks approximately 25% of its refrigerant each year; these systems can have an operational life span longer than 20 years. This measure would support the conversion of medium and small grocery stores away from high-global warming potential (GWP)[8] refrigerants and would be targeted to small businesses and stores serving low-income communities with limited access to groceries and which may face high compliance costs. This program could serve as a catalyst to transform market adoption to these low GWP technologies in WA and would provide higher market value for these technologies allowing for a scalable transformation from the old to new, cleaner, technologies. Success of this program could encourage acceleration through program growth and future funding from Ecology's Refrigerant Management Program (RMP) and the Climate Commitment Act (CCA).

Estimate of the quantifiable GHG emissions reductions and quantitative cost estimates
Table 4 estimates of average HFC emissions for common commercial refrigerant systems of differing sizes, displaying the significant effects refrigerant emissions reduction could have on GHG emissions.

[8] Global warming potential compares a climate pollutant relative to a similar mass of carbon dioxide (e.g. one pound of an emitted HFC with a GWP = 150 would have the same climate warming as 150 pounds of carbon dioxide emissions.)

To calculate estimated statewide emissions of refrigerant from equipment in Washington, Ecology used the IPCC's emission factor approach, following the California Air Resources Board (CARB) example. Emissions were calculated by multiplying the estimated number of units, the average charge of refrigerant in each type of unit, and the leak rate, which is the rate of refrigerant loss over a year of operation. This is the same approach used by both CARB for its GHG inventory and Ecology's RMP.

In addition to using the IPCC approach, Ecology is using a leak rate for retail food refrigeration equipment, based on CARB emission inventories of this equipment, EPA Greenchill estimates, and anecdotal evidence from stakeholders, to be 25%, and end of life refrigerant loss to be approximately 20%.

Table 4. Average HFC Emissions for Common Commercial Refrigerant Systems

System Size	Large (3,635 lb. refrigerant)		Medium (704 lb.)		Small (125 lb.)	
Equipment Age (year)	Cumulative refrigerant lost (lb.)*	CO_2e (lb.)	Cumulative refrigerant lost (lb.)*	CO_2e (lb.)	Cumulative refrigerant lost (lb.)*	CO_2e (lb.)
5	4,209	16,508,482	819	3,213,687	145	568,690
10	7,844	30,764,952	1,523	5,974,775	270	1,058,940
15	11,479	45,021,422	2,227	8,735,863	395	1,549,190
20	15,114	59,277,892	2,931	11,496,951	520	2,039,440
*** based on an average annual leak rate of 20% for a system using R-404a refrigerant (GWP = 3,922)**						

Addressing these systems can be transformational. California's "F-gas Reduction Incentive Program" began with $1 million in funding in 2019 that converted and helped build 15 grocery store refrigeration projects to lower GWP systems, reducing emissions of systems by 75-90%. In Washington, Ecology has estimated emissions from retail food refrigeration systems to amount to 1 million $MMTCO_2e$/year. There are an estimated 1,700 average sized grocery stores and another approximately 1,300 small grocery stores in Washington that use high-GWP refrigerants. The cost to fully convert an average sized grocery store amounts to around $1 million. A $25 million incentive program similar to that in California, providing grants from $250,000 to $500,000, would allow Washington to help owners convert and build low GWP refrigeration systems into approximately 70 stores. Table 5 shows the approximate reductions that this approach to the measure could achieve and represent 7% of the GHG emissions from these types of equipment in Washington.

Table 5. Cumulative GHG Reductions for Refrigeration Reduction

Measure or Project	Cumulative GHGs Avoided, 2025-2030 (MT CO_2e)	Cumulative GHGs Avoided, 2025-2050 (MT CO_2e)
Refrigerant Reduction	57,000	255,000

For a state program for this measure funded at $25 million, the cost effectiveness of the GHG reductions for this priority measure is approximately $440/MTCO$_2$e[9]. The impact of these investments would be immediate upon the decommissioning of the old high GWP equipment and would eliminate the future emissions entirely when replaced with ultra-low GWP technologies.

Implementation schedule, milestones, and metrics for tracking progress
This measure would be implemented through grant awards to applicants, in order to carry out refrigerant conversions to low-GWP refrigerants at grocery stores and food retailers, prioritizing stores in overburdened communities.

The implementation schedule may proceed as follows:

- Request for information (RFI): Ecology would conduct an RFI to better understand the current state of Washington grocers and retail food refrigeration, the incentives needed to transition to low-GWP refrigeration technologies, and a manageable timeframe for facilities to participate in such a program. Ecology's RMP reporting data would inform this work as well.
- Application format: The application would be developed using Ecology's Administration of Grants and Loans system. It would be simple and streamlined to improve access and reduce barriers to applicants.
- Scoring and evaluation: Scoring and evaluation criteria would prioritize the installation of refrigeration systems that contain ultra-low GWP refrigerants, i.e., with a GWP <10, as well as small businesses and grocery stores in both EPA defined low-income and disadvantaged communities (LIDACs) and state defined overburdened communities in Washington.
- Funding levels: Ecology would rely on the RFI to inform the funding amount offered per system and the technology of the potentially proposed replacement system options.
- Timing: The program would be an ongoing grant program, anticipating one application period each year for four years. Ecology anticipates opening the first round of the grant program in 2025. If CPRG funds are made available, approximately $6 million would be available in each round for the HFC reduction incentive.

The program may proceed according to the following timeline:

- Year 1 – request for information (RFI) from stakeholders in WA and program designs, which will determine outreach and community engagement strategies
- Years 2-4 – grant award cycles for the replacement of approximately 70 system replacement projects in WA (~$6 million per year, final awards in Year 4):
    - Request for proposals/grant applications
    - Determination of eligibility
    - Distribution of annual incentive grants to applicants to carry out work at recipient stores; milestone tracking begins for each project
    - Milestones of projects will be tracked including the completion of each activity: design, installation, completion; as well as semi-annual schedule updates to ensure milestones are on track with project timelines
    - Project verification

[9] For the purposes of the Climate Pollution Reduction Grant program, EPA defines cost effectiveness as the total cost of the priority measure divided by the cumulative GHG reductions from 2025-2023: cprg-general-competition-correction.pdf (epa.gov). These are estimates based on proposed CPRG funding levels.

- Program outreach for next application cycles

- Year 5 – follow up and completion of projects, review program performance and outcomes, and final reporting

Milestones
- Ecology would track design, installation, and completion of projects toward the goal of over 70 systems.
- Target the reduction of HFCs by 10,200 $MTCO_2e$ per year
- Increase awareness of refrigeration technologies that use refrigerants with GWP <10 and further market demand of ultra-low GWP technologies already available

Metrics for measuring performance
- Number of new/replacement systems completed and total number of systems permanently removed from service
- Number of systems with GWP <10 in Washington
- Pounds of high-GWP refrigerant capacity permanently removed from service
- Outreach and community engagement (metric to be determined)

Geographic location
This measure would affect eligible refrigeration units and systems in new and existing retail food facilities across the state that currently use or would otherwise use HFCs and other fluorinated refrigerants with a GWP greater than 150. The measure would focus on EPA defined LIDACs and state defined overburdened communities.

Intersection with other funding
There is no known funding to supplement this work directly. However, EPA's HFC Reclaim and Innovative Destruction Grants could be utilized to complement the removal of high GWP refrigerants. However, Ecology would not have a role in applying for this grant due to the scope of work.

Authority to implement
In May 2021, the Governor signed HB 1050 (codified as Chapter 70A.60 RCW). The 2021 law directs Ecology to:

- Set a maximum GWP threshold for hydrofluorocarbons used in:
  - ice rinks
  - new stationary air conditioning equipment.
  - new stationary refrigeration equipment.
- Establish a refrigerant management program to address refrigerant emissions from large air conditioning and refrigeration equipment.
- Recommend to the Legislature how to manage end-of-life and disposal of refrigerants.

Starting July 25, 2021, the new law banned the sale and purchase of certain HFC refrigerants with high-GWP, as well as non-essential consumer products (e.g., air horns and noisemakers) which contain high GWP refrigerants.

2.2.2 Decarbonize campus energy systems

Implementing entity
Higher education; State and Local agencies; School districts; Tribes; Utilities

Description of measure
Universities, colleges, state and local agencies, and school districts must dramatically lower their GHG footprint to meet state goals as well as the state's building energy performance standard. For many, legacy systems, which include steam heating and natural gas boilers, are at the end of life, having become unreliable, and posing a significant life-safety risk to maintenance personnel. Buildings are often decades old and predate modern energy efficiency standards. Deferred maintenance costs impact budgets, air quality, and the ability of a campus to function efficiently.

This measure targets campus energy system decarbonization through conversion from legacy district energy systems that are heated by fossil fuel combustion to electric and renewable thermal central plant space conditioning using a variety of technologies, which may include air or ground source heat pumps, thermal storage and renewable energy resources among other clean solutions. This measure can also cover a variety of energy efficiency upgrades for buildings to reduce heating demand and lower emissions, including exhaust air heat recovery systems. Examples include heating, ventilation and air conditioning (HVAC) controls recommissioning, and upgrades that support energy efficiency through the inclusion of state-of-the-art electronic controls that can monitor building occupancy and indoor air quality and provide fresh air ventilation only when occupied. Further investments could include an all-electric approach that ties in solar panels and battery energy storage for greater resiliency and self-reliance. Modular approaches that roll out in multiple phases can accommodate expansion to new college buildings and tying in neighboring properties as they are redeveloped.

Estimate of the quantifiable GHG emissions reductions and quantitative cost estimates
In 2022, the State Efficiency and Environmental Performance Office published a legislative report recommending public agencies and institutions develop plans for replacing these systems and called for an inventory of such systems in public agencies across the state. At this time, this inventory has not been conducted; however, the following list of public entities are known to have fossil-fuel campus boiler systems:

- Seattle Central College
- Washington State Department of Health
- Central Washington University
- University of Washington
- Washington State University
- Western Washington University

Every system will have vastly different assumptions for GHG reductions based on the specific upgrades being made and the legacy system being replaced.

To illustrate the impact and assumptions of this measure, figures have been provided from two use cases: (1) Seattle Central College (SCC) plans to construct an EcoDistrict as part of the college's decarbonization plans and (2) Western Washington University (WWU) plans to expand exhaust air heat recovery and HVAC controls.

Seattle Central College

Seattle Central College (SCC) is taking an all-electric solution, which uses the Washington Department of Enterprise Service's (DES) Energy Savings Performance Contracting program model. SCC contracted through DES with a DES-approved energy services company (ESCO), McKinstry, to analyze all the available technologies and come back with a design, modeled performance and estimated GHG reduction based on published emission data from SCC's utility providers and CenTrio Energy, the college's current steam provider.

SCC's approach to this measure includes two buildings, which if CPRG funds are made available, could be updated three years earlier than planned. This updated timing increases the total GHG savings and is responsive to new City of Seattle Building Performance Standard regulations, which have accelerated the need to expand the EcoDistrict scope.

SCC would replace its use of fossil-fueled steam heating with an all-electric, heat pump based, low carbon impact heating and cooling system to serve its Broadway campus buildings. This conversion would dramatically lower GHG emissions by more than 3 million lbs (1,387 $MTCO_2e$) per year as well as adding redundancy and resiliency and lowering maintenance, operating, and utility costs. The EcoDistrict is an example of a shovel-ready project to implement this measure and would provide up to a 90% reduction in the college's carbon footprint.

Table 6. Cumulative GHG Reductions for SCC District Energy System Decarbonization

Measure or Project	Cumulative GHGs Avoided 2025-2030 ($MTCO_2e$)	Cumulative GHGs Avoided 2025-2050 ($MTCO_2e$)
Seattle Central College EcoDistrict	7,000	35,000

The financial impact of addressing these systems is substantial. For SCC, the upgrades would mean avoidance of $10 million in deferred maintenance costs for failing steam pipes and supply. The college would realize a savings of $550,000 per year on steam costs and an overall operations and maintenance savings of more than $750,000 annually. The total cost of the project is around $7,300,000 and the cost effectiveness of this measure is approximately $1000/$MTCO_2e$.

Implementation schedule, milestones, and metrics for tracking progress
Like many large-scale campus projects, the SCC EcoDistrict would need to be implemented in phases and work around the reality of campus life. Phase 1 is sized to serve the 404,000 square feet (sf) Broadway/Edison building, the 83,000 sf Science and Math Building, and the 41,000 sf Broadway Performance Hall. Future phases would expand the work to other buildings on campus. Piping to distribute the hot and chilled water is sized for future expansion to include the Mitchell Athletic Center, a remodeled Student Union Building, planned student housing, and a planned North Plaza instructional building. When fully realized, the EcoDistrict will serve approximately one million square feet of buildings. Table 7 shows the phasing timeline for this work:

Table 7. Proposed Phasing for SCC Campus Energy Decarbonization

Building Name	Phase	Building Type	Square Footage
BPH	1	College	41,174
Broadway-Edison Total	1	College	405,085
Broadway Phase 1	1	College	

Building Name	Phase	Building Type	Square Footage
Broadway Phase 2	1	College	
Edison	1	College	
Bookstore	2	Student Union	14,765
MAC	2	Student Union	85,000
Science and Math (SAM)	2	College	83,446
Student Housing	3	Housing	179,000
New North Plaza Academic Building	4	College	145,000
		TOTAL	**953,470**

Timeline

- SCC estimates an eighteen-month construction to commissioning timeline. The start date for this work is contingent on funding and other statewide rulemaking related to contracting with an ESCO.

Milestones

- Milestones include retirement of legacy systems and commissioning of newly renovated buildings.

Metrics for tracking progress

- Natural gas (therms) reduced
- Electricity (kWh) consumed

Western Washington University

At Western Washington University (WWU), the majority of buildings are more the 30 years old and predate modern energy efficiency code requirements. The campus is heated by a Steam District Energy System that uses natural gas combustion as the energy source, creating 95% of scope 1 GHG emissions for the campus. WWU was funded by the legislature with CCA funds in 2021 to conduct a Feasibility Study for a reduced carbon District Energy System. That study identified energy conservation efforts as an immediate first step to reduce GHG emissions. Specifically, the study showed that concentrating on the nine highest demand buildings had the potential to reduce heating demand up to 22%. Additional federal funding would mean the accelerated deployment of these projects, reducing the capacity demands and construction cost of the new system.

For WWU, the biggest GHG reduction opportunity is expanding the exhaust air heat recovery systems at the two main science buildings, which were constructed in the 1990s. These buildings require 100% outside air delivered at six air changes per hour to maintain a healthy lab environment. From an energy perspective, this means a fresh air molecule only spends about 15 minutes in the building before it is exhausted back out of the roof. The Chemistry building has no heat recovery system, and the Biology building has a partial heat recovery system that is 30-40% effective depending on the outside temperature. The proposed upgrades install a complete heat recovery fluid loop at both buildings, which will permit more efficient operations during low occupancy and low demand periods.

The second largest GHG reduction opportunity is HVAC controls recommissioning and upgrades which take advantage of state-of-the-art electronic controls that monitor occupancy and indoor air quality and provide fresh air ventilation only to the extent necessary. During the recent COVID pandemic, most buildings ended up over-ventilated out of an abundance of caution to provide fresh air. WWU learned to use a home-grown

solution to ensure proper ventilation, marrying CO_2 and occupancy sensors with dynamic monitoring that enabled the university to match ventilation to the actual occupancy need. Further federal funding would expand those learnings with more devices and smarter controls programming to conserve even more energy and thereby reduce heating demand and fan run time. These upgrades would result in the following GHG reductions:

Table 8. Cumulative GHG Reductions for WWU Campus Energy System Decarbonization

Measure or Project	Cumulative GHGs Avoided 2025-2030 ($MTCO_2e$)	Cumulative GHGs Avoided 2025-2050 ($MTCO_2e$)
Western Washington Exhaust Heat Recovery and HVAC control upgrade	4,000	36,000

The cost effectiveness of this measure is approximately \$1,200/$MTCO_2e$ and the estimated cost of the project is around \$4,700,000.

Implementation schedule, milestones, and metrics for tracking progress
The proposed projects were identified by an ASHRAE Level II Energy Audit that WWU commissioned in 2022 for its highest energy use buildings. Conceptual designs were completed as proofs of concept thus enabling the team to move right into detailed construction design and permitting.

Implementation activities
- Complete detailed design and submit construction permits
- Engage with the building users to set expectations for timing and mitigate disruptions
- Commence construction
- Complete digital controls programming and commission the upgrades
- Compile closeout and Maintenance and Operations manuals
- Begin measurement and verification process

Milestones
- 1,291Metric Tons of CO_2 reduced per year
- Electrical grid benefit of 680,000 kWh avoided and available for other uses
- Co-pollutant reduction from less natural gas combustion

Metrics for tracking progress
- Natural gas (therms) reduced
- Electricity (kWh) reduced

The SCC EcoDistrict and WWU project represent two of dozens of conversion opportunities for district heating and cooling systems across the state. The emission reductions, cost, implementation timeline, and co-benefits of each project would vary by location and design. For most of these facilities, the legacy boilers are the largest source of GHG emissions.

Geographic location
Statewide; higher education campuses, state and municipal buildings, tribal centers.

Intersections of other funding
Several federal grants address building decarbonization, but finding the funding to upgrade legacy campus energy systems can be challenging given the scale of work. The Washington Legislature may potentially provide direct support to universities and colleges through the CCA funds. Project proponents can also leverage IRA clean energy tax credits in some cases where the technology aligns with available programs. Washington offers a state energy performance standard Early Adopter Incentive program, which began July 1, 2021 and applies to non-residential, hotel, motel, and dormitory buildings greater than 50,000 sq. ft. An eligible building owner that demonstrates early compliance with the Clean Buildings Standard may receive a one-time base incentive payment of $0.85 per gross sf of floor area, excluding parking, unconditioned, or semi-conditioned spaces. Incentive funds are limited to $75 million at this time.

Authority to implement
The State's Building Energy Performance Standard, also called the Clean Buildings Performance Standard, established through legislation enacted in 2019 and codified in RCW 19.27A.210, requires Commerce to establish rules for energy performance standards for covered buildings, to collect data on compliance, and to report on outcomes. Covered buildings include any nonresidential buildings greater than 50,000 square feet, excluding those used for industrial or manufacturing purposes, those that are agricultural structures, or those meeting certain standards for financial hardship. The performance standards seek to maximize reductions in GHG emissions from the building sector. The performance standard includes energy use intensity targets by building type, as well as requirements for an energy management plan, operations and maintenance program, energy efficiency audits, and investments in energy efficiency measures. In 2022, parts of the Clean Building Performance Standard was expanded to add a second tier of covered buildings: multifamily residential buildings over 20,000 sf and smaller commercial buildings (between 20,000-50,000 sf). These buildings will need to meet benchmarking requirements, energy management planning, and operations and maintenance planning, and may be subject to future energy use intensity targets.

Campuses with district energy systems have specific requirements under this law. In Washington, a campus district energy system is defined as a district energy system that provides heating, cooling, or heating and cooling to three or more buildings with more than 100,000 sf of combined conditioned space, where the system and all connected buildings are owned by:

- a single entity;
- a public-private partnership where a private entity owns the energy system and a public entity owns the buildings; or
- two private entities where one owns the connected buildings and the other owns the energy system.

A state campus district energy system is a campus district energy system owned by either the State of Washington or by a public-private partnership. Under state law (RCW 19.27A.260), the owner of a state campus district energy system must develop a decarbonization plan. The plan must provide a strategy for up to 15 years, or longer, if approved by Commerce. The plan must be under development by June 30, 2024, and a final plan must be submitted to Commerce by June 30, 2025. Commerce must provide a summary report on decarbonization plans to the Governor and Legislature by December 1, 2025.

Additional authority to implement comes from Executive Order 20-01, which authorizes the State Efficiency and Environmental Performance Office to support state agencies in emission reduction planning and implementation.

Waste, water and sustainable materials management sector

2.2.3 Organics management

Implementing entity
Washington State Department of Ecology

Description of measure
This measure reduces GHG emissions by upgrading organics management facilities and supporting organics management efforts by local governments and local health jurisdictions, in line with the goals of Washington's 2022 Organics Management Law (OML) (RCW 70A.205.070). The measure also includes a pilot for King County and the City of Seattle for institutional, local food procurement, compost market creation, and next generation organics management, to address GHG emissions in the state's most populous region that uses a whole supply chain approach to pilot new methods that reduce emissions throughout regional food systems.

The OML requires that by 2025, 20% of previously disposed edible food must be rescued for consumption, and by 2030, 75% of previously disposed organic materials must be diverted from landfills. Currently, organics represent nearly 60% of total landfilled waste in Washington. According to EPA, landfilled organics are the third largest generator of methane emissions in the US. A significant strategy utilized by the OML is to require statewide management of organics at both the commercial and residential levels. Thus, local governments, who are also tasked with creating and managing solid waste plans in their jurisdictions, are now responsible for creating and developing programs to support organics management. The law also gives local health jurisdictions (LHJs) enforcement authority to ensure compliance of organics management.

Estimate of the quantifiable GHG emissions reductions and quantitative cost estimates
A 2019 law (RCW 70A.205.715) mandated the creation of a cross agency plan that "develops and adopts a state wasted food reduction and food waste diversion plan" to achieve the aforementioned food waste reduction goals. This plan is called Use Food Well Washington (UFWW), and it was developed and published in 2022. The plan includes 30 recommendations and quantifies the GHG, economic, and cost impact of each organic and food waste reduction recommendation.

This measure focuses on three recommendations of the UFWW. Table 9 below lists the estimated GHG reduction potential of each program over 5-year and 25-year time frames. This table also includes estimates based on an expected pilot through King County and Seattle for food procurement, compost market creation, and next generation organics management.

Table 9. Cumulative GHG Reductions for Organics Management

Measure or Project	Cumulative GHGs Avoided, 2025-2030 (MT CO_2e)	Cumulative GHGs Avoided 2025-2050 (MT CO_2e)
Organics Management Processing Facilities	28,000	158,000
Organics Management Working Capital to Local County and City Governments	301,000	1,986,000
Organics Management Working Capital to Local Health Jurisdictions	135,000	443,000
Total	**464,000**	**2,587,000**

The overall cost effectiveness for all measures is approximately $140/MTCO$_2$e for an estimated cost of around $67 million.

Implementation schedule, milestones, and metrics for tracking progress
Table 10 below lists the context and potential implementation approach for each recommendation in this measure, including timeline, milestones, and metrics for tracking progress.

Table 10. Implementation Approach to Organics Management

	Organics Management Support for Local Governments	Investment in Local Health Jurisdictions (LHJs)	Investment in Organics Processing Facilities
Rationale	County and City governments are tasked with developing organics management services and capabilities to meet the State's organics diversion goals. This also includes the proposed pilot through King County and Seattle for low carbon food procurement, compost market creation, and next generation organics management.	LHJs are provided with enforcement authority for the commercial organics management requirements. LHJs provide all solid waste permits for organics processing facilities.	Due to the 2022 Organics Management Law, significant growth in organics feedstock will occur. Organics processing facilities will be impacted.
Fund Deployment	Cities and Counties will receive funds on a noncompetitive basis. An organics management plan must first be developed as a stipulation of receiving funding.	LHJs will receive funds on a noncompetitive basis. An organics management plan must first be developed as a stipulation of receiving funding.	Two tranches of funding will be available: one that funds research and development for improving pre & post-consumer food waste at facilities, the second tranche for capital improvements. This will be a competitive process.
Implementation Schedule	Year 1: Counties and participating cities submit organics management plans, including their use of funds plan. Year 2: Funding deployed. Years 2-5: Implementation, tracking and evaluating.	Year 1: LHJs submit organics management enforcement plans, including their use of funds plan. Year 2: Funding deployed. Years 2-5: Implementation, tracking and evaluating.	Year 1: Facilities indicate interest in R&D fund. Year 2: Awarded Facilities receive funding and spend the year piloting new processes. Year 3: Facilities apply through a competitive process to access funding capital improvement projects. Years 3-5: Funding for Capital projects deployed. Tracking and evaluation of investment follows.
Milestones	Years 1-3: Local Jurisdictions support impacted businesses comply with the Organics Management Law. Year 4: All impact jurisdictions ensure there is organics curbside service available, a result of the OML.	Year 1: LHJs submit organics management plan Year 2-5: LJHs receive CPRG funds and generate an organics management plan; a process of tracking and evaluation is developed.	Year 1: Facilities statewide express interest R&D funds to process more food waste. Year 2: Food waste processing is dialed in. Years 3-5: Capital improvements made to facilities statewide Tracking and evaluation is established.

	Organics Management Support for Local Governments	Investment in Local Health Jurisdictions (LHJs)	Investment in Organics Processing Facilities
	Year 5: Record significant diversion of organics from landfill.		
Metrics for Tracking Progress	Number of organics management plans developed that addresses commercial and/or residential needs. Total pounds diverted from landfill on annual basis.	Number of enforcement actions taking for non-compliance with organics management. Number of campaigns developed to provide education and technical assistance Total pounds diverted from landfill on annual basis	Total pounds of organic waste processed Total pounds of compost generated

Geographic location

- Processing Facilities
  - Currently, six facilities in Washington regularly accept post-consumer food waste. Federal funding from CPRG could be used to support compost facilities, evolve processes to accept food waste, pilot new processes, and fund upgrades to provide infrastructure to handle increased volumes of organic waste, including pre and post-consumer food waste.
- Funding to Local and City Governments
  - Support each of Washington's 39 counties and a per capita allocation to one city per county
- Funding to Local Health Jurisdictions
  - 35 Local Health Jurisdictions distributed regionally in Washington

Intersections of other funding

Historic investments made in organics management and food waste prevention are listed in Table 11 below. These investments have funneled support to county and city governments and non-profits throughout Washington. Funds have been used to implement the OML in addition to prioritizing food rescue and recovery. The Washington State Data Hub is a priority of the recently launched Washington State for Sustainable Food Management. The Data Hub will serve as the incoming conduit to track edible food waste diverted.

Table 11. Historic Investments in Organic Management and Food Waste Prevention

Funding Source	Time Frame	Total Investment
Public Participation Grants (State Budget)	2023-2025	$1,526,816
Local solid waste financial assistance program grants (State Budget)	2023-2025	$2,094,000
Food Waste Reduction Campaigns (State Budget)	2021-2023	$2,000,000
Washington State Data Hub (State Budget)	2023-2025	$280,000

In addition to the funding sources listing in Table 11, LHJs receive funding from the Legislature and municipal governments that support organics management work when able.

The estimated need to meet Washington's organic management goals by 2030 as legislatively mandated by OML is $2 billion in total.

Authority to implement
To address food waste and wasted food in Washington, the 2019 Washington Legislature passed the Food Waste Reduction Act, now codified as RCW 70A.205.715.

In 2022, the Washington State Legislature passed the Organics Management Law. This law requires diversion of organic materials away from landfill disposal and toward food rescue programs and organics management facilities. This legislation amended and/or created over 20 laws, such as RCW 70A.205.540 and RCW 70A.205.545, which will drive the largest recovery of organics by phasing in business and residential organics collection requirements.

Seattle Municipal Code sections 21.36.082 and 21.36.083 require that residents and businesses do not put food scraps, compostable paper, yard waste, and recyclables in their garbage.

King County Code (KCC) 10.14.020 requires zero waste of material resources through prevention, reuse and reduction of solid wastes to landfill. Pursuant to KCC 18.25.010 to meet climate goals a goal of zero food waste in landfill by 2030 has been set.

Transportation sector

2.2.4 Scrap and replace fossil fuel powered commercial vehicles

Implementing entity
Washington State Department of Ecology

Description of measure
This priority measure addresses transportation sector emissions by implementing strategies identified in the newly approved state Transportation Electrification Strategy (TES). Transportation emissions account for 39% of emissions in Washington and medium- and heavy-duty (MHD) vehicles are responsible for 27% of on-road GHG emissions.

The goal of this measure is to establish a MHD vehicle scrap and replace program, offering point-of-sale vehicle incentives to scrap diesel vehicles and replace with zero-emission models and charging infrastructure incentives. This measure would catalyze Washington's MHD EV market while simultaneously ensuring polluting vehicles are removed from the road. Incentivizing the uptake of MHD vehicles will have an out-sized emission reduction impact relative to their proportion of the on-road vehicle population. Many MHD zero-emission vehicles are primed for wide-scale zero-emission adoption and only face the barrier of high upfront costs. This approach, with built-in reassessment milestones to adapt to market needs, will target vehicles that are ready for wide-scale application, bring down up-front costs, establish supportive fueling infrastructure, and encourage wide-spread adoption.

This program aligns with federal and state efforts to reduce transportation GHG emissions, future-proofing this infrastructure investment. The sooner zero-emission MHD vehicles are adopted, the sooner GHG emission reductions will be realized and associated public health co-benefits will be felt by LIDAC and overburdened communities. Additionally, the scrapping component of this program ensures older polluting vehicles will not be sold and operated elsewhere, such as overburdened communities. Decarbonizing high-mileage MHD vehicles will result in immediate and cost-effective GHG emission reductions and the scrapping component of this program will improve the air quality of communities overburdened by air pollution.

Estimate of the quantifiable GHG emissions reductions and quantitative cost estimates
This program will result in immediate and permanent GHG reductions by taking internal combustion engine (ICE) vehicles off the road and replacing them with zero-emission vehicles. Vehicles included in the GHG reduction model include zero-emission delivery vans, class-8 tractors, and refuse trucks, all of which have a useful life expectancy of 10-15 years. Per-vehicle emissions profiles are estimated using Alternative Fuel Data Center data on annual vehicle miles traveled (VMT) and fuel economy by vehicle type, as well as CO_2 emissions per gallon of gasoline from EPA.

The program design will take into account various scenarios, market demands, and potential GHG reductions when determining the classes of vehicles incentivized and the incentive amounts. Table 12 displays scenarios that model illustrated emissions reduced if all program funds were used for a single vehicle class.

Table 12. Cumulative GHG Reductions for Scrap and Replace of Fossil Fuel Powered Commercial Vehicles

Measure or Project	Cumulative GHGs Avoided 2025-2030 ($MTCO_2e$)	Cumulative GHGs Avoided 2025-2050 ($MTCO_2e$)
Scenario 1: Cumulative Emissions Reductions from Delivery Vans	117,000	313,000
Scenario 2: Cumulative Emissions Reductions from HD C8 Tractors	179,000	637,000
Scenario 3: Cumulative Emissions Reductions from Refuse Trucks	74,000	117,000

The above estimates are based on an estimated program cost of $100 million, which results in the following cost effectiveness for each scenario:

- Scenario 1 (Cumulative Emissions Reductions from Delivery Vans): $850/$MTCO_2e$
- Scenario 2 (Cumulative Emissions Reductions from HD C8 Tractors): $560/ $MTCO_2e$
- Scenario 3 (Cumulative Emissions Reductions from Refuse Trucks): $1400/ $MTCO_2e$

Implementation schedule, milestones, and metrics for tracking progress

The implementation of this proposed program could follow the following schedule:
- October 2024: Program Research: RFI & existing research review phase
- November 2025: Procurement: Request for Proposal (RFP) for third party administrator (TPA) released
- February 2025: TPA selected, contracting
- April-June 2025: Program design, approval, Environmental Justice Review

- July 2025: Round 1 funding launch (~$25 million)
- April 2026: Year 1 review program performance measures & modify
- July 2026: Round 2 funding launch (~$25 million)
- April 2027: Review program performance measures & modify
- July 2027: Round 3 funding launch (~$25 million)
- April 2028: Review program performance & modify
- July 2028: Round 4 (final) funding launch (~$25 million or remaining funds)
- June 2030: Review program performance and outcomes, Program closes, Final reporting

Milestones

- 400-1500 MHD zero emission vehicles purchased
- 400-1500 MHD ICE vehicles scrapped
- Reduction in cumulative metric tons of GHG emissions (120,000 – 180,000 $MTCO_2e$ by 2030, 300,000 – 600,000 $MTCO_2e$ by 2050)
- Reduction of criteria air pollutants (NOx: range 50 – 580 short tons, CO: range 86 – 394 short tons, PM2.5: range 0.3 - 1.1 short tons)
- Expansion of charging infrastructure (low-end range; 392 to high-end: 1524, assuming 1 charging station per vehicle replaced)[10]

Metrics for tracking progress

- Incentives distributed ($)
- Number of vehicles scrapped and replaced
- Vehicle purchase data (Price, make, model, year, intended use)
- Locations of vehicle replacements, % of funds in LIDAC
- GHG emissions reduced
- CAP pollutants reduced (NOx, PM2.5, CO)

Geographic location

The focus will be on MHD vehicles operating in EPA defined LIDACS and state defined overburdened communities in Washington. The Seattle-Tacoma-Bellevue MSA PCAP includes measures relating to regional transportation electrification and would be designed to ensure no duplication or overlap with the State's scrap and replace measure.

Intersections of other funding

This measure seeks to provide the entire state's MHD fleet access to zero-emission vehicles. Existing funding for converting vehicles is listed in Table 13 and has historically been focused on publicly-owned fleets.

The $120 million appropriated by Washington for MHD vehicle incentives will, at maximum only impact 1-2% of the total registered MHD fleet in the state[11]. Further funds from CPRG could double funds dedicated to the state's MHD fleet. In the zero-emission MHD commercial vehicle incentive study conducted for the WA Legislature's Joint Transportation Committee, stakeholder feedback highlighted the necessity of point-of-sale

[10] Ranges provided for the Scrap and Replace program quantify the possible program impact based on modeled scenarios using different vehicle types (class 8 tractors, refuse trucks, and delivery vans). Vehicles incentivized with the program will be determined based on the research/RFI phase of the project.
[11] Based on fleet data used in Transportation Electrification Strategy modeling

rebates to drive adoption of MHD EVs[12]. Existing tax credits are often inaccessible to many small, owner-operator businesses since they require the purchaser to provide the full cost up front and then be reimbursed.

Table 13. Funding for Fossil Fuel Powered Commercial Vehicles

Funding Source	State/Federal	Total Investment
Carbon Emissions Reduction Account (CERA), funded through Climate Commitment Act revenues (cap and invest program)	State	$120M appropriated for zero emission MHD vehicle incentives. At maximum, these funds will impact 1-2% of the total registered MHD fleet in WA. Additional funding is necessary to further accelerate transportation sector emission reductions. This funding does not include a vehicle scrapping incentive.
Commercial Clean Vehicle Credit	Federal	Up to $40k per vehicle tax credit. This tax credit has limited usefulness to many small, owner-operator or disadvantaged businesses since it does not reduce the capital needed at the time of purchase. The high initial investment associated with transitioning to zero-emission vehicles has been identified as a primary barrier to wide-spread adoption[13].
EPA Diesel Emissions Reduction Act (DERA) grants	Federal	Approximately $1M/biennium to scrap and replace old diesel-fueled equipment with cleaner equipment.
Volkswagen mitigation fund	Federal Settlement, State Penalty	$141M in funds from the Volkswagen federal settlement and State penalty invested in projects that accelerate widespread adoption of zero-emission technology. Initial funding opportunities were focused on publicly owned vehicles and charging infrastructure.
Ecology Air Quality Clean School Bus Grant Program	State	$14M appropriated in 23-25 biennium to scrap and replace diesel school buses with electric school buses.

Authority to implement
Authority for this measure is established in Washington's Clean Air Act (Chapters 70A.15 RCW, and 173-476 WAC).

State policies that will support this program include:

- Washington's Clean Fuel Standard, which will align with and support funding granted to the scrap and replace program by providing credits to owners of zero-emission infrastructure.
- Washington's Clean Truck program, which will align Washington with California's Advanced Clean Truck programs and will also positively impact MHD vehicle adoption.

2.2.5 Marine terminal electrification

Implementing entity
Washington State Department of Transportation

[12] Study in draft form, final study will be published on the JTC website: https://leg.wa.gov/JTC
[13] MHD study in draft form, final study will be published on the JTC website: https://leg.wa.gov/JTC

Description of measure
This measure will reduce GHG emissions through adding electrification improvements to key ferry routes operated by Washington State Ferries (WSF) in the Greater Seattle Metropolitan Area, which is home to more than half of Washington's population and is one of the largest metropolitan areas in the U.S. This measure will be implemented through the electrification of ferry terminals that will enable full electrification of four ferry routes. The measure will support the design and construction of rapid charging systems (RCS) for routes in the Central Puget Sound Region: Seattle-Bainbridge, Seattle-Bremerton, Edmonds-Kingston, and Mukilteo-Clinton. The RCS will allow for full battery-electric propulsion of the ferry system's Jumbo MKII and Hybrid Electric Olympic (HEO) class vessels. The design and installation of medium voltage power delivery and offshore charging structures — by providing RCS at both terminals on each route — will allow these hybrid-electric vessels to operate their electric engines fully on batteries without having to run their diesel-electric generators, thereby facilitating GHG emissions reductions.

Estimate of the quantifiable GHG emissions reductions and quantitative cost estimates
Table 14 lists the estimated GHG reductions for all routes in this measure. Projects will result in a permanent reduction of GHG emissions because diesel-powered vessels will no longer operate on these routes. GHG emission reductions are based on engineering estimates capturing vessel emissions generated by the engine/generator as well as the power utilities upstream emissions. Vessel emissions are calculated based on historical Fuel Consumption (FC).

Table 14. Cumulative GHG Reductions for Marine Terminal Electrification

Measure or Project	Cumulative GHGs Avoided 2025-2030 ($MTCO_2e$)	Cumulative GHGs Avoided 2025-2050 ($MTCO_2e$)
All terminal upgrades (Seattle, Bainbridge, Bremerton, Edmunds, Kingston, Clinton, Mukilteo)	102,000	1,318,000

An approximate cost of $99 million would fund terminal electrification upgrades on four major ferry routes and enable implementation of the entire electrification project along with other state and federal funding already identified. The measure will have a cost effectiveness of approximately $900/$MTCO_2e$.

Implementation schedule, milestones, and metrics for tracking progress
The WSF System Electrification Plan (SEP) outlines the agency's implementation schedule for the full system electrification initiative. Work has already begun to accomplish the project. Beginning in 2025, final design and right-of-way acquisition will be completed. Construction will be underway in 2026 and last less than five years. Progress toward achieving the expected outputs and outcomes will be tracked as part of WSDOT's annual requirement to report emissions of GHG and criteria pollutants to Ecology.

Milestones
- Upgrades to four routes allowing use of battery-electric propulsion of ferry system
- Reduction of ~1.3 million $MTCO_2e$ by 2050

Metrics for tracking progress
- Gallons of diesel used throughout the ferry system (change in gallons used by route)
- Number of ferry terminals converted to RCS
- Total GHGs reduced

Geographic location
The measure will support the design and construction of rapid charging systems for routes in the Central Puget Sound Region: Seattle-Bainbridge, Seattle-Bremerton, Edmonds-Kingston, and Mukilteo-Clinton.

Intersections of other funding
The Washington Legislature has approved approximately $435 million toward this measure from the CCA, but that amount is not sufficient to complete the project. In 2022, WSF applied for and received federal funds through the Federal Transit Administration's Low Emitting Passenger Ferry Program with $4.9 million in funds awarded for the electrification of the Clinton Terminal in Island County. The entire electrification program is estimated to cost approximately $4 billion for all 16 terminals with the potential of supporting hybrid electric propulsion.

Authority to implement
WSF is a publicly owned provider of mass transportation, administered by WSDOT under RCW 47.60. The authority to take all necessary action and responsibility on behalf of Washington is properly delegated and executed, and there are no outstanding legal, technical, or financial issues that would make this a high-risk project to implement quickly. Annually, WSDOT provides all certifications and assurances expected to apply to any active grant of the applicant in the fiscal year and will record these in the Federal Transit Administration's (FTA) Transit Award Management System (TrAMs) with the appropriate electronic signatures. WSF ensures compliance with all applicable Federal statutes, regulations, executive orders, FTA circulars, and other Federal requirements in carrying out any project supported by an FTA grant or cooperative agreement.

2.2.6 Complete Streets

Implementing entity
Washington State Department of Transportation

Description of measure
Complete streets create the foundation for a virtuous cycle of GHG reduction that sustains and accelerates over time. The public benefit and desirability of complete streets stimulates development of housing and destinations within convenient proximity of each other, reducing travel distances for all modes. Making places walkable and bikeable is an essential and foundational element of achieving Smart Growth as outlined by the EPA, and a strategic priority of the USDOT. As demonstrated by Washington's long-standing leadership in multimodal transportation and growth management, when people have access to transportation options, they use them. State highways are often the weakest link and most inhospitable part of the transportation network for walking and biking. By providing high quality walking and biking facilities on and across state highways, growing networks can be connected and catalyzed and infill development in already developed places can be supported.

Electrification of the transportation system is essential, but not sufficient to meet climate goals, and does not address the need to improve access for the Washingtonians who do not drive. Studies have found trips under 3 miles to be more than 50% of all daily trips, which is the active transportation standard for an easily bikeable distance. Complete streets that enable people of all ages and abilities to walk, cycle, roll, and access transit can transform our transportation system to one where people can freely access their destinations with little to no GHG emissions or co-pollutants, enjoy healthy exercise and connection to their communities, and benefit from improved equity, safety, and quality of life.

Developing complete streets is a requirement for state transportation projects. When project funds are available, WSDOT collaborates with local communities and redesigns streets which were built decades ago without infrastructure to support walking, biking, and other forms of active transportation. WSDOT has a long list of unfunded projects which this measure seeks to address and through which the agency is prioritizing communities with the most environmental health disparities.

Estimate of the quantifiable GHG emissions reductions and quantitative cost estimates
To be consistent with current best practices, the emissions reduction calculations in Table 15 are derived using the CARB Clean Mobility model, which includes assumptions about change in travel behavior. WSDOT currently has proposals to improve both the CARB Clean Mobility and the California Air Pollution Control Officers Association (CAPCOA) model for needed state reporting, and WSDOT will continue to test and refine these models for complete streets projects in Washington. As is expected of infrastructure projects, many of the reductions will occur in later years of project implementation and will continue to accrue reductions beyond the 2050 timeframe.

Table 15. Cumulative GHG Reductions for Complete Streets

Measure or Project	Cumulative GHGs Avoided 2025-2030 ($MTCO_2e$)	Cumulative GHGs Avoided 2025-2050 ($MTCO_2e$)
Complete Streets	450	6,500

This measure assumes a cost of $100 million for WSDOT to deliver complete streets improvements across Washington, with a cost effectiveness of approximately $222,000/$MTCO_2e$. With further funding, WSDOT will accelerate the successful delivery of programmed complete streets projects in over a dozen communities across the state, the majority of which would be in EPA EJScreen disadvantaged block groups. The median size of population expected to benefit from an individual project is around 10,000 people. These transformative projects will build demand and support for more improvements, catalyzing future success with other funding opportunities.

Implementation schedule, milestones, and metrics for tracking progress
Performance of the project delivery and construction is tracked and documented by the Capital Program Development and Management Division, as part of the standard statewide oversight of project delivery. Regional WSDOT teams oversee implementation of projects.

Project timelines
Each project will have specific needs depending on the location. A typical project timeline may look like the schedule presented in Table 16.

Table 16. Example of Typical Project Timeline for Complete Streets

Milestone	Date
Pre-design begins	11/2024
Project summary approval	8/2025

Milestone	Date
Preliminary engineering begins	9/2025
Environmental approval	7/2026
Right of way certification	12/2027
Advertisement	1/2028
Operational completeness	10/2029

Milestones

- Completing at least 17 projects
- Benefitting 13,000 people on average for projects
- More than 6,000 $MTCO_2e$ avoided by 2050
- 350,000 people within three miles of projects

Metrics for tracking progress

- Reduction in transportation related criteria and hazardous air pollutants measured in lbs.
- Reduction in GHG emissions ($MTCO_2e$)
- Number of projects and project mileage each report that finish Pre-Design
- Number of projects and project mileage each report that reach Construction start
- Number of projects and project mileage each report that open to the public
- Number of community engagement activities and # of participants

Geographic location

WSDOT currently has approximately over 100 projects located across the state that are targeted for completion by 2030 and need improvements to make them complete streets. Of that set, more than 75% serve communities in Washington that are low-income and disadvantaged. Providing benefits to these communities would be prioritized as part of this measure.

Intersections of other funding

The Complete Streets requirement at WSDOT does not have a dedicated funding source within the state transportation budget. As of September 2023, total preservation funding from the state legislature for the state highway system met 40% of total need, and without additional funds, projects will struggle to be completed[14].

The WSDOT projects with Complete Streets requirements have an estimated $890 million funding gap for the walking and bicycling elements programmed to be constructed by 2030.

Federal programs such as the Federal Highway Administration's identified Complete Streets funding opportunities and Department of Transportation programs for pedestrian opportunities tend to favor large individual projects. Currently, there is no dedicated funding that focuses on retrofitting complete streets for state highways or takes a programmatic approach. This measure would rely on CPRG funds to fill in the gaps

[14] The supplemental budget for the 23-25 biennium had not been finalized at time of publication and may have an impact on total state funding

in other funding sources to maximize the number of projects that are open for use by the public within the grant period.

Authority to implement
Authority for this work is under RCW 47.01.260 and Complete Streets directive is RCW 47.04.035. WSDOT also maintains long-standing agreements and protocols to address overlapping jurisdictional issues, including utilities relocation and ongoing maintenance.

2.2.7 Reduce emissions of fleets for rural and special needs transit

Implementing entity
Washington State Department of Transportation

Description of measure
State funding to transition public transit fleets has been effective in the procurement, delivery, and operation of zero-emission vehicles and equipment providing millions of trips per year in the largest population centers and avoiding the need for single occupancy vehicle trips. Proof of this program design has been established through the state Green Transportation Capital Grant program authorized by the Legislature in 2018. Since 2018, $78.3 million has been awarded to 23 agencies, supporting 44 zero-emissions projects.

The goal of this measure is to eliminate financial and technical barriers that prevent rural, private non-profit, and tribal transit providers of critical services from transitioning to a zero-emission transit fleet. To implement this measure, WSDOT would establish a competitive grant program to provide funding to these entities for cost-effective capital projects that reduce the carbon intensity of the Washington transportation system, expanding on the Green Transportation Capital Grant program. The proposed program expands the eligible pool of applicants to tribal transit agencies and private non-profit providers of critical services currently excluded from the Green Transit Capital and State Bus and Bus Facilities grant programs. It also expands the types of projects eligible to meet needs not currently addressed through other state or federal grant programs.

Estimate of the quantifiable GHG emissions reductions and quantitative cost estimates
Table 17 lists the estimated emissions reduction for this measure, which were calculated using the California Air Resources Board's Clean Mobility calculator tool. Funding would provide vehicle replacements and operating support to transition existing rural fixed route services in Washington to renewable vehicles. As an input to the calculator, an average annual VMT on each vehicle of 45,610 was assumed, which is an average calculated from rural Washington transit data in the National Transit Database's 2021 dataset. The results of this analysis greatly depend on the fuel source and quantity of vehicles purchased through this project. By increasing the number of battery electric vehicles purchased, GHG reductions could be increased further.

Table 17. Cumulative GHG Reductions for Reducing Emissions of Fleets

Measure or Project	Cumulative Reductions 2025-2030 ($MTCO_2e$)	Cumulative Reductions 2025-2050 ($MTCO_2e$)
Purchase Electric Bus (29)	16,000	38,000
Purchase Hybrid Cutaway/Shuttle (19)	1,500	1,500
Purchase Electric Van (51)	1,600	1,600

Measure or Project	Cumulative Reductions 2025-2030 ($MTCO_2e$)	Cumulative Reductions 2025-2050 ($MTCO_2e$)
All Vehicle Replacements	**19,000**	**41,000**

Assuming additional funding for this measure of $50,000,000, the cost effectiveness is approximately $2,600/MTCO_2e.

Implementation schedule, milestones, and metrics for tracking progress

The implementation schedule for this measure may proceed as follows:

- Fall 2024 - May 2025: WSDOT develops supplemental Green Transportation NOFO
    - Develop grant parameters: Create funding opportunity using the state's Green Transportation Capital Grant program as a model for application and scoring criteria development. Engage internal and external stakeholders in grant development. Prepare program materials such as website, informational documents, online application, and communications to partners.
    - Application cycle: call for projects, applications submitted, awards finalized WSDOT posts notice of funding opportunity, provides technical assistance to applicants, oversees application through evaluation and final awards, notifies grantees of awards, develops grant agreements, assigns project managers to funded projects
- May - June 2025: WSDOT awards all funds and executes grant agreements, and procurement initiated.
- July 2025 - June 2026: Subrecipients place orders for vehicles and equipment
- July 2026 - December 2027: Awarded projects are completed (all vehicles and equipment are delivered, accepted, and reimbursed)
- January 2027-2030: Completed projects are monitored for performance annually

Milestones

- Deployment of:
    - 29 Electric Buses
    - 18 Hybrid Cutaway/Shuttle
    - 50 Electric Vans
- 19,000 $MTCO_2e$ reduced from 2025-2030
- 41,000 $MTCO_2e$ reduced from 2025-2050
- 15,000 tons of NOx reduced from 2025-2030
- 105 lbs. of diesel PM and 446 lbs. of PM2.5 reductions from 2025-2030

Metric for tracking outcomes

- Short term outcomes:
    - Decreased diesel emissions
    - Increased mobility for rural areas
    - Increased awareness of green technology
    - Increased availability of alternative fueling infrastructure

- Long term outcomes:
    - Improved air quality leading to improved health outcomes
    - Reduced fire danger from climate change causing emissions

Metrics for tracking progress
- Number of vehicles converted to zero-emissions
- Amount of GHGs reduced

Geographic location
This measure plans to support rural transit agencies, tribal transits, and community transit providers (private non-profits) throughout Washington.

Intersections of other funding
While state and federal funding opportunities exist to support green fleet transitions, none are designed specifically for this applicant pool. This priority measure helps fill a critical funding gap while leveraging overall progress toward green fleet transitions. Tribal transit agencies and non-profits currently are not eligible for the state Green Transportation Capital grant program. Rural agencies can struggle to be competitive for this funding with big projects proposed by large urban transit organizations. Further, non-profit agencies are not eligible to apply for the Federal Transit Administrations Bus and Bus Facilities Program (5339(b)). And finally, the federal Low or No Emission Grant Program (5339(c)) and the Bus and Bus Facilities Program (5339(b)) require applicant match which can be a barrier for smaller agencies with limited financial resources.

Authority to implement
Authority for this work is under RCW 47.66.120. WSDOT maintains long-standing agreements and protocols to address overlapping jurisdictional issues, including utilities relocation and ongoing maintenance.

2.2.8 Enable decarbonization of rail infrastructure

Implementing agency or agencies:
Local Agencies, Ports

Description of measure
The Transportation Carbon Reduction Strategy cite green hydrogen and low-carbon fuels for rail as strategies to reduce the carbon intensity of transportation. The State Energy Strategy cites ongoing work to include new technologies and improvements that help make the changes needed to meet statewide GHG reduction limits and encourages the state to fund pilots and demonstration projects. This work is especially important for medium- and heavy-duty vehicles, rail, marine, and aviation.

It is estimated that rail moves around 40% of freight measured in ton-miles and is responsible for about 8% of the freight transportation carbon emissions. The rail industry in Washington is seeking ways to continue to lower its environmental footprint and there is growing interest in powering trains with hybrid solutions featuring hydrogen fuel cells. For example, Coradia iLint, launched in France, is one of the first passenger trains powered solely by hydrogen fuel cells and it produces zero emissions at the point of use.

This measure would have the objective of increasing energy efficiency of locomotive engines in the region. The measure would further reduce emissions associated with current locomotive technology and move toward

lower and zero-emission technologies that are still in research, development, and demonstration phases. Funding to support this measure could be used for the design and build of a repair and maintenance shop run by the Port of Pend Oreille (dba Pend Oreille Valley Railroad, POVA) for locomotives, large industrial vehicles, and smaller commercial vehicles. The facility would increase the number of locomotive engine conversions to Tier 3 and 4 locomotive emission standards (the highest efficiency and performance standards). POVA also plans to pilot a hydrogen fueling station and engine conversions which will look to replace diesel powered emissions entirely for a certain percentage of locomotives. This additional work in the measure would have further impacts to GHG reductions in the region. Costs will vary depending on the development of technology and supply chain. Additional funding from CPRG would allow the facility to expand from its current rate of 1-2 engine conversions per year to an additional 4-6 engine conversions per year and add hydrogen refueling capacity.

The new locomotive repair and maintenance shop would also incorporate, wherever possible, all sustainable development and design practices. These also include strategies that promote minimal environmental impact, advanced energy efficiencies, reduced water consumption, practical landscaping, and other green technologies that would be of particular interest and focus. Maintenance ease and the economical operation of the facility would also be essential to the project build. The new facility could also meet nationally recognized standards for energy efficiency and pursue LEED Certification.

Estimate of the quantifiable GHG emissions reductions quantitative cost estimates
Table 18 shows the estimated cumulative GHG reductions for Tier 3 and Tier 4 locomotive engines. With funding from CPRG, the number of converted locomotives to either Tier 3 or Tier 4 could be more than 35 by 2030. Additional shop space, staff, and apprentices could cut the timeline of this work in half and allow for an additional 4-6 conversions a year (instead of the average 1 to 2).

By 2050, POVA staff could complete an estimated 150-200 locomotive conversions, thus directly impacting at least 1% of the total North American Fleet, which as of 2020 was estimated to have around 38,450 locomotives in total with over 26,000 of them being diesel powered. Emissions and fuel consumption information is based on data and calculations done by Cummins and Western Rail.

Table 18. Cumulative GHG Reductions for Converting Locomotive Engines

Measure or Project	Cumulative Reductions 2025-2030 ($MTCO_2e$)	Cumulative Reductions 2025-2050 ($MTCO_2e$)
Conversions to Tier 3 engines	2,800	11,000
Conversion to Tier 4 engines	7,900	30,000
Total	**10,700**	**41,000**

The estimated cost of this project is $12 million and the cost effectiveness is approximately $1,100/$MTCO_2e$ for both tiers of locomotive engines.

Implementation schedule, milestones, and metrics for tracking progress
Initial performance measures would revolve around the timely completion of the maintenance shop expansion project. Following that project, increased locomotive conversions could begin to be measured compared to previous conversion capacity.

Implementation timeline
The timeline for this planning and construction project is estimated to take a least six to eight months to complete the building design process with an additional six to eight months for the selected consultants to draft and finalize a shovel-ready, turn-key building specification plan for the construction of POVA's new locomotive maintenance and repair shop. POVA anticipates that the total planning process for this feasibility study will take an estimated 12 to 16 months to complete. The actual infrastructure construction of this new facility could take up to 12 to 16 months, pending any possible issues there might be with assembly, installation, equipment testing, supply chain gaps or disruptions, and/or any potential delivery delays. Therefore, the overall estimated timeline to complete the entire project including planning, building construction, and installation of the new dry blast booth and hydrogen fueling station with storage capabilities is estimated to range between 24 to 32 months within a three-year (or 36 month) timespan. Following that time engine conversions can begin at a rate of an additional 4-6 per year.

Milestones
- 30 locomotives upgraded by 2030
- 150 locomotives upgraded by 2050
- 1 hydrogen fueling station added
- 1 blast booth conversion from a wet-to-dry process
- 6-8 new jobs created
- 100 annual apprenticeships created

Metrics for tracking progress
- Increase in locomotives upgraded to Tier 3/4
- Reduction of GHG emissions from new hydrogen fuel locomotives
- Improvements in air quality
- Increase in technology that conserves fuel, reduces idling and arm crews with information to operate trains more efficiently
- Number of direct/indirect jobs created through workforce development program that aims to train, place, support, and retain a diverse rail industry workforce

Geographic location (if applicable)
Port of Pend Oreille/ Pend Oreille Valley Railroad; Other ports in Washington

Intersections of other funding
This planning and construction project will not be a feasible option for POVA to pursue without the assistance of significant state and/or federal grant funding. To support the costs of construction and consultation for the new shop, POVA is seeking funding through federal programs including: EDA Public Works and Economic Adjustment Assistance Program; US DOT Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grants; US DOT Maritime Administration Port Infrastructure Development Program; and the Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program as well as investigating IRA clean energy tax credits related to hydrogen fueling. POVA will also seek state funding through the Commerce Community Economic Revitalization Board Planning Grant.

Authority to implement
Ecology regulates transportation emissions in Washington and follows EPA regulations for Tier 3 and 4 nonroad diesel engine standards. POVA has authority for this work under the Port of Pend Oreille Comprehensive Plan "Comprehensive Scheme of Harbor Improvement" per RCW 53.20.010 and economic

development activities are also authorized as part of the Port's public purpose by RCW 53.08.245. Similar authorities would be available under individual port comprehensive plans.

2.2.9 Electrify municipal and tribal fleets including expansion of electric vehicle charging

Implementing entity
Local agencies; tribes

Description of measure
Washington recently developed the Transportation Electrification Strategy (TES) to help the transportation sector reduce its GHG emissions in accordance with the state's GHG reduction goals. Electrifying on-road transportation, which represents 24% of the state's emissions, and for which electric vehicle (EV) technology is most advanced, is a critical opportunity for the state to reduce GHG emissions. As a national leader on climate action, Washington is already taking critical steps toward achieving these goals.

For example, the Washington Legislature adopted, and Ecology is implementing, California's motor vehicle emissions standards rather than the federal government's standards for new light-duty (i.e., passenger) vehicles (LDVs), the Advanced Clean Cars I and II (ACC I and ACC II) regulations, which require a progressively stringent zero-emissions vehicle (ZEV) sales share, culminating in a 100% sales requirement by 2035.

In addition to state legislation, tribes, cities, towns, ports, and transit agencies are also committed to reducing GHGs in Washington. This measure would directly fund the decarbonization of both municipal and tribal fleets to zero-emission vehicles, as well as the expansion and strategic deployment of EV charging infrastructure to support the increased use of EVs.

Additional GHG emissions reductions and resilience benefits could be realized by leveraging this measure in two different ways:

- Deploying renewable energy plus storage to fuel charging stations. By encouraging adoption of EVs, grant investments can address the transportation sector's outsized contributions to climate change in Washington.
- Using electrified fleets in a vehicle-to-grid set up. By leveraging smart charging technology to communicate with the local utilities and help mitigate load during peak times, especially extreme heat events, this measure can further reduce emissions associated with peak loads on the grid.

Estimate of the quantifiable GHG emissions reductions and quantitative cost estimates
Calculating the emissions and costs impacts from EV and charging infrastructure will vary depending on many factors including vehicle model and number, cost and emissions content of electricity and the emissions associated with existing fleets.

Table 19 lists estimated reductions from conversion to EVs. For the EV emission reduction estimations, the historic annual gasoline and diesel emissions can be compared to the projected electricity emissions after the project using the following methodology: Annual gallons of fuel consumed can be multiplied by the EPA's CO_2e equivalency factors to obtain the historic emissions from the vehicles to be replaced. For the projected emissions, the mileage for those same vehicles can be multiplied by their kWh per mile figures for the electric replacements. The total amount of electricity required to replace that fuel use can then be converted to CO_2e by multiplying by utility specific grid emission figures reported by Ecology. Using this methodology it is

expected that approximately 80% of emissions from fossil vehicles will be demonstrably avoided through the use of zero emission fleet EVs. Based on typical passenger vehicle estimates and a projected 80 vehicle list for municipality or tribe, annual estimated GHG reductions would be 300 $MTCO_2e$ reduced annually.

Table 19. Cumulative GHG Reductions for Converting Fleets to Electric Vehicles

Measure or Project	Cumulative Reductions 2025-2030 ($MTCO_2e$)	Cumulative Reductions 2025-2050 ($MTCO_2e$)
Convert fleets to electric vehicles	1,500	7,500

The average cost of electric light duty vehicles (which could include trucks and other larger LDV) can be estimated at $60,000. Therefore, the cost effectiveness of this measure using these assumptions is $3,200/$MTCO_2e$.

Implementation schedule
This measure could expect to be implemented over several years including purchasing, installation of charging stations and data collection for potential grid-related benefits and other renewable energy opportunities. Vehicle purchases are likely to happen over a staggered timeline, with approximately a dozen purchases per year during a five-year period, assuming supply chain issues do not hinder progress.

Milestones
- Complete conversion of fleets to EVs
- Deployment of charging infrastructure for EVs

Metrics for tracking progress
- Number of vehicles converted
- Number of emissions reduced
- Amount of storage capacity deployed

Geographic location
Statewide. The Seattle-Tacoma-Bellevue MSA PCAP includes measures relating to regional transportation electrification and would be designed to ensure no duplication or overlap with this measure.

Intersection with other funding
Washington has been awarded several federal funding opportunities related to EVs. WSDOT will receive $71 million total over five years from the National Electric Vehicle Infrastructure Formula Program, including 10.5 million in the first year. Washington received over $40 million from the FHWA Charging and Fueling Infrastructure Discretionary Grant program, with programs that support charging stations along the Olympic Peninsula, City of Mount Vernon, Ports of Seattle and Tacoma, and as part of a Pacific Northwest Rural Community Charging program. Commerce also awarded $85 million in grants to fund nearly 5,000 new EV charging stations in communities throughout the state, using state funds.

Authority to implement
Authority for this measure is established in Washington's Clean Air Act (RCW 70A.15 RCW, and 173-476 WAC) and Washington's Vehicle Emissions Standards (Chapter 70A.30 RCW).

E2SHB 1181, 2023 adds a climate change and resiliency goal to the Growth Management Act (GMA) and a required climate change and resiliency element to a GMA comprehensive plan.

2.2.10 Mode shift from trucking to water transportation to reduce vehicles miles travelled

Implementing entity
Local agencies; tribes; ports

Description of measure
The State Energy Strategy identifies reducing vehicle miles traveled (VMT) as a key strategy to reducing transportation emissions and the Washington State Transportation Carbon Reduction Strategy cites mode shift to maritime freight transport as an efficient and equitable way to move goods and people, one of the two overall strategies for emissions reductions.

This measure leverages mode shifting to water transportation as an effective VMT reduction strategy. To reduce GHG emissions in the transportation sector, local agencies and ports can purchase equipment and provide incentives to encourage the adoption of water transportation in lieu of long-haul freight trucking. Barging is a form of water transportation used to move freight between coastal ports. Barges are non-motorized, cargo-carrying vessels that are pushed or pulled between ports by towing vessels (such as electric tugboats). Barging freight is a less carbon-intensive modality that will lead to a measurable reduction in VMT and GHG reductions compared to long-haul trucking by:

- Allowing freight to be moved in bulk which reduces emissions; one barge can transport approximately 50 truckloads of freight
- Not consuming fuel and instead pushing or pulling freight by a towing vessel, which can be electric or electric-hybrid, further reducing the emissions compared to long-haul diesel trucking
- Reducing VMT by taking long-haul freight trucks off the highways.
- Lowering wear and tear on truck tires due to reduced VMTs[15].

Estimate of the quantifiable GHG emissions reductions quantitative cost estimates
Projects under this measure may increase the amount of goods moved by barging, increasing the efficiency of transportation and reducing VMT. This strategy has been explored by the Port of Port Angeles. Currently, the Port participates in two barge routes running between Port Angeles and Everett, WA and Port Angeles and Coos Bay, OR. In 2023, freight movement along these water routes produced 41% fewer GHG emissions compared to long-haul trucking. GHG reduction estimates for the proposed measure are modeled on actual VMT, fuel consumption, and freight volume numbers from 2023. These datasets were compiled on a weekly basis by the Port of Port Angeles and its logistics partners who received freight from Port Angeles.

For an estimate of GHG emissions, the Port considered the impact of creating new barging routes between Port Angeles and Everett, WA. Table 20 shows the potential impact that reducing VMTs through barging could have along that route.

[15] EPA identifies four major sources of emissions related to tire manufacturing: rubber processing, the use of cement, tire cord production, and puncture seal application. Tire manufacturing facilities are known to produce hazardous air pollutants (HAPs) that contribute to chronic and acute health disorders including formaldehyde, methanol, and hexane. In addition, tires are the primary source of 6PPD-quinone, a chemical found in runoff that is highly toxic to endangered salmon species.

Table 20. Cumulative GHG Reductions for Mode Switch to Water Transportation to Reduce VMTs

Measure or Project	Cumulative Reductions 2025-2030 ($MTCO_2e$)	Cumulative Reductions 2025-2050 ($MTCO_2e$)
Mode switch, reduction in VMT	3,600	18,000

These estimated emissions reductions are based on a grant award of around $10 million, with a cost effectiveness of approximately $2,800/ $MTCO_2e$.

These calculations do not include hybrid or electric towing vessels; however, with the adoption of such vessels, which are increasingly available and feasible for barging operations, GHG reductions could increase by an additional 27% (CO_2) and for criteria pollutants up to 73% (particulates) and 51% (NOx).

Implementation schedule, milestones, and metrics for tracking progress
Using the Port of Port Angeles as a pilot, the implementation of this measure may proceed via this proposed timeline:

- Year 1:
  - Purchase and installation of spud barge for use in shipping routes
  - Purchase of an inland barge; signed documents leasing the inland barge to a qualified operator
  - Develop management program for scheduling barging route
- Year 2:
  - 1-2 qualified participants selected and enrolled into management program
  - New inland barge begins operating

Milestones
- GHG emission reductions at double the current rate (725-ton reduction per year based on 2023 barging rates)
- Doubling barge freight traffic
- Reduced long-haul trucking vehicle miles traveled (VMT)
- Hazardous Air Pollutant (HAP) and Criteria Air Pollutant (CAP) reductions driven by fewer VMT and fewer gallons of fuel being consumed for freight truck traffic.

Performance Measure and Metrics for Tracking Progress
- Amount of GHG emissions reductions
- Amount of increase in barge traffic route
- Amount of reduction in long-haul trucking VMT.
- Amount of reduction in Hazardous Air Pollutants (HAP) and Criteria Air Pollutants (CAP)

Geographic location
Ports throughout Washington waterways could take advantage of this measure through multiple barging routes.

Intersections of other funding
A number of programs exist to support the work of ports, including the upcoming EPA Clean Ports Program and MARAD Port Infrastructure Development Program. However, these federal programs do not provide support for barging. Currently, funding through the CPRG is the best option for funding barging operations.

Authority to implement
Local governments have been directed to include VMT reductions in long term planning. In 2023, Washington Legislature passed legislation that adds a climate goal to the Growth Management Act (GMA) and requires local comprehensive plans to have a climate element with resilience and greenhouse gas emissions mitigation sub-elements. The GHG emissions sub-element must include goals and policies to reduce emissions and vehicle miles traveled. This sub-element is mandatory for the state's 11 largest counties and the cities within those counties. Climate elements must maximize economic, environmental, and social co-benefits and prioritize environmental justice in order to avoid worsening environmental health disparities.

Electric power sector

2.2.11 Support tribal energy sovereignty through Tribal Clean Energy grants

Implementing entity
Washington State Department of Commerce

Description of measure
This measure supports continued funding for federally recognized tribal governments and tribes' contracted service providers to promote sovereignty, advance resiliency, and contribute to Washington's climate, energy and environmental justice goals. The measure may include projects that modernize the electric grid, promote innovation and solar energy deployment, enhance community resilience, support low-income communities, target industrial decarbonization and siting and permitting of clean energy projects[16], and address any other climate pollution reduction projects important to tribes.

The 2021 State Energy Strategy includes tribal energy sovereignty as a priority for achieving the clean energy transition. This goal is best achieved through direct funding to tribes for tribally led projects. To achieve this goal through the state, the Washington Legislature has historically provided support for the state Clean Energy Fund (CEF) at Commerce for projects that provide a public benefit to communities in Washington through deployment of clean energy technologies that save energy and reduce energy costs, reduce harmful air emissions, or otherwise increase energy independence for the state.

To enhance support for tribal projects, the Tribal Clean Energy Grant program is a newly designed, state funded, program at Commerce that makes at least $16 million of grant funds available, with the funds tailored exclusively to federally recognized tribal governments and tribes' contracted service providers. Projects funded through this program align with state requirements to use funding for efforts to mitigate and adapt to the effects of climate change affecting Indian tribes, including capital investments in support of the relocation of Indian tribes located in areas at heightened risk due to anticipated sea level rise, flooding, or other disturbances caused by climate change and should not be used for activities that would violate tribal treaty rights or result in significant long-term damage to critical habitat or ecological functions. Investments from

[16] Clean energy projects funded under this measure should meet the state's definitions of clean energy (Chapter 19.405 RCW).

this account must result in long-term environmental benefits and increased resilience to the impacts of climate change.

This measure would seek additional federal funding to support an additional round of grants as part of this new program, which could begin as early as 2025. Commerce also supports direct funding of tribally led projects and this measure includes projects not funded by Washington state, but instead developed by and funded directly to tribes.

Estimate of the quantifiable GHG emissions reductions and quantitative cost estimates
Commerce has previously funded over 30 clean energy projects with federally recognized tribal governments and tribes' contracted service providers, focusing on the following projects:

- Solar projects
- Solar + storage (including planning, pre-design and pre-development)
- Grid modernization
- EV charger installation (including planning, pre-design and pre-development)

Tribal microgrids are a good example of a project that both deploys renewable energy and provides resilience benefits, which has been understood by Commerce to be a priority for many tribes in the Pacific Northwest region. Many tribes are "first off and last on" when extreme weather, wildfire, and other emergencies take down the power grid. The most recent round of funds for the Commerce Solar plus Storage for Resilient Communities grants supported four tribal microgrid projects. To estimate the GHG impacts over time, Commerce used the 895 kW of solar paired with 4053 kWh of storage from these tribal projects to estimate reductions.

Table 21 lists estimated GHG reduction assumptions for the solar deployed as part of these projects. Impacts to GHG emissions would be even greater with further data on the impacts of offsetting diesel backup and other grid benefits realized through deployment of solar plus storage microgrids.

Table 21 Cumulative GHG Reductions for Tribal Solar plus Storage Projects

Measure or Project	Cumulative Reductions 2025-2030 ($MTCO_2e$)	Cumulative Reductions 2025-2050 ($MTCO_2e$)
Tribal solar from microgrids	1900	9900

The total funds supporting these tribal solar plus storage projects was $4.63 million, making the cost effectiveness of this program approximately $2,300/MTCO2e. Cost effectiveness thresholds may be expanded at the discretion of Commerce evaluators for projects that support tribal energy sovereignty in a manner that support tribal priorities.

Implementation schedule, milestones, and metrics for tracking progress
The state-funded Tribal Clean Energy grant program timeline runs from February 15, 2024 into the fall of 2024. To address the varying levels of tribal staff capacity and readiness, applications are accepted on an ongoing basis until funds are exhausted. In support of this measure, additional federal funding for another round of the program would leverage existing program design Commerce has executed to develop the state-funded program, including listening and informational sessions and Commerce attendance at tribal conventions. Program development and design has also included working with Commerce's Office of Tribal Relations,

leveraging previous feedback from listening sessions and meetings with individual tribes on Commerce programs to develop the request for applications (RFA).

Implementation timelines and schedules would likely mirror those of the state-funded program, and could follow this timeline for a winter 2025 rollout:

- Request for Applications posted: February 15
- Question & answer period: February 15 – March 15
- Pre-Application Conferences (2): between March and February
- 1st Application review deadline: March 29
- Evaluate applications: April
- Announce awards: April 26
- Negotiate contract May – June
- Other rounds of application review could be run on a rolling basis in summer and winter depending on availability of funds

Milestones

- Increased tribal energy sovereignty
- Increased renewable energy on tribal lands
- Workforce development
- Deploying projects to tribes not having received funding in previous Commerce grants
- Emissions reductions on tribal lands
- Increased resilience
- Continued coordination with tribes

Metrics for tracking progress could include

- Number of tribal projects funded
- Amount of renewable energy capacity constructed
- Amount of storage capacity constructed
- Amount of GHG emissions reduced
- Health disparities impact on tribal lands

Geographic location

All federally recognized tribal governments, defined by Commerce as "[t]he government of any federally recognized Indian tribe whose traditional lands and territories included parts of Washington, designated subdivisions and agencies (such as a Tribal Housing Authority), or any other entities or authorities of a federally recognized tribal government in corporate form or otherwise in Washington[,]" are included as part of this measure.

Intersections of other funding

The Department of Energy (DOE) Office of Indian Energy keeps an updated list of funding opportunities available to tribes. One program under the Infrastructure Investment and Jobs Act is the Grid Resilience State and Tribal Formula Grants, which provide allocations to states and tribes. Allocations available for tribes are listed on the federal funding website. DOE also plans to release a funding opportunity in spring 2024 for $25 million to support Clean Energy Technology Deployment on Tribal Lands.

Authority to implement

Governor Inslee created the Clean Energy Fund (CEF) in 2013 to fund projects that provide a public benefit to communities in Washington through deployment of clean energy technologies that save energy and reduce

energy costs, reduce harmful air emissions, or otherwise increase energy independence for the state. The authority for the newly released Tribal Clean Energy Grant program comes from ten provisos in both the 2023-25 Biennium Capital and Operating Budget.

The HEAL Act requires Commerce to conduct consultation with federally recognized Indian tribes and guides tribal coordination and program development and design.

Agriculture sector

2.2.12 Fund anaerobic digesters

Implementing entity
Local agencies; tribes, farms, third party implementers

Description of measure
Organic waste, which includes food waste and other biodegradable materials, accounts for approximately 1.2 million tons (2015 baseline for food waste, source: Use Food Well Washington Plan) of all municipal solid waste generated in Washington per year. Food waste left to rot in landfills produces methane, a potent GHG. Anaerobic digesters (AD) divert organic waste from landfills, thereby reducing the impact of rotting food on the environment. AD can also be used to transform waste to energy at its source, reducing the need for hauling waste, and the renewable energy generated by the system could displace energy that would have otherwise come from fossil fuels. The anaerobic digestion process produces organic digestate that adds nutrients and carbon to the soil for improved plant growth and long-term carbon storage.

ADs can be implemented at a small scale to handle food waste at public facilities, medium scale when servicing agricultural livestock operations, and regional scale when accounting for multiple inputs which can include all the above. Deployment of community scale AD systems, which locate project as close to the food waste source as possible, preempts methane from being released in the atmosphere and captures it for beneficial use. These decentralized systems benefit the communities in which they are located. This measure aligns with recommendations from state plans to increase the use of small-scale ADs to reduce methane emissions from food waste.

Estimate of the quantifiable GHG emissions reductions and quantitative cost estimates
Local governments can implement this measure at a variety of scales. A small AD system can process 25 tons per year and reduce emissions by about 0.67 $MTCO_2e$ per ton of food waste, meaning that one project could avoid 17 $MTCO_2e$ per year. A larger system can process 500 tons per year and reduce emissions by about 0.67 $MTCO_2e$ per ton of food waste, meaning that one larger scale project could avoid 335 $MTCO_2e$ per year. These emissions reductions estimates are based on calculations done using EPA emissions factors and the EPA Waste Reduction (WARM) model.

Table 22. Cumulative GHG Reductions for Anaerobic Digesters

Measure or Project	Cumulative Reductions 2025-2030 ($MTCO_2e$)	Cumulative Reductions 2025-2050 ($MTCO_2e$)
Small scale anaerobic digester AD25	85	425
Large scale anaerobic digester AD500	1700	8000

Measure or Project	Cumulative Reductions 2025-2030 ($MTCO_2e$)	Cumulative Reductions 2025-2050 ($MTCO_2e$)
Total	**1760**	**8800**

Small ADs are approximately $209,000, and the large ADs are approximately $1,000,000, making the approximate cost effectiveness of the AD systems alone $2,500/$MTCO_2e$ and $590/$MTCO_2e$, respectively. The total cost effectiveness of a full project would depend on project specific costs of freight, permitting, installation and training, as well the size of digester.

Implementation schedule, milestones, and metrics for tracking progress
This measure could start with deployment to three projects in communities across Washington. The implementation schedule would include site work/installation, digester construction, and beginning of digestion. The transformative potential of projects could scale with more ADs coming online in the next five to ten years.

Other anticipated milestones and outputs:
- Over 8000 $MTCO_2e$ avoided by 2050
- 14200 tons of food waste diverted from landfills 2030-2050
- 3 installations by 2025
- Between 3-30 local jobs created

Metrics for tracking progress
- Number of digester projects completed
- Tons of waste diverted from landfill
- $MTCO_2e$ avoided
- Communities engaged
- Local jobs created

Geographic location
Small scale digester deployments as demonstration projects could be deployed at community facilities and farms across Washington.

Intersections of other funding
Federal funding for ADs is available through the USDA Rural Energy for America Program, which provides guaranteed loan financing and grant funding to agricultural producers and rural small businesses for renewable energy systems or to make energy efficiency improvements. Agricultural producers may also apply for new energy efficient equipment and new system loans for agricultural production and processing.

The Washington State Conservation Commission has one-time funding of $30 million from the CCA that was appropriated as part of the 2023-25 biennium to the Sustainable Farms and Fields program for organic agricultural waste and greenhouse gas emissions reduction through climate-smart livestock management. This one-time funding resulted in three new funding opportunities: Alternative Manure Management, Research and Demonstration, and Dairy Anaerobic Digesters.

Authority to implement
Washington's Solid Waste Handling Standards includes permitting requirements for solid waste anaerobic digesters. Other specific regulations are included in Chapter 70A.205.290 RCW.

2.3 Low income disadvantaged communities benefits analysis

The implementation of the measures included in this PCAP are anticipated to prioritize benefits to low-income and disadvantaged communities (LIDACs). This section identifies LIDACs covered by this PCAP, discusses meaningful engagement in the development of this PCAP, and lays out how Washington will continue engagement into the future (i.e. during CCAP development).

2.3.1. Washington's environmental justice context

Washington's environmental justice (EJ) law, known as the Healthy Environment for All (HEAL) Act (Chapter 70A.02 RCW), was enacted in 2021 and provides a roadmap for integrating EJ into state agency actions. The seven agencies covered by the HEAL Act include the state departments of Agriculture, Commerce, Ecology, Health, Natural Resources, and Transportation; it also includes the Puget Sound Partnership. The HEAL Act directs agencies to:

- Adopt a community engagement plan that centers on EJ
- Incorporate EJ into strategic plans
- Develop a tribal consultation framework
- Prioritize EJ in budget and funding decisions
- Conduct EJ assessments for Significant Agency Actions – any new program and projects over $12 million will count as Significant Agency Actions

The HEAL Act ensures that any significant new funding directed at climate pollution reduction will be required to center EJ principles and community engagement in both design and implementation.

2.3.2. Identifying LIDACs and potential impacts

Appendix D provides all LIDAC census block groups in Washington from the CEJST tool and EPA's EJScreen mapping tool. The criteria for determining LIDACs are set by EPA. For programs being delivered by state agencies, this list represents census block groups that will be prioritized in receiving the benefits of priority measures. Local agencies will also be required to work with LIDACs as they distribute implementation grant funds.

Table 23 lists the communities anticipated to be affected by implementation of specific priority measures included in this PCAP. Projects with "statewide" census LIDAC block groups are those that will be implemented through competitive programs or where project sites are not yet determined.

Table 23. Washington Communities Affected by Priority Measures

Measure	Affected LIDAC Census Block Groups
Refrigerant reduction	Statewide
Decarbonizing campus energy systems	Statewide Campuses with known fossil-fuel campus boiler systems: • Seattle Central College • Department of Health • Central Washington University • University of Washington • Washington State University • Western Washington University

Measure	Affected LIDAC Census Block Groups
Organics management	Statewide
Scrap and replace fossil fuel powered commercial vehicles	Statewide Especially along interstate highway routes, ports and other heavy- duty vehicle hubs.
Marine terminal electrification	Washington State Ferry service areas, including Island, King, Kitsap, and Snohomish counties
Complete Streets	Statewide
Reduce emissions of fleets for rural and special needs transit	Statewide
Enable decarbonization of rail infrastructure	Statewide
Electrify municipal and tribal fleets including expansion of electric vehicle charging	Statewide
Mode shift from trucking to water transportation to reduce vehicles miles travelled	Communities along coastal shipping routes, especially along Hwy. 101, the only truck route that connects the North Olympic Peninsula to the I-5 corridor and runs directly through downtown corridors and residential zones
Support tribal energy sovereignty through Tribal Clean Energy grants	Federally recognized tribes
Fund anaerobic digesters	Statewide

2.3.3. Mapping environmental justice communities in Washington

To assist with implementing the state's EJ requirements, Washington has developed a mapping tool, the Washington Environmental Health Disparities (EHD) Map, which provides nuanced information on different environmental health indicators across the state and identifies which communities are most impacted by environmental health disparities. State agencies are strongly encouraged to use the EHD map as a resource when implementing the HEAL Act, including making funding decisions and prioritizing outreach. The EHD map weighs environmental exposures such as diesel emissions and ozone with environmental effects like proximity to hazardous waste sites and measures such as education levels, race, employment, poverty rates, birth weights, and cardiovascular disease deaths to develop an overall environmental health disparities score between 1 and 10 for each census tract in the state. Higher scores correspond to higher rates of environmental health disparities; a score of 9 or 10 indicates that a census tract is "highly impacted" under Washington's Clean Energy Transformation Act (RCW 19.405.020).

There are also several federal tools for EJ mapping. Since each tool takes a different approach to mapping environmental, health, and economic disparities, multiple tools can be used together to determine disadvantaged communities. For CPRG, EPA includes any of the following as LIDACs:

- Any census tract included as disadvantaged in CEJST

- Any census block group at or above the 90th percentile for any of EJScreen's Supplemental Indexes when compared to the nation or state
- Tribal lands including Reservations or Off-reservation Trust Lands

While there is significant overlap between census tracts with high environmental health disparities scores and LIDACs, there is not complete agreement. For example, the CEJST tool marks all federally recognized tribal lands as disadvantaged, while the EHD tool does not score census tracts containing tribal lands highly unless these lands also have other significant environmental health disparities. However, other Washington laws require that tribal lands be a focus of clean energy transition, greenhouse gas reductions, and environment justice. A University of Washington researcher has compared these maps and found that another example is that more census tracts in southern parts of Puget Sound are considered highly impacted by the EHD map but not disadvantaged by CEJST; the difference may be because of weighting for various environmental factors between the two tools, different datasets or weighting of datasets, or different metrics that go into one tool versus another (e.g., the EHD map weighs race as a factor because "[a]n individual's race/ethnicity is a primary social determinant of health and is strongly associated with exposure to environmental pollutants"[17]).

EPA's EJScreen is another commonly used EJ mapping tool. Unlike the EHD Map, EJScreen does not combine all indicators into one score and unlike CEJST, EJScreen does not identify census block groups as "disadvantaged." Rather, it combines socioeconomic indicators with individual environmental indicators to create thirteen EJ indexes for pollution sources and hazards like superfund proximity or air toxics cancer risk.

2.3.4. Potential benefits of GHG emission reduction measures to LIDACs

Table 24 lists the potential co-benefits that LIDACs would receive from each measure in this PCAP. Potential risks for each measure would be identified as part of EJ assessments and could include environmental assessments for construction for projects and grid related infrastructure improvements. Other potential disbenefits would also be identified directly by impacted LIDACs through outreach and engagement activities.

Table 24. Benefits to LIDACs from Priority Measures

Measure	Direct/Indirect Benefits
Refrigerant reduction	○ reduce GHG emissions ○ economic development through transition to climate friendly refrigeration systems for small businesses ○ promote healthy food options in areas that may otherwise have few accessible stores ○ accelerated development of the workforce needed to support the installation and maintenance of climate friendly technologies
Decarbonizing campus energy systems	○ reduce GHG emissions ○ enhance resilience of campus infrastructure and reduce the risk of educational disruptions from the imminent failure of the existing infrastructure ○ workforce development ○ reducing operating costs ○ increasing health and safety for maintenance workers
Organics management	○ reduce GHG emissions ○ improve the air quality in communities near landfills

[17] Washington State Department of Health. Washington Environmental Health Disparities Map, Technical Report. Updated July 2022. https://deohs.washington.edu/sites/default/files/2022-08/311-011-EHD-Map-Tech-Report.pdf

Measure	Direct/Indirect Benefits
	• reduce methane emissions • Potential to increase food recovery
Scrap and replace fossil fuel powered commercial vehicles	• reduce GHG emissions • enhance resilience • improve air quality • promote economic development • improve salmon recovery • build community knowledge • provide cost savings • benefit wildlife and habitat • reduce emissions (mitigation) • relieve local road congestion
Marine terminal electrification	• reduce GHG emissions • enhance resilience • improve air quality • reduce HAPs and CAPs by eliminating the need to burn diesel • reduce risk of fuel spills and damage to the marine environment • provide cost savings • benefit wildlife and habitat
Complete Streets	• reduce GHG emissions • improved safety, mobility, and accessibility • climate resilience • mitigate heat islands • housing • physical and mental health • connectivity plus social capital • community centered economic development • environment and open space • co-governance • reduce individual transportation costs
Reduce emissions of fleets for rural and special needs transit	• reduce GHG emissions • enhance resilience • improve air quality • promote economic development • improve salmon recovery • build community knowledge • provide cost savings • benefit wildlife and habitat • relieve local road congestion
Enable decarbonization of rail infrastructure	• reduce GHG emissions • enhance resilience • improve air quality • promote economic development • workforce development
Electrify municipal and tribal fleets including expansion of electric vehicle charging	• reduce GHG emissions • enhances resilience • enable further transportation electrification • reduce noise pollution • improve air quality • promote economic development • workforce development

Measure	Direct/Indirect Benefits
Mode shift from trucking to water transportation to reduce vehicles miles travelled	○ reduce GHG emissions ○ reduce VMT through communities ○ reduce noise pollution ○ enhance resilience ○ improve air quality ○ promote economic development ○ workforce development
Support tribal energy sovereignty through Tribal Clean Energy grants	○ support tribal sovereignty ○ reduce GHG emissions ○ enhance resilience ○ promote economic development ○ workforce development
Fund anaerobic digesters	○ reduce GHG emissions ○ enhance resilience ○ reduce waste volume ○ reduce water pollution

2.3.5 Community engagement

Washington conducted intergovernmental coordination and public outreach in the development of this PCAP. This section outlines the approach to facilitating meaningful engagement strategies, aiming to ensure broad representation from across the state in the identification of priority measures.

Collaborating partners in PCAP development

This PCAP is designed to address and identify the priority measures that are implementation ready, can be completed in the near term (defined as the five-year performance period of the implementation grant), and follows state GHG reduction mandates. The priority measures in this PCAP include actions that will be competitive for Phase 2 CPRG funding implementation grant awards.

Washington actively engaged with all CPRG Phase 1 awardees in the state, encouraging them to coordinate and collaborate on CPRG deliverables and potential Phase 2 implementation grant applications. Puget Sound Clean Air Agency (PSCAA), lead for the Seattle-Tacoma-Bellevue Metro Statistical Area (MSA), and Washington began collaboration prior to the submission of the CPRG Phase 1 application. Despite the tight timeline for developing the PCAP, due by March 1, 2024, Washington made significant efforts to ensure the inclusion of voices from a diverse range of interested partners.

To identify collaborating partners for the PCAP, Washington reached out to tribes, state and local agencies, organizations with an interest in clean energy infrastructure and practices, as well as the general public. These collaborating partners encompass various entities, groups, and individuals who may be affected by the PCAP's implementation, including but not limited to:

- State agencies
- Metropolitan planning organizations
- Economic development organizations
- Environmental advocates
- Industrial associations
- Automotive associations
- Utilities
- Agricultural associations
- Waste management organizations
- Industrial organizations
- Consumer advocates
- Local elected officials

- Community-based organizations
- Chambers of commerce
- General public

Outreach and Coordination Plan
Commerce established the Washington Climate Pollution Reduction Grant Program website upon receiving the grant, serving as a central hub for information, meeting announcements, and collaboration opportunities related to the Washington Climate Pollution Reduction Grant Program. Engagement strategies encompassed various channels, including email lists, social media, public surveys, online meetings, public comment periods, and a dedicated portal for submitting ideas and input.

For detailed insights into outreach and coordination efforts, covering interagency and intergovernmental coordination, partnering agencies, and public engagement associated with the PCAP's development, refer to Appendix A, Table 1A. Additionally, Appendix B, Table 1B provides specifics on recurring workgroup meetings dedicated to offering guidance, subject matter expertise, collaboration, and outreach coordination regarding CPRG progress. Meeting and outreach materials and resources are available at WA CPRG Meeting Materials.

2.4 Workforce planning analysis

The priority measures included in this PCAP will result in the creation of high-quality jobs for Washington. This section details Washington's strategies and commitments to ensure job quality, strong labor standards, and a diverse, highly skilled workforce to implement priority measures. In 2023, Governor Inslee and the Legislature passed the Climate and Clean Energy Service and Workforce Programs bill, House Bill 1176.

The goals of this legislation include:

- Enacting the Washington Climate Corps Network to support and grow climate-related service opportunities for young adults and veterans.
- Establishing the Clean Energy Technology Workforce Advisory Committee (CETWAC) to advise policymakers on efforts to support the expansion of clean energy technology sectors and jobs by prioritizing transition of the existing skilled workforce to new industry sectors and providing training opportunities where needed to address gaps.

CETWAC is tasked with recommending strategies to prevent workforce displacement, to support job creation in clean energy technology sectors, and to provide support for workforce-related changes to businesses and for adversely impacted workers. CETWAC membership is open to all interested parties including, but not limited to, business and worker representatives from sectors of the economy affected by the transition to clean energy.

In addition to the Commerce, participating CETWAC entities include:

- International Brotherhood of Electrical Workers
- Employment Security Department
- Northwest Laborers' Employers Cooperation and Education Team
- Governor's Office
- Washington and Northern Idaho District Council of Laborers
- State Board of Community & Technical Colleges
- Global Operational Due Diligence

- Washington Labor Advisory Committee
- Amalgamated Transit Union
- Washington Building Trades
- City of Seattle
- Workforce Training and Education Coordinating Board
- WSU Energy,
- BlueGreen Alliance
- CleanTech Alliance
- United Steel Workers
- PNW Center of Excellence for Clean Energy
- Puget Sound Partnership
- Washington State Association of Plumbers & Pipefitters
- Washington Roundtable
- Office of Financial Management
- MacDonald Miller
- Association of Washington Business
- Department of Labor and Industries
- Puget Sound Energy
- Sheet Metal Workers Union

CETWAC is serving as a policy development hub supporting public and private partnerships and facilitating regional and industry specific workforce needs. Over the next two years, aligning with the HEAL Act and President Biden's Executive Order 14008 Justice40 Initiative, emphasis will be placed on diversity and inclusion in recruitment and training, especially for workers in overburdened, marginalized, and vulnerable communities. The committee will work with education and training sources to encourage opportunities in clean energy and technology for workers, both those entering the workforce for the first time, and for workers interested in a career shift. Recommendations will be made to create a crosswalk of transferable skills between industries and supporting alterations in curriculum for career training and educational programs as well as registered apprenticeships. Supporting creation of family wage jobs, while meeting employer needs for skilled workers will address Washington's future job needs and bring a financial boost to families and the state's economy.

Over the next few years, the Advisory Committee plans to prioritize a comprehensive analysis of Washington's clean energy policies' impact on the current workforce. This includes assessing the capacity of existing education and training programs to meet clean energy sector workforce needs, while also evaluating the demographics of the workforce and efforts to bring equity to the Washington workforce. Recommendations to policymakers will involve input from a balance of business, labor interests, education and training programs, as well as state agencies.

The first CETWAC report includes preliminary policy issues identified by the advisory group to assist with clean energy technology workforce development. The recommendations include:

1. Policymakers fund grant development and management capacity for state and local agencies, tribal governments, postsecondary education and technical programs, as well as registered apprenticeship programs, to best leverage available federal funding opportunities focused on clean energy technology workforce needs. This will enable local partnerships between government, labor, business, and others to plan, solicit, and implement clean energy workforce activities.

2. Policymakers at the state, local and federal level address delays, and work to improve the predictability of the permitting process to help business, labor, and communities plan for their workforce needs.

3. Next Steps: Comprehensive Climate Action Plan

The next step for the CPRG planning grant is to develop Washington's Comprehensive Climate Action Plan (CCAP). This section details the EPA requirements and current plans for that work.

3.1 CCAP development

The CCAP is a crucial tool in determining the full scope of actions required to reach the state-mandated limit of net-zero emissions by 2050. It will be a pathways analysis, identifying and prioritizing cost-effective opportunities to achieve Washington's emission limits. The development of the CCAP will align with the state's EJ and equity objectives, as stipulated in the HEAL Act and state agency-specific community engagement plans. The elements that are required by EPA in the CCAP include:

- Element 2.1, GHG Inventory
- Element 2.2, GHG Emissions Projections
- Element 2.3, GHG Reduction Targets
- Element 2.4, Quantified Comprehensive GHG Reduction Measures
- Element 2.5, Benefits Analysis
- Element 2.6, Low-Income and Disadvantaged Communities Benefits Analysis
- Element 2.7, Review of Authority to Implement
- Element 2.8, Leverage and Intersection with other Funding
- Element 2.9, Workforce Planning Analysis
- Element 2.10, Stakeholder engagement activities

3.2 Future outreach and engagement

Washington, in collaboration with the Puget Sound Clean Air Agency (PSCAA),[18] will host the CPRG CCAP Public Kick-Off meeting on April 29th, 2024. The partners will adopt a comprehensive and equitable approach to GHG reduction strategies that includes lived experience. Building on relationships established during the PCAP, Washington aims to deepen existing connections and expand avenues for engagement during CCAP community outreach. Cascadia Consulting Group, Inc. has been contracted by Commerce to strategize on how to identify and engage low-income and disadvantaged communities, creating meaningful opportunities for resident input regarding concerns and priorities. Cascadia (Cascadia) will also assist in establishing specialized workgroups tailored to specific sectors, measures, regions, and shared areas of interest.

Washington plans to overcome participation barriers by utilizing available funds from the CPRG planning grant. These funds will be allocated for needed services, such as translation services, stipends for participation in listening sessions, space rental, and tabling/participation in community events. A combination of hybrid in-person and virtual events will address geographic representation concerns, allowing individuals to attend regardless of their ability to physically reach a location. Meeting locations will be selected with consideration for community trust, accessibility, and flexibility.

Multiple communication channels, such as press releases, social media, online meetings, focus groups, public meetings, and both virtual and in-person community dialogues, will be leveraged to inform and invite interested parties and the public to participate in CCAP development. Regular updates on progress, upcoming

[18] the lead for the Seattle/Tacoma/Bellevue municipal statistical area (MSA)

engagement opportunities, and solicitation of feedback will be provided through these channels. By employing these engagement methods, Washington aims to incorporate the priorities and concerns of low-income and disadvantaged communities into the CCAP while ensuring alignment with federal government guidance.

3.3 Measures identified for CCAP consideration

Commerce received public feedback on draft PCAP priority measures, which were made publicly available for review from December 19, 2023 through January 12, 2024. Measures that were not aligned with the goals of the PCAP, but were aligned with overall Washington GHG reduction strategies, are presented in Appendix C, Table 1C and will be considered in development of the CCAP. These measures will not be used for CPRG Phase 2 Implementation funding.

Beyond the measures outlined in Appendix C, conducting a thorough analysis of measures across all sectors is essential to meet the state's net-zero emissions requirement by 2050. Through extensive outreach, Washington intends to engage state agencies, local governments, subject matter experts, tribes, and the public in shaping the CCAP. This collaborative approach ensures that relevant measures in various communities are considered, emphasizing EJ and equity goals. As the CPRG team transitions to the next phase, these measures will not only steer CCAP development but also play a vital role in achieving overall success in GHG emissions reduction, fostering an inclusive and sustainable approach to tackling climate pollution challenges.

Appendix A. CPRG PCAP Outreach and Coordination Log

Table 1A. CPRG PCAP Outreach and Coordination Log 7/1/2023 - 2/29/2024

Date/ Schedule	Topic	Organizations Involved	Outreach Method	Outcome/Links
6/27-29/ 2023	Conveners Network in Chicago	Commerce & Ecology	In Person - Chicago	Coordinate and connect with other states on the CPRG
8/28/2023	Public Engagement	Commerce and other state agencies	Lunch and Learn zoom	Public utility focused
9/19/2023	Presentation with Energy Division	Affiliated Tribes of Northwest Indians (ATNI) Convention	In Person	Information sharing
9/20/2023	Refineries Emissions Workgroup	RMI, Ecology, Commerce	Online	Review reduction strategies
9/21/2023	Seattle/Bellevue/Tacoma MSA CPRG Kick Off Meeting	PSCAA (Lead), Commerce and Ecology present	In Person	Collaboration with MSA
10/30/2023	CPRG Phase 1 Quarterly Meeting	Commerce and Ecology present with General Public in attendance	Online	Introduction to CPRG and first quarter progress. 80 attendees
11/14/2023	Phase 2 Public Stakeholder Meeting	Department of Commerce & PSCAA	Online	180 virtual attendees, collaboration, partnership building, survey for GHG priority identification
11/15/2023	Phase 2 Working Session	Governor's Office, Commerce, Ecology, PSCAA, Cascadia Consulting	Online	Identified Governor office priorities for GHG reduction measures
11/20/2023	CPRG and UCUT Collaboration	Commerce and UCUT	Online	Collaboration and Partnership with Tribal CRPG recipient. 8 attendees
11/21/2023	CPRG Phase 1 Tribal Collaboration Gathering	Commerce and 10 tribes who received CPRG Phase 1 grants were invited	Online	Coordination and Partnership with Tribal CPRG recipients. 19 attendees from 5 tribes.
11/28/2023	CPRG/Cascadia Ideation meeting for CPRG Message and Tools for Effective Outreach	Commerce, Cascadia, PSCAA, Ecology	Online	Brainstorming session to identify CPRG Communications, Messaging, and Outreach needs. 10 attendees
12/15/2023	Phase 2 Working Session	Governor's Office, Commerce, Ecology, PSCAA, Cascadia Consulting	Online	Strategy development for State and MSA Phase 2 applications. 10 attendees
12/20/2023	CPRG Phase 1 Tribal Collaboration Gathering follow up	Commerce and 10 tribes and 2 tribal consortium who received CPRG Phase 1 grants were invited	Online	Coordination and Partnership with Tribal CPRG recipients. 19 attendees from 5 tribes and 1 tribal consortium
12/21/2023	Phase 2 Strategy Session	Governor's Office, Commerce, Ecology, and PSCAA	Online	Discussion and identification of PCAP draft measures for potential Phase 2 Implementation Grant. 24 attendees

Date/ Schedule	Topic	Organizations Involved	Outreach Method	Outcome/Links
1/10/2024	CPRG/Cascadia Ideation meeting for Engagement and Outreach	Commerce, Cascadia, PSCAA, Ecology, and DH Consulting	Online	Identify Outreach and Engagement goals, objectives, impacts, methods, and barriers to engagement. 8 attendees
1/11/2024	CPRG Monthly Tribal Workgroup Preparation	Commerce and Office of Tribal Relations	Online	Assist with preparation and review for up-coming CPRG Monthly Tribal Workgroup. 2 attendees
1/18/2024	Peninsula Regional Transportation Planning Organization (PRTPO) Advisory Committee	PRTPO, Commerce, and interested public members	Online	Presented information on CPRG to Advisory group. 30 attendees
1/29/2024	CPRG Phase 1 Quarterly Meeting	Commerce and Ecology present with General Public in attendance	Online	CPRG Planning Grant progress. 188 virtual attendees.
Throughout PCAP	Numerous one on one meetings	Various state and local agencies, tribes, communities, subject matter experts, businesses, and public	Online, In Person, Phone	Collaboration on PCAP measures and identification of potential Phase 2 Implementation grant projects. Outreach to 95+

Appendix B. CPRG PCAP Recurring Workgroup Log

Table 1B. CPRG PCAP Recurring Workgroup Log 7/1/2023 - 2/29/2024

Date/ Schedule	Topic	Organizations Involved	Outreach Method	Outcome/Links
Weekly	CPRG State/MSA Coordination meetings	Department of Commerce & PSCAA	Online	CPRG Outreach, engagement, and coordination.
Weekly	Commerce/ Ecology CPRG Progress Meeting	Commerce & Ecology	Online	Updating progress toward CPRG deliverables.
Weekly 9/28/2023- 11/1/2023 then moved to Monthly	Weekly Clean Energy Workforce Technical Advisory Committee	Clean Energy Technology Board, Commerce, Union Worker Representatives, Employment Security Department, Labor organizations, Governor's Offices, State Boards and Councils, College and Training Institutions, Trade Organizations, Various State and Local Organizations, Business Organizations, Council of Laborers, and various Industry Representatives	Online	Workforce Planning Analysis Collaboration.
Bimonthly 7/1/2023- 10/31/2023	Office of Financial Management Coordination	OFM and Commerce	Online	Coordination of CPRG operations.
Bi- Monthly as of Nov 2023- Feb 2024	CPRG and Cascadia Communication/ Engagement Meetings	Commerce and Cascadia Communications	Online	Coordination of marketing, communications, and engagement strategy for CPRG program.
Bimonthly as of Jan 2024	CPRG and EPIC coordination	Commerce CPRG and Energy Division EPIC teams	Online	Coordination of climate related programing.
Bi-monthly as of Feb 2024	CPRG, MSA (PSCAA), and Cascadia Communication/ Engagement Meetings	Commerce, PSCAA, and Cascadia Communications	Online	Coordination of marketing, communications, and engagement strategy for CPRG program.
Monthly	CPRG update to State offices	Commerce, Governor's Office, Ecology, Office of Financial Management, Department of Health	Online	Provide updates and guidance on CPRG progress on deliverables.
Monthly	Tribal Climate Roundtable	Tribal governance members, Governor's Office of Indian Affairs, ATNI, Ecology, Commerce, Governor's Office, and Climate related agencies	Online	Provide updates and coordination among different climate related policies, planning, and grants.
Monthly	PSCAA/UW TCTAC Coordination	PSCAA, UW TCTAC, Commerce, Ecology	Online	Program updates, sharing of resources, and coordination.
Monthly	USCA CPRG Monthly Meetings	USCA and CPRG awardees throughout the nation	Online	Coordination and collaboration among CPRG recipients.

Date/ Schedule	Topic	Organizations Involved	Outreach Method	Outcome/Links
Monthly	CPRG and Office of Tribal Relations Coordination	Commerce CRPG and Office of Tribal Relations	Online	Coordination and technical assistance to prepare for tribal engagement.
Monthly	Energy Tribal Relations Committee	Commerce Energy Division programs	Online	Coordinate tribal relations and outreach among Energy Division at Commerce.
Monthly	Righting our Relations: Tribal Resource Group	Commerce staff & Office of Tribal Relations	Online	Provide information, conversations, tools, tips, techniques, and coordination of tribal engagement.
Monthly	Energy Resilience Workgroup	Commerce Energy Department Staff	Online	Coordination of Commerce Energy Programs
Monthly	Washington, Oregon, ATNI, MSA, and EPA Coordination calls	Affiliated Tribes of NW Indians (ATNI), Oregon State- DEQ & ODOE, Washington State - Commerce & Ecology, Portland-Vancouver Metro MSA, Seattle-Tacoma-Bellevue MSA (PSCAA), EPA	Region 10 listserv	CPRG Updates, Collaboration, and Coordination.
Monthly	Environmental Justice Council Meeting	EJ appointed council members and interested public attendees	Online	Provide information about EJ within the state of Washington.

Appendix C. Potential CCAP GHG measures

Table1C. Measures that will be explored further in the CCAP but are not included in Washington's PCAP and will not be considered for CPRG Phase 2 Implementation funding.

Sector	Greenhous gas reduction measure
Solid waste management	Use renewable energy plus storage for backup power at wastewater treatment plant
Solid waste management	Fund food donation and transportation related cold chain infrastructure
Solid waste management	Retrofit anaerobic digesters, including more energy efficient pumps, lights, and other support systems that will reduce the electrical and fossil fuel load
Electric power sector	Create a virtual power plant incentive program
Built Environment	Energy efficiency upgrades for public libraries
Agriculture	Decarbonize agriculture and forestry using electrification, on-farm charging, and energy efficiency measures-especially in heating, cooling, pumps, and other equipment
Agriculture	Provide grants and incentives for in-state alternative nitrogen fertilizer production
Building	Fund neighborhood energy districts Deploy natural refrigerant heat pumps and chillers with stratified thermal storage to enable thermal demand to be decoupled from power supply Fund residential, commercial and municipal waste heat recovery
Building	Fund EV chargers in multifamily homes Fund EV chargers at commercial buildings (ex. building-supply centers) and places of employment
Building	Replace electric resistance water heaters and electric resistance space heating in "mobile homes" with heat pump systems
Building	Incentive programs for electric heat pump water heaters for residential gas customers
Building	Fund residential, campus, commercial and municipal waste heat recovery
Building	Fund digital building controls that enable deep energy savings, such as conservation of electrical energy for fans and motors, in older commercial and campus buildings Support sub-metering capabilities at campuses as a tool for conservation
Building	Holistic library retrofits to create resilience hubs, including solar and storage, high-quality air filtration, and all-electric heating and cooling alongside energy efficiency upgrades
Building	Expand Funding for High Efficiency Electrification Programs through existing residential energy efficiency program to achieve 3,000 installations of ductless heat pumps in moderate income homes, replacing oil, gas, propane, or wood heat
Building	Fund K-12 community resilience hub and distributed energy/storage demonstration projects with solar panels, geothermal heating/cooling, and bi-directional EV buses
General	I want cleaner energy, and air land and water

Sector	Greenhous gas reduction measure
Carbon Removal Measures	Include carbon capture as a viable means to reduce GHG emissions. For large buildings and campus settings
Electric Power Sector	Fund existing or expired renewable energy incentive programs
Electric Power Sector	Encourage the use of solar modules with a low carbon footprint
Transportation	In addition to Complete Streets, fund complementary land use patterns that generate walk, bike, and transit trips
Carbon Removal Measures	Carbon sequestration on natural and working lands, including restoration treatments on acquired properties, expanded invasive species management, and land acquisition for conservation practices.
Transportation	Low-interest loan/financing for low-income individuals for electric vehicle purchases
Transportation	Incentives for income-qualified residents to purchase e-bikes
Transportation	Programs to increase the share of electric vehicles and to expand electric vehicle charging infrastructure powered by renewable energy
Transportation	Improve public transit service and infrastructure
Transportation	Truck and vehicle replacements for small businesses to upgrade their gasoline & diesel vehicles to electric or hybrid electric.

Appendix D. LIDACs in Washington

Please see Attachment 1 for a full list of Washington LIDACs, which includes data from both the Climate and Economic Justice Screening Tool and the Environmental Justice Screening and Mapping Tool.

The underlying data from both tools and technical documentation can be found on the EPA website: Inflation Reduction Act Disadvantaged Communities Map

OID_	ID	National_Supp_Index	State_Supp_Index	CEJST	Alaska_Native_Allotments	Alaska_Native_Villages	American_Indian_Reservations	OffReservation_Trust_Lands	Oklahoma_Statistical_Areas	Disadvantaged
227682	530019501001	No	No	Yes	No	No	No	No	No	**Yes**
227683	530019501002	No	No	Yes	No	No	No	No	No	**Yes**
227684	530019501003	No	Yes	Yes	No	No	No	No	No	**Yes**
227685	530019502001	No	No	Yes	No	No	No	No	No	**Yes**
227686	530019502002	No	Yes	Yes	No	No	No	No	No	**Yes**
227687	530019502003	No	Yes	Yes	No	No	No	No	No	**Yes**
227688	530019503011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227689	530019503021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227690	530019503031	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227691	530019503032	No	No	Yes	No	No	No	No	No	**Yes**
227692	530019504001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227693	530019504002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227694	530019505001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227695	530019505002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227696	530019505003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227704	530039603001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227705	530039603002	No	Yes	Yes	No	No	No	No	No	**Yes**
227706	530039603003	No	Yes	Yes	No	No	No	No	No	**Yes**
227707	530039603004	No	No	Yes	No	No	No	No	No	**Yes**
227708	530039604001	No	Yes	Yes	No	No	No	No	No	**Yes**
227709	530039604002	No	No	Yes	No	No	No	No	No	**Yes**
227710	530039605001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227711	530039605002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227712	530039605003	No	No	Yes	No	No	No	No	No	**Yes**
227713	530039605004	No	No	Yes	No	No	No	No	No	**Yes**
227714	530039606001	No	Yes	No	No	No	No	No	No	**Yes**
227716	530039606003	No	Yes	No	No	No	No	No	No	**Yes**
227717	530039606004	No	Yes	No	No	No	No	No	No	**Yes**
227728	530050102042	Yes	Yes	No	No	No	No	No	No	**Yes**
227731	530050103003	No	Yes	No	No	No	No	No	No	**Yes**
227733	530050104001	No	Yes	Yes	No	No	No	No	No	**Yes**
227734	530050104002	No	Yes	Yes	No	No	No	No	No	**Yes**
227735	530050104003	No	Yes	Yes	No	No	No	No	No	**Yes**
227736	530050105001	No	Yes	Yes	No	No	No	No	No	**Yes**
227737	530050105002	No	Yes	Yes	No	No	No	No	No	**Yes**
227740	530050106003	Yes	Yes	No	No	No	No	No	No	**Yes**
227742	530050107011	No	Yes	No	No	No	No	No	No	**Yes**
227744	530050107031	No	No	Yes	No	No	No	No	No	**Yes**
227745	530050107032	No	No	Yes	No	No	No	No	No	**Yes**
227746	530050107033	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227758	530050108092	No	Yes	No	No	No	No	No	No	**Yes**
227766	530050108151	No	Yes	No	No	No	No	No	No	**Yes**
227784	530050109012	No	Yes	No	No	No	No	No	No	**Yes**
227786	530050109014	Yes	Yes	No	No	No	No	No	No	**Yes**
227788	530050109021	No	No	Yes	No	No	No	No	No	**Yes**
227789	530050109022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227790	530050109023	No	Yes	Yes	No	No	No	No	No	**Yes**
227791	530050110011	No	No	Yes	No	No	No	No	No	**Yes**
227792	530050110012	No	Yes	Yes	No	No	No	No	No	**Yes**
227793	530050110013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227794	530050110014	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227795	530050110015	No	Yes	Yes	No	No	No	No	No	**Yes**
227796	530050110021	No	Yes	Yes	No	No	No	No	No	**Yes**
227797	530050110022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227798	530050110023	No	No	Yes	No	No	No	No	No	**Yes**
227799	530050110024	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227800	530050111001	No	Yes	No	No	No	No	No	No	**Yes**
227802	530050111003	No	Yes	No	No	No	No	No	No	**Yes**
227803	530050111004	No	Yes	No	No	No	No	No	No	**Yes**
227806	530050112011	No	Yes	Yes	No	No	No	No	No	**Yes**
227807	530050112012	No	No	Yes	No	No	No	No	No	**Yes**
227808	530050112013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227809	530050112014	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227810	530050112021	Yes	Yes	Yes	No	No	No	No	No	**Yes**

227811	530050112022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227812	530050113001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227813	530050113002	No	No	Yes	No	No	No	No	No	**Yes**
227814	530050113003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227815	530050113004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227816	530050114011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227817	530050114012	No	No	Yes	No	No	No	No	No	**Yes**
227818	530050114013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227824	530050115011	Yes	Yes	No	No	No	No	No	No	**Yes**
227825	530050115012	Yes	Yes	No	No	No	No	No	No	**Yes**
227826	530050115013	Yes	Yes	No	No	No	No	No	No	**Yes**
227829	530050115041	Yes	Yes	No	No	No	No	No	No	**Yes**
227831	530050115051	No	Yes	No	No	No	No	No	No	**Yes**
227832	530050115052	Yes	Yes	No	No	No	No	No	No	**Yes**
227837	530050116001	No	Yes	Yes	No	No	No	No	No	**Yes**
227838	530050117011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227839	530050117021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227840	530050117022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227841	530050117023	No	No	Yes	No	No	No	No	No	**Yes**
227842	530050117024	No	No	Yes	No	No	No	No	No	**Yes**
227843	530050118011	Yes	Yes	No	No	No	No	No	No	**Yes**
227846	530050118021	No	Yes	No	No	No	No	No	No	**Yes**
227847	530050118022	No	Yes	No	No	No	No	No	No	**Yes**
227848	530050118023	No	Yes	No	No	No	No	No	No	**Yes**
227849	530050119001	Yes	Yes	No	No	No	No	No	No	**Yes**
227850	530050119002	Yes	Yes	No	No	No	No	No	No	**Yes**
227851	530050119003	No	Yes	No	No	No	No	No	No	**Yes**
227863	530079603011	No	No	Yes	No	No	No	No	No	**Yes**
227864	530079603012	No	No	Yes	No	No	No	No	No	**Yes**
227865	530079603013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227866	530079603021	No	No	Yes	No	No	No	No	No	**Yes**
227867	530079603022	No	No	Yes	No	No	No	No	No	**Yes**
227868	530079603023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227869	530079603031	No	No	Yes	No	No	No	No	No	**Yes**
227870	530079603032	No	No	Yes	No	No	No	No	No	**Yes**
227871	530079604001	No	Yes	Yes	No	No	No	No	No	**Yes**
227872	530079604002	No	No	Yes	No	No	No	Yes	No	**Yes**
227873	530079604003	No	No	Yes	No	No	No	Yes	No	**Yes**
227874	530079604004	No	No	Yes	No	No	No	No	No	**Yes**
227878	530079605021	Yes	Yes	No	No	No	No	No	No	**Yes**
227881	530079606001	Yes	Yes	No	No	No	No	No	No	**Yes**
227889	530079608031	No	Yes	No	No	No	No	No	No	**Yes**
227891	530079608041	Yes	Yes	No	No	No	No	No	No	**Yes**
227892	530079608042	No	Yes	No	No	No	No	No	No	**Yes**
227893	530079610011	No	Yes	Yes	No	No	No	No	No	**Yes**
227894	530079610012	No	Yes	Yes	No	No	No	No	No	**Yes**
227895	530079610013	No	Yes	Yes	No	No	No	No	No	**Yes**
227896	530079610021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227897	530079610022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227898	530079610023	No	No	Yes	No	No	No	No	No	**Yes**
227899	530079610024	No	No	Yes	No	No	No	No	No	**Yes**
227900	530079611011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227901	530079611012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227902	530079611013	No	No	Yes	No	No	No	No	No	**Yes**
227903	530079611021	No	Yes	Yes	No	No	No	No	No	**Yes**
227904	530079611022	No	No	Yes	No	No	No	No	No	**Yes**
227905	530079611023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227906	530079611024	Yes	Yes	Yes	No	No	No	No	No	**Yes**
227917	530090003001	No	No	Yes	No	No	No	No	No	**Yes**
227918	530090003002	No	No	Yes	No	No	No	No	No	**Yes**
227919	530090003003	No	No	Yes	No	No	No	No	No	**Yes**
227920	530090003004	No	No	Yes	No	No	No	No	No	**Yes**
227923	530090006003	No	No	No	No	No	Yes	Yes	No	**Yes**
227925	530090007002	No	No	Yes	No	No	No	No	No	**Yes**
227926	530090007003	No	No	Yes	No	No	No	No	No	**Yes**

227927	530090008001	No	Yes	Yes	No	No	No	No	No	**Yes**
227928	530090008002	No	No	Yes	No	No	No	No	No	**Yes**
227929	530090008003	No	No	Yes	No	No	No	No	No	**Yes**
227930	530090009001	No	Yes	No	No	No	No	No	No	**Yes**
227931	530090009002	No	Yes	No	No	No	No	No	No	**Yes**
227934	530090010002	No	Yes	Yes	No	No	No	No	No	**Yes**
227948	530090015002	No	No	No	No	No	Yes	Yes	No	**Yes**
227949	530090016001	No	No	Yes	No	No	No	No	No	**Yes**
227950	530090016002	No	No	Yes	No	No	No	No	No	**Yes**
227951	530090016003	No	No	Yes	No	No	No	No	No	**Yes**
227952	530090017011	No	No	Yes	No	No	No	Yes	No	**Yes**
227953	530090017012	No	No	Yes	No	No	No	Yes	No	**Yes**
227954	530090017021	No	No	Yes	No	No	No	Yes	No	**Yes**
227959	530090019011	No	No	No	No	No	No	Yes	No	**Yes**
227960	530090019012	No	No	No	No	No	No	Yes	No	**Yes**
227962	530090019021	No	No	No	No	No	No	Yes	No	**Yes**
227968	530090020022	No	No	No	No	No	No	Yes	No	**Yes**
227969	530090021001	No	No	Yes	No	No	No	No	No	**Yes**
227970	530090021002	No	Yes	Yes	No	No	No	No	No	**Yes**
227971	530090021003	No	No	Yes	No	No	No	No	No	**Yes**
227973	530090023012	No	No	No	No	No	Yes	Yes	No	**Yes**
227975	530090023022	No	No	No	No	No	No	Yes	No	**Yes**
227976	530090023023	No	No	No	No	No	Yes	Yes	No	**Yes**
227977	530090024001	No	No	Yes	No	No	No	No	No	**Yes**
227978	530090024002	No	No	Yes	No	No	Yes	No	No	**Yes**
227979	530090024003	No	No	No	No	No	Yes	No	No	**Yes**
227980	530099400001	No	Yes	No	No	No	Yes	No	No	**Yes**
227981	530099400002	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
227999	530110403011	No	No	No	No	No	Yes	No	No	**Yes**
228040	530110405072	No	Yes	No	No	No	No	No	No	**Yes**
228042	530110405092	Yes	Yes	No	No	No	No	No	No	**Yes**
228073	530110407034	No	Yes	No	No	No	No	No	No	**Yes**
228074	530110407061	No	Yes	Yes	No	No	No	No	No	**Yes**
228075	530110407062	No	Yes	Yes	No	No	No	No	No	**Yes**
228076	530110407071	No	Yes	No	No	No	No	No	No	**Yes**
228086	530110407123	No	Yes	No	No	No	No	No	No	**Yes**
228104	530110408092	Yes	Yes	No	No	No	No	No	No	**Yes**
228117	530110409044	Yes	Yes	No	No	No	No	No	No	**Yes**
228134	530110410031	No	Yes	No	No	No	No	No	No	**Yes**
228138	530110410051	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228139	530110410052	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228141	530110410072	No	Yes	No	No	No	No	No	No	**Yes**
228149	530110410101	No	Yes	Yes	No	No	No	No	No	**Yes**
228150	530110410102	No	No	Yes	No	No	No	No	No	**Yes**
228153	530110411041	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228154	530110411042	No	No	Yes	No	No	No	No	No	**Yes**
228156	530110411052	Yes	Yes	No	No	No	No	No	No	**Yes**
228162	530110411102	No	Yes	No	No	No	No	No	No	**Yes**
228164	530110411104	No	Yes	No	No	No	No	No	No	**Yes**
228165	530110411111	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228166	530110411112	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228170	530110411124	No	Yes	No	No	No	No	No	No	**Yes**
228171	530110411131	No	Yes	Yes	No	No	No	No	No	**Yes**
228172	530110411141	No	Yes	Yes	No	No	No	No	No	**Yes**
228173	530110411142	No	Yes	Yes	No	No	No	No	No	**Yes**
228174	530110411143	No	Yes	Yes	No	No	No	No	No	**Yes**
228175	530110411144	No	No	Yes	No	No	No	No	No	**Yes**
228176	530110412031	Yes	Yes	No	No	No	No	No	No	**Yes**
228179	530110412051	No	Yes	No	No	No	No	No	No	**Yes**
228181	530110412053	Yes	Yes	No	No	No	No	No	No	**Yes**
228183	530110412062	No	Yes	No	No	No	No	No	No	**Yes**
228185	530110412071	No	Yes	No	No	No	No	No	No	**Yes**
228186	530110412072	No	Yes	No	No	No	No	No	No	**Yes**
228199	530110413122	No	Yes	No	No	No	No	No	No	**Yes**
228201	530110413124	No	Yes	No	No	No	No	No	No	**Yes**

228202	530110413131	No	Yes	No	No	No	No	No	No	**Yes**
228214	530110413204	No	Yes	No	No	No	No	No	No	**Yes**
228215	530110413205	Yes	Yes	No	No	No	No	No	No	**Yes**
228219	530110413222	No	Yes	No	No	No	No	No	No	**Yes**
228220	530110413223	No	Yes	No	No	No	No	No	No	**Yes**
228221	530110413231	Yes	Yes	No	No	No	No	No	No	**Yes**
228222	530110413232	Yes	Yes	No	No	No	No	No	No	**Yes**
228223	530110413233	Yes	Yes	No	No	No	No	No	No	**Yes**
228224	530110413234	Yes	Yes	No	No	No	No	No	No	**Yes**
228225	530110413235	Yes	Yes	No	No	No	No	No	No	**Yes**
228240	530110413311	No	Yes	No	No	No	No	No	No	**Yes**
228251	530110413361	No	Yes	No	No	No	No	No	No	**Yes**
228255	530110414001	No	Yes	No	No	No	No	No	No	**Yes**
228259	530110415002	Yes	Yes	No	No	No	No	No	No	**Yes**
228261	530110416001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228262	530110416002	No	No	Yes	No	No	No	No	No	**Yes**
228263	530110417001	No	Yes	Yes	No	No	No	No	No	**Yes**
228264	530110417002	No	Yes	Yes	No	No	No	No	No	**Yes**
228265	530110418001	No	Yes	Yes	No	No	No	No	No	**Yes**
228266	530110418002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228267	530110418003	No	No	Yes	No	No	No	No	No	**Yes**
228274	530110423001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228275	530110423002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228276	530110423003	No	No	Yes	No	No	No	No	No	**Yes**
228277	530110424001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228278	530110424002	No	No	Yes	No	No	No	No	No	**Yes**
228283	530110426022	No	Yes	No	No	No	No	No	No	**Yes**
228284	530110427001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228285	530110427002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228286	530110427003	No	Yes	Yes	No	No	No	No	No	**Yes**
228291	530110430002	No	Yes	No	No	No	No	No	No	**Yes**
228301	530150004001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228302	530150004002	No	No	Yes	No	No	No	No	No	**Yes**
228303	530150004003	No	No	Yes	No	No	No	No	No	**Yes**
228304	530150004004	No	No	Yes	No	No	No	No	No	**Yes**
228305	530150004005	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228306	530150004006	No	Yes	Yes	No	No	No	No	No	**Yes**
228307	530150005011	No	Yes	No	No	No	No	No	No	**Yes**
228308	530150005012	No	Yes	No	No	No	No	No	No	**Yes**
228309	530150005013	No	Yes	No	No	No	No	No	No	**Yes**
228310	530150005021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228311	530150005022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228312	530150005023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228313	530150006011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228314	530150006012	No	Yes	Yes	No	No	No	No	No	**Yes**
228315	530150006013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228316	530150006014	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228321	530150007022	No	Yes	No	No	No	No	No	No	**Yes**
228322	530150007031	No	Yes	Yes	No	No	No	No	No	**Yes**
228323	530150007051	No	No	Yes	No	No	No	No	No	**Yes**
228324	530150007052	No	Yes	Yes	No	No	No	No	No	**Yes**
228325	530150007061	No	No	Yes	No	No	No	No	No	**Yes**
228326	530150007062	No	Yes	Yes	No	No	No	No	No	**Yes**
228336	530150009021	No	Yes	No	No	No	No	No	No	**Yes**
228338	530150010001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228339	530150010002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228340	530150011001	No	No	Yes	No	No	No	No	No	**Yes**
228341	530150011002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228342	530150011003	No	Yes	Yes	No	No	No	No	No	**Yes**
228343	530150011004	No	Yes	Yes	No	No	No	No	No	**Yes**
228344	530150011005	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228345	530150011006	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228346	530150011007	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228350	530150012004	No	Yes	No	No	No	No	No	No	**Yes**
228351	530150013001	No	Yes	Yes	No	No	No	No	No	**Yes**

228352	530150013002	No	Yes	Yes	No	No	No	No	No	**Yes**
228353	530150013003	No	Yes	Yes	No	No	No	No	No	**Yes**
228354	530150013004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228362	530150015042	Yes	Yes	No	No	No	No	No	No	**Yes**
228363	530150015043	No	Yes	No	No	No	No	No	No	**Yes**
228369	530150017002	No	Yes	No	No	No	No	No	No	**Yes**
228373	530150018001	No	No	Yes	No	No	No	No	No	**Yes**
228374	530150018002	No	No	Yes	No	No	No	No	No	**Yes**
228384	530150020032	No	Yes	No	No	No	No	No	No	**Yes**
228388	530150021001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228389	530150021002	No	No	Yes	No	No	No	No	No	**Yes**
228390	530150021003	No	Yes	Yes	No	No	No	No	No	**Yes**
228391	530150021004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228392	530159800001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228393	530179501011	No	No	Yes	No	No	No	No	No	**Yes**
228394	530179501012	No	Yes	Yes	No	No	No	No	No	**Yes**
228395	530179501013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228396	530179501014	No	No	Yes	No	No	No	No	No	**Yes**
228397	530179501021	No	No	Yes	No	No	No	No	No	**Yes**
228398	530179501022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228399	530179501023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228408	530179504002	Yes	Yes	No	No	No	No	No	No	**Yes**
228413	530179505003	No	Yes	No	No	No	No	No	No	**Yes**
228418	530179507001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228419	530179507002	No	Yes	Yes	No	No	No	No	No	**Yes**
228420	530179507003	No	Yes	Yes	No	No	No	No	No	**Yes**
228423	530179508003	No	Yes	No	No	No	No	No	No	**Yes**
228424	530199400001	No	No	Yes	No	No	Yes	No	No	**Yes**
228425	530199400002	No	No	Yes	No	No	Yes	No	No	**Yes**
228426	530199701001	No	No	Yes	No	No	No	No	No	**Yes**
228427	530199701002	No	No	Yes	No	No	No	No	No	**Yes**
228428	530199701003	No	No	Yes	No	No	No	No	No	**Yes**
228429	530199702001	No	No	Yes	No	No	No	No	No	**Yes**
228430	530199702002	No	No	Yes	No	No	No	No	No	**Yes**
228431	530199702003	No	No	Yes	No	No	No	No	No	**Yes**
228432	530210201011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228433	530210201012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228434	530210201021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228435	530210201022	No	No	Yes	No	No	No	No	No	**Yes**
228436	530210201023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228437	530210201031	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228438	530210201032	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228439	530210202011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228440	530210202012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228441	530210202021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228442	530210202022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228443	530210203001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228444	530210203002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228445	530210203003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228446	530210203004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228447	530210204011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228448	530210204021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228449	530210204022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228450	530210204031	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228451	530210204032	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228452	530210204041	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228453	530210204042	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228458	530210205031	Yes	Yes	No	No	No	No	No	No	**Yes**
228462	530210205042	No	Yes	No	No	No	No	No	No	**Yes**
228463	530210205043	Yes	Yes	No	No	No	No	No	No	**Yes**
228464	530210205044	No	Yes	No	No	No	No	No	No	**Yes**
228465	530210206031	No	Yes	No	No	No	No	No	No	**Yes**
228468	530210206052	No	Yes	No	No	No	No	No	No	**Yes**
228473	530210206064	No	Yes	No	No	No	No	No	No	**Yes**
228476	530210206081	No	Yes	No	No	No	No	No	No	**Yes**

228479	530210206084	Yes	Yes	No	No	No	No	No	No	**Yes**
228481	530210208011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228482	530210208012	No	No	Yes	No	No	No	No	No	**Yes**
228483	530210208013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228484	530210208021	No	Yes	Yes	No	No	No	No	No	**Yes**
228485	530210208022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228486	530210208023	No	Yes	Yes	No	No	No	No	No	**Yes**
228488	530239703001	Yes	Yes	No	No	No	No	No	No	**Yes**
228491	530250101001	No	No	Yes	No	No	No	No	No	**Yes**
228492	530250101002	No	No	Yes	No	No	No	No	No	**Yes**
228493	530250101003	No	Yes	Yes	No	No	No	No	No	**Yes**
228494	530250101004	No	No	Yes	No	No	No	No	No	**Yes**
228497	530250103001	No	Yes	Yes	No	No	No	No	No	**Yes**
228498	530250103002	No	No	Yes	No	No	No	No	No	**Yes**
228499	530250103003	No	No	Yes	No	No	No	No	No	**Yes**
228500	530250104011	No	Yes	Yes	No	No	No	No	No	**Yes**
228501	530250104012	No	No	Yes	No	No	No	No	No	**Yes**
228502	530250104021	No	No	Yes	No	No	No	No	No	**Yes**
228503	530250104022	No	Yes	Yes	No	No	No	No	No	**Yes**
228507	530250106001	No	No	Yes	No	No	No	No	No	**Yes**
228508	530250106002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228509	530250106003	No	Yes	Yes	No	No	No	No	No	**Yes**
228510	530250106004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228511	530250107001	No	No	Yes	No	No	No	No	No	**Yes**
228512	530250107002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228513	530250107003	No	No	Yes	No	No	No	No	No	**Yes**
228514	530250108001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228515	530250108002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228516	530250108003	No	Yes	Yes	No	No	No	No	No	**Yes**
228518	530250109031	Yes	Yes	No	No	No	No	No	No	**Yes**
228519	530250109032	Yes	Yes	No	No	No	No	No	No	**Yes**
228520	530250109033	Yes	Yes	No	No	No	No	No	No	**Yes**
228521	530250109041	No	Yes	No	No	No	No	No	No	**Yes**
228522	530250109042	Yes	Yes	No	No	No	No	No	No	**Yes**
228523	530250109043	No	Yes	No	No	No	No	No	No	**Yes**
228525	530250110012	No	Yes	No	No	No	No	No	No	**Yes**
228528	530250110022	Yes	Yes	No	No	No	No	No	No	**Yes**
228530	530250111011	No	No	Yes	No	No	No	No	No	**Yes**
228531	530250111012	No	Yes	Yes	No	No	No	No	No	**Yes**
228532	530250111021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228533	530250111022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228537	530250113001	No	No	Yes	No	No	No	No	No	**Yes**
228538	530250113002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228539	530250113003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228540	530250114011	No	Yes	Yes	No	No	No	No	No	**Yes**
228541	530250114031	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228542	530250114032	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228543	530250114033	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228544	530250114041	No	Yes	Yes	No	No	No	No	No	**Yes**
228545	530250114051	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228546	530250114061	No	Yes	Yes	No	No	No	No	No	**Yes**
228547	530250114062	No	No	Yes	No	No	No	No	No	**Yes**
228566	530270005011	No	Yes	No	No	No	No	No	No	**Yes**
228574	530270007001	No	No	No	No	No	Yes	Yes	No	**Yes**
228576	530270007003	No	No	No	No	No	No	Yes	No	**Yes**
228580	530270009001	No	Yes	Yes	No	No	No	No	No	**Yes**
228581	530270009002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228582	530270009003	No	No	Yes	No	No	No	No	No	**Yes**
228583	530270009004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228584	530270009005	No	Yes	Yes	No	No	No	No	No	**Yes**
228585	530270009006	No	No	Yes	No	No	No	No	No	**Yes**
228586	530270010001	No	Yes	Yes	No	No	No	No	No	**Yes**
228587	530270010002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228588	530270010003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228589	530270010004	Yes	Yes	Yes	No	No	No	No	No	**Yes**

228593	530270011004	No	Yes	No	No	No	No	No	No	**Yes**
228594	530270011005	Yes	Yes	No	No	No	No	No	No	**Yes**
228595	530270012001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228596	530270012002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228597	530270012003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228598	530270012004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228599	530270012005	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228600	530270013001	No	No	Yes	No	No	No	No	No	**Yes**
228601	530270013002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228602	530270013003	No	Yes	Yes	No	No	No	No	No	**Yes**
228603	530270013004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228604	530270014001	No	Yes	Yes	No	No	No	No	No	**Yes**
228605	530270014002	No	Yes	Yes	No	No	No	No	No	**Yes**
228606	530270015001	No	Yes	Yes	No	No	No	No	No	**Yes**
228607	530270015002	No	No	Yes	No	No	No	No	No	**Yes**
228608	530270015003	No	No	Yes	No	No	No	No	No	**Yes**
228609	530270016011	No	Yes	No	No	No	No	No	No	**Yes**
228614	530279400001	No	No	Yes	No	No	Yes	No	No	**Yes**
228618	530299702001	No	Yes	Yes	No	No	No	No	No	**Yes**
228619	530299703001	No	Yes	No	No	No	No	No	No	**Yes**
228633	530299706013	Yes	Yes	No	No	No	No	No	No	**Yes**
228641	530299709001	No	No	Yes	No	No	No	No	No	**Yes**
228642	530299709002	No	No	Yes	No	No	No	No	No	**Yes**
228643	530299709003	No	No	Yes	No	No	No	No	No	**Yes**
228644	530299709004	No	No	Yes	No	No	No	No	No	**Yes**
228698	530319506031	No	Yes	Yes	No	No	No	No	No	**Yes**
228699	530319506032	No	No	Yes	No	No	No	No	No	**Yes**
228700	530319506033	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228701	530319506041	No	No	Yes	No	No	No	No	No	**Yes**
228702	530319506042	No	No	Yes	No	No	No	No	No	**Yes**
228703	530319506043	No	No	Yes	No	No	No	No	No	**Yes**
228704	530319507021	No	No	Yes	No	No	Yes	Yes	No	**Yes**
228705	530319507022	No	No	Yes	No	No	No	No	No	**Yes**
228706	530319507023	No	No	Yes	No	No	No	No	No	**Yes**
228709	530330001012	Yes	Yes	No	No	No	No	No	No	**Yes**
228710	530330001013	No	Yes	No	No	No	No	No	No	**Yes**
228712	530330001022	No	Yes	No	No	No	No	No	No	**Yes**
228713	530330001023	Yes	Yes	No	No	No	No	No	No	**Yes**
228714	530330002011	No	Yes	No	No	No	No	No	No	**Yes**
228727	530330004032	Yes	Yes	No	No	No	No	No	No	**Yes**
228728	530330004041	No	Yes	No	No	No	No	No	No	**Yes**
228729	530330004042	Yes	Yes	No	No	No	No	No	No	**Yes**
228730	530330004043	Yes	Yes	No	No	No	No	No	No	**Yes**
228742	530330007004	No	Yes	No	No	No	No	No	No	**Yes**
228752	530330012012	Yes	Yes	No	No	No	No	No	No	**Yes**
228753	530330012013	No	Yes	No	No	No	No	No	No	**Yes**
228756	530330012023	Yes	Yes	No	No	No	No	No	No	**Yes**
228757	530330013001	No	Yes	No	No	No	No	No	No	**Yes**
228758	530330013002	No	Yes	No	No	No	No	No	No	**Yes**
228760	530330014001	No	Yes	No	No	No	No	No	No	**Yes**
228761	530330014002	No	Yes	No	No	No	No	No	No	**Yes**
228762	530330014003	No	Yes	No	No	No	No	No	No	**Yes**
228763	530330014004	No	Yes	No	No	No	No	No	No	**Yes**
228769	530330017011	No	Yes	No	No	No	No	No	No	**Yes**
228770	530330017012	No	Yes	No	No	No	No	No	No	**Yes**
228771	530330017013	No	Yes	No	No	No	No	No	No	**Yes**
228772	530330017021	No	Yes	No	No	No	No	No	No	**Yes**
228774	530330017023	No	Yes	No	No	No	No	No	No	**Yes**
228775	530330017024	No	Yes	No	No	No	No	No	No	**Yes**
228808	530330028004	No	Yes	No	No	No	No	No	No	**Yes**
228813	530330030002	No	Yes	No	No	No	No	No	No	**Yes**
228823	530330032013	No	Yes	No	No	No	No	No	No	**Yes**
228829	530330033013	No	Yes	No	No	No	No	No	No	**Yes**
228830	530330033021	No	Yes	No	No	No	No	No	No	**Yes**
228835	530330034003	No	Yes	No	No	No	No	No	No	**Yes**

228838	530330035003	No	Yes	No	No	No	No	No	No	**Yes**
228863	530330043011	Yes	Yes	No	No	No	No	No	No	**Yes**
228866	530330043021	No	Yes	No	No	No	No	No	No	**Yes**
228867	530330043022	Yes	Yes	No	No	No	No	No	No	**Yes**
228868	530330043023	Yes	Yes	No	No	No	No	No	No	**Yes**
228869	530330044011	No	Yes	No	No	No	No	No	No	**Yes**
228871	530330044013	Yes	Yes	No	No	No	No	No	No	**Yes**
228872	530330044021	Yes	Yes	No	No	No	No	No	No	**Yes**
228875	530330045001	Yes	Yes	No	No	No	No	No	No	**Yes**
228877	530330046001	No	Yes	No	No	No	No	No	No	**Yes**
228878	530330046002	No	Yes	No	No	No	No	No	No	**Yes**
228879	530330046003	No	Yes	No	No	No	No	No	No	**Yes**
228881	530330047012	Yes	Yes	No	No	No	No	No	No	**Yes**
228882	530330047013	No	Yes	No	No	No	No	No	No	**Yes**
228883	530330047021	No	Yes	No	No	No	No	No	No	**Yes**
228885	530330047023	No	Yes	No	No	No	No	No	No	**Yes**
228886	530330047031	Yes	Yes	No	No	No	No	No	No	**Yes**
228890	530330048002	No	Yes	No	No	No	No	No	No	**Yes**
228891	530330048003	No	Yes	No	No	No	No	No	No	**Yes**
228893	530330049011	No	Yes	No	No	No	No	No	No	**Yes**
228894	530330049012	No	Yes	No	No	No	No	No	No	**Yes**
228895	530330049013	No	Yes	No	No	No	No	No	No	**Yes**
228896	530330049021	No	Yes	No	No	No	No	No	No	**Yes**
228897	530330049022	No	Yes	No	No	No	No	No	No	**Yes**
228899	530330050002	No	Yes	No	No	No	No	No	No	**Yes**
228906	530330052013	No	Yes	No	No	No	No	No	No	**Yes**
228908	530330052022	No	Yes	No	No	No	No	No	No	**Yes**
228909	530330052023	Yes	Yes	No	No	No	No	No	No	**Yes**
228910	530330053031	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228911	530330053032	No	No	Yes	No	No	No	No	No	**Yes**
228912	530330053041	No	No	Yes	No	No	No	No	No	**Yes**
228913	530330053042	Yes	Yes	Yes	No	No	No	No	No	**Yes**
228914	530330053051	Yes	Yes	No	No	No	No	No	No	**Yes**
228915	530330053052	Yes	Yes	No	No	No	No	No	No	**Yes**
228916	530330053061	Yes	Yes	No	No	No	No	No	No	**Yes**
228917	530330053062	Yes	Yes	No	No	No	No	No	No	**Yes**
228918	530330053071	Yes	Yes	No	No	No	No	No	No	**Yes**
228919	530330053072	Yes	Yes	No	No	No	No	No	No	**Yes**
228920	530330053073	Yes	Yes	No	No	No	No	No	No	**Yes**
228923	530330054013	No	Yes	No	No	No	No	No	No	**Yes**
228926	530330054023	No	Yes	No	No	No	No	No	No	**Yes**
228933	530330057002	No	Yes	No	No	No	No	No	No	**Yes**
228935	530330057004	No	Yes	No	No	No	No	No	No	**Yes**
228936	530330057005	No	Yes	No	No	No	No	No	No	**Yes**
228940	530330058014	No	Yes	No	No	No	No	No	No	**Yes**
228941	530330058031	No	Yes	No	No	No	No	No	No	**Yes**
228944	530330058042	No	Yes	No	No	No	No	No	No	**Yes**
228946	530330059012	No	Yes	No	No	No	No	No	No	**Yes**
228947	530330059013	Yes	Yes	No	No	No	No	No	No	**Yes**
228950	530330059023	No	Yes	No	No	No	No	No	No	**Yes**
228951	530330060001	No	Yes	No	No	No	No	No	No	**Yes**
228953	530330060003	No	Yes	No	No	No	No	No	No	**Yes**
228954	530330060004	No	Yes	No	No	No	No	No	No	**Yes**
228956	530330061002	No	Yes	No	No	No	No	No	No	**Yes**
228957	530330061003	No	Yes	No	No	No	No	No	No	**Yes**
228958	530330061004	No	Yes	No	No	No	No	No	No	**Yes**
228959	530330061005	No	Yes	No	No	No	No	No	No	**Yes**
228971	530330065002	No	Yes	No	No	No	No	No	No	**Yes**
228975	530330066003	No	Yes	No	No	No	No	No	No	**Yes**
228979	530330067021	No	Yes	No	No	No	No	No	No	**Yes**
228981	530330067023	No	Yes	No	No	No	No	No	No	**Yes**
228992	530330070012	No	Yes	No	No	No	No	No	No	**Yes**
228993	530330070013	Yes	Yes	No	No	No	No	No	No	**Yes**
228996	530330070023	No	Yes	No	No	No	No	No	No	**Yes**
228998	530330071012	No	Yes	No	No	No	No	No	No	**Yes**

229001	530330072011	Yes	Yes	No	No	No	No	No	No	**Yes**
229002	530330072012	Yes	Yes	No	No	No	No	No	No	**Yes**
229003	530330072013	No	Yes	No	No	No	No	No	No	**Yes**
229004	530330072021	No	Yes	No	No	No	No	No	No	**Yes**
229005	530330072022	No	Yes	No	No	No	No	No	No	**Yes**
229007	530330072031	Yes	Yes	No	No	No	No	No	No	**Yes**
229008	530330072032	No	Yes	No	No	No	No	No	No	**Yes**
229009	530330073011	No	Yes	No	No	No	No	No	No	**Yes**
229010	530330073012	Yes	Yes	No	No	No	No	No	No	**Yes**
229011	530330073013	No	Yes	No	No	No	No	No	No	**Yes**
229013	530330073022	No	Yes	No	No	No	No	No	No	**Yes**
229014	530330073023	No	Yes	No	No	No	No	No	No	**Yes**
229015	530330073031	No	Yes	No	No	No	No	No	No	**Yes**
229016	530330073032	No	Yes	No	No	No	No	No	No	**Yes**
229022	530330074051	No	Yes	No	No	No	No	No	No	**Yes**
229023	530330074052	Yes	Yes	No	No	No	No	No	No	**Yes**
229024	530330074061	No	Yes	No	No	No	No	No	No	**Yes**
229025	530330074062	No	Yes	No	No	No	No	No	No	**Yes**
229026	530330075011	No	Yes	No	No	No	No	No	No	**Yes**
229027	530330075012	No	Yes	No	No	No	No	No	No	**Yes**
229028	530330075013	Yes	Yes	No	No	No	No	No	No	**Yes**
229030	530330075022	No	Yes	No	No	No	No	No	No	**Yes**
229032	530330075031	No	Yes	No	No	No	No	No	No	**Yes**
229033	530330075032	No	Yes	No	No	No	No	No	No	**Yes**
229034	530330076001	No	Yes	No	No	No	No	No	No	**Yes**
229045	530330079011	No	Yes	No	No	No	No	No	No	**Yes**
229046	530330079012	No	Yes	No	No	No	No	No	No	**Yes**
229047	530330079021	Yes	Yes	No	No	No	No	No	No	**Yes**
229048	530330079022	No	Yes	No	No	No	No	No	No	**Yes**
229050	530330080021	Yes	Yes	No	No	No	No	No	No	**Yes**
229051	530330080022	No	Yes	No	No	No	No	No	No	**Yes**
229052	530330080023	No	Yes	No	No	No	No	No	No	**Yes**
229053	530330080031	Yes	Yes	No	No	No	No	No	No	**Yes**
229054	530330080032	No	Yes	No	No	No	No	No	No	**Yes**
229056	530330080041	No	Yes	No	No	No	No	No	No	**Yes**
229059	530330081011	Yes	Yes	No	No	No	No	No	No	**Yes**
229060	530330081012	No	Yes	No	No	No	No	No	No	**Yes**
229062	530330081021	No	Yes	No	No	No	No	No	No	**Yes**
229063	530330081022	Yes	Yes	No	No	No	No	No	No	**Yes**
229064	530330082001	No	Yes	No	No	No	No	No	No	**Yes**
229065	530330082002	No	Yes	No	No	No	No	No	No	**Yes**
229066	530330082003	No	Yes	No	No	No	No	No	No	**Yes**
229067	530330083001	No	Yes	No	No	No	No	No	No	**Yes**
229068	530330083002	No	Yes	No	No	No	No	No	No	**Yes**
229069	530330084011	Yes	Yes	No	No	No	No	No	No	**Yes**
229070	530330084012	No	Yes	No	No	No	No	No	No	**Yes**
229072	530330084021	No	Yes	No	No	No	No	No	No	**Yes**
229075	530330085001	No	Yes	No	No	No	No	No	No	**Yes**
229076	530330085002	No	Yes	No	No	No	No	No	No	**Yes**
229077	530330085003	Yes	Yes	No	No	No	No	No	No	**Yes**
229078	530330086001	No	Yes	No	No	No	No	No	No	**Yes**
229079	530330086002	Yes	Yes	No	No	No	No	No	No	**Yes**
229080	530330086003	Yes	Yes	No	No	No	No	No	No	**Yes**
229081	530330086004	No	Yes	No	No	No	No	No	No	**Yes**
229082	530330087001	No	Yes	No	No	No	No	No	No	**Yes**
229083	530330087002	No	Yes	No	No	No	No	No	No	**Yes**
229084	530330087003	No	Yes	No	No	No	No	No	No	**Yes**
229085	530330088001	No	Yes	No	No	No	No	No	No	**Yes**
229090	530330089003	Yes	Yes	No	No	No	No	No	No	**Yes**
229092	530330090001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229093	530330090002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229094	530330090003	No	Yes	Yes	No	No	No	No	No	**Yes**
229095	530330091001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229096	530330091002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229097	530330092001	Yes	Yes	Yes	No	No	No	No	No	**Yes**

229098	530330092002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229099	530330093001	No	Yes	No	No	No	No	No	No	**Yes**
229100	530330093002	No	Yes	No	No	No	No	No	No	**Yes**
229101	530330093003	No	Yes	No	No	No	No	No	No	**Yes**
229102	530330094001	Yes	Yes	No	No	No	No	No	No	**Yes**
229103	530330094002	No	Yes	No	No	No	No	No	No	**Yes**
229104	530330094003	No	Yes	No	No	No	No	No	No	**Yes**
229106	530330094005	No	Yes	No	No	No	No	No	No	**Yes**
229107	530330095001	No	Yes	No	No	No	No	No	No	**Yes**
229108	530330095002	No	Yes	No	No	No	No	No	No	**Yes**
229110	530330095004	Yes	Yes	No	No	No	No	No	No	**Yes**
229111	530330096001	No	Yes	No	No	No	No	No	No	**Yes**
229123	530330098011	Yes	Yes	No	No	No	No	No	No	**Yes**
229128	530330098023	No	Yes	No	No	No	No	No	No	**Yes**
229129	530330099001	No	Yes	No	No	No	No	No	No	**Yes**
229130	530330099002	No	Yes	No	No	No	No	No	No	**Yes**
229131	530330099003	Yes	Yes	No	No	No	No	No	No	**Yes**
229132	530330099004	No	Yes	No	No	No	No	No	No	**Yes**
229133	530330100011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229134	530330100012	No	Yes	Yes	No	No	No	No	No	**Yes**
229135	530330100013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229136	530330100021	No	Yes	Yes	No	No	No	No	No	**Yes**
229137	530330100022	No	Yes	Yes	No	No	No	No	No	**Yes**
229138	530330100023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229139	530330101011	Yes	Yes	No	No	No	No	No	No	**Yes**
229140	530330101012	Yes	Yes	No	No	No	No	No	No	**Yes**
229141	530330101013	No	Yes	No	No	No	No	No	No	**Yes**
229143	530330101022	No	Yes	No	No	No	No	No	No	**Yes**
229144	530330101023	No	Yes	No	No	No	No	No	No	**Yes**
229150	530330103012	No	Yes	No	No	No	No	No	No	**Yes**
229151	530330103013	Yes	Yes	No	No	No	No	No	No	**Yes**
229155	530330104011	No	Yes	Yes	No	No	No	No	No	**Yes**
229156	530330104012	No	Yes	Yes	No	No	No	No	No	**Yes**
229157	530330104013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229158	530330104021	No	Yes	Yes	No	No	No	No	No	**Yes**
229159	530330104022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229160	530330104023	No	Yes	Yes	No	No	No	No	No	**Yes**
229161	530330104024	No	No	Yes	No	No	No	No	No	**Yes**
229162	530330105011	No	Yes	No	No	No	No	No	No	**Yes**
229163	530330105012	No	Yes	No	No	No	No	No	No	**Yes**
229164	530330105013	No	Yes	No	No	No	No	No	No	**Yes**
229166	530330105022	No	Yes	No	No	No	No	No	No	**Yes**
229167	530330105023	No	Yes	No	No	No	No	No	No	**Yes**
229169	530330106011	No	Yes	No	No	No	No	No	No	**Yes**
229172	530330106021	No	Yes	No	No	No	No	No	No	**Yes**
229175	530330107011	No	Yes	No	No	No	No	No	No	**Yes**
229178	530330107021	No	No	Yes	No	No	No	No	No	**Yes**
229179	530330107022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229180	530330107023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229181	530330108001	No	Yes	No	No	No	No	No	No	**Yes**
229182	530330108002	No	Yes	No	No	No	No	No	No	**Yes**
229183	530330108003	No	Yes	No	No	No	No	No	No	**Yes**
229184	530330109001	No	Yes	No	No	No	No	No	No	**Yes**
229185	530330109002	No	Yes	No	No	No	No	Yes	No	**Yes**
229186	530330110011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229187	530330110012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229188	530330110013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229189	530330110021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229190	530330110022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229191	530330110023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229192	530330111011	No	Yes	Yes	No	No	No	No	No	**Yes**
229193	530330111012	No	Yes	Yes	No	No	No	No	No	**Yes**
229194	530330111013	No	Yes	Yes	No	No	No	No	No	**Yes**
229195	530330111014	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229197	530330111022	No	Yes	No	No	No	No	No	No	**Yes**

229198	530330111023	No	Yes	No	No	No	No	No	No	**Yes**
229199	530330111024	No	Yes	No	No	No	No	No	No	**Yes**
229200	530330112001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229201	530330112002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229202	530330112003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229203	530330113001	No	Yes	No	No	No	No	No	No	**Yes**
229204	530330113002	No	Yes	No	No	No	No	No	No	**Yes**
229208	530330114011	No	Yes	No	No	No	No	No	No	**Yes**
229210	530330114013	No	Yes	No	No	No	No	No	No	**Yes**
229211	530330114021	No	No	Yes	No	No	No	No	No	**Yes**
229212	530330114022	No	Yes	Yes	No	No	No	No	No	**Yes**
229213	530330114023	No	No	Yes	No	No	No	No	No	**Yes**
229222	530330117001	No	Yes	Yes	No	No	No	No	No	**Yes**
229223	530330117002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229224	530330117003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229225	530330117004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229226	530330118011	Yes	Yes	No	No	No	No	No	No	**Yes**
229228	530330118013	No	Yes	No	No	No	No	No	No	**Yes**
229231	530330118023	Yes	Yes	No	No	No	No	No	No	**Yes**
229234	530330119013	Yes	Yes	No	No	No	No	No	No	**Yes**
229235	530330119021	No	Yes	No	No	No	No	No	No	**Yes**
229236	530330119022	Yes	Yes	No	No	No	No	No	No	**Yes**
229243	530330201001	No	Yes	No	No	No	No	No	No	**Yes**
229245	530330201003	No	Yes	No	No	No	No	No	No	**Yes**
229251	530330203012	No	Yes	No	No	No	No	No	No	**Yes**
229253	530330203022	Yes	Yes	No	No	No	No	No	No	**Yes**
229261	530330204024	Yes	Yes	No	No	No	No	No	No	**Yes**
229272	530330207002	Yes	Yes	No	No	No	No	No	No	**Yes**
229282	530330210003	No	Yes	No	No	No	No	No	No	**Yes**
229287	530330211003	Yes	Yes	No	No	No	No	No	No	**Yes**
229289	530330213002	No	Yes	No	No	No	No	No	No	**Yes**
229319	530330218044	Yes	Yes	No	No	No	No	No	No	**Yes**
229320	530330219031	Yes	Yes	No	No	No	No	No	No	**Yes**
229325	530330219042	Yes	Yes	No	No	No	No	No	No	**Yes**
229436	530330232021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229437	530330232022	No	No	Yes	No	No	No	No	No	**Yes**
229438	530330232023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229440	530330233002	No	Yes	No	No	No	No	No	No	**Yes**
229445	530330234013	No	Yes	No	No	No	No	No	No	**Yes**
229457	530330236031	No	Yes	No	No	No	No	No	No	**Yes**
229465	530330236044	Yes	Yes	No	No	No	No	No	No	**Yes**
229473	530330238051	No	Yes	No	No	No	No	No	No	**Yes**
229516	530330247011	No	Yes	No	No	No	No	No	No	**Yes**
229522	530330247041	No	Yes	No	No	No	No	No	No	**Yes**
229544	530330250052	No	Yes	No	No	No	No	No	No	**Yes**
229555	530330251011	Yes	Yes	No	No	No	No	No	No	**Yes**
229561	530330251033	No	Yes	No	No	No	No	No	No	**Yes**
229566	530330252012	Yes	Yes	No	No	No	No	No	No	**Yes**
229567	530330252013	Yes	Yes	No	No	No	No	No	No	**Yes**
229569	530330252022	No	Yes	No	No	No	No	No	No	**Yes**
229571	530330253021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229572	530330253022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229573	530330253023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229574	530330253024	No	No	Yes	No	No	No	No	No	**Yes**
229575	530330253031	Yes	Yes	No	No	No	No	No	No	**Yes**
229579	530330254011	Yes	Yes	No	No	No	No	No	No	**Yes**
229580	530330254012	Yes	Yes	No	No	No	No	No	No	**Yes**
229585	530330255001	Yes	Yes	No	No	No	No	No	No	**Yes**
229587	530330255003	Yes	Yes	No	No	No	No	No	No	**Yes**
229590	530330256013	No	Yes	No	No	No	No	No	No	**Yes**
229598	530330257031	Yes	Yes	No	No	No	No	No	No	**Yes**
229599	530330257032	No	Yes	No	No	No	No	No	No	**Yes**
229600	530330257041	No	Yes	No	No	No	No	No	No	**Yes**
229604	530330258033	No	Yes	No	No	No	No	No	No	**Yes**
229608	530330258051	No	Yes	No	No	No	No	No	No	**Yes**

229609	530330258052	No	Yes	No	No	No	No	No	No	**Yes**
229613	530330258063	No	Yes	No	No	No	No	No	No	**Yes**
229616	530330260013	No	Yes	No	No	No	No	No	No	**Yes**
229617	530330260014	No	Yes	No	No	No	No	No	No	**Yes**
229618	530330260031	Yes	Yes	No	No	No	No	No	No	**Yes**
229620	530330260033	Yes	Yes	No	No	No	No	No	No	**Yes**
229624	530330261011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229625	530330261012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229626	530330261013	No	Yes	Yes	No	No	No	No	No	**Yes**
229627	530330261021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229628	530330261022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229629	530330261023	No	Yes	Yes	No	No	No	No	No	**Yes**
229630	530330262001	Yes	Yes	No	No	No	No	No	No	**Yes**
229632	530330262003	No	Yes	No	No	No	No	No	No	**Yes**
229633	530330262004	No	Yes	No	No	No	No	No	No	**Yes**
229634	530330263001	No	No	Yes	No	No	No	No	No	**Yes**
229635	530330263002	Yes	Yes	No	No	No	No	No	No	**Yes**
229636	530330264001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229637	530330264002	No	Yes	Yes	No	No	No	No	No	**Yes**
229638	530330264003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229639	530330264004	No	Yes	Yes	No	No	No	No	No	**Yes**
229640	530330265001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229641	530330265002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229642	530330265003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229643	530330266001	No	Yes	No	No	No	No	No	No	**Yes**
229645	530330267001	Yes	Yes	No	No	No	No	No	No	**Yes**
229646	530330267002	Yes	Yes	No	No	No	No	No	No	**Yes**
229649	530330268011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229650	530330268012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229651	530330268013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229652	530330268014	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229653	530330268021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229654	530330268022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229655	530330268023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229656	530330268024	No	No	Yes	No	No	No	No	No	**Yes**
229657	530330270001	No	Yes	No	No	No	No	No	No	**Yes**
229659	530330270003	No	Yes	No	No	No	No	No	No	**Yes**
229660	530330271001	No	Yes	Yes	No	No	No	No	No	**Yes**
229661	530330271002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229662	530330271003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229663	530330272001	No	Yes	Yes	No	No	No	No	No	**Yes**
229664	530330272002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229665	530330273001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229666	530330273002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229667	530330273003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229668	530330273004	No	Yes	Yes	No	No	No	No	No	**Yes**
229669	530330274001	Yes	Yes	No	No	No	No	No	No	**Yes**
229670	530330274002	Yes	Yes	No	No	No	No	No	No	**Yes**
229671	530330274003	No	Yes	No	No	No	No	No	No	**Yes**
229672	530330274004	Yes	Yes	No	No	No	No	No	No	**Yes**
229673	530330275001	No	Yes	No	No	No	No	No	No	**Yes**
229675	530330275003	Yes	Yes	No	No	No	No	No	No	**Yes**
229676	530330276001	Yes	Yes	No	No	No	No	No	No	**Yes**
229677	530330276002	Yes	Yes	No	No	No	No	No	No	**Yes**
229685	530330277023	No	Yes	No	No	No	No	No	No	**Yes**
229690	530330279013	Yes	Yes	No	No	No	No	No	No	**Yes**
229692	530330279022	Yes	Yes	No	No	No	No	No	No	**Yes**
229693	530330279023	Yes	Yes	No	No	No	No	No	No	**Yes**
229694	530330280001	No	Yes	Yes	No	No	No	No	No	**Yes**
229695	530330280002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229696	530330280003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229697	530330281001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229698	530330281002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229699	530330282001	No	Yes	Yes	No	No	No	No	No	**Yes**
229700	530330282002	No	Yes	Yes	No	No	No	No	No	**Yes**

229701	530330282003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229702	530330283001	No	Yes	No	No	No	No	No	No	**Yes**
229704	530330283003	No	Yes	No	No	No	No	No	No	**Yes**
229705	530330284021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229706	530330284022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229707	530330284023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229708	530330284024	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229709	530330284031	No	Yes	No	No	No	No	No	No	**Yes**
229710	530330284032	Yes	Yes	No	No	No	No	No	No	**Yes**
229712	530330284034	Yes	Yes	No	No	No	No	No	No	**Yes**
229713	530330285001	No	Yes	No	No	No	No	No	No	**Yes**
229714	530330285002	No	Yes	No	No	No	No	No	No	**Yes**
229715	530330285003	Yes	Yes	No	No	No	No	No	No	**Yes**
229717	530330286002	No	Yes	No	No	No	No	No	No	**Yes**
229721	530330287001	No	Yes	No	No	No	No	No	No	**Yes**
229722	530330287002	No	Yes	No	No	No	No	No	No	**Yes**
229723	530330287003	No	Yes	No	No	No	No	No	No	**Yes**
229724	530330288011	No	Yes	No	No	No	No	No	No	**Yes**
229725	530330288012	No	Yes	No	No	No	No	No	No	**Yes**
229726	530330288021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229727	530330288022	No	Yes	Yes	No	No	No	No	No	**Yes**
229728	530330288023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229729	530330288024	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229730	530330289011	Yes	Yes	No	No	No	No	No	No	**Yes**
229731	530330289012	No	Yes	No	No	No	No	No	No	**Yes**
229732	530330289013	No	Yes	No	No	No	No	No	No	**Yes**
229733	530330289021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229734	530330289022	No	No	Yes	No	No	No	No	No	**Yes**
229735	530330289023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229736	530330289024	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229737	530330289025	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229738	530330290011	No	Yes	No	No	No	No	No	No	**Yes**
229739	530330290012	No	Yes	No	No	No	No	No	No	**Yes**
229741	530330290031	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229742	530330290032	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229743	530330290033	No	Yes	Yes	No	No	No	No	No	**Yes**
229744	530330290034	No	Yes	Yes	No	No	No	No	No	**Yes**
229745	530330290041	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229746	530330290042	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229747	530330291011	Yes	Yes	No	No	No	No	No	No	**Yes**
229749	530330291021	Yes	Yes	No	No	No	No	No	No	**Yes**
229751	530330291023	Yes	Yes	No	No	No	No	No	No	**Yes**
229752	530330292031	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229753	530330292032	No	No	Yes	No	No	No	No	No	**Yes**
229754	530330292033	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229756	530330292052	Yes	Yes	No	No	No	No	No	No	**Yes**
229757	530330292053	Yes	Yes	No	No	No	No	No	No	**Yes**
229758	530330292061	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229759	530330292062	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229760	530330292063	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229762	530330292072	No	Yes	No	No	No	No	No	No	**Yes**
229763	530330292081	Yes	Yes	No	No	No	No	No	No	**Yes**
229764	530330292082	Yes	Yes	No	No	No	No	No	No	**Yes**
229770	530330293052	Yes	Yes	No	No	No	No	No	No	**Yes**
229772	530330293061	No	Yes	No	No	No	No	No	No	**Yes**
229774	530330293063	No	Yes	No	No	No	No	No	No	**Yes**
229778	530330293081	Yes	Yes	No	No	No	No	No	No	**Yes**
229782	530330293092	Yes	Yes	No	No	No	No	No	No	**Yes**
229786	530330294033	Yes	Yes	No	No	No	No	No	No	**Yes**
229788	530330294051	No	Yes	No	No	No	No	No	No	**Yes**
229795	530330294071	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229796	530330294072	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229797	530330294073	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229799	530330294082	No	Yes	No	No	No	No	No	No	**Yes**
229800	530330294083	No	Yes	No	No	No	No	No	No	**Yes**

229801	530330295041	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229802	530330295042	No	Yes	Yes	No	No	No	No	No	**Yes**
229803	530330295043	No	Yes	Yes	No	No	No	No	No	**Yes**
229804	530330295051	No	Yes	Yes	No	No	No	No	No	**Yes**
229805	530330295052	No	No	Yes	No	No	No	No	No	**Yes**
229806	530330295053	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229807	530330295061	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229808	530330295062	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229809	530330295063	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229810	530330295071	No	Yes	No	No	No	No	No	No	**Yes**
229819	530330296031	Yes	Yes	No	No	No	No	No	No	**Yes**
229822	530330296041	Yes	Yes	No	No	No	No	No	No	**Yes**
229823	530330296042	Yes	Yes	No	No	No	No	No	No	**Yes**
229825	530330297011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229826	530330297012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229827	530330297013	No	No	Yes	No	No	No	No	No	**Yes**
229828	530330297021	No	No	Yes	No	No	No	No	No	**Yes**
229829	530330297022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229830	530330298031	No	Yes	No	No	No	No	No	No	**Yes**
229831	530330298032	Yes	Yes	No	No	No	No	No	No	**Yes**
229838	530330298053	Yes	Yes	No	No	No	No	No	No	**Yes**
229839	530330298054	Yes	Yes	No	No	No	No	No	No	**Yes**
229841	530330298062	Yes	Yes	No	No	No	No	No	No	**Yes**
229843	530330299011	No	Yes	No	No	No	No	No	No	**Yes**
229844	530330299012	Yes	Yes	No	No	No	No	No	No	**Yes**
229845	530330299013	Yes	Yes	No	No	No	No	No	No	**Yes**
229849	530330300031	No	Yes	No	No	No	No	No	No	**Yes**
229851	530330300033	Yes	Yes	No	No	No	No	No	No	**Yes**
229852	530330300034	Yes	Yes	No	No	No	No	No	No	**Yes**
229853	530330300051	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229854	530330300052	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229855	530330300053	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229856	530330300061	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229857	530330300062	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229858	530330300063	No	Yes	Yes	No	No	No	No	No	**Yes**
229859	530330300071	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229860	530330300072	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229861	530330300081	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229862	530330300082	No	No	Yes	No	No	No	No	No	**Yes**
229863	530330300083	No	Yes	Yes	No	No	No	No	No	**Yes**
229864	530330301011	Yes	Yes	No	No	No	No	No	No	**Yes**
229870	530330302011	No	Yes	No	No	No	No	No	No	**Yes**
229871	530330302012	Yes	Yes	No	No	No	No	No	No	**Yes**
229873	530330302014	Yes	Yes	No	No	No	No	No	No	**Yes**
229874	530330302031	Yes	Yes	No	No	No	No	No	No	**Yes**
229875	530330302032	No	Yes	No	No	No	No	No	No	**Yes**
229876	530330302033	Yes	Yes	No	No	No	No	No	No	**Yes**
229877	530330302041	Yes	Yes	No	No	No	No	No	No	**Yes**
229878	530330302042	Yes	Yes	No	No	No	No	No	No	**Yes**
229879	530330302043	Yes	Yes	No	No	No	No	No	No	**Yes**
229880	530330303041	No	No	No	No	No	Yes	No	No	**Yes**
229881	530330303042	No	No	No	No	No	Yes	No	No	**Yes**
229882	530330303043	No	Yes	No	No	No	Yes	Yes	No	**Yes**
229886	530330303061	Yes	Yes	No	No	No	Yes	No	No	**Yes**
229889	530330303064	No	Yes	No	No	No	No	No	No	**Yes**
229891	530330303082	Yes	Yes	No	No	No	No	No	No	**Yes**
229893	530330303084	Yes	Yes	No	No	No	No	No	No	**Yes**
229895	530330303092	Yes	Yes	No	No	No	No	No	No	**Yes**
229898	530330303101	No	Yes	No	No	No	No	No	No	**Yes**
229899	530330303102	No	Yes	No	No	No	No	No	No	**Yes**
229906	530330303121	Yes	Yes	No	No	No	Yes	No	No	**Yes**
229908	530330303123	No	No	No	No	No	Yes	No	No	**Yes**
229909	530330303124	Yes	Yes	No	No	No	No	No	No	**Yes**
229910	530330303131	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229911	530330303132	Yes	Yes	Yes	No	No	No	No	No	**Yes**

229912	530330303133	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229913	530330303141	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229914	530330303142	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229915	530330303143	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229917	530330304032	No	No	No	No	No	Yes	No	No	**Yes**
229922	530330304051	No	Yes	No	No	No	No	No	No	**Yes**
229923	530330304052	Yes	Yes	No	No	No	No	No	No	**Yes**
229928	530330304072	Yes	Yes	No	No	No	No	No	No	**Yes**
229929	530330305011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229930	530330305012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229931	530330305031	Yes	Yes	No	No	No	No	No	No	**Yes**
229932	530330305032	Yes	Yes	No	No	No	No	No	No	**Yes**
229936	530330305043	Yes	Yes	No	No	No	No	No	No	**Yes**
229939	530330306002	No	Yes	No	No	No	Yes	No	No	**Yes**
229940	530330306003	Yes	Yes	No	No	No	No	No	No	**Yes**
229941	530330306004	Yes	Yes	No	No	No	No	No	No	**Yes**
229942	530330307001	Yes	Yes	No	No	No	No	No	No	**Yes**
229945	530330308011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229946	530330308012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229947	530330308013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229948	530330308014	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229949	530330308021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
229950	530330308022	No	No	Yes	No	No	No	No	No	**Yes**
229951	530330309011	Yes	Yes	No	No	No	No	No	No	**Yes**
229953	530330309013	Yes	Yes	No	No	No	No	No	No	**Yes**
229954	530330309021	No	Yes	No	No	No	No	No	No	**Yes**
229956	530330309023	Yes	Yes	No	No	No	No	No	No	**Yes**
229957	530330309024	Yes	Yes	No	No	No	No	No	No	**Yes**
229960	530330310003	No	No	No	No	No	Yes	No	No	**Yes**
229961	530330311011	Yes	Yes	No	No	No	Yes	No	No	**Yes**
229962	530330311012	No	No	No	No	No	Yes	No	No	**Yes**
229963	530330311013	No	No	No	No	No	Yes	No	No	**Yes**
229964	530330311021	No	No	No	No	No	Yes	No	No	**Yes**
229965	530330311022	No	No	No	No	No	Yes	No	No	**Yes**
229966	530330311023	Yes	Yes	No	No	No	Yes	No	No	**Yes**
229967	530330312021	No	No	No	No	No	Yes	Yes	No	**Yes**
229968	530330312022	No	Yes	No	No	No	Yes	No	No	**Yes**
229971	530330312025	No	Yes	No	No	No	Yes	No	No	**Yes**
229981	530330312072	Yes	Yes	No	No	No	No	No	No	**Yes**
229982	530330312073	No	Yes	No	No	No	No	No	No	**Yes**
229983	530330312081	Yes	Yes	No	No	No	No	No	No	**Yes**
229986	530330313011	No	No	No	No	No	No	Yes	No	**Yes**
229990	530330313023	No	Yes	No	No	No	No	No	No	**Yes**
230015	530330316052	No	No	No	No	No	No	Yes	No	**Yes**
230028	530330317082	No	No	No	No	No	No	Yes	No	**Yes**
230032	530330317093	No	Yes	No	No	No	No	No	No	**Yes**
230043	530330319082	No	Yes	No	No	No	No	No	No	**Yes**
230044	530330319083	No	Yes	No	No	No	No	No	No	**Yes**
230189	530330323243	No	Yes	No	No	No	No	No	No	**Yes**
230237	530330327031	No	No	No	No	No	Yes	Yes	No	**Yes**
230255	530350801021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230256	530350801022	No	Yes	Yes	No	No	No	No	No	**Yes**
230257	530350801023	No	Yes	Yes	No	No	No	No	No	**Yes**
230258	530350802001	No	Yes	Yes	No	No	No	No	No	**Yes**
230259	530350802002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230260	530350803001	Yes	Yes	No	No	No	No	No	No	**Yes**
230262	530350803003	Yes	Yes	No	No	No	No	No	No	**Yes**
230266	530350805001	No	Yes	No	No	No	No	No	No	**Yes**
230270	530350806002	Yes	Yes	No	No	No	No	No	No	**Yes**
230271	530350806003	Yes	Yes	No	No	No	No	No	No	**Yes**
230272	530350806004	No	Yes	No	No	No	No	No	No	**Yes**
230275	530350807003	No	Yes	No	No	No	No	No	No	**Yes**
230278	530350809001	No	Yes	No	No	No	No	No	No	**Yes**
230282	530350810001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230283	530350810002	No	Yes	Yes	No	No	No	No	No	**Yes**

230284	530350810003	No	No	Yes	No	No	No	No	No	**Yes**
230285	530350811001	No	Yes	No	No	No	No	No	No	**Yes**
230286	530350811002	No	Yes	No	No	No	No	No	No	**Yes**
230288	530350812002	No	Yes	No	No	No	No	No	No	**Yes**
230289	530350814001	No	Yes	Yes	No	No	No	No	No	**Yes**
230291	530350901012	No	No	No	No	No	Yes	Yes	No	**Yes**
230294	530350901021	No	No	No	No	No	No	Yes	No	**Yes**
230316	530350905013	No	Yes	No	No	No	No	No	No	**Yes**
230393	530350922001	No	Yes	No	No	No	No	No	No	**Yes**
230395	530350922003	No	Yes	No	No	No	No	No	No	**Yes**
230396	530350922004	No	Yes	No	No	No	No	No	No	**Yes**
230397	530350923001	No	Yes	No	No	No	No	No	No	**Yes**
230398	530350923002	No	Yes	No	No	No	No	No	No	**Yes**
230399	530350923003	No	Yes	No	No	No	No	No	No	**Yes**
230400	530350923004	No	Yes	No	No	No	No	No	No	**Yes**
230420	530350928012	No	Yes	No	No	No	No	No	No	**Yes**
230435	530359400001	No	No	No	No	No	Yes	No	No	**Yes**
230436	530359400002	No	No	No	No	No	Yes	No	No	**Yes**
230437	530359400003	No	No	No	No	No	Yes	No	No	**Yes**
230438	530359401001	No	No	No	No	No	Yes	No	No	**Yes**
230439	530359401002	No	No	No	No	No	Yes	No	No	**Yes**
230440	530359401003	No	No	No	No	No	Yes	No	No	**Yes**
230441	530359401004	No	No	No	No	No	Yes	No	No	**Yes**
230442	530359901000	No	No	No	No	No	Yes	No	No	**Yes**
230449	530379752013	No	Yes	No	No	No	No	No	No	**Yes**
230456	530379754022	No	Yes	No	No	No	No	No	No	**Yes**
230461	530379754032	No	Yes	No	No	No	No	No	No	**Yes**
230463	530379754041	Yes	Yes	No	No	No	No	No	No	**Yes**
230464	530379754042	No	Yes	No	No	No	No	No	No	**Yes**
230465	530379754043	No	Yes	No	No	No	No	No	No	**Yes**
230470	530379756001	No	Yes	Yes	No	No	No	No	No	**Yes**
230471	530379756002	No	Yes	Yes	No	No	No	No	No	**Yes**
230475	530399501011	No	No	Yes	No	No	No	Yes	No	**Yes**
230476	530399501012	No	No	Yes	No	No	Yes	No	No	**Yes**
230477	530399501021	No	No	Yes	No	No	No	Yes	No	**Yes**
230478	530399501022	No	No	Yes	No	No	No	Yes	No	**Yes**
230479	530399501031	No	No	Yes	No	No	No	Yes	No	**Yes**
230480	530399501032	No	No	Yes	No	No	No	No	No	**Yes**
230481	530399501033	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230482	530399501034	No	No	Yes	No	No	No	No	No	**Yes**
230483	530399502001	No	No	Yes	No	No	No	Yes	No	**Yes**
230484	530399502002	No	No	Yes	No	No	No	Yes	No	**Yes**
230485	530399502003	Yes	Yes	Yes	No	No	No	Yes	No	**Yes**
230486	530399502004	No	No	Yes	No	No	No	Yes	No	**Yes**
230493	530399503024	No	No	No	No	No	No	Yes	No	**Yes**
230499	530419703001	Yes	Yes	No	No	No	No	No	No	**Yes**
230502	530419703004	Yes	Yes	No	No	No	No	No	No	**Yes**
230503	530419704001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230504	530419704002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230505	530419704003	No	No	Yes	No	No	No	No	No	**Yes**
230506	530419704004	No	Yes	Yes	No	No	No	No	No	**Yes**
230507	530419705001	No	Yes	No	No	No	No	No	No	**Yes**
230509	530419706001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230510	530419706002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230511	530419707001	No	Yes	Yes	No	No	No	No	No	**Yes**
230512	530419707002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230513	530419707003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230514	530419707004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230518	530419708004	No	Yes	No	No	No	No	No	No	**Yes**
230519	530419709001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230520	530419709002	No	Yes	Yes	No	No	No	No	No	**Yes**
230526	530419712001	No	No	Yes	No	No	No	No	No	**Yes**
230527	530419712002	No	No	Yes	No	No	No	No	No	**Yes**
230528	530419713001	No	No	Yes	No	No	No	No	No	**Yes**
230529	530419713002	No	No	Yes	No	No	No	No	No	**Yes**

230530	530419713003	No	No	Yes	No	No	No	No	No	**Yes**
230537	530419715023	No	No	No	No	No	No	Yes	No	**Yes**
230544	530419717004	No	Yes	No	No	No	No	No	No	**Yes**
230545	530419718001	No	Yes	Yes	No	No	No	No	No	**Yes**
230546	530419718002	No	No	Yes	No	No	No	No	No	**Yes**
230547	530419718003	No	No	Yes	No	No	No	No	No	**Yes**
230548	530419718004	No	No	Yes	No	No	No	No	No	**Yes**
230549	530419719001	No	No	Yes	No	No	No	No	No	**Yes**
230550	530419719002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230551	530419719003	No	Yes	Yes	No	No	No	No	No	**Yes**
230558	530439602001	No	No	No	No	No	Yes	No	No	**Yes**
230559	530439602002	No	No	No	No	No	Yes	No	No	**Yes**
230560	530439602003	No	Yes	No	No	No	No	No	No	**Yes**
230564	530439604001	No	No	Yes	No	No	No	No	No	**Yes**
230565	530439604002	No	No	Yes	No	No	No	No	No	**Yes**
230566	530439604003	No	No	Yes	No	No	No	No	No	**Yes**
230567	530459400001	No	No	Yes	No	No	Yes	No	No	**Yes**
230568	530459601001	No	No	No	No	No	Yes	No	No	**Yes**
230569	530459601002	No	No	No	No	No	Yes	No	No	**Yes**
230570	530459602011	No	No	Yes	No	No	No	No	No	**Yes**
230571	530459602012	No	No	Yes	No	No	No	No	No	**Yes**
230572	530459602021	No	Yes	Yes	No	No	No	No	No	**Yes**
230573	530459602022	No	No	Yes	No	No	No	No	No	**Yes**
230574	530459602023	No	No	Yes	No	No	No	No	No	**Yes**
230575	530459602024	No	No	Yes	No	No	No	No	No	**Yes**
230593	530459605003	No	No	No	No	No	No	Yes	No	**Yes**
230598	530459607001	No	Yes	No	No	No	No	No	No	**Yes**
230600	530459608001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230601	530459608002	No	Yes	Yes	No	No	No	No	No	**Yes**
230602	530459608003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230603	530459608004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230604	530459609001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230605	530459609002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230606	530459609003	No	No	Yes	No	No	No	No	No	**Yes**
230607	530459609004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230611	530459610004	No	No	No	No	No	No	Yes	No	**Yes**
230612	530459611011	No	No	Yes	No	No	Yes	No	No	**Yes**
230613	530459611012	No	No	Yes	No	No	No	No	No	**Yes**
230614	530459611021	No	No	Yes	No	No	No	No	No	**Yes**
230615	530459611022	No	No	Yes	No	No	No	No	No	**Yes**
230616	530459611023	No	No	Yes	No	No	No	No	No	**Yes**
230620	530459613001	No	No	No	No	No	Yes	Yes	No	**Yes**
230621	530459613002	No	No	No	No	No	Yes	Yes	No	**Yes**
230623	530479401001	No	No	Yes	No	No	Yes	No	No	**Yes**
230624	530479401002	No	No	Yes	No	No	Yes	No	No	**Yes**
230625	530479401003	No	No	Yes	No	No	Yes	No	No	**Yes**
230626	530479402001	No	No	Yes	No	No	Yes	No	No	**Yes**
230627	530479402002	No	Yes	Yes	No	No	Yes	No	No	**Yes**
230628	530479402003	No	Yes	Yes	No	No	Yes	No	No	**Yes**
230629	530479703011	No	No	Yes	No	No	No	No	No	**Yes**
230630	530479703012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230631	530479703013	No	No	Yes	No	No	No	No	No	**Yes**
230632	530479703021	No	No	Yes	No	No	No	No	No	**Yes**
230633	530479703022	No	No	Yes	No	No	No	No	No	**Yes**
230634	530479703031	No	No	Yes	No	No	No	No	No	**Yes**
230635	530479703032	No	No	Yes	No	No	No	No	No	**Yes**
230636	530479703033	No	No	Yes	No	No	No	No	No	**Yes**
230637	530479704001	No	No	Yes	No	No	No	No	No	**Yes**
230638	530479704002	No	No	Yes	No	No	No	No	No	**Yes**
230639	530479704003	No	Yes	Yes	No	No	No	No	No	**Yes**
230640	530479705001	No	No	Yes	No	No	No	No	No	**Yes**
230641	530479705002	No	No	Yes	No	No	No	No	No	**Yes**
230642	530479706011	No	No	Yes	No	No	No	No	No	**Yes**
230643	530479706012	No	Yes	Yes	No	No	No	No	No	**Yes**
230644	530479706021	No	Yes	Yes	No	No	No	No	No	**Yes**

230645	530479706022	No	Yes	Yes	No	No	No	No	No	**Yes**
230646	530479706023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230647	530479706024	No	No	Yes	No	No	No	No	No	**Yes**
230648	530479707001	No	No	Yes	No	No	No	No	No	**Yes**
230649	530479707002	No	No	Yes	No	No	No	No	No	**Yes**
230650	530479707003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230651	530479707004	No	No	Yes	No	No	No	No	No	**Yes**
230652	530479707005	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230653	530479708001	No	No	Yes	No	No	No	No	No	**Yes**
230654	530479708002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230655	530479708003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230656	530479708004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230657	530479708005	No	Yes	Yes	No	No	No	No	No	**Yes**
230661	530479710001	No	No	Yes	No	No	No	No	No	**Yes**
230662	530479710002	No	No	Yes	No	No	No	No	No	**Yes**
230663	530479710003	No	No	Yes	No	No	No	No	No	**Yes**
230664	530479710004	No	No	Yes	No	No	No	No	No	**Yes**
230665	530479710005	No	No	Yes	No	No	No	No	No	**Yes**
230666	530499502001	No	Yes	No	No	No	No	No	No	**Yes**
230668	530499502003	No	Yes	No	No	No	No	No	No	**Yes**
230670	530499502005	No	Yes	No	No	No	No	No	No	**Yes**
230671	530499503011	No	No	Yes	No	No	Yes	Yes	No	**Yes**
230672	530499503012	No	No	Yes	No	No	No	No	No	**Yes**
230673	530499503013	No	No	Yes	No	No	Yes	Yes	No	**Yes**
230674	530499503021	No	Yes	Yes	No	No	No	No	No	**Yes**
230683	530499506001	No	Yes	Yes	No	No	No	No	No	**Yes**
230684	530499506002	No	No	Yes	No	No	No	No	No	**Yes**
230685	530499507011	No	No	Yes	No	No	No	No	No	**Yes**
230686	530499507012	No	No	Yes	No	No	No	No	No	**Yes**
230687	530499507021	No	No	Yes	No	No	No	No	No	**Yes**
230688	530499508011	No	No	Yes	No	No	No	No	No	**Yes**
230689	530499508021	No	No	Yes	No	No	No	No	No	**Yes**
230691	530519701001	No	No	Yes	No	No	No	No	No	**Yes**
230692	530519701002	No	Yes	Yes	No	No	No	No	No	**Yes**
230693	530519701003	No	No	Yes	No	No	No	No	No	**Yes**
230694	530519702001	No	No	Yes	No	No	Yes	Yes	No	**Yes**
230695	530519702002	No	No	Yes	No	No	Yes	No	No	**Yes**
230696	530519702003	No	No	Yes	No	No	No	No	No	**Yes**
230697	530519702004	No	No	Yes	No	No	Yes	Yes	No	**Yes**
230698	530519703001	No	No	Yes	No	No	No	No	No	**Yes**
230699	530519703002	No	No	Yes	No	No	No	No	No	**Yes**
230700	530519704001	No	Yes	Yes	No	No	No	No	No	**Yes**
230701	530519704002	No	No	Yes	No	No	No	No	No	**Yes**
230702	530519704003	No	No	Yes	No	No	No	No	No	**Yes**
230705	530530602001	Yes	Yes	Yes	No	No	Yes	Yes	No	**Yes**
230723	530530607005	Yes	Yes	No	No	No	No	No	No	**Yes**
230745	530530610021	No	Yes	Yes	No	No	No	No	No	**Yes**
230746	530530610022	No	No	Yes	No	No	No	No	No	**Yes**
230747	530530610023	No	No	Yes	No	No	No	No	No	**Yes**
230751	530530611004	No	Yes	No	No	No	No	No	No	**Yes**
230753	530530612001	No	Yes	No	No	No	No	No	No	**Yes**
230755	530530612003	Yes	Yes	No	No	No	No	No	No	**Yes**
230757	530530613001	No	Yes	Yes	No	No	No	No	No	**Yes**
230758	530530613002	No	No	Yes	No	No	No	No	No	**Yes**
230759	530530613003	No	Yes	Yes	No	No	No	No	No	**Yes**
230760	530530613004	No	No	Yes	No	No	No	No	No	**Yes**
230761	530530614001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230762	530530614002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230763	530530614003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230764	530530615011	Yes	Yes	No	No	No	No	No	No	**Yes**
230765	530530615012	No	Yes	No	No	No	No	No	No	**Yes**
230768	530530616011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230769	530530616012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230770	530530616021	Yes	Yes	No	No	No	No	No	No	**Yes**
230772	530530617002	Yes	Yes	No	No	No	No	No	No	**Yes**

230774	530530617004	Yes	Yes	No	No	No	No	No	No	**Yes**
230777	530530619001	No	Yes	Yes	No	No	No	No	No	**Yes**
230778	530530619002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230779	530530620001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230780	530530620002	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
230781	530530620003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230782	530530623001	No	Yes	No	No	No	Yes	No	No	**Yes**
230783	530530623002	Yes	Yes	No	No	No	Yes	No	No	**Yes**
230784	530530623003	No	No	No	No	No	Yes	No	No	**Yes**
230785	530530623004	No	No	No	No	No	Yes	No	No	**Yes**
230786	530530624001	No	Yes	No	No	No	No	No	No	**Yes**
230789	530530624004	Yes	Yes	No	No	No	No	No	No	**Yes**
230790	530530625011	Yes	Yes	No	No	No	No	No	No	**Yes**
230791	530530625012	Yes	Yes	No	No	No	No	No	No	**Yes**
230795	530530626001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230796	530530626002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230797	530530626003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230798	530530628011	No	Yes	Yes	No	No	No	No	No	**Yes**
230799	530530628012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230800	530530628013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230801	530530628014	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230804	530530628023	No	Yes	No	No	No	No	No	No	**Yes**
230807	530530629013	Yes	Yes	No	No	No	No	No	No	**Yes**
230810	530530629023	No	Yes	No	No	No	No	No	No	**Yes**
230811	530530630001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230812	530530630002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230813	530530631001	No	Yes	No	No	No	No	No	No	**Yes**
230814	530530631002	No	Yes	No	No	No	No	No	No	**Yes**
230817	530530632002	Yes	Yes	No	No	No	No	No	No	**Yes**
230818	530530632003	No	Yes	No	No	No	No	No	No	**Yes**
230820	530530633011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230821	530530633012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230822	530530633013	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
230823	530530633021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230824	530530633022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230825	530530633023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230826	530530634011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230827	530530634012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230828	530530634013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230829	530530634021	No	Yes	Yes	No	No	No	No	No	**Yes**
230830	530530634022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230831	530530634023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230832	530530635011	No	No	Yes	No	No	No	No	No	**Yes**
230833	530530635012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230834	530530635013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230835	530530635021	Yes	Yes	No	No	No	No	No	No	**Yes**
230836	530530635022	Yes	Yes	No	No	No	No	No	No	**Yes**
230837	530530635023	Yes	Yes	No	No	No	No	No	No	**Yes**
230838	530530635024	No	Yes	No	No	No	No	No	No	**Yes**
230840	530530701002	No	Yes	No	No	No	No	No	No	**Yes**
230850	530530702062	No	No	No	No	No	No	Yes	No	**Yes**
230863	530530703073	No	No	No	No	No	Yes	No	No	**Yes**
230907	530530707031	No	No	No	No	No	Yes	No	No	**Yes**
230910	530530707034	No	No	No	No	No	Yes	No	No	**Yes**
230914	530530712051	No	No	No	No	No	Yes	Yes	No	**Yes**
230918	530530712061	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230919	530530712062	No	No	Yes	No	No	No	No	No	**Yes**
230920	530530712063	No	No	Yes	No	No	No	No	No	**Yes**
230921	530530712064	No	No	Yes	No	No	No	No	No	**Yes**
230922	530530712065	No	No	Yes	No	No	No	No	No	**Yes**
230925	530530712073	Yes	Yes	No	No	No	No	No	No	**Yes**
230926	530530712074	Yes	Yes	No	No	No	No	No	No	**Yes**
230944	530530713051	No	Yes	No	No	No	No	No	No	**Yes**
230946	530530713053	No	Yes	No	No	No	No	No	No	**Yes**
230971	530530714093	Yes	Yes	No	No	No	No	No	No	**Yes**

230972	530530714111	No	Yes	No	No	No	No	No	No	**Yes**
230973	530530714112	Yes	Yes	No	No	No	No	No	No	**Yes**
230974	530530714113	Yes	Yes	No	No	No	No	No	No	**Yes**
230976	530530714122	No	Yes	No	No	No	No	No	No	**Yes**
230987	530530714161	Yes	Yes	No	No	No	No	No	No	**Yes**
230988	530530714162	Yes	Yes	No	No	No	No	No	No	**Yes**
230990	530530714172	No	Yes	No	No	No	No	No	No	**Yes**
230991	530530715031	Yes	Yes	No	No	No	No	No	No	**Yes**
230992	530530715032	Yes	Yes	No	No	No	No	No	No	**Yes**
230994	530530715034	No	Yes	No	No	No	No	No	No	**Yes**
230995	530530715041	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230996	530530715042	Yes	Yes	Yes	No	No	No	No	No	**Yes**
230997	530530715043	No	No	Yes	No	No	No	No	No	**Yes**
230998	530530715044	No	No	Yes	No	No	No	No	No	**Yes**
231007	530530716011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231008	530530716012	No	Yes	Yes	No	No	No	No	No	**Yes**
231009	530530716013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231010	530530716014	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231011	530530716031	Yes	Yes	No	No	No	No	No	No	**Yes**
231012	530530716032	Yes	Yes	No	No	No	No	No	No	**Yes**
231015	530530716042	Yes	Yes	No	No	No	No	No	No	**Yes**
231016	530530716043	No	Yes	No	No	No	No	No	No	**Yes**
231017	530530717031	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231018	530530717032	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231019	530530717041	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231020	530530717042	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231021	530530717043	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231022	530530717051	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231023	530530717052	No	No	Yes	No	No	No	No	No	**Yes**
231024	530530717053	No	Yes	Yes	No	No	No	No	No	**Yes**
231025	530530717061	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231026	530530717071	No	Yes	No	No	No	No	No	No	**Yes**
231027	530530717072	Yes	Yes	No	No	No	No	No	No	**Yes**
231028	530530718031	No	No	Yes	No	No	No	No	No	**Yes**
231029	530530718032	No	No	Yes	No	No	No	No	No	**Yes**
231030	530530718033	No	No	Yes	No	No	No	No	No	**Yes**
231031	530530718034	No	No	Yes	No	No	No	No	No	**Yes**
231032	530530718051	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231033	530530718052	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231034	530530718053	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231035	530530718061	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231036	530530718062	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231037	530530718063	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231038	530530718071	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231039	530530718072	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231040	530530718073	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231041	530530718074	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231042	530530718081	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231043	530530718082	No	Yes	Yes	No	No	No	No	No	**Yes**
231044	530530718083	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231045	530530719011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231046	530530719012	No	Yes	Yes	No	No	No	No	No	**Yes**
231047	530530719013	No	No	Yes	No	No	No	No	No	**Yes**
231052	530530720001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231053	530530720002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231054	530530720003	No	Yes	Yes	No	No	No	No	No	**Yes**
231057	530530721053	Yes	Yes	No	No	No	No	No	No	**Yes**
231059	530530721061	No	No	Yes	No	No	No	No	No	**Yes**
231060	530530721062	No	Yes	Yes	No	No	No	No	No	**Yes**
231061	530530721063	No	No	Yes	No	No	No	No	No	**Yes**
231062	530530721064	No	No	Yes	No	No	No	No	No	**Yes**
231083	530530723071	No	Yes	No	No	No	No	No	No	**Yes**
231156	530530726035	No	Yes	No	No	No	No	No	No	**Yes**
231165	530530729032	No	Yes	No	No	No	No	No	No	**Yes**
231166	530530729071	Yes	Yes	Yes	No	No	No	No	No	**Yes**

231167	530530729072	No	Yes	Yes	No	No	No	No	No	**Yes**
231168	530530729073	No	No	Yes	No	No	No	No	No	**Yes**
231169	530530729081	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231170	530530729082	No	No	Yes	No	No	No	No	No	**Yes**
231171	530530729083	No	No	Yes	No	No	No	No	No	**Yes**
231172	530530729084	No	No	Yes	No	No	No	No	No	**Yes**
231174	530530729092	No	No	No	No	No	Yes	No	No	**Yes**
231190	530530731111	Yes	Yes	No	No	No	No	No	No	**Yes**
231209	530530731184	No	Yes	No	No	No	No	No	No	**Yes**
231218	530530731221	No	Yes	No	No	No	No	No	No	**Yes**
231227	530530731262	No	Yes	No	No	No	No	No	No	**Yes**
231229	530530731271	No	Yes	No	No	No	No	No	No	**Yes**
231230	530530731272	Yes	Yes	No	No	No	No	No	No	**Yes**
231232	530530731282	Yes	Yes	No	No	No	No	No	No	**Yes**
231233	530530731283	Yes	Yes	No	No	No	No	No	No	**Yes**
231239	530530731302	Yes	Yes	No	No	No	No	No	No	**Yes**
231244	530530731322	Yes	Yes	No	No	No	No	No	No	**Yes**
231257	530530733014	No	Yes	No	No	No	No	No	No	**Yes**
231258	530530733015	Yes	Yes	No	No	No	No	No	No	**Yes**
231268	530530734052	No	Yes	No	No	No	No	No	No	**Yes**
231273	530530734064	No	Yes	No	No	No	No	No	No	**Yes**
231274	530530734071	Yes	Yes	No	No	No	No	No	No	**Yes**
231275	530530734072	No	Yes	No	No	No	Yes	No	No	**Yes**
231277	530530734081	No	Yes	No	No	No	Yes	No	No	**Yes**
231286	530539400011	No	No	No	No	No	Yes	No	No	**Yes**
231287	530539400012	No	No	No	No	No	Yes	No	No	**Yes**
231288	530539400021	No	Yes	Yes	No	No	Yes	No	No	**Yes**
231289	530539400022	No	No	Yes	No	No	Yes	No	No	**Yes**
231290	530539400023	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
231291	530539400024	No	No	Yes	No	No	Yes	No	No	**Yes**
231292	530539400041	No	No	No	No	No	Yes	No	No	**Yes**
231293	530539400042	No	No	No	No	No	Yes	No	No	**Yes**
231294	530539400043	No	No	No	No	No	Yes	No	No	**Yes**
231295	530539400044	No	No	No	No	No	Yes	No	No	**Yes**
231296	530539400045	No	No	No	No	No	Yes	No	No	**Yes**
231297	530539400051	No	No	Yes	No	No	Yes	No	No	**Yes**
231298	530539400052	No	No	Yes	No	No	Yes	No	No	**Yes**
231299	530539400053	No	No	Yes	No	No	Yes	No	No	**Yes**
231300	530539400054	No	No	Yes	No	No	Yes	No	No	**Yes**
231301	530539400061	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
231302	530539400062	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
231303	530539400071	Yes	Yes	Yes	No	No	Yes	Yes	No	**Yes**
231304	530539400072	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
231305	530539400081	No	No	Yes	No	No	Yes	No	No	**Yes**
231306	530539400082	No	No	Yes	No	No	Yes	No	No	**Yes**
231307	530539400083	No	No	Yes	No	No	Yes	No	No	**Yes**
231308	530539400084	No	No	Yes	No	No	Yes	No	No	**Yes**
231309	530539400091	No	No	No	No	No	Yes	No	No	**Yes**
231311	530539400101	No	No	No	No	No	Yes	No	No	**Yes**
231313	530539400103	No	Yes	No	No	No	Yes	No	No	**Yes**
231314	530539400111	No	No	Yes	No	No	Yes	No	No	**Yes**
231315	530539400112	No	No	Yes	No	No	Yes	No	No	**Yes**
231316	530539400113	No	No	Yes	No	No	Yes	No	No	**Yes**
231317	530539400121	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
231318	530539400122	No	No	Yes	No	No	Yes	No	No	**Yes**
231319	530539400123	No	No	Yes	No	No	Yes	No	No	**Yes**
231320	530539400131	No	No	Yes	No	No	Yes	No	No	**Yes**
231321	530539400132	No	No	Yes	No	No	Yes	No	No	**Yes**
231322	530539400133	No	No	Yes	No	No	Yes	No	No	**Yes**
231352	530579405001	No	Yes	Yes	No	No	No	No	No	**Yes**
231353	530579405002	No	No	Yes	No	No	No	No	No	**Yes**
231354	530579405003	No	No	Yes	No	No	No	No	No	**Yes**
231355	530579406001	No	No	Yes	No	No	No	No	No	**Yes**
231356	530579406002	No	No	Yes	No	No	No	No	No	**Yes**
231359	530579408011	No	No	No	No	No	Yes	No	No	**Yes**

231360	530579408021	No	No	No	No	No	Yes	No	No	**Yes**
231361	530579408022	No	No	No	No	No	Yes	No	No	**Yes**
231367	530579508022	No	No	No	No	No	Yes	Yes	No	**Yes**
231370	530579509002	No	No	No	No	No	Yes	Yes	No	**Yes**
231374	530579511011	No	No	Yes	No	No	No	No	No	**Yes**
231375	530579511012	No	Yes	Yes	No	No	No	No	No	**Yes**
231376	530579511021	No	Yes	Yes	No	No	No	No	No	**Yes**
231377	530579511022	No	No	Yes	No	No	Yes	No	No	**Yes**
231378	530579511023	No	No	Yes	No	No	No	No	No	**Yes**
231384	530579514002	No	Yes	No	No	No	No	No	No	**Yes**
231389	530579515013	No	Yes	No	No	No	No	No	No	**Yes**
231394	530579516001	No	Yes	No	No	No	No	No	No	**Yes**
231397	530579517001	No	No	Yes	No	No	No	No	No	**Yes**
231398	530579517002	No	No	Yes	No	No	No	No	No	**Yes**
231399	530579518001	No	Yes	No	No	No	No	No	No	**Yes**
231400	530579518002	Yes	Yes	No	No	No	No	No	No	**Yes**
231401	530579518003	No	Yes	No	No	No	No	No	No	**Yes**
231404	530579521001	No	No	No	No	No	No	Yes	No	**Yes**
231407	530579522001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231408	530579522002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231409	530579522003	No	Yes	Yes	No	No	No	No	No	**Yes**
231410	530579523011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231411	530579523012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231412	530579523013	No	No	Yes	No	No	No	No	No	**Yes**
231420	530579524013	Yes	Yes	No	No	No	No	No	No	**Yes**
231421	530579524031	No	Yes	No	No	No	No	No	No	**Yes**
231423	530579524041	No	Yes	No	No	No	No	No	No	**Yes**
231425	530579525001	No	No	Yes	No	No	No	No	No	**Yes**
231426	530579525002	No	No	Yes	No	No	No	No	No	**Yes**
231427	530579525003	No	Yes	Yes	No	No	No	No	No	**Yes**
231435	530579901000	No	No	Yes	No	No	Yes	No	No	**Yes**
231450	530610402001	No	Yes	Yes	No	No	No	No	No	**Yes**
231451	530610402002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231452	530610402003	No	No	Yes	No	No	No	No	No	**Yes**
231453	530610402004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231454	530610402005	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231455	530610403001	No	Yes	No	No	No	No	No	No	**Yes**
231456	530610403002	No	Yes	No	No	No	No	No	No	**Yes**
231457	530610404001	No	Yes	No	No	No	No	No	No	**Yes**
231462	530610407001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231463	530610407002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231464	530610407003	No	No	Yes	No	No	No	No	No	**Yes**
231465	530610407004	No	Yes	Yes	No	No	No	No	No	**Yes**
231467	530610408002	No	Yes	No	No	No	No	No	No	**Yes**
231471	530610410001	No	Yes	No	No	No	No	No	No	**Yes**
231481	530610412021	No	Yes	Yes	No	No	No	No	No	**Yes**
231482	530610412022	No	Yes	Yes	No	No	No	No	No	**Yes**
231483	530610412023	No	No	Yes	No	No	No	No	No	**Yes**
231484	530610412024	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231489	530610413031	No	Yes	No	No	No	No	No	No	**Yes**
231491	530610413033	No	Yes	No	No	No	No	No	No	**Yes**
231496	530610414002	No	Yes	No	No	No	No	No	No	**Yes**
231498	530610414004	No	Yes	No	No	No	No	No	No	**Yes**
231500	530610415002	No	Yes	No	No	No	No	No	No	**Yes**
231510	530610416061	No	Yes	No	No	No	No	No	No	**Yes**
231512	530610416063	No	Yes	No	No	No	No	No	No	**Yes**
231513	530610416064	Yes	Yes	No	No	No	No	No	No	**Yes**
231519	530610416093	Yes	Yes	No	No	No	No	No	No	**Yes**
231523	530610417011	Yes	Yes	No	No	No	No	No	No	**Yes**
231526	530610417014	Yes	Yes	No	No	No	No	No	No	**Yes**
231537	530610418052	No	Yes	No	No	No	No	No	No	**Yes**
231540	530610418081	Yes	Yes	No	No	No	No	No	No	**Yes**
231541	530610418082	Yes	Yes	No	No	No	No	No	No	**Yes**
231542	530610418083	No	Yes	No	No	No	No	No	No	**Yes**
231543	530610418091	Yes	Yes	Yes	No	No	No	No	No	**Yes**

231544	530610418092	No	Yes	Yes	No	No	No	No	No	**Yes**
231545	530610418093	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231546	530610418101	Yes	Yes	No	No	No	No	No	No	**Yes**
231547	530610418102	Yes	Yes	No	No	No	No	No	No	**Yes**
231548	530610418103	No	Yes	No	No	No	No	No	No	**Yes**
231549	530610418121	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231550	530610418122	No	No	Yes	No	No	No	No	No	**Yes**
231551	530610418123	No	No	Yes	No	No	No	No	No	**Yes**
231552	530610418124	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231553	530610418131	No	No	Yes	No	No	No	No	No	**Yes**
231554	530610418132	No	No	Yes	No	No	No	No	No	**Yes**
231555	530610418133	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231556	530610418141	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231557	530610418142	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231558	530610418143	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231559	530610418151	Yes	Yes	No	No	No	No	No	No	**Yes**
231561	530610418153	No	Yes	No	No	No	No	No	No	**Yes**
231564	530610418163	No	Yes	No	No	No	No	No	No	**Yes**
231565	530610419011	No	No	Yes	No	No	No	No	No	**Yes**
231566	530610419012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231567	530610419013	No	No	Yes	No	No	No	No	No	**Yes**
231568	530610419014	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231569	530610419041	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231570	530610419042	No	No	Yes	No	No	No	No	No	**Yes**
231571	530610419043	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231572	530610419044	No	Yes	Yes	No	No	No	No	No	**Yes**
231573	530610419051	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231574	530610419052	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231575	530610419053	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231576	530610419054	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231577	530610419061	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231578	530610419062	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231579	530610419071	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231580	530610419072	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231581	530610419073	No	Yes	Yes	No	No	No	No	No	**Yes**
231595	530610420061	No	Yes	No	No	No	No	No	No	**Yes**
231621	530610504043	Yes	Yes	No	No	No	No	No	No	**Yes**
231656	530610514011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231657	530610514012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231658	530610514013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231659	530610514021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231660	530610514022	No	No	Yes	No	No	No	No	No	**Yes**
231661	530610514023	No	No	Yes	No	No	No	No	No	**Yes**
231663	530610515002	No	Yes	No	No	No	No	No	No	**Yes**
231664	530610515003	No	Yes	No	No	No	No	No	No	**Yes**
231667	530610516012	No	Yes	No	No	No	No	No	No	**Yes**
231675	530610517013	Yes	Yes	No	No	No	No	No	No	**Yes**
231676	530610517014	No	Yes	No	No	No	No	No	No	**Yes**
231678	530610517022	No	Yes	No	No	No	No	No	No	**Yes**
231686	530610518031	No	No	Yes	No	No	No	No	No	**Yes**
231687	530610518032	No	No	Yes	No	No	No	No	No	**Yes**
231688	530610518033	No	Yes	Yes	No	No	No	No	No	**Yes**
231689	530610518034	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231730	530610519283	Yes	Yes	No	No	No	No	No	No	**Yes**
231733	530610519292	Yes	Yes	No	No	No	No	No	No	**Yes**
231824	530610522041	No	Yes	No	No	No	No	No	No	**Yes**
231836	530610522081	Yes	Yes	No	No	No	No	No	No	**Yes**
231840	530610522102	No	Yes	No	No	No	No	No	No	**Yes**
231854	530610524023	Yes	Yes	No	No	No	No	No	No	**Yes**
231904	530610528031	No	No	No	No	No	No	Yes	No	**Yes**
231910	530610528052	No	No	No	No	No	No	Yes	No	**Yes**
231924	530610529031	No	Yes	Yes	No	No	No	No	No	**Yes**
231925	530610529032	Yes	Yes	Yes	No	No	No	No	No	**Yes**
231926	530610529033	No	Yes	Yes	No	No	No	No	No	**Yes**
231928	530610529042	No	Yes	No	No	No	No	No	No	**Yes**

231931	530610529051	No	No	Yes	No	No	No	No	No	**Yes**
231932	530610529052	No	Yes	Yes	No	No	No	No	No	**Yes**
231933	530610529053	No	Yes	Yes	No	No	No	No	No	**Yes**
231940	530610531021	No	No	No	No	No	No	Yes	No	**Yes**
231946	530610532013	No	No	No	No	No	No	Yes	No	**Yes**
231955	530610533021	No	No	No	No	No	No	Yes	No	**Yes**
231959	530610533025	No	No	No	No	No	No	Yes	No	**Yes**
231961	530610534002	No	No	No	No	No	No	Yes	No	**Yes**
231962	530610534003	No	No	No	No	No	No	Yes	No	**Yes**
231963	530610534004	No	No	No	No	No	Yes	Yes	No	**Yes**
231967	530610535054	No	No	No	No	No	No	Yes	No	**Yes**
231968	530610535061	No	No	No	No	No	No	Yes	No	**Yes**
231976	530610535081	No	No	No	No	No	No	Yes	No	**Yes**
231980	530610535093	Yes	Yes	No	No	No	No	No	No	**Yes**
231990	530610536041	No	No	No	No	No	No	Yes	No	**Yes**
231998	530610537001	No	No	No	No	No	Yes	No	No	**Yes**
232011	530619400011	No	No	No	No	No	Yes	No	No	**Yes**
232012	530619400012	No	No	No	No	No	Yes	No	No	**Yes**
232013	530619400013	No	No	No	No	No	Yes	No	No	**Yes**
232014	530619400014	No	No	No	No	No	Yes	No	No	**Yes**
232015	530619400015	No	No	No	No	No	Yes	No	No	**Yes**
232016	530619400021	No	Yes	No	No	No	Yes	No	No	**Yes**
232017	530619400022	No	No	No	No	No	Yes	No	No	**Yes**
232018	530619400023	No	No	No	No	No	Yes	No	No	**Yes**
232019	530619900020	No	No	No	No	No	Yes	No	No	**Yes**
232021	530630002011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232022	530630002012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232023	530630002021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232024	530630002022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232025	530630003011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232026	530630003012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232027	530630003021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232028	530630003022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232029	530630004001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232030	530630004002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232031	530630004003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232035	530630006001	Yes	Yes	No	No	No	No	No	No	**Yes**
232038	530630007001	No	Yes	No	No	No	No	No	No	**Yes**
232040	530630007003	No	Yes	No	No	No	No	No	No	**Yes**
232041	530630007004	No	Yes	No	No	No	No	No	No	**Yes**
232048	530630009004	No	Yes	No	No	No	No	No	No	**Yes**
232052	530630010002	No	Yes	No	No	No	No	No	No	**Yes**
232060	530630012001	No	No	Yes	No	No	No	No	No	**Yes**
232061	530630012002	No	No	Yes	No	No	No	No	No	**Yes**
232062	530630013001	No	No	Yes	No	No	No	No	No	**Yes**
232063	530630013002	No	Yes	Yes	No	No	No	No	No	**Yes**
232064	530630013003	No	Yes	Yes	No	No	No	No	No	**Yes**
232065	530630014001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232066	530630014002	No	Yes	Yes	No	No	No	No	No	**Yes**
232067	530630014003	No	Yes	Yes	No	No	No	No	No	**Yes**
232068	530630014004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232069	530630015001	No	Yes	Yes	No	No	No	No	No	**Yes**
232070	530630015002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232071	530630015003	No	No	Yes	No	No	No	No	No	**Yes**
232072	530630015004	No	Yes	Yes	No	No	No	No	No	**Yes**
232073	530630015005	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232074	530630016001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232075	530630016002	No	Yes	Yes	No	No	No	No	No	**Yes**
232076	530630016003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232077	530630018001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232078	530630018002	No	No	Yes	No	No	No	No	No	**Yes**
232079	530630019001	No	Yes	Yes	No	No	No	No	No	**Yes**
232080	530630019002	No	No	Yes	No	No	No	No	No	**Yes**
232081	530630019003	No	Yes	Yes	No	No	No	No	No	**Yes**
232082	530630020001	No	Yes	Yes	No	No	No	No	No	**Yes**

232083	530630020002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232084	530630020003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232085	530630020004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232086	530630020005	No	Yes	Yes	No	No	No	No	No	**Yes**
232088	530630021002	No	Yes	No	No	No	No	No	No	**Yes**
232089	530630023001	No	Yes	Yes	No	No	No	No	No	**Yes**
232090	530630023002	No	No	Yes	No	No	No	No	No	**Yes**
232091	530630023003	No	Yes	Yes	No	No	No	No	No	**Yes**
232092	530630023004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232093	530630024001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232094	530630024002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232095	530630025011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232096	530630025012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232097	530630025013	No	No	Yes	No	No	No	No	No	**Yes**
232098	530630025021	No	Yes	Yes	No	No	No	No	No	**Yes**
232099	530630025022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232100	530630025031	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232101	530630026001	No	No	Yes	No	No	No	No	No	**Yes**
232102	530630026002	No	Yes	Yes	No	No	No	No	No	**Yes**
232103	530630026003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232104	530630026004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232108	530630030001	No	Yes	Yes	No	No	No	No	No	**Yes**
232109	530630030002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232110	530630031001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232111	530630031002	No	No	Yes	No	No	No	No	No	**Yes**
232112	530630031003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232113	530630031004	No	No	Yes	No	No	No	No	No	**Yes**
232114	530630032001	No	No	Yes	No	No	No	No	No	**Yes**
232115	530630032002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232116	530630032003	No	Yes	Yes	No	No	No	No	No	**Yes**
232117	530630032004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232118	530630035001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232119	530630035002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232120	530630035003	No	Yes	Yes	No	No	No	No	No	**Yes**
232121	530630035004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232122	530630036011	No	Yes	No	No	No	No	No	No	**Yes**
232123	530630036012	No	Yes	No	No	No	No	No	No	**Yes**
232124	530630036021	Yes	Yes	No	No	No	No	No	No	**Yes**
232126	530630036023	No	Yes	No	No	No	No	No	No	**Yes**
232129	530630039001	No	Yes	No	No	No	No	No	No	**Yes**
232131	530630040011	No	Yes	Yes	No	No	No	No	No	**Yes**
232132	530630040012	No	No	Yes	No	No	No	No	No	**Yes**
232133	530630040013	No	No	Yes	No	No	No	No	No	**Yes**
232134	530630040021	No	No	Yes	No	No	No	No	No	**Yes**
232135	530630040022	No	Yes	Yes	No	No	No	No	No	**Yes**
232157	530630046014	Yes	Yes	No	No	No	No	No	No	**Yes**
232162	530630047012	No	Yes	No	No	No	No	No	No	**Yes**
232164	530630047022	No	Yes	No	No	No	No	No	No	**Yes**
232173	530630050001	No	Yes	No	No	No	No	No	No	**Yes**
232187	530630102042	No	Yes	No	No	No	No	No	No	**Yes**
232188	530630103011	No	Yes	Yes	No	No	No	No	No	**Yes**
232189	530630103012	No	No	Yes	No	No	No	No	No	**Yes**
232190	530630103013	No	Yes	Yes	No	No	No	No	No	**Yes**
232194	530630103042	No	Yes	No	No	No	No	No	No	**Yes**
232200	530630104011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232201	530630104012	No	Yes	Yes	No	No	No	Yes	No	**Yes**
232202	530630104013	Yes	Yes	Yes	No	No	Yes	Yes	No	**Yes**
232203	530630104014	No	No	Yes	No	No	No	Yes	No	**Yes**
232233	530630108001	No	Yes	Yes	No	No	No	No	No	**Yes**
232235	530630109021	No	Yes	No	No	No	No	No	No	**Yes**
232237	530630109023	Yes	Yes	No	No	No	No	No	No	**Yes**
232239	530630110002	No	Yes	No	No	No	No	No	No	**Yes**
232241	530630111021	No	No	Yes	No	No	No	No	No	**Yes**
232242	530630111022	No	Yes	Yes	No	No	No	No	No	**Yes**
232243	530630111031	Yes	Yes	Yes	No	No	No	No	No	**Yes**

232244	530630111032	No	Yes	Yes	No	No	No	No	No	**Yes**
232245	530630111041	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232246	530630111042	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232247	530630111043	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232249	530630112022	Yes	Yes	No	No	No	No	No	No	**Yes**
232252	530630112031	No	Yes	Yes	No	No	No	No	No	**Yes**
232253	530630112032	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232254	530630112033	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232255	530630112034	No	No	Yes	No	No	No	No	No	**Yes**
232256	530630112041	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232257	530630112042	No	Yes	Yes	No	No	No	No	No	**Yes**
232260	530630113021	No	Yes	No	No	No	No	No	No	**Yes**
232267	530630115002	No	Yes	No	No	No	No	No	No	**Yes**
232269	530630117011	No	Yes	No	No	No	No	No	No	**Yes**
232271	530630117021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232272	530630117022	No	No	Yes	No	No	No	No	No	**Yes**
232273	530630117023	No	Yes	Yes	No	No	No	No	No	**Yes**
232274	530630117024	No	Yes	Yes	No	No	No	No	No	**Yes**
232275	530630118001	No	Yes	Yes	No	No	No	No	No	**Yes**
232276	530630118002	No	Yes	Yes	No	No	No	No	No	**Yes**
232277	530630118003	No	Yes	Yes	No	No	No	No	No	**Yes**
232278	530630118004	No	Yes	Yes	No	No	No	No	No	**Yes**
232279	530630119001	No	Yes	Yes	No	No	No	No	No	**Yes**
232280	530630119002	No	Yes	Yes	No	No	No	No	No	**Yes**
232281	530630120001	No	Yes	No	No	No	No	No	No	**Yes**
232286	530630122001	Yes	Yes	No	No	No	No	No	No	**Yes**
232289	530630123002	Yes	Yes	No	No	No	No	No	No	**Yes**
232291	530630123004	No	Yes	No	No	No	No	No	No	**Yes**
232299	530630125001	No	No	Yes	No	No	No	No	No	**Yes**
232300	530630125002	No	Yes	Yes	No	No	No	No	No	**Yes**
232301	530630125003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232306	530630127021	No	Yes	No	No	No	No	No	No	**Yes**
232311	530630128014	No	Yes	No	No	No	No	No	No	**Yes**
232315	530630129011	No	Yes	No	No	No	No	No	No	**Yes**
232316	530630129012	No	Yes	No	No	No	No	No	No	**Yes**
232317	530630129021	No	Yes	No	No	No	No	No	No	**Yes**
232318	530630129022	No	Yes	No	No	No	No	No	No	**Yes**
232323	530630130021	No	Yes	No	No	No	No	No	No	**Yes**
232327	530630130033	No	Yes	No	No	No	No	No	No	**Yes**
232367	530630140011	Yes	Yes	No	No	No	No	No	No	**Yes**
232368	530630140012	Yes	Yes	No	No	No	No	No	No	**Yes**
232370	530630140014	Yes	Yes	No	No	No	No	No	No	**Yes**
232373	530630140023	No	Yes	No	No	No	No	No	No	**Yes**
232374	530630140024	No	Yes	No	No	No	No	No	No	**Yes**
232379	530630141005	No	Yes	No	No	No	No	No	No	**Yes**
232382	530630143001	No	Yes	Yes	No	No	No	No	No	**Yes**
232383	530630143002	No	No	Yes	No	No	No	No	No	**Yes**
232384	530630143003	No	No	Yes	No	No	No	No	No	**Yes**
232385	530630144001	No	No	Yes	No	No	No	No	No	**Yes**
232386	530630144002	No	Yes	Yes	No	No	No	No	No	**Yes**
232387	530630144003	No	No	Yes	No	No	No	No	No	**Yes**
232388	530630144004	No	No	Yes	No	No	No	No	No	**Yes**
232389	530630145001	No	Yes	Yes	No	No	No	No	No	**Yes**
232390	530630145002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232391	530630145003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232392	530659410001	No	Yes	Yes	No	No	Yes	No	No	**Yes**
232393	530659410002	No	Yes	Yes	No	No	Yes	No	No	**Yes**
232394	530659501011	No	No	Yes	No	No	No	No	No	**Yes**
232395	530659501012	No	No	Yes	No	No	No	No	No	**Yes**
232396	530659501013	No	No	Yes	No	No	No	No	No	**Yes**
232397	530659501021	No	No	Yes	No	No	No	No	No	**Yes**
232398	530659501022	No	No	Yes	No	No	No	No	No	**Yes**
232399	530659501023	No	No	Yes	No	No	No	No	No	**Yes**
232403	530659503001	No	Yes	No	No	No	No	No	No	**Yes**
232407	530659505002	No	No	Yes	No	No	No	No	No	**Yes**

232410	530659507001	No	Yes	Yes	No	No	No	No	No	**Yes**
232411	530659507002	No	Yes	Yes	No	No	No	No	No	**Yes**
232412	530659507003	No	No	Yes	No	No	No	No	No	**Yes**
232413	530659508001	No	No	Yes	No	No	No	No	No	**Yes**
232414	530659508002	No	No	Yes	No	No	No	Yes	No	**Yes**
232415	530659508003	No	No	Yes	No	No	No	Yes	No	**Yes**
232416	530659509001	No	No	Yes	No	No	No	No	No	**Yes**
232417	530659509002	No	No	Yes	No	No	No	No	No	**Yes**
232418	530659511001	No	Yes	Yes	No	No	No	No	No	**Yes**
232419	530659511002	No	No	Yes	No	No	No	No	No	**Yes**
232420	530659511003	No	Yes	Yes	No	No	No	No	No	**Yes**
232421	530659513011	No	Yes	No	No	No	No	No	No	**Yes**
232426	530659514011	No	Yes	No	No	No	No	No	No	**Yes**
232430	530670101001	No	Yes	No	No	No	No	No	No	**Yes**
232437	530670103001	No	No	Yes	No	No	No	No	No	**Yes**
232438	530670103002	No	No	Yes	No	No	No	No	No	**Yes**
232439	530670103003	No	No	Yes	No	No	No	No	No	**Yes**
232440	530670103004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232444	530670105101	No	No	Yes	No	No	No	No	No	**Yes**
232445	530670105201	No	No	Yes	No	No	No	No	No	**Yes**
232446	530670105202	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232447	530670105203	No	No	Yes	No	No	No	No	No	**Yes**
232448	530670105204	No	No	Yes	No	No	No	No	No	**Yes**
232451	530670106003	No	Yes	No	No	No	No	No	No	**Yes**
232458	530670108011	Yes	Yes	No	No	No	No	No	No	**Yes**
232459	530670108012	Yes	Yes	No	No	No	No	No	No	**Yes**
232465	530670109102	Yes	Yes	No	No	No	No	No	No	**Yes**
232466	530670109103	No	Yes	No	No	No	No	No	No	**Yes**
232468	530670109201	Yes	Yes	No	No	No	No	No	No	**Yes**
232469	530670109202	No	Yes	No	No	No	No	No	No	**Yes**
232477	530670112001	No	Yes	No	No	No	No	No	No	**Yes**
232478	530670112002	No	Yes	No	No	No	No	No	No	**Yes**
232481	530670113001	No	Yes	Yes	No	No	No	No	No	**Yes**
232482	530670113002	No	No	Yes	No	No	No	No	No	**Yes**
232483	530670113003	No	Yes	Yes	No	No	No	No	No	**Yes**
232484	530670113004	No	No	Yes	No	No	No	No	No	**Yes**
232494	530670115001	Yes	Yes	No	No	No	No	No	No	**Yes**
232508	530670116243	Yes	Yes	No	No	No	No	No	No	**Yes**
232530	530670118222	No	No	No	No	No	No	Yes	No	**Yes**
232531	530670118223	No	No	No	No	No	No	Yes	No	**Yes**
232552	530670122232	Yes	Yes	No	No	No	No	No	No	**Yes**
232559	530670123201	No	No	No	No	No	Yes	No	No	**Yes**
232574	530670124202	No	No	No	No	No	Yes	No	No	**Yes**
232577	530670124221	Yes	Yes	No	No	No	No	No	No	**Yes**
232589	530670125314	No	Yes	No	No	No	No	No	No	**Yes**
232595	530670126104	No	Yes	No	No	No	No	No	No	**Yes**
232598	530670126202	No	Yes	No	No	No	No	No	No	**Yes**
232601	530670126205	No	Yes	No	No	No	No	No	No	**Yes**
232602	530670127101	No	No	No	No	No	No	Yes	No	**Yes**
232603	530670127201	No	No	No	No	No	Yes	Yes	No	**Yes**
232604	530670127202	No	No	No	No	No	No	Yes	No	**Yes**
232605	530670127203	No	No	No	No	No	No	Yes	No	**Yes**
232606	530670127204	No	No	No	No	No	No	Yes	No	**Yes**
232607	530670127205	No	No	No	No	No	Yes	Yes	No	**Yes**
232609	530670127302	No	No	No	No	No	No	Yes	No	**Yes**
232617	530719200001	No	Yes	Yes	No	No	No	No	No	**Yes**
232618	530719200002	No	No	Yes	No	No	No	No	No	**Yes**
232619	530719200003	No	Yes	Yes	No	No	No	No	No	**Yes**
232620	530719200004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232621	530719201001	No	Yes	No	No	No	No	No	No	**Yes**
232623	530719201003	No	No	No	No	No	No	Yes	No	**Yes**
232624	530719201004	No	Yes	No	No	No	No	No	No	**Yes**
232626	530719202001	No	Yes	Yes	No	No	No	No	No	**Yes**
232627	530719202002	No	No	Yes	No	No	No	No	No	**Yes**
232632	530719203023	No	Yes	No	No	No	No	No	No	**Yes**

232633	530719203024	No	Yes	No	No	No	No	No	No	**Yes**
232635	530719205001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232636	530719205002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232637	530719205003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232639	530719206002	Yes	Yes	No	No	No	No	No	No	**Yes**
232640	530719206003	Yes	Yes	No	No	No	No	No	No	**Yes**
232641	530719206004	Yes	Yes	No	No	No	No	No	No	**Yes**
232643	530719207011	No	Yes	No	No	No	No	No	No	**Yes**
232644	530719207012	Yes	Yes	No	No	No	No	No	No	**Yes**
232645	530719207013	No	Yes	No	No	No	No	No	No	**Yes**
232655	530719208021	Yes	Yes	No	No	No	No	No	No	**Yes**
232657	530719208023	No	Yes	No	No	No	No	No	No	**Yes**
232666	530730001022	Yes	Yes	No	No	No	No	No	No	**Yes**
232668	530730002011	No	No	Yes	No	No	No	No	No	**Yes**
232669	530730002012	No	No	Yes	No	No	No	No	No	**Yes**
232670	530730002013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232671	530730002021	No	No	Yes	No	No	No	No	No	**Yes**
232672	530730002022	No	No	Yes	No	No	No	No	No	**Yes**
232673	530730002031	No	Yes	Yes	No	No	No	No	No	**Yes**
232674	530730002032	No	No	Yes	No	No	No	No	No	**Yes**
232678	530730003021	Yes	Yes	No	No	No	No	No	No	**Yes**
232679	530730003022	No	Yes	No	No	No	No	No	No	**Yes**
232686	530730005012	No	Yes	No	No	No	No	No	No	**Yes**
232687	530730005013	Yes	Yes	No	No	No	No	No	No	**Yes**
232689	530730005022	No	Yes	No	No	No	No	No	No	**Yes**
232690	530730006001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232693	530730007003	No	Yes	No	No	No	No	No	No	**Yes**
232694	530730007004	Yes	Yes	No	No	No	No	No	No	**Yes**
232714	530730009031	No	Yes	No	No	No	No	No	No	**Yes**
232717	530730010001	No	Yes	No	No	No	No	No	No	**Yes**
232718	530730010002	Yes	Yes	No	No	No	No	No	No	**Yes**
232719	530730010003	Yes	Yes	No	No	No	No	No	No	**Yes**
232720	530730010004	Yes	Yes	No	No	No	No	No	No	**Yes**
232730	530730012031	Yes	Yes	No	No	No	No	No	No	**Yes**
232733	530730012042	No	Yes	No	No	No	No	No	No	**Yes**
232734	530730101011	No	No	Yes	No	No	No	No	No	**Yes**
232735	530730101012	No	No	Yes	No	No	Yes	Yes	No	**Yes**
232736	530730101021	No	No	Yes	No	No	No	No	No	**Yes**
232737	530730101022	No	No	Yes	No	No	No	No	No	**Yes**
232738	530730101031	No	No	Yes	No	No	No	Yes	No	**Yes**
232739	530730101032	No	No	Yes	No	No	No	No	No	**Yes**
232740	530730102011	No	No	No	No	No	No	Yes	No	**Yes**
232741	530730102012	No	No	No	No	No	No	Yes	No	**Yes**
232744	530730102023	No	No	No	No	No	No	Yes	No	**Yes**
232752	530730103031	No	Yes	No	No	No	No	Yes	No	**Yes**
232757	530730104053	No	Yes	No	No	No	No	No	No	**Yes**
232776	530730105062	No	Yes	No	No	No	No	No	No	**Yes**
232783	530730107021	No	No	No	No	No	No	Yes	No	**Yes**
232785	530730107023	No	No	No	No	No	No	Yes	No	**Yes**
232790	530739400011	No	No	Yes	No	No	Yes	No	No	**Yes**
232791	530739400021	No	No	Yes	No	No	Yes	No	No	**Yes**
232792	530750001001	Yes	Yes	No	No	No	No	No	No	**Yes**
232793	530750001002	Yes	Yes	No	No	No	No	No	No	**Yes**
232794	530750001003	Yes	Yes	No	No	No	No	No	No	**Yes**
232795	530750001004	Yes	Yes	No	No	No	No	No	No	**Yes**
232797	530750002012	No	Yes	No	No	No	No	No	No	**Yes**
232798	530750002013	No	Yes	No	No	No	No	No	No	**Yes**
232808	530750005001	Yes	Yes	No	No	No	No	No	No	**Yes**
232809	530750006011	Yes	Yes	No	No	No	No	No	No	**Yes**
232810	530750006012	No	Yes	No	No	No	No	No	No	**Yes**
232811	530750006013	Yes	Yes	No	No	No	No	No	No	**Yes**
232812	530750006021	No	Yes	No	No	No	No	No	No	**Yes**
232813	530750006022	No	Yes	No	No	No	No	No	No	**Yes**
232814	530750006023	No	Yes	No	No	No	No	No	No	**Yes**
232819	530750008003	No	Yes	No	No	No	No	No	No	**Yes**

232821	530750009001	No	No	Yes	No	No	No	No	No	**Yes**
232822	530750009002	No	No	Yes	No	No	No	No	No	**Yes**
232823	530750009003	No	Yes	Yes	No	No	No	No	No	**Yes**
232824	530750009004	No	No	Yes	No	No	No	No	No	**Yes**
232827	530770001001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232828	530770001002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232829	530770002001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232830	530770002002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232831	530770002003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232832	530770002004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232833	530770003011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232834	530770003012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232835	530770003013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232836	530770003021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232837	530770003022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232839	530770004012	No	Yes	No	No	No	No	No	No	**Yes**
232843	530770005001	Yes	Yes	No	No	No	No	No	No	**Yes**
232844	530770005002	Yes	Yes	No	No	No	No	No	No	**Yes**
232845	530770005003	No	Yes	No	No	No	No	No	No	**Yes**
232847	530770006001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232848	530770006002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232849	530770006003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232850	530770006004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232851	530770007001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232852	530770007002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232853	530770007003	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232854	530770007004	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232855	530770007005	No	Yes	Yes	No	No	No	No	No	**Yes**
232860	530770009021	No	Yes	No	No	No	No	No	No	**Yes**
232864	530770009032	No	Yes	No	No	No	No	No	No	**Yes**
232868	530770010001	No	Yes	No	No	No	No	No	No	**Yes**
232870	530770010003	Yes	Yes	No	No	No	No	No	No	**Yes**
232872	530770011001	Yes	Yes	No	No	No	No	No	No	**Yes**
232873	530770011002	Yes	Yes	No	No	No	No	No	No	**Yes**
232877	530770012011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232878	530770012012	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232879	530770012013	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232880	530770012021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232881	530770012022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232882	530770012023	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232883	530770012024	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232884	530770013001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232885	530770013002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232886	530770014001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232887	530770014002	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232888	530770015021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232889	530770015031	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232890	530770015032	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232891	530770015033	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232892	530770015034	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232893	530770015041	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232894	530770015042	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232895	530770016011	No	Yes	No	No	No	No	No	No	**Yes**
232898	530770016022	No	Yes	No	No	No	No	No	No	**Yes**
232902	530770017011	No	Yes	Yes	No	No	No	No	No	**Yes**
232903	530770017012	No	Yes	Yes	No	No	No	No	No	**Yes**
232904	530770017021	No	Yes	No	No	No	No	No	No	**Yes**
232906	530770017023	No	Yes	No	No	No	No	No	No	**Yes**
232907	530770018011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232908	530770018012	No	Yes	Yes	No	No	No	No	No	**Yes**
232909	530770018013	No	No	Yes	No	No	No	No	No	**Yes**
232910	530770018021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232911	530770018022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232912	530770019011	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232913	530770019012	Yes	Yes	Yes	No	No	No	No	No	**Yes**

232914	530770019021	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232915	530770019022	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232916	530770019023	No	Yes	Yes	No	No	No	No	No	**Yes**
232917	530770019024	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232918	530770020031	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232919	530770020032	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232920	530770020033	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232921	530770020034	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232922	530770020041	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232923	530770020042	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232924	530770020051	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232925	530770020061	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232926	530770020062	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232927	530770020063	No	No	Yes	No	No	No	No	No	**Yes**
232928	530770020064	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232929	530770021011	No	Yes	No	No	No	No	No	No	**Yes**
232930	530770021031	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232931	530770021032	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232932	530770021041	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232933	530770021042	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232934	530770021043	No	Yes	Yes	No	No	No	No	No	**Yes**
232935	530770021044	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232936	530770022011	No	Yes	No	No	No	No	No	No	**Yes**
232940	530770022021	No	Yes	No	No	No	No	No	No	**Yes**
232942	530770022023	Yes	Yes	No	No	No	No	No	No	**Yes**
232943	530770027011	No	Yes	No	No	No	No	No	No	**Yes**
232944	530770027012	Yes	Yes	No	No	No	No	No	No	**Yes**
232949	530770028031	Yes	Yes	No	No	No	No	No	No	**Yes**
232953	530770029001	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232954	530770029002	No	Yes	Yes	No	No	No	No	No	**Yes**
232955	530770029003	No	No	Yes	No	No	No	No	No	**Yes**
232956	530770029004	No	No	Yes	No	No	No	No	No	**Yes**
232957	530770029005	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232958	530770029006	Yes	Yes	Yes	No	No	No	No	No	**Yes**
232960	530770030022	No	Yes	No	No	No	No	No	No	**Yes**
232966	530770031001	Yes	Yes	No	No	No	No	No	No	**Yes**
232971	530770032003	No	Yes	No	No	No	No	No	No	**Yes**
232975	530779400011	No	Yes	Yes	No	No	Yes	No	No	**Yes**
232976	530779400012	No	Yes	Yes	No	No	Yes	No	No	**Yes**
232977	530779400013	No	Yes	Yes	No	No	Yes	No	No	**Yes**
232978	530779400014	No	Yes	Yes	No	No	Yes	No	No	**Yes**
232979	530779400015	No	Yes	Yes	No	No	Yes	No	No	**Yes**
232980	530779400021	No	Yes	Yes	No	No	Yes	No	No	**Yes**
232981	530779400022	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
232982	530779400023	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
232983	530779400031	No	Yes	Yes	No	No	Yes	No	No	**Yes**
232984	530779400032	No	No	Yes	No	No	Yes	No	No	**Yes**
232985	530779400033	No	Yes	Yes	No	No	Yes	No	No	**Yes**
232986	530779400051	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
232987	530779400052	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
232988	530779400061	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
232989	530779400062	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
232990	530779400071	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
232991	530779400072	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**
232992	530779400081	Yes	Yes	Yes	No	No	Yes	No	No	**Yes**