

Littleton Environmental Stewardship Review and Possible Actions September 2021

Purpose

This report has two distinct parts; the first is a possible course of action related to City Council's Goal of Environmental Stewardship, while the second is an inventory of existing city environmental policies and practices. The inventory report contains potential definitions for environmental stewardship (sustainability) based on currently adopted plans, identifies adopted goals that parallel sustainable practices, and reviews what the city is doing to be a great community partner in supporting and enhancing interconnected natural systems.

Potential Future Actions

The inventory of city policies and programs identified 127 current activities related to sustainable and environmental practices. The review also identified over 30 existing goals in city plans that support ecological systems approaches. Based on the inventory there is no reason to reduce the existing programs already in place unless they conflict with new goals.

If City Council decides to develop a more comprehensive set of programs and policies staff would recommend an approach that endorses and supports existing programs. Possible next steps might include formally defining environmental stewardship in city policy as it reflects Littleton's community and goals, then perhaps broadening the discussion to develop more formal city action steps. In looking at other communities' experiences, the base timeline to develop a set of stewardship goals and implementation strategies would require between 12 and 24 months of rigorous work, public engagement, plus additional staff, and consultant resources. An alternative option is adopting a brief policy definition for environmental stewardship providing clarification for the community and staff but not jumping into development of an entire plan in the near term.

Much of the work of environmental stewardship is about collaboration with partners including other agencies, non-profits, and the private sector. Staff would recommend that development of environmental stewardship values statement would assist in conveying to partners the city's intent and values. A stewardship statement would allow framing of discussions for our partners such as South Suburban Parks & Recreation District, Mile High Flood District, Arapahoe County, Highline Canal Conservancy, Denver Water, and CDOT allowing for more clear expectations and facilitating collaboration supporting council's goals.

In reviewing planned 2021/22 work plans, several departments are already engaging on programs that include sustainable and resilient practices as called for in a variety of adopted city plans. Based on the projected 2021/22 work of Council and staff, a preferred course of action may be cataloging programs that will be implemented in 2021/22 supporting a sustainable community, while also reviewing existing programs to enhance performance and community impacts.

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Examples of some 2021/2 planned projects already in the work plan:

- Technical review of all city irrigation programs and cataloging of assets with the project goals of reducing water usage and revitalizing medians, rights-of-way, and city maintained properties with modern landscaping, hardscaping, and native species.
- Finalization of new stormwater standards and design tools to reduce runoff, erosion, and water quality contaminants.
- Development of a city plan for vehicle electrification and installation of electric vehicle charging stations at city facilities. When vehicles are up for replacement consider electric vehicles as an alternative in selection in the right situations.
- It is anticipated that in forthcoming federal infrastructure legislation opportunities for supplemental electrification grants will be available, the city has already begun discussions with Xcel about broader implications in our community about electrification although this is still in its infancy.
- Enhancement of the community garden program including consideration of additional locations.
- Within appropriate code updates incentivize development that reduces impacts on natural systems.
- Target 2022 for an update to the Parks, Recreation, and Trails Master Plan including an update to the operating agreement with South Suburban Parks & Rec District.
- Future city construction projects include additional energy saving opportunities and alternative energy sources when appropriate and cost-effective providing a quality return on investment.
- When updating city code for vehicle weights and truck routes build in requirements for annual registration of trash collection vehicles operating in the city.
- Develop a water resources master plan that assures the city's water portfolio and addressing outstanding community issues such as Ridgeview and Ketrings parks.

An approach that continues to enhance the city's sustainable practices by working within planned 2021/22 work allows the city to move forward on this topic while doing so with existing resources. This alternative gives council and the community time to tackle this topic in future work plans when more resources are available while still enhancing the community.

To: City Council

Thru: Mark Relph, City Manager

From: Keith Reester, Public Works & Utilities Director

Subject: Environmental Stewardship Inventory Update

Date: September 1, 2021

CC: City Department Leaders

This memo is a review of the internal assessment for environmental stewardship and sustainability practices. The goal of this process is to inventory all the activities, processes, and programs the city of Littleton currently has in place for sustainable and resilient use of resources. In addition, staff has offered some thoughts on possible next steps.

Executive Overview

- **Defining Environmental Stewardship** – The city has never formally defined environmental stewardship or sustainability, but several plans have touched on it while defining goals although none explicitly call it either term. In a series of 1-1 interviews with council members there is not a consensus currently on the definition or goals of environmental stewardship, sustainability, resiliency, and resource conservation.
- **Working Definition** – For the context of only this report staff has defined environmental stewardship as:

Environmental Stewardship is pursuing a balanced approach for a vibrant community today and tomorrow through the efficient delivery of services and resilient infrastructure in an environmentally, economically, and socially responsible way. Recognizing the community as a series of interconnected systems, including natural and local, that function together to provide the quality-of-life citizens desire and acknowledge that the whole operates as a dynamic interconnected system – a change to one part of the system will affect other parts of the system.

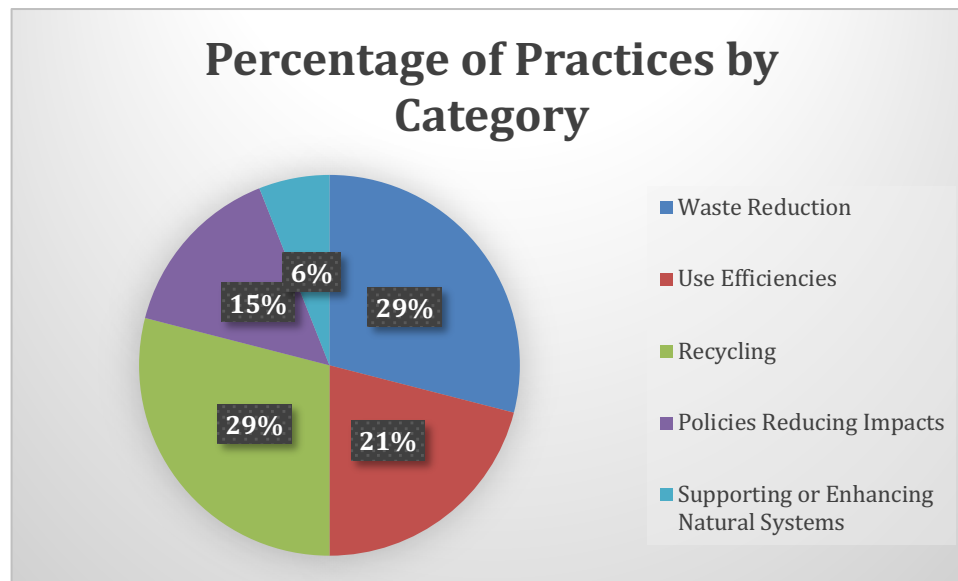
- **Inventory of Efforts** – The attached inventory of environmentally responsible practices (Appendix A) sought to compile as many current programs and processes as possible that incorporate sustainability, resource conservation, and efficient use of resources. Currently the city has over 127 programs and practices that address one of five categories – waste reduction, recycling, use efficiencies, policies reducing impacts, and supporting or enhancing natural systems. The collection and classification of programs is not perfect and future initiatives in this area will continue to improve data collection and validity.

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- **Key Inventory Findings** – The city has some programs that have been in place for 20 plus years while several are recent. In the 1990's, the city averaged one new program or policy per year. There was a small uptick in the 2000s, but implementation of new programs remained low.

Beginning in 2014 there has been a significant jump in new programs and projects averaging more than 6 per year with a high of 14 new programs in 2019.

- The majority of programs fall into the categories of waste reduction and recycling making up 58%. The next largest category is use efficiencies at 21%. Programs that support enhancing or strengthening natural systems make up the smallest category at 6%.



- **Potential Next Steps –**
 - Review of findings with City Council and discussion of highlights and broad conclusions from the data.
 - City Council discussion to ascertain the aptitude and vigor for defining and establishing some form of environmental stewardship and resource management policy for city operations and the community. This will require a review of available resources or identification of new resources to accomplish programming in this policy area.
 - If Council determines policy action is needed the definition of the policy and inclusions and exclusions will take several steps including potential public discourse on the topic. A key element of this effort is the targeting of goals and resources that are the of the highest priority for city resources or identification of partners to deliver on key goals. This topic area and its implementation can be very broad, each community must define what is important in their own context. The critical process of value setting and narrowing to key objectives is necessary to avoid scattershot policy implementation potentially limiting impactful change. The focal efforts also allow city management to target resources to accomplishing policy objectives in relation to other critical city needs.

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- The timeline for definition and adoption of policy followed by strategic and tactical planning to execute will likely take 12-24 months if resources are identified to accomplish the effort.
- **Resources** – There are currently no workplans established in 2021 or 2022 to accomplish additional stewardship projects. The city is currently supporting already existing programs.

Adopted Plans with Sustainability References

At least three adopted master plans have references supporting sustainable community practices; Envision Comprehensive Plan, Transportation Master Plan and the Parks, Recreation and Trails Master Plan. Additional plans including Historic Preservation and the Bicycle and Pedestrian Plan have concepts supporting sustainable practices and resource conservation.

- The **Envision Comprehensive Plan** has 27 individual policy references supporting sustainable communities from land use to parks to transportation and historic preservation. (Appendix B).
- **Parks, Recreation and Trails Master Plan's Vision Statement:** To preserve a family-oriented and economically vibrant community that encourages citizen involvement, respects diversity, values community character, and enhances the quality of life of Littleton residents and visitors.
- Sustainability is one of the 5 Goals of the **Transportation Master Plan**. Under the goals, there are 31 identified Objectives, of which 14 align with the Sustainability Goal.

Inventory Assessment

To assess the city's current practices staff undertook a survey of all city departments to catalog policies and programs supporting enhanced resource management and preservation of natural assets. The inventory sought to capture information in a classification system to better provide a more synchronized methodology allowing for analysis of existing practices.

Things that were specifically excluded in this assessment were goal setting or ideas for future programs, this step can occur after Council action identifies policy direction and boundaries for better utilization of resources. There was not an intent to create an environmental stewardship plan, work plan for staff, or build a dashboard for measurement of programming and impacts.

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Review Methodology

Public Works staff worked with all city departments to catalog and describe stewardship practices in a consistent format. Five categories were used to classify programs into large groups intended to help in assessing current practices, it is not intended as a final methodology for future plans. The categories are:

Waste Reduction	...is a set of processes and practices intended to reduce the amount of waste produced.
Use Efficiencies	...generates more value through technology and process changes reducing resource use throughout the program's lifespan.
Recycling	...collecting and reprocessing a resource so it can be used again.
Policies Reducing Impacts	...this category focuses on both internal and external facing policies, both formal and informal, that establish standards of practice that reduce environmental impacts.
Supporting or Enhancing Natural Systems	... programs and practices that improve or revitalize natural environmental surroundings and resources.

Additionally, staff identified "Transferability" determining whether practices are transferable to other parts of the organization as that may not be the case today.

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Current Inventory Summary

Waste Reduction— is a set of processes and practices intended to reduce the amount of waste produced. By reducing or eliminating the generation of harmful and persistent wastes, waste minimization supports efforts to promote a more sustainable Littleton. Waste minimization involves redesigning products and processes and/or changing organizational or community patterns of consumption and production.

Examples:

In 2019/2020, the Clerk's Office used innovative practices to minimize waste:

- The usage of Microsoft Office 365, SharePoint and One-Drive (shared files) reduces the amount of paper passing through the Clerk's office which the department estimates as a 50-70% decline in use.
- Incorporating electronic filing methods for Open Records Requests significantly reduces physical paper in the process and expedites citizen response.

Over the past 20 years, the Code Enforcement Division and Public Works targeted programs to eliminate waste:

- Summer Clean-up & Recycle Program (free large item, metal and household electronic pick up for citizens in need). Recycling and waste reduction which serviced over fifty City of Littleton households and Amity Plaza residents. Provided seven 40yd dumpsters (disposing of 280 yards of rubbish) and the recycling of approx. 3,000 lbs. of metal, 1916 lbs. of household electronics and the disposal of 14 appliances w/ freon on an annual basis.
- Joint efforts with Public Works, Code Enforcement and the Littleton Police Department more actively address identified homeless camps, posting and cleanup of contaminated grounds and surrounding areas. This approach eliminates ground contaminates that can create illicit discharge and health risks.
- Beginning in 2008, electronics recycling programs for the city and citizens have diverted 4,768 lbs. of household electronics from landfills. This program is jointly administered with Englewood enhancing regional waste diversion systems. Likewise, the annual leaf collection program is a joint venture with Englewood.
- Starting in 2016, the Public Works Grounds Division and Code Enforcement have provided large item drop off opportunities. In past Spring Clean-up Programs dumpsters were placed around the city for drop-off collection. These events averaged services for 87 individual households and resulted in four 40 yd dumpsters (160 yds of rubbish) and also recycled nearly 4,000 lbs. of metal.

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- In 2019, the Earth Day Electronic Recycling program diverted 3,464 lbs. of household electronics from the waste stream.
- Museum staff has targeted operational improvements to reduce one-time use items such as nitrile gloves and microfiber cloth to support collections management.
- Targeted reuse of materials is a key component of exhibit preparation reducing overall waste.
- Many departments chose plant based or renewably sourced office supplies and food related materials to reduce waste impacts.
- Across the city the past three years have seen a substantial increase in digital platforms for customer facing operations dramatically reducing paper waste, examples include Trakit 9 in Community Services, City Clerk's records management, Human Resources digital recruiting practices, and Finance's paperless payroll system changes

Use Efficiencies— generates more value through technology and process changes reducing resource use throughout the program's lifespan.

Examples:

Over past 10 years the Public Works Grounds Division established operating practices improving natural systems and diverting organics from the waste stream.

- All organic waste that cannot be turned into wood mulch is stored and hauled to a recycling facility resulting in the recycling 200 cubic yards per year.
- The annual tree program sells diverse, low-cost shade trees to citizens each April, to date the city has distributed 6,160 trees including 48 separate species.
- The chipping of wood debris generates mulch available for free distribution to citizens and is also utilized in city operations. The chipping program reuses over 500 cubic yards of waste annually.
- Phosphorus free fertilizer usage reduces 200-500 lbs. of phosphorus from entering the storm water system each year.
- In 2015, the Public Works Facilities Management division increased the use of Building Automated Systems (BAS), implementing automated setback schedules, setpoint changes and "smart" controls, significantly reducing energy usage during unoccupied hours.
- City management and Finance utilize local vendors when appropriate to reduce impacts.

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Recycling— collecting and reprocessing a resource so it can be used again.

Examples:

- In 2017 the Public Works Traffic Division switched to thermoplastic and epoxy paints for striping; as a result, the department reduced total paint use and extended the lifespan of striping.
- Implementation of electronic tracking and workorder systems reduced paper usage.
- The city switched to galvanized poles versus painted, saving on paint, reducing wear and tear, and extending the life of the poles and mast arms.
- Installation of new or replacement traffic flashers with a built-in solar power system saves electricity and using longer lasting batteries adds 5 years to the life span.
- Implementation of LED signal electronics saves 90% of energy use and doubles service years to 10. An LED fixture provides cost savings of up to \$4,500 while also reducing light pollution through more targeted lighting patterns.
- Implementation of recycling collection points in city facilities reduces landfill waste.

Policies Reducing Impacts— this category focuses on both internal and external facing policies, both formal and informal, that establish standards of practice that reduce environmental impacts.

Examples:

- Using asset management data and risk profiling the sanitary sewer maintenance program extends the life of assets and reduces overflow by more strategic utilization of resources and proactive service practices.
- Public Works Utilities Management uses rechargeable battery systems in the field.
- In 2019 Utilities moved to electronic work orders and task planning platform based on the new asset management (Cartegraph) platform, enhancing regulatory compliance while reducing chemical waste through more targeted, planned work.
- For several years Fleet Management has continually improved operations to reduce waste and excessive road miles traveled including investment in OEM diagnostic, repair and training software for vehicles, also improving customer service and reducing vehicle downtime.
- The Museum added bulk purchasing of cleaning and supplies to reduce excess packaging.
- Community Services partners with city staff, boards and commissions, and city council to enhance public engagement through unique non-paper-based programming including telephone town halls, online charrettes, and partnership with parallel agencies.
- Strategic planning of printer resources including individual user print tracking better manages paper plus reduces the overall number of printers and copiers.
- City Council and Planning Commission moving to iPad based meeting materials dramatically reducing paper waste.

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- Support of two community gardens helping over 80 community gardeners per year grow and harvest locally sourced food crops. The gardeners also donated an average of 1,600 pounds of produce to local community food banks.

Supporting or Enhancing Natural Systems— programs and practices that improve or revitalize natural environmental surroundings and resources.

Examples:

- City operations recycle all freon gasses from A.C. systems in vehicles, reducing ozone layer depletion.
- Fleet recycles all metals and proceeds are directed back to the General Fund.
- All city operations recycle chemical cleaning solvents reducing or eliminating caustic chemicals in the sanitary sewer system.
- Reuse/recycle electronic accessories in Police and city vehicles reducing cost and waste.
- Adopted Stormwater policies minimize new impermeable surfaces in both city locations and development reducing runoff, reducing infrastructure investment, and reduce pollutant transmission in the South Platte River Basin.
- Public Works is overhauling median and greenway maintenance practices with target goals of reduced blue grass and cutting water usage by 50% over a 3-year period. This process will also allow for a significant investment in native plant species as a leading component in city managed natural assets.
- Public Works Grounds and Asset Management is cataloging all city irrigation systems and assessing quality to reduce water loss from poor system performance and age. The eventual goal is to move all systems to a high level of quality and manage them through a SCADA system tied to infield rain gauges to minimize usage as well as improve plant production.

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Appendix A – Inventory

City of Littleton - Environmental Stewardship Inventory - 2021

The objective of the inventory is to capture what the city is CURRENTLY doing related to sustainable practices. Future efforts will address ideas for changes and examination of those opportunities, that is not included in this inventory.



Areas for Classification:
Waste Reduction
Use Efficiencies
Recycling
Policies Reducing Impacts
Supporting or enhancing natural systems

How to compile the inventory
Identify your department from the dropdown list
Enter the division within your organization
Choose one of the 5 classification categories
If you know when this item started please enter the year
Describe the activity or practice. An overview is fine, we will collect details later (Cell Expands)
If the impacts are measurable and have been measured indicate that information (Cell Expands)
Transferable: is the practice transferable to other parts of the organization?

In the highlighted columns please utilize the dropdown lists
Make every effort to stay within the format as this will help us as we compile city-wide results
If you're not sure which classification to select make your best choice, we have plenty of time to re-categorize as we go forward.

Department	Division	Classification	When Implemented	Describe the Activity / Practice	Measurable Impact (if known)	Transferable
Public Works	Facilities	Efficiency		Installation of high efficiency lighting as a matter of policy and practice. Multiple projects and renovations in COL facilities incorporating T-8 and LED lighting. Nearly all major lighting systems completed.	Data available, calculations not completed. Average of nearly 70% less energy usage per fixture. Longer lasting LED's also reduce waste and recycling efforts.	N/A
Public Works	Facilities	Efficiency		Replacement of capital HVAC assets with high efficiency units as a matter of policy and practice. Multiple examples in multiple COL facilities.	Calcs very on individual units but modernizing brings technological advancement and improved efficiencies.	N/A
Public Works	Facilities	Efficiency	2015	Increasing use of Building Automated Systems (BAS) and implementation of setback schedules, setpoint changes and "smart" controls.	Significant energy savings during unoccupied hours. Reduced total energy consumption is a sum of all efforts, not entirely individually distinguished.	Y
Public Works	Facilities	Efficiency	2015	Installation of high efficiency windows and best practices maintenance (re-sealing) of existing windows when need and opportunity combine.	Effects measurable but undetermined.	Y
Public Works	Facilities	Efficiency	2015	Use of occupancy based, sophisticated lighting controls with dimming capabilities.	Significant energy savings during unoccupied hours. Reduced total energy consumption is a sum of all efforts, not entirely individually distinguished.	Y
Public Works	Fleet	Efficiency	2019	Comprehensive oil analysis extends oil change intervals.	Savings in oil costs, labor hours and downtime	N/A
Public Works	Fleet	Efficiency	2002	Maximize vehicle life cycles using sophisticated software to evaluate total cost of ownership, re-purposing units when able.	Maximize available capital and time/material usage	N/A
Public Works	Fleet	Efficiency	2002	Investment in OEM diagnostic, repair and training software for vehicles.	Savings in costs associated with training and diagnostics (vehicle movement to dealer etc.), improved customer service and less vehicle downtime.	N/A
Public Works	Fleet	Efficiency	2002	All work order and task tracking for asset maintenance in Cartegraph, not paperlists.	can run reports of all work	Y
Public Works	Utilities	Efficiency	2019	See Click Fix	efficiency in responding to utility issues	Y
Public Works	Streets	Efficiency		Division went paperless	Can measure decline in paper orders used for copying	Y
Public Works	Streets	Efficiency		Installing new electronics and calibers on ice trucks to optimize amount of ice removal placed.	Can be measured by ice amount used year over year by equipment installation and implementation.	N
Public Works	Traffic	Efficiency	2003	Implementation of LED electronics.	Saves 90% of energy use and extends electronic life cycle (5 years warranty bulbs usually go to 10 years). From \$4500 to \$1700. Less light pollution.	?
Public Works	Traffic	Efficiency	2010	Installing all new or replaced traffic flashers with solar power systems built in.	Saves electricity. Longer lasting batteries on these products as well over traditional flashers (5 years).	N
Public Works	Traffic	Efficiency	2016	Paper reduction in office and transition to paperless.	Measurable reduction in paper use.	Y
Public Works	Traffic	Efficiency	2017	Switching to galvanized only poles rather than painted.	Saves on paint upon installation, wear and tear paint replacement, extends life of pole/mast arm.	N
Public Works	Traffic	Efficiency	2000	Switching to thermoplastic and epoxy paints for striping.	Reduction in paint used and extends life of paint.	N
Public Works	Engineering	Efficiency	2020	Fiber master plan to extend life and reliability of communication system and minimize needs for new lines	can be measured based on fiber installed, linear feet	N
Public Works	Engineering	Efficiency	2020	Priority signal identification and modernization/upgrade planning	reduce maintenance and increase efficiency	
Museum	Collections	Efficiency	Pre-90	Lights in majority of building are left off in order to keep museum collection in the dark.		
Museum	Collections/Exhibits	Efficiency	2005	Lights in exhibit cases in permanent exhibit hall are activated by motion sensors		
Museum	Education/interpretation	Efficiency	2015	Drip irrigation in 60s garden for water conservation efforts		
Museum	Facilities	Efficiency	2018	LED lighting installed in multiple areas of museum.		
Museum	All divisions	Efficiency		Electric golf carts reduce amount of emissions produced by museum vehicles		
Courts		Efficiency	2016	All lights are motion set in low use rooms and bathrooms		Y
Courts		Efficiency	2016	All lights are turned off at the end of the work day		Y

City Manager		Efficiency	Pre-90	Using local businesses as much as possible		?
Public Works	Grounds	Natural	1996	Tree Program selling diverse, low-cost shade trees to citizens annually in April	Distributed 6160 trees including 48 species and 24 genera.	
Public Works	Engineering	Natural	2003	Storm water quality programs (MS4)	programs to require protection of storm water quality in construction and post-construction	N
Public Works	Engineering	Natural	Pre-90	Storm drainage / channel restoration projects w/ MHFD	reduce erosion and flooding	N
Public Works	Streets	Natural		Switched from diesel emulsifiers to eco-friendly products.	Reduces diesel pollution into storm systems and switches to natural sustainable products opposed to fossil fuels. Can be measured by gallons purchased.	N
Public Works	Streets	Natural		Uses salt and mag chloride instead of sand for ice removal in winter on public roads.	Prevents pollution into storm system and reduces air pollution. Can be measured by amount of salt ice used.	N
Public Works	Engineering	Natural	2019	collaboration with Hightline Canal Conservancy to convert canal to stormwater/water quality feature	can be measured by linear feet of canal being managed by city, currently 1 mile	N
Public Works	Engineering	Natural	2020	Transportation master plan emphasizing multi modal policies that reduce vehicle greenhouse gas emissions - air quality	saves gas/emissions	N
Code Enforcement				Joint efforts with PW and police: Homeless camp identification, posting and clean-up of contaminated ground and surrounding areas. Program falls under two classifications: natural and waste reduction.	Eliminate ground contaminants to avoid possible illicit discharge and health risks.	N
Public Works	Grounds	Policy	2014	phosphorus free fertilizer use	Saves 100-500 lbs of Phosphorus from storm water per year	
Public Works	Grounds	Policy	2006	Pet waste bag supplies/stations, and maintenance of	Use 60,000-100,000 compostable dog waste bags per year, keeping pet waste out of storm water.	
Public Works	Grounds	Policy	2014	Using environmentally friendly herbicides	Reduced then stopped using glyphosates for weed control.	
Public Works	Engineering	Policy	2019	Encourage LID/Green infrastructure in developments with storm detention and water quality requirements based on % impervious	Not easily measured	
Public Works	Facilities	Policy	2019	Implementation of Safety Data Sheet software and related product inventory across all COL facilities.	Addresses safety mandates while helping to identify, and properly dispose of old, unnecessary or unsafe products/chemicals in various facility locations.	Y
Public Works	Facilities	Policy		Use of water based coverings and solvents.	Simplified disposal and improved water stream safety.	Y
Public Works	Facilities	Policy		F.M. as a matter of policy, purchases a certain amount of renewable energy credits and energy sourced from renewables, across all major billing premises.	This is a moving target, one that has been ramped up since initial conception. In 2019, approximately 964 REC were purchased (each representing 1mwh of energy from renewable sources) and enough renewable energy was purchased across all premises to account for all energy consumed in the Litterton Center.	N/A
Public Works	Facilities	Policy	2016	MSDS inventory	Extend life of assets and reduce pollution from overflows	N
Public Works	Utilities	Policy	2019	Sanitary sewer maintenance program	Extend life of assets, reduce flooding	N
Public Works	Utilities	Policy	Pre-90	Storm sewer maintenance and inlet program	Extend life of assets, reduce pollution from overflows	N
Public Works	Utilities	Policy	Pre-90	Sanitary sewer rehabilitation/replacement	Saves gas burned and CO2 output. Is measurable via DRCOG calculated savings.	N
Public Works	Traffic	Policy	1990	Partner with DRCOG to develop signal timing recommendations to reduce signal times and save on cars waiting at lights.	saves gas/emissions	N
Public Works	Engineering	Policy	2020	Creating a traffic management center to help efficiency in vehicle traffic and less emissions - air quality		N
Museum	Administration/Custodial	Policy	2017	Janitorial supplies are purchased in bulk and orders increased to reduce packaging and number of deliveries to museum. Items with plastic free packaging are preferred.	Reduction in use of plastic containers	Y
Eco Development		Policy	2018	We use recyclable paper cups and other non-plastic containers for beverages		Y
Community Development	Planning	Policy	Pre-90	Pro-bono for sister agencies: staff provides free review of all entitlement processes/documents.	Social and Economic Aspects of Sustainability: Parks, schools, playgrounds, swimming pools, other public facilities are designed and constructed to be safe for people of all ages and abilities to use and enjoy. The new facilities add social, economic, and environmental value to the community and provide important recreation and exercise opportunities for residents and visitors. This results in better public health outcomes and increases the likelihood of better academic and economic outcomes for the location population.	N

Community Development	Planning	Policy	Pre-90	For-fee for private landowners: staff review of all entitlement processes/documents. If administrative in nature, staff leadership denies or approves each entitlement request.	Social and Economic Aspects of Sustainability: New homes, businesses, parks, and playgrounds are designed and constructed to be safe for habitation and use by people of all ages. The review by staff planners and engineers ensures the long-term safety of the public. The new homes provide opportunities for empty-nesters to downsize and for families and young professionals to become residents and access Littleton Public School District. New homes also increase the chance that more residents can live close to where they work, decreasing pressure on the roadway network. New businesses generate new jobs, provides income to the City's general fund, and increases the likelihood that more residents can live close to where they work, again, decreasing pressure on the roadway network. All of this contributes to the economic and social resiliency of the community.	N
Community Development	Planning	Policy	2019	Re-write of portions of Title 10 and the creation of the Unified Land Use Code	Social and Economic Aspects of Sustainability: zoning and subdivision regulations have a direct impact on the allocation and availability of all resources including education, housing, employment, services, and the ability to generate multi-generational wealth. Creating a Unified Land Use Code is the ideal way for a city to ensure that all residents and visitors have equal access to processes, procedures, resources, and opportunities. It is also the ideal method for ensuring a resilient economy and natural environment as land use patterns and transportation networks have direct impacts on both: they can harm the social and economic fabric (usually because they only benefit one category of user) or can support and enable healthy social and economic patterns that benefit all people.	N
Community Development	Planning, Building, Mediation	Policy	2018	Engaged Outreach E-Team analyzed and developed recommendations for use by Commity. Dev. Dept. in outreach and engagement with the public.	Social and Economic Aspects of Sustainability: Effective 2-way communication with the public is a key component of a healthy democracy. Streamlined and well-coordinated engagement helps ensure a well-informed public can engage meaningfully in planning processes that directly impact personal access to education, employment, housing, recreation, and mobility services. A public that can rely on consistent and easy-to-maintain 2-way communication with city staff and leadership is more likely to become and remain engaged in planning efforts over the years and contribute to the long-range decisions being made.	N
Public Works	Grounds	Recycling	1993	Leaf recycling events	Program run with City of Englewood. Collected and recycled more than 36,000 CY of leaves. Also recycled 3480 trees in a companion program that was discontinued in 2018.	
Public Works	Grounds	Recycling	Pre-90	Christmas tree recycling event	Collect and chip 2000-4000 Christmas trees per year into mulch for free citizen pick-up	
Public Works	Grounds	Recycling	2008	Chipping generated tree debris onsite for free distribution to public. Collaborate with City of Englewood for 2X year household hazardous waste event	Collect and chip +/- 5000 CY per year for free citizen pickup	
Public Works	Engineering	Recycling		Mixed stream recycling in city buildings	Volume of household hazard waste collected is measured and documented	Y
Public Works	Facilities	Recycling		Recycling of all light bulbs and fixtures replaced.	Mandated in the case of fluorescents. Electronic components and sheet metal also recycled.	N/A
Public Works	Facilities	Recycling	2010	Purchase of "Eco" recycled paper products when possible including toilet paper, paper towels etc.	Impact difficult to measure.	Y
Public Works	Fleet	Recycling	2002	Recycle all used petroleum products and filters.	EPA mandated. Reduce pollution and many products can be cleaned and resold, reducing consumption.	Y
Public Works	Fleet	Recycling	2002	Recycle all freon gasses from A.C. systems in vehicles.	Federal mandated. Reduce ozone layer depletion.	Y
Public Works	Fleet	Recycling	2002	Recycle all metals and proceeds back to the general fund.	Reduce landfill volume, reduce mining, save energy, cost savings.	Y
Public Works		Recycling	2002	Chemical cleaning solvents are recycled.	Federal mandated. Reduce or eliminate caustic chemicals in ground and waterways.	?
Public Works	Fleet	Recycling	2002	Recycling paper products and general shop/office waste.	No metric available	Y
Public Works	Fleet	Recycling	2002	Reuse/recycle electronic accessories on Police and other City vehicles.	Cost savings and reduced landfill waste.	N/A
Public Works	Fleet	Recycling	2002	Reuse serviceable items from retired vehicles: racks, tool boxes and other accessories.	Cost savings and reduced landfill waste.	N/A
Public Works	Fleet	Recycling	2002	Recycle used tires and recap truck tires (as many time as safety allows)	Recycled tires are used for a variety of sustainable products and eliminates landfill waste.	N/A
Public Works	Streets	Recycling		Using 20% recycled asphalt materials in all new asphalt paving hot mix	Can be measured via material tickets from asphalt plant, not currently being measured or tracked.	N
Public Works	Streets	Recycling		Using recycled concrete as class 6 road base.	Can be measured by tons purchased from plant, not currently being measured.	N
Public Works	Streets	Recycling		Removed asphalt is brought plant to be re-used as base course.	Can obtain quantities rom plant, not currently being measured.	N

Public Works	Streets	Recycling		Leaves collected by street sweepers in fall brought to local yard to be converted to mulch/compost.	Can be measured from receiving plant by tons accepted, not currently being measured.	N
Public Works	Traffic	Recycling	2018	Electronic components from traffic signals recycled once decommissioned.	Is measured	N
Public Works	Traffic	Recycling	Pre-90	Old street signs, fallen traffic poles, aging mast arms, and other metals recycled at plant.	Measured and compensated for at plant.	N
Public Works	Traffic	Recycling	2008	Recycles battery backups for street lights	6 batteries per traffic signal calculated as replacements occur.	N
Museum	Exhibits	Recycling	2015	Scrap plexiglass material from exhibits is recycled using local plastic company		
Museum	Exhibits	Recycling	2014	Glass bottles and cardboard from exhibit openings are recycled after event		
Museum	Facilities	Recycling	Pre-90	Batteries from all divisions are given to F facilities to recycle.		
Museum	All divisions	Recycling		All offices and communal areas within the museum building have recycling bins, with breakroom including list of what is and is not recyclable.		
Museum	All divisions	Recycling		All divisions within the museum recycle cardboard boxes generated from supply deliveries		
Museum	All divisions	Recycling	2014	Laser jet ink cartridges are returned to HP to be recycled.		
Museum	All divisions	Recycling		Electronic Recycling (on-going non-public- for city offices & dumped) program falls under two classifications: recycling, waste reduction		
Code Enforcement		Recycling	2008	Earth Day Electronic Recycling (one day public event) program falls under two classifications: recycling, waste reduction	4768 lbs of household electronics recycled in 2019	Y
Code Enforcement		Recycling	2007	Summer Clean-up & Recycle Program (free large item & metal & household electronic pick up for citizens in need) program falls under two classifications: recycling, waste reduction	3464 lbs of household electronics recycled in 2019	Y
Code Enforcement		Recycling	Pre-90	Our department has been recycling in our offices and in shared spaces since 2015	2019- Serviced over 50 households & Amity Plaza residents. Provided 7-40yd dumpsters (disposed of 280 yards of rubbish), recycled approx. 3000 lbs of metal, 1916 lbs of household electronics, disposed of 14 appliances w/ Treon	Y
Eco Development		Recycling	2015	Separate containers for recycling next to every waste container		Y
Courts		Recycling	2016	Separate containers for shredding next to every waste container and then it gets recycled		Y
Courts		Recycling	2016	Recycle wireless devices		Y
IT	Infrastructure	Recycling	2018	Recycle computers	Securely recycle old phones	Y
IT	Infrastructure	Recycling	2018	Recycling of paper, cardboard, etc.	Securely recycle old computers	Y
City Manager		Recycling	2009	Mulching grass on site rather than collecting lawn clippings	4768 lbs of household electronics recycled in 2019	?
Public Works	Grounds	Waste	2006	All organic waste that cannot be turned into wood mulch is stored and hauled to a recycling facility.	Recycle +/- 200 CY per year	
Public Works	Grounds	Waste	2006	Paperless - use of SharePoint and other electronic platforms for division communications and filing	can measure decline in paper orders used for copying	
Public Works	Engineering/Development	Waste	2020	Paperless - E-track submittals, Trakit9 filing	can run reports	
Public Works	Engineering	Waste	2020	Use of low flow plumbing fixtures and motion controlled faucets and dispensers.	Measurable aggregate effect.	Y
Public Works	Facilities	Waste		Implementation of Computerized Maintenance Management System, Asset Essentials with mobile app for techs in the field.	No wasted paper in work order management process.	Y
Public Works	Facilities	Waste	2019	Use of automated hot water parts washing equipment, capturing waste material for proper disposal.	Eliminates hazardous solvent use and saves technician time.	?
Public Works	Fleet	Waste	2008	GraniteNet CCTV data storage for sewer inspections	reduce paper, CDs, etc.	Y
Public Works	Utilities	Waste	2019	Rechargeable battery tool use	reduce battery waste	Y
Public Works	Utilities	Waste	2018	Electronic field work data collection/recording (iPad, iPhone, laptop)	reduce paper use	Y
Public Works	Utilities	Waste	2019	Asphalt millings removed from street sent back to mix plant for re-use and recycling.	Can be measured via weight collection measurements from receiving plant, however, not currently being measured.	N
Public Works	Streets	Waste		Water sensors to monitor potential flooding, with added benefit of tracking daily water usage		
Museum	Collections	Waste	2014	Reusable nitrile gloves were purchased to reduce waste of one-time glove usage		
Museum	Collections	Waste	2019	Microfiber cloths purchased to reduce usage of blue paper towels for cleaning		
Museum	Collections	Waste	2017	Exhibit furniture is saved for potential use in the future (includes pedestals, vitrines, display mounts, etc.)		
Museum	Exhibits	Waste		MDf exhibit panels from past exhibits are reused for new exhibits when possible		
Museum	Exhibits	Waste		Framing materials are used for multiple installations over time, reducing paper and plexiglass waste		
Museum	Exhibits	Waste	2019	Frame stock saved and reused across multiple exhibits		
Museum	Exhibits	Waste	2010	Use of compostable cups for exhibit openings to reduce waste		
Museum	Exhibits	Waste	2018			

Museum	Education/Interpretation	Waste	2011	Using manure from the farms' livestock to fertilize fields and gardens, helping replenish soil and plant nutrients.		
Museum	Facilities	Waste	Pre-90	Scraps from exhibit construction kept for potential use in mounting displays		
Museum	Administration/Custodial	Waste	2019	Reamless paper ordered to reduce non-recyclable plastic ream wrappers		
Museum	Administration/Custodial	Waste	2019	Entry and mud mats converted from carpet to rubber to eliminate use of water and chemicals in weekly cleanings		
Museum	All divisions	Waste	2020	Utilization of Microsoft Teams to carry out copy editing and proofreading tasks that were previously done using hard copies		
Code Enforcement		Waste	2000	Joint event w/PW Grounds division- Large item drop-off (free for citizen) (previously the Spring Clean-up program dumpsters were placed at different locations around the city)- large items drop at the service center started in 2016. Program falls under two classifications: recycling, waste reduction	2019- Serviced 87 vehicles. Provided 4-40 yd dumpsters (disposed of 160 yds of rubbish), recycled approx. 4000 lbs of metal	Y
Eco Development		Waste	2018	The department went paperless	2019- 160 yds of rubbish), recycled approx. 4000 lbs of metal	Y
Courts		Waste	2016	Separate containers for waste	We spend virtually nothing on paper	Y
City Clerk		Waste	2020	Use of O-365/SharePoint/One-Drive (shared files) to reduce paper passed in the clerk's office.	Anticipated to be 50-70% less paper.	Y
City Clerk		Waste	2019	Electronic filing of Open Records Requests	Less paper to scan and then email to parties in interest.	Y
IT	Infrastructure	Waste	2019	Managed print services	Reduce paper, reduce printer fleet, reduce costs	Y
City Manager		Waste	2009	plant based spoons, forks & knives		?
Community Development				Trakt 9 / eTrakt Software Implementation	The update to the Trakt software enabled paperless land application and development review. The need to generate and throw away thousands of pounds of paper each year is eliminated.	N
Community Development	Planning, Building, Mediation	Waste	2020	Recycling of batteries, cardboard, paper, aluminum.	All items are being diverted from landfills.	Y
Human Resources		Waste Reduction	2016	Digitize employee files in an effort to become paperless and reduce waste and costs in supplies		
Human Resources		Waste Reduction	2020	Digitize recruiting and onboarding process to be paperless and reduce waste and costs in supplies		
Human Resources		Waste Reduction	2020	Digitize payroll process to be more paperless and reduce waste and costs in supplies		

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Appendix B – Comprehensive Plan Stewardship Policy Items

Envision Comprehensive Plan (2019)

There are 27 individual policy references in the Comprehensive Plan that align with goals supporting resource management or policies to enhance community resiliency and reduce environmental and social impacts.

Policy L&C 5: Manage land use patterns near Littleton’s many parks, trails, greenways, and open spaces to: protect their ecological functions; prevent physical and other impactful encroachments; maintain public access; and preserve their overall quality and value – especially where public green spaces contribute to neighborhood character and enhance business park and other commercial settings.

Policy L&C 7: Promote Littleton’s aesthetic appeal through the quality expectations set within the City’s Code for landscaping, signage, lighting, and similar design elements.

Policy H&N 7: Support the ongoing appeal of Littleton’s neighborhoods through effective code compliance and by using public investments in streets, sidewalks, infrastructure, parks and trails, and pedestrian/bicycle safety measures, along with routine maintenance practices for all of the above.

Policy TMP 10: Develop a Complete Networks Plan.

Policy TMP 12: Consider installing an all ages and abilities bicycle facility for every new bicycle project. All ages and abilities bicycle facilities are low stress for all potential users, including children and seniors.

Policy TMP 13: Update City Code to address burgeoning micro-mobility industry. Include operating rules such as number of permits, speed limits, whether users should use sidewalks, bike lanes, or general-purpose lanes depending on speeds, and establish restricted areas.

Policy TMP 25: Develop mobility hubs at key stops and stations to promote mode choice and technological integration.

Policy TMP 29: Coordinate traffic management center systems and operations with adjacent municipalities and CDOT.

Policy TMP 30: Partner with neighboring municipalities and the private sector as needed to manage the introduction of new technologies to Littleton.

Policy TMP 31: Transition government fleets to electric and other zero-emission vehicles.

Policy I&S 2: Remain an active and reliable partner in interlocal and interagency approaches to operation and oversight of essential infrastructure, and public facilities and services, including

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with South Platte Water Renewal Partners, Denver Water, the Mile High Flood District, and South Metro Fire Rescue, among others.

Policy I&S 4: Be a prepared and resilient community with City infrastructure and services that can recover quickly from the effects of severe weather and natural hazards, and which manages growth and development to reduce risks.

Policy I&S 5: Pursue multi-objective drainage design solutions, where appropriate, that integrate open space, recreational, and aesthetic considerations while maintaining public safety.

Policy I&S 6: Be a leader among Colorado cities in managing and maintaining public infrastructure and facilities, and in learning about and adopting best practices, green infrastructure, and new technologies.

Policy E&T 9: Determine whether development proposals are consistent with adopted City policies and regulations and can be accommodated with adequate public infrastructure and services.

Policy HART 1: Maintain close and mutually beneficial relationships with the South Suburban Park and Recreation District, South Platte Working Group, High Line Canal Conservancy, Hudson Gardens, and other key partners that enable Littleton residents and visitors to enjoy a large quantity of high quality recreational assets and public open space.

Policy HART 2: Strive to build consensus and support on how best the City can preserve more areas and structures with historic significance, and protect designated and potential new historic districts and landmarks.

Policy HART 4: Incorporate guidance and incentives into the City's zoning and subdivision regulations so that green and open spaces are aligned and integrated across private development sites and adjacent public lands.

Policy ENV 1: Provide regional leadership to protect and enhance the South Platte River, including its water quality, associated greenways and trails, nearby development, and well-managed access for public enjoyment.

Policy ENV 2: Be a committed partner, with state and regional agencies, organizations, and other area cities, in planning and executing programs and public education that will improve regional air quality and satisfy Clean Air Act targets and requirements.

Policy ENV 3: Continue to be a leader in promoting and incentivizing wise water use, water-saving measures, and water conservation and re-use.

Policy ENV 4: Apply its stewardship ethic enthusiastically, in collaboration with other public agencies, private interests, and the non-profit sector, to ensure that the city's extensive public and private open space remains a defining and well managed facet of Littleton.

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Policy ENV 5: Include habitat protection among its community planning considerations, recognizing that wildlife presence and movement within the city is a continuing reality and part of a healthy natural environment.

Policy ENV 6: Reduce excessive noise and outdoor lighting levels.

Policy ENV 7: Continue to explore viable and cost-effective ways to assist Littleton residents and businesses in reducing their solid waste generation, and to offer expanded recycling options.

Policy ENV 8: Encourage energy efficiency and other “green” building practices, including adaptive reuse whenever possible.

Policy S&D 5: Promote development plans near transit stations that prioritize the pedestrian and are compatible with local tolerance for transit-supporting uses and design (e.g., as expressed in the Mineral Station Framework).

Policy S&D 7: Stay active in regional planning processes and decision-making forums with implications for special planning areas identified within Littleton.

Transportation Master Plan

Appendix C - Parks, Recreation, & Trails Master Plan Policy Items

Parks, Recreation, & Trails Master Plan (2016)

Vision Statement: To preserve a family-oriented and economically vibrant community that encourages citizen involvement, respects diversity, values community character, and enhances the quality of life of Littleton residents and visitors.

In order to accomplish this vision, it is important that the services and amenities meet the standards for a high level of service. This may involve improvements to existing sites as well as the potential development of new sites. It also entails the equitable provision of services. Emphasizing the strong natural components and unique attributes of Littleton will offer a valuable image for current and future residents.

Through the use of multiple tools, including community engagement and component-based mapping, the plan offers a clear, community driven picture of the parks, recreation, and trail system within Littleton, and will serve as a roadmap with recommendations and implementation strategies for elected officials, special committees and staff to work with SSPR to provide an appropriate balance of parks, trails, recreation facilities, and programs now and into the future.

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Appendix D - Transportation Master Plan Stewardship Policy Items

Transportation Master Plan (2019)

Sustainability is one of the 5 Goals of the Transportation Master Plan. Under the goals, there are 31 identified Objectives, of which 14 were shown to align with the Sustainability Goal.



GOAL: SUSTAINABLE

Build and operate a financially and environmentally sustainable transportation system.

What are we trying to achieve with the “sustainable” goal?

For Littleton, sustainability means taking a long-term view of the City's financial and environmental resources. This includes establishing a prioritized set of transportation improvements that allows for adaptability as technology and demographics change. These improvements should include a focus on improving air and water quality. The City will work toward both aspects of its sustainability goal by maintaining a strong presence in regional planning efforts.

ALIGNMENT WITH ENVISION LITTLETON:

- Active (*Guiding Principle*)
- Anchored (*Guiding Principle*)
- Being a Model Community (*Values*)
- The Outdoors (*Values*)
- Quality (*Values*)
- Parks, trails, and open space (*Shared Priorities*)
- Contentious local politics (*Shared Concerns*)

“The way the budget is currently structured, it would be hard to keep up with transportation needs if the economy changes.”

“We can't just solve today's problems - we have to solve tomorrow's problems.”

“Colorado is a place where people want to be out in nature -- being tied up in your car for an hour runs antithetical to that goal.”

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- **Sustainable:** the auto and freight networks in the City are already mostly built and generally require only maintenance and operations to continue to serve their purpose. Improvements to these networks can be accomplished with incremental steps. The City should advocate for measures that encourage autos and trucks to transition to technology that does not harm the environment.
- **Sustainable:** Walking and bicycling are both zero-emissions modes of travel which also have a very small impact on pavements in comparison to driving. With an increase in the number of people walking and bicycling, transportation and infrastructure emissions will be reduced.

Goal 5: Sustainable

Buses and trains offer significant reductions in greenhouse gas emissions on a per-person basis compared with cars. In addition, investments in high-capacity transit are associated with increased property values for nearby homes and businesses.¹⁰

- **Sustainable:** Constantly refining and adjusting our outlook will help us respond to environmental and fiscal pressures.

No.	Topic	Objective	Related Goals				
			Connected	Healthy	Inclusive	Prosperous	Sustainable
15	Mobility	Provide travelers with relevant, timely information -- including innovative methods	●	●	●		
16	Active	Provide a well-connected, direct bicycling network	●	●			●
17	Active	Provide a safe and low-stress biking environment	●	●	●		●
18	Active	Provide a well-connected pedestrian network	●	●			
19	Active	Provide a safe and low-stress walking environment	●	●	●		
20	Active	Provide healthy transportation choices		●			●
21	Auto	Provide a well-connected automotive network	●			●	
22	Auto	Provide for safe automobile travel		●		●	
23	Auto	Provide a resilient and responsive traffic operations system	●				●
24	Auto	Provide an efficient automotive network	●			●	●
25	Auto	Provide a roadway network that allows for excellent emergency response	●	●			
26	Transit	Connect people effectively to the transit system	●			●	
27	Transit	Provide an efficient transit system with regional partners	●		●		
28	Transit	Provide safe and comfortable transit stops and stations			●	●	
29	Freight	Provide a reliable freight network	●			●	
30	Freight	Provide a well-connected freight network	●			●	
31	Freight	Provide a safe freight network		●		●	