



City of San Diego Climate Action Plan Consistency Checklist

Technical Support Documentation

PREPARED FOR:

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1 INTRODUCTION

In December 2015, the City of San Diego (City) adopted a Climate Action Plan (CAP) that outlines the actions that the City will undertake to achieve its proportional share of State greenhouse gas (GHG) emission reductions. The purpose of the Climate Action Plan Consistency Checklist (Checklist) is to provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA). This document details the process used to develop the Checklist and provides justification for the project-specific measures included therein.

2 CLIMATE ACTION PLAN SUMMARY

The City's CAP included a baseline inventory of GHG emissions for 2010; a business-as-usual (BAU) projection for emissions at 2020, 2030, and 2035; a calculation of the City's targets based on a reduction from the 2010 baseline; and emission reductions with implementation of the CAP.

The City emitted a total of 12,984,993 metric tons of carbon dioxide equivalent (MT CO_{2e}) in 2010. Accounting for future population and economic growth, the City projects GHG emissions of 14,124,690 MT CO_{2e} in 2020, 15,856,604 MT CO_{2e} in 2030, and 16,716,020 MT CO_{2e} in 2035. The CAP set a target to achieve a 15 percent reduction from the 2010 baseline by 2020 based on the recommendation by the California Air Resources Board (ARB). The CAP also includes reduction targets to reduce emissions below the 2010 baseline by 40 percent by 2030, and 50 percent by 2035. Therefore, the City must implement strategies that reduce emissions to 11,037,244 MT of CO_{2e} in 2020, 7,790,996 MT of CO_{2e} in 2030, and 6,492,497 MT of CO_{2e} in 2035. This data is shown in Table 1.

Table 1 Climate Action Plan Baseline Emissions, Future Projections and Reduction Targets (metric tons of carbon dioxide equivalent)			
	2020	2030	2035
2010 Baseline Emissions	12,984,993	12,984,993	12,984,993
Projected Emissions (Business-as-Usual)	14,124,690	15,856,604	16,716,020
City Target Emissions Levels	11,037,244	7,790,996	6,492,497
Total Reductions from Climate Action Plan	4,330,946	8,276,803	10,428,926
Total Resulting Emissions Levels	9,793,744	7,579,800	6,287,035

By meeting the 2020 and 2035 targets, the City will maintain its trajectory to meet its proportional share of the 2050 state target identified in Executive Order S-3-05. Future actions anticipated by the state and possible federal initiatives would reduce the need for local measures and help ensure broader participation in emission reduction efforts. If ARB adopts a recommendation for a percentage reduction for local governments for future years, the City will amend its targets accordingly.

The City has identified five broad strategies to reduce GHG emissions to achieve the 2020 and 2035 targets:

1. Energy & Water Efficient Buildings
2. Clean & Renewable Energy
3. Bicycling, Walking, Transit & Land Use

4. Zero Waste
5. Climate Resiliency

The City's ability to grow its population and economy while meeting the GHG reduction targets will require broad-based participation from the entire community. Everyone who lives, works, shops, or plays in the City contributes to the community's GHG emissions, and everyone will need to be part of the solution. This includes new development that is anticipated in the City through 2020 and 2035. The CAP is intended to achieve reductions from all sources and sectors, existing and new. This is emphasized by the fact that the City's reduction targets are a reduction below baseline emissions. Therefore, GHG emissions in the City need to be reduced below existing levels while additional emissions are generated by growth through 2020 and 2035. As such, new development can contribute its fair-share of GHG reductions by complying with CAP strategies, goals and actions that were determined to be applicable through the Checklist development process. The following sections provide additional information about the steps used to determine the applicability of individual actions to new development projects in the City.

3 CAP CONSISTENCY CHECKLIST COMPONENTS

Following adoption of the CAP, the City has committed to preparing and presenting to City Council a refined CEQA streamlining proposal to allow project-specific environmental documents, if eligible, to tier from and/or incorporate by reference the CAP's programmatic review of GHG impacts in their cumulative impact analysis. With this implementing action, the City's CAP meets the requirements under section 15183.5 of the CEQA Guidelines as a qualified plan for the reduction of GHG emissions for use in cumulative impact analysis pertaining to development projects. The Checklist provides a streamlined review process for the GHG emissions analysis of proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to CEQA.

3.1 Land Use Consistency

The first step in the CAP Consistency Checklist assesses a project's consistency with the growth projections in the CAP. The GHG emissions projections in the CAP were developed using various data sources for each sector. For example, the California Energy Commission's forecasts were used to project electricity- and natural gas-related emissions in the City while transportation-related emissions were projected using regional vehicle miles travelled (VMT) data from the San Diego Association of Governments (SANDAG) and ARB's Emission Factors (EMFAC) model. Overall, the projections were based on SANDAG's Series 12 growth forecasts. The assumptions used to project emissions in the City's CAP were reviewed and a series of questions were developed that allow the City to assess a project's consistency with the land use assumptions used in the CAP. This step is intended to provide the substantial evidence that a project that is consistent with the CAP GHG projections would not result in a cumulatively considerable GHG impact if otherwise consistent with the CAP. For the CAP to be applicable to a project, it must be consistent with the projections in the CAP. If a project is consistent with the projections in the CAP, this means that the project's growth was accounted for in the CAP's BAU projection, which in turn means that if the project is otherwise consistent with the CAP, with implementation of the CAP, the City's overall GHG emissions would be less than the identified GHG targets, and would therefore be less than significant, as set forth in the Final Environmental Impact Report for the CAP (CAP FEIR).

If a project is consistent with the existing General Plan and Community Plan land use and zoning designations or was otherwise included in SANDAG's Series 12 growth forecasts, it can be determined to be consistent with the CAP projections and can move forward to Step 2 of the Checklist. However, not all projects that are inconsistent with existing General Plan and Community Plan land use and zoning designations would be inconsistent with the CAP's projections. For example, if a project includes a land use

plan and/or zoning designation amendment that would result in an equivalent or less GHG-intensive project when compared to the existing designations, it would still be within the projections assumed in the CAP and can move forward to Step 2 of the Checklist. Estimated GHG emissions under the existing and proposed designations would need to be provided to support this conclusion.

A third scenario that is examined is a project that would increase the intensity of land uses through a land use plan and/or zoning designation amendment and would potentially increase GHG emissions above and beyond the projections in the CAP. However, the location of such a project would be a determining factor in its consistency with the CAP. A higher-density project located within a Transit Priority Area (TPA) could help the City achieve its VMT and mode share goals even though it would be inconsistent with the growth projections in the CAP, whereas a higher-density project in a more remote location may not provide the same benefit. If a proposed project located in a TPA is not consistent with the existing land use plan and zoning designations, and includes a land use plan and/or zoning designation amendment that would result in an increase in GHG emissions when compared to the existing designations, it would need to implement CAP Strategy 3 actions, as determined in Step 3 of the Checklist to the satisfaction of the Development Services Department.

Step 3 focuses on assessing if a proposed project would implement the General Plan's City of Villages strategy, the General Plan's Mobility Element, pedestrian improvements, the Bicycle Master Plan, and support transit oriented development in a TPA.

Projects in TPAs can support Strategy 3 by increasing the capacity for transit-supportive residential and/or employment densities. Considerations in this assessment include an evaluation of whether the proposed land use and zoning designation associated with the project provide capacity for transit-supportive residential densities and employment intensities within the TPA and if the project site is suitable to accommodate mixed-use, village development as defined in the General Plan.

Considerations in assessing if a project would implement the General Plan's Mobility Element in Transit Priority Areas to increase the use of transit include an evaluation of the project's incorporation of identified transit routes and stops/stations into site design and inclusion of transit priority measures.

Projects can increase walking opportunities in a TPA by implementing pedestrian improvements through provision of multiple and direct pedestrian connections and accessibility to local activity centers (such as transit stations, schools, shopping centers, and libraries) and features for walkability as identified in the proposed project circulation system.

A proposed project can increase bicycling opportunities by including bicycle improvements consistent with the Bicycle Master Plan in the project circulation system. A balanced, multimodal, "complete streets" approach to accommodate mobility would also be consistent with the City's vision under Strategy 3.

A project can incorporate implementation mechanisms that support transit oriented development by including new or expanded urban public spaces such as plazas, pocket parks, or urban greens in a TPA, increasing the potential for jobs in a TPA, and supporting efficient use of parking.

Step 3 provides a general framework to allow the City to determine a project's consistency with Strategy 3 of the CAP. If the project can respond in the affirmative to the questions therein and provide substantiation to support the responses, it may be deemed consistent with CAP projections, if otherwise consistent with the CAP strategies under Step 2.

It should be noted that while a project that increases density in a TPA may lead to a short-term increase in the magnitude of GHG emissions at the project site alone, it is likely to provide additional benefits associated with reducing automobile trips in the long-term. Designing projects with increased densities reduces GHG emissions associated with traffic in several ways. Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. This strategy also provides a

foundation for implementation of many other strategies which would benefit from increased densities. For example, transit ridership increases with density, which justifies enhanced transit service.¹ The City can make progress towards its GHG reduction goals by accommodating growth in a more efficient manner, i.e. higher density in TPAs. This higher density would allow City residents to take advantage of non-auto modes of transportation as such facilities become available. Focusing development within TPAs rather than outside of TPAs is consistent with CAP Strategy 3. Specifically, increased density in a TPA is consistent with and implements CAP Actions 3.1, 3.2, 3.3, and 3.6.

3.2 CAP Strategies Consistency

The CAP identified specific goals, actions, and targets supporting each GHG reduction strategy. These actions include a combination of ordinances, City Council policies, resolutions, programs, and incentives, as well as outreach and education activities. As implementation occurs, each action will be assessed and monitored. The CAP also included supporting measures for each strategy that would work in conjunction with identified goals and actions to reduce GHG emissions to the target levels.

As described in the CAP, there is an existing framework of federal, state, regional, and local regulations that contribute to reducing GHG emissions. Table 3.1 of the CAP shows discrete reductions from state and federal actions (combined), regional actions and local actions. The table shows that federal, state, and regional actions by themselves would not achieve the City's targets, especially in 2030 and 2035. Local actions that reduce emissions from both the built environment and new development would be necessary. The CAP includes targets that relate to a percent reduction in GHG emissions below baseline levels. While the City will achieve reductions outlined in the CAP through planning processes and ordinances, new development can do its fair share in helping the City achieve its targets by incorporating measures consistent with the CAP. This also provides new development with the benefit of using CEQA streamlining provisions for addressing its GHG impacts.

While the CAP baseline is set at 2010 and includes the effect of regulations that were in place at the time, projected emissions in the City account for existing (implemented since 2010) and reasonably foreseeable state programs. For example, projected emissions from the energy sector include reductions due to implementation of the 2013 Building Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6) (See Appendix A.2 to the CAP for details). Similarly, projected emissions from the transportation sector were estimated using ARB's EMFAC model which includes fleet turnover in the future years. Also, the effect of California electric vehicle (EV) policies and programs was included as a separate reduction under state and federal actions. The emissions gap that remains after the projected emissions are adjusted for known state actions demonstrates the need for local action.

Based on the foregoing, the approach to develop the CAP Compliance Checklist was to perform a policy gap analysis to determine actions/measures that would exceed existing state or local regulatory requirements already assumed in the CAP. Existing requirements that a project needs to comply with form the baseline for project measures because reductions associated with the same are included in the CAP baseline and/or projections as described above. The approach to developing the Checklist questions is to determine measures that would be additive to the requirement of existing state and local codes. If a new project incorporates these identified measures that exceed existing requirements, it would not hinder the City's ability to achieve its reduction targets, and more importantly, would contribute to ensuring that the City meets its overall CAP targets.

In addition, CAP Chapter 3 identifies supporting measures for each CAP strategy to achieve the CAP targets. The overall intent of the strategy and supporting goals, actions, and measures provide the basis for identified measures in the Checklist. Details on each measure are provided in the following sections.

¹ California Air Pollution Control Officers Association. *Quantifying Greenhouse Gas Mitigation Measures*. August 2010.

The Checklist will be updated by the City as needed to incorporate new GHG reduction techniques or to comply with later amendments to the CAP or local, state or federal law. Certain measures in the Checklist may otherwise become mandatory through future updates to state and local codes or through adoption of local ordinances. These measures would then be removed from the Checklist. If the CAP monitoring process (see CAP Chapter 3) reveals the need for further reductions to stay on track to meet reduction targets, the Checklist measures may be updated to include additional applicable measures for new development.

4 BACKGROUND DOCUMENTS/RESOURCES REVIEWED

As described in Section 3.2 above, existing state and local codes and ordinances form the baseline for determining appropriate measures for inclusion in the Checklist. Existing regulations were reviewed to determine measures that a project needs to comply with by law and that relate to the strategies, goals and actions outlined in the CAP.

The California Green Building Standards Code (CALGreen Code) is Part 11 of twelve parts of the California Code of Regulations, Title 24, also referred to as the California Building Standards Code. The state regulations are in effect and are enforced by the City of San Diego for projects whose construction permit applications are deemed completed on or after January 1, 2014. Local amendments to the 2013 editions of the California Building Code, California Residential Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Fire Code and the California Green Building Standards Code were approved by the City Council on March 22, 2016. The proposed regulations go into effect 30 days after final passage and are expected to be in effect for construction permit applications submitted and deemed complete on or after May 6, 2016.

The City's Green Building Regulations are published in Chapter 14 Article 10 of the Land Development Code. The amendments address sections related to light pollution reduction for residential and non-residential buildings, water reuse systems for residential buildings, and bicycle and designated parking spaces for non-residential buildings,

The City also adopted the 2013 Building Energy Efficiency Standards for Residential and Nonresidential Buildings (Part 6 of Title 24) without any proposed changes.

The San Diego Municipal Code (Municipal Code) consists of administrative, criminal and regulatory ordinances of the City. The Municipal Code contains many of the ordinances for the City of San Diego. The Municipal Code is updated as new ordinances are adopted by the City Council. Applicable state regulations such as the Title 24 requirements are also adopted into the City's Municipal Code. The Municipal Code includes the Land Development Code to help ensure that development in the City is protective of the public health, safety, and welfare. The intent of the Land Development Code is to provide different review processes appropriate to the different types of development. The Land Development Code provides procedures to review land use plans, zoning actions, maps, and permit applications.

The City's Municipal Code requires compliance with the mandatory measures under CALGreen for residential and non-residential projects, with the exception of the amendments cited above. CALGreen also includes voluntary tier measures in Appendix Chapters A4 and A5 of the CALGreen Code documents. The voluntary tiers are intended to further encourage building practices that improve public health, safety and general welfare by promoting the use of building concepts which minimize the building's impact on the environment and promote a more sustainable design. A project would need to incorporate a number of measures that exceed the mandatory requirements to achieve Tier 1 or Tier 2 status under CALGreen. The intent of the Checklist is not to require projects to achieve a CALGreen specific tier level; rather the approach is to extract measures that exceed current code requirements and can be linked to CAP strategies, goals and actions and provide them as Checklist measures, consistent with the CAP.

Where applicable CALGreen voluntary measures were available to provide reductions beyond baseline conditions, the Tier 1 provisions were included in the Checklist. This is based on the demonstrated feasibility of achieving Tier 1 levels in other jurisdictions. For example, Sonoma County and the City of Cloverdale have adopted the Tier 1 voluntary measures as mandatory. The City of Palo Alto has adopted CALGreen Tier 1 for tenant improvements and renovations for non-residential projects and CALGreen Tier 2 for new construction.

CALGreen provides an opportunity for a simple green building program that is acceptable to most if not all local jurisdictions. The potential for city-wide uniformity provides major benefits by consistent application of green building standards in the plan check and inspection processes and creates an opportunity for the City to provide consistent permit submittal requirements. While other green building rating programs such as Leadership in Energy and Environmental Design (LEED) include similar provisions, the CALGreen voluntary tiers are the City's preferred approach because it already operates under the CALGreen mandatory framework. CALGreen also provides a simple, uniform program that provides more specificity, predictability and certainty for development projects. It should be noted that the City is not requiring green building certification as part of the Checklist and only measures relevant to CAP strategies are included.

For the purposes of the Checklist, only Tier 1 standards are included for CAP consistency. The CAP consistency measures would work in conjunction with future ordinances developed by the City for CAP implementation. If an ordinance is adopted that incorporates the Checklist questions, those questions would be removed from the Checklist through future amendments. CALGreen Tier 2 compliance would remain voluntary but projects may choose to incorporate the higher tier to achieve additional reductions. If the CAP monitoring program reveals that additional reductions are required of new development, the Checklist would be updated accordingly. Updates may include specifying compliance with the higher CALGreen tier as a CAP consistency measure.

5 PROJECT-SPECIFIC MEASURES

The following sections cover each emissions sector from the CAP and associated project-specific measures included in the Checklist. The measures are also mapped to corresponding CAP strategies noting that in some cases individual measures may overlap across multiple strategies.

5.1 Energy

The CAP includes two broad strategies related to energy:

- ▲ Strategy 1: Energy & Water Efficient Buildings
- ▲ Strategy 2: Clean & Renewable Energy

Both non-residential and residential buildings offer opportunities for emissions reductions in new development as well as existing structures. Generally, building strategies focus on site-specific design and innovation, and technological improvements that increase energy efficiency and provide renewable energy generation. Because both nonresidential and residential property owners, as well as their respective tenants, have different needs and demands, reduction strategies implemented under the CAP will consist of a combination of regulatory mandates and incentives to improve building performance. Therefore, actions under Strategy 1 identified in the CAP include development of an Energy Conservation and Disclosure Ordinance for existing buildings and preparation of a Municipal Energy Strategy and Implementation Plan.

Due to the largely built-out nature of the City, energy efficiency improvements in existing buildings present a sizable opportunity for GHG reductions. Because only a relatively small percentage of building

additions/alterations projects would be captured through the CEQA process, an associated measure is not included in the Checklist. Reductions associated with this action also include energy use reductions at the point of sale which would not trigger a CEQA review. The ordinance to be developed through CAP implementation would appropriately identify opportunities and incentives to achieve meaningful reductions from this subsector.

Similarly, the Municipal Energy Strategy and Implementation Plan applies to the City's operations and would not have broad applicability in the Checklist as it relates to new development projects.

The supporting measures related to Strategy 1 in the CAP include the following:

- ▲ Expand the Property-Assessed Clean Energy (PACE) financing programs to further support residential and non-residential energy and water efficiency actions.
- ▲ Expand incentive programs that further promote energy and water efficiency in residential and non-residential buildings.
- ▲ Implementation of amendments to the City's Building Code that require installation of cool roof materials consistent with the supplementary measures contained in the CALGreen Code for new construction, significant repairs to existing roofs, and re-roofing.
- ▲ Implement a Smart Energy Management & Monitoring System (SEMMS) for municipal facilities to monitor and track energy consumption. Based upon results, staff will identify opportunities for greater efficiency and demand response.
- ▲ Develop a Zero Net Energy Policy for new municipal-owned buildings.
- ▲ Pursue LEED for Existing Buildings: Operation and Maintenance Certification for municipal facilities.

The supporting measures primarily represent actions that would be taken by the City and/or would only impact municipal buildings. An exception is the measure related to cool roofs that would be implemented through a future update to the City's Building Code. The measure is included in the Checklist in the interim until an update to the code is adopted. Additional detail is provided in the "Cool/Green Roofs" section below.

Goals and actions related to Strategy 2 in the CAP include development of a Community Choice Aggregation (CCA) or another program to achieve 100 percent renewable energy city-wide by 2035, an increase in municipal zero emissions vehicles in the City's fleet, and conversion of existing diesel municipal solid waste collection trucks to compressed natural gas or other alternative low emission fuels.

The measures related to improvements to the City's vehicle fleet would be implemented by appropriate City departments and do not represent actions relevant to the Checklist. Supporting measures related to these actions include:

- ▲ Consider updating regulations for alternative fuel and zero emissions vehicle requirements for the City's vehicle fleet.
- ▲ Consider an integrated transportation strategy that combines zero emissions vehicle deployment and infrastructure.
- ▲ Present to City Council for consideration an Electric Vehicle Charging Plan.

The supporting measures also represent actions that would be undertaken by the City.

Action 2.1 of the CAP directs the City to consider adoption of a CCA or other program, to leverage its purchasing power for renewable sources of energy. This would include encouraging and facilitating the installation of distributed (small-scale) renewable energy systems for homes and businesses. It may also result in the need for large-scale generation, transmission, and storage systems to maintain a consistent energy supply. Pending development of such a program by the City, a measure related to reducing energy demand on the grid is included in the Checklist. The measure provides projects with the option to reduce energy consumption through enhanced efficiency improvements and/or distributed renewable energy system installation in new development projects. Additional detail is provided in the “Energy Performance Standard/Renewable Energy” section below.

Supporting measures related to Action 2.1 in the CAP include:

- ▲ Complete a citywide CCA Feasibility Study, which would include timelines for implementation and analyze potential costs.
- ▲ Implement General Plan Policy CE-A.5 to achieve net zero energy consumption by employing sustainable or “green” building techniques for the construction and operation of buildings.
- ▲ Support the State’s implementation of the Green Tariff Shared Renewables Program.
- ▲ Establish policies, programs and ordinances that facilitate and promote siting of new onsite photovoltaic energy generation and energy storage systems.
- ▲ Provide adequate funding and resources to meet increased demand for solar photovoltaic and energy storage permitting.
- ▲ Encourage solar photovoltaic installations through implementation of a professional-certification permitting program.

The CAP also notes that the City’s renewable energy program should include presenting an ordinance to City Council to require new residential and non-residential construction to install conduit for future photovoltaics and EV charging stations, and to install plumbing for future solar water heating. Further, should the CCA Program or another program not be implemented, the City will explore the option of utilizing renewable energy credits (RECs) to contribute toward the 100 percent renewable energy target. The CAP notes that efforts should be local in nature to benefit local renewable energy businesses, create jobs, and increase resiliency for the City. The installation of photovoltaics and solar water heaters is covered under the “Renewable Energy” section below while EV charging infrastructure is covered in Section 5.3.

A majority of the supporting measures shown above represent City-initiated actions. However, implementation of General Plan Policy CE-A.5 to achieve net zero energy consumption can be translated to a project-level measure that complements the onsite renewable energy goals. Additional details on this measure are provided in the “Energy Performance Standard/Renewable Energy” section below.

COOL/GREEN ROOFS

A cool roof is one that reflects sunlight and also cools itself by efficiently emitting radiation to its surroundings. A cool roof may consist of white-colored coating or other “cool color” products which use darker-colored pigments that are highly reflective in the near infrared (non-visible) portion of the solar spectrum. Because a white roof strongly reflects both visible and near infrared sunlight, a white roof will typically be cooler than a cool colored roof.

A cool roof reflects and emits the sun’s energy as light back to the sky instead of allowing it to enter the building below as heat. In San Diego’s climate zones, a cool roof can substantially reduce the cooling load of the building, providing several direct benefits to the building owner and occupants, such as increased

occupant comfort, especially during hot summer months, reduced air conditioning use, resulting in energy savings, and decreased roof maintenance costs due to longer roof life. Cool roofs directly reduce GHG emissions by conserving electricity for air conditioning, therefore, emitting less GHGs from offsite electricity generation.²

The provisions of Chapter 15 of the California Building Code and Chapter 9 of the California Residential Code govern the design, materials, construction and quality of roof assemblies and rooftop structures, as applicable and as amended by the San Diego Municipal Code in Chapter 14, Article 5, Division 15. The City's Code currently does not require installation of cool or green roofs in new construction.

The mandatory measures for residential and non-residential buildings in CALGreen do not include a requirement for installation of cool roofs. Installation of a cool roof is one of the measures included for the additional voluntary tiers that a city or community could adopt beyond the mandatory code. The City has incorporated the provisions of CALGreen Tier 1 voluntary measures for residential and non-residential buildings in the Checklist for new projects. The measure has been expanded to include the option of providing a green (vegetated) roof, or a combination of cool and green roof, if it is determined to be more feasible or appropriate for a proposed project. The plants and growing medium of a green roof shade and protect the underlying roof structure from sunlight, thereby reducing its temperature. Further, green roofs cool through evapotranspiration, a process whereby plants take water in through their root systems and release it through their leaves in a process called transpiration. At the same time, evaporation occurs from plant surfaces and directly from the growing medium. Energy from incoming solar radiation that would otherwise heat the roof surface and increase ambient air temperatures is instead used in the evapotranspiration process, resulting in latent heat loss that lowers surrounding air temperatures. Thus, green roofs reduce GHG emissions by conserving electricity for air conditioning, and in some cases, by serving as a means of sequestering carbon.³ CALGreen voluntary measures include provision of green roofs as an exception to the cool roof standards.

If the CAP monitoring program reveals that additional reductions are required of new development, the Checklist would be updated accordingly. Updates may include specifying compliance with the higher CALGreen tier as a CAP consistency criterion.

ENERGY PERFORMANCE STANDARD/RENEWABLE ENERGY

The City's General Plan Policy CE-A.5 seeks to develop and implement sustainable building standards for new and significant remodels of residential and commercial buildings to maximize energy efficiency, and to achieve overall net zero energy consumption by 2020 for new residential buildings and 2030 for new commercial buildings. The policy mirrors goals set for California to move towards Zero Net Energy (ZNE). In a ZNE building, the annual energy consumption is equal to its annual production of renewable energy. Through a future update to Title 24, all new residential construction is to be ZNE by 2020 with all new commercial buildings achieving this ZNE goal by 2030. The purpose of ZNE buildings is to reduce demand on the electric grid, thereby reducing GHG emissions. The City is taking a two-pronged approach to reducing energy demand on the grid. Projects may achieve this by either incorporating enhanced efficiency measures to reduce overall energy consumption, or by generating energy onsite from renewable sources (e.g., solar).

Local actions that can help achieve ZNE buildings include encouraging new construction to exceed Title 24, Part 6 requirements. This allows buildings to reduce their energy consumption through increased efficiency and maximizes the benefit of onsite renewable energy. As described in Section 4 above, new construction in the City is required to meet Title 24, Part 6 and CALGreen mandatory standards. The CALGreen voluntary measures were determined to be an appropriate and feasible framework for guiding exceedance of Title 24,

² Natural Resources Defense Council (2012). *Looking Up: How Green Roofs and Cool Roofs Can Reduce Energy Use, Address Climate Change, and Protect Water Resources in Southern California*. June. Available: <<https://www.nrdc.org/sites/default/files/GreenRoofsReport.pdf>>

³ *Ibid*

Part 6 requirements. The CALGreen voluntary measures provide separate performance standards for residential and non-residential buildings under Tier 1 and Tier 2 performance levels. For the purposes of the Checklist, only Tier 1 standards are included for CAP compliance. CALGreen Tier 2 compliance would remain voluntary but projects may choose to incorporate the higher tier to achieve additional reductions. If the CAP monitoring program reveals that additional reductions are required of new development, the Checklist would be updated accordingly. Updates may include specifying compliance with the higher CALGreen tier as a CAP consistency criterion. Additionally, updates to the Checklist would also reflect future updates to Title 24, Part 6 to implement the state's ZNE policies. As these measures become mandatory, corresponding measures would be removed from the Checklist. The Checklist also provides projects the option to achieve the CALGreen Tier 1 energy performance standard through onsite renewable energy generation. As stated in Section 5.1 above, implementation of a CCA or other program to achieve 100 percent renewable energy by 2035 would include encouraging and facilitating the installation of distributed (small-scale) renewable energy systems for homes and businesses. Pending development of such a program by the City, this measure provides projects the option to generate onsite renewable energy to meet the specified standard. This option is included in the Checklist to encourage installation of such systems on new development projects. The optional compliance mechanism is appropriate because distributed generation renewable energy systems on new development projects form a relatively small proportion of overall renewable energy generation that needs to be achieved to meet City goals in the CAP (See Appendix A of the CAP). The City's renewable energy goals are expected to be achieved through a combination of large-scale solar development and small-scale distributed generation systems on existing and new development. Because of the built-out nature of the City, a larger proportion of these systems is anticipated to be on existing buildings as new development alone would not be able to meet the targets specified in the CAP. The precise distribution of various renewable energy systems will be determined through the development of the CCA or other program.

5.2 Water

The CAP includes the following strategy related to water consumption:

▲ Strategy 1: Energy & Water Efficient Buildings

The CAP includes a goal of reducing per capita water consumption through actions such as a water rate structure that encourages water conservation and reuse, development of a Water Conservation and Disclosure Ordinance, and an Outdoor Landscaping Ordinance that requires use of weather-based irrigation controllers.

The supporting measures related to Strategy 1 as it relates to water consumption include the following:

- ▲ Expand the Property-Assessed Clean Energy (PACE) financing programs to further support residential and non-residential energy and water efficiency actions.
- ▲ Expand incentive programs that further promote energy and water efficiency in residential and non-residential buildings.
- ▲ Record the annual volume percentage of recycled water used and planned to be introduced through 2035. The report will include plans for increasing future annual volumes of recycled water/potable reuse as well as report the number of grey water permits filed for systems discharging more than 250 gallons per day.
- ▲ Pursue additional financial resources and incentives for implementing energy and water efficiency measures identified by the conservation and ordinances, and to promote the expansion of greywater systems.

While CAP actions and supporting measures primarily represent actions that would be taken by the City, the intent of this strategy is to reduce overall water consumption. This is embodied in the specified reductions in daily per capita water consumption by 4 gallons by 2020 and 9 gallons by 2035. New development can contribute to the City's goals by designing buildings to reduce indoor and outdoor water consumption.

Indoor water consumption may be reduced through installation of low-flow plumbing fixtures and fittings as described in the following section.

Outdoor water consumption may be reduced through landscaping regulations that limit lawn areas, require native or drought-tolerant landscaping, hydrozoning irrigation techniques, and efficient irrigation systems. The City's Landscape Regulations are included in Chapter 14, Article 2, Division 4 of the San Diego Municipal Code. The Code requires installation of an automatic irrigation controller that utilizes a rain sensor and evapotranspiration or soil moisture sensor data, and that does not lose programming data if in the event a primary power source is interrupted. Therefore, a separate measure related to weather-based irrigation controllers is not included in the Checklist.

The City also adopted a recent update to the Municipal Code that incorporates water budget requirements under emergency conditions. The water budget calculations are performed in compliance with the Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELo). Under the updated Code, the maximum allowable water budget is reduced by more than 20 percent compared to the 2009 ordinance due to a reduction in the evapotranspiration adjustment factor.⁴ The CAP assumed compliance with the 2009 MWELo for baseline calculations. Adoption of the recent Code updates achieves a reduction similar to that assumed in the CAP for outdoor water consumption. In addition, the City's Code already includes requirements for limiting lawn areas, requiring native or drought-tolerant landscaping, hydrozoning irrigation techniques, and efficient irrigation systems that meet or exceed CALGreen voluntary measures. Therefore, additional feasible measures for reducing outdoor water consumption are not applicable and a corresponding measure was not included in the Checklist.

Chapter 14, Article 10, Division 4 of the San Diego Municipal Code includes a requirement for all new residential buildings that are within the scope of the California Residential Code to be constructed to include waste piping to discharge greywater from clothes washers to a place where it may be used for outdoor irrigation, in compliance with Section 1602 of the California Plumbing Code. Therefore, a measure related to greywater systems was not included in the Checklist.

PLUMBING FIXTURES AND FITTINGS

Chapter 14, Article 7, Division 3 of the San Diego Municipal Code specifies plumbing regulations for water and energy conservation. The purpose of this division is to reduce the use of potable water in the City by establishing maximum rates of flow for plumbing fixtures installed in new construction. The section requires new water conserving plumbing fixtures and fittings to comply with the residential and non-residential mandatory measures in Chapter 4 and 5 of the CALGreen Code and Chapter 4 of the California Plumbing Code.

CALGreen includes voluntary measures that specify reduced flow rates for plumbing fixtures and fittings for residential and non-residential development. Prescriptive-method based Tier 1 specifications that specify the maximum flow rate for each plumbing fixture and fitting are included in the Checklist to achieve greater reductions in indoor water consumption compared to baseline conditions.⁵

⁴<http://www.water.ca.gov/wateruseefficiency/landscapeordinance/docs/MWELo%202015%20Revision%20Fact%20Sheet.pdf>

⁵ 2013 California Green Building Standards Code (CALGreen). California Code of Regulations Title 24, Part 11. See Appendix A4 and A5.

5.3 Transportation

The CAP includes the following strategy related to transportation:

▲ Strategy 3: Bicycling, Walking, Transit & Land Use

Transportation strategies cover a broad range of activities that aim to reduce VMT, improve mobility, and enhance vehicle fuel efficiency. Specific implementation measures involve changing land uses, adopting a new perspective on community design, promoting alternative modes of travel, revising parking standards, and managing parking.

The CAP includes a collective mode share goal for transit, walking and biking of 22 percent by 2020 and 50 percent by 2035 in TPAs. The goals would be achieved through a combination of implementing the General Plan’s Mobility Element and the City of Villages Strategy in TPAs, pedestrian improvements, the City’s Bicycle Master Plan, a Traffic Signal Master Plan, a Roundabouts Master Plan, and transit-oriented development in TPAs.

Supporting measures related to this strategy in the CAP include:

- ▲ Implement bicycle improvements concurrent with street re-surfacing projects, including lane diets, green bike lanes, sharrows, and buffered bike lanes.
- ▲ Implement a bicycle sharing program with DecoBikes. Reduce the “1 mile” barrier gap by ensuring that further expansion of the bike share program is designed and implemented to reduce the distance needed to travel between transit stops and destinations.
- ▲ Identify and address gaps in the City’s pedestrian network and opportunities for improved pedestrian crossings, using the City’s Pedestrian Master Plan and the City’s sidewalk assessment.
- ▲ Adopt City portions of SANDAG’s forthcoming first mile/last mile initiative and incorporate Safe Routes to Transit strategies in TPAs.
- ▲ Coordinate pedestrian counting programs with SANDAG & San Diego State University (SDSU) Active Transportation Research Programs.
- ▲ Develop a Parking Plan to include measures such as “unbundled parking” for nonresidential and residential sectors in urban areas.
- ▲ Prepare a Commuter Report with measures to increase commuting by transit for City employees.
- ▲ Achieve better walkability and transit-supportive densities by locating a majority of all new residential development within TPAs.
- ▲ Develop a new priority ranking for capital improvement projects in TPAs that will be integrated into Council Policy 800-14, Community Development Block Grant and other grant opportunities, and Public Facilities Financing Plans.
- ▲ In addition to commuting, implement infrastructure improvements including “complete streets” to facilitate alternative transportation modes for all travel trips.
- ▲ The most recent version of the California Office of Environmental Health Hazard Assessment (OEHHA) CalEnviroScreen tool will be used as one method to identify and help prioritize, when possible,

underserved communities in census tracts ranking in the top 30 percent of CalEnviroScreen scores, which may be locally normalized, for transit-related infrastructure improvements and capital improvements.

A majority of the CAP actions and supporting measures related to Strategy 3 would be City-initiated actions. Changes in land uses and community design would be best suited for implementation at the Community Plan level. Nonetheless, the City has adopted a mode share goal for alternative transportation and new projects can demonstrate consistency with the City's overall intent by incorporating measures that would not hinder and would contribute to the City's ability to meet these goals. Implementation of the measures included in the Checklist would help new projects make a contribution to reduction in single-occupancy vehicle trips and encourage an increase in trips using alternative modes of transportation, including mass transit, walking, biking, EVs and low emissions vehicles. It should be noted that the City's reduction efforts would be focused on commuter trips in TPAs based on assumptions in the CAP; therefore, the measures in the following sections are geared towards employment uses in TPAs, unless otherwise noted.

ELECTRIC VEHICLE CHARGING

The CAP included the effect of California EV policies and programs as a separate reduction under state and federal actions. On March 23, 2012, California Governor Jerry Brown adopted Executive Order B-16-2012 which, among other things, sets a statewide target of 1.5 million zero emissions vehicles by 2025. In addition, California has adopted a number of policies to encourage adoption of EVs, including the Clean Vehicle Rebate Project, which provides cash incentives to offset a portion of the cost of a qualified vehicle. Senate Bill 350 set a 50 percent renewable standard for the electricity grid by 2030 and directed the California Public Utilities Commission, the California Energy Commission, and ARB to ensure that public utilities move towards creating electricity generation capacity for the upcoming electrification of cars. Therefore, a relevant local action relates to having projects be ready for increasing numbers of electrical cars. An increased number of EVs would also serve to reduce GHG emissions from the transportation sector.⁶ These vehicles would not generate tailpipe emissions and offsite emissions from electricity generation would decline in the future as the City progresses towards its 100 percent renewable energy by 2035.

The City's parking regulations can be found in Chapter 14, Article 2, Division 5 of the San Diego Municipal Code. EV parking requirements are currently included in the designated vehicle parking spaces shown in the following sections. However, given the information provided above regarding increased electrification of the vehicle fleet and the importance of providing EV-readiness for future projects, a separate set of measures is included in the Checklist related to EV parking and charging stations. The specifications for number of EV spaces were adapted from CALGreen Tier 1 standards for residential and non-residential buildings. The Checklist specifies that 3 percent of required parking spaces be equipped with a listed cabinet, box or enclosure connected to a conduit linking the parking spaces with the electrical service to allow for future installation of charging stations, consistent with CALGreen voluntary measures. To further support the shift towards electric vehicles in the fleet, the Checklist specifies that certain development projects equip 50 percent of designated EV spaces with charging stations ready for use by residents or employees. The 50 percent metric is based on the Governor's Office of Planning and Research's (OPR's) *Model Building Code for Plug-In Electric Vehicle Charging*.⁷

DESIGNATED VEHICLE PARKING

Chapter 14, Article 2, Division 5 of the San Diego Municipal Code also specifies the requirements for designated parking spaces for carpool vehicles and zero emissions vehicles. The number of designated

⁶ California Air Resources Board. Electric and Hydrogen Fuels and Vehicles. Available: <http://www.arb.ca.gov/fuels/altfuels/electric_hydrogen/electric_hydrogen.htm>

⁷ https://www.opr.ca.gov/docs/Example_Building_Codes.docx

parking spaces are estimated as a ratio of the total vehicle parking spaces provided with a specified requirement of at least 8 percent of the total automobile parking spaces on the premises if there are 201 or more automobile parking spaces on the premises.

Providing a higher proportion of designated parking spaces would encourage future employees of a project located in a TPA to carpool or drive a low emissions vehicle to work.⁸ The City's requirements in the Municipal Code were compared to CALGreen mandatory and voluntary measures for non-residential uses (shown in Table 2 below). The City's code requirements were found to be consistent with CALGreen mandatory measures. An increase in designated parking spaces to comply with CALGreen Tier 1 voluntary measures would provide a greater incentive to reduce single-occupancy vehicle trips. The designated parking space requirement does not include EV spaces as those are addressed under Question 4 of the Checklist.

Table 2 Number of Designated Parking Spaces for Non-Residential Uses under the San Diego Municipal Code and CALGreen			
Number of Provided Parking Spaces	Number of Designated Parking Spaces		
	San Diego Municipal Code	CALGreen Mandatory Measures	CALGreen Tier 1 Voluntary Measures
0-9	0	0	0
10-25	1	1	2
26-50	3	3	4
51-75	6	6	6
76-100	8	8	9
101-150	11	11	11
151-200	16	16	18
201 and over	At least 8% of total	At least 8% of total	At least 10% of total

Sources: San Diego Municipal Code Chapter 14, Article 2, Division 5; 2013 California Green Building Standards Code (CALGreen) Tables 5.106.5.2 and A5.106.5.1.1

CALGreen specifies a higher proportion of designated parking spaces under Tier 2 voluntary measures. This measure was not included in the Checklist; however, if the City determines the need for higher reductions from this measure through CAP monitoring, the Checklist question may be modified.

BICYCLE PARKING AND SHOWER FACILITIES

Chapter 14, Article 2, Division 5 of the San Diego Municipal Code also specifies the requirements for short-term and long-term bicycle parking spaces. Short-term bicycle parking spaces are intended for use by visitors and are calculated based on the total number of automobile parking spaces required for the premises. Long-term bicycle parking spaces are intended for use by employees and are required for non-residential development at a rate of 5 percent of the required automobile parking for any premises with more than ten full-time employees. The City code also specifies that employee shower facilities shall be provided on the premises for non-residential development where 10 or more long-term bicycle parking spaces are required. The City code requirements are consistent with CALGreen mandatory measures. Bicycle end-of-trip facilities such as secure bicycle parking and showers and lockers for employees, further improve safety and convenience for bicyclists and encourage the use of this alternative mode of transportation.⁹

⁸ California Air Resources Board. 2014. *Impacts of Employer-Based Trip Reduction Programs and Vanpools on Passenger Vehicle Use and Greenhouse Gas Emissions Policy Brief*. September. Available: <http://www.arb.ca.gov/cc/sb375/policies/ebtr/ebtr_brief.pdf>

⁹ California Air Resources Board. 2014. *Impacts of Employer-Based Trip Reduction Programs and Vanpools on Passenger Vehicle Use and Greenhouse Gas Emissions Policy Brief*. September. Available: <http://www.arb.ca.gov/cc/sb375/policies/ebtr/ebtr_brief.pdf>

The project-specific CAP measure included in the Checklist is to provide more short- and long-term bicycle parking than required by the City's Municipal Code. A specific performance standard (higher than the 5 percent ratio) was not included to avoid provision of a disproportionately high number of bicycle parking spaces. Non-portable bicycle corrals within 600 feet of project frontage can be counted towards the project's bicycle parking requirements. The 600 feet distance criterion is consistent with the City's off-premises parking regulation for automobiles (Section 142.0535, Chapter 14, Article 2, Division 5 of the San Diego Municipal Code) and is considered appropriate for bicycle parking as well.

CALGreen voluntary measures do not specify a higher proportion of bicycle parking, therefore, any increase in number of bicycle parking spaces above the City's code requirements would be consistent with the CAP.

A measure related to shower facilities and personal effects lockers was also included in the Checklist because, while the City code specifies the need for these facilities to be provided, it does not specify a performance standard. The measure is based on CALGreen non-residential voluntary measures. Providing workplace amenities such as bicycle lockers and showers to complement bike lanes is shown to increase cycling to employment sites, thereby reducing automobile trips and GHG emissions.¹⁰

ONSITE AMENITIES

Provision of onsite or easily accessible amenities at employment centers is a complementary transportation demand management (TDM) measure. Access to amenities helps reduce GHG emissions by reducing the need to drive by requiring or encouraging a mix of uses (cafes, drug stores, grocery stores, banks, post office, services, gyms, or childcare) into major developments so workers don't need to use cars during the day.¹¹ To encourage the provision of such amenities in larger non-residential projects that would accommodate over 50 employees, a measure was included in the Checklist specifying provision of such amenities (that meet the definition of accessory uses under San Diego Municipal Code Section 113.0301). The amenities may either be available onsite as part of the development project or within 1,320 feet (1/4 mile) of the structure/use. The 1/4 mile distance metric is used to be consistent with criteria used in the CAP to define mixed-use (See Appendix A of the CAP). Projects that provide access to amenities within this radius encourage walking and other non-auto modes of transportation.

TRANSPORTATION DEMAND MANAGEMENT PROGRAM

Programs and services that reduce or manage travel demand (Transportation Demand Management or TDM) are cost effective, flexible, and can be executed in shorter time frames than transportation infrastructure improvement projects. TDM refers to a variety of strategies that change travel behavior (how, when, and where people travel) in order to improve transportation system efficiency and achieve key regional objectives, such as reduced traffic congestion, increased safety and mobility, and energy conservation and emission reductions. Typical TDM programs reduce GHG emissions by reducing single-occupancy vehicle trips through ridesharing initiatives such as carpooling and vanpooling; alternative work schedules and teleworking; efficient use of parking; and the use of transit, biking, and walking to work.¹² TDM strategies are especially effective for commuter trips.

Because of the CAP's focus on reducing VMT associated with commuter trips, a measure related to TDM programs is included in the Checklist. This measure would allow future projects to approach VMT reduction in a comprehensive manner instead of implementing discrete measures that may not work as well in isolation. The measure provides the option to incentivize mode share shift for employees by implementing

¹⁰ California Air Resources Board Bicycle Awareness Program. Bicycle Fact Sheet. Available: <<http://www.arb.ca.gov/planning/tsaq/bicycle/factsht.htm>>

¹¹ San Diego Association of Governments. 2012. *Integrating Transportation Demand Management Into the Planning and Development Process*. May. Available: <http://www.sandag.org/uploads/publicationid/publicationid_1663_14425.pdf>

¹² *Ibid*

parking cash out programs, parking management plans, or unbundled parking (specified as supporting measures in the CAP). The measure is intended to be flexible as it relates to parking and would work in conjunction with other parking-related measures specified above. The measure also provides projects the ability to choose from a number of optional components of a TDM program to determine the ones that are best suited for a particular project.

5.4 Solid Waste

The CAP includes the following strategy related to solid waste generation:

▲ Strategy 4: Zero Waste (Gas & Waste Management)

There are several different options for managing waste including source reduction, increased recycling, and gas capture. The goal for the City is to achieve a 75 percent waste diversion rate by 2020. The City also has a goal to strive for Zero Waste disposal by 2040. Goals and actions related to this strategy include enacting the City's Zero Waste Plan, and implementing landfill gas collection operational procedures in compliance with the ARB's Landfill Methane Capture regulations. The City will also implement operational procedures to capture methane gas from wastewater treatment.

Supporting measures related to this strategy in the CAP include:

- ▲ Develop a Resource Recovery Center and “one-stop shop” at Miramar Landfill that provides opportunities to maximize waste diversion.
- ▲ Convert curb side recycling and curb side greenery collection programs to a weekly basis and add kitchen scraps to greenery.

The CAP actions and supporting measures shown above represent actions that would be taken by the City, Discretionary projects that exceed the City's CEQA Threshold of Significance for solid waste impacts are required to complete a Waste Management Plan (WMP).¹³ In addition, all projects are required to comply with the City Recycling Ordinance (CRO) and the Construction and Demolition (C&D) Debris Deposit Ordinance (C&D Ordinance). The City's Zero Waste Plan, adopted by City Council in June 2015, includes proposals to modify the CRO and C&D Ordinance.¹⁴ The CRO would be modified to reduce exemptions for commercial facilities and multi-family developments and to add additional materials to the ordinance. The C&D Ordinance would be modified to increase the diversion rate required in WMPs to 65 percent. The City's Environmental Services Department is pursuing these ordinance modifications and all projects would be required to comply with City requirements. While new projects could contribute further to the City's goals by achieving waste reduction through composting, the infrastructure to support large-scale increases in composting is not available at this time. This strategy would be implemented at a program-level by the City, supported by projects meeting the ordinance requirements cited above. Therefore, a project-specific action related to this strategy was not included in the Checklist.

5.5 Urban Forestry

The CAP includes the following strategy related to urban forestry:

▲ Strategy 5: Climate Resiliency

¹³ <https://www.sandiego.gov/sites/default/files/legacy/environmental-services/pdf/recycling/wmpbulletin.pdf>

¹⁴ <https://www.sandiego.gov/sites/default/files/legacy/mayor/pdf/2015/ZeroWastePlan.pdf>

Climate Resiliency can be defined as the capacity of a system to absorb disturbance and reorganize while undergoing change and still retain essentially the same function, structure and feedbacks, and therefore identity. The intent is to develop programs, policies, and processes that are not rigid or static, but rather flexible allowing change to accommodate unexpected events and shocks and continue to function effectively.

The CAP includes a target of achieving 15 percent urban tree canopy coverage by 2020 and 35 percent urban tree coverage by 2035. Urban tree canopy refers to the tree crowns that cover the ground when viewed from above. Typically, urban tree canopy coverage is measured by using high definition aerial imagery to calculate how much of the City is “shaded” by trees. Citywide tree canopy coverage is generated by street trees, trees in parks, open space, and private residential, commercial, and industrial areas. This goal would be accomplished through preparation of a city-wide Urban Tree Planting Program that includes water conservation measures to minimize water use for tree plantings. The measures should include planting drought-tolerant and native trees, and prioritizing tree plantings in areas with recycled water and greywater infrastructure.

Supporting measures related to this strategy in the CAP include:

- ▲ Develop a regional (Western San Diego County) Urban Tree Canopy Assessment in collaboration with other regional jurisdictions and SANDAG.
- ▲ Prepare a Parks Master Plan that prioritizes parks in underserved communities.
- ▲ Hire an Urban Forest Program Manager.
- ▲ Plan for the long-term maintenance of additional trees and ensure sufficient staff and funding are available.
- ▲ Complete the Urban Forest Management Plan and present to City Council for adoption.

The CAP actions and supporting measures shown above represent actions that would be taken by the City. While individual projects could contribute to an increase in urban tree canopy, monitoring and enforcing the planting and long-term maintenance of trees would be beyond the scope of current City actions. This strategy is well suited for a city-wide, comprehensive approach and the specified targets would be accomplished through the Urban Tree Planting Program. Therefore, a project-specific action related to this strategy was not included in the Checklist.

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