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UNIVERSITY OF CALIFORNIA,
IRVINE

Renewable Hydrogen Production Pathways from Biomass via Anaerobic Digestion for California

THESIS

Submitted in partial satisfaction of the requirements
for the degree of

MASTER OF SCIENCE
in Engineering
with concentration in Environmental Engineering

by
Amber M. Fong

Thesis Committee:
Professor Scott Samuelsen, Chair
Professor Steve Davis
Professor Sunny Jiang

2020

Dedication

To my family for their unending support

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List of Acronyms

AD	Anaerobic Digester
AFV	Alternative Fuel Vehicle
CARB	California Air Resources Board
CHIT	California Hydrogen Infrastructure Tool
FCEV	Fuel Cell Electric Vehicle
GHG	Greenhouse Gas
GIS	Geographic Information Systems
GJ	Gigajoules
GREET	Greenhouse gases, Regulated Emissions, and Energy use in Transportation (Model)
HEV	Hybrid Electric Vehicle
HRS	Hydrogen Refueling Station
LCFS	Low Carbon Fuel Standard
MJ	Megajoules
MSW	Municipal Solid Waste
NLCD	National Land Cover Database
NWALT	U.S. Conterminous Wall-to-Wall Anthropogenic Land Use Trends
PFCEV	Plug-in Fuel Cell Electric Vehicle
PHEV	Plug-in Hybrid Electric Vehicle
PSA	Pressure Swing Adsorption
SMR	Steam Methane Reformation
SNG	Synthetic Natural Gas
TGFC	Tri-Generation Fuel Cell
ZEV	Zero Emission Vehicle

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Abstract of the Thesis

Renewable Hydrogen Production Pathways from Biomass via Anaerobic Digestion for

California

By

Amber M. Fong

Master of Science in Engineering

with concentration in Environmental Engineering

University of California, Irvine, 2020

Professor G. Scott Samuelson, Chair

In 2016, the transportation sector in California emits 41% of the state's greenhouse gas (GHG) emissions, and the state's GHG emissions reduction goals necessitate reducing GHG emissions from this sector. One strategy is through the increased adoption of zero-emission vehicles. One option is fuel cell electric vehicles (FCEVs), using fuel produced from renewable (carbon-neutral and zero-carbon) hydrogen pathways.

This thesis conducts techno-economic analyses for a set of carbon-neutral hydrogen production pathways from biomass via anaerobic digestion (AD) to synthetic natural gas (SNG). The scope of analysis is from the transportation of feedstocks to AD facilities to the delivery of the renewable hydrogen fuel to stations. The biomass feedstocks included in the analyses are municipal solid waste (MSW), food waste, and animal manures. Technologies considered to convert SNG to hydrogen are steam methane reformation and tri-generation. Geographic information systems (GIS) software is utilized to account for the high spatial-dependency of the transportation aspects of the production pathways.

It was found that across all biomass feedstocks, (1) tri-generation is more expensive but less emissions-intensive than steam methane reformation for the generation of carbon-neutral hydrogen, (2) the transportation segment accounts for a large majority of pathway emissions while a small contribution to the cost of hydrogen, and (3) the optimal scenario to minimize both cost and emissions is to site 5 AD facilities in the State with an average size of 1,243,889; 187,204; and 449,132 dry tons of biomass per year, for MSW, food waste, and animal manure, respectively.

1 Introduction

1.1 Emissions and California's Light Duty Transportation Sector

In 2016, the transportation sector was the largest emitter of greenhouse gases (GHGs) in California, contributing 41% of the state's GHG emissions, approximately 70% of which came from light duty vehicles. Despite the sector's decline in GHG emissions starting in 2007, there has been a gradual increase starting in 2014 due to increased overall vehicle miles traveled in the state [1] despite the increasing deployment of alternative fuel vehicles (AFVs) [2]. The need is clear for the increased adoption of AFVs and zero emission vehicles (ZEVs) in order to reduce GHG emissions from the light duty transportation sector. Examples of AFVs and ZEVs include hybrid electric vehicles, plug-in hybrid electric vehicles, battery electric vehicles (BEVs), fuel cell electric vehicles (FCEVs), and plug-in fuel cell electric vehicles.

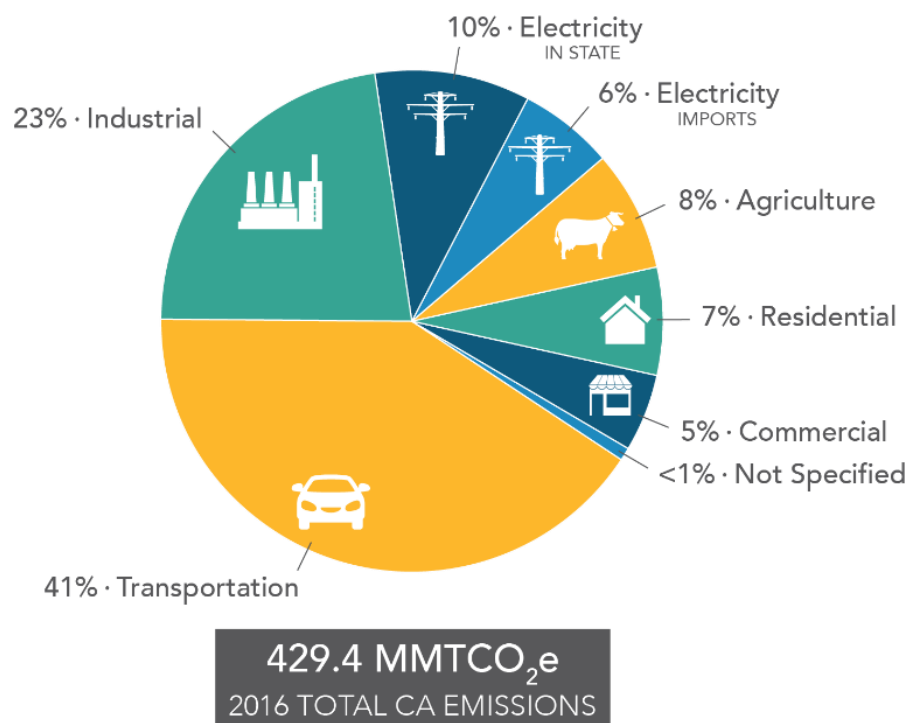


Figure 1 California GHG Emissions by Economic Sector [3]

1.2 Summary of Legislative Motivations

California has passed a variety of legislation in support of reducing the state's environmental impact. As related to this research, policies regarding reducing GHG and air pollutant emissions, ZEVs, renewable hydrogen are particularly relevant. These policies, as well as the programs that support them, are summarized in Table 1 Summary of California Legislation and Goals Regarding Energy and TransportationTable 1.

Table 1 Summary of California Legislation and Goals Regarding Energy and Transportation

GHG Emissions	
AB 32: Global Warming Solutions Act of 2006	Reduce GHG emissions to 1990 levels by 2020 [4]
SB 32: Global Warming Solutions Act of 2006: emission limit	Reduce GHG emissions to 40% below 1990 levels by 2030 [5]
SB 375: Sustainable Communities and Climate Protection Act	Reduce GHG emissions through transportation, housing, and land use planning [6]
Zero Emission Vehicles	
Executive Order B-48-18	200 hydrogen refueling stations & 250,000 BEV chargers by 2025, 5 million ZEVs by 2030 [7]
Hydrogen Fuel	
AB 8: Alternative Fuel and vehicle technologies: funding programs	Allocates \$20 million annually to fund hydrogen refueling stations, until 100 stations [8]
SB 1505: Fuel: hydrogen alternative fuel	Requires 33% of hydrogen fuel dispensed in state to be renewable [9]
Low Carbon Fuel Standard (LCFS) Program	Reduce carbon intensity of transportation fuels used in California 20% below 2010 levels by 2030 [10]

1.3 Goal

The goal of this research was to establish the sizing and siting of facilities for biomass-anaerobic digestion (carbon-neutral) hydrogen pathways in California, given resource and

conversion pathway inputs, that would minimize GHG emissions and hydrogen fuel production cost.

1.4 Objectives

To accomplish this goal, the objectives were to:

1. Identify carbon-neutral hydrogen pathways in California, from feedstock to end use, that involve biomass and anaerobic digestion
2. Determine the economic and emission factors within the pathways' steps
3. Project cost and emissions for each feedstock and pathway and determine the optimal siting and sizing of facilities to minimize cost and emissions

2 Background

2.1 Anaerobic Digestion, Biomass, and Biogas

Anaerobic digestion (AD) is a series of biological processes through which microorganisms decompose biomass in the absence of oxygen (Figure 2), with the operational inputs of heat and electricity. The end products are biogas and digestate. The biogas is typically around 60% methane in composition and can be combusted for heat and electricity or cleaned up and put into the natural gas system. The digestate is useful in agricultural applications, such as for fertilizers.

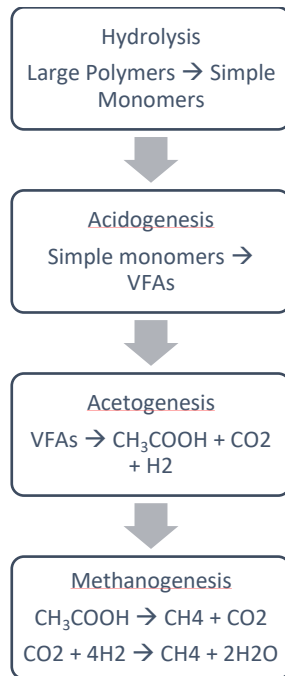


Figure 2 Anaerobic Digestion Biological Processes

The type of technologies used in an anaerobic digestion plant depend on the type of biomass being processed and how the input will be processed. One of the main considerations is the moisture content of the input substrate. Moisture content is categorized into wet substrates and dry substrates, which are defined as approximately <10% total solids and 20-40% total solids, respectively [11]. The next major level of categorization is between batch and continuous reactors, which describes the substrate loading strategy. A third level of categorization is the operating temperature of the digester, either thermophilic (35-45°C) or mesophilic (50-65°C). A detailed breakdown of digester reactor technologies is in Figure 3, along with where various commercial processes fall within the categorization.

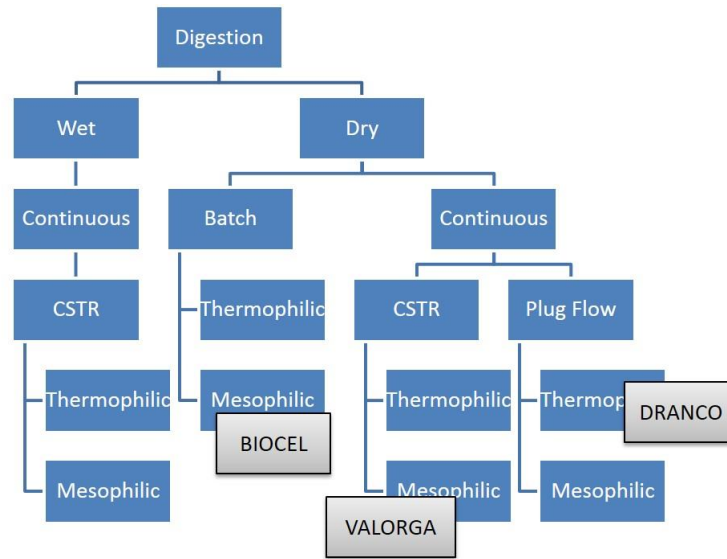


Figure 3 Anaerobic Digestion Technologies [12]

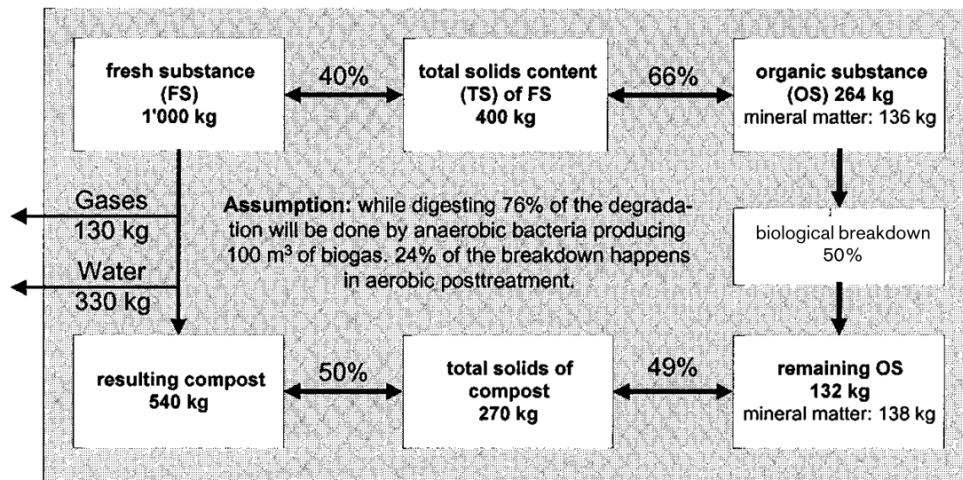


Figure 1 Assumptions for mass fluxes while degrading biogenic wastes with biotechnology

Figure 4 Anaerobic digestion mass balance diagram [13]

Anaerobic digesters are a mature and commercialized technology and are currently being used at facilities like wastewater treatment plants and agriculture and livestock farms, which are utilizing the resulting biogas to satisfy on-site heating and electrical demands via combined heat and power (CHP) units or flaring it.

The biomass in California is sourced from places such as the agriculture and livestock industries, the increasing organics diversion from landfills in accordance with AB 341 [14], the increasing urban waste streams resulting from population growth, etc. This would enable an increased utilization of this technology. In Figure 5, potential biomass conversion pathways via gasification and anaerobic digestion are outlined to produce two useful end products, synthetic natural gas (SNG) and hydrogen, which would contribute to the state's existing natural gas capacity or supply California's nascent hydrogen vehicle fueling infrastructure, respectively. Gasification would receive lower moisture content feedstocks while anaerobic digestion would receive the higher moisture content feedstocks.

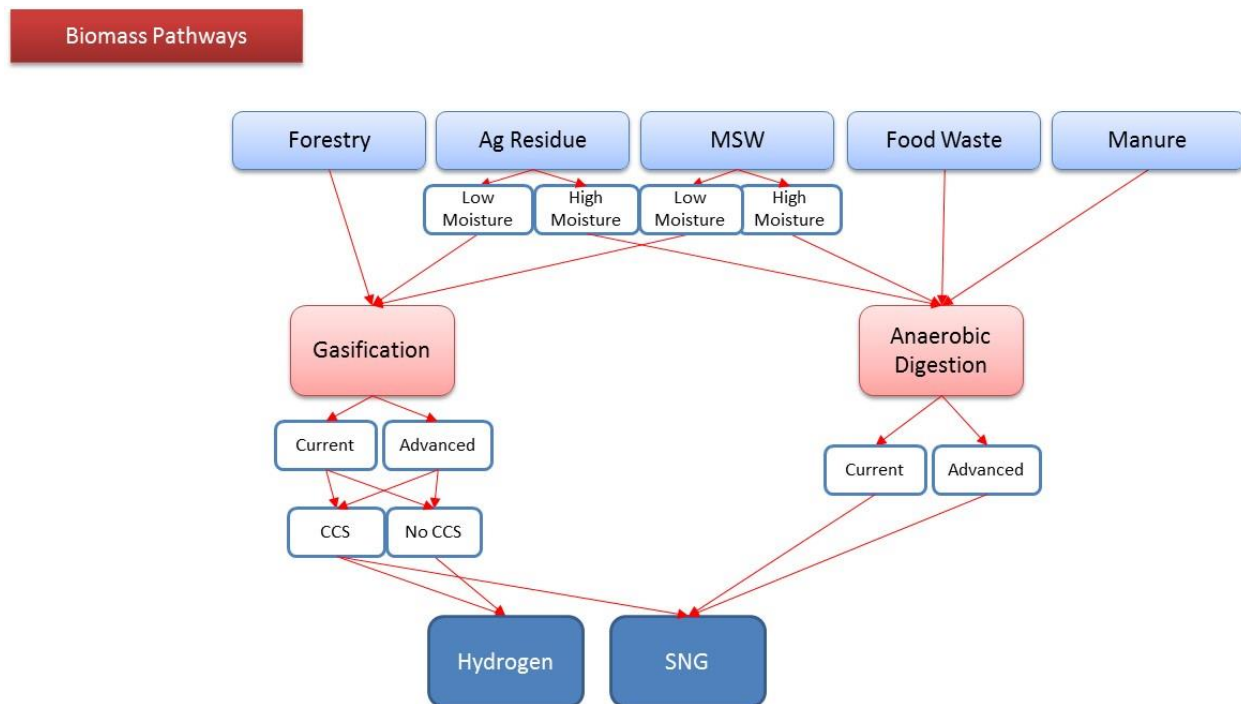


Figure 5 Gasification and Anaerobic Digestion Pathways

Some form of carbon capture technology is needed to remove excess CO₂ from the raw biogas in order for the biogas to be of sufficient quality to be added to the natural gas system. Typical upgrading media are chemical adsorption via amines (eg., methyl diethanolamine,

monoethanolamine, dieethanolamine), pressure swing adsorption (PSA), water scrubbing, and membrane separation [15,16]. These technologies typically produce methane with around 95% purity [17,18].

2.2 Hydrogen in California's Transportation

2.2.1 Hydrogen Fuel Cell Vehicles in California

The commercialization of light-duty FCEVs in California began in 2014. In June 2014, there were 125 FCEVs registered in the state [19]. As of December 2018, FCEV deployment in-state reached 5,658 registered FCEVs. Future estimates put deployment at 23,600 FCEVs in 2021 and 47,200 FCEVs in 2024 [2]. The goal, as outlined in California Executive Order B-48-18, is to have the total number of ZEVs (FCEVs plus BEVs) reach a total deployment of 5,000,000 ZEVs by 2030 [7].

2.2.2 Hydrogen Fueling Stations in California

The state's growing FCEV market needs to be supported in parallel by a growing hydrogen infrastructure. With the passing of California Assembly Bill 8 in 2013, \$20 million per year is allocated towards funding hydrogen refueling stations (HRS) until there are at least 100 public stations in the state [8]. As of December 2018, California's HRS network had 39 public stations open and 25 stations in construction, for a total of 64 funded stations in the network [2]. The goal is to reach 220 HRSs by 2050 [7], along with building stations with increased nameplate capacity [2].

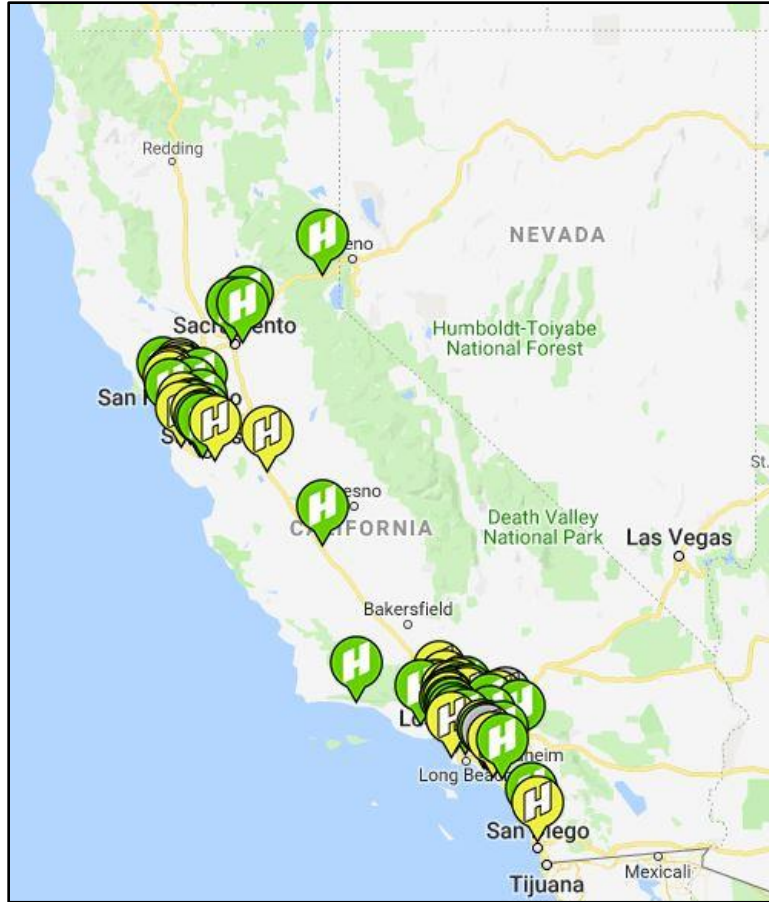


Figure 6 Open (Green) and Planned (Yellow) Hydrogen Refueling Stations in California [20]

As seen by the station locations in Figure 6, a majority of the HRSs are concentrated in a few main areas: the Bay Area, Sacramento, the greater Los Angeles area, and San Diego. A few stations are “destination” stations, meaning that the stations are located near an attractive recreational site (e.g., Lake Tahoe) or weekend retreat (e.g., Santa Barbara). Some stations are “connector” stations, that is, located for the purpose of facilitating FCEV trips between major regions. One notable station of this category is the Coalinga station in the Central Valley, located on the Interstate 5, a freeway often used to travel between northern and southern California.

2.2.2.1 Geographic Information Systems Software in Energy System Modeling

The integration of GIS software in energy systems planning enables the addition of a spatial component to the analyses, which can yield more detailed and region-specific results. Applications in literature include BEV charging infrastructure siting [21], urban distributed generation [22], and hydrogen infrastructure [23–25].

Using GIS analysis components in hydrogen fueling infrastructure siting has been conducted for California's nascent and developing fueling network to optimize the siting of stations. The Spatially and Temporally Resolved Energy and Environment Tool (STREET) was utilized to site stations for an initial HRS network of 68 stations dependent on the spatial distribution of potential FCEV drivers [26–28]. Currently, the California Hydrogen Infrastructure Tool (CHIT), developed by the California Air Resources Board, uses Geographic Information Systems (GIS) software with the current HRS network to calculate network gaps in both station coverage and hydrogen capacity which identifies the priority areas in the state for new HRSs [29].

2.3.3 Hydrogen Fuel in California

Expanding the hydrogen refueling infrastructure further requires a growing hydrogen fuel supply chain. Currently in the United States, 95% of hydrogen is produced through steam methane reforming (SMR) of conventional natural gas [30]. In California, [current? Plans to increase this standard?] state law requires 33% of vehicular hydrogen sold in the state to be produced renewably [9,31] There are various pathways to produce carbon-neutral and zero-carbon renewable hydrogen. Two major pathways are the following: 1) zero-carbon hydrogen via electrolyzer powered by renewable electricity, or 2) carbon-neutral hydrogen via reformed

renewable biogas. Carbon-neutral biogas can be sourced from biomass, landfill gas, or gases from wastewater treatment processes.

Currently, a majority of HRSs in California are supplied by the Southern California Fill Station in Wilmington, which provides 4,000 kg/day and fulfills the 33% renewable requirement via carbon-neutral biogas credits. Two new zero-carbon hydrogen production facilities are planned. One is a facility in Moreno Valley producing 100% renewable hydrogen. The second is a facility in Kings County which will produce renewable hydrogen via electrolyzer powered by solar-generated electricity [2]. As of June 2019, 13 stations in the network dispense zero-carbon renewable hydrogen [32]. Carbon-neutral renewable biogas pathways typically utilize biogas produced from landfills or anaerobic digester (AD) gas produced from waste water treatment or biomass. After being scrubbed for impurities, the end product from both sources, SNG, can either be utilized as natural gas via pipeline or further reformed into hydrogen through SMR.

Furthermore, the biogas could be used as the fuel for a high temperature tri-generation fuel cell (TGFC) to produce heat, hydrogen, and electricity, which was successfully demonstrated at the Orange County Sanitation District [33]. This low-carbon method provides not only a diversification but also a flexibility to the hydrogen supply chain because TGFC systems have the ability vary the amount of hydrogen produced. When hydrogen is not needed for refueling, it is used internally to contribute to the electricity and heat generation. TGFCs also have the feedstock flexibility to use conventional natural gas in case of a disruption in biogas quantity or quality [34].

The need to increase carbon-neutral hydrogen in proportion to or more quickly than the hydrogen fuel demand as the market grows necessitates the study of more fuel sources and pathways along with each's economics, environmental effects, and technology readiness for

commercialization. Potential sources of carbon-neutral hydrogen in California are agricultural waste, food waste, organic municipal solid waste (MSW), and manure. Currently in California, MSW and agricultural biomass programs are in place that convert these feedstocks to electricity via direct burning. But these feedstocks can also be used to produce carbon-neutral hydrogen, if processed via anaerobic digestion, as defined by the California Energy Commission [35]. These production pathways merit research in regards to their economic and emissions effects because it will facilitate an informed and effective implementation of these technologies into the hydrogen fuel supply chain. This is the motivation for the research addressed in this thesis.

3 Approach

The goal of this research is to establish the optimal sizing and siting of facilities for biomass-AD carbon-neutral hydrogen pathways in California, given resource and conversion pathway inputs. The following approach will be used to reach the previously stated objectives.

Task 1: *Identify carbon-neutral hydrogen pathways in California*

Through literature review, the location and capacity of the components in biomass-AD carbon-neutral hydrogen pathways will be identified for the following categories: feedstocks, refining processes, end products, and end uses. For each of the feedstocks, location and capacity will be identified. Additionally, through literature review, conversion efficiencies of the technologies will be determined.

Task 2: *Identify economic and emission factors*

Using pathway components and steps determined in the previous task, cost and emission factors will be gathered for each from literature and emission inventories.

Task 3: *Project cost and emissions for each production pathway*

For each component and step, curves will be created for cost and emissions versus number of facilities sited for each production pathway. For the transportation portions of the pathways, the GIS software, ArcGIS, will be used to determine trucking distances, spanning the number of anaerobic digestion facilities sited from 1 to 100.

4 Methodology

4.1 Carbon-neutral Hydrogen Pathways via Biomass

4.1.1 Anaerobic Digestion Feedstocks

The first step was to find data of the location and quantity of the biomass supply in California. Since anaerobic digestion requires high moisture feedstocks, those particular feedstocks were identified as the following: municipal solid waste (MSW), food wastes, and animal manures. All of these high moisture feedstock categories are found in the U.S. Department of Energy's 2016 Billion Ton report database [36], which is the third installation of DOE's national biomass resource assessment and projection meant to inform national bioenergy and biofuels research and policy. It should be noted that Billion Ton defines MSW as the garbage fraction of MSW, which includes "mixed commercial and residential wastes generally destined for landfill or incineration disposal" plus yard trimmings and excluding construction and demolition wastes [36]. The food waste category in the Billion Ton report contains food wastes from industrial, institutional, and commercial sources.

The Billion Ton report data are available in the units of dry tons per year and are geographically defined at the county level. For later analysis purposes, the data will need to be of higher spatial detail. In order to increase the spatial density of the data, a weighting factor needed to be established to allocate the county-level biomass totals in a sensible manner, that is, not

assuming uniform distribution of the biomass total across the entire county area. In order to do this, two datasets were used to downscale the Billion Ton data depending on the feedstock: the National Land Cover Database (NLCD) from the U.S. Geological Survey [37] and high resolution population data from Oak Ridge National Laboratory [38]. From the former, the “Pasture/Hay” category was used to downscale the manure data, and the latter dataset was used to downscale food waste and MSW data. In ArcGIS, the downscaling datasets were joined to a 4km x 4km grid across California. Then, for each point of the 4x4km grid, two values were calculated: 1) the summation of values for a particular point (i.e. the number of land cover points for the NLCD data and the sum of the population for the LandScan data) and 2) the sum of values for the entire county. The first divided by the second gave a weighting density metric for each 4x4km grid point. The density metric multiplied by the respective county biomass total results in a higher density spatial allocation of the biomass resources. Then, the dataset is further reduced to all points that are associated with populations greater than 250 people.

4.1.2 Anaerobic Digesters

The U.S. Conterminous Wall-to-Wall Anthropogenic Land Use Trends (NWALT) database was used to determine candidate sites for anaerobic digesters [39]. NWALT’s subcategory “Developed, Industrial/Military” was applied to the 4x4km grid, and all non-null data points were used as the candidate sites for anaerobic digesters.

Through literature review, conversion efficiency factors were determined for each feedstock. A summary of anaerobic feedstock characteristics, including methane conversion efficiency, or methane yield per dry ton, is found in Table 2, as found across literature. In the cases where assumed feedstock higher heating values were not explicitly stated in the paper, values from a UC Davis report were used [40].

Table 2 Summary of feedstock methane yields from literature

Feedstock	Dry Matter (% of fresh matter)	Organic dry matter content (oDM) (% of DM)	Gas yields (m ³ biogas ton ⁻¹ oDM)	High methane yield (m ³ methane ton ⁻¹ oDM)	Low Methane yield (m ³ methane ton ⁻¹ oDM)	Mean methane yield (m ³ methane ton ⁻¹ oDM)	Source(s)
Algae	--	--	--	340	90	215	[41]
Banana Waste	--	--	--	320	240	280	[41]
Corn Stover	22	--	--	360	223	290	[41,42]
Flower Bulbs	10	80	--	--	--	500	[43]
Food Wastes	15	80	--	500	300	400	[11,44–47]
Grass	32	90	590	319	318	318	[48]
Leaves	--	--	--	300	100	200	[11]
Maize	35	95	650	390	338	364	[47,48]
Manure, cattle	25	85	410	250	150	200	[11,48,49]
Manure, poultry	20	80	--	--	--	410	[47]
Manure, swine	7	80	--	360	356	358	[11,47]
OFMSW	20	--	--	300	115	225	[11,50–54]
OFMSW, MS	18	--	--	--	--	342	[11,54]
OFMSW, SS	--	--	--	--	--	490	[55]
Paper, news	--	--	--	--	--	100	[11]
Paper, office	--	--	--	--	--	370	[11]
Primary Wastewater Solids	--	--	--	--	--	590	[11]
Rice Straw	--	--	--	--	--	350	[11]
Rye Silage	35	95	620	--	--	330	[48]
Sewage Sludge	20	--	--	--	--	190	[11,56]
Smooth Cordgrass	92	--	--	412	268	340	[11,57]
Sweet sorghum	--	--	--	320	290	305	[11]
Wheat Straw	22	--	--	--	--	150	[11,58]

4.1.2.1 Learning Rates

There are several methods to project technological progress and its effects on technology cost: Wright's Law, Moore's Law, and others [59]. Nagy et al. compared these different methods' abilities to predict future cost using a database of 62 different technologies. The authors conclude that while Moore's and Wright's Laws performed similarly, Wright's Law performs slightly better. The one used in this research is Wright's Law since it projects future costs and technology improvements based on cumulative market size, versus using time as Moore's Law does. Wright's Law can be written as the following [60]:

Equation 1 Wright's Law

$$C(p_t) = C(p_i) \left(\frac{p_t}{p_i} \right)^{-b}$$

Where p_i is the initial production volume, p_t is the production volume at time t , $C(p_t)$ is the cost at production volume at time t , $C(p_i)$ is the cost at the initial production volume, and b is an exponential learning parameter related to the learning rate (LR) by the equation $LR = 1 - 2^{-b}$.

4.1.2.1.1 Efficiency

According to the International Energy Agency, biomass accounts for about 1TW average power production annually [61]. It is therefore reasonable to assume the following market sizes in 2035 and 2050 for anaerobic digesters: 500 GW and 1000GW, respectively. In Figure 7 and Figure 8, the efficiency improvement is projected out to 2050 for manure feedstocks (hogs and milk cows) and organic feedstocks (food waste), respectively.

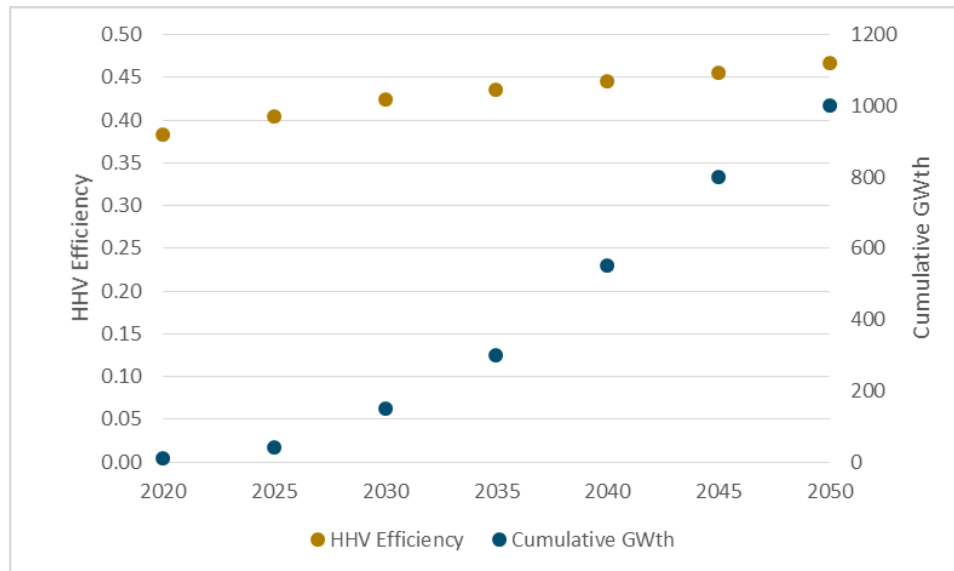


Figure 7 Projected HHV efficiency and market growth for anaerobic digesters with manure feedstocks

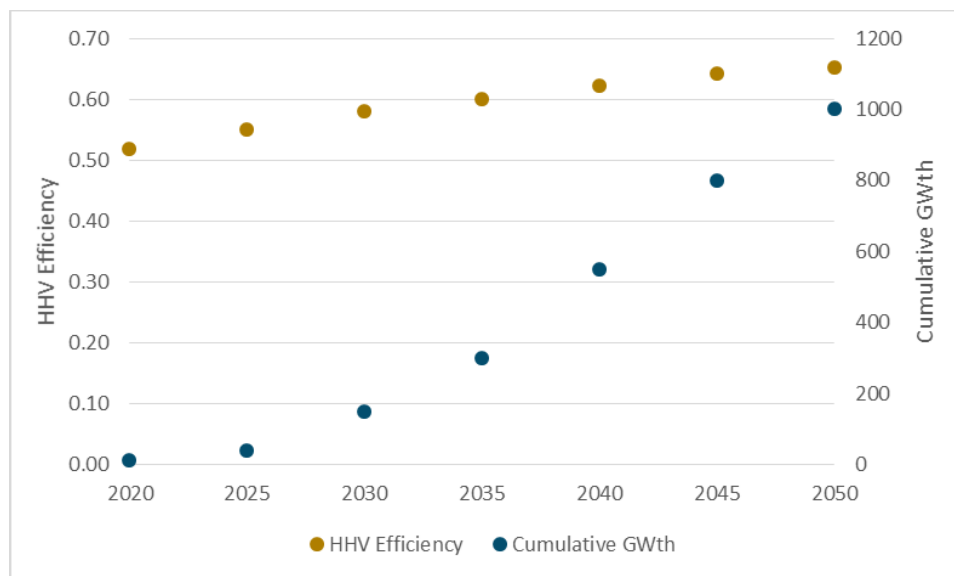


Figure 8 Projected HHV efficiency and market growth for anaerobic digesters with organic feedstocks

4.1.2.1.2 Cost

In Figure 9 and Figure 10 are the projected costs as a function of cumulative market capacity according to Wright's Law, for manure and organic feedstocks, respectively, with a 10% learning rate.

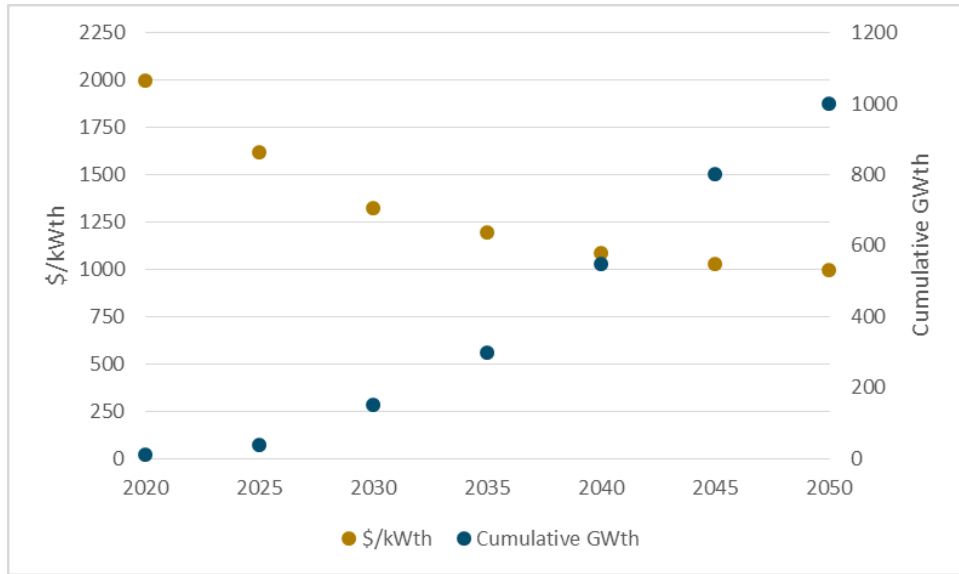


Figure 9 Projected installation cost and market size for anaerobic digesters with manure feedstocks

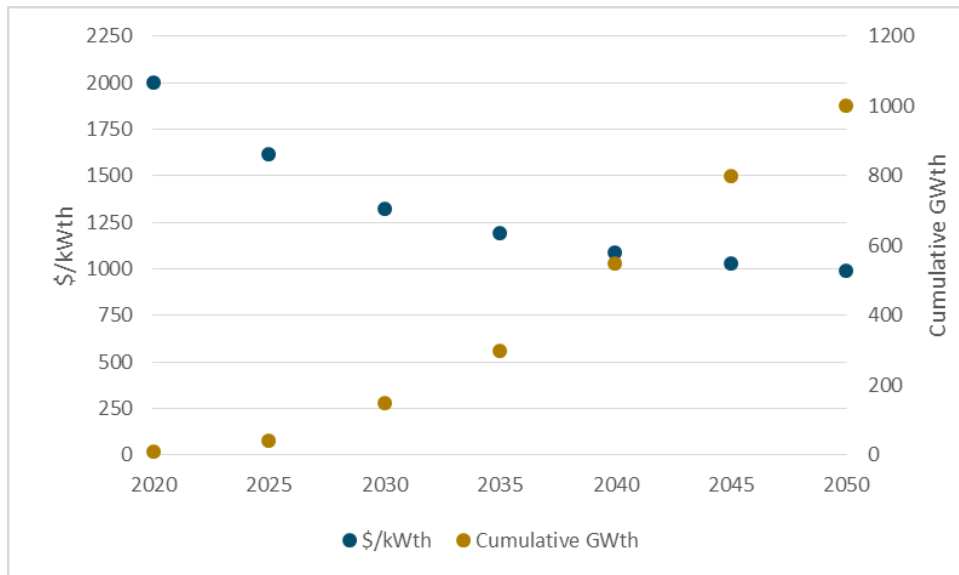


Figure 10 Projected installation cost and market size for anaerobic digesters with organic feedstocks

For this work, the efficiency and cost values from 2025 are used. The values used in the work are summarized in Table 3.

Table 3 Summary of Values Used for Anaerobic Digestion Feedstock Conversion Efficiencies

		Source
Anaerobic Digester Conversion Efficiencies [MJ _{out} /MJ _{in}]		
MSW	0.4518	[62]
Food Waste	0.5182	
Manure	0.3834	
Assumed Higher Heating Value (HHV) [GJ/dry ton]		
MSW	15.422	[63]
Food Waste	14	[62]
Manure	16.63	
SNG Cleanup & Upgrading Efficiencies [MJ _{out} /MJ _{in}]		
MSW	0.9663	[64]
Food Waste & Manure	0.9097	[64]

4.1.3 Synthetic Natural Gas to Hydrogen

Two gas post-processing technologies were considered for the pathway scenarios that have an end product of carbon-neutral hydrogen: 1) steam methane reformation (SMR) and 2) tri-generation fuel cell (TGFC). It is assumed that the conversion technologies share the same site as the AD unit. Through literature review and CA-GREET, efficiency factors were found for each post-processing pathway. Table 4 contains the efficiency values used in the biogas post-processing step.

Table 4 Summary of Values Used for SNG to Hydrogen Conversion Efficiencies

	[MJ _{out} /MJ _{in}]	Source
SMR	0.7203	[64]
TGFC	0.841	[65]
Compression & Precooling	0.9030	[64]

4.1.4 Carbon-neutral Hydrogen Delivery to Stations

The final destination of the carbon-neutral hydrogen is hydrogen fueling stations. For delivery candidate sites, a combination of the existing HRSs and gas stations in California are used, the latter dataset reduced down to high priority areas as determined by CHIT [29].



Figure 11 Candidate HRS for Carbon-neutral Hydrogen Fuel Delivery

4.1.5 Transportation

There are two transportation legs for the fuel production pathways: 1) transporting biomass from its source to the AD conversion facility and 2) transporting hydrogen fuel from the upgrading facility to the HRS. For both transportation legs, the vehicle is assumed to be a class 8 diesel truck. For hydrogen transportation, the fuel is assumed to be transported as liquid. A summary of transportation assumptions used are in Table 5.

Table 5 Summary of Values Used for Biomass and Hydrogen Transportation

		Units	Source
Biomass Transportation			
Truck Volume	162.42	m ³ /truck	[66]
MSW Density	560	kg _{as received} /m ³	[67]
Manure Density	810		
Food Waste Density	560		
Hydrogen Transportation			
Truck Capacity	4000	kgH ₂ /truck	[68]

4.2 Emission factors

Emissions factors for anaerobic digestion, gas cleanup, and trucking were sourced from the CA-GREET model. CA-GREET is a model used by the California Air Resources Board to determine the carbon intensity of fuel pathways, which assists in the administration of the state's LCFS program [64]. CA-GREET is adapted from Argonne National Laboratory's Greenhouse gases, Regulated Emissions, and Energy use in Transportation (GREET) model [69]. In the database, the emissions are divided into their respective chemical species. For the purposes of this research, the greenhouses gases CO₂, CH₄, and N₂O were considered. Each species was assigned its respective global warming potential, 1, 28, and 265, respectively [70], which were

used to calculate each category's emission factor in grams of equivalent CO₂. The negative values seen in Table 6 for AD processes are a result of the carbon sequestering nature of the process.

Table 6 Summary of Emission Factors Used

		Units	Source
AD & Gas Cleanup (MSW)	-61.95	[g CO _{2eq} / MJ _{out}]	[64]
AD & Gas Cleanup (Manure)	-84.03	[g CO _{2eq} / MJ _{out}]	[64]
Class 8 Trucking	1384.37	[g CO _{2eq} / mi]	[64]
SMR	104.20	[g CO _{2eq} / MJ _{out}]	[64]
TGFC	47.36	[g CO _{2eq} / MJ _{out}]	[71]

In order to calculate the transportation emissions, the transportation distances need to be known. A spatial analysis was done in ArcGIS to obtain trucking distances for the transportation of biomass to AD facilities and hydrogen fuel to hydrogen stations. This method helps construct a comprehensive picture of energy resources that includes the spatial dimension of the system. Given inputs of the location and quantity of the feedstocks and AD candidate locations, the Maximize Coverage tool in ArcGIS's Location-Allocation toolbox outputs several sets of data: 1) a number of Chosen facilities with each's allocated feedstock input ("Facilities") 2) the subset of feedstock demand that is assigned to a specific Chosen facility ("Demand"), and 3) the distance between the feedstock and assigned AD facility ("Lines"). The number of facilities for Maximize Coverage to choose was spanned between 1 and 100 facilities in increments of 10. These spanning scenarios were done for each of the three feedstocks. For the transportation section from the AD facilities to the HRS, a similar analysis is done, but using the Maximize Capacitated Coverage tool. The inputs are the location and H₂ outputs of the AD facilities and the candidate and existing locations for HRSs with each's capacity in kilograms of hydrogen per

day. Because of the constraints of the Location Allocation tool, any single AD facility that produces an amount of hydrogen that is less than the HRS with the minimum hydrogen demand (100 kg per day) are not considered in the analysis.

4.3 Cost factors

Cost factors for the various steps in the fuel pathways were found through literature and are summarized in Table 7.

Table 7 Summary of Cost Factors Used

		Units	Source
Anaerobic Digestion Costs			
MSW Fixed	107.88	\$/ton	[62]
MSW VOM	6.74		
Manure Fixed	133.77		
Manure VOM	8.36		
Food Waste Fixed	107.88		
Food Waste VOM	6.74		
Gas Upgrading Costs			
SMR Fixed	300	\$/ (kg/day)	
SMR VOM	5.14% of fixed		[72]
SMR Lifetime	20	years	
Tri-Generation	7092.5*(kg H2 /day) + 1000000	\$/year	[71]
Transportation Costs			
Biomass Delivery			
Truck Delivery	0.1114	\$/ton-km	[73]
Liquid Hydrogen Delivery			
Truck Delivery	1.08	\$/kg H2	[74]
Vehicle Cost	0.67	\$/mi	

5 Results

5.1 Feedstock Maps

The feedstocks considered in this analysis were MSW, animal manures, and food waste. The total amount of biomass per year, in dry tons, is summarized in Table 8. Below in Figure 12,

Figure 13, and Figure 14 are the feedstock resource maps generated in ArcGIS in which the Billion Ton report data was allocated into a 4x4km grid, weighted by land type or population data.

Table 8 Summary of biomass resources in California, in dry tons per year.

MSW	6,219,449.019
Manure	2,245,660.597
Food Waste	936,020.7356

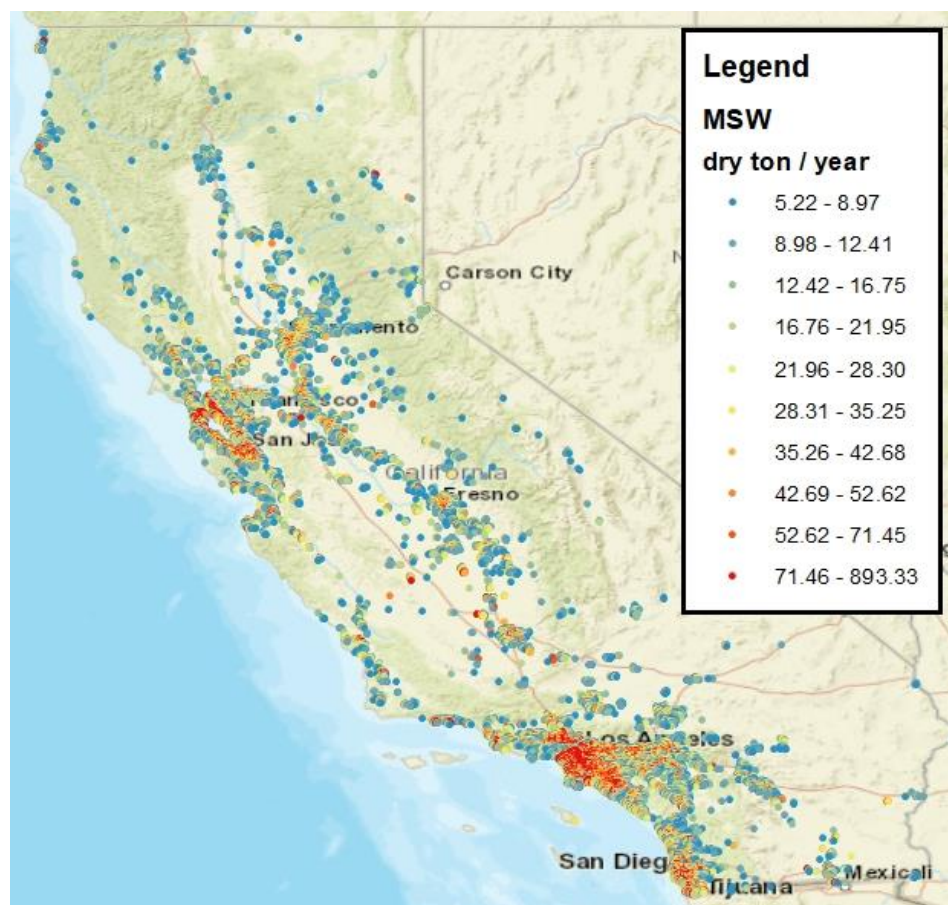


Figure 12 Map of MSW feedstock in California

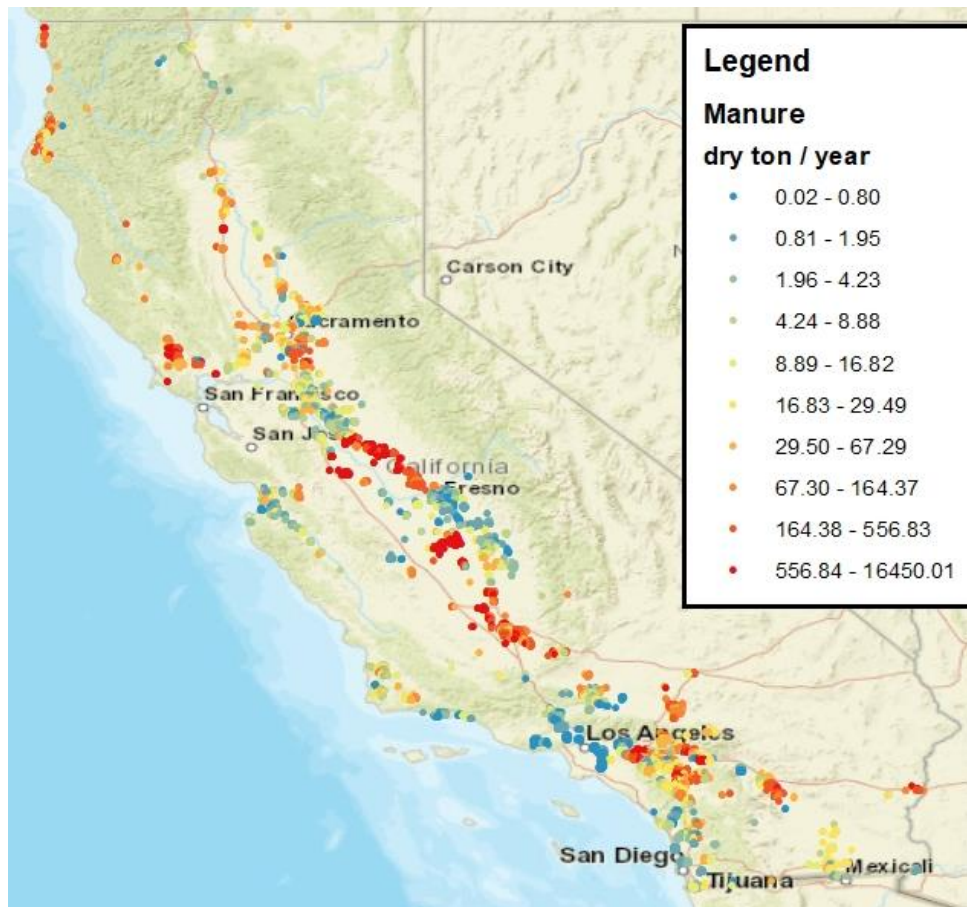


Figure 13 Map of manure feedstock in California

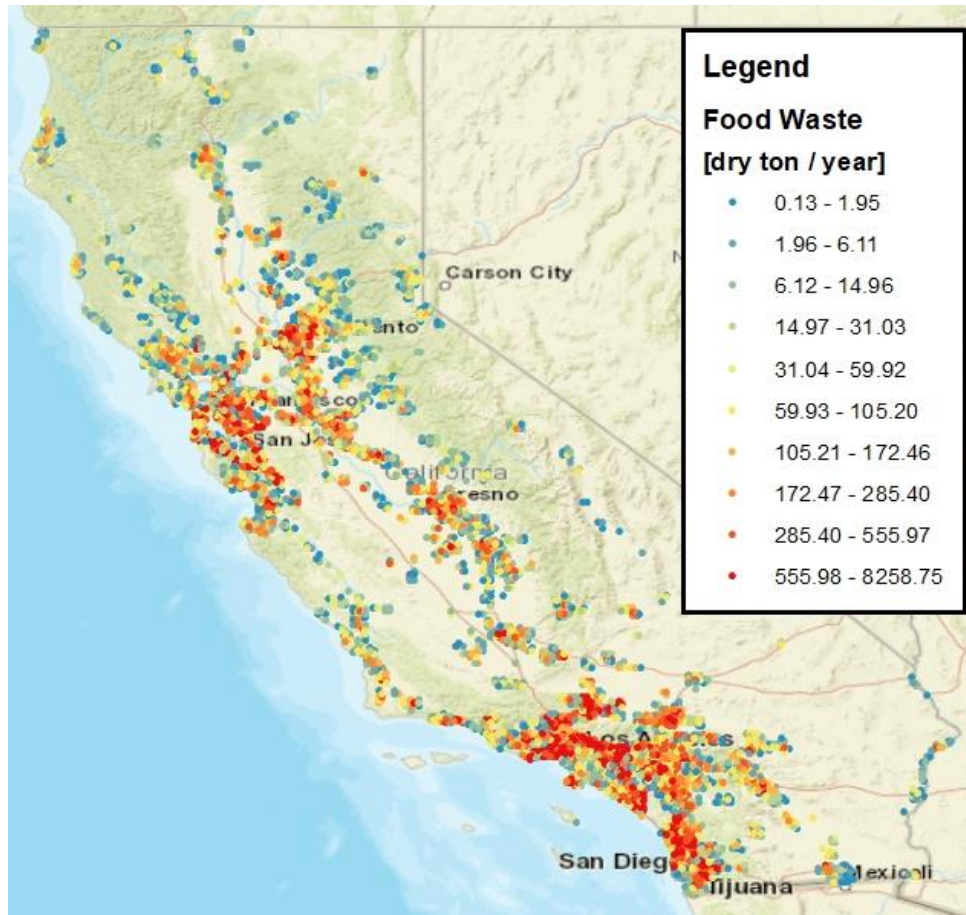


Figure 14 Map of food waste feedstock in California

The locations and weight of the resources makes sense as the MSW and food waste feedstocks will be mainly concentrated in urban areas. The manure feedstocks' location in the Central Valley makes sense, since many dairy and swine farms are located there.

5.2 Anaerobic Digester Siting

Below in Figure 15 is the map of candidate sites for AD facilities. In Figure 18, Figure 17, Figure 18 are an example of sited AD facilities for the 60 AD scenario.

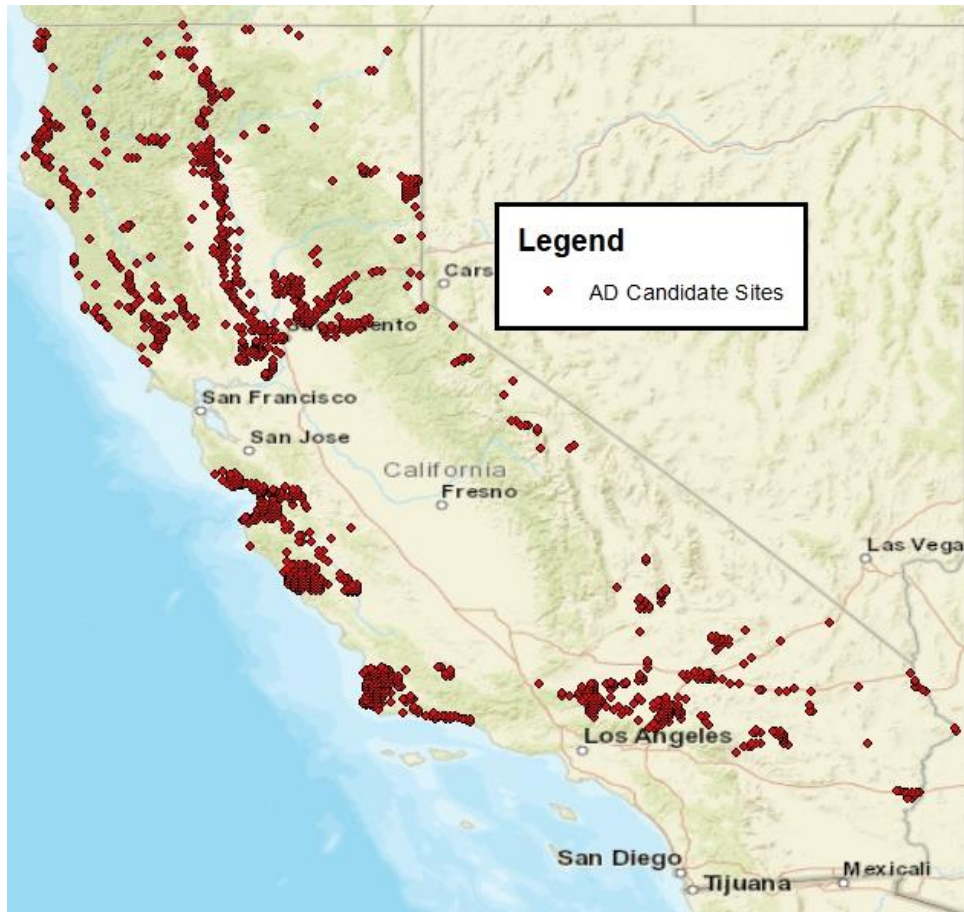


Figure 15 Map of candidate AD sites

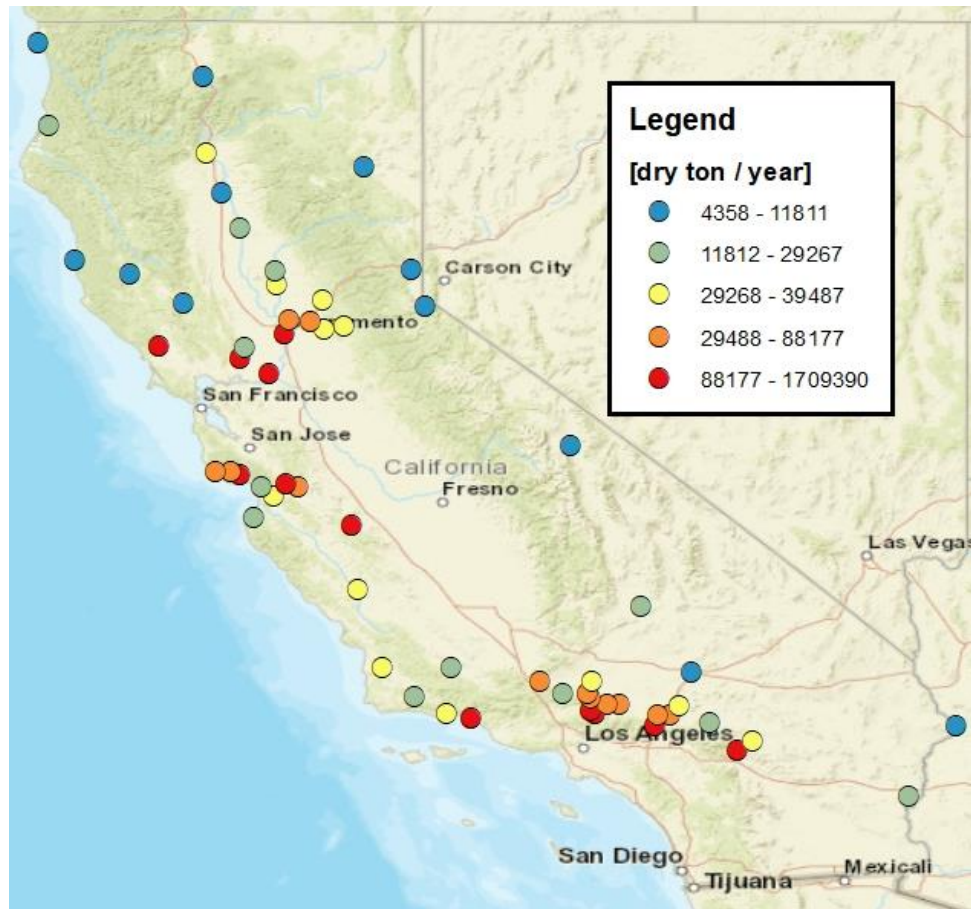


Figure 16 Map of 60 AD scenario for MSW feedstocks

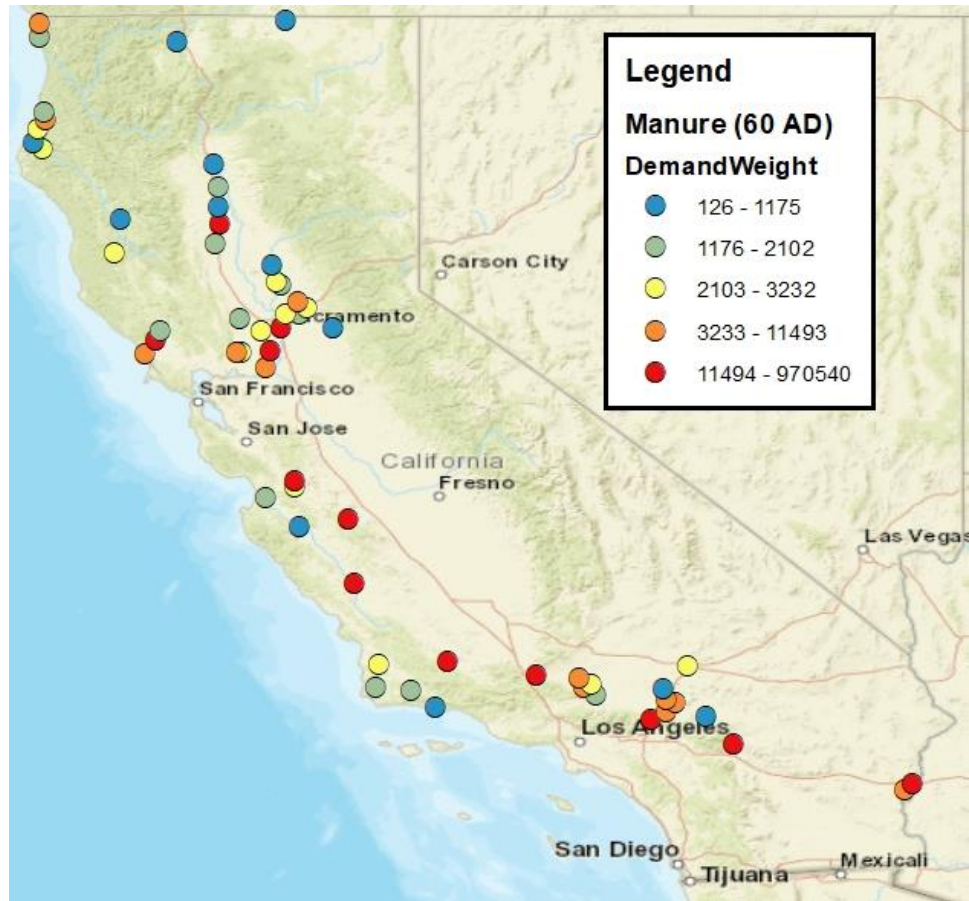


Figure 17 Map of 60 AD scenario for manure feedstocks

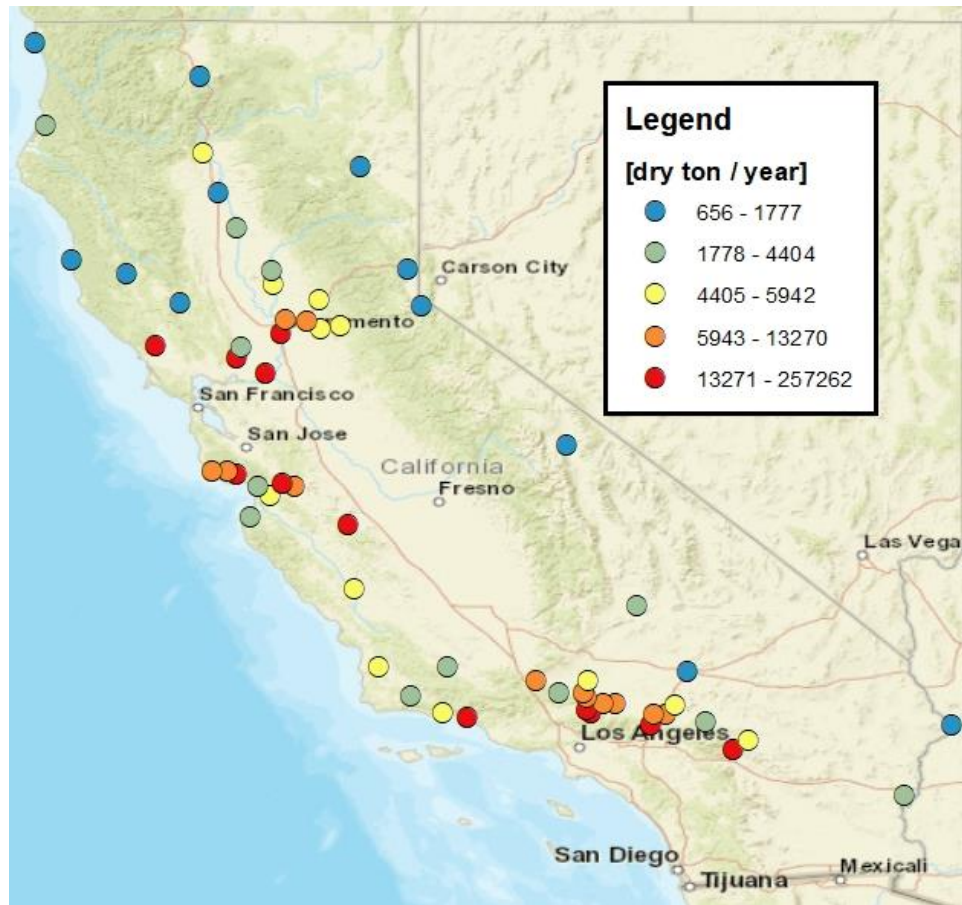


Figure 18 Map of 60 AD scenario for food waste feedstocks

The sited facilities for MSW and food waste are similar since the feedstock sources are similar. Over all three feedstocks, the facilities are predominately cited in a few regions: 1) Sacramento, 2) Monterey Bay, 3) east of the Angeles National Forest, and 4) Coastal Santa Barbara county.

5.3 Synthetic Natural Gas Production

The scale of SNG production among the feedstocks is proportional to each feedstocks quantity relative to each other, i.e. MSW had the largest amount in dry tons per year and, thereby, has the most SNG production. The difference in AD conversion efficiencies is not significant enough to change relative quantitative differences between the feedstocks. Below in

Table 9 is a summary of the total amount of synthetic natural gas produced via anaerobic digestion for each feedstock.

Table 9 Summary of SNG production results across AD scenarios in petajoules per year

MSW	41.88
Manure	13.73
Food Waste	6.96

5.4 Carbon-neutral Hydrogen Production

Between the two pathways considered for SNG-hydrogen conversion, Tri-Generation produced a higher yield due to it having a higher SNG conversion efficiency over SMR.

Table 10 Summary of RH2 production results across production pathways, in kilograms of hydrogen per day

	SMR	Tri-Generation
MSW	612,473.01	715,109.16
Manure	200,835.00	234,490.25
Food Waste	101,727.54	118,774.69

5.5 Emission Curves

The total emissions for each pathway and AD facility scenario were calculated. In the figures below, the emissions are separated between two categories: Transportation and Non-Transportation. Transportation emissions decrease the most between the 1 to 5 facilities scenarios. This is due to the drastic decrease in the total amount of miles traveled. Non-transportation-related emissions steadily increase as the number of AD facilities sited increases, that is, as the size of individual AD facilities decreases. Considering the inverse of the previous statement, that is, as the size of individual AD facilities increase, emissions decrease, this trend can be recognized as similar to the economic concept of economies of scale. Across all

pathways, the minimal emissions of GHGs per kg H₂ produced occurs at the scenarios where 5 AD facilities are sited, except for the SMR-Manure pathway, which the emissions are minimal at 10 AD facilities sited. Between the SNG-H₂ conversion pathways, tri-generation was less emissive than SMR, and among the three feedstocks, MSW and food waste were the most and least emissive, respectively. Below in Figure 19 is a summary of the total emissions for all pathways considered, across all AD facility deployment scenarios.

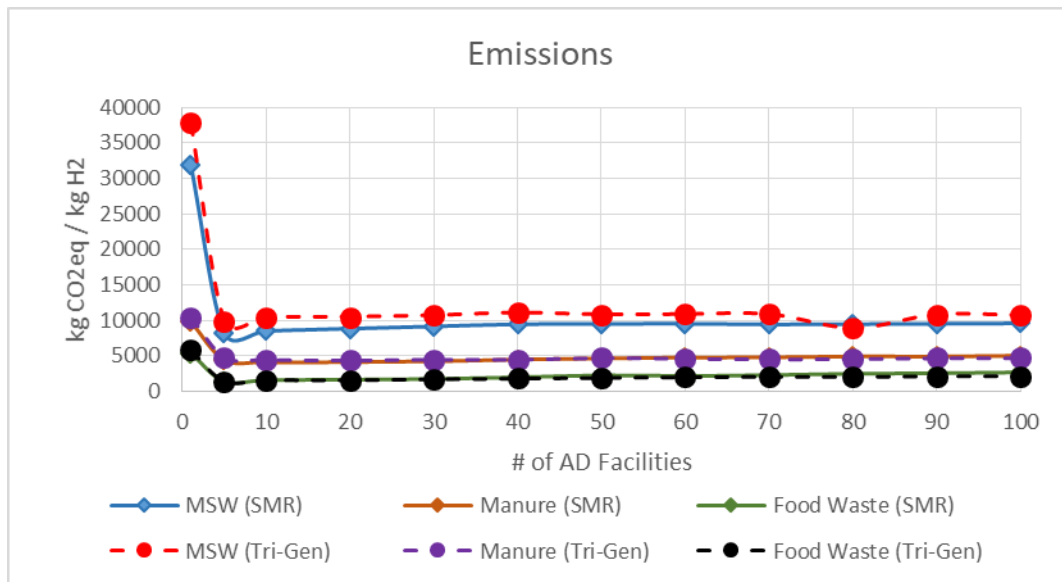


Figure 19 Summary of emissions for all pathways

Non-transportation emissions make up between 0.02 – 46.92% of total emissions, the trend being that non-transportation emissions increase in their share as the number of AD facilities sited increased. Across the feedstocks MSW, manure, and then food waste, the overall share of non-transportation emissions from the total increased. Figures 20-22 and Figures 23-25 show the contribution of transportation and non-transportation emissions for all SMR and Tri-Gen pathways, respectively.

5.5.1 Steam Methane Reformation

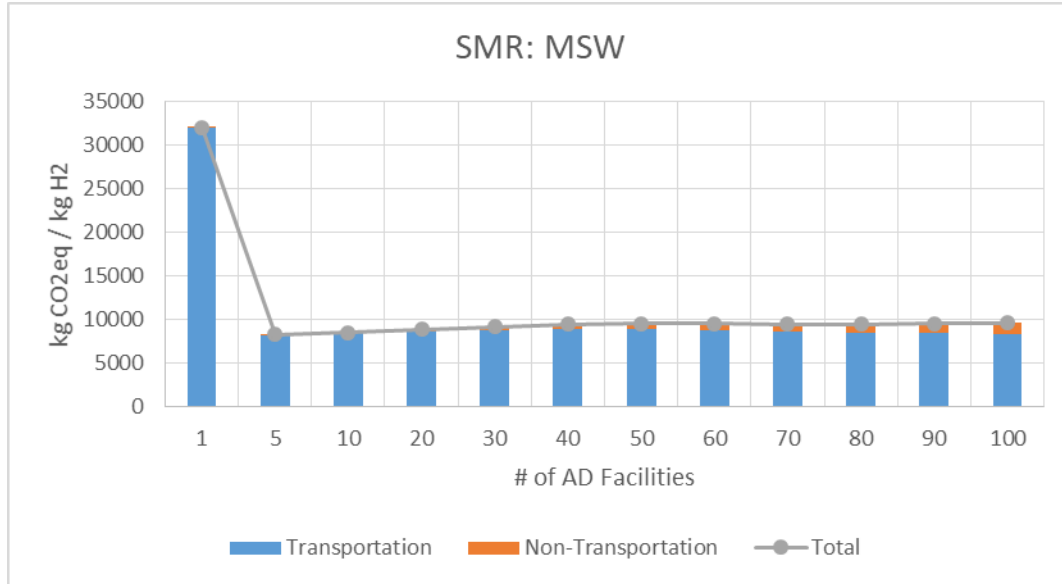


Figure 20 Total Emissions for MSW-SMR pathway

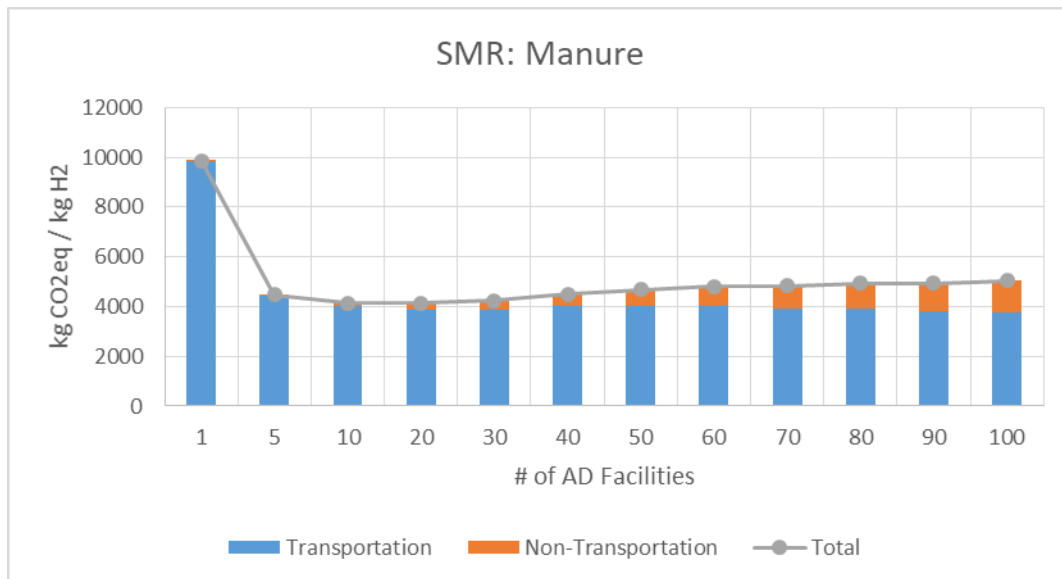


Figure 21 Total Emissions for Manure-SMR pathway

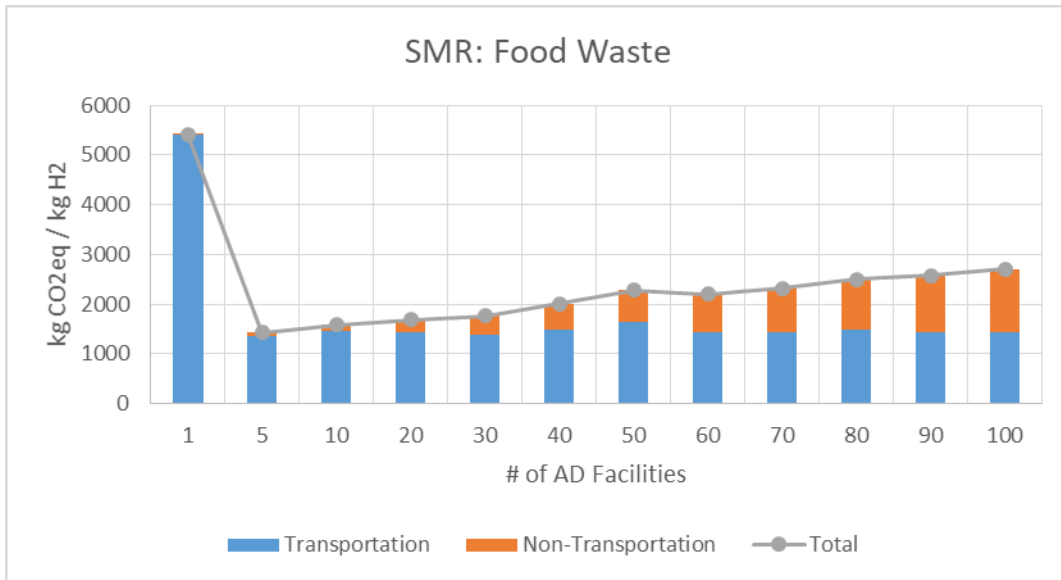


Figure 22 Total Emissions for Food Waste-SMR pathway

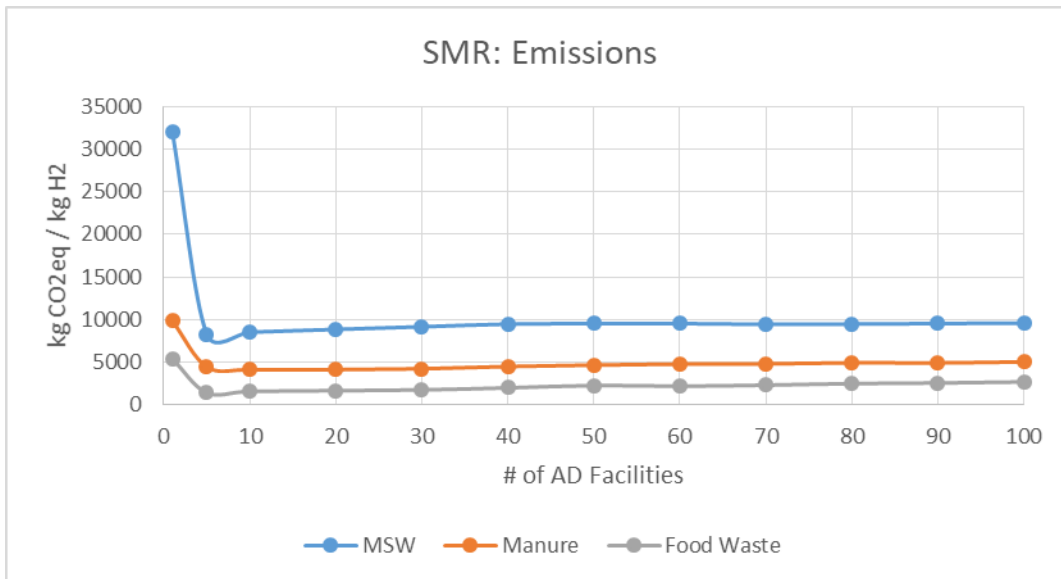


Figure 23 Summary of emissions for all SMR pathways

5.5.2 Tri-Generation

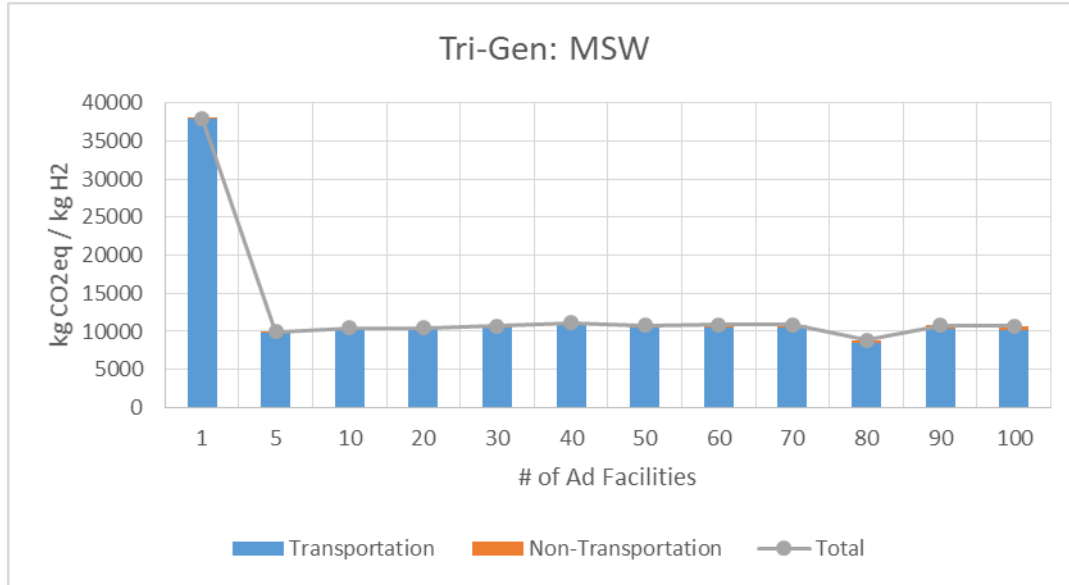


Figure 24 Total Emissions for MSW-Tri-Gen pathway

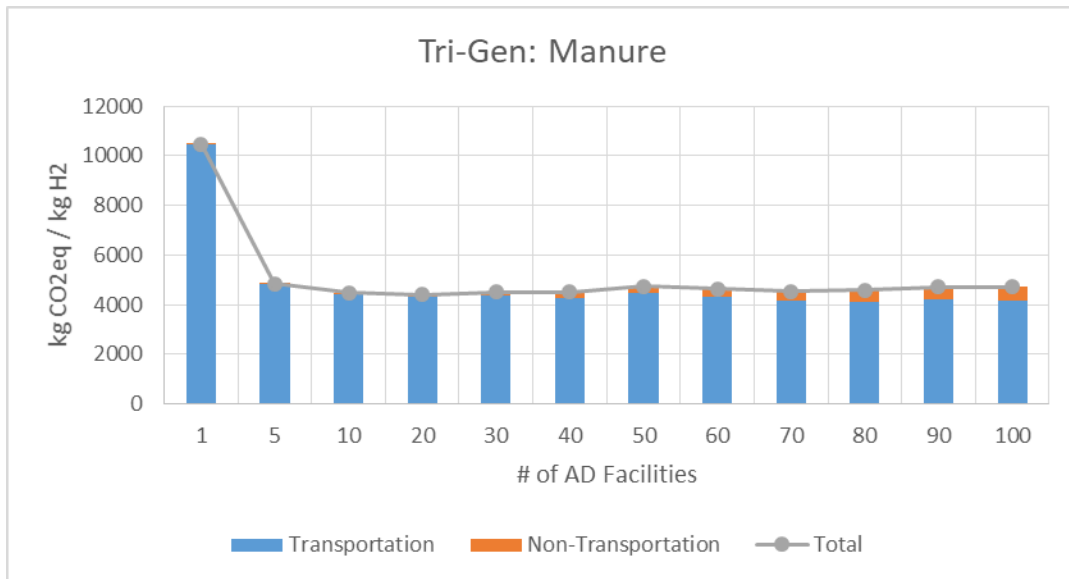


Figure 25 Total Emissions for Manure-Tri-Gen pathway

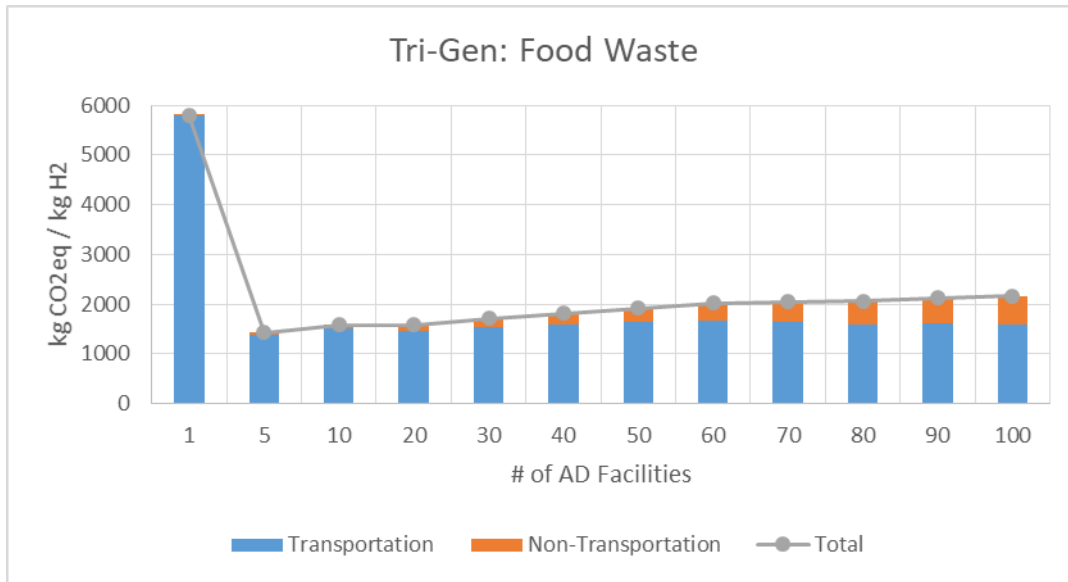


Figure 26 Total Emissions for Food Waste-Tri-Gen pathway

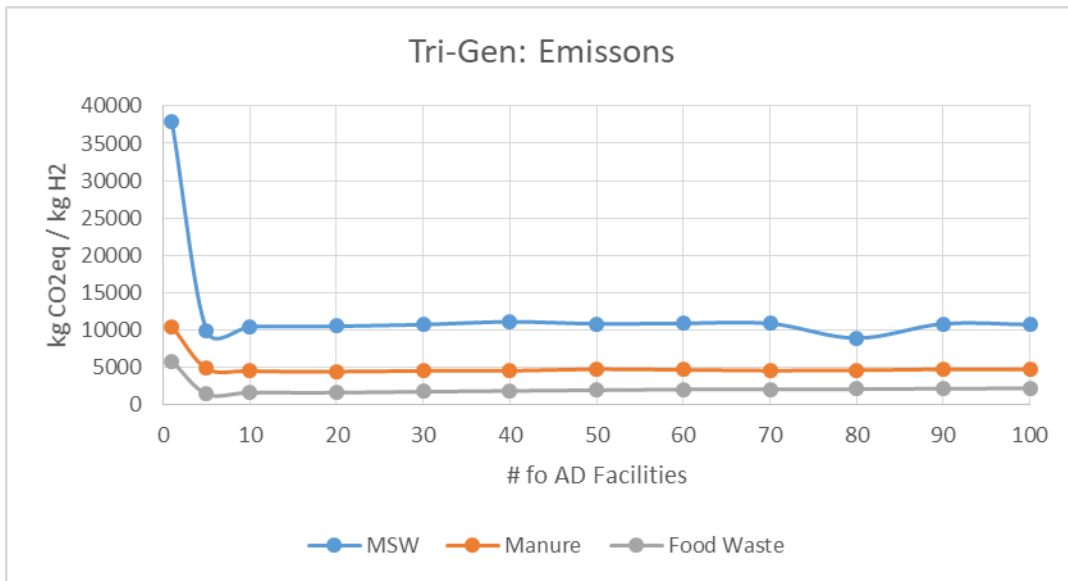


Figure 27 Summary of emissions for all Tri-Gen pathways

5.6 Cost Curves

The total cost for each pathway and AD scenario were calculated. In the figures below, the costs are separated between two categories: Transportation and Non-Transportation.

Transportation costs greatly decrease between the 1 to 5 facilities scenarios, then incrementally decrease until the 100 facilities scenario. Across all pathways, the minimal cost per kg H₂ produced occurs at the scenarios where 100 AD facilities are sited. But the decrease in cost is only between 1.1 – 8.3% between the 5 and 100 AD facilities scenarios. Between the SNG-H₂ conversion pathways, tri-generation cost less per kilogram of hydrogen produced than SMR, and among the three feedstocks, manure and food waste were the most and least expensive per kilogram of hydrogen produced, respectively. Below in Figure 28 is a summary of the total costs for all pathways considered, across all AD facility deployment scenarios.

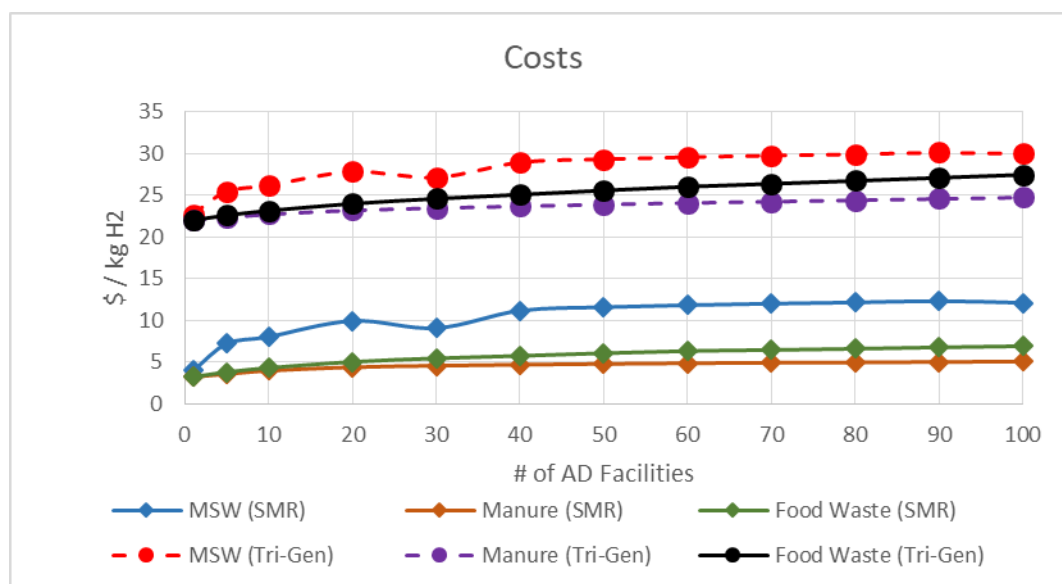


Figure 28 Summary of costs for all pathways

Non-transportation costs make up between 0.02 – 0.6% of total cost. Across the feedstocks manure, MSW, and then food waste, the overall share of non-transportation costs from the total increased. Figures 29-31 and Figures 33-35 show the contribution of transportation and non-transportation costs for all SMR and Tri-Gen pathways, respectively.

5.6.1 Steam Methane Reformation

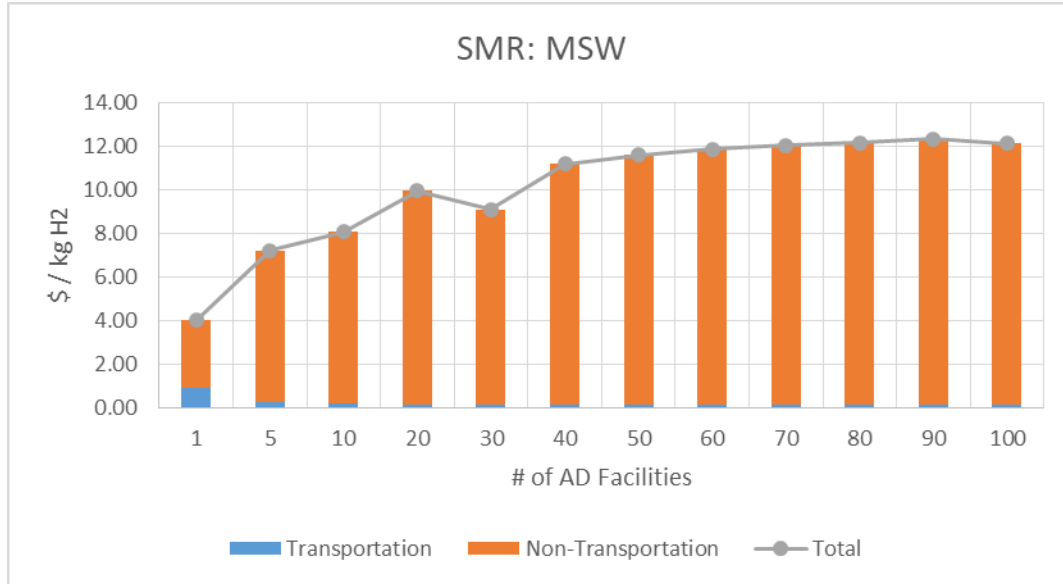


Figure 29 Total cost for MSW-SMR pathway

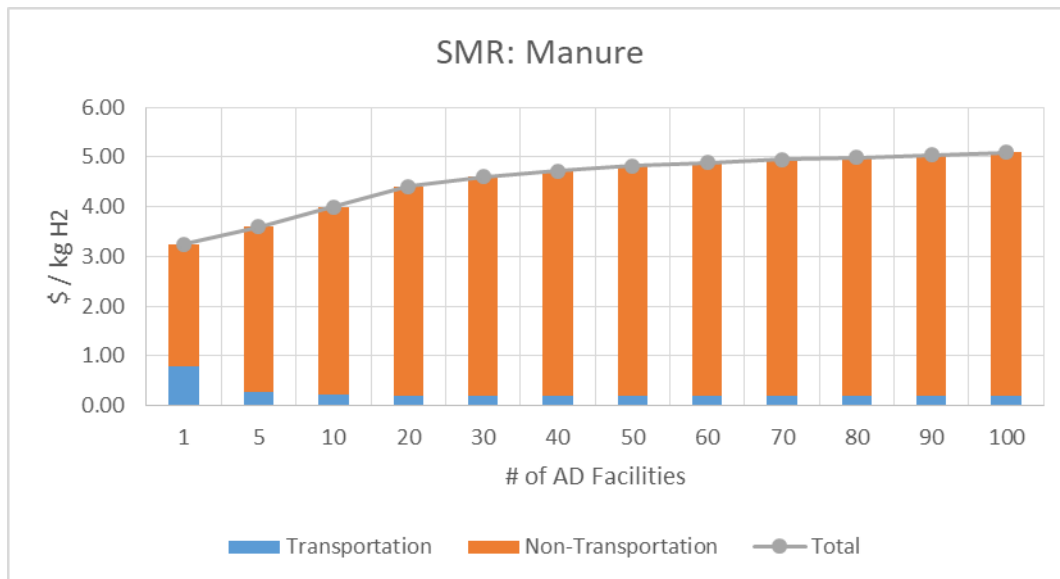


Figure 30 Total cost for Manure-SMR pathway

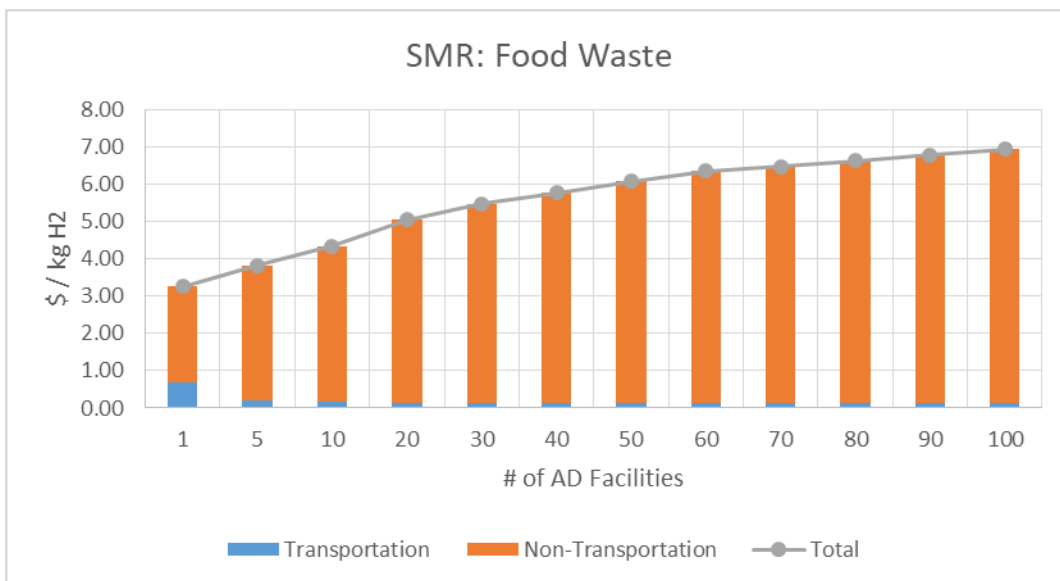


Figure 31 Total cost for Food Waste-SMR pathway

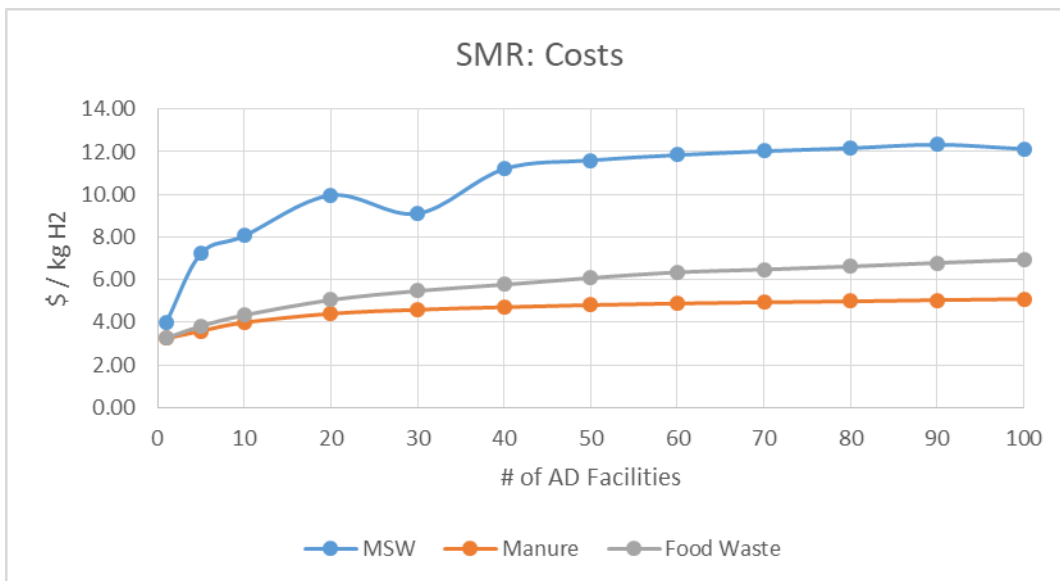


Figure 32 Summary of costs for all SMR pathways

5.6.1 Tri-Generation

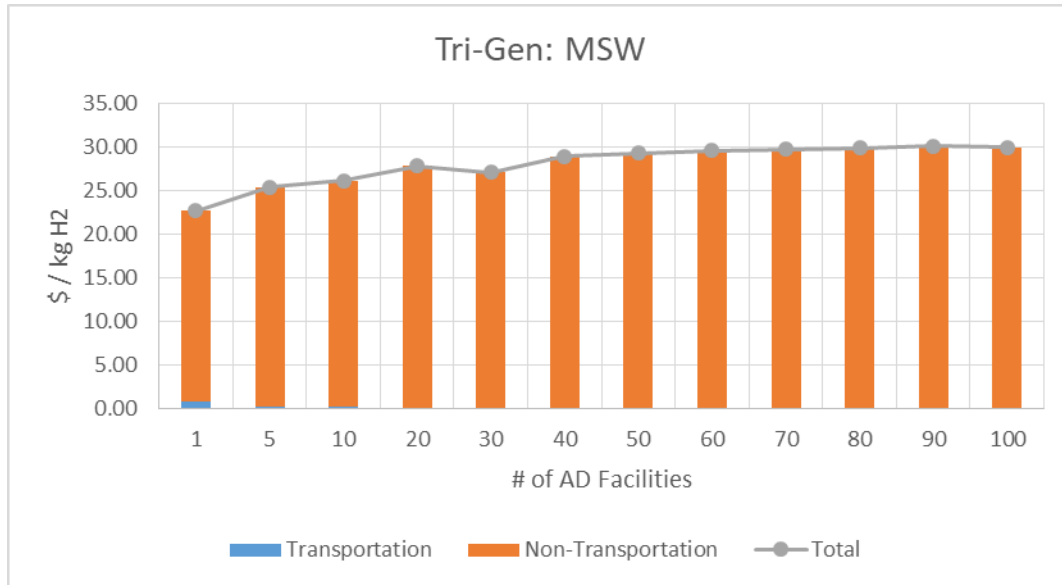


Figure 33 Total cost for MSW-Tri-Gen pathway

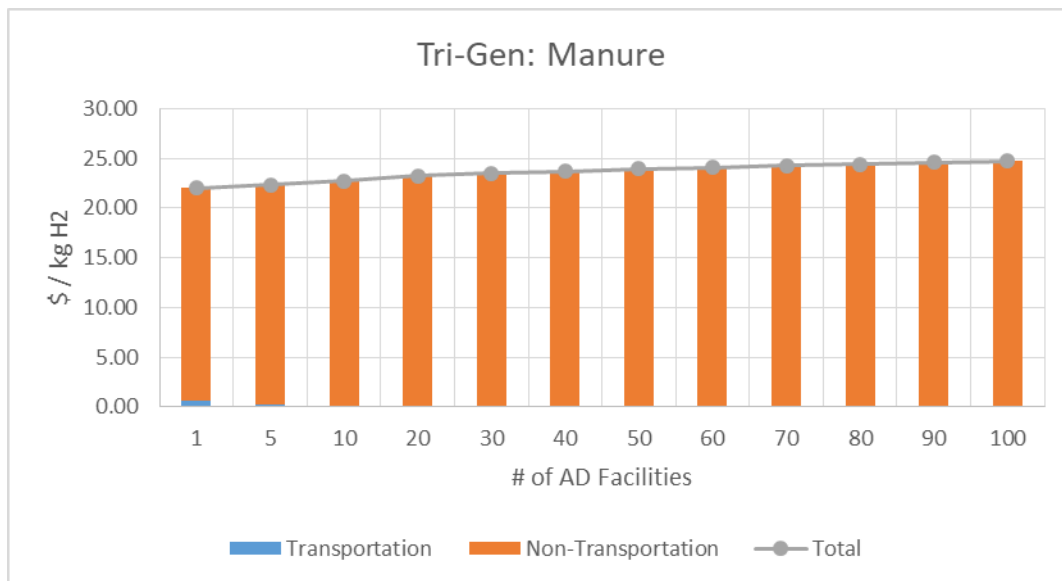


Figure 34 Total cost for Manure-Tri-Gen pathway

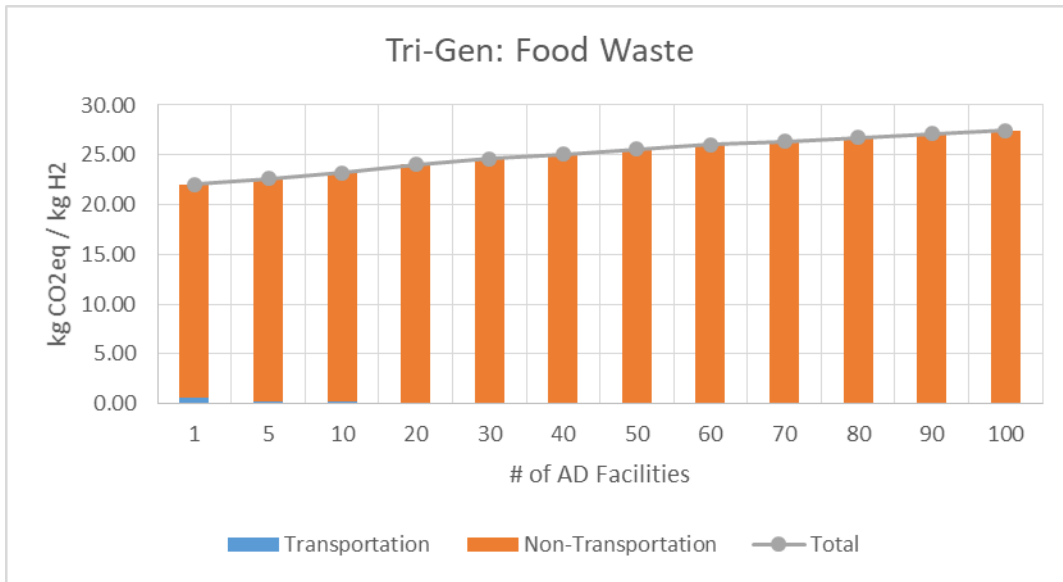


Figure 35 Total cost of Food Waste-Tri-Gen pathway

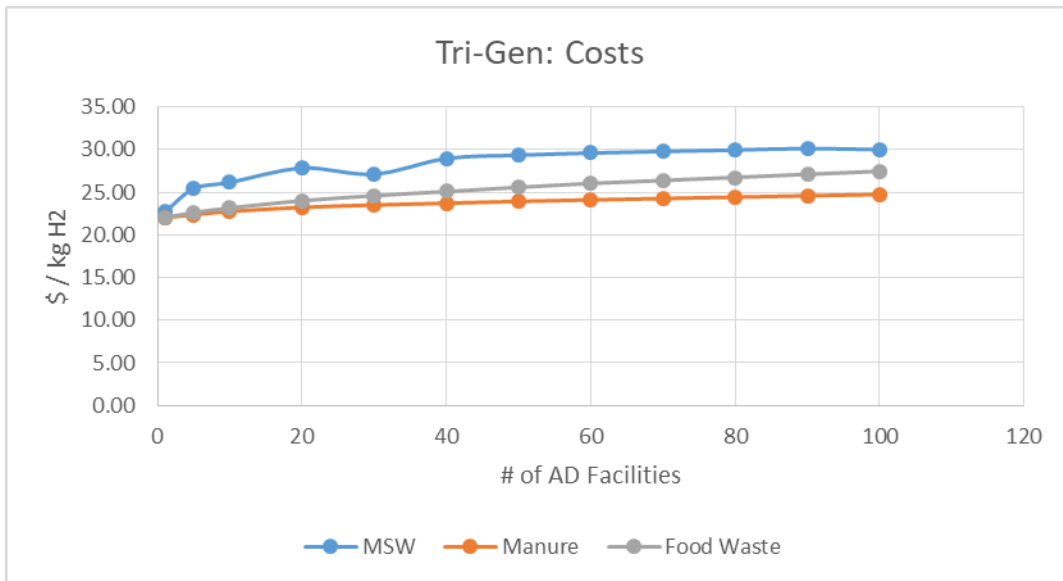


Figure 36 Summary of costs for all Tri-Gen pathways

6 Summary and Conclusions

6.1 Summary

Due to a large share of California's GHG emissions coming from light duty vehicles, the need is clear for the increased adoption of AFVs and zero emission vehicles (ZEVs) in order to reduce GHG emissions from the light duty transportation sector. In this thesis, carbon-neutral hydrogen production pathways sourced from biomass (municipal solid waste, animal manures, and food waste) are examined for one type of ZEV, the FCEV. In particular, the carbon-neutral hydrogen production pathways analyzed are converted to substitute natural gas (SNG) via anaerobic digestion. For the conversion of SNG to hydrogen, two technologies are considered: steam methane reformation and tri-generation. The six pathways were spanned across a range of anaerobic digestion facilities sited, from 1 to 100 in increments of 10. The range of AD facility scenarios allowed the analysis to take into account the emissions and cost effects of geography of the biomass resources, AD facilities, and hydrogen stations. Using GIS software, the geography-dependence of transporting biomass to AD facilities and hydrogen fuel to stations was analyzed. Using emission and cost factors found in literature, the total emissions and cost of each pathway, across all AD facility scenarios, were calculated.

It was found that across all biomass feedstocks, tri-generation pathways cost more but are less emissive than steam methane reformation pathways for carbon-neutral hydrogen production, disregarding the contribution of transportation. Compared to the non-transportation factors in the production pathways, transportation by class 8 diesel truck contributes between 53.08 – 99.96% and 73.39 – 99.98% of carbon dioxide equivalent emissions on a per kilogram of hydrogen produced basis, for SMR and TGFC, respectively. As for the cost on a per kilogram of hydrogen

produced basis, transportation contributes between 1.16 – 24.01% and 0.39 – 3.07%, for SMR and TGFC, respectively.

Overall, the optimal scenario when both cost and emissions are minimized occurs in the 5 AD scenario across all feedstocks. As the number of sited facilities increases, transportation-related emissions decrease while non-transportation-related emissions (i.e. fuel processing-related) increases. At 5 AD facilities sited, the sum of these opposing trends is minimized. Even though cost is minimized at the largest siting scenario, 100 AD facilities, the decrease in cost from the 5 to 100 AD facilities scenarios ranges from 1.1 – 8.3%. The emissions increase between the same scenarios ranges from 7 – 51%. Since the increase in emissions is larger than the cost reduction, the 5 AD facilities scenario can be considered the optimal to minimize both emissions and cost. Below in Figure 37 is a map of the 5 AD facilities sited for MSW, manures, and food waste. Since the MSW and food facilities were sited in the same location, they are represented by the same symbol. The sizes of the facilities in this scenario are summarized in Table 11.



Figure 37 Five AD facilities sited scenario for all feedstocks

Table 11 Summary of AD facility sizes for 5 AD facilities scenarios across all feedstocks.

	SMR [kg H₂/day]		Tri-Gen [kg H₂/day]	
	Facilities	Total	Facilities	Total
MSW	209,364.6	1,243,889.8	244,449.2	715,108.2
	155,394.9		181,435.5	
	39,330.3		45,921.2	
	104,067.5		121,506.8	
	104,315.7		121,796.5	
Manure	97,100.7	200,835.0	113,372.5	234,490.2
	18,223.7		21,277.6	
	62,333.3		72,778.9	
	8,223.7		9,601.8	
	14,953.6		17,459.5	
Food Waste	34,774.1	101,727.5	40,601.4	118,774.7
	25,810.0		30,135.2	
	6,532.4		7,627.1	
	17,284.9		20,181.4	
	17,326.1		20,229.6	

6.2 Conclusions

1. Building five anaerobic digestion facilities minimizes the emissions of biomass-anaerobic digestion carbon-neutral hydrogen fuel production pathways.

When taking into consideration the effects of geographic-dependent transportation distances on emissions and cost, building 5 AD facilities is optimal for minimizing both cost and emissions.

The cost is at the absolute minimum in the 100 AD facilities scenario, not in the 5 AD facilities scenario, but the increase in emissions that occurs from 5 to 100 AD facilities is an order of magnitude larger than the cost reduction between the two scenarios.

2. A sufficient amount of biomass in California is available to produce a significant amount of carbon-neutral hydrogen fuel for the state's growing fuel demand.

When compared to the magnitude of hydrogen production facilities in California, like the southern California Fill Station in Wilmington, which provides 4,000 kg/day, the biomass

facilities sized in this thesis for the 5 AD scenario are of similar size or at least an order of magnitude larger. Given that this result is for each feedstock individually, the co-digestion of all three feedstocks considered would only increase the AD facility sizes and amount of carbon-neutral hydrogen produced.

3. Steam methane reformation (SMR) is the less expensive method of producing hydrogen when compared to the tri-generation fuel cell (TRFC), without economic incentives or additional pricing

Across all scenarios, SMR is cheaper on a per kilogram of hydrogen produced than TGFC. However, this analysis does not include policies or economic incentives that would change these values. One such program would be California's Low Carbon Fuel Standard Program, which incentivizes low-carbon fuel production. Depending on the carbon intensity of the SMR- and TGFC-hydrogen production pathways, TGFC could turn out to be favorable economically.

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APPENDIX A: MSW Pathways Calculations

Fuel Production

	Feedstock to AD			SNG	SNG to RH2					
Scenario	Demand [dt/yr]	Distance [mi]	# of Trucks / yr	SNG Output [GJ/yr]	SMR/PSA [GJ/yr]	# of Trucks	Tri-Gen/PSA [GJ/yr]	# of Trucks	SMR/PSA [kg/day]	Tri-Gen/PSA [kg/day]
1	6219449.019	1021170.435	284289	41876631	27238543	55889	31803085.66	65254	612473	715109.1646
5	2126024.209	86693.01041	97180	14314890	9311082	19105	10871401.92	22306	209364.6	244449.2094
	1577981.017	42546.13727	72129	10624820	6910886	14180	8068988.959	16556	155394.9	181435.475
	399385.8642	57563.25362	18256	2689134.4	1749140	3589	2042255.321	4191	39330.34	45921.18865
	1056768.791	18465.69983	48305	7115407.8	4628198	9497	5403775.846	11088	104067.5	121506.7516
	1059289.138	145942.3672	48420	7132377.8	4639236	9519	5416663.611	11114	104315.7	121796.5399
10	202859.5587	21691.50672	9273	1365888.6	888438.6	1823	1037320.171	2129	19977.01	23324.69148
	1923164.65	49555.30498	87908	12949002	8422644	17282	9834081.751	20178	189387.6	221124.5179
	1321368.791	28199.64699	60400	8897005.6	5787034	11874	6756805.099	13864	130124.5	151930.3284
	289053.4895	12581.63695	13213	1946247.4	1265931	2598	1478071.909	3033	28465.14	33235.22691
	350122.4474	47074.31818	16004	2357435.3	1533387	3147	1790347.369	3674	34479.03	40256.90541
	747978.8164	12228.1889	34190	5036271.3	3275829	6722	3824781.632	7848	73658.75	86002.23346
	666300.102	20913.48816	30457	4486314.3	2918111	5988	3407118.404	6991	65615.27	76610.85537
	429537.1662	26865.99874	19634	2892148.4	1881190	3860	2196433.679	4507	42299.55	49387.9704
	177310.6884	14660.94216	8105	1193863.7	776545.4	1594	906676.2978	1861	17461.03	20387.09504
	111753.3094	25428.42605	5109	752454.44	489432	1005	571449.3456	1173	11005.14	12849.34011
20	31955.91426	5833.424441	1461	215164.72	139953.3	288	163406.2239	336	3146.924	3674.275178
	170903.6444	10356.36952	7812	1150723.9	748485.3	1536	873913.9475	1794	16830.09	19650.4163

	1874263.24	45925.84295	85672	12619740	8208476	16843	9584024.918	19665	184571.9	215501.8581
	376693.2592	6131.800126	17219	2536341.1	1649756	3385	1926216.929	3953	37095.64	43312.00418
	643635.6706	4266.117868	29421	4333710.8	2818851	5784	3291224.079	6753	63383.34	74004.9103
	236196.3169	2527.461909	10797	1590350.8	1034439	2123	1207787.326	2479	23259.92	27157.73541
	230438.2933	3595.433222	10534	1551581.1	1009222	2071	1178343.734	2418	22692.88	26495.68072
	119592.0345	13336.3396	5467	805233.94	523762.3	1075	611532.5821	1255	11777.07	13750.63284
	73685.99207	4955.857486	3369	496140.58	322713.3	663	376792.5279	774	7256.379	8472.378835
	34915.91211	5092.869234	1596	235094.9	152916.9	314	178542.141	367	3438.416	4014.614263
	275777.5025	30339.65364	12606	1856857.8	1207788	2479	1410185.293	2894	27157.76	31708.76051
	229887.9199	6621.877143	10509	1547875.3	1006811	2066	1175529.406	2412	22638.68	26432.39905
	522684.1573	6824.977092	23892	3519323.2	2289134	4697	2672739.816	5484	51472.4	60097.96526
	391231.3839	12546.17495	17884	2634228.9	1713427	3516	2000557.474	4105	38527.31	44983.59055
	318903.1039	4873.276132	14577	2147230	1396660	2866	1630707.592	3346	31404.64	36667.32077
	361967.3403	17494.88146	16546	2437189	1585263	3253	1850916.101	3798	35645.48	41618.82533
	156653.462	13698.24256	7161	1054775	686075.6	1408	801045.793	1644	15426.77	18011.93739
	83881.42038	8209.777262	3835	564788.17	367365	754	428926.7409	881	8260.395	9644.644127
	58148.32992	9523.250739	2658	391522.81	254665	523	297340.8596	611	5726.276	6685.866144
	28034.12076	2612.145847	1282	188758.6	122777.5	252	143352.1749	295	2760.718	3223.349305
30	31955.91426	5833.424441	1461	215164.72	139953.3	288	163406.2239	336	3146.924	3674.275178
	170903.6444	10356.36952	7812	1150723.9	748485.3	1536	873913.9475	1794	16830.09	19650.4163
	1738421.094	42437.03324	79463	11705091	7613545	15622	8889397.565	18240	171194.6	199882.7955
	136357.3301	2463.577683	6233	918117.59	597187.1	1226	697261.7406	1431	13428.07	15678.2982
	374714.1366	6117.548799	17129	2523015.4	1641089	3368	1916096.707	3932	36900.74	43084.44564

	594467.2469	4008.197867	27173	4002651.2	2603514	5342	3039801.873	6238	58541.38	68351.54931
	102268.1689	225.1993734	4675	688589.35	447891.1	919	522947.1817	1073	10071.07	11758.74336
	185405.423	2216.437574	8475	1248366.9	811996.9	1667	948068.6362	1946	18258.18	21317.82361
	230438.2933	3595.433222	10534	1551581.1	1009222	2071	1178343.734	2418	22692.88	26495.68072
	117808.6908	12890.79415	5385	793226.38	515952	1059	602413.4731	1237	11601.45	13545.58486
	49894.73884	1455.851437	2281	335949.94	218517.7	449	255136.2104	524	4913.487	5736.872334
	29462.60966	2048.85261	1347	198376.87	129033.7	265	150656.7376	310	2901.391	3387.596251
	33880.3634	3505.031384	1549	228122.37	148381.6	305	173246.8738	356	3336.438	3895.547386
	266602.3431	28484.28002	12187	1795079.9	1167605	2396	1363268.214	2798	26254.21	30653.80522
	5453.302454	681.1837159	250	36718.033	23883.15	50	27885.40344	58	537.0252	627.0180124
	78761.58873	1580.30995	3601	530315.46	344942.3	708	402746.5368	827	7756.209	9055.968423
	163510.5198	3933.354965	7475	1100944.7	716106.6	1470	836109.2845	1716	16102.03	18800.3585
	510324.4493	6416.342775	23327	3436103.2	2235004	4586	2609538.582	5355	50255.25	58676.85216
	379826.3939	12219.76147	17362	2557437.1	1663478	3414	1942238.18	3986	37404.18	43672.25045
	311068.342	4601.783941	14219	2094477.2	1362347	2796	1590644.621	3264	30633.09	35766.48373
	171157.2847	1241.945684	7824	1152431.7	749596.1	1539	875210.9343	1796	16855.06	19679.57974
	195739.2682	10851.72996	8948	1317946.5	857254.8	1759	1000910.642	2054	19275.83	22506.00401
	134224.3334	5687.681699	6136	903755.75	587845.5	1207	686354.685	1409	13218.02	15433.0473
	16012.55541	1915.721191	732	107815.32	70128.19	144	81880.02986	169	1576.869	1841.115682
	55601.35412	2772.407822	2542	374373.58	243510.3	500	284316.9262	584	5475.457	6393.016129
	22429.12864	3670.10757	1026	151019.22	98230.05	202	114691.1081	236	2208.754	2578.890091
	29762.3593	1146.698824	1361	200395.14	130346.5	268	152189.5042	313	2930.909	3422.061316
	9594.926267	2049.626877	439	64604.305	42021.7	87	49063.55226	101	944.8801	1103.219865

	45369.09461	6264.461345	2074	305477.99	198697.3	408	231994.3773	477	4467.815	5216.516004
	28034.12076	2612.145847	1282	188758.6	122777.5	252	143352.1749	295	2760.718	3223.349305
40	31955.91426	5833.424441	1461	215164.72	139953.3	288	163406.2239	336	3146.924	3674.275178
	139417.6864	9246.062921	6373	938723.5	610590.2	1253	712910.8399	1463	13729.44	16030.17646
	31485.958	539.9390412	1440	212000.42	137895.1	283	161003.1076	331	3100.644	3620.23984
	17368.18196	539.3910963	794	116942.99	76065.25	157	88812.01161	183	1710.367	1996.98495
	1742144.496	42322.00136	79633	11730162	7629852	15655	8908437.139	18279	171561.3	200310.9103
	115265.7465	1370.876281	5269	776104.29	504815	1036	589410.155	1210	11351.03	13253.19839
	374714.1366	6117.548799	17129	2523015.4	1641089	3368	1916096.707	3932	36900.74	43084.44564
	594467.2469	4008.197867	27173	4002651.2	2603514	5342	3039801.873	6238	58541.38	68351.54931
	102268.1689	225.1993734	4675	688589.35	447891.1	919	522947.1817	1073	10071.07	11758.74336
	185405.423	2216.437574	8475	1248366.9	811996.9	1667	948068.6362	1946	18258.18	21317.82361
	194392.3221	3174.190919	8886	1308877.3	851355.7	1747	994023.0479	2040	19143.18	22351.13281
	45586.17385	347.0979078	2084	306939.63	199648.1	410	233104.4096	479	4489.192	5241.475667
	117808.6908	12890.79415	5385	793226.38	515952	1059	602413.4731	1237	11601.45	13545.58486
	40407.30917	1212.160603	1848	272069.43	176966.8	364	206622.3408	424	3979.193	4646.012375
	29462.60966	2048.85261	1347	198376.87	129033.7	265	150656.7376	310	2901.391	3387.596251
	33827.5905	3461.566976	1547	227767.04	148150.5	304	172977.0202	355	3331.241	3889.479584
	266602.3431	28484.28002	12187	1795079.9	1167605	2396	1363268.214	2798	26254.21	30653.80522
	26561.48297	781.0013248	1215	178843.08	116328	239	135821.8574	279	2615.697	3054.026142
	5453.302454	681.1837159	250	36718.033	23883.15	50	27885.40344	58	537.0252	627.0180124
	61315.40382	566.573787	2803	412847.26	268535.4	551	313535.6579	644	6038.16	7050.014731
	161139.4321	3842.294873	7366	1084979.8	705722.2	1449	823984.7529	1691	15868.54	18527.73201

	451185.4352	4920.463901	20624	3037909.9	1976000	4055	2307131.87	4734	44431.41	51877.07764
	53142.64686	1345.859694	2430	357818.67	232742.2	478	271744.3531	558	5233.331	6110.315188
	374939.7447	10346.37014	17139	2524534.4	1642077	3370	1917250.352	3934	36922.96	43110.38595
	310320.4989	4427.906001	14185	2089441.8	1359072	2789	1586820.533	3256	30559.45	35680.4971
	54753.14751	7642.05154	2503	368662.45	239795.5	493	279979.6308	575	5391.929	6295.489754
	164793.5542	1130.549876	7533	1109583.6	721725.7	1481	842670.0667	1729	16228.38	18947.88115
	128386.4055	669.03841	5869	864447.97	562277.9	1154	656502.5037	1348	12643.11	14761.80525
	131564.6167	4818.650624	6014	885847.42	576197.1	1183	672754.2521	1381	12956.1	15127.23439
	30513.52035	1673.514691	1395	205452.83	133636.2	275	156030.5581	321	3004.882	3508.429442
	16012.55541	1915.721191	732	107815.32	70128.19	144	81880.02986	169	1576.869	1841.115682
	48937.92859	1768.166629	2237	329507.57	214327.3	440	250243.5714	514	4819.263	5626.858765
	15235.54691	1616.220864	697	102583.58	66725.22	137	77906.80527	160	1500.352	1751.77563
	29762.3593	1146.698824	1361	200395.14	130346.5	268	152189.5042	313	2930.909	3422.061316
	10183.61588	1634.441048	466	68568.055	44599.91	92	52073.81027	107	1002.852	1170.907105
	9505.379657	1907.230928	435	64001.372	41629.52	86	48605.65663	100	936.0618	1092.92384
	38399.72524	1969.408316	1756	258552.02	168174.5	346	196356.582	403	3781.492	4415.18137
	22309.68334	747.4125428	1020	150214.97	97706.93	201	114080.3258	235	2196.992	2565.15633
	7058.915979	1679.625168	323	47528.907	30915.05	64	36095.69093	75	695.1412	811.6306594
	5394.119979	533.557424	247	36319.547	23623.95	49	27582.77449	57	531.197	620.2132407
50	25955.98627	4412.212021	1187	174766.16	113676.2	234	132725.6566	273	2556.069	2984.406433
	5999.927993	713.571142	275	40398.557	26277.13	54	30680.56725	63	590.8552	689.8687458
	139417.6864	9246.062921	6373	938723.5	610590.2	1253	712910.8399	1463	13729.44	16030.17646
	31485.958	539.9390412	1440	212000.42	137895.1	283	161003.1076	331	3100.644	3620.23984

	16410.65364	432.8593027	751	110495.78	71871.69	148	83915.70085	173	1616.073	1886.888819
	1727280.688	42165.17216	78954	11630081	7564755	15522	8832431.219	18123	170097.5	198601.8771
	78404.85775	365.6974627	3584	527913.53	343379.9	705	400922.3968	823	7721.079	9014.951671
	41825.53681	210.5391	1912	281618.6	183178.1	376	213874.4326	439	4118.856	4809.079486
	374714.1366	6117.548799	17129	2523015.4	1641089	3368	1916096.707	3932	36900.74	43084.44564
	594467.2469	4008.197867	27173	4002651.2	2603514	5342	3039801.873	6238	58541.38	68351.54931
	42563.62842	123.6528651	1946	286588.3	186410.6	383	217648.6561	447	4191.541	4893.944893
	53369.01047	55.86885271	2440	359342.82	233733.6	480	272901.861	560	5255.623	6136.342363
	65082.19348	39.16523356	2975	438209.71	285032.3	585	332797.0963	683	6409.103	7483.118339
	92426.40214	217.0894577	4225	622323.02	404788.4	831	472621.4132	970	9101.88	10627.14189
	194392.3221	3174.190919	8886	1308877.3	851355.7	1747	994023.0479	2040	19143.18	22351.13281
	10756.70081	353.1748612	492	72426.735	47109.78	97	55004.27389	113	1059.288	1236.800126
	36045.97128	137.7319182	1648	242703.79	157866	324	184320.6864	379	3549.701	4144.547906
	34642.01821	1676.690971	1584	233250.73	151717.3	312	177141.5875	364	3411.444	3983.122078
	91570.53292	9896.348722	4186	616560.3	401040	823	468244.9351	961	9017.596	10528.73447
	13832.31826	128.5304474	633	93135.402	60579.67	125	70731.41066	146	1362.166	1590.433096
	26471.3689	2379.794406	1210	178236.33	115933.3	238	135361.0601	278	2606.822	3043.664871
	36115.19348	1029.789837	1651	243169.87	158169.2	325	184674.6534	379	3556.518	4152.507041
	29267.62989	2001.376743	1338	197064.04	128179.8	263	149659.7106	308	2882.19	3365.177574
	33479.68548	3320.126185	1531	225424.54	146626.8	301	171198.0116	352	3296.981	3849.477637
	250159.8019	25278.65936	11435	1684369.4	1095594	2248	1279189.456	2625	24635	28763.25
	26561.48297	781.0013248	1215	178843.08	116328	239	135821.8574	279	2615.697	3054.026142
	5453.302454	681.1837159	250	36718.033	23883.15	50	27885.40344	58	537.0252	627.0180124

	70215.52014	6453.341285	3210	472773.29	307514.1	631	359046.307	737	6914.617	8073.345693
	61298.04304	552.1161773	2802	412730.37	268459.4	551	313446.8837	644	6036.451	7048.018597
	112667.5321	357.185856	5150	758610.06	493435.9	1013	576124.2137	1183	11095.17	12954.45698
	451185.4352	4920.463901	20624	3037909.9	1976000	4055	2307131.87	4734	44431.41	51877.07764
	53142.64686	1345.859694	2430	357818.67	232742.2	478	271744.3531	558	5233.331	6110.315188
	369656.0265	10199.13611	16897	2488958.2	1618936	3322	1890232.115	3879	36402.64	42502.86665
	310320.4989	4427.906001	14185	2089441.8	1359072	2789	1586820.533	3256	30559.45	35680.4971
	54753.14751	7642.05154	2503	368662.45	239795.5	493	279979.6308	575	5391.929	6295.489754
	133603.0845	1057.636435	6107	899572.78	585124.7	1201	683177.9353	1402	13156.84	15361.61641
	106746.5134	495.2714274	4880	718742.82	467504.3	960	545847.1481	1120	10512.08	12273.66119
	52830.36183	123.914673	2415	355716	231374.5	475	270147.4869	555	5202.578	6074.40881
	131564.6167	4818.650624	6014	885847.42	576197.1	1183	672754.2521	1381	12956.1	15127.23439
	30513.52035	1673.514691	1395	205452.83	133636.2	275	156030.5581	321	3004.882	3508.429442
	16012.55541	1915.721191	732	107815.32	70128.19	144	81880.02986	169	1576.869	1841.115682
	48937.92859	1768.166629	2237	329507.57	214327.3	440	250243.5714	514	4819.263	5626.858765
	15235.54691	1616.220864	697	102583.58	66725.22	137	77906.80527	160	1500.352	1751.77563
	29762.3593	1146.698824	1361	200395.14	130346.5	268	152189.5042	313	2930.909	3422.061316
	10183.61588	1634.441048	466	68568.055	44599.91	92	52073.81027	107	1002.852	1170.907105
	9505.379657	1907.230928	435	64001.372	41629.52	86	48605.65663	100	936.0618	1092.92384
	38399.72524	1969.408316	1756	258552.02	168174.5	346	196356.582	403	3781.492	4415.18137
	22309.68334	747.4125428	1020	150214.97	97706.93	201	114080.3258	235	2196.992	2565.15633
	7058.915979	1679.625168	323	47528.907	30915.05	64	36095.69093	75	695.1412	811.6306594
	5394.119979	533.557424	247	36319.547	23623.95	49	27582.77449	57	531.197	620.2132407

60	25955.98627	4412.212021	1187	174766.16	113676.2	234	132725.6566	273	2556.069	2984.406433
	5999.927993	713.571142	275	40398.557	26277.13	54	30680.56725	63	590.8552	689.8687458
	139417.6864	9246.062921	6373	938723.5	610590.2	1253	712910.8399	1463	13729.44	16030.17646
	31485.958	539.9390412	1440	212000.42	137895.1	283	161003.1076	331	3100.644	3620.23984
	15825.17671	399.059154	724	106553.66	69307.55	143	80921.87087	167	1558.417	1819.570972
	1709390.467	41928.98934	78136	11509623	7486404	15361	8740949.767	17935	168335.7	196544.8684
	52615.03987	270.329661	2406	354266.2	230431.5	473	269046.4404	553	5181.374	6049.651197
	47553.41457	255.8592354	2174	320185.4	208263.7	428	243163.8739	499	4682.92	5467.668031
	38537.63792	174.1667695	1762	259480.61	168778.5	347	197061.797	405	3795.073	4431.038501
	374714.1366	6117.548799	17129	2523015.4	1641089	3368	1916096.707	3932	36900.74	43084.44564
	584547.3837	3603.928267	26720	3935859.1	2560069	5253	2989076.759	6134	57564.5	67210.96835
	42563.62842	123.6528651	1946	286588.3	186410.6	383	217648.6561	447	4191.541	4893.944893
	53369.01047	55.86885271	2440	359342.82	233733.6	480	272901.861	560	5255.623	6136.342363
	65082.19348	39.16523356	2975	438209.71	285032.3	585	332797.0963	683	6409.103	7483.118339
	86300.54437	113.237567	3945	581076.56	377959.7	776	441296.9054	906	8498.623	9922.793804
	194392.3221	3174.190919	8886	1308877.3	851355.7	1747	994023.0479	2040	19143.18	22351.13281
	10756.70081	353.1748612	492	72426.735	47109.78	97	55004.27389	113	1059.288	1236.800126
	24675.77616	470.7919085	1128	166146.29	108069.4	222	126179.316	259	2429.998	2837.208509
	36045.97128	137.7319182	1648	242703.79	157866	324	184320.6864	379	3549.701	4144.547906
	34642.01821	1676.690971	1584	233250.73	151717.3	312	177141.5875	364	3411.444	3983.122078
	82940.47776	9766.369863	3792	558452.64	363244	746	424115.2409	871	8167.734	9536.455011
	13832.31826	128.5304474	633	93135.402	60579.67	125	70731.41066	146	1362.166	1590.433096
	26471.3689	2379.794406	1210	178236.33	115933.3	238	135361.0601	278	2606.822	3043.664871

	36115.19348	1029.789837	1651	243169.87	158169.2	325	184674.6534	379	3556.518	4152.507041
	29267.62989	2001.376743	1338	197064.04	128179.8	263	149659.7106	308	2882.19	3365.177574
	33479.68548	3320.126185	1531	225424.54	146626.8	301	171198.0116	352	3296.981	3849.477637
	250159.8019	25278.65936	11435	1684369.4	1095594	2248	1279189.456	2625	24635	28763.25
	24684.63483	327.3963362	1129	166205.93	108108.2	222	126224.6147	259	2430.87	2838.227074
	5453.302454	681.1837159	250	36718.033	23883.15	50	27885.40344	58	537.0252	627.0180124
	35727.22878	610.4330895	1634	240557.64	156470.1	322	182690.8001	375	3518.312	4107.899052
	70215.52014	6453.341285	3210	472773.29	307514.1	631	359046.307	737	6914.617	8073.345693
	112650.4328	343.3185455	5150	758494.93	493361	1013	576036.7764	1182	11093.48	12952.49091
	29204.11688	249.6323442	1335	196636.39	127901.6	263	149334.9375	307	2875.935	3357.874879
	391628.3104	4258.032588	17902	2636901.4	1715166	3520	2002587.153	4109	38566.4	45029.22896
	58758.51793	565.3876258	2686	395631.31	257337.3	529	300461.0494	617	5786.366	6756.02526
	52201.89854	1277.862117	2387	351484.45	228622.1	470	266933.8467	548	5140.689	6002.148413
	369656.0265	10199.13611	16897	2488958.2	1618936	3322	1890232.115	3879	36402.64	42502.86665
	288116.3906	4142.653765	13170	1939937.7	1261827	2590	1473280.065	3023	28372.85	33127.47975
	32296.43989	6485.497681	1477	217457.54	141444.7	291	165147.498	339	3180.458	3713.428646
	39487.54476	979.5099954	1805	265876.5	172938.7	355	201919.1354	415	3888.617	4540.258319
	22410.28617	177.1326502	1025	150892.35	98147.53	202	114594.7573	236	2206.899	2576.723592
	4358.811406	267.1436254	200	29348.634	19089.74	40	22288.73524	46	429.2429	501.1739743
	134956.7254	1102.966005	6169	908687.07	591053.1	1213	690099.7635	1416	13290.14	15517.25737
	88177.03223	343.9204932	4031	593711.27	386177.9	793	450892.3058	926	8683.414	10138.55145
	52830.36183	123.914673	2415	355716	231374.5	475	270147.4869	555	5202.578	6074.40881
	131385.7151	4623.038619	6006	884642.84	575413.6	1181	671839.4408	1379	12938.48	15106.66438

	30334.91695	1601.504685	1387	204250.27	132854	273	155117.2715	319	2987.293	3487.893711
	11811.17259	1266.760198	540	79526.677	51727.91	107	60396.30401	124	1163.129	1358.042769
	31422.68249	672.1966695	1437	211574.38	137618	283	160679.5489	330	3094.413	3612.964453
	9662.993225	858.0089848	442	65062.612	42319.8	87	49411.61192	102	951.5831	1111.04617
	17515.2461	790.9455044	801	117933.19	76709.33	158	89564.02252	184	1724.85	2013.894312
	8658.367055	981.2281516	396	58298.289	37919.97	78	44274.4668	91	852.6505	995.5347511
	25584.13668	872.5941692	1170	172262.44	112047.6	230	130824.2077	269	2519.45	2941.651351
	6946.386657	671.1043878	318	46771.228	30422.22	63	35520.27345	73	684.0597	798.6920938
	9505.379657	1907.230928	435	64001.372	41629.52	86	48605.65663	100	936.0618	1092.92384
	10408.72192	314.8727098	476	70083.733	45585.78	94	53224.88759	110	1025.02	1196.789686
	32169.22594	1486.424569	1471	216600.99	140887.5	290	164496.9908	338	3167.931	3698.801649
	22640.00078	900.3385402	1035	152439.06	99153.58	204	115769.4004	238	2229.521	2603.136064
	7058.915979	1679.625168	323	47528.907	30915.05	64	36095.69093	75	695.1412	811.6306594
	5394.119979	533.557424	247	36319.547	23623.95	49	27582.77449	57	531.197	620.2132407
70	25955.98627	4412.212021	1187	174766.16	113676.2	234	132725.6566	273	2556.069	2984.406433
	4462.690856	373.8825272	204	30048.073	19544.69	41	22819.92169	47	439.4726	513.1179821
	7337.205544	82.72007343	336	49402.679	32133.84	66	37518.72163	77	722.5464	843.6282557
	139417.6864	9246.062921	6373	938723.5	610590.2	1253	712910.8399	1463	13729.44	16030.17646
	24148.75246	263.9664138	1104	162597.75	105761.3	218	123484.3859	254	2378.098	2776.611585
	15825.17671	399.059154	724	106553.66	69307.55	143	80921.87087	167	1558.417	1819.570972
	1537.237136	25.59477182	71	10350.485	6732.445	14	7860.645561	17	151.3826	176.7507637
	1709390.467	41928.98934	78136	11509623	7486404	15361	8740949.767	17935	168335.7	196544.8684
	52615.03987	270.329661	2406	354266.2	230431.5	473	269046.4404	553	5181.374	6049.651197

	47553.41457	255.8592354	2174	320185.4	208263.7	428	243163.8739	499	4682.92	5467.668031
	40709.38194	220.6375318	1861	274103.34	178289.8	366	208166.9866	428	4008.94	4680.744551
	374714.1366	6117.548799	17129	2523015.4	1641089	3368	1916096.707	3932	36900.74	43084.44564
	584547.3837	3603.928267	26720	3935859.1	2560069	5253	2989076.759	6134	57564.5	67210.96835
	42563.62842	123.6528651	1946	286588.3	186410.6	383	217648.6561	447	4191.541	4893.944893
	53369.01047	55.86885271	2440	359342.82	233733.6	480	272901.861	560	5255.623	6136.342363
	65082.19348	39.16523356	2975	438209.71	285032.3	585	332797.0963	683	6409.103	7483.118339
	8069.772926	225.8424174	369	54335.183	35342.17	73	41264.69706	85	794.6875	927.85849
	86300.54437	113.237567	3945	581076.56	377959.7	776	441296.9054	906	8498.623	9922.793804
	194392.3221	3174.190919	8886	1308877.3	851355.7	1747	994023.0479	2040	19143.18	22351.13281
	24675.77616	470.7919085	1128	166146.29	108069.4	222	126179.316	259	2429.998	2837.208509
	10417.26155	431.9416846	477	70141.232	45623.18	94	53268.55488	110	1025.861	1197.771568
	24739.94052	1151.323617	1131	166578.32	108350.4	223	126507.4198	260	2436.316	2844.586095
	36045.97128	137.7319182	1648	242703.79	157866	324	184320.6864	379	3549.701	4144.547906
	82940.47776	9766.369863	3792	558452.64	363244	746	424115.2409	871	8167.734	9536.455011
	12099.86444	52.12023843	554	81470.489	52992.26	109	61872.52665	127	1191.559	1391.236414
	6871.287178	78.18553574	315	46265.57	30093.32	62	35136.25307	73	676.6641	790.0571929
	26471.3689	2379.794406	1210	178236.33	115933.3	238	135361.0601	278	2606.822	3043.664871
	31225.66663	898.5166451	1428	210247.84	136755.1	281	159672.1105	328	3075.012	3590.311668
	29267.62989	2001.376743	1338	197064.04	128179.8	263	149659.7106	308	2882.19	3365.177574
	33230.37898	3278.142437	1519	223745.91	145534.9	299	169923.1855	349	3272.43	3820.812499
	250159.8019	25278.65936	11435	1684369.4	1095594	2248	1279189.456	2625	24635	28763.25
	24684.63483	327.3963362	1129	166205.93	108108.2	222	126224.6147	259	2430.87	2838.227074

	5453.302454	681.1837159	250	36718.033	23883.15	50	27885.40344	58	537.0252	627.0180124
	35727.22878	610.4330895	1634	240557.64	156470.1	322	182690.8001	375	3518.312	4107.899052
	70215.52014	6453.341285	3210	472773.29	307514.1	631	359046.307	737	6914.617	8073.345693
	112650.4328	343.3185455	5150	758494.93	493361	1013	576036.7764	1182	11093.48	12952.49091
	29204.11688	249.6323442	1335	196636.39	127901.6	263	149334.9375	307	2875.935	3357.874879
	391628.3104	4258.032588	17902	2636901.4	1715166	3520	2002587.153	4109	38566.4	45029.22896
	58758.51793	565.3876258	2686	395631.31	257337.3	529	300461.0494	617	5786.366	6756.02526
	52201.89854	1277.862117	2387	351484.45	228622.1	470	266933.8467	548	5140.689	6002.148413
	8843.944032	2229.103297	405	59547.811	38732.72	80	45223.41268	93	870.9255	1016.8723
	369656.0265	10199.13611	16897	2488958.2	1618936	3322	1890232.115	3879	36402.64	42502.86665
	288108.3735	4108.899551	13170	1939883.7	1261792	2589	1473239.069	3023	28372.06	33126.55794
	49888.75916	3951.317826	2281	335909.68	218491.6	449	255105.6333	524	4912.898	5736.184793
	22410.28617	177.1326502	1025	150892.35	98147.53	202	114594.7573	236	2206.899	2576.723592
	13354.7492	887.9332888	611	89919.846	58488.12	121	68289.36638	141	1315.136	1535.522442
	4358.811406	267.1436254	200	29348.634	19089.74	40	22288.73524	46	429.2429	501.1739743
	134956.7254	1102.966005	6169	908687.07	591053.1	1213	690099.7635	1416	13290.14	15517.25737
	72312.08704	197.3656483	3306	486889.84	316696.2	650	369767.0792	759	7121.081	8314.407915
	52830.36183	123.914673	2415	355716	231374.5	475	270147.4869	555	5202.578	6074.40881
	121817.261	4280.965498	5569	820216.78	533507.8	1095	622911.2537	1279	11996.2	14006.48827
	27605.87909	361.7300176	1262	185875.18	120902	249	141162.3658	290	2718.546	3174.110291
	10207.80546	354.776138	467	68730.927	44705.85	92	52197.50341	108	1005.235	1173.688411
	19111.27866	950.4629818	874	128679.56	83699.28	172	97725.31786	201	1882.022	2197.405345
	11811.17259	1266.760198	540	79526.677	51727.91	107	60396.30401	124	1163.129	1358.042769

	30601.91915	618.7272381	1399	206048.04	134023.4	275	156482.5844	322	3013.587	3518.593491
	9031.659014	674.86184	413	60811.729	39554.83	82	46183.29122	95	889.4112	1038.455675
	17515.2461	790.9455044	801	117933.19	76709.33	158	89564.02252	184	1724.85	2013.894312
	8658.367055	981.2281516	396	58298.289	37919.97	78	44274.4668	91	852.6505	995.5347511
	25584.13668	872.5941692	1170	172262.44	112047.6	230	130824.2077	269	2519.45	2941.651351
	6946.386657	671.1043878	318	46771.228	30422.22	63	35520.27345	73	684.0597	798.6920938
	7940.824291	1430.958579	363	53466.949	34777.43	72	40605.3196	84	781.989	913.0320399
	10408.72192	314.8727098	476	70083.733	45585.78	94	53224.88759	110	1025.02	1196.789686
	29901.22591	1090.143086	1367	201330.15	130954.7	269	152899.597	314	2944.585	3438.02813
	2268.000036	36.45826909	104	15270.838	9932.876	21	11597.39379	24	223.346	260.7735197
	1564.555367	14.02160506	72	10534.423	6852.087	15	8000.337038	17	154.0728	179.8918003
	10340.52866	438.5307939	473	69624.576	45287.12	93	52876.18206	109	1018.305	1188.948858
	12299.47212	214.8792463	563	82814.482	53866.46	111	62893.21839	130	1211.216	1414.187206
	7058.915979	1679.625168	323	47528.907	30915.05	64	36095.69093	75	695.1412	811.6306594
	5394.119979	533.557424	247	36319.547	23623.95	49	27582.77449	57	531.197	620.2132407
80	25955.98627	4412.212021	1187	174766.16	113676.2	234	132725.6566	273	2556.069	2984.406433
	4462.690856	373.8825272	204	30048.073	19544.69	41	22819.92169	47	439.4726	513.1179821
	7337.205544	82.72007343	336	49402.679	32133.84	66	37518.72163	77	722.5464	843.6282557
	139417.6864	9246.062921	6373	938723.5	610590.2	1253	712910.8399	1463	13729.44	16030.17646
	24148.75246	263.9664138	1104	162597.75	105761.3	218	123484.3859	254	2378.098	2776.611585
	15825.17671	399.059154	724	106553.66	69307.55	143	80921.87087	167	1558.417	1819.570972
	1537.237136	25.59477182	71	10350.485	6732.445	14	7860.645561	17	151.3826	176.7507637
	1709390.467	41928.98934	78136	11509623	7486404	15361	8740949.767	17935	168335.7	196544.8684

	44778.88059	234.2655275	2047	301503.98	196112.5	403	228976.3243	470	4409.692	5148.653489
	38353.0662	190.840385	1754	258237.86	167970.1	345	196117.9915	403	3776.897	4409.816537
	28428.78992	99.04815982	1300	191415.98	124506	256	145370.3115	299	2799.583	3268.72817
	29317.09966	162.318961	1341	197397.12	128396.4	264	149912.6738	308	2887.062	3370.865583
	374714.1366	6117.548799	17129	2523015.4	1641089	3368	1916096.707	3932	36900.74	43084.44564
	584547.3837	3603.928267	26720	3935859.1	2560069	5253	2989076.759	6134	57564.5	67210.96835
	42563.62842	123.6528651	1946	286588.3	186410.6	383	217648.6561	447	4191.541	4893.944893
	53369.01047	55.86885271	2440	359342.82	233733.6	480	272901.861	560	5255.623	6136.342363
	65082.19348	39.16523356	2975	438209.71	285032.3	585	332797.0963	683	6409.103	7483.118339
	8069.772926	225.8424174	369	54335.183	35342.17	73	41264.69706	85	794.6875	927.85849
	86300.54437	113.237567	3945	581076.56	377959.7	776	441296.9054	906	8498.623	9922.793804
	191973.1295	3157.760264	8776	1292588.4	840760.7	1726	981652.5327	2015	18904.95	22072.97525
	24675.77616	470.7919085	1128	166146.29	108069.4	222	126179.316	259	2429.998	2837.208509
	10417.26155	431.9416846	477	70141.232	45623.18	94	53268.55488	110	1025.861	1197.771568
	19037.48407	32.69989276	871	128182.69	83376.09	172	97347.97001	200	1874.755	2188.920479
	24739.94052	1151.323617	1131	166578.32	108350.4	223	126507.4198	260	2436.316	2844.586095
	19427.67977	82.14393581	889	130809.94	85084.98	175	99343.23156	204	1913.181	2233.784988
	82940.47776	9766.369863	3792	558452.64	363244	746	424115.2409	871	8167.734	9536.455011
	12099.86444	52.12023843	554	81470.489	52992.26	109	61872.52665	127	1191.559	1391.236414
	6867.385254	67.92481916	314	46239.298	30076.23	62	35116.30063	73	676.2799	789.6085516
	26471.3689	2379.794406	1210	178236.33	115933.3	238	135361.0601	278	2606.822	3043.664871
	11028.37658	83.98546572	505	74255.975	48299.6	100	56393.48503	116	1086.042	1268.037272
	20212.11051	777.6397294	924	136091.65	88520.45	182	103354.4097	213	1990.429	2323.978445

	29267.62989	2001.376743	1338	197064.04	128179.8	263	149659.7106	308	2882.19	3365.177574
	32781.52921	2992.594873	1499	220723.73	143569.2	295	167627.997	344	3228.228	3769.203975
	250159.8019	25278.65936	11435	1684369.4	1095594	2248	1279189.456	2625	24635	28763.25
	10222.02272	545.2682633	468	68826.655	44768.11	92	52270.20321	108	1006.635	1175.323104
	16712.10981	170.6509245	764	112525.54	73191.94	151	85457.19374	176	1645.759	1921.5501
	3074.396533	413.0059561	141	20700.446	13464.55	28	15720.8936	33	302.7575	353.4925891
	33915.66232	227.1579382	1551	228360.05	148536.2	305	173427.3744	356	3339.914	3899.606038
	70215.52014	6453.341285	3210	472773.29	307514.1	631	359046.307	737	6914.617	8073.345693
	112650.4328	343.3185455	5150	758494.93	493361	1013	576036.7764	1182	11093.48	12952.49091
	29204.11688	249.6323442	1335	196636.39	127901.6	263	149334.9375	307	2875.935	3357.874879
	2378.90592	34.4875168	109	16017.587	10418.6	22	12164.50983	25	234.2676	273.5254232
	391628.3104	4258.032588	17902	2636901.4	1715166	3520	2002587.153	4109	38566.4	45029.22896
	58758.51793	565.3876258	2686	395631.31	257337.3	529	300461.0494	617	5786.366	6756.02526
	52201.89854	1277.862117	2387	351484.45	228622.1	470	266933.8467	548	5140.689	6002.148413
	8843.944032	2229.103297	405	59547.811	38732.72	80	45223.41268	93	870.9255	1016.8723
	369656.0265	10199.13611	16897	2488958.2	1618936	3322	1890232.115	3879	36402.64	42502.86665
	288108.3735	4108.899551	13170	1939883.7	1261792	2589	1473239.069	3023	28372.06	33126.55794
	26899.66686	3859.829125	1230	181120.13	117809.1	242	137551.1572	283	2649	3092.910359
	20292.27619	114.2013239	928	136631.42	88871.54	183	103764.336	213	1998.324	2333.195855
	11360.24838	559.2437555	520	76490.526	49753.06	103	58090.50789	120	1118.724	1306.195726
	4358.811406	267.1436254	200	29348.634	19089.74	40	22288.73524	46	429.2429	501.1739743
	123369.1611	832.6800775	5640	830665.99	540304.5	1109	630846.8784	1295	12149.03	14184.92498
	22477.60138	95.56382807	1028	151345.59	98442.34	202	114938.9729	236	2213.528	2584.463462

	12145.75538	136.2859962	556	81779.481	53193.25	110	62107.18949	128	1196.078	1396.512932
	79164.20398	219.4842997	3619	533026.34	346705.6	712	404805.3055	831	7795.857	9102.260924
	52504.62988	79.1063336	2400	353522.79	229948	472	268481.8601	551	5170.501	6036.956312
	121817.261	4280.965498	5569	820216.78	533507.8	1095	622911.2537	1279	11996.2	14006.48827
	12743.51384	125.7127853	583	85804.292	55811.17	115	65163.82094	134	1254.944	1465.242903
	17213.31252	363.8964791	787	115900.22	75386.99	155	88020.08841	181	1695.116	1979.178139
	10207.80546	354.776138	467	68730.927	44705.85	92	52197.50341	108	1005.235	1173.688411
	14299.75698	746.4701762	654	96282.748	62626.86	129	73121.65349	151	1408.198	1644.178967
	11811.17259	1266.760198	540	79526.677	51727.91	107	60396.30401	124	1163.129	1358.042769
	27004.91871	370.3653507	1235	181828.81	118270.1	243	138089.3613	284	2659.365	3105.012164
	9031.659014	674.86184	413	60811.729	39554.83	82	46183.29122	95	889.4112	1038.455675
	3597.000442	60.03416475	165	24219.229	15753.33	33	18393.22307	38	354.222	413.5813274
	17515.2461	790.9455044	801	117933.19	76709.33	158	89564.02252	184	1724.85	2013.894312
	8658.367055	981.2281516	396	58298.289	37919.97	78	44274.4668	91	852.6505	995.5347511
	25584.13668	872.5941692	1170	172262.44	112047.6	230	130824.2077	269	2519.45	2941.651351
	6946.386657	671.1043878	318	46771.228	30422.22	63	35520.27345	73	684.0597	798.6920938
	7940.824291	1430.958579	363	53466.949	34777.43	72	40605.3196	84	781.989	913.0320399
	10408.72192	314.8727098	476	70083.733	45585.78	94	53224.88759	110	1025.02	1196.789686
	29665.84625	971.9326067	1357	199745.3	129923.8	267	151695.9857	312	2921.405	3410.964293
	2268.000036	36.45826909	104	15270.838	9932.876	21	11597.39379	24	223.346	260.7735197
	4869.975644	187.3380009	223	32790.392	21328.42	44	24902.56807	52	479.5808	559.947385
	1564.555367	14.02160506	72	10534.423	6852.087	15	8000.337038	17	154.0728	179.8918003
	3885.187644	605.5453325	178	26159.643	17015.47	35	19866.86523	41	382.6018	446.716949

	17770.02513	387.2912727	813	119648.67	77825.16	160	90866.83237	187	1749.94	2043.188679
	4058.22834	1047.671872	186	27324.756	17773.31	37	20751.70697	43	399.6424	466.6130825
	4744.999631	108.6962726	217	31948.907	20781.08	43	24263.50457	50	467.2736	545.577705
90	25955.98627	4412.212021	1187	174766.16	113676.2	234	132725.6566	273	2556.069	2984.406433
	4462.690856	373.8825272	204	30048.073	19544.69	41	22819.92169	47	439.4726	513.1179821
	7337.205544	82.72007343	336	49402.679	32133.84	66	37518.72163	77	722.5464	843.6282557
	139417.6864	9246.062921	6373	938723.5	610590.2	1253	712910.8399	1463	13729.44	16030.17646
	24148.75246	263.9664138	1104	162597.75	105761.3	218	123484.3859	254	2378.098	2776.611585
	15825.17671	399.059154	724	106553.66	69307.55	143	80921.87087	167	1558.417	1819.570972
	1537.237136	25.59477182	71	10350.485	6732.445	14	7860.645561	17	151.3826	176.7507637
	1706414.053	41827.38059	78000	11489582	7473368	15334	8725729.907	17904	168042.6	196202.6418
	22588.44462	226.4211563	1033	152091.92	98927.78	203	115505.7686	237	2224.443	2597.208163
	24722.69507	13.01863642	1131	166462.2	108274.9	223	126419.2353	260	2434.618	2842.603221
	25596.58207	87.05071092	1171	172346.23	112102.1	231	130887.8471	269	2520.676	2943.082315
	13300.62578	106.935443	608	89555.424	58251.09	120	68012.60687	140	1309.806	1529.299358
	28428.78992	99.04815982	1300	191415.98	124506	256	145370.3115	299	2799.583	3268.72817
	29317.09966	162.318961	1341	197397.12	128396.4	264	149912.6738	308	2887.062	3370.865583
	374714.1366	6117.548799	17129	2523015.4	1641089	3368	1916096.707	3932	36900.74	43084.44564
	582581.7242	3599.368711	26630	3922623.9	2551460	5236	2979025.38	6113	57370.93	66984.95781
	42463.64135	93.43810979	1941	285915.07	185972.7	382	217137.3733	446	4181.694	4882.448428
	46354.56613	43.79037547	2119	312113.35	203013.3	417	237033.5753	487	4564.861	5329.825031
	21541.47778	18.02866687	985	145042.51	94342.52	194	110152.1149	227	2121.341	2476.828435
	43581.10645	15.30314558	1993	293439.16	190866.7	392	222851.519	458	4291.739	5010.934012

	16344.59601	40.13268812	748	110051	71582.38	147	83577.9159	172	1609.568	1879.293546
	8069.772926	225.8424174	369	54335.183	35342.17	73	41264.69706	85	794.6875	927.85849
	79299.56401	78.19100624	3625	533937.74	347298.4	713	405497.4676	833	7809.187	9117.824553
	191973.1295	3157.760264	8776	1292588.4	840760.7	1726	981652.5327	2015	18904.95	22072.97525
	24675.77616	470.7919085	1128	166146.29	108069.4	222	126179.316	259	2429.998	2837.208509
	10390.33471	418.225316	475	69959.928	45505.25	94	53130.86479	110	1023.21	1194.675534
	19037.48407	32.69989276	871	128182.69	83376.09	172	97347.97001	200	1874.755	2188.920479
	24362.96472	1143.913743	1114	164040.07	106699.4	219	124579.7581	256	2399.193	2801.241605
	19427.67977	82.14393581	889	130809.94	85084.98	175	99343.23156	204	1913.181	2233.784988
	82940.47776	9766.369863	3792	558452.64	363244	746	424115.2409	871	8167.734	9536.455011
	12099.86444	52.12023843	554	81470.489	52992.26	109	61872.52665	127	1191.559	1391.236414
	6867.385254	67.92481916	314	46239.298	30076.23	62	35116.30063	73	676.2799	789.6085516
	26471.3689	2379.794406	1210	178236.33	115933.3	238	135361.0601	278	2606.822	3043.664871
	11028.37658	83.98546572	505	74255.975	48299.6	100	56393.48503	116	1086.042	1268.037272
	20212.11051	777.6397294	924	136091.65	88520.45	182	103354.4097	213	1990.429	2323.978445
	29267.62989	2001.376743	1338	197064.04	128179.8	263	149659.7106	308	2882.19	3365.177574
	32781.52921	2992.594873	1499	220723.73	143569.2	295	167627.997	344	3228.228	3769.203975
	250159.8019	25278.65936	11435	1684369.4	1095594	2248	1279189.456	2625	24635	28763.25
	10222.02272	545.2682633	468	68826.655	44768.11	92	52270.20321	108	1006.635	1175.323104
	16712.10981	170.6509245	764	112525.54	73191.94	151	85457.19374	176	1645.759	1921.5501
	3074.396533	413.0059561	141	20700.446	13464.55	28	15720.8936	33	302.7575	353.4925891
	24899.22628	203.2395719	1139	167650.82	109048	224	127321.9258	262	2452.002	2862.900693
	70215.52014	6453.341285	3210	472773.29	307514.1	631	359046.307	737	6914.617	8073.345693

	21072.2928	145.2578492	964	141883.41	92287.68	190	107752.9426	222	2075.137	2422.881778
	112667.5321	357.185856	5150	758610.06	493435.9	1013	576124.2137	1183	11095.17	12954.45698
	19599.65298	158.5842162	896	131967.87	85838.15	177	100222.6147	206	1930.116	2253.558382
	2378.90592	34.4875168	109	16017.587	10418.6	22	12164.50983	25	234.2676	273.5254232
	389159.8182	4173.246665	17789	2620280.7	1704355	3498	1989964.545	4084	38323.31	44745.40296
	58758.51793	565.3876258	2686	395631.31	257337.3	529	300461.0494	617	5786.366	6756.02526
	52201.89854	1277.862117	2387	351484.45	228622.1	470	266933.8467	548	5140.689	6002.148413
	8843.944032	2229.103297	405	59547.811	38732.72	80	45223.41268	93	870.9255	1016.8723
	369656.0265	10199.13611	16897	2488958.2	1618936	3322	1890232.115	3879	36402.64	42502.86665
	288108.3735	4108.899551	13170	1939883.7	1261792	2589	1473239.069	3023	28372.06	33126.55794
	26899.66686	3859.829125	1230	181120.13	117809.1	242	137551.1572	283	2649	3092.910359
	20292.27619	114.2013239	928	136631.42	88871.54	183	103764.336	213	1998.324	2333.195855
	11360.24838	559.2437555	520	76490.526	49753.06	103	58090.50789	120	1118.724	1306.195726
	4358.811406	267.1436254	200	29348.634	19089.74	40	22288.73524	46	429.2429	501.1739743
	123369.1611	832.6800775	5640	830665.99	540304.5	1109	630846.8784	1295	12149.03	14184.92498
	22477.60138	95.56382807	1028	151345.59	98442.34	202	114938.9729	236	2213.528	2584.463462
	12145.75538	136.2859962	556	81779.481	53193.25	110	62107.18949	128	1196.078	1396.512932
	79164.20398	219.4842997	3619	533026.34	346705.6	712	404805.3055	831	7795.857	9102.260924
	52504.62988	79.1063336	2400	353522.79	229948	472	268481.8601	551	5170.501	6036.956312
	107232.8164	3588.886768	4902	722017.18	469634.2	964	548333.8532	1126	10559.97	12329.57606
	12743.51384	125.7127853	583	85804.292	55811.17	115	65163.82094	134	1254.944	1465.242903
	17213.31252	363.8964791	787	115900.22	75386.99	155	88020.08841	181	1695.116	1979.178139
	15212.59901	344.3581251	696	102429.07	66624.72	137	77789.46139	160	1498.092	1749.137091

	9370.014503	329.4402641	429	63089.935	41036.68	85	47913.46838	99	922.7314	1077.359622
	14299.75698	746.4701762	654	96282.748	62626.86	129	73121.65349	151	1408.198	1644.178967
	11811.17259	1266.760198	540	79526.677	51727.91	107	60396.30401	124	1163.129	1358.042769
	27004.91871	370.3653507	1235	181828.81	118270.1	243	138089.3613	284	2659.365	3105.012164
	9031.659014	674.86184	413	60811.729	39554.83	82	46183.29122	95	889.4112	1038.455675
	1474.26067	121.7438772	68	9926.4532	6456.635	14	7538.616079	16	145.1808	169.5097609
	3597.000442	60.03416475	165	24219.229	15753.33	33	18393.22307	38	354.222	413.5813274
	17515.2461	790.9455044	801	117933.19	76709.33	158	89564.02252	184	1724.85	2013.894312
	8648.674868	912.7336138	396	58233.03	37877.52	78	44224.90591	91	851.696	994.4203483
	20861.39977	686.2587614	954	140463.43	91364.06	188	106674.5433	219	2054.369	2398.633402
	6953.928929	157.2943513	318	46822.011	30455.25	63	35558.84078	73	684.8024	799.5593004
	5691.454688	116.7654818	261	38321.553	24926.15	52	29103.19233	60	560.4777	654.4006382
	4099.431049	852.3800526	188	27602.181	17953.77	37	20962.39657	44	403.6999	471.3505495
	3841.393242	37.09729096	176	25864.768	16823.67	35	19642.92302	41	378.2891	441.6814904
	8374.864192	299.6826153	383	56389.415	36678.34	76	42824.77796	88	824.7319	962.9377325
	29468.51196	916.9588579	1347	198416.61	129059.6	265	150686.9189	310	2901.972	3388.274895
	2268.000036	36.45826909	104	15270.838	9932.876	21	11597.39379	24	223.346	260.7735197
	4845.245996	173.6762428	222	32623.883	21220.12	44	24776.11328	51	477.1455	557.1039823
	1564.555367	14.02160506	72	10534.423	6852.087	15	8000.337038	17	154.0728	179.8918003
	6632.846995	148.069773	304	44660.111	29049.05	60	33916.99176	70	653.1832	762.6414589
	3885.187644	605.5453325	178	26159.643	17015.47	35	19866.86523	41	382.6018	446.716949
	11161.90779	164.7585091	511	75155.064	48884.41	101	57076.2954	118	1099.192	1283.390623
	4058.22834	1047.671872	186	27324.756	17773.31	37	20751.70697	43	399.6424	466.6130825

	4744.999631	108.6962726	217	31948.907	20781.08	43	24263.50457	50	467.2736	545.577705
100	25955.98627	4412.212021	1187	174766.16	113676.2	234	132725.6566	273	2556.069	2984.406433
	4462.690856	373.8825272	204	30048.073	19544.69	41	22819.92169	47	439.4726	513.1179821
	7337.205544	82.72007343	336	49402.679	32133.84	66	37518.72163	77	722.5464	843.6282557
	139417.6864	9246.062921	6373	938723.5	610590.2	1253	712910.8399	1463	13729.44	16030.17646
	24148.75246	263.9664138	1104	162597.75	105761.3	218	123484.3859	254	2378.098	2776.611585
	15825.17671	399.059154	724	106553.66	69307.55	143	80921.87087	167	1558.417	1819.570972
	1537.237136	25.59477182	71	10350.485	6732.445	14	7860.645561	17	151.3826	176.7507637
	1706414.053	41827.38059	78000	11489582	7473368	15334	8725729.907	17904	168042.6	196202.6418
	22588.44462	226.4211563	1033	152091.92	98927.78	203	115505.7686	237	2224.443	2597.208163
	24722.69507	13.01863642	1131	166462.2	108274.9	223	126419.2353	260	2434.618	2842.603221
	25596.58207	87.05071092	1171	172346.23	112102.1	231	130887.8471	269	2520.676	2943.082315
	13300.62578	106.935443	608	89555.424	58251.09	120	68012.60687	140	1309.806	1529.299358
	28428.78992	99.04815982	1300	191415.98	124506	256	145370.3115	299	2799.583	3268.72817
	29317.09966	162.318961	1341	197397.12	128396.4	264	149912.6738	308	2887.062	3370.865583
	374714.1366	6117.548799	17129	2523015.4	1641089	3368	1916096.707	3932	36900.74	43084.44564
	548586.5808	3478.347075	25076	3693728.7	2402576	4930	2805191.58	5756	54023.19	63076.21307
	42463.64135	93.43810979	1941	285915.07	185972.7	382	217137.3733	446	4181.694	4882.448428
	46354.56613	43.79037547	2119	312113.35	203013.3	417	237033.5753	487	4564.861	5329.825031
	33995.1434	108.1095221	1554	228895.21	148884.3	306	173833.8001	357	3347.742	3908.744734
	21541.47778	18.02866687	985	145042.51	94342.52	194	110152.1149	227	2121.341	2476.828435
	43581.10645	15.30314558	1993	293439.16	190866.7	392	222851.519	458	4291.739	5010.934012
	16344.59601	40.13268812	748	110051	71582.38	147	83577.9159	172	1609.568	1879.293546

	7345.858436	95.4601436	336	49460.941	32171.74	67	37562.9681	78	723.3985	844.6231609
	79299.56401	78.19100624	3625	533937.74	347298.4	713	405497.4676	833	7809.187	9117.824553
	191973.1295	3157.760264	8776	1292588.4	840760.7	1726	981652.5327	2015	18904.95	22072.97525
	24675.77616	470.7919085	1128	166146.29	108069.4	222	126179.316	259	2429.998	2837.208509
	10390.33471	418.225316	475	69959.928	45505.25	94	53130.86479	110	1023.21	1194.675534
	19037.48407	32.69989276	871	128182.69	83376.09	172	97347.97001	200	1874.755	2188.920479
	24362.96472	1143.913743	1114	164040.07	106699.4	219	124579.7581	256	2399.193	2801.241605
	19427.67977	82.14393581	889	130809.94	85084.98	175	99343.23156	204	1913.181	2233.784988
	723.9144897	3.05603852	34	4874.242	3170.438	7	3701.728957	8	71.28897	83.23532911
	82940.47776	9766.369863	3792	558452.64	363244	746	424115.2409	871	8167.734	9536.455011
	12099.86444	52.12023843	554	81470.489	52992.26	109	61872.52665	127	1191.559	1391.236414
	6867.385254	67.92481916	314	46239.298	30076.23	62	35116.30063	73	676.2799	789.6085516
	26471.3689	2379.794406	1210	178236.33	115933.3	238	135361.0601	278	2606.822	3043.664871
	11028.37658	83.98546572	505	74255.975	48299.6	100	56393.48503	116	1086.042	1268.037272
	20212.11051	777.6397294	924	136091.65	88520.45	182	103354.4097	213	1990.429	2323.978445
	12784.13992	256.9949579	585	86077.835	55989.1	115	65371.56196	135	1258.944	1469.914069
	16516.72669	1873.112053	755	111209.99	72336.24	149	84458.10427	174	1626.519	1899.085046
	32781.52921	2992.594873	1499	220723.73	143569.2	295	167627.997	344	3228.228	3769.203975
	250159.8019	25278.65936	11435	1684369.4	1095594	2248	1279189.456	2625	24635	28763.25
	10222.02272	545.2682633	468	68826.655	44768.11	92	52270.20321	108	1006.635	1175.323104
	16712.10981	170.6509245	764	112525.54	73191.94	151	85457.19374	176	1645.759	1921.5501
	3041.159817	156.8408779	140	20476.657	13318.99	28	15550.93801	32	299.4845	349.671048
	29107.17418	197.7981083	1331	195983.66	127477	262	148839.2221	306	2866.389	3346.728456

	70215.52014	6453.341285	3210	472773.29	307514.1	631	359046.307	737	6914.617	8073.345693
	112667.5321	357.185856	5150	758610.06	493435.9	1013	576124.2137	1183	11095.17	12954.45698
	22227.73776	159.1779166	1017	149663.22	97348.04	200	113661.2979	234	2188.922	2555.734267
	15293.23521	75.23697871	700	102972.01	66977.87	138	78201.79373	161	1506.033	1758.408602
	2378.90592	34.4875168	109	16017.587	10418.6	22	12164.50983	25	234.2676	273.5254232
	388102.8432	4238.438801	17741	2613163.9	1699725	3488	1984559.714	4072	38219.22	44623.87248
	58758.51793	565.3876258	2686	395631.31	257337.3	529	300461.0494	617	5786.366	6756.02526
	52201.89854	1277.862117	2387	351484.45	228622.1	470	266933.8467	548	5140.689	6002.148413
	8843.944032	2229.103297	405	59547.811	38732.72	80	45223.41268	93	870.9255	1016.8723
	369656.0265	10199.13611	16897	2488958.2	1618936	3322	1890232.115	3879	36402.64	42502.86665
	288108.3735	4108.899551	13170	1939883.7	1261792	2589	1473239.069	3023	28372.06	33126.55794
	26899.66686	3859.829125	1230	181120.13	117809.1	242	137551.1572	283	2649	3092.910359
	20292.27619	114.2013239	928	136631.42	88871.54	183	103764.336	213	1998.324	2333.195855
	11360.24838	559.2437555	520	76490.526	49753.06	103	58090.50789	120	1118.724	1306.195726
	4358.811406	267.1436254	200	29348.634	19089.74	40	22288.73524	46	429.2429	501.1739743
	17412.66602	20.98964122	796	117242.5	76260.07	157	89039.48037	183	1714.748	2002.099705
	105956.4951	799.2307949	4844	713423.49	464044.4	953	541807.398	1112	10434.28	12182.82527
	6541.463837	39.66254987	300	44044.812	28648.83	59	33449.70497	69	644.1841	752.1342687
	22477.60138	95.56382807	1028	151345.59	98442.34	202	114938.9729	236	2213.528	2584.463462
	70099.6637	179.8451504	3205	471993.21	307006.7	630	358453.8763	736	6903.208	8060.024576
	7570.66884	799.8550065	347	50974.628	33156.31	69	38712.53368	80	745.5372	870.4717496
	52504.62988	79.1063336	2400	353522.79	229948	472	268481.8601	551	5170.501	6036.956312
	13416.95889	42.53409372	614	90338.715	58760.58	121	68607.47498	141	1321.263	1542.675281

	5604.291542	60.05773086	257	37734.668	24544.41	51	28657.48452	59	551.8941	644.3786629
	99662.14756	2574.451767	4556	671042.55	436477.8	896	509621.3196	1046	9814.435	11459.10431
	10499.36052	112.4690192	480	70694.018	45982.74	95	53688.36708	111	1033.946	1207.211267
	15105.04723	334.3202737	691	101704.91	66153.69	136	77239.49653	159	1487.501	1736.770841
	15212.59901	344.3581251	696	102429.07	66624.72	137	77789.46139	160	1498.092	1749.137091
	9370.014503	329.4402641	429	63089.935	41036.68	85	47913.46838	99	922.7314	1077.359622
	14299.75698	746.4701762	654	96282.748	62626.86	129	73121.65349	151	1408.198	1644.178967
	11811.17259	1266.760198	540	79526.677	51727.91	107	60396.30401	124	1163.129	1358.042769
	27004.91871	370.3653507	1235	181828.81	118270.1	243	138089.3613	284	2659.365	3105.012164
	5735.202664	273.2172007	263	38616.116	25117.75	52	29326.89714	61	564.7859	659.4307588
	1474.26067	121.7438772	68	9926.4532	6456.635	14	7538.616079	16	145.1808	169.5097609
	3597.000442	60.03416475	165	24219.229	15753.33	33	18393.22307	38	354.222	413.5813274
	17515.2461	790.9455044	801	117933.19	76709.33	158	89564.02252	184	1724.85	2013.894312
	4445.481042	225.3175597	204	29932.196	19469.32	40	22731.91949	47	437.7779	511.1392061
	4485.991054	106.32593	206	30204.957	19646.73	41	22939.067	48	441.7672	515.7970272
	3013.659122	351.2142079	138	20291.49	13198.55	28	15410.3135	32	296.7763	346.5090317
	20861.39977	686.2587614	954	140463.43	91364.06	188	106674.5433	219	2054.369	2398.633402
	6953.928929	157.2943513	318	46822.011	30455.25	63	35558.84078	73	684.8024	799.5593004
	5691.454688	116.7654818	261	38321.553	24926.15	52	29103.19233	60	560.4777	654.4006382
	4099.431049	852.3800526	188	27602.181	17953.77	37	20962.39657	44	403.6999	471.3505495
	3841.393242	37.09729096	176	25864.768	16823.67	35	19642.92302	41	378.2891	441.6814904
	8374.864192	299.6826153	383	56389.415	36678.34	76	42824.77796	88	824.7319	962.9377325
	28894.13446	755.6083879	1321	194549.23	126544	260	147749.8458	304	2845.409	3322.233254

	1084.793186	131.9384073	50	7304.101	4750.933	10	5547.078287	12	106.8272	124.7289827
	2268.000036	36.45826909	104	15270.838	9932.876	21	11597.39379	24	223.346	260.7735197
	4845.245996	173.6762428	222	32623.883	21220.12	44	24776.11328	51	477.1455	557.1039823
	1564.555367	14.02160506	72	10534.423	6852.087	15	8000.337038	17	154.0728	179.8918003
	6632.846995	148.069773	304	44660.111	29049.05	60	33916.99176	70	653.1832	762.6414589
	3374.77196	213.8560227	155	22722.926	14780.07	31	17256.86012	36	332.3376	388.0296068
	11161.90779	164.7585091	511	75155.064	48884.41	101	57076.2954	118	1099.192	1283.390623
	4058.22834	1047.671872	186	27324.756	17773.31	37	20751.70697	43	399.6424	466.6130825
	4744.999631	108.6962726	217	31948.907	20781.08	43	24263.50457	50	467.2736	545.577705

Emissions Calculations

	Biomass to AD		On-site	SNG to RH2		AD to HRS				TOTAL [kg CO2eq / kg H2]	
Scenario	Distance [mi]	Transportation [g CO2eq]	AD&Cleanup [g CO2eq]	SMR/PSA [gCO2eq/yr]	Tri-Gen/PSA [gCO2eq/yr]	Distance [mi]	SMR [gCO2eq]	Distance [mi]	TG [gCO2eq]	SMR	Tri-Gen
1	1021170.435	4.01892E+14	-2594340726	2.83817E+12	1.50623E+12	238834.1721	1.84788E+13	287491.8478	2.597E+13	31981.23541	37862.60167
5	86693.01041	1.1663E+13	-886835983.6	9.70186E+11	5.14883E+11	21534.47197	5.69551E+11	26161.60214	8.079E+11	2885.682152	3441.301607
	42546.13727	4.24836E+12	-658228792.5	7.20093E+11	3.82157E+11	12849.21526	2.52234E+11	15348.30447	3.518E+11	1710.766999	2008.763859
	57563.25362	1.4548E+12	-166597235.5	1.82255E+11	96723662283	8775.349574	43600238938	10359.34383	6.01E+10	1222.589195	1401.399643
	18465.69983	1.23483E+12	-440813696.5	4.82244E+11	2.55929E+11	4980.704197	65482940453	6605.782605	1.014E+11	674.4283616	868.1070276
	145942.3672	9.78266E+12	-441865017.6	4.83394E+11	2.5654E+11	12286.08905	1.61903E+11	15707.34554	2.417E+11	1821.66661	2210.032042
10	21691.50672	2.78459E+11	-84619523.87	92572515760	49128727887	3957.914829	9988587951	4809.349996	1.417E+10	550.8772083	646.1796364
	49555.30498	6.03073E+12	-802216459.7	8.77613E+11	4.65754E+11	19578.02893	4.68397E+11	22974.29551	6.418E+11	2573.144311	2982.728476
	28199.64699	2.35793E+12	-551187228.6	6.02991E+11	3.2001E+11	10623.75011	1.74633E+11	12597.00076	2.418E+11	1404.373732	1639.618029
	12581.63695	2.30139E+11	-120573902.5	1.31906E+11	70003259015	2298.555944	8266948080	2923.255068	1.227E+10	325.2582811	394.0424118
	47074.31818	1.04295E+12	-146047812.5	1.59774E+11	84792999430	7541.359316	32854689077	8807.566445	4.48E+10	1048.446769	1189.510499

	12228.1889	5.78778E+11	-312007044.3	3.41331E+11	1.81146E+11	3212.696971	29896424878	3936.094929	4.276E+10	440.0891685	521.4382801
	20913.48816	8.81789E+11	-277936113.8	3.04058E+11	1.61365E+11	6167.619715	51127006409	9494.792052	9.189E+10	828.6964325	1236.753979
	26865.99874	7.30235E+11	-179174354.5	1.96014E+11	1.04026E+11	2972.279685	15882832756	5375.067084	3.354E+10	435.4658476	725.3186926
	14660.94216	1.645E+11	-73962233.4	80913596577	42941277289	1662.328726	3668227072	1892.034792	4.874E+09	248.5757965	266.9624689
	25428.42605	1.79848E+11	-46616052.48	50997276460	27064526632	4942.860581	6876942729	6134.212899	9.961E+09	682.342164	819.3315078
20	5833.424441	11798445148	-13329883.33	14582696502	7739114816	1588.453906	633312543.4	1554.359891	723005904	224.2040376	211.333367
	10356.36952	1.12001E+11	-71289640.54	77989819258	41389613070	3354.604563	7133185763	4025.131352	9.997E+09	454.7517991	530.0996587
	45925.84295	5.44687E+12	-781818042.1	8.55297E+11	4.53911E+11	18702.70961	4.36089E+11	22404.9659	6.099E+11	2456.239837	2905.345444
	6131.800126	1.46166E+11	-157131389.1	1.71899E+11	91227944837	2882.601353	13508099286	3512.714621	1.922E+10	387.6218518	458.8322034
	4266.117868	1.73757E+11	-268482019.5	2.93715E+11	1.55876E+11	4998.119279	40020811035	5866.666089	5.485E+10	651.6036874	753.296352
	2527.461909	37777977662	-98525403.52	1.07785E+11	57202256856	2471.278448	7263110657	3030.876276	1.04E+10	329.3925896	392.5748468
	3595.433222	52431891574	-96123538.81	1.05158E+11	55807773027	2149.015937	6161276798	2774.126802	9.286E+09	290.5212873	361.6585198
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	30339.65364	5.29467E+11	-115036043.2	1.25848E+11	66788067404	5917.161017	20306772302	6928.976388	2.776E+10	813.8316104	926.9742618
	6621.877143	96337083837	-95893959.6	1.04907E+11	55674483048	1610.21562	4605378587	2224.360511	7.427E+09	227.7724356	296.7399986
	6824.977092	2.25738E+11	-218029087.8	2.38521E+11	1.26584E+11	2088.691145	13581438480	2596.91142	1.972E+10	288.5582164	344.1059551
	12546.17495	3.10618E+11	-163195728.3	1.78534E+11	94748802209	3254.922184	15843110876	3883.081069	2.207E+10	445.9902493	515.2325675
	4873.276132	98342254225	-133025177.6	1.45528E+11	77232268053	2783.949073	11045578271	3427.338768	1.588E+10	372.981547	446.0757006
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	10356.36952	1.12001E+11	-71289640.54	77989819258	41389613070	3391.754441	7212180760	4007.212176	9.952E+09	459.4454764	527.8349117
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	2463.577683	21257606969	-56879214.47	62225024878	33023152605	2225.055856	3776438120	2627.923037	5.206E+09	298.2559987	341.5260817
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	4008.197867	1.50778E+11	-247972221.3	2.71278E+11	1.43969E+11	4600.348946	34020887883	5391.203677	4.656E+10	600.8830769	692.9401871
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	28484.28002	4.80566E+11	-111208776.5	1.21661E+11	64566018239	5735.482909	19024260698	7116.516896	2.757E+10	787.4504705	947.9647594
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	25278.65936	4.00167E+11	-104350041.3	1.14157E+11	60583947423	5626.159435	17508918734	6389.96468	2.322E+10	767.9212754	851.1878646
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	25278.65936	4.00167E+11	-104350041.3	1.14157E+11	60583947423	5296.135085	16481864739	6394.379836	2.324E+10	726.2304292	851.7456773
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	267.1436254	73964920.71	-1818206.39	1989091074	1055621243	0	0	94.54699304	6020832.4	13.15624979	18.17853298
	1102.966005	9419500693	-56294975.29	61585875796	32683952778	1052.207755	1766905343	2017.380914	3.955E+09	147.5745407	262.2753371
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	618.7272381	1198306554	-12765086.57	13964817143	7411202945	487.3261694	185525415.3	803.4138416	358134505	75.33655468	108.4772171
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	34.4875168	5204025.405	-992321.4247	1085585058	576125780.7	0	0	0	0	12.74501466	5.812862631
	4258.032588	1.05526E+11	-163361299.7	1.78715E+11	94844930260	1752.328036	8539040196	1752.328036	9.968E+09	241.5920503	233.5458412
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	267.1436254	73964920.71	-1818206.39	1989091074	1055621243	94.56325193	5236406.762	94.56325193	6021867.8	25.35541897	18.18059889
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	674.86184	385847693.4	-3767407.809	4121488786	2187296083	151.4398196	17191149.65	151.4398196	19916576	33.20139926	25.95774068
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	187.3380009	57833800.11	-2031430.133	2222354717	1179415502	200.3928566	12206352.22	200.3928566	14425689	38.46667054	31.80628755
	14.02160506	1397594.593	-652628.5034	713965993.3	378905560.9	0	0	0	0	12.7090064	5.782022461
	605.5453325	149216774.6	-1620642.038	1772958576	940918573.3	0	0	0	0	13.75266225	6.675887444
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	108.6962726	32653171.57	-1979298.447	2165323419	1149148688	340.126937	20246990.01	340.126937	23543012	56.20566226	49.07715615
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	373.8825272	105588427.5	-1861537.992	2036495210	1080778871	0	0	244.9733723	15939244	13.34240547	37.38802011
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	25.59477182	2515710.114	-641233.1535	701499648	372289604.9	0	0	0	0	12.72968373	5.799732074
	41827.38059	4.51654E+12	-711802518.3	7.78701E+11	4.13261E+11	16676.28429	3.54002E+11	20048.43355	4.969E+11	2192.941126	2601.487247
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	78.19100624	392388072.8	-33078507.09	36187400713	19204846579	708.0569927	698889846.4	877.2394089	1.012E+09	102.3176657	116.8275135
	3157.760264	38364253766	-80078429.22	87604624942	46492241731	1690.17707	4038536216	2183.643178	6.091E+09	231.8671832	286.483
	470.7919085	735172197.4	-10293093.62	11260493182	5976003794	139.6781269	42927180.25	170.2985066	61060673	31.17855476	27.99204088
	418.225316	275014069.5	-4334156.999	4741504073	2516341503	128.7086869	16748915.76	212.4168071	32346891	29.78952553	33.46730146
	32.69989276	39428973.29	-7941172.937	8687526510	4610516657	13.29667267	3166083.828	233.3911278	64619757	14.43057339	35.33137844
	1143.913743	1764125402	-10162609.48	11117745451	5900246812	184.6297654	55975349.98	226.1835162	80158928	38.02958143	36.10162197
	82.14393581	101094668.7	-8103936.65	8865587620	4705014638	189.4228393	45890350.6	22.85740129	6455174.8	36.81534259	8.774521752
	3.05603852	143842.998	-301969.0067	330349656.4	175318324.7	0	0	0	0	12.68968241	5.765471951
	9766.369863	51268720745	-34597254.29	37848887841	20086606660	940.9062894	971708907.8	1114.041792	1.343E+09	148.8505848	161.3484111
	52.12023843	39973036.81	-5047259.169	5521627369	2930357097	60.7854384	9172274.347	91.86732859	16151609	20.47377249	17.44899103
	67.92481916	29526306.52	-2864616.655	3133848529	1663150130	52.22007045	4482085.407	53.22721584	5379074.9	19.43133058	12.67551668
	2379.794406	3986353375	-11042095.56	12079890297	6410862213	522.2527069	172071380	629.3100783	242192376	82.88183898	88.92163142
	83.98546572	58714652.91	-4600305.657	5032666795	2670863112	116.9431015	16189207.62	117.7716409	18912533	27.73888459	20.80240489
	777.6397294	994721252	-8431149.012	9223553136	4894988847	275.4924277	69411597.39	345.7406176	101948536	48.92601903	50.80151619
	256.9949579	208128451.9	-5332693.416	5833888241	3096075607	458.8198025	73045081.65	431.9889171	80734165	71.15798003	61.0730727
	1873.112053	1957770116	-6889680.514	7537209249	4000037151	425.1857268	87703299.13	571.6138336	137690179	69.90271605	81.0885552
	2992.594873	6210127908	-13674275.01	14959455936	7939063057	835.5280716	341219660.5	977.1637044	465346825	123.653289	133.73494
	25278.65936	4.00167E+11	-104350041.3	1.14157E+11	60583947423	5293.88255	16474854724	6293.365452	2.287E+10	725.9458741	838.983477
	545.2682633	353270244.4	-4263948.423	4664696922	2475579538	41.27736019	5257154.342	41.27736019	6171442.1	18.86814364	11.83507185
	170.6509245	180489935.1	-6971181.363	7626369980	4047355227	12.80619353	2676997.669	19.42190141	4732116.2	14.61122266	8.48073359
	156.8408779	30397529.27	-1268569.731	1387796646	736511082.3	0	0	0	0	12.96223523	5.998906579
	197.7981083	364461093.8	-12141578.32	13282708283	7049204134	180.2020569	65359996.48	302.5890201	128181567	35.83471987	44.35965329
	6453.341285	28677457893	-29289247.8	32042006732	17004863882	631.1224866	551307624	738.3858339	753358736	103.7775523	108.8068777
	357.185856	2546551522	-46997405.43	51414470987	27285933993	783.9659154	1099404756	934.6022464	1.531E+09	112.4015953	124.4519198
	159.1779166	224106655.3	-9271934.721	10143360348	5383135440	110.2643535	30529248.64	119.1867657	38609562	26.91181436	21.1080109
	75.23697871	72908870.84	-6379321.191	6978883649	3703730777	23.02107792	4398005.075	97.37745384	21703775	15.73704643	18.21718523

	34.4875168	5204025.405	-992321.4247	1085585058	576125780.7	0	0	0	0	12.74501466	5.812862631
	4238.438801	1.04096E+11	-161890709.1	1.77106E+11	93991129118	1679.748217	8110948616	2046.122828	1.153E+10	232.3679379	270.629597
	565.3876258	2102341641	-24510148.02	26813741796	14230195793	342.3325323	250700286.1	408.8877322	349253068	57.00560601	58.30833657
	1277.862117	4222672493	-21775162.23	23821707525	12642307246	398.9837022	259599588	415.5930209	315282445	65.43361023	60.21647345
	2229.103297	1249787574	-3689105.596	4035827316	2141835083	157.6988932	17465041.31	317.7737293	40912114	36.66911727	49.36128564
	10199.13611	2.38574E+11	-154195923.3	1.68688E+11	89523660871	3026.097974	13916614524	3623.186975	1.946E+10	412.9365762	478.9049412
	4108.899551	74913878836	-120179663	1.31475E+11	69774369892	2608.946073	9350786424	3060.279552	1.281E+10	349.4953959	398.5672214
	3859.829125	6572402849	-11220753	12275338912	6514587836	349.1899077	116984422.1	678.1132955	265668265	63.64338794	97.47850972
	114.2013239	146713507.4	-8464588.803	9260135777	4914403449	201.7282253	51105629.54	276.065906	81403553	38.45955208	40.82230664
	559.2437555	402583037.3	-4738740.511	5184112491	2751236150	71.77485534	10234356.37	268.2805074	44567816	22.8183124	40.7254689
	267.1436254	73964920.71	-1818206.39	1989091074	1055621243	0	0	94.54699304	6020832.4	13.15624979	18.17853298
	20.98964122	23129650.36	-7263406.847	7946060366	4217016620	307.662596	66869078.38	314.3421833	79635139	51.71755526	45.56819906
	799.2307949	5359537681	-44198006.86	48351970081	25660648427	392.0961773	517292871.6	972.8862999	1.498E+09	63.66767842	129.8993993
	39.66254987	16472247.95	-2728663.904	2985118217	1584218160	86.14665825	7036252.757	71.52269798	6831938.8	23.67694729	14.90414225
	95.56382807	135999602.2	-9376161.217	10257382603	5443647659	104.1454354	29123434.82	108.1594994	35336836	26.00950524	19.57770078
	179.8451504	797953805.5	-29240920.19	31989137038	16976805653	125.2168177	109207935.4	182.1234385	185564391	28.8207253	29.05478113
	799.8550065	384230403.9	-3157979.82	3454783521	1833472042	44.54927076	4255402.8	109.0475489	12076939	19.80397232	20.84408177
	79.1063336	262829121.3	-21901441.62	23959855323	12715623020	156.1558775	102035505.1	191.2647007	145893992	32.55758263	30.04682861
	42.53409372	36154015.49	-5596663.429	6122667557	3249332330	27.14615534	4547206.585	20.96077445	4091451.6	16.20068375	8.477124725
	60.05773086	21367466.3	-2337737.916	2557450930	1357252850	74.29501323	5245426.735	76.71488295	6265887.9	22.29463506	15.57550818
	2574.451767	16237511061	-41572423.45	45479620412	24136277136	976.0627192	1210700494	1076.31728	1.559E+09	140.5760689	145.6533796
	112.4690192	74735187.79	-4379635.319	4791256687	2542745480	32.73808481	4305542.294	34.27867097	5267419.9	17.04637044	10.29364216
	334.3202737	319809784	-6300821.676	6893006332	3658155227	52.22715759	9833005.539	52.54930169	11566849	19.88361175	12.9252058
	344.3581251	331795551.6	-6345685.129	6942086291	3684202223	150.9148395	28622232.05	224.245254	49670008	32.39673718	34.67730245
	329.4402641	195652298.6	-3908547.229	4275893238	2269239349	129.0523767	15185738.52	77.67061684	10644933	29.72245174	16.13885664
	746.4701762	675835801.6	-5964908.11	6525521828	3463129240	96.7463106	17277269.5	146.924115	30712913	26.26809318	25.5666824

	1266.760198	946976396.2	-4926836.121	5389886324	2860441421	188.017452	27850495.45	267.3012052	45885301	38.85918663	41.45899233
	370.3653507	633210769.1	-11264657.08	12323369325	6540077832	484.4415241	162966605.8	691.8868342	272022227	74.61677436	93.92691393
	273.2172007	99475188.52	-2392345.334	2617190644	1388957035	47.63671482	3429226.192	88.18081477	7446546.9	19.23842783	17.46641151
	121.7438772	11460591.32	-614963.5579	672761096.4	357037902.3	0	0	0	0	12.9004286	5.945970763
	60.03416475	13713029.24	-1500429.493	1641447818	871125112.6	108.2524965	4945416.181	102.8025042	5408019.8	26.75156431	18.9276513
	790.9455044	877061531.5	-7306196.439	7992871551	4241859565	170.5488223	37304119.75	226.1738439	57611766	35.70472562	35.56104698
	225.3175597	63632090.5	-1854359.201	2028641719	1076610981	119.5063793	6617623.65	101.390835	6597016.1	28.19877625	19.0083037
	106.32593	30321968.72	-1871257.285	2047127975	1086421735	119.4226915	6778314.206	103.2685024	6862148.3	28.2158381	19.22576685
	351.2142079	67096852.46	-1257098.269	1375247035	729850936.8	0	0	0	0	13.30356705	6.291248702
	686.2587614	906331891.1	-8701989.333	9519848468	5052234360	546.6899969	142282000.1	760.0799891	230438160	83.15109071	102.8665563
	157.2943513	69245448.37	-2900716.923	3173341693	1684109363	133.2471756	11621161.76	147.390993	14895147	29.93128268	24.62720588
	116.7654818	42189654.42	-2374096.587	2597226782	1378362107	146.7886214	10566878.66	146.930407	12204329	31.7437299	24.58699856
	852.3800526	221841152.1	-1710010.146	1870725973	992804252.3	0	0	231.3249769	14090493	14.18968852	36.94406148
	37.09729096	9038697.438	-1602373.924	1752973529	930312401.9	0	0	0	0	12.74961633	5.816803842
	299.6826153	158895394.3	-3493436.666	3821768382	2028232865	165.1063613	17371142.53	374.5873699	45633816	34.27477241	53.6030269
	755.6083879	1381817132	-12052712.31	13185490173	6997609965	1240.06087	446341569.8	1497.545572	630238044	170.8784027	196.6034013
	131.9384073	9132553.531	-452503.6113	495032301.9	262716283.1	0	0	0	0	12.91837078	5.961337784
	36.45826909	5249045.898	-946058.8618	1034974494	549266484.4	0	0	0	0	12.748543	5.815884568
	173.6762428	53375797.23	-2021114.567	2211069639	1173426451	200.3928566	12206352.22	238.1682763	16815318	38.57266447	36.20667415
	14.02160506	1397594.593	-652628.5034	713965993.3	378905560.9	0	0	0	0	12.7090064	5.782022461
	148.069773	62314767.54	-2766782.883	3026819820	1606349423	256.065248	21269284.35	258.3766227	25038150	45.50803742	38.81542557
	213.8560227	45888532.44	-1407730.542	1540036528	817305600	0	0	0	0	13.06245041	6.084738365
	164.7585091	116552002.2	-4656006	5093602151	2703201830	539.4116138	75421063.41	546.225914	89228849	81.58967679	75.53541714
	1047.671872	269767242.9	-1692823.114	1851923614	982825739.7	0	0	306.7460626	18259902	14.53352868	46.47753423
	108.6962726	32653171.57	-1979298.447	2165323419	1149148688	339.9570931	20236879.59	343.6264588	23785243	56.1840252	49.52114604

Cost Calculations

	Biomass to AD			SNG to H2		H2 Delivery		TOTAL			
Scenario	Biomass Cost [\$/yr]	Biomass Delivery [\$/yr]	AD Processing [\$/yr]	SMR [\$/yr]	Tri-Gen [\$/yr]	SMR [\$/yr]	Tri-Gen [\$/yr]	SMR [\$/yr]	SMR [\$/kg H2]	Tri-Gen [\$/yr]	Tri-Gen [\$/kg H2]
1	435361431	169249760.9	252295175	10131528.51	5027859872	25163651.78	35208469.5	892201547.5	3.9910131	5919974709	22.68060542
5	148821695	18580884.51	252745355.2	3463309.181	1719355718	981315.8982	1335198.755	424592559.4	5.556179493	2140838851	23.99399014
	110458671	12567989.69	73409066.85	2570542.763	1276400672	502279.2654	662392.4342	199508549.8	3.51748157	1473498792	22.2502407
	27957010	4639500.261	394837122.4	650602.5306	323802995.6	100289.0136	129290.0253	428184524.7	29.82705472	751365918.8	44.8276019
	73973815	5047827.771	298194035.5	1721484.187	855131710.6	199220.7397	265676.8664	379136383.5	9.981310767	1232613066	27.79287614
	74150240	11500430.23	95670618.04	1725589.85	857168776.9	327338.6212	451986.4649	183374216.4	4.816103876	1038942051	23.37025816
10	14200169	1536355.525	110419559.5	330459.7234	164960918.8	34819.65662	43985.73835	126521363.5	17.35163808	291160988.7	34.19986667
	134621525	13508351.56	194823555.7	3132849.457	1555394799	825614.8189	1089760.984	346911897	5.018510297	1899437992	23.53397875
	92495815	9530593.503	178680247.4	2152519.546	1068994244	372090.8859	484665.6545	283231266.7	5.963335489	1350185566	24.34759784
	20233744	1864596.896	128663944.2	470870.2751	234627027.6	41704.00244	52169.04741	151274859.6	14.5599752	385441482	31.77363775
	24508571	3891928.831	66378529.73	570352.0597	283985916.6	80801.40556	102876.1686	95430183.34	7.582944825	378867822.6	25.78424804
	52358517	3000068.094	46997092.45	1218463.031	605552700.1	119192.9612	149585.4722	103693333.7	3.856857845	708057963.3	22.55621456
	46641007	3572152.367	18422867.53	1085407.801	539536007.8	138656.9401	204584.4392	69860091.78	2.916965989	608376619.3	21.75651545
	30067602	2324677.306	64575563.65	699719.2248	348172738	66743.54512	97807.6007	97734305.36	6.33021377	445238388.2	24.69895382
	12411748	904828.9639	387303095.1	288840.4245	144311084.6	23721.84503	28481.409	400932234.5	62.90832936	544959238.2	73.23451458
	7822731.7	1043501.398	116630570.1	182046.9687	91324436.3	21004.10958	27085.34008	125699854.3	31.29294772	216848324.8	46.23622649
20	2236914	246759.9586	174114986	52056.421	26828317.37	4238.426319	4926.895271	176654954.8	153.7965768	203431904.2	151.6891511
	11963255	839378.5714	82258534.92	278403.3024	139132601.4	27634.82472	34477.59312	95367206.73	15.52457901	234228247.6	32.6568769
	131198427	13045341.48	80753144.29	3053188.699	1515870311	777574.7267	1041502.962	228827676	3.396644192	1741908727	22.14529712
	26368528	2190856.927	49441485.42	613636.109	305461733.4	57974.5145	72265.89548	78672481.12	5.810414186	383534869.8	24.26072136
	45054497	2385713.74	34416105.86	1048487.274	521217516.9	121520.0708	152648.0138	83026323.89	3.588787948	603226481.5	22.33196804

	16533742	738582.8861	19685962.46	384765.5495	191905301.1	34751.31649	43122.33598	37377804.4	4.402635784	228906711	23.09256145
	16130681	773008.1226	92364973.63	375385.6864	187251387.6	32677.93123	40928.35398	109676725.9	13.24133949	296560978.2	30.66521821
	8371442.4	1003012.838	80609926.24	194816.3099	97660073.51	15246.34598	18383.98477	90194444.15	20.98213251	187662839	37.39062562
	5158019.4	314952.6276	149009782.9	120035.0268	60556587.02	9044.167642	11165.18822	154611834.1	58.37540283	215050507.2	69.54120952
	2444113.8	293322.6964	119980906.2	56878.27941	29220730.96	4374.770547	5307.39625	122779595.8	97.83064144	151944381.1	103.692646
	19304425	2851286.131	102969237.5	449243.594	223896732	56256.37678	71054.08228	125630448.7	12.67383854	349092734.9	30.16259344
	16092154	1013317.978	113204028.6	374489.124	186806549.1	30556.33484	38395.36237	130714546.4	15.81903048	317154445.5	32.87315265
	36587891	1837218.363	60504769.42	851456.3632	423458646.8	73598.65309	91047.66466	99854933.81	5.314987956	522479573.3	23.8186248
	27386197	1953481.553	37918590.44	637318.8218	317212149.8	62616.85565	77842.09155	67958204.55	4.832593926	384548260.7	23.42091562
	22323217	1078560.902	28831031.69	519495.518	258752931.4	48563.02164	60651.32725	52800868.41	4.606323261	311046392.6	23.24090988
	25337714	1753725.228	16703690.97	589647.4781	293559532.6	51079.58029	69196.30316	44435857.07	3.415358271	337423859	22.21227825
	10965742	798208.6809	18422867.53	255189.6498	127614913.9	20345.63249	24656.65047	30462353.84	5.409978691	157826389.1	24.0063607
	5871699.4	397951.2413	64575563.65	136643.455	68797025.89	11833.92628	14394.64459	70993691.7	23.5464846	139656634.9	39.67185439
	4070383.1	340696.6117	366108379.5	94724.06008	47998296.06	8815.948392	11075.6247	370622999.2	177.3238752	418528830.9	171.5042309
	1962388.5	115811.6629	54539668.28	45667.79033	23658533.94	3686.454071	4457.384697	56667222.64	56.23634431	80280859.72	68.23572007
30	2236914	246759.9586	116171914.4	52056.421	26828317.37	4240.897081	4926.895271	118711885.7	103.3510872	145488832.6	108.4838565
	11963255	839378.5714	164066924.3	278403.3024	139132601.4	27739.56905	34418.58355	177175700.9	28.84197054	316036578	44.06286488
	121689477	12858672.58	43980416.72	2831900.836	1406076111	670484.7993	901688.0846	182030951.5	2.913146661	1585506365	21.73200071
	9545013.1	382351.4445	68632217.78	222127.1005	111210597.2	19509.72542	23835.5039	78801219.16	16.077797	189794015.1	33.16581916
	26229990	2192612.256	80753144.29	610412.1035	303862110.6	58087.50447	71383.59646	109844245.7	8.155476236	413109240.3	26.26948359
	41612707	2337911.672	48888967.19	968391.5477	481477215.9	108335.0846	135552.0571	93916312.78	4.395266322	574452354.1	23.02569703
	7158771.8	93624.6288	25710129.37	166595.6045	83658086.42	12858.49198	15248.17561	33141979.92	9.015920283	116635860.4	27.17554868
	12978380	592062.3799	17337358.45	302026.8071	150853641.1	25237.90686	30905.4806	31235065.15	4.686968952	181792347	23.36360567
	16130681	773008.1226	19246914	375385.6864	187251387.6	31846.82203	39912.44746	36557835.16	4.41365023	223441902.7	23.10450533
	8246608.4	982091.744	90056577.33	191911.2297	96218688.74	15469.37372	18062.67676	99492658.04	23.49555982	195522028.8	39.54622832
	3492631.7	114844.234	4909472.706	81278.89908	41327344.07	5971.281247	6932.335461	8604198.839	4.797641336	49851225.07	23.80717068

	2062382.7	146210.9174	36175549.43	47994.80933	24813107.85	3624.72553	4310.642053	38435762.56	36.29412939	63201561.51	51.11440391
	2371625.4	155390.1276	62475279.46	55191.36289	28383750.35	4089.545032	4985.363686	65061575.93	53.42550205	93391030.74	65.68161346
	18662164	2788301.362	146366155.4	434297.1913	216480923.8	53579.98954	69656.93037	168304498	17.56320838	384367201.5	34.3533476
	381731.17	19274.40287	117354912	8883.470083	5407623.118	603.1677093	704.1025086	117765404.2	600.8004302	123164244.8	538.1604363
	5513311.2	146080.7563	101071009.4	128303.2113	64658930.03	9278.702023	10431.48537	106867983.3	37.74898157	171399762.9	51.85402263
	11445736	787210.2434	64648432.46	266359.8478	133157120.1	20653.30678	24591.15234	77168392.24	13.13003386	210063090.3	30.61193306
	35722711	1835903.101	71474509.74	831322.3072	413468932.2	73147.37197	90080.54241	109937594	5.993381815	522592137.1	24.40075135
	26587848	1914047.651	53899775.85	618740.0086	307994084.6	60384.19198	74386.79379	83080795.27	6.085378533	390470142.4	24.49567405
	21774784	1057971.344	10988439.32	506732.6328	252420497.4	47335.08733	58671.66483	34375262.32	3.074413652	286300363.7	21.93071491
	11981010	281340.5552	27877792.78	278816.4843	139337605.8	22550.60246	29182.06499	40441510.35	6.573612078	179506931.1	24.99036147
	13701749	839521.4806	14138845.83	318860.7174	159205955.2	22381.09302	26599.37894	29021357.89	4.124885161	187912670.6	22.87519519
	9395703.3	432338.513	17469937.74	218652.4331	109486606	16928.86751	20361.36823	27533560.89	5.706938855	136804947	24.28607044
	1120878.9	50605.02464	7490246.55	26084.57135	13942122.69	1780.719581	2226.030328	8689595.744	15.09770796	22606079.17	33.63963714
	3892094.8	145026.257	23946639.38	90575.01763	45939706.88	6812.469135	8235.806733	28081147.91	14.05081714	73931703.11	31.6834194
	1570039	89296.863	16703690.97	36537.21666	19128307.89	2588.547537	3069.035049	18402152.6	22.82592149	37494403.76	39.8327925
	2083365.2	69393.50317	18422867.53	48483.10372	25055380.02	3649.634836	4403.675691	20627758.92	19.28220897	45635409.88	36.53602571
	671644.84	48705.81816	55452273.18	15630.20595	8755084.041	1083.301799	1403.126756	56189337.35	162.9237366	64929111.01	161.2443548
	3175836.6	220076.9194	18220674.56	73906.59112	37669499.25	6378.289153	7878.873257	21696872.98	13.3048238	59293966.23	31.14132544
	1962388.5	115811.6629	11676408.04	45667.79033	23658533.94	3684.871658	4460.232281	13803960.82	13.69900018	37417602.33	31.80355874
40	2236914	246759.9586	366694758	52056.421	26828317.37	4330.320025	4926.895271	369234818.7	321.4574491	396011676.2	295.2864018
	9759238	760226.1446	48097752.02	227112.4437	113684125.4	21382.38533	26337.3229	58865711.04	11.74671998	172327679	29.45261573
	2204017.1	41191.60481	116171914.4	51290.85876	26448475.96	3882.904289	4365.223319	118472296.8	104.6819947	144869964.2	109.6347284
	1215772.7	35546.95203	164066924.3	28292.89703	15037805.71	1994.142863	2323.889989	165348531	264.8610363	180358373.6	247.4392861
	121950115	12890733.57	43980416.72	2837966.285	1409085544	676044.7825	906851.3325	182335276	2.911780405	1588813661	21.73078906
	8068602.3	249800.5047	68632217.78	187768.7547	94163358.05	15834.61153	19232.34647	77154223.91	18.62222343	171133210.9	35.37697834
	26229990	2192612.256	71105251.74	610412.1035	303862110.6	58090.92355	71391.41139	100196356.6	7.439160784	403461355.6	25.65597771

	41612707	2337911.672	24030875.39	968391.5477	481477215.9	108225.3449	136078.7853	69058111.23	3.23190702	549594789	22.02933457
	7158771.8	93624.6288	48888967.19	166595.6045	83658086.42	12795.67711	15224.80077	56320754.93	15.3214575	139814674.9	32.57609186
	12978380	592062.3799	21957889.6	302026.8071	150853641.1	25289.0145	30898.8182	35855647.41	5.380309129	186412871.5	23.95742667
	13607463	695372.2046	17337358.45	316666.5323	158117288.1	26525.59521	32532.52883	31983385.32	4.577384726	189790013.8	23.26381598
	3191032.2	64326.66354	19224485.32	74260.2148	37844953.2	4995.736837	5874.378547	22559100.1	13.7676787	60330671.73	31.53491919
	8246608.4	982091.744	90056577.33	191911.2297	96218688.74	15126.33512	17968.338	99492315	23.49547881	195521934.5	39.54620924
	2828511.6	84511.83721	16043936.48	65823.80589	33659143.99	4780.20587	5499.838132	19027563.97	13.1007257	52621603.79	31.03064862
	2062382.7	146210.9174	4909472.706	47994.80933	24813107.85	3623.167066	4322.077953	7169684.276	6.770190871	31935496.22	25.82790384
	2367931.3	155047.2074	29996993.49	55105.39544	28341096.73	4185.639867	4951.810901	32579263.07	26.79429196	60866020.58	42.87365884
	18662164	2788301.362	61796273.92	434297.1913	216480923.8	53362.01565	70817.5141	83734398.51	8.737999919	299798480.6	26.79490179
	1859303.8	48220.45629	133484177.2	43268.85246	22468276.77	2867.065511	3501.293567	135437837.4	141.8599444	157863479.5	141.6172172
	381731.17	19274.40287	26952342.52	8883.470083	5407623.118	603.1677093	704.1025086	27362834.73	139.5961997	32761675.31	143.1506158
	4292078.3	69375.17104	116223485.5	99883.24691	50558078.55	7069.566896	8363.24459	120691891.8	54.76216319	171151380.8	66.51161882
	11279760	810032.6051	100889204	262497.3283	131240692.2	20030.06046	23974.31211	113261524.2	19.55476793	244243663.3	36.11670986
	31582980	1486378.366	27563458.67	734984.4153	365669917.3	62776.80746	76554.02468	61430578.73	3.787927241	426379288.8	22.51789207
	3719985.3	246769.4924	62841938.16	86569.7653	43952460.61	6006.298235	7084.734328	66901269	35.02380027	110768238.3	49.66595275
	26245782	1759134.782	52136413.03	610779.6209	304044458.1	58733.1999	73047.33556	80810842.77	5.996257159	384258835.4	24.4201927
	21722435	1035738.53	53098793.54	505514.3908	251816054.4	47265.16676	58410.93189	76409746.55	6.850312563	327731432.3	25.16484937
	3832720.3	263142.8561	17798271.4	89193.28279	45254145.23	6781.782387	8268.336905	21990109.65	11.17352997	67156548.15	29.22577116
	11535549	258608.7343	10988439.32	268449.9202	134194130.6	20237.4321	26670.68257	23071284.2	3.894965739	157003398.1	22.70155131
	8987048.4	145928.3613	25338280.18	209142.4054	104768110	14335.00111	16949.91029	34694734.34	7.518247522	139256316.9	25.84535897
	9209523.2	394309.3906	10587054.52	214319.7349	107336894.2	16667.57758	19966.79718	20421874.39	4.318456899	127547748	23.10044758
	2135946.4	59928.21603	17469937.74	49706.75063	25662504.76	3380.892765	3897.743291	19718900.02	17.97887294	45332214.88	35.39984231
	1120878.9	50605.02464	7832963.724	26084.57135	13942122.69	1780.707616	2224.155208	9032312.906	15.69316071	22948794.47	34.14962466
	3425655	105902.344	7437888.477	79720.24809	40554003.69	5845.396461	7406.266824	11055011.47	6.284716734	51530855.78	25.09045147
	1066488.3	35961.53584	21137361.55	24818.81875	13314106.79	1708.152044	1985.799338	22266338.34	40.65957627	35555903.96	55.60839745

	2083365.2	69393.50317	14080465.15	48483.10372	25055380.02	3664.608562	4427.587578	16285371.52	15.22307576	41293031.42	33.05948739
	712853.11	40351.21969	5955574.843	16589.18569	9230891.495	1132.747723	1356.521845	6726501.107	18.37635202	15941027.19	37.29932709
	665376.58	46950.39045	4868707.577	15484.33386	8682708.135	1073.275555	1353.725186	5597592.153	16.38339407	14265096.4	35.75954194
	2687980.8	86981.00704	15768774.38	62553.4368	32036517.44	5280.113257	6335.487218	18611569.71	13.48425571	50586589.08	31.39019287
	1561677.8	37221.14463	5272616.422	36342.63939	19031766.42	2868.493308	3468.942401	6910726.533	8.617918744	25906750.76	27.66981432
	494124.12	27017.44268	55452273.18	11499.02641	6705357.72	783.1091045	1038.215178	55985696.88	220.6536771	62679810.68	211.5808548
	377588.4	17271.25381	18220674.56	8787.061393	5359788.976	604.3957522	705.8051178	18624925.67	96.06076468	23976028.99	105.9115581
50	1816919	197588.882	11191470.62	42282.49386	21978885.02	3269.287134	3806.6167	13251530.32	14.20367061	35188670.17	32.30368173
	419994.96	24430.89197	364352042.8	9773.927134	5849432.349	662.4062123	773.4338376	364806905	1691.566614	370646674.4	1471.976151
	9759238	760226.1446	36053011.16	227112.4437	113684125.4	21328.20434	26275.25264	46820916	9.34316735	160282876	27.39403202
	2204017.1	41191.60481	22532597.57	51290.85876	26448475.96	3880.817755	4365.142566	24832977.91	21.94239272	51230647.33	38.77034232
	1148745.8	31132.40644	116171914.4	26733.07631	14263884.95	1854.045537	2161.693288	117380379.7	198.9947982	131617839.2	191.1065539
	120909648	12891884.01	164066924.3	2813753.033	1397071895	666416.5778	888494.3905	301348626.1	4.853761044	1695828846	23.39407107
	5488340	98895.2324	22829392.54	127722.0939	64370602.77	9776.984417	11775.39198	28554126.89	10.13206593	92799005.97	28.20246422
	2927787.6	37124.12557	27038696.53	68134.10922	34805424.24	4927.618432	5967.386214	30076669.96	20.00600255	64814999.86	36.92501707
	26229990	2192612.256	31364847.38	610412.1035	303862110.6	58317.76709	71842.27828	60456179.07	4.488618666	363721402.1	23.12892686
	41612707	2337911.672	40774524.63	968391.5477	481477215.9	108367.3771	136036.6862	85801902.51	4.0155134	566338396.1	22.70046634
	2979454	35244.99434	71105251.74	69336.46591	35401985.62	4871.423309	5814.235352	74194158.61	48.49569239	109527750.6	61.31577604
	3735830.7	28286.40013	8159597.202	86938.5133	44135418.64	6257.545186	7421.936338	12016910.39	6.26434641	56066554.91	25.03233859
	4555753.5	32236.25099	20160032.9	106019.3752	53602580.36	7672.607155	9246.004222	24861714.67	10.62774168	78359849.06	28.68917853
	6469848.1	99297.18989	19570016.25	150563.2936	75703493.94	10991.1103	13168.5622	26300716	7.916689599	101855824.1	26.25889963
	13607463	695372.2046	40491531.49	316666.5323	158117288.1	26494.29112	32698.18477	55137527.06	7.891149472	212944352.5	26.10199626
	752969.06	19666.70268	9848086.204	17522.74528	9694086.486	1180.83508	1403.333123	10639425.54	27.51763994	20316211.78	45.00392022
	2523218	26913.60386	16003116.45	58719.15416	30134099.5	3945.875487	4703.351271	18615913.07	14.36811196	48692050.9	32.18755874
	2424941.3	129669.3619	20188785.47	56432.10421	28999356.65	3963.357656	4720.653358	22803791.57	18.31369472	51747473.41	35.5936617
	6409937.3	787412.4291	17251463.91	149169.0763	75011738.98	11197.1141	13382.09445	24609179.84	7.476760884	99473934.72	25.88452854

	968262.28	14470.4168	19076396.82	22532.94889	12179949.45	1492.131691	1742.186962	20083154.6	40.39327365	32240821.15	55.53897053
	1852995.8	159335.1681	85869352.12	43122.05598	22395442.21	3129.226082	3608.424574	87927934.4	92.41076466	110280733.8	99.26815512
	2528063.5	71753.48684	16043936.48	58831.91764	30190048.24	4234.293364	4874.446859	18706819.72	14.41060149	48838676.2	32.22260457
	2048734.1	144952.7562	4909472.706	47677.18584	24655515.76	3597.48903	4294.303578	7154434.23	6.800797358	31762969.62	25.85950745
	2343578	150677.9981	33197404.06	54538.65559	28059903.05	4019.634635	4836.59173	35750218.34	29.70772687	63756399.69	45.37630403
	17511186	2607837.173	29990639.31	407512.17	203191265.9	49821.95423	61854.31104	50566996.75	5.623694626	253362782.8	24.13303818
	1859303.8	48220.45629	47284282.22	43268.85246	22468276.77	2867.065511	3501.293567	49237942.4	51.57267647	71663584.54	64.28844372
	381731.17	19274.40287	133484177.2	8883.470083	5407623.118	603.1919438	704.1818851	133894669.4	683.0866462	139293510.1	608.6365104
	4915086.4	521019.3087	26952342.52	114381.6023	57751583.55	8276.498636	9770.548054	32511106.34	12.88162715	90149802.34	30.59273927
	4290863	68787.56297	114996176	99854.96607	50544046.73	7067.720487	8025.419651	119462749.2	54.21980965	169907898.7	66.04708626
	7886727.2	183214.913	100889204	183536.2442	92063355.37	13431.68534	15954.0964	109156114.1	26.95388543	201038455.6	42.5174355
	31582980	1486378.366	27563458.67	734984.4153	365669917.3	62638.79533	76793.54875	61430440.71	3.787918731	426379528.3	22.51790472
	3719985.3	246769.4924	53714215.23	86569.7653	43952460.61	6008.396195	7077.105293	57773548.16	30.24530389	101640507.7	45.57328646
	25875922	1723348.028	45412628.78	602172.4047	299773901.1	57786.50834	71706.72228	73671857.57	5.5446728	372857506.5	24.03431805
	21722435	1035738.53	26834437.29	505514.3908	251816054.4	47344.55602	58262.65285	50145469.69	4.495658688	301466927.8	23.14813009
	3832720.3	263142.8561	53098793.54	89193.28279	45254145.23	6710.675278	8400.928057	57290560.68	29.11025944	102457202.9	44.58821734
	9352215.9	211616.7685	17798271.4	217640.414	108984482.6	16315.69344	21283.41661	27596060.19	5.746490488	136367870.1	24.32104753
	7472255.9	111447.0772	10988439.32	173890.8609	87277701.31	11781.4308	13936.81493	18757814.63	4.888781578	105863780.5	23.6309077
	3698125.3	39218.01572	25338280.18	86061.05067	43700056.73	5853.657427	6872.011517	29167538.24	15.35989632	72782552.27	32.82693988
	9209523.2	394309.3906	10587054.52	214319.7349	107336894.2	16667.57758	19966.79718	20421874.39	4.318456899	127547748	23.10044758
	2135946.4	59928.21603	17469937.74	49706.75063	25662504.76	3304.771601	3894.204839	19718823.9	17.97880353	45332211.34	35.39983955
	1120878.9	50605.02464	7832963.724	26084.57135	13942122.69	1781.458215	2106.068608	9032313.657	15.69316201	22948676.38	34.14944894
	3425655	105902.344	7437888.477	79720.24809	40554003.69	5803.36053	7087.845769	11054969.43	6.284692837	51530537.36	25.09029643
	1066488.3	35961.53584	21137361.55	24818.81875	13314106.79	1672.298305	1985.799338	22266302.48	40.6595108	35555903.96	55.60839745
	2083365.2	69393.50317	14080465.15	48483.10372	25055380.02	3568.033093	4305.704936	16285274.94	15.22298548	41292909.53	33.05938981
	712853.11	40351.21969	5955574.843	16589.18569	9230891.495	1132.747723	1322.751697	6726501.107	18.37635202	15940993.42	37.29924807

	665376.58	46950.39045	4868707.577	15484.33386	8682708.135	1073.248384	1252.75198	5597592.126	16.38339399	14264995.43	35.75928882
	2687980.8	86981.00704	15768774.38	62553.4368	32036517.44	5136.800113	6313.318718	18611426.39	13.48415188	50586566.92	31.39017911
	1561677.8	37221.14463	5272616.422	36342.63939	19031766.42	2868.493308	3348.956252	6910726.533	8.617918744	25906630.78	27.66968617
	494124.12	27017.44268	55452273.18	11499.02641	6705357.72	783.1142046	952.3460486	55985696.89	220.6536771	62679724.81	211.580565
	377588.4	17271.25381	18220674.56	8787.061393	5359788.976	604.3957522	705.8051178	18624925.67	96.06076468	23976028.99	105.9115581
60	1816919	197588.882	10891450.71	42282.49386	21978885.02	3269.287134	3806.6167	12951510.41	13.88209386	34888650.26	32.02825934
	419994.96	24430.89197	361525578.8	9773.927134	5849432.349	662.9411775	773.4338376	361980441.5	1678.460636	367820210.5	1460.751208
	9759238	760226.1446	26752428.37	227112.4437	113684125.4	21306.45163	26275.25264	37520311.46	7.487221073	150982293.2	25.80446444
	2204017.1	41191.60481	24803040.08	51290.85876	26448475.96	3679.833825	4365.142566	27103219.44	23.94837571	53501089.85	40.48856839
	1107762.4	28776.31522	21194103.46	25779.33005	13790674.14	1788.62222	2084.694521	22358210.09	39.3061546	36123400.98	54.39096546
	119657333	12989883.98	116171914.4	2784609.73	1382612152	652932.7042	872586.2223	252256673.5	4.105570178	1632303870	22.75340706
	3683052.8	77120.41806	162014730.5	85710.2896	43526023.09	6323.103332	7540.892034	165866937.1	87.70452779	209308467.7	94.79023468
	3328739	44678.46983	22829392.54	77464.86451	39434972.42	5621.925169	6602.054841	26285896.81	15.37847196	65644384.5	32.89293128
	2697634.7	31838.99172	27038696.53	62778.09757	32147985.14	4561.289016	5460.737441	29835509.56	21.53874829	61921616.05	38.28634374
	26229990	2192612.256	31364847.38	610412.1035	303862110.6	58442.33242	72151.50644	60456303.63	4.488627915	363721711.3	23.12894652
	40918317	2283613.701	38735715.86	952232.017	473459502	105613.465	133839.526	82995491.9	3.950088951	555530988	22.64515367
	2979454	35244.99434	71105251.74	69336.46591	35401985.62	4876.716789	5831.438595	74194163.91	48.49569585	109527767.8	61.31578567
	3735830.7	28286.40013	8159597.202	86938.5133	44135418.64	6190.834951	7392.133184	12016843.68	6.264311634	56066525.11	25.03232529
	4555753.5	32236.25099	15184196.51	106019.3752	53602580.36	7672.973759	9177.012707	19885878.66	8.500700137	73383943.68	26.86739557
	6041038.1	65431.66366	20160032.9	140584.2259	70752279.04	10273.33121	12149.74307	26417360.22	8.516241654	97030931.45	26.79065731
	13607463	695372.2046	19570016.25	316666.5323	158117288.1	26472.2573	32663.11604	34215989.79	4.896909676	192022802.2	23.5375036
	752969.06	19666.70268	37601745.76	17522.74528	9694086.486	1180.83508	1379.251225	38393085.1	99.29926083	48069847.26	106.4830193
	1727304.3	62967.7452	9848086.204	40197.02211	20944157.21	2681.31732	3171.916162	11681236.62	13.17013093	32585687.41	31.46608916
	2523218	26913.60386	16003116.45	58719.15416	30134099.5	3889.785792	4695.47587	18615856.98	14.36806867	48692043.02	32.18755353
	2424941.3	129669.3619	20188785.47	56432.10421	28999356.65	3965.756323	4708.826001	22803793.97	18.31369665	51747461.58	35.59365356
	5805833.4	726101.1461	17251463.91	135110.6525	68036510.5	10115.06984	12079.30224	23928624.22	8.026446037	91831988.3	26.38239138

	968262.28	14470.4168	19076396.82	22532.94889	12179949.45	1492.131691	1760.640066	20083154.6	40.39327365	32240839.6	55.53900232
	1852995.8	159335.1681	85869352.12	43122.05598	22395442.21	3164.800866	3608.989046	87927969.97	92.41080204	110280734.3	99.26815562
	2528063.5	71753.48684	15188167.42	58831.91764	30190048.24	4255.648293	4871.251793	17851072.02	13.75138526	47982903.94	31.65798625
	2048734.1	144952.7562	4909472.706	47677.18584	24655515.76	3601.858257	4201.796691	7154438.599	6.800801511	31762877.11	25.85943214
	2343578	150677.9981	20027068.56	54538.65559	28059903.05	4019.491065	4836.824488	22579882.68	18.7634375	50586064.41	36.0027958
	17511186	2607837.173	33197404.06	407512.17	203191265.9	48460.12005	62057.23733	53772399.66	5.98017629	256569750.5	24.4385048
	1727924.4	27890.29861	47278914.28	40211.45294	20951317.21	2634.432639	3078.461679	49077574.9	55.3131614	69989124.69	67.56014286
	381731.17	19274.40287	17223839.66	8883.470083	5407623.118	603.3839675	700.232605	17634332.09	89.964573	23033168.58	100.6423583
	2500906	63683.19728	120072286.6	58199.92027	29876476.38	3958.961372	4643.825968	122699034.7	95.5463076	152517996	101.7204946
	4915086.4	521019.3087	29055736.76	114381.6023	57751583.55	8198.607811	9766.94911	34614422.69	13.71500811	92253192.98	31.30653431
	7885530.3	183439.3903	26594637.71	183508.3893	92049534.86	13342.27513	16031.89136	34860458.06	8.609388742	126729174.1	26.80590314
	2044288.2	22427.44208	114996176	47573.72267	24604181.46	3145.387674	3701.783616	117113610.7	111.5669052	141670774.8	115.5907004
	27413982	1346141.67	95439327.66	637965.418	317532965	52963.18136	63974.02526	124890379.7	8.872111684	441796390.1	26.88034187
	4113096.3	121980.374	18571588.7	95718.06087	48491479.56	6597.703106	7742.511518	22908981.1	10.84693491	71305887.41	28.91620267
	3654132.9	271254.9862	21583693.27	85037.27933	43192102.27	5896.163333	6937.116992	25600014.6	13.64350669	68708120.54	31.36234115
	25875922	1723348.028	14128771.39	602172.4047	299773901.1	57721.29396	75318.25111	42387934.97	3.190190091	341577260.6	22.01799985
	20168147	1021438.253	4153178.652	469343.7341	233869618.9	42965.51147	53024.84268	25855073.5	2.496605394	259265408	21.44190236
	2260750.8	165638.2596	54120773.02	52611.13977	27103546.67	3854.500367	4646.09024	56603627.71	48.75977664	83655354.83	61.71998301
	2764128.1	91715.80623	39363437.71	64325.50286	32915745.85	4310.003605	5487.189222	42287917.16	29.79396183	75140514.69	45.34200685
	1568720	23794.04245	26834437.29	36506.52213	19113078.49	2486.39283	2905.454252	28465944.28	35.33867696	47542935.31	50.55048111
	305116.8	8314.845339	53044771.82	7100.536061	4523002.453	470.525607	549.251285	53365774.52	340.6174016	57881755.16	316.4173705
	9446970.8	220031.8344	17720295.18	219845.5051	110078560.7	16435.3439	20452.67192	27623578.64	5.694524979	137486311.1	24.27457482
	6172392.3	82190.36512	8751574.866	143641.0385	72268947.4	9630.453534	11355.17926	15159428.98	4.78298984	87286460.06	23.58729329
	3698125.3	39218.01572	18190212.47	86061.05067	43700056.73	5756.739106	6950.153335	22019373.6	11.59560648	65634562.69	29.60299929
	9197000.1	386241.7048	7530990.287	214028.3029	107192297.3	16580.34697	19939.3254	17344840.7	3.672774459	124326468.6	22.54769507
	2123444.2	58840.47472	11749998.5	49415.80437	25518148.84	3285.343474	3885.178649	13984984.31	12.82600092	39454317.19	30.99120232

	826782.08	30968.83205	6937708.224	19240.48763	10546361.64	1293.301301	1528.494893	7815992.926	18.41040046	18343349.28	37.00601527
	2199587.8	47160.92293	15600489.12	51187.78248	26397333.62	3654.326577	4388.316578	17902079.93	15.85011174	44248959.76	33.55417091
	676409.53	17169.22779	5883740.447	15741.08753	8810099.052	1043.129573	1218.008288	6594103.418	18.98524353	15388636.26	37.94680044
	1226067.2	37560.30712	7437888.477	28532.46561	15156670.07	1927.648834	2251.396848	8731976.125	13.86974221	23860437.48	32.46002592
	606085.69	21989.32288	7962977.249	14104.54405	7998111.533	953.4083377	1110.784732	8606110.219	27.65304779	16590274.58	45.6566755
	1790889.6	56491.74652	18514914.32	41676.74812	21678338.17	3009.152619	3582.491287	20406981.53	22.19116478	42044216.29	39.15815301
	486247.07	18978.35273	14236115.72	11315.71531	6614406.073	755.5057541	882.056963	14753412.36	59.08886129	21356629.27	73.25891106
	665376.58	46950.39045	5955574.843	15484.33386	8682708.135	1073.248384	1252.833143	6684459.391	19.56450727	15351862.78	38.48383252
	728610.53	13328.56181	4868707.577	16955.8851	9412833.098	1168.509611	1358.81945	5628771.068	15.04486422	15024838.59	34.39530088
	2251845.8	66395.86642	15768774.38	52403.9073	27000726.19	4194.54848	5029.488776	18143614.52	15.69116873	45092771.75	33.4005043
	1584800.1	43779.38621	4225434.096	36880.72893	19298744.96	2910.397938	3535.024957	5893804.664	7.242548197	25156293.53	26.47627724
	494124.12	27017.44268	6129004.767	11499.02641	6705357.72	783.1246358	952.3419637	6662428.48	26.25830211	13356456.39	45.08581679
	377588.4	17271.25381	55452273.18	8787.061393	5359788.976	604.375731	705.8051178	55856524.27	288.0881529	61207627.62	270.3781852
70	1816919	197588.882	14940950.78	42282.49386	21978885.02	3177.111886	3806.6167	17000918.3	18.22245716	38938150.33	35.74575593
	312388.36	12661.1579	10891450.71	7269.756455	4606962.855	474.6304541	575.3022466	11224244.61	69.97330918	15824038.38	84.49037322
	513604.39	4943.351588	1903948.343	11952.36217	6930284.823	795.5355037	947.7185579	2435243.98	9.233872769	9353728.624	30.37671343
	9759238	760226.1446	361525578.8	227112.4437	113684125.4	21344.15518	26292.7313	372293499.6	74.29159374	485755461.2	83.02072552
	1690412.7	21988.88221	26752428.37	39338.49659	20518191.13	2735.538504	3247.65053	28506903.96	32.84183737	48986268.7	48.33551661
	1107762.4	28776.31522	24803040.08	25779.33005	13790674.14	1789.863302	2084.694521	25967147.96	45.65073537	39732337.61	59.8249374
	107606.6	904.9799419	22081292.67	2504.170679	2242469.494	163.4931891	190.8908248	22192471.91	401.6399504	24432464.63	378.7155306
	119657333	12989883.98	116171914.4	2784609.73	1382612152	653343.8538	872029.7695	252257084.6	4.105576869	1632303313	22.7533993
	3683052.8	77120.41806	162014730.5	85710.2896	43526023.09	6319.975306	7546.319593	165866934	87.70452614	209308473.1	94.79023714
	3328739	44678.46983	22829392.54	77464.86451	39434972.42	5609.387943	6612.673804	26285884.28	15.37846463	65644395.12	32.8929366
	2849656.7	39323.46355	27038696.53	66315.88466	33903293.82	4871.697124	5752.965367	29998864.31	20.50134708	63836723.51	37.36481045
	26229990	2192612.256	31364847.38	610412.1035	303862110.6	58336.67447	72128.5267	60456197.97	4.48862007	363721688.3	23.12894506
	40918317	2283613.701	6581202.773	952232.017	473459502	105756.363	134069.4439	50841121.71	2.419733272	523376704.8	21.33444608

	2979454	35244.99434	38735715.86	69336.46591	35401985.62	4871.594322	5807.91111	41824622.9	27.337921	77158208.37	43.19467349
	3735830.7	28286.40013	71105251.74	86938.5133	44135418.64	6190.442903	7420.495515	74962497.83	39.07751983	119012208	53.13602543
	4555753.5	32236.25099	15184196.51	106019.3752	53602580.36	7679.358792	9146.305286	19885885.04	8.500702867	73383912.97	26.86738433
	564884.1	11528.1262	7966132.529	13145.71986	7522381.256	890.6974005	1035.753561	8556581.178	29.4992554	16065961.77	47.43862786
	6041038.1	65431.66366	15213539.02	140584.2259	70752279.04	10431.29447	12351.33993	21471024.31	6.921676884	92084639.17	25.42496475
	13607463	695372.2046	20160032.9	316666.5323	158117288.1	26345.6855	32615.01316	34805879.86	4.981333316	192612770.7	23.60981995
	1727304.3	62967.7452	37601745.76	40197.02211	20944157.21	2681.263353	3171.916162	39434896.12	44.46128113	60339346.97	58.26617214
	729208.31	30178.241	8910092.642	16969.79621	9419735.238	1130.028247	1336.936745	9687579.016	25.8722252	19090551.37	43.66682417
	1731795.8	90065.16824	5835349.911	40301.54633	20996017.96	2725.108284	3179.2167	7700237.571	8.659195931	28656408.09	27.60004601
	2523218	26913.60386	16003116.45	58719.15416	30134099.5	3889.785792	4661.66609	18615856.98	14.36806867	48692009.21	32.18753119
	5805833.4	726101.1461	18107235.27	135110.6525	68036510.5	10136.82982	12089.15766	24784417.35	8.313507142	92687769.52	26.62824858
	846990.51	7189.778411	17251463.91	19710.76878	10779696.37	1299.00468	1524.139423	18126653.97	41.67822675	28886864.71	56.88615846
	480990.1	5574.984087	18970043.36	11193.3777	6553707.037	736.8549329	860.3804805	19468538.68	78.82561137	26011175.86	90.20042618
	1852995.8	159335.1681	85869352.12	43122.05598	22395442.21	3120.725353	3662.703802	87927925.9	92.41075572	110280788	99.26820398
	2185796.7	60280.63406	15188167.42	50866.8422	26238095.87	3519.650918	4304.836296	17488631.21	15.58174864	43676645.42	33.32915171
	2048734.1	144952.7562	4909472.706	47677.18584	24655515.76	3525.425157	4204.893038	7154362.166	6.800728856	31762880.2	25.85943466
	2326126.5	149384.9509	20027068.56	54132.53345	27858401.46	3989.927833	4803.334659	22560702.5	18.88814977	50365784.83	36.1149498
	17511186	2607837.173	33197404.06	407512.17	203191265.9	48460.12005	61875.58544	53772399.66	5.98017629	256569568.8	24.4384875
	1727924.4	27890.29861	47278914.28	40211.45294	20951317.21	2634.432639	3078.461679	49077574.9	55.3131614	69989124.69	67.56014286
	381731.17	19274.40287	17223839.66	8883.470083	5407623.118	603.4027905	704.3696816	17634332.11	89.9645731	23033172.72	100.6423764
	2500906	63683.19728	120072286.6	58199.92027	29876476.38	3958.961372	4658.842389	122699034.7	95.5463076	152518011	101.7205046
	4915086.4	521019.3087	29055736.76	114381.6023	57751583.55	8198.607811	9770.30102	34614422.69	13.71500811	92253196.33	31.30653544
	7885530.3	183439.3903	26594637.71	183508.3893	92049534.86	13342.27513	16003.0355	34860458.06	8.609388742	126729145.3	26.80589704
	2044288.2	22427.44208	7049355.645	47573.72267	24604181.46	3145.387674	3702.303602	9166790.379	8.73263515	33723955.04	27.5157356
	27413982	1346141.67	114996176	637965.418	317532965	52963.18136	64046.1695	144447228	10.26141439	461353310.5	28.07024907
	4113096.3	121980.374	95437341.28	95718.06087	48491479.56	6597.703106	7749.709097	99774733.68	47.24129971	148171647.2	60.08706343

	3654132.9	271254.9862	25709108.17	85037.27933	43192102.27	5896.163333	6937.116992	29725429.5	15.84214316	72833535.44	33.24541797
	619076.08	66115.8594	14128771.39	14406.85032	8148103.833	988.0324552	1152.469977	14829358.21	46.64965795	22963219.63	61.8690572
	25875922	1723348.028	9592506.145	602172.4047	299773901.1	57768.447	71740.35426	37851716.88	2.848786388	337037417.5	21.72536249
	20167586	1020790.725	4153178.652	469330.6741	233863139.1	43043.1146	52985.71797	25853929.31	2.496564379	259257680.3	21.4418599
	3492213.1	215790.9649	54120773.02	81269.15813	41322511	5499.707627	6856.645304	57915545.99	32.2971757	99158144.77	47.3600764
	1568720	23794.04245	33935993.92	36506.52213	19113078.49	2482.820976	2915.100455	35567497.34	44.15480781	54644501.59	58.10128945
	934832.44	23291.25563	26834437.29	21754.98535	11793955	1478.469923	1748.517477	27815794.44	57.94658216	39588264.51	70.63459037
	305116.8	8314.845339	50127924.99	7100.536061	4523002.453	463.5823326	549.251285	50448920.75	322.0000169	54964908.34	300.4720869
	9446970.8	220031.8344	16512752.81	219845.5051	110078560.7	16696.20047	22002.28076	26416297.13	5.445647207	136280318.4	24.06164481
	5061846.1	54156.73917	7845843.425	117796.9253	59446130.44	7895.851993	9392.87855	13087539.03	5.03522854	72417369.57	23.86264353
	3698125.3	39218.01572	12543008.64	86061.05067	43700056.73	5757.682272	6759.299883	16372170.72	8.621737036	59987168.01	27.05586842
	8527208.3	353353.1856	8751574.866	198441.2203	99458609.29	15193.38798	18151.64445	17845770.93	4.075665912	117108897.3	22.90697623
	1932411.5	31574.81035	17833494.94	44970.18148	23312408.29	2962.514871	3465.338628	19845413.98	20.00003127	43113354.91	37.21319355
	714546.38	20627.21683	7159833.309	16628.59069	9250442.682	1107.313096	1282.981417	7912742.812	21.56585887	17146732.57	40.0254012
	1337789.5	30418.44954	11749998.5	31132.41447	16446660.87	2074.177243	2441.267702	13151413.05	19.14497336	29567308.6	36.8645344
	826782.08	30968.83205	6937708.224	19240.48763	10546361.64	1293.332549	1528.349224	7815992.958	18.41040053	18343349.13	37.00601498
	2142134.3	43986.58207	15600489.12	49850.75293	25733952.95	3500.673329	4274.95358	17839961.47	16.2187486	43524837.95	33.89028362
	632216.13	14766.12065	5883740.447	14712.63942	8299824.171	983.3588582	1152.826121	6546418.697	20.16546956	14831699.7	39.13002225
	1226067.2	37560.30712	6502125.791	28532.46561	15156670.07	1948.554325	2251.396848	7796234.345	12.38342376	22924674.79	31.18700312
	606085.69	21989.32288	7962977.249	14104.54405	7998111.533	953.4042279	1110.761454	8606110.214	27.65304778	16590274.56	45.65667543
	1790889.6	56491.74652	17530496.61	41676.74812	21678338.17	3010.179378	3651.562462	19422564.85	21.12068051	41059867.66	38.24137353
	486247.07	18978.35273	2544939.263	11315.71531	6614406.073	755.5221508	882.2242057	3062235.919	12.26455474	9665452.98	33.15507102
	555857.7	33164.11618	1928385.139	12935.66158	7418158.724	870.6240185	1049.015535	2531213.242	8.868195135	9936614.696	29.81669943
	728610.53	13328.56181	7921764.074	16955.8851	9412833.098	1163.211017	1365.072369	8681822.266	23.205214	18077901.34	41.38446162
	2093085.8	50144.07755	9019428.438	48709.31845	25167618.74	3793.265167	4554.001096	11215160.91	10.43490761	36334831.07	28.95481905
	158760	1180.15417	5955574.843	3694.588855	2833107.457	241.2136358	281.6354013	6119450.802	75.06569048	8948904.091	94.01853948

	109518.88	502.7586709	4868707.577	2548.672279	2264549.41	166.3986254	194.2831444	4981444.282	88.58015458	7243472.905	110.3170417
	723837.01	18446.01475	15768774.38	16844.79776	9357715.998	1178.895982	1385.326993	16529081.1	44.47111939	25870158.73	59.61328506
	860963.05	12049.31076	4225434.096	20035.93117	10941028.97	1418.050252	1722.922535	5119900.437	11.58102867	16041198.34	31.07685349
	494124.12	27017.44268	6129004.767	11499.02641	6705357.72	783.2472339	957.7949566	6662428.602	26.25830259	13356461.84	45.08583519
	377588.4	17271.25381	55452273.18	8787.061393	5359788.976	604.2855877	705.8051178	55856524.18	288.0881525	61207627.62	270.3781852
80	1816919	197588.882	14940950.78	42282.49386	21978885.02	3177.111886	3709.142505	17000918.3	18.22245716	38938052.86	35.74566644
	312388.36	12661.1579	10891450.71	7269.756455	4606962.855	474.6304541	554.1674206	11224244.61	69.97330918	15824017.25	84.49026038
	513604.39	4943.351588	1903948.343	11952.36217	6930284.823	813.4130057	949.691921	2435261.858	9.233940556	9353730.597	30.37671984
	9759238	760226.1446	361525578.8	227112.4437	113684125.4	21315.92431	24888.11202	372293471.4	74.29158811	485754056.6	83.02048545
	1690412.7	21988.88221	23712414.61	39338.49659	20518191.13	2735.538504	3193.543013	25466890.2	29.33954061	45946200.84	45.33583416
	1107762.4	28776.31522	21118130.29	25779.33005	13790674.14	1788.62222	2088.380452	22282236.93	39.17259234	36047431.5	54.27657829
	107606.6	904.9799419	16880459.68	2504.170679	2242469.494	163.4931891	190.8908248	16991638.92	307.5151357	19231631.64	298.0999948
	119657333	12989883.98	17273466.75	2784609.73	1382612152	653433.751	762929.5348	153358726.9	2.495969708	1533295765	21.37328922
	3134521.6	74628.65136	116171914.4	72945.12811	37192459.7	5286.21753	6171.370797	119459296	74.21963458	156579695.7	83.31993378
	2684714.6	33339.50991	162014730.5	62477.42888	31998805.34	4386.617574	5121.877993	164799648.7	119.544138	196736711.9	122.2283706
	1990015.3	20038.68083	22829392.54	46310.70931	23977524.67	3241.380434	3784.645424	24888998.6	24.35685117	48820755.82	40.91973651
	2052197	25809.41046	27038696.53	47757.77246	24695499.62	3375.0489	3940.394305	29167835.74	27.67931228	53816142.93	43.73994863
	26229990	2192612.256	31364847.38	610412.1035	303862110.6	58313.0083	68082.72331	60456174.31	4.488618313	363717642.5	23.12868779
	40918317	2283613.701	6581202.773	952232.017	473459502	105660.2188	123372.3622	50841025.57	2.419728696	523366007.7	21.33401003
	2979454	35244.99434	38735715.86	69336.46591	35401985.62	4871.594322	5687.79595	41824622.9	27.337921	77158088.26	43.19460625
	3735830.7	28286.40013	70442319.94	86938.5133	44135418.64	6190.442903	7227.348339	74299566.03	38.73193729	118349083.1	52.83995644
	4555753.5	32236.25099	15184196.51	106019.3752	53602580.36	7679.358792	8966.197916	19885885.04	8.500702867	73383732.87	26.86731839
	564884.1	11528.1262	7966132.529	13145.71986	7522381.256	890.6974005	1039.853892	8556581.178	29.4992554	16065965.87	47.43863997
	6041038.1	65431.66366	12505767.2	140584.2259	70752279.04	10446.65905	12197.21037	18763267.85	6.048769519	89376713.22	24.67729475
	13438119	697011.4663	15213539.02	312725.6496	156161979.5	25772.28785	30090.38465	29687167.49	4.302297234	185540739.4	23.0295548
	1727304.3	62967.7452	12697004.33	40197.02211	20944157.21	2681.263353	3130.528653	14530154.69	16.38217305	35434564.15	34.21708252

	729208.31	30178.241	37601745.76	16969.79621	9419735.238	1130.028247	1319.452814	38379232.14	102.497862	47782187	109.2947143
	1332623.9	8864.900053	8910092.642	31012.20253	16387016.51	2028.933853	2368.915636	10284622.56	15.0297203	26640966.85	33.34472447
	1731795.8	90065.16824	5832871.118	40301.54633	20996017.96	2735.687145	3193.951212	7697769.357	8.656420335	28653944.03	27.59767278
	1359937.6	12122.30918	16003116.45	31647.83423	16702391.57	2158.861231	2520.463396	17408983.04	24.93013091	34080088.38	41.7990566
	5805833.4	726101.1461	8313062.711	135110.6525	68036510.5	10136.82982	11835.50404	14990244.78	5.028220164	82893343.3	23.81441006
	846990.51	7189.778411	13078326.32	19710.76878	10779696.37	1304.587993	1523.163257	13953521.96	32.08303381	24713726.14	48.66810419
	480716.97	5310.769911	17251463.91	11187.02144	6550553.314	736.3253216	859.7747252	17749415	71.90593295	24288904.74	84.275866
	1852995.8	159335.1681	18778047.61	43122.05598	22395442.21	3084.626789	3601.670217	20836585.29	21.89889701	43189422.49	38.87654847
	771986.36	7543.394562	85869352.12	17965.30713	9913668.001	1194.370364	1394.35643	86668041.56	218.6349003	96563944.24	208.6364157
	1414847.7	43638.10692	7854232.654	32925.67771	17336406.48	2241.739256	2617.655829	9347885.914	12.86689724	26651742.63	31.41959992
	2048734.1	144952.7562	11344819.62	47677.18584	24655515.76	3525.425157	4117.659041	13589709.08	12.9179827	38198139.88	31.09863766
	2294707	145063.5102	3197827.913	53401.35385	27495619.34	3938.036124	4597.2929	5694937.858	4.833167805	33137815.1	24.08692528
	17511186	2607837.173	19262537.96	407512.17	203191265.9	48442.05726	56562.60862	39837515.5	4.43043954	242629389.7	23.11067262
	715541.59	20497.1617	33197404.06	16651.75071	9261933.759	1094.136228	1277.532048	33951188.7	92.40388607	43196654.11	100.6931602
	1169847.7	16231.97463	47278914.28	27224.15064	14507536.43	1780.96966	2079.411385	48493999.06	80.72885867	62974609.78	89.78853973
	215207.76	9062.641321	17223839.66	5008.214721	3484876.155	326.9781102	381.7719963	17453445.25	157.9404531	20933367.98	162.2429858
	2374096.4	33741.6033	2639655.627	55248.86509	28412280.64	3725.7735	4350.082889	5106468.231	4.188827009	33464124.32	23.51071659
	4915086.4	521019.3087	120072286.6	114381.6023	57751583.55	8191.904167	9564.973163	125630965.8	49.77779725	183269540.8	62.19333968
	7885530.3	183439.3903	29055736.76	183508.3893	92049534.86	13358.12708	15595.61027	37321572.96	9.217203329	129189836.9	27.32638541
	2044288.2	22427.44208	26594637.71	47573.72267	24604181.46	3144.478826	3671.409329	28712071.53	27.3522176	53269206.21	43.46291507
	166523.41	1560.042823	7049355.645	3875.255361	2922746.963	253.0090552	295.4074571	7221567.366	84.45518025	10140481.47	101.5705988
	27413982	1346141.67	114996176	637965.418	317532965	52974.15347	61848.58551	144447238.9	10.26141517	461351112.9	28.07011537
	4113096.3	121980.374	95437341.28	95718.06087	48491479.56	6596.061822	7700.98274	99774732.03	47.24129893	148171598.5	60.08704367
	3654132.9	271254.9862	16197419.5	85037.27933	43192102.27	5898.226181	6886.07029	20213742.89	10.77289761	63321795.72	28.90371245
	619076.08	66115.8594	13117522.03	14406.85032	8148103.833	963.7625026	1125.148975	13818084.58	43.46842999	21951942.95	59.14440727
	25875922	1723348.028	8499298.664	602172.4047	299773901.1	57684.78088	67353.11825	36758425.73	2.766503384	335939822.8	21.65461176

	20167586	1020790.725	4153178.652	469330.6741	233863139.1	42888.68233	50076.5045	25853774.88	2.496549466	259254771.1	21.4416193
	1882976.7	120627.5374	50605847.62	43819.75653	22741613.37	3093.27613	3612.06555	52656364.87	54.45980301	75354677.27	66.74980735
	1420459.3	16492.95519	14160319.66	33056.26819	17401200.26	2230.54866	2604.072915	15632558.76	21.43242924	33001076.28	38.75110074
	795217.39	16457.01851	8935775.115	18505.92874	10181902.86	1222.141783	1426.908979	9767177.59	23.91956905	19930779.29	41.80451188
	305116.8	8314.845339	36313658.7	7100.536061	4523002.453	470.525607	549.2526578	36634661.41	233.8278286	41150642.05	224.9547879
	8635841.3	185616.2847	26710593.24	200969.2771	100712930.1	14616.43951	17066.02545	35747636.52	8.061443511	136262047	26.31812838
	1573432.1	13589.81344	50127924.99	36616.17912	19167485.91	2427.161312	2833.923852	51753990.24	64.05690743	70885266.74	75.14372444
	850202.88	12578.65231	9262038.269	19785.52546	10816787.65	1319.374864	1540.362451	10145924.7	23.24016452	20943147.81	41.0869716
	5541494.3	63801.32468	11598040.42	128959.0746	64984343.16	8602.616377	10044.13285	17340897.71	6.094173588	82197723.32	24.74102246
	3675324.1	31515.96331	7845843.425	85530.43091	43436784.39	5719.436464	6677.852722	11643933.35	6.169844275	54996145.73	24.95866527
	8527208.3	353353.1856	10096929.09	198441.2203	99458609.29	15193.38798	17740.4736	19191125.16	4.382921585	118453840.3	23.17005256
	892045.97	9604.919948	8751574.866	20759.27842	11299924.99	1368.289362	1597.552114	9675353.322	21.12271464	20954748.29	39.18140069
	1204931.9	19273.03939	16241764.34	28040.61357	14912632.73	1845.656725	2154.948106	17495855.53	28.27761801	32380756.93	44.82385936
	714546.38	20627.21683	7159833.309	16628.59069	9250442.682	1107.313096	1293.010125	7912742.812	21.56585887	17146742.6	40.02542461
	1000983	22101.76042	3594253.835	23294.41002	12557756.05	1543.762751	1802.529242	4642176.757	9.031608618	17176897.16	28.62218357
	826782.08	30968.83205	11749998.5	19240.48763	10546361.64	1292.824578	1509.153009	12628282.73	29.74564388	23155620.21	46.71432803
	1890344.3	27778.7563	6937708.224	43991.21257	22826683.01	3092.738855	3611.262777	8902915.241	9.171945338	31686125.56	27.95844213
	632216.13	14766.12065	15600489.12	14712.63942	8299824.171	983.3588582	1147.940745	16263167.37	50.09676617	24548443.49	64.76541189
	251790.03	3083.129574	5883740.447	5859.540358	3907269.941	388.9282653	454.0012614	6144862.076	47.52736552	10046337.55	66.55090702
	1226067.2	37560.30712	6502125.791	28532.46561	15156670.07	1912.016397	2232.277137	7796197.807	12.38336572	22924655.67	31.18697711
	606085.69	21989.32288	7962977.249	14104.54405	7998111.533	953.4042279	1113.142873	8606110.214	27.65304778	16590276.94	45.65668199
	1790889.6	56491.74652	17427171.23	41676.74812	21678338.17	3015.604921	3521.535635	19319244.9	21.00832729	40956412.25	38.14501967
	486247.07	18978.35273	2544939.263	11315.71531	6614406.073	755.5221508	881.9819287	3062235.919	12.26455474	9665452.737	33.15507019
	555857.7	33164.11618	4510388.675	12935.66158	7418158.724	870.654484	1016.532063	5113216.808	17.91433597	12518585.75	37.56439391
	728610.53	13328.56181	1928385.139	16955.8851	9412833.098	1163.080528	1358.133409	2688443.201	7.18580707	12084515.47	27.66422701
	2076609.2	45612.39226	3810125.112	48325.88324	24977373.5	3763.064213	4394.251064	5984435.689	5.612269997	30914114.49	24.83057482

	158760	1180.15417	11877104.87	3694.588855	2833107.457	241.2136358	281.6354013	12040980.83	147.7035389	14870434.12	156.2310293
	340898.3	7430.226556	3936470.162	7933.22639	4936150.143	534.1324706	623.8710857	4293266.042	24.52636039	9221572.698	45.11956553
	109518.88	502.7586709	4423269.318	2548.672279	2264549.41	166.3986254	194.2831444	4536006.023	80.65936141	6798034.646	103.5330817
	271963.14	11182.90843	15768774.38	6328.999445	4140196.793	413.2099746	482.4543049	16058662.64	114.9924876	20192599.67	123.8417101
	1243901.8	20103.0983	4225434.096	28947.50254	15362594.82	2123.355299	2479.453892	5520509.812	8.642974614	20854513.23	27.96396303
	284075.98	14703.59851	6129004.767	6610.884021	4280056.663	431.6137554	503.9421291	6434826.848	44.11359778	10708344.96	62.87421525
	332149.97	4195.132639	55452273.18	7729.639539	4835138.477	531.5021967	620.4410512	55796879.43	327.1491687	60624377.21	304.4372646
90	1816919	197588.882	14940950.78	42282.49386	21978885.02	3177.111886	3806.6167	17000918.3	18.22245716	38938150.33	35.74575593
	312388.36	12661.1579	10891450.71	7269.756455	4606962.855	474.6304541	575.3022466	11224244.61	69.97330918	15824038.38	84.49037322
	513604.39	4943.351588	1903948.343	11952.36217	6930284.823	795.5355037	947.7185579	2435243.98	9.233872769	9353728.624	30.37671343
	9759238	760226.1446	361054615.6	227112.4437	113684125.4	21344.15518	26292.7313	371822536.4	74.19761249	485284498	82.94023294
	1690412.7	21988.88221	14212810.93	39338.49659	20518191.13	2735.538504	3247.65053	15967286.52	18.39536935	36446651.27	35.96248019
	1107762.4	28776.31522	15205778.68	25779.33005	13790674.14	1788.730792	2084.694521	16369885.43	28.778567	30135076.2	45.37435137
	107606.6	904.9799419	15606054.39	2504.170679	2242469.494	163.4931891	190.8908248	15717233.63	284.4509147	17957226.35	278.3460698
	119448984	13102764.29	9563774.164	2779761.13	1380206471	650879.1217	870788.1499	145546162.4	2.372949158	1523192781	21.26949397
	1581191.1	41599.5504	16880459.68	36796.74357	19257074.78	2581.918499	2999.152757	18542629.01	22.83794775	37763324.29	39.83552951
	1730588.7	7332.590738	17273466.75	40273.45336	20982079.34	2792.852601	3264.763108	19054454.3	21.44237054	39996732.1	38.54920276
	1791760.7	15863.84952	116171914.4	41697.02175	21688397.13	2877.255226	3404.462068	118024113.2	128.2805644	139671340.6	130.0205587
	931043.8	10118.23162	161607041.5	21666.8179	11750209.84	1473.266016	1703.151853	162571343.6	340.0509667	174300116.5	312.2570891
	1990015.3	20038.68083	22789266.22	46310.70931	23977524.67	3241.313226	3833.290863	24848872.22	24.31758272	48780678.15	40.8861449
	2052197	25809.41046	24333841.29	47757.77246	24695499.62	3373.567732	3989.083841	26462979.01	25.11249263	51111336.38	41.54157296
	26229990	2192612.256	13717139.12	610412.1035	303862110.6	58384.33903	71971.56538	42808537.38	3.178355016	346073823.1	22.006723
	40780721	2294898.654	23236384.6	949029.9433	471870760.9	104550.382	132170.9142	67365584.28	3.217016717	538314935.8	22.0174124
	2972454.9	30106.3196	11157768.97	69173.58623	35321171.23	4904.903342	5842.818561	14234408.68	9.32597594	49487344.23	27.769216
	3244819.6	23105.1596	6581202.773	75511.93152	38466005.06	5302.789226	6328.47032	9929942.283	5.959726049	48321461.09	24.83900763
	1507903.4	8843.601961	36360346.99	35091.22684	18410865.49	2384.268558	2785.438471	37914569.53	48.96691341	56290744.96	62.26560422

	3050677.5	15188.58623	70442319.94	70993.94515	36224360.63	4981.319922	5876.200491	73584161.24	46.97406942	109738422.8	59.99943573
	1144121.7	9343.491784	15184196.51	26625.46795	14210493.98	1792.041441	2104.433731	16366079.23	27.85752649	30550260.14	44.53766312
	564884.1	11528.1262	7950725.107	13145.71986	7522381.256	872.5107589	1035.748237	8541155.569	29.44607481	16050554.34	47.39313371
	5550969.5	54290.12077	12505767.2	129179.577	65093747.69	9354.214967	11189.94726	18249560.59	6.40256072	83215964.44	25.00475221
	13438119	697011.4663	15039802.04	312725.6496	156161979.5	25772.28785	31915.60086	29513430.51	4.277119078	185368827.7	23.00821689
	1727304.3	62967.7452	12697004.33	40197.02211	20944157.21	2704.260345	3171.916162	14530177.69	16.38219898	35434605.53	34.21712248
	727323.43	30915.99953	37601745.76	16925.93219	9397971.664	1127.278686	1333.157065	38378038.4	102.7602917	47759290.01	109.5254454
	1332623.9	8864.900053	8910092.642	31012.20253	16387016.51	2028.933853	2459.125163	10284622.56	15.0297203	26641057.06	33.34483738
	1705407.5	90658.7593	5832871.118	39687.44996	20691327.86	2666.69492	3131.163863	7671291.553	8.760127873	28323396.43	27.7014115
	1359937.6	12122.30918	16003116.45	31647.83423	16702391.57	2127.08394	2449.260958	17408951.26	24.93008541	34080017.18	41.79896927
	5805833.4	726101.1461	8313062.711	135110.6525	68036510.5	10146.33298	12086.22497	14990254.29	5.028223352	82893594.02	23.81448209
	846990.51	7189.778411	13078326.32	19710.76878	10779696.37	1299.045791	1523.656765	13953516.42	32.08302107	24713726.63	48.66810516
	480716.97	5310.769911	17251463.91	11187.02144	6550553.314	736.3253216	860.0655008	17749415	71.90593295	24288905.03	84.27586701
	1852995.8	159335.1681	18778047.61	43122.05598	22395442.21	3120.365142	3676.017105	20836621.03	21.89893457	43189496.84	38.87661539
	771986.36	7543.394562	85869352.12	17965.30713	9913668.001	1194.391652	1394.50905	86668041.58	218.6349004	96563944.39	208.636416
	1414847.7	43638.10692	7854232.654	32925.67771	17336406.48	2241.700512	2645.165615	9347885.875	12.86689719	26651770.14	31.41963235
	2048734.1	144952.7562	11344819.62	47677.18584	24655515.76	3526.673363	4203.735714	13589710.33	12.91798389	38198225.96	31.09870774
	2294707	145063.5102	3197827.913	53401.35385	27495619.34	3938.536442	4686.378153	5694938.358	4.83316823	33137904.19	24.08699004
	17511186	2607837.173	15286881.07	407512.17	203191265.9	48437.73852	61598.71668	35861854.29	3.988295336	238658769	22.73246733
	715541.59	20497.1617	33197404.06	16651.75071	9261933.759	1094.136228	1291.127276	33951188.7	92.40388607	43196667.7	100.6931919
	1169847.7	16231.97463	13493141.32	27224.15064	14507536.43	1780.960964	2081.548712	14708226.09	24.48505647	29188838.96	41.61714119
	215207.76	9062.641321	47284282.22	5008.214721	3484876.155	326.9781102	381.7719963	47513887.81	429.9646781	50993810.54	395.2248909
	1742945.8	25061.29488	12781513.34	40561.02401	21124760.42	2710.887982	3201.84144	14592792.38	16.30514424	35677482.73	34.14247944
	4915086.4	521019.3087	2639655.627	114381.6023	57751583.55	8199.434155	9771.090128	8198342.382	3.248366533	65837115.99	22.34212024
	1475060.5	13946.84523	119505711.1	34326.92102	18031647.46	2266.847287	2654.694015	121031312.2	159.7931076	139029020.6	157.210075
	7886727.2	183214.913	29055736.76	183536.2442	92063355.37	13468.9672	15991.20834	37322684.13	9.216078832	129205025.5	27.32545036

	1371975.7	18621.45946	26594637.71	31927.97985	16841388.65	2097.706888	2454.04456	28019260.56	39.7722702	44829077.57	54.50020358
	166523.41	1560.042823	7049355.645	3875.255361	2922746.963	253.0090552	295.4074571	7221567.366	84.45518025	10140481.47	101.5705988
	27241187	1359208.334	114996176	633944.226	315537810.1	52391.4312	63597.89548	144282907.2	10.31475664	459197979.5	28.11633315
	4113096.3	121980.374	95437341.28	95718.06087	48491479.56	6588.628604	7743.331179	99774724.6	47.24129541	148171640.8	60.08706084
	3654132.9	271254.9862	16197419.5	85037.27933	43192102.27	5902.377877	6951.719497	20213747.04	10.77289983	63321861.37	28.90374242
	619076.08	66115.8594	13117522.03	14406.85032	8148103.833	963.7575604	1152.469977	13818084.58	43.46842998	21951970.27	59.14448088
	25875922	1723348.028	8499298.664	602172.4047	299773901.1	57722.92674	71701.47769	36758463.88	2.766506255	335944171.1	21.65489206
	20167586	1020790.725	4153178.652	469330.6741	233863139.1	43034.00031	52869.69684	25853920.2	2.496563499	259257564.3	21.44185031
	1882976.7	120627.5374	50605847.62	43819.75653	22741613.37	3059.969062	3692.609111	52656331.56	54.45976856	75354757.81	66.74987869
	1420459.3	16492.95519	14160319.66	33056.26819	17401200.26	2226.378847	2624.356082	15632554.59	21.43242352	33001096.57	38.75112456
	795217.39	16457.01851	8935775.115	18505.92874	10181902.86	1221.792044	1490.44487	9767177.24	23.91956819	19930842.82	41.80464515
	305116.8	8314.845339	36313658.7	7100.536061	4523002.453	470.525607	549.251285	36634661.41	233.8278286	41150642.05	224.9547878
	8635841.3	185616.2847	26710593.24	200969.2771	100712930.1	14582.77635	19046.25269	35747602.86	8.06143592	136264027.2	26.31851085
	1573432.1	13589.81344	45567397.6	36616.17912	19167485.91	2426.744406	2838.075827	47193462.44	58.4122546	66324743.5	70.30922614
	850202.88	12578.65231	9262038.269	19785.52546	10816787.65	1319.970531	1559.018723	10145925.29	23.24016588	20943166.47	41.0870082
	5541494.3	63801.32468	11598040.42	128959.0746	64984343.16	8603.746433	10147.80542	17340898.84	6.094173986	82197826.99	24.74105367
	3675324.1	31515.96331	10574494.11	85530.43091	43436784.39	5719.436464	6714.112051	14372584.04	7.615691596	57724832.67	26.19701358
	7506297.1	312899.1436	7359021.748	174683.0521	87670754.94	13146.39842	15610.37885	15366047.49	3.986635703	102864583.4	22.85729654
	892045.97	9604.919948	10096929.09	20759.27842	11299924.99	1365.831596	1593.288504	11020705.09	24.05981477	22300098.26	41.69694969
	1204931.9	19273.03939	8751574.866	28040.61357	14912632.73	1845.337076	2161.248862	10005665.73	16.17162379	24890573.76	34.45538904
	1064881.9	22953.32327	16241764.34	24781.43644	13295559.18	1655.605132	1954.610996	17356036.64	31.74089978	30627113.39	47.97216874
	655901.02	18521.65182	7159833.309	15263.82302	8573299.462	1016.561634	1177.663164	7850536.361	23.30940349	16408733.1	41.72741603
	1000983	22101.76042	1845473.875	23294.41002	12557756.05	1543.483454	1816.1105	2893396.517	5.629261076	15428130.79	25.70818159
	826782.08	30968.83205	3594253.835	19240.48763	10546361.64	1293.332549	1527.419823	4472538.569	10.53496681	14999893.81	30.26090225
	1890344.3	27778.7563	11749998.5	43991.21257	22826683.01	3092.392224	3712.767195	13715205.17	14.12965402	36498517.34	32.20468476
	632216.13	14766.12065	6931899.109	14712.63942	8299824.171	983.3588582	1152.864937	7594577.359	23.39419852	15879858.4	41.89534747

	103198.25	1288.35458	13391669.91	2401.58155	2191568.864	156.7953134	183.0705418	13498714.89	254.7359491	15687908.45	253.5580893
	251790.03	3083.129574	5888743.941	5859.540358	3907269.941	388.9282653	454.5248362	6149865.571	47.56606498	10051341.57	66.58405561
	1226067.2	37560.30712	5069029.581	28532.46561	15156670.07	1912.241778	2251.726224	6363101.822	10.10705717	21491578.91	29.23740225
	605407.24	21428.37744	3965051.385	14088.75541	7990277.839	952.3734133	1109.590159	4606928.132	14.81951395	12583274.43	34.66816073
	1460298	47946.47757	3777282.534	33983.37472	17861193.5	2406.954631	2906.08821	5321917.325	7.097358966	23149626.59	26.44157061
	486775.03	8303.254218	6767832.3	11328.00172	6620502.102	755.0162051	881.5440131	7274993.597	29.10545956	13884294.23	47.57516077
	398401.83	4463.806999	17340365.04	9271.421837	5600109.286	619.3407072	722.8445666	17753121.44	86.78077705	23344062.81	97.73269267
	286960.17	12469.25469	2544939.263	6678.003538	4313358.688	435.9958784	527.8065038	2851482.691	19.35170553	7158255.186	41.60737282
	268897.53	2322.502398	4493245.742	6257.65804	4104800.037	408.5522115	492.3073204	4771131.982	34.55451135	8869758.116	55.01862246
	586240.49	10585.12295	1928385.139	13642.71579	7768970.79	913.8910132	1095.371439	2539767.363	8.437004061	10295276.92	29.29186092
	2062795.8	44572.57273	5682972.037	48004.42422	24817878.37	3737.076242	4491.407999	7842081.947	7.40363949	32612710.23	26.37031935
	158760	1180.15417	3810125.112	3694.588855	2833107.457	241.2136358	281.6354013	3974001.071	48.74802397	6803454.361	71.47812021
	339167.22	7384.981039	8387881.418	7892.94161	4916162.443	531.5023434	624.1200216	8742858.063	50.20069039	13651220.18	67.13397216
	109518.88	502.7586709	3936470.162	2548.672279	2264549.41	166.3986254	194.2831444	4049206.867	72.00308783	6311235.49	96.11920112
	464299.29	5899.099758	4423269.318	10804.95688	6360988.136	733.6667433	856.9979313	4905006.331	20.57366606	11255312.84	40.4337755
	271963.14	11182.90843	15768774.38	6328.999445	4140196.793	413.2099746	502.3087001	16058662.64	114.9924876	20192619.53	123.8418318
	781333.55	9982.718067	4225434.096	18182.83045	10021594.39	1287.160096	1504.375902	5036220.35	12.55273575	15039849.12	32.10641043
	284075.98	14703.59851	6129004.767	6610.884021	4280056.663	431.6137554	529.465024	6434826.848	44.11359778	10708370.48	62.8743651
	332149.97	4195.132639	55452273.18	7729.639539	4835138.477	531.5021967	620.7622402	55796879.43	327.1491687	60624377.53	304.4372662
100	1816919	197588.882	14940950.78	42282.49386	21978885.02	3177.111886	3806.6167	17000918.3	18.22245716	38938150.33	35.74575593
	312388.36	12661.1579	10891450.71	7269.756455	4606962.855	474.6304541	575.3022466	11224244.61	69.97330918	15824038.38	84.49037322
	513604.39	4943.351588	1903948.343	11952.36217	6930284.823	795.5355037	929.0218035	2435243.98	9.233872769	9353709.927	30.37665271
	9759238	760226.1446	361054615.6	227112.4437	113684125.4	21344.15518	26292.7313	371822536.4	74.19761249	485284498	82.94023294
	1690412.7	21988.88221	14212810.93	39338.49659	20518191.13	2735.538504	3247.65053	15967286.52	18.39536935	36446651.27	35.96248019
	1107762.4	28776.31522	15205778.68	25779.33005	13790674.14	1760.420281	2084.694521	16369857.11	28.77851723	30135076.2	45.37435137
	107606.6	904.9799419	15606054.39	2504.170679	2242469.494	163.4931891	190.8908248	15717233.63	284.4509147	17957226.35	278.3460698

	119448984	13102764.29	9563774.164	2779761.13	1380206471	648437.3615	870733.0348	145543720.7	2.372909348	1523192726	21.2694932
	1581191.1	41599.5504	16880459.68	36796.74357	19257074.78	2573.679132	2999.076808	18542620.77	22.83793761	37763324.21	39.83552943
	1730588.7	7332.590738	17273466.75	40273.45336	20982079.34	2804.506302	3264.85517	19054465.95	21.44238365	39996732.19	38.54920285
	1791760.7	15863.84952	116171914.4	41697.02175	21688397.13	2885.68805	3405.34591	118024121.7	128.2805736	139671341.4	130.0205596
	931043.8	10118.23162	154500090.5	21666.8179	11750209.84	1477.88784	1703.118125	155464397.3	325.1853458	167193165.5	299.5250504
	1990015.3	20038.68083	22789266.22	46310.70931	23977524.67	3241.313226	3833.290863	24848872.22	24.31758272	48780678.15	40.8861449
	2052197	25809.41046	24333841.29	47757.77246	24695499.62	3372.155262	3989.083841	26462977.6	25.11249129	51111336.38	41.54157296
	26229990	2192612.256	19296266.8	610412.1035	303862110.6	58460.95444	72044.87152	48387741.67	3.592587621	351653024.1	22.36150259
	38401061	2310482.424	13717139.12	893651.6029	444394239.8	96758.48527	121810.827	55419092.29	2.81051768	498944732.8	21.67174921
	2972454.9	30106.3196	23236384.6	69173.58623	35321171.23	4865.960479	5842.818561	26312985.36	17.23951265	61565959.86	34.54698296
	3244819.6	23105.1596	11157768.97	75511.93152	38466005.06	5301.773536	6323.927694	14506507.47	8.70647663	52898022.75	27.19152859
	2379660	41832.54716	6134410.557	55378.34036	28476521.1	3776.190637	4457.933205	8615057.673	7.050394284	37036882.18	25.9599736
	1507903.4	8843.601961	36360346.99	35091.22684	18410865.49	2388.526493	2785.209476	37914573.79	48.96691891	56290744.73	62.26560396
	3050677.5	15188.58623	70442319.94	70993.94515	36224360.63	4994.331812	5883.779103	73584174.26	46.97407772	109738430.4	59.99943988
	1144121.7	9343.491784	15184196.51	26625.46795	14210493.98	1791.009024	2086.296809	16366078.2	27.85752473	30550242	44.53763668
	514210.09	4991.610909	7950725.107	11966.45779	6937278.51	794.3475825	945.5463727	8482687.614	32.12647028	15408150.86	49.97981811
	5550969.5	54290.12077	12505767.2	129179.577	65093747.69	9360.623444	11188.60966	18249567	6.402562969	83215963.1	25.00475181
	13438119	697011.4663	15039802.04	312725.6496	156161979.5	25772.28785	31915.60086	29513430.51	4.277119078	185368827.7	23.00821689
	1727304.3	62967.7452	12697004.33	40197.02211	20944157.21	2681.31732	3145.149299	14530154.75	16.38217311	35434578.77	34.21709664
	727323.43	30915.99953	1083974.583	16925.93219	9397971.664	1127.274722	1333.140312	1860267.219	4.981015447	11241518.82	25.77995516
	1332623.9	8864.900053	37601745.76	31012.20253	16387016.51	2028.933853	2449.717436	38976275.68	56.95906858	55332700.77	69.25625755
	1705407.5	90658.7593	8910092.642	39687.44996	20691327.86	2665.349564	3131.628595	10748511.73	12.27411793	31400618.42	30.71105735
	1359937.6	12122.30918	5832871.118	31647.83423	16702391.57	2127.08394	2421.047101	7238705.93	10.36602116	23909743.63	29.32518004
	50674.014	129.3621106	16003116.45	1179.262065	1585102.746	76.99208259	89.89415544	16055176.08	617.0209311	17639112.47	580.5988399
	5805833.4	726101.1461	8313062.711	135110.6525	68036510.5	10109.60122	12080.52585	14990217.55	5.028211031	82893588.32	23.81448045
	846990.51	7189.778411	13078326.32	19710.76878	10779696.37	1299.045791	1523.951741	13953516.42	32.08302107	24713726.93	48.66810574

	480716.97	5310.769911	9284501.456	11187.02144	6550553.314	736.3253216	859.9096827	9782452.54	39.63039777	16321942.42	56.63268257
	1852995.8	159335.1681	11245405.19	43122.05598	22395442.21	3043.528227	3608.295856	13303901.76	13.98217464	35656786.69	32.09611789
	771986.36	7543.394562	18778047.61	17965.30713	9913668.001	1194.391652	1394.557546	19576737.07	49.38565451	29472639.93	63.67869503
	1414847.7	43638.10692	85869352.12	32925.67771	17336406.48	2241.700512	2645.076566	87363005.34	120.2508057	104666889.5	123.3912483
	894889.79	19702.72134	7854232.654	20825.4586	11332760.95	1456.514949	1694.557599	8791107.143	19.13128543	20103280.68	37.46986471
	1156170.9	113592.1614	11344819.62	26905.8701	14349618.33	1872.931259	2233.583742	12643361.45	21.29661917	26966434.56	38.90328282
	2294707	145063.5102	3171933.339	53401.35385	27495619.34	3938.930823	4687.772322	5669044.178	4.811192413	33112011.01	24.06816903
	17511186	2607837.173	17180811.12	407512.17	203191265.9	48450.82504	61388.84832	37755797.43	4.198925955	240552489.1	22.91284592
	715541.59	20497.1617	33197404.06	16651.75071	9261933.759	1094.136228	1277.532048	33951188.7	92.40388607	43196654.11	100.6931602
	1169847.7	16231.97463	47284282.22	27224.15064	14507536.43	1780.96966	2081.548712	48499367	80.73779477	62979979.85	89.79619633
	212881.19	4556.227504	14042877.83	4954.071864	3458012.632	323.443212	377.6447318	14265592.76	130.503654	17718705.52	138.8287619
	2037502.2	28501.76142	10616629.16	47415.8023	24525827.68	3182.36467	3784.43057	12733231.28	12.17056321	37212245.23	30.46299039
	4915086.4	521019.3087	2639655.627	114381.6023	57751583.55	8198.799626	9718.138118	8198341.748	3.248366282	65837063.03	22.34210227
	7886727.2	183214.913	119262832.7	183536.2442	92063355.37	13440.54833	16020.33433	127529751.7	31.49088208	219412150.6	46.40327112
	1555941.6	13899.69012	29055736.76	36209.14942	18965534.03	2404.516483	2811.387806	30664191.76	38.38029876	49593923.51	53.16427643
	1070526.5	10928.17116	26594637.71	24912.79341	13360733.27	1632.346934	1927.859662	27702637.49	50.39574205	41038753.47	63.94130517
	166523.41	1560.042823	7049355.645	3875.255361	2922746.963	253.0090552	295.4074571	7221567.366	84.45518025	10140481.47	101.5705988
	27167199	1347002.989	114996176	632222.4057	314683511.6	52031.56863	63487.79364	144194631.9	10.3365203	458257377.4	28.13515713
	4113096.3	121980.374	95437341.28	95718.06087	48491479.56	6581.693878	7759.603444	99774717.67	47.24129213	148171657.1	60.08706744
	3654132.9	271254.9862	16197419.5	85037.27933	43192102.27	5896.163333	6900.372707	20213740.82	10.77289652	63321810.02	28.90371898
	619076.08	66115.8594	13117522.03	14406.85032	8148103.833	963.7575604	1152.469977	13818084.58	43.46842998	21951970.27	59.14448088
	25875922	1723348.028	8499298.664	602172.4047	299773901.1	57767.74361	71701.47769	36758508.69	2.766509628	335944171.1	21.65489206
	20167586	1020790.725	4153178.652	469330.6741	233863139.1	43040.61247	52758.38342	25853926.81	2.496564137	259257453	21.4418411
	1882976.7	120627.5374	11699031.17	43819.75653	22741613.37	3016.036758	3692.609111	13749471.19	14.22037951	36447941.37	32.28589323
	1420459.3	16492.95519	45161966.91	33056.26819	17401200.26	2225.953539	2627.789511	46634201.42	63.93606046	64002747.25	75.15442482
	795217.39	16457.01851	5624805.909	18505.92874	10181902.86	1221.792044	1469.786597	6456208.034	15.81108897	16619852.96	34.85989336

	305116.8	8314.845339	14160319.66	7100.536061	4523002.453	463.5823326	549.251285	14481315.42	92.42980308	18997303.01	103.8509742
	1218886.6	6933.71808	33156490.52	28365.36189	15073759.88	1940.593703	2267.860819	34412616.82	54.98250494	49458338.6	67.68009464
	7416954.7	169122.284	6274188.193	172603.9152	86639170.26	11954.93651	15143.31214	14044823.99	3.687744383	100514578.7	22.6041498
	457902.47	3703.490595	26710593.24	10656.09303	6287127.842	705.0486064	821.3638987	27183560.34	115.6121522	33460148.41	121.882014
	1573432.1	13589.81344	9625770.692	36616.17912	19167485.91	2429.226728	2838.075827	11251838.01	13.92661595	30383116.59	32.20839316
	4906976.5	55201.73964	5010443.623	114192.8713	57657942.76	7600.270469	8950.877803	10094414.96	4.006243228	67639515.46	22.99170917
	529946.82	20326.43298	43138994.65	12332.67561	7118981.164	810.8226275	956.1230475	43702411.4	160.5991509	50809205.19	159.9170817
	3675324.1	31515.96331	8012721.804	85530.43091	43436784.39	5719.436464	6713.362651	11810811.73	6.258269173	55163059.62	25.03441509
	939187.12	6502.867452	10518223.86	21856.3254	11844235.89	1432.992995	1671.514412	11487203.17	23.81948166	23309821.26	41.39725629
	392300.41	5490.391959	10574494.11	9129.432426	5529659.811	603.0008772	704.2372828	10982017.35	54.51719455	16502648.96	70.16485723
	6976350.3	275525.6	7359021.748	162350.3765	81551773.78	12204.93171	14442.42081	14785452.99	4.127399305	96177113.88	22.9947241
	734955.24	7907.233631	10096929.09	17103.53604	9486091.6	1122.370749	1310.772565	10858017.47	28.77131958	20327193.94	46.13189408
	1057353.3	16918.47411	8751574.866	24606.2338	13208630.63	1619.538762	1891.049706	9852072.419	18.1458619	23036368.32	36.33947345
	1064881.9	22953.32327	16241764.34	24781.43644	13295559.18	1655.891248	1954.928583	17356036.92	31.7409003	30627113.71	47.97216924
	655901.02	18521.65182	5097805.662	15263.82302	8573299.462	1016.685631	1177.663164	5788508.837	17.18693881	14346705.45	36.48367875
	1000983	22101.76042	1845473.875	23294.41002	12557756.05	1543.762751	1816.437429	2893396.797	5.629261619	15428131.11	25.70818214
	826782.08	30968.83205	3594253.835	19240.48763	10546361.64	1293.108511	1527.528339	4472538.345	10.53496629	14999893.92	30.26090247
	1890344.3	27778.7563	11749998.5	43991.21257	22826683.01	3088.201452	3714.10417	13715200.98	14.12964971	36498518.68	32.20468594
	401464.19	6390.062437	4213393.586	9342.687614	5635468.519	614.5157458	722.0590549	4631205.038	22.46556437	10257438.41	42.6164091
	103198.25	1288.35458	4242363.703	2401.58155	2191568.864	156.7953134	183.0705418	4349408.682	82.07823911	6538602.24	105.6811044
	251790.03	3083.129574	3150505.289	5859.540358	3907269.941	389.1171943	453.8386603	3411627.107	26.38719088	7313102.229	48.44487696
	1226067.2	37560.30712	13391669.91	28532.46561	15156670.07	1912.301629	2251.396848	14685742.21	23.32661654	29814218.91	40.55962175
	311183.67	4578.092305	5888743.941	7241.721539	4593053.049	481.5748155	560.7777327	6212229.003	38.87772001	10798119.53	57.87834074
	314019.37	3208.166031	5069029.581	7307.712649	4625795.203	486.0963361	566.1597347	5394050.929	33.45251182	10012618.48	53.18338419
	210956.14	6351.801375	3965051.385	4909.273028	3435785.238	320.5183696	374.2297542	4187589.117	38.6582356	7618518.793	60.23697024
	1460298	47946.47757	3777282.534	33983.37472	17861193.5	2407.379169	2896.07623	5321917.749	7.097359532	23149616.57	26.44155918

	486775.03	8303.254218	6767832.3	11328.00172	6620502.102	754.9958341	883.2744375	7274993.576	29.10545948	13884295.96	47.5751667
	398401.83	4463.806999	17086926.27	9271.421837	5600109.286	619.3271735	722.9351615	17499682.66	85.54191804	23090624.13	96.67164153
	286960.17	12469.25469	1466958.433	6678.003538	4313358.688	435.9958784	527.7420464	1773501.861	12.03594392	6080274.291	35.34160668
	268897.53	2322.502398	2544939.263	6257.65804	4104800.037	408.5522115	477.0160096	2822825.503	20.44406993	6921436.345	42.93328952
	586240.49	10585.12295	4493245.742	13642.71579	7768970.79	913.743966	1100.48144	5104627.818	16.95736636	12860142.63	36.58935183
	2022589.4	37657.80476	1928385.139	47068.75902	24353638.66	3664.873729	4423.683372	4039365.989	3.889337297	28346694.7	23.37649747
	75935.523	1642.633171	5682972.037	1767.136133	1876782.384	115.3734146	134.7073013	5762432.703	147.785223	7637467.284	167.7602707
	158760	1180.15417	3429241.803	3694.588855	2833107.457	241.2136358	281.6354013	3593117.762	44.07582878	6422571.052	67.47650258
	339167.22	7384.981039	8387881.418	7892.94161	4916162.443	531.5023434	623.9687666	8742858.063	50.20069039	13651220.03	67.13397142
	109518.88	502.7586709	3936470.162	2548.672279	2264549.41	166.3986254	194.2831444	4049206.867	72.00308783	6311235.49	96.11920112
	464299.29	5899.099758	4423269.318	10804.95688	6360988.136	733.6401357	856.852402	4905006.304	20.57366595	11255312.7	40.43377498
	236234.04	4855.160704	0	5497.528517	3727654.121	358.9246039	419.0719753	246945.6511	2.035771563	3969162.391	28.02471079
	781333.55	9982.718067	0	18182.83045	10021594.39	1287.132559	1504.375902	810786.2261	2.02087767	10814415.02	23.086139
	284075.98	14703.59851	0	6610.884021	4280056.663	431.6137554	528.154058	305822.0801	2.096546271	4579364.4	26.88780985
	332149.97	4195.132639	0	7729.639539	4835138.477	531.4887907	620.7622402	344606.2351	2.020500868	5172104.346	25.97274186

APPENDIX B: Manure Pathways Calculations

Fuel Production

	Feedstock to AD			SNG	SNG to RH2					
Scenario	Demand [dt/yr]	Distance [mi]	# of Trucks / yr	SNG Output [GJ/yr]	SMR/PSA [GJ/yr]	# of Trucks	Tri-Gen/PSA [GJ/yr]	# of Trucks	SMR/PSA [kg/day]	Tri-Gen/PSA [kg/day]
1	2245660.597	2038569.867	102649	13731696	8931745	18327	10428496.5	21398	200835	234490.2473
5	1085743.022	216675.4107	49629	6639067.7	4318364	8861	5042020.74	10346	97100.69	113372.4972
	203770.7267	122763.8107	9315	1246010.9	810464.5	1663	946279.3767	1942	18223.72	21277.59117

	696987.1182	157823.6602	31860	4261915.2	2772151	5688	3236699.14	6642	62333.29	72778.88827
	91954.44721	103436.1175	4204	562280.2	365733.7	751	427022.0675	877	8223.714	9601.816541
	167205.2831	41212.52585	7643	1022421.7	665031.5	1365	776475.1771	1594	14953.58	17459.45413
10	16547.69254	22186.04847	757	101185.32	65815.72	136	76844.89545	158	1479.901	1727.898028
	75575.79888	22647.39026	3455	462128.55	300590.3	617	350962.1869	721	6758.931	7891.569986
	993619.5306	129795.8788	45418	6075753.9	3951958	8109	4614213.658	9468	88861.86	103753.0292
	196572.3781	87994.34965	8986	1201994.7	781834.2	1605	912851.3719	1873	17579.96	20525.94484
	249869.548	77821.79973	11422	1527894.6	993814.9	2040	1160355.091	2381	22346.45	26091.19659
	455618.6513	118054.8974	20827	2786002.8	1812148	3719	2115821.739	4342	40747.11	47575.3684
	69679.15396	59657.49421	3186	426071.93	277137.4	569	323579.0904	664	6231.58	7275.84661
	145755.823	4647.124293	6663	891263.18	579719.8	1190	676867.24	1389	13035.3	15219.7171
	21173.73383	9696.926636	968	129472.49	84215.04	173	98327.5075	202	1893.62	2210.945897
	21248.28694	2903.358018	972	129928.37	84511.56	174	98673.72048	203	1900.287	2218.730678
20	16547.69254	22186.04847	757	101185.32	65815.72	136	76844.89545	158	1479.901	1727.898028
	75575.79888	22647.39026	3455	462128.55	300590.3	617	350962.1869	721	6758.931	7891.569986
	970592.5943	121888.667	44366	5934949.5	3860372	7921	4507280.168	9249	86802.5	101348.5732
	22090.8035	1986.350842	1010	135080.16	87862.53	181	102586.2356	211	1975.635	2306.705645
	16497.00546	8490.69683	755	100875.38	65614.12	135	76609.51255	158	1475.368	1722.605319
	136011.7003	51044.88438	6218	831680.12	540964.1	1110	631617.0586	1296	12163.86	14202.24289
	44532.49155	5410.607751	2036	272305.9	177120.6	364	206801.9241	425	3982.651	4650.050399
	7132.319059	10308.72113	327	43612.483	28367.62	59	33121.37393	68	637.861	744.751572
	70200.1705	8272.409763	3209	429257.82	279209.6	573	325998.6097	669	6278.175	7330.250779
	201976.4391	99065.13451	9233	1235039.3	803328	1649	937946.9861	1925	18063.25	21090.23297
	425859.9943	36800.67551	19466	2604035.5	1693788	3476	1977627.192	4058	38085.72	44467.99107
	12012.36171	37116.45131	550	73452.817	47777.19	99	55783.52854	115	1074.295	1254.322078
	6399.812454	1389.118036	293	39133.375	25454.2	53	29719.72785	61	572.3511	668.2637647
	42718.02426	8959.53983	1953	261210.85	169903.9	349	198375.8218	408	3820.379	4460.585043
	140732.5572	3111.807844	6433	860547.07	559740.6	1149	653539.9795	1341	12586.06	14695.19133
	12164.93685	4241.041062	557	74385.778	48384.03	100	56492.06364	116	1087.94	1270.253864
	3538.654585	174.8622792	162	21638.055	14074.42	29	16432.9583	34	316.4707	369.5037397
	19828.95358	8706.493699	907	121249.47	78866.39	162	92082.55836	189	1773.353	2070.52492
	16099.29806	2156.928774	736	98443.488	64032.3	132	74762.62161	154	1439.8	1681.077002

	5148.988884	133.97043	236	31484.877	20479.25	43	23911.09887	50	460.4868	537.6536767
30	16547.69254	22186.04847	757	101185.32	65815.72	136	76844.89545	158	1479.901	1727.898028
	75575.79888	22647.39026	3455	462128.55	300590.3	617	350962.1869	721	6758.931	7891.569986
	970566.2748	121694.5706	44365	5934788.5	3860267	7921	4507157.945	9248	86800.15	101345.825
	11544.76144	1007.958516	528	70593.549	45917.39	95	53612.06605	111	1032.477	1205.495598
	8256.884916	211.7938344	378	50488.944	32840.4	68	38343.68184	79	738.4337	862.1779214
	8317.037516	14175.05448	381	50856.763	33079.65	68	38623.02111	80	743.8133	868.4590122
	2314.478225	27.90570974	106	14152.5	9205.456	19	10748.0748	23	206.9895	241.676134
	8507.082445	1295.331518	389	52018.844	33835.52	70	39505.56002	82	760.8095	888.3033655
	135685.5843	40544.01671	6203	829686	539667	1108	630102.6267	1293	12134.7	14168.19009
	2424.29675	3924.956348	111	14824.015	9642.241	20	11258.05485	24	216.8109	253.1433045
	44532.49155	5410.607751	2036	272305.9	177120.6	364	206801.9241	425	3982.651	4650.050399
	4708.022309	2114.795011	216	28788.469	18725.38	39	21863.31908	45	421.0501	491.6082675
	70021.80132	6766.515688	3201	428167.14	278500.2	572	325170.2911	668	6262.223	7311.625598
	201976.4391	99065.13451	9233	1235039.3	803328	1649	937946.9861	1925	18063.25	21090.23297
	1617.471704	2950.75911	74	9890.4658	6433.227	14	7511.285555	16	144.6545	168.8952197
	424420.8918	29498.77288	19401	2595235.7	1688064	3464	1970944.225	4044	37957.01	44317.72103
	11493.3382	36908.95604	526	70279.108	45712.86	94	53373.26456	110	1027.878	1200.126021
	14521.40968	1462.531952	664	88795.065	57756.51	119	67435.15481	139	1298.686	1516.315044
	4807.947101	799.9251623	220	29399.486	19122.82	40	22327.35418	46	429.9866	502.0423416
	23192.24365	4760.885624	1061	141815.21	92243.33	190	107701.1513	221	2074.14	2421.717225
	4675.079736	1345.2457	214	28587.032	18594.36	39	21710.33892	45	418.104	488.168428
	140732.5572	3111.807844	6433	860547.07	559740.6	1149	653539.9795	1341	12586.06	14695.19133
	8745.569141	1913.740881	400	53477.135	34784.06	72	40613.05493	84	782.1379	913.205973
	5893.313658	977.5858158	270	36036.251	23439.68	49	27367.62668	57	527.0537	615.3755286
	3538.654585	174.8622792	162	21638.055	14074.42	29	16432.9583	34	316.4707	369.5037397
	17284.33398	967.1746078	791	105689.71	68745.59	142	80265.74302	165	1545.781	1804.817591
	2512.35482	4975.640417	115	15362.469	9992.477	21	11666.98275	24	224.6861	262.3382642
	4074.508329	165.3964993	187	24914.677	16205.69	34	18921.37926	39	364.3934	425.4571981
	12023.28861	970.1553695	550	73519.632	47820.65	99	55834.27137	115	1075.273	1255.463057
	5148.988884	133.97043	236	31484.877	20479.25	43	23911.09887	50	460.4868	537.6536767
40	3506.671446	20262.52993	161	21442.486	13947.21	29	16284.43361	34	313.6103	366.1640836

	13092.88883	146.146839	599	80059.99	52074.81	107	60801.32749	125	1170.93	1367.149936
	75523.93114	22261.93503	3453	461811.39	300384	617	350721.3212	720	6754.292	7886.153995
	970540.7709	121660.5301	44364	5934632.6	3860166	7921	4507039.508	9248	86797.87	101343.1619
	6269.706582	173.1789066	287	38337.807	24936.72	52	29115.53653	60	560.7154	654.6782041
	5300.558746	774.7633842	243	32411.692	21082.1	44	24614.9656	51	474.0421	553.4804916
	8256.884916	211.7938344	378	50488.944	32840.4	68	38343.68184	79	738.4337	862.1779214
	3428.849256	1700.650041	157	20966.621	13637.68	28	15923.03954	33	306.6505	358.0379471
	4888.18826	11785.96867	224	29890.142	19441.96	40	22699.98157	47	437.1628	510.4210651
	2314.478225	27.90570974	106	14152.5	9205.456	19	10748.0748	23	206.9895	241.676134
	8507.082445	1295.331518	389	52018.844	33835.52	70	39505.56002	82	760.8095	888.3033655
	135685.5843	40544.01671	6203	829686	539667	1108	630102.6267	1293	12134.7	14168.19009
	2595.858847	3971.097535	119	15873.077	10324.6	22	12054.76239	25	232.1541	271.057694
	1392.374482	216.0153784	64	8514.0483	5537.94	12	6465.969273	14	124.5235	145.3907314
	44532.49155	5410.607751	2036	272305.9	177120.6	364	206801.9241	425	3982.651	4650.050399
	3144.08573	720.4397599	144	19225.358	12505.08	26	14600.64227	30	281.1834	328.3031466
	70021.80132	6766.515688	3201	428167.14	278500.2	572	325170.2911	668	6262.223	7311.625598
	201976.4391	99065.13451	9233	1235039.3	803328	1649	937946.9861	1925	18063.25	21090.23297
	1617.471704	2950.75911	74	9890.4658	6433.227	14	7511.285555	16	144.6545	168.8952197
	424420.8918	29498.77288	19401	2595235.7	1688064	3464	1970944.225	4044	37957.01	44317.72103
	11493.3382	36908.95604	526	70279.108	45712.86	94	53373.26456	110	1027.878	1200.126021
	14521.40968	1462.531952	664	88795.065	57756.51	119	67435.15481	139	1298.686	1516.315044
	4826.711839	810.8198397	221	29514.228	19197.45	40	22414.49469	46	431.6648	504.0017419
	22834.38271	4405.480366	1044	139626.97	90819.99	187	106039.3011	218	2042.135	2384.349645
	2963.002691	690.5200778	136	18118.077	11784.85	25	13759.72096	29	264.9887	309.3945873
	3707.129722	165.3477027	170	22668.242	14744.5	31	17215.33049	36	331.5378	387.0957911
	4270.677662	1105.691695	196	26114.207	16985.92	35	19832.35895	41	381.9373	445.9410573
	137025.4275	2915.149735	6264	837878.83	544996.1	1119	636324.649	1306	12254.52	14308.09554
	1693.312307	167.8805788	78	10354.214	6734.871	14	7863.477453	17	151.4371	176.8144403
	4832.752424	431.4820333	221	29551.165	19221.48	40	22442.54622	47	432.205	504.6324954
	5893.313658	977.5858158	270	36036.251	23439.68	49	27367.62668	57	527.0537	615.3755286
	1236.893101	33.77175134	57	7563.3156	4919.538	11	5743.938063	12	110.6184	129.1554786
	3538.654585	174.8622792	162	21638.055	14074.42	29	16432.9583	34	316.4707	369.5037397

	16016.13048	706.4185472	733	97934.938	63701.52	131	74376.4044	153	1432.362	1672.392704
	2276.638062	444.8162293	105	13921.116	9054.953	19	10572.351	22	203.6054	237.7248917
	4040.006516	152.0406471	185	24703.706	16068.46	33	18761.15824	39	361.3078	421.8545439
	2526.332196	187.6454258	116	15447.938	10048.07	21	11731.8915	25	225.9362	263.7977717
	9531.458224	396.2205543	436	58282.665	37909.8	78	44262.60089	91	852.422	995.2679398
	267.0271486	827.3046726	13	1632.8093	1062.056	3	1240.032304	3	23.8809	27.88278077
	5148.988884	133.97043	236	31484.877	20479.25	43	23911.09887	50	460.4868	537.6536767
50	3506.671446	20262.52993	161	21442.486	13947.21	29	16284.43361	34	313.6103	366.1640836
	13092.88883	146.146839	599	80059.99	52074.81	107	60801.32749	125	1170.93	1367.149936
	75523.93114	22261.93503	3453	461811.39	300384	617	350721.3212	720	6754.292	7886.153995
	571.7122199	242.9619276	27	3495.8881	2273.891	5	2654.942111	6	51.12964	59.69777446
	970540.7709	121660.5301	44364	5934632.6	3860166	7921	4507039.508	9248	86797.87	101343.1619
	6269.706582	173.1789066	287	38337.807	24936.72	52	29115.53653	60	560.7154	654.6782041
	6101.806016	203.6108286	279	37311.134	24268.93	50	28335.83257	59	545.6996	637.146149
	6883.925427	155.2943229	315	42093.614	27379.68	57	31967.87276	66	615.6465	718.8144895
	3428.849256	1700.650041	157	20966.621	13637.68	28	15923.03954	33	306.6505	358.0379471
	4884.836756	11308.33662	224	29869.648	19428.63	40	22684.41771	47	436.8631	510.0711035
	2314.478225	27.90570974	106	14152.5	9205.456	19	10748.0748	23	206.9895	241.676134
	8507.082445	1295.331518	389	52018.844	33835.52	70	39505.56002	82	760.8095	888.3033655
	604.026975	1179.666915	28	3693.4854	2402.418	5	2805.006778	6	54.01963	63.07205769
	135685.5843	40544.01671	6203	829686	539667	1108	630102.6267	1293	12134.7	14168.19009
	1995.183376	185.1064527	92	12200.085	7935.513	17	9265.319472	20	178.4342	208.3355979
	1392.374482	216.0153784	64	8514.0483	5537.94	12	6465.969273	14	124.5235	145.3907314
	44532.49155	5410.607751	2036	272305.9	177120.6	364	206801.9241	425	3982.651	4650.050399
	3144.08573	720.4397599	144	19225.358	12505.08	26	14600.64227	30	281.1834	328.3031466
	70021.80132	6766.515688	3201	428167.14	278500.2	572	325170.2911	668	6262.223	7311.625598
	201976.4391	99065.13451	9233	1235039.3	803328	1649	937946.9861	1925	18063.25	21090.23297
	1617.471704	2950.75911	74	9890.4658	6433.227	14	7511.285555	16	144.6545	168.8952197
	2499.901669	182.1646378	115	15286.321	9942.947	21	11609.15226	24	223.5724	261.0379152
	421920.9901	29068.97181	19286	2579949.4	1678121	3444	1959335.073	4021	37733.44	44056.68312
	11493.3382	36908.95604	526	70279.108	45712.86	94	53373.26456	110	1027.878	1200.126021
	14521.40968	1462.531952	664	88795.065	57756.51	119	67435.15481	139	1298.686	1516.315044

	2684.976814	264.520208	123	16418.013	10679.05	22	12468.61229	26	240.1241	280.3633274
	3519.235027	530.6108986	161	21519.309	13997.18	29	16342.77692	34	314.7339	367.4759636
	1076.875259	162.0096438	50	6584.8434	4283.094	9	5000.840234	11	96.30763	112.4465318
	20768.34572	4000.286183	950	126993.64	82602.67	170	96444.94851	198	1857.365	2168.615564
	2963.002691	690.5200778	136	18118.077	11784.85	25	13759.72096	29	264.9887	309.3945873
	3707.129722	165.3477027	170	22668.242	14744.5	31	17215.33049	36	331.5378	387.0957911
	4090.981245	891.7171721	187	25015.405	16271.2	34	18997.87691	39	365.8666	427.177288
	2293.210593	476.9630434	105	14022.453	9120.867	19	10649.31124	22	205.0875	239.4553833
	135647.9275	2783.894115	6201	829455.74	539517.3	1107	629927.7545	1293	12131.33	14164.25799
	1693.312307	167.8805788	78	10354.214	6734.871	14	7863.477453	17	151.4371	176.8144403
	3708.399981	246.4091612	170	22676.009	14749.55	31	17221.22937	36	331.6514	387.2284305
	4717.44175	494.4504101	216	28846.066	18762.85	39	21907.06149	45	421.8925	492.5918386
	1175.871909	321.1210815	54	7190.1851	4676.837	10	5460.56519	12	105.1611	122.78369
	1236.893101	33.77175134	57	7563.3156	4919.538	11	5743.938063	12	110.6184	129.1554786
	3538.654585	174.8622792	162	21638.055	14074.42	29	16432.9583	34	316.4707	369.5037397
	15218.30911	494.494336	696	93056.444	60528.32	125	70671.44676	146	1361.011	1589.084776
	829.1317645	29.81783097	38	5069.9492	3297.735	7	3850.358205	8	74.15131	86.5773362
	1285.727512	201.3673749	59	7861.9267	5113.769	11	5970.717426	13	114.9858	134.2547323
	959.6001596	65.18127509	44	5867.7333	3816.651	8	4456.233021	10	85.81942	100.2007512
	4040.006516	152.0406471	185	24703.706	16068.46	33	18761.15824	39	361.3078	421.8545439
	2526.332196	187.6454258	116	15447.938	10048.07	21	11731.8915	25	225.9362	263.7977717
	9531.458224	396.2205543	436	58282.665	37909.8	78	44262.60089	91	852.422	995.2679398
	267.0271486	827.3046726	13	1632.8093	1062.056	3	1240.032304	3	23.8809	27.88278077
	1433.478127	68.17808416	66	8765.3876	5701.423	12	6656.848168	14	128.1995	149.6827441
	3715.510757	8.607898467	170	22719.49	14777.83	31	17254.2507	36	332.2873	387.9709326
60	3506.671446	20262.52993	161	21442.486	13947.21	29	16284.43361	34	313.6103	366.1640836
	13092.88883	146.146839	599	80059.99	52074.81	107	60801.32749	125	1170.93	1367.149936
	75523.93114	22261.93503	3453	461811.39	300384	617	350721.3212	720	6754.292	7886.153995
	571.7122199	242.9619276	27	3495.8881	2273.891	5	2654.942111	6	51.12964	59.69777446
	970540.7709	121660.5301	44364	5934632.6	3860166	7921	4507039.508	9248	86797.87	101343.1619
	6269.706582	173.1789066	287	38337.807	24936.72	52	29115.53653	60	560.7154	654.6782041
	6101.806016	203.6108286	279	37311.134	24268.93	50	28335.83257	59	545.6996	637.146149

	6078.427522	105.9230012	278	37168.18	24175.94	50	28227.2665	58	543.6089	634.7049838
	805.4979044	28.65865312	37	4925.4336	3203.735	7	3740.606256	8	72.03768	84.1095057
	1489.742826	7951.693387	69	9109.4332	5925.207	13	6918.132626	15	133.2314	155.557863
	4488.931569	3901.572368	206	27448.779	17853.99	37	20845.89596	43	401.4563	468.7309717
	2314.478225	27.90570974	106	14152.5	9205.456	19	10748.0748	23	206.9895	241.676134
	2338.363121	296.2269096	107	14298.55	9300.454	20	10858.99252	23	209.1256	244.1701775
	8507.082445	1295.331518	389	52018.844	33835.52	70	39505.56002	82	760.8095	888.3033655
	600.675471	711.6370732	28	3672.9917	2389.088	5	2789.442918	6	53.7199	62.72209608
	135685.5843	40544.01671	6203	829686	539667	1108	630102.6267	1293	12134.7	14168.19009
	1995.183376	185.1064527	92	12200.085	7935.513	17	9265.319472	20	178.4342	208.3355979
	1392.374482	216.0153784	64	8514.0483	5537.94	12	6465.969273	14	124.5235	145.3907314
	44532.49155	5410.607751	2036	272305.9	177120.6	364	206801.9241	425	3982.651	4650.050399
	3144.08573	720.4397599	144	19225.358	12505.08	26	14600.64227	30	281.1834	328.3031466
	70021.80132	6766.515688	3201	428167.14	278500.2	572	325170.2911	668	6262.223	7311.625598
	201976.4391	99065.13451	9233	1235039.3	803328	1649	937946.9861	1925	18063.25	21090.23297
	401.5534734	636.8793715	19	2455.4067	1597.113	4	1864.751511	4	35.91192	41.92992182
	1215.918231	1375.776209	56	7435.0591	4836.114	10	5646.534044	12	108.7426	126.9652978
	2499.901669	182.1646378	115	15286.321	9942.947	21	11609.15226	24	223.5724	261.0379152
	421920.9901	29068.97181	19286	2579949.4	1678121	3444	1959335.073	4021	37733.44	44056.68312
	11493.3382	36908.95604	526	70279.108	45712.86	94	53373.26456	110	1027.878	1200.126021
	14521.40968	1462.531952	664	88795.065	57756.51	119	67435.15481	139	1298.686	1516.315044
	2684.976814	264.520208	123	16418.013	10679.05	22	12468.61229	26	240.1241	280.3633274
	3519.235027	530.6108986	161	21519.309	13997.18	29	16342.77692	34	314.7339	367.4759636
	1076.875259	162.0096438	50	6584.8434	4283.094	9	5000.840234	11	96.30763	112.4465318
	20647.28589	3860.226077	944	126253.38	82121.18	169	95882.76562	197	1846.538	2155.974586
	2963.002691	690.5200778	136	18118.077	11784.85	25	13759.72096	29	264.9887	309.3945873
	3707.129722	165.3477027	170	22668.242	14744.5	31	17215.33049	36	331.5378	387.0957911
	1695.400562	594.0086278	78	10366.983	6743.176	14	7873.174981	17	151.6239	177.0324944
	2769.400721	338.5344824	127	16934.246	11014.83	23	12860.6637	27	247.6744	289.1788104
	2110.67218	291.4411564	97	12906.273	8394.851	18	9801.631409	21	188.7626	220.3948549
	134076.2832	2592.642684	6129	819845.5	533266.3	1095	622629.2844	1278	11990.77	14000.14804
	1693.312307	167.8805788	78	10354.214	6734.871	14	7863.477453	17	151.4371	176.8144403

	3638.178179	188.7182044	167	22246.619	14470.25	30	16895.1303	35	325.3713	379.895921
	1704.563682	174.4994564	78	10423.013	6779.621	14	7915.727078	17	152.4434	177.9893007
	2102.719025	143.1271597	97	12857.641	8363.218	18	9764.698204	21	188.0514	219.5643923
	2614.722724	185.1281439	120	15988.425	10399.63	22	12142.36328	25	233.8411	273.0274464
	1175.871909	321.1210815	54	7190.1851	4676.837	10	5460.56519	12	105.1611	122.78369
	1236.893101	33.77175134	57	7563.3156	4919.538	11	5743.938063	12	110.6184	129.1554786
	3203.060919	50.18609055	147	19585.978	12739.65	27	14874.51382	31	286.4577	334.461293
	15218.30911	494.494336	696	93056.444	60528.32	125	70671.44676	146	1361.011	1589.084776
	829.1317645	29.81783097	38	5069.9492	3297.735	7	3850.358205	8	74.15131	86.5773362
	202.6742505	2.934307637	10	1239.3062	806.1034	2	941.1875129	2	18.12566	21.16309792
	1285.727512	201.3673749	59	7861.9267	5113.769	11	5970.717426	13	114.9858	134.2547323
	959.6001596	65.18127509	44	5867.7333	3816.651	8	4456.233021	10	85.81942	100.2007512
	3232.3976	118.7295482	148	19765.365	12856.33	27	15010.74878	31	289.0813	337.524608
	807.6089158	12.40141953	37	4938.3419	3212.131	7	3750.409462	8	72.22647	84.32993597
	2526.332196	187.6454258	116	15447.938	10048.07	21	11731.8915	25	225.9362	263.7977717
	7792.744674	178.3438462	357	47650.833	30994.36	64	36188.28717	75	696.9245	813.7127347
	1738.713551	73.62169209	80	10631.832	6915.447	15	8074.313724	17	155.4975	181.5552052
	126.5791843	31.03690869	6	774.00247	503.4478	2	587.8139297	2	11.32029	13.21730642
	140.4479643	545.3137703	7	858.80685	558.6086	2	652.2183746	2	12.56061	14.66547435
	1433.478127	68.17808416	66	8765.3876	5701.423	12	6656.848168	14	128.1995	149.6827441
	3715.510757	8.607898467	170	22719.49	14777.83	31	17254.2507	36	332.2873	387.9709326
70	3506.671446	20262.52993	161	21442.486	13947.21	29	16284.43361	34	313.6103	366.1640836
	13092.88883	146.146839	599	80059.99	52074.81	107	60801.32749	125	1170.93	1367.149936
	75523.93114	22261.93503	3453	461811.39	300384	617	350721.3212	720	6754.292	7886.153995
	571.7122199	242.9619276	27	3495.8881	2273.891	5	2654.942111	6	51.12964	59.69777446
	970540.7709	121660.5301	44364	5934632.6	3860166	7921	4507039.508	9248	86797.87	101343.1619
	3940.351175	62.65619732	181	24094.337	15672.1	33	18298.37443	38	352.3954	411.4486056
	2794.801423	93.21795908	128	17089.565	11115.86	23	12978.62059	27	249.946	291.8311332
	3440.900014	89.55151123	158	21040.309	13685.61	29	15979.00137	33	307.7282	359.2962784
	2837.30792	79.18678121	130	17349.482	11284.92	24	13176.01411	28	253.7475	296.2696307
	5436.579588	88.9784423	249	33243.428	21623.1	45	25246.62511	52	486.2068	567.683689
	805.4979044	28.65865312	37	4925.4336	3203.735	7	3740.606256	8	72.03768	84.1095057

	1369.998439	1503.526768	63	8377.2239	5448.943	12	6362.05843	14	122.5224	143.0542413
	4226.99777	965.1432057	194	25847.115	16812.19	35	19629.51637	41	378.0309	441.3800348
	2314.478225	27.90570974	106	14152.5	9205.456	19	10748.0748	23	206.9895	241.676134
	2338.363121	296.2269096	107	14298.55	9300.454	20	10858.99252	23	209.1256	244.1701775
	184.3946877	1751.746253	9	1127.5309	733.3995	2	856.3000828	2	16.49087	19.25435926
	613.7711094	7424.911659	29	3753.0685	2441.173	6	2850.257013	6	54.89107	64.08953312
	7524.207852	1137.969808	344	46008.793	29926.3	62	34941.24418	72	672.9086	785.6723149
	440.1449689	411.4789117	21	2691.3848	1750.604	4	2043.964379	5	39.36326	45.95961774
	973.7337699	54.00122029	45	5954.157	3872.866	8	4521.867296	10	87.08343	101.6765725
	135438.768	39761.34413	6191	828176.78	538685.4	1106	628956.4504	1291	12112.62	14142.41771
	1823.621279	138.9652656	84	11151.023	7253.153	15	8468.611932	18	163.091	190.4212084
	1392.374482	216.0153784	64	8514.0483	5537.94	12	6465.969273	14	124.5235	145.3907314
	44532.49155	5410.607751	2036	272305.9	177120.6	364	206801.9241	425	3982.651	4650.050399
	1760.059535	197.1957245	81	10762.357	7000.347	15	8173.441138	17	157.4065	183.7841374
	1555.588292	322.989384	72	9512.063	6187.096	13	7223.90867	15	139.1201	162.4333987
	70021.80132	6766.515688	3201	428167.14	278500.2	572	325170.2911	668	6262.223	7311.625598
	201976.4391	99065.13451	9233	1235039.3	803328	1649	937946.9861	1925	18063.25	21090.23297
	401.5534734	636.8793715	19	2455.4067	1597.113	4	1864.751511	4	35.91192	41.92992182
	910.3066946	1160.277332	42	5566.3151	3620.595	8	4227.321881	9	81.41099	95.05356339
	2499.901669	182.1646378	115	15286.321	9942.947	21	11609.15226	24	223.5724	261.0379152
	421920.9901	29068.97181	19286	2579949.4	1678121	3444	1959335.073	4021	37733.44	44056.68312
	305.611536	44.84646644	14	1868.7439	1215.52	3	1419.212163	3	27.3316	31.91173446
	11493.3382	36908.95604	526	70279.108	45712.86	94	53373.26456	110	1027.878	1200.126021
	14521.40968	1462.531952	664	88795.065	57756.51	119	67435.15481	139	1298.686	1516.315044
	2684.976814	264.520208	123	16418.013	10679.05	22	12468.61229	26	240.1241	280.3633274
	3519.235027	530.6108986	161	21519.309	13997.18	29	16342.77692	34	314.7339	367.4759636
	1076.875259	162.0096438	50	6584.8434	4283.094	9	5000.840234	11	96.30763	112.4465318
	20647.28589	3860.226077	944	126253.38	82121.18	169	95882.76562	197	1846.538	2155.974586
	2963.002691	690.5200778	136	18118.077	11784.85	25	13759.72096	29	264.9887	309.3945873
	3707.129722	165.3477027	170	22668.242	14744.5	31	17215.33049	36	331.5378	387.0957911
	1695.400562	594.0086278	78	10366.983	6743.176	14	7873.174981	17	151.6239	177.0324944
	2769.400721	338.5344824	127	16934.246	11014.83	23	12860.6637	27	247.6744	289.1788104

	2110.67218	291.4411564	97	12906.273	8394.851	18	9801.631409	21	188.7626	220.3948549
	134076.2832	2592.642684	6129	819845.5	533266.3	1095	622629.2844	1278	11990.77	14000.14804
	1693.312307	167.8805788	78	10354.214	6734.871	14	7863.477453	17	151.4371	176.8144403
	3638.178179	188.7182044	167	22246.619	14470.25	30	16895.1303	35	325.3713	379.895921
	1571.644267	96.89038496	72	9610.2416	6250.956	13	7298.470109	15	140.556	164.109952
	2102.719025	143.1271597	97	12857.641	8363.218	18	9764.698204	21	188.0514	219.5643923
	2614.722724	185.1281439	120	15988.425	10399.63	22	12142.36328	25	233.8411	273.0274464
	1175.871909	321.1210815	54	7190.1851	4676.837	10	5460.56519	12	105.1611	122.78369
	132.9194151	13.32786313	7	812.77151	528.6651	2	617.2569697	2	11.88731	13.87934871
	1236.893101	33.77175134	57	7563.3156	4919.538	11	5743.938063	12	110.6184	129.1554786
	3203.060919	50.18609055	147	19585.978	12739.65	27	14874.51382	31	286.4577	334.461293
	15218.30911	494.494336	696	93056.444	60528.32	125	70671.44676	146	1361.011	1589.084776
	829.1317645	29.81783097	38	5069.9492	3297.735	7	3850.358205	8	74.15131	86.5773362
	202.6742505	2.934307637	10	1239.3062	806.1034	2	941.1875129	2	18.12566	21.16309792
	1285.727512	201.3673749	59	7861.9267	5113.769	11	5970.717426	13	114.9858	134.2547323
	959.6001596	65.18127509	44	5867.7333	3816.651	8	4456.233021	10	85.81942	100.2007512
	3232.3976	118.7295482	148	19765.365	12856.33	27	15010.74878	31	289.0813	337.524608
	807.6089158	12.40141953	37	4938.3419	3212.131	7	3750.409462	8	72.22647	84.32993597
	2526.332196	187.6454258	116	15447.938	10048.07	21	11731.8915	25	225.9362	263.7977717
	7696.865179	95.89141841	352	47064.552	30613.01	63	35743.03779	74	688.3497	803.7010675
	1641.575403	48.23420042	76	10037.854	6529.096	14	7623.219361	16	146.8102	171.4121104
	95.87949475	3.292169061	5	586.28096	381.3449	1	445.2493742	1	8.574741	10.01166715
	126.5791843	31.03690869	6	774.00247	503.4478	2	587.8139297	2	11.32029	13.21730642
	140.4479643	545.3137703	7	858.80685	558.6086	2	652.2183746	2	12.56061	14.66547435
	252.4955724	29.49584917	12	1543.9521	1004.26	3	1172.549938	3	22.58131	26.36540414
	1555.855787	25.03923119	72	9513.6987	6188.16	13	7225.150876	15	139.144	162.4613304
	3437.775672	2.198030028	158	21021.204	13673.19	29	15964.49242	33	307.4488	358.970037
80	3506.671446	20262.52993	161	21442.486	13947.21	29	16284.43361	34	313.6103	366.1640836
	13092.88883	146.146839	599	80059.99	52074.81	107	60801.32749	125	1170.93	1367.149936
	75523.93114	22261.93503	3453	461811.39	300384	617	350721.3212	720	6754.292	7886.153995
	571.7122199	242.9619276	27	3495.8881	2273.891	5	2654.942111	6	51.12964	59.69777446
	970540.7709	121660.5301	44364	5934632.6	3860166	7921	4507039.508	9248	86797.87	101343.1619

	3940.351175	62.65619732	181	24094.337	15672.1	33	18298.37443	38	352.3954	411.4486056
	2794.801423	93.21795908	128	17089.565	11115.86	23	12978.62059	27	249.946	291.8311332
	3440.900014	89.55151123	158	21040.309	13685.61	29	15979.00137	33	307.7282	359.2962784
	2837.30792	79.18678121	130	17349.482	11284.92	24	13176.01411	28	253.7475	296.2696307
	5436.579588	88.9784423	249	33243.428	21623.1	45	25246.62511	52	486.2068	567.683689
	805.4979044	28.65865312	37	4925.4336	3203.735	7	3740.606256	8	72.03768	84.1095057
	1369.998439	1503.526768	63	8377.2239	5448.943	12	6362.05843	14	122.5224	143.0542413
	4226.99777	965.1432057	194	25847.115	16812.19	35	19629.51637	41	378.0309	441.3800348
	2314.478225	27.90570974	106	14152.5	9205.456	19	10748.0748	23	206.9895	241.676134
	2338.363121	296.2269096	107	14298.55	9300.454	20	10858.99252	23	209.1256	244.1701775
	184.3946877	1751.746253	9	1127.5309	733.3995	2	856.3000828	2	16.49087	19.25435926
	613.7711094	7424.911659	29	3753.0685	2441.173	6	2850.257013	6	54.89107	64.08953312
	7433.81528	1042.059033	340	45456.063	29566.78	61	34521.47521	71	664.8245	776.2335883
	440.1449689	411.4789117	21	2691.3848	1750.604	4	2043.964379	5	39.36326	45.95961774
	973.7337699	54.00122029	45	5954.157	3872.866	8	4521.867296	10	87.08343	101.6765725
	135431.6082	39668.95235	6191	828133	538656.9	1106	628923.2014	1291	12111.98	14141.67009
	1823.621279	138.9652656	84	11151.023	7253.153	15	8468.611932	18	163.091	190.4212084
	1392.374482	216.0153784	64	8514.0483	5537.94	12	6465.969273	14	124.5235	145.3907314
	44532.49155	5410.607751	2036	272305.9	177120.6	364	206801.9241	425	3982.651	4650.050399
	1760.059535	197.1957245	81	10762.357	7000.347	15	8173.441138	17	157.4065	183.7841374
	1155.981418	191.1921847	53	7068.5593	4597.726	10	5368.196864	12	103.3823	120.7067395
	399.6068734	24.77047319	19	2443.5037	1589.37	4	1855.711806	4	35.73783	41.72665927
	97.55237914	150.3619071	5	596.51026	387.9985	1	453.0179876	1	8.724351	10.18634852
	70021.80132	6766.515688	3201	428167.14	278500.2	572	325170.2911	668	6262.223	7311.625598
	201976.4391	99065.13451	9233	1235039.3	803328	1649	937946.9861	1925	18063.25	21090.23297
	401.5534734	636.8793715	19	2455.4067	1597.113	4	1864.751511	4	35.91192	41.92992182
	490.8972172	499.1327356	23	3001.7231	1952.463	5	2279.649881	5	43.90216	51.25913061
	2499.901669	182.1646378	115	15286.321	9942.947	21	11609.15226	24	223.5724	261.0379152
	419.4094773	182.8693399	20	2564.5921	1668.132	4	1947.672	4	37.50883	43.79443278
	421920.9901	29068.97181	19286	2579949.4	1678121	3444	1959335.073	4021	37733.44	44056.68312
	305.611536	44.84646644	14	1868.7439	1215.52	3	1419.212163	3	27.3316	31.91173446
	11493.3382	36908.95604	526	70279.108	45712.86	94	53373.26456	110	1027.878	1200.126021

	14521.40968	1462.531952	664	88795.065	57756.51	119	67435.15481	139	1298.686	1516.315044
	2666.212076	253.6255305	122	16303.271	10604.42	22	12381.47178	26	238.446	278.4039271
	3519.235027	530.6108986	161	21519.309	13997.18	29	16342.77692	34	314.7339	367.4759636
	1076.875259	162.0096438	50	6584.8434	4283.094	9	5000.840234	11	96.30763	112.4465318
	356.8475328	39.55044562	17	2182.0402	1419.302	3	1657.144117	4	31.91376	37.26176
	20647.28589	3860.226077	944	126253.38	82121.18	169	95882.76562	197	1846.538	2155.974586
	2231.774487	224.2903423	103	13646.785	8876.515	19	10364.01158	22	199.5931	233.0402697
	218.846785	5.555980676	11	1338.1975	870.427	2	1016.290233	3	19.57201	22.85182222
	3707.129722	165.3477027	170	22668.242	14744.5	31	17215.33049	36	331.5378	387.0957911
	1582.854339	495.1840401	73	9678.7886	6295.542	13	7350.527928	16	141.5586	165.2804996
	873.2844647	173.6023683	40	5339.9327	3473.345	8	4055.396437	9	78.1	91.18772906
	2769.400721	338.5344824	127	16934.246	11014.83	23	12860.6637	27	247.6744	289.1788104
	1328.206142	170.7427143	61	8121.6737	5282.721	11	6167.981537	13	118.7848	138.6903199
	1085.16601	123.9474536	50	6635.5394	4316.069	9	5039.341186	11	97.04909	113.312246
	134076.2832	2592.642684	6129	819845.5	533266.3	1095	622629.2844	1278	11990.77	14000.14804
	994.326467	21.74089426	46	6080.0766	3954.77	9	4617.49656	10	88.92508	103.826847
	3298.166901	156.1900287	151	20167.529	13117.92	27	15316.17112	32	294.9632	344.3921906
	1571.644267	96.89038496	72	9610.2416	6250.956	13	7298.470109	15	140.556	164.109952
	714.5931048	38.64598145	33	4369.5717	2842.176	6	3318.458588	7	63.90783	74.6172926
	2856.105792	114.7293746	131	17464.427	11359.69	24	13263.30849	28	255.4286	298.2324908
	1296.600381	108.6407743	60	7928.4118	5157.014	11	6021.209331	13	115.9582	135.3900694
	1175.871909	321.1210815	54	7190.1851	4676.837	10	5460.56519	12	105.1611	122.78369
	132.9194151	13.32786313	7	812.77151	528.6651	2	617.2569697	2	11.88731	13.87934871
	1236.893101	33.77175134	57	7563.3156	4919.538	11	5743.938063	12	110.6184	129.1554786
	3203.060919	50.18609055	147	19585.978	12739.65	27	14874.51382	31	286.4577	334.461293
	15218.30911	494.494336	696	93056.444	60528.32	125	70671.44676	146	1361.011	1589.084776
	829.1317645	29.81783097	38	5069.9492	3297.735	7	3850.358205	8	74.15131	86.5773362
	202.6742505	2.934307637	10	1239.3062	806.1034	2	941.1875129	2	18.12566	21.16309792
	1285.727512	201.3673749	59	7861.9267	5113.769	11	5970.717426	13	114.9858	134.2547323
	959.6001596	65.18127509	44	5867.7333	3816.651	8	4456.233021	10	85.81942	100.2007512
	3232.3976	118.7295482	148	19765.365	12856.33	27	15010.74878	31	289.0813	337.524608
	807.6089158	12.40141953	37	4938.3419	3212.131	7	3750.409462	8	72.22647	84.32993597

	2205.672656	146.5521209	101	13487.179	8772.699	18	10242.79876	22	197.2588	230.3147356
	814.1242724	35.89526048	38	4978.1818	3238.045	7	3780.665759	8	72.80915	85.01026477
	7203.400447	83.42087945	330	44047.13	28650.34	59	33451.46477	69	644.218	752.1738389
	1641.575403	48.23420042	76	10037.854	6529.096	14	7623.219361	16	146.8102	171.4121104
	95.87949475	3.292169061	5	586.28096	381.3449	1	445.2493742	1	8.574741	10.01166715
	126.5791843	31.03690869	6	774.00247	503.4478	2	587.8139297	2	11.32029	13.21730642
	140.4479643	545.3137703	7	858.80685	558.6086	2	652.2183746	2	12.56061	14.66547435
	252.4955724	29.49584917	12	1543.9521	1004.26	3	1172.549938	3	22.58131	26.36540414
	506.5191106	2.25292988	24	3097.2473	2014.596	5	2352.19551	5	45.29926	52.89035736
	1049.336676	12.63264555	48	6416.4513	4173.564	9	4872.955366	10	93.84478	109.570973
	3437.775672	2.198030028	158	21021.204	13673.19	29	15964.49242	33	307.4488	358.970037
90	3506.671446	20262.52993	161	21442.486	13947.21	29	16284.43361	34	313.6103	366.1640836
	13092.88883	146.146839	599	80059.99	52074.81	107	60801.32749	125	1170.93	1367.149936
	75523.93114	22261.93503	3453	461811.39	300384	617	350721.3212	720	6754.292	7886.153995
	571.7122199	242.9619276	27	3495.8881	2273.891	5	2654.942111	6	51.12964	59.69777446
	970540.7709	121660.5301	44364	5934632.6	3860166	7921	4507039.508	9248	86797.87	101343.1619
	3940.351175	62.65619732	181	24094.337	15672.1	33	18298.37443	38	352.3954	411.4486056
	2794.801423	93.21795908	128	17089.565	11115.86	23	12978.62059	27	249.946	291.8311332
	3440.900014	89.55151123	158	21040.309	13685.61	29	15979.00137	33	307.7282	359.2962784
	2837.30792	79.18678121	130	17349.482	11284.92	24	13176.01411	28	253.7475	296.2696307
	5436.579588	88.9784423	249	33243.428	21623.1	45	25246.62511	52	486.2068	567.683689
	805.4979044	28.65865312	37	4925.4336	3203.735	7	3740.606256	8	72.03768	84.1095057
	1369.998439	1503.526768	63	8377.2239	5448.943	12	6362.05843	14	122.5224	143.0542413
	3394.620345	923.9134712	156	20757.319	13501.54	28	15764.08582	33	303.5893	354.463789
	2314.478225	27.90570974	106	14152.5	9205.456	19	10748.0748	23	206.9895	241.676134
	2337.659981	290.5239625	107	14294.251	9297.657	20	10855.72725	23	209.0627	244.0967561
	184.3946877	1751.746253	9	1127.5309	733.3995	2	856.3000828	2	16.49087	19.25435926
	613.7711094	7424.911659	29	3753.0685	2441.173	6	2850.257013	6	54.89107	64.08953312
	1228.357879	40.8131504	57	7511.1246	4885.591	11	5704.301825	12	109.8551	128.2642369
	7038.537967	1027.539007	322	43039.034	27994.62	58	32685.86921	68	629.4739	734.9590186
	440.1449689	411.4789117	21	2691.3848	1750.604	4	2043.964379	5	39.36326	45.95961774
	973.7337699	54.00122029	45	5954.157	3872.866	8	4521.867296	10	87.08343	101.6765725

	135431.6082	39668.95235	6191	828133	538656.9	1106	628923.2014	1291	12111.98	14141.67009
	1823.621279	138.9652656	84	11151.023	7253.153	15	8468.611932	18	163.091	190.4212084
	1392.374482	216.0153784	64	8514.0483	5537.94	12	6465.969273	14	124.5235	145.3907314
	232.6261286	30.1035226	11	1422.455	925.2321	2	1080.279349	3	20.80433	24.29065127
	44532.49155	5410.607751	2036	272305.9	177120.6	364	206801.9241	425	3982.651	4650.050399
	1527.433407	130.2357343	70	9339.9024	6075.115	13	7093.161789	15	136.6022	159.4934861
	1155.981418	191.1921847	53	7068.5593	4597.726	10	5368.196864	12	103.3823	120.7067395
	399.6068734	24.77047319	19	2443.5037	1589.37	4	1855.711806	4	35.73783	41.72665927
	97.55237914	150.3619071	5	596.51026	387.9985	1	453.0179876	1	8.724351	10.18634852
	70014.9581	6737.178861	3201	428125.29	278473	572	325138.5123	668	6261.611	7310.911035
	118.4035287	35.75496101	6	724.01022	470.9305	1	549.8474642	2	10.58912	12.36361041
	201976.4391	99065.13451	9233	1235039.3	803328	1649	937946.9861	1925	18063.25	21090.23297
	289.9931593	373.2492593	14	1773.2412	1153.4	3	1346.682865	3	25.93481	30.28087492
	490.8972172	499.1327356	23	3001.7231	1952.463	5	2279.649881	5	43.90216	51.25913061
	2499.901669	182.1646378	115	15286.321	9942.947	21	11609.15226	24	223.5724	261.0379152
	419.4094773	182.8693399	20	2564.5921	1668.132	4	1947.672	4	37.50883	43.79443278
	421920.9901	29068.97181	19286	2579949.4	1678121	3444	1959335.073	4021	37733.44	44056.68312
	305.611536	44.84646644	14	1868.7439	1215.52	3	1419.212163	3	27.3316	31.91173446
	11493.3382	36908.95604	526	70279.108	45712.86	94	53373.26456	110	1027.878	1200.126021
	14521.40968	1462.531952	664	88795.065	57756.51	119	67435.15481	139	1298.686	1516.315044
	1666.061091	109.0054084	77	10187.579	6626.483	14	7736.927066	16	149	173.9688881
	3519.235027	530.6108986	161	21519.309	13997.18	29	16342.77692	34	314.7339	367.4759636
	1000.150986	78.5708762	46	6115.6922	3977.936	9	4644.544713	10	89.44598	104.435039
	1076.875259	162.0096438	50	6584.8434	4283.094	9	5000.840234	11	96.30763	112.4465318
	356.8475328	39.55044562	17	2182.0402	1419.302	3	1657.144117	4	31.91376	37.26176
	20571.81345	3838.095589	941	125791.89	81821	168	95532.28341	197	1839.788	2148.093808
	2231.774487	224.2903423	103	13646.785	8876.515	19	10364.01158	22	199.5931	233.0402697
	218.846785	5.555980676	11	1338.1975	870.427	2	1016.290233	3	19.57201	22.85182222
	3707.129722	165.3477027	170	22668.242	14744.5	31	17215.33049	36	331.5378	387.0957911
	1582.854339	495.1840401	73	9678.7886	6295.542	13	7350.527928	16	141.5586	165.2804996
	533.536783	86.00807372	25	3262.4542	2122.055	5	2477.661354	6	47.71552	55.71152308
	2769.400721	338.5344824	127	16934.246	11014.83	23	12860.6637	27	247.6744	289.1788104

	415.2201244	7.394363133	19	2538.9751	1651.47	4	1928.217301	4	37.13417	43.35698359
	1328.206142	170.7427143	61	8121.6737	5282.721	11	6167.981537	13	118.7848	138.6903199
	794.8648726	107.3547072	37	4860.4151	3161.444	7	3691.22812	8	71.08674	82.99921225
	134076.2832	2592.642684	6129	819845.5	533266.3	1095	622629.2844	1278	11990.77	14000.14804
	994.326467	21.74089426	46	6080.0766	3954.77	9	4617.49656	10	88.92508	103.826847
	1972.869116	79.80294081	91	12063.639	7846.762	17	9161.695537	19	176.4386	206.0055591
	1615.598923	49.27721083	74	9879.0142	6425.778	14	7502.588653	16	144.487	168.6996652
	1571.644267	96.89038496	72	9610.2416	6250.956	13	7298.470109	15	140.556	164.109952
	714.5931048	38.64598145	33	4369.5717	2842.176	6	3318.458588	7	63.90783	74.6172926
	1102.960148	57.80548704	51	6744.3465	4386.842	10	5121.97438	11	98.64046	115.170297
	1753.145644	40.27947923	81	10720.081	6972.848	15	8141.334108	17	156.7882	183.0621939
	1296.600381	108.6407743	60	7928.4118	5157.014	11	6021.209331	13	115.9582	135.3900694
	1175.871909	321.1210815	54	7190.1851	4676.837	10	5460.56519	12	105.1611	122.78369
	132.9194151	13.32786313	7	812.77151	528.6651	2	617.2569697	2	11.88731	13.87934871
	1236.893101	33.77175134	57	7563.3156	4919.538	11	5743.938063	12	110.6184	129.1554786
	3203.060919	50.18609055	147	19585.978	12739.65	27	14874.51382	31	286.4577	334.461293
	247.5483869	271.5696933	12	1513.7012	984.5829	3	1149.575982	3	22.13887	25.84882263
	14970.76072	19.45092029	685	91542.743	59543.73	123	69521.87077	143	1338.872	1563.235953
	829.1317645	29.81783097	38	5069.9492	3297.735	7	3850.358205	8	74.15131	86.5773362
	202.6742505	2.934307637	10	1239.3062	806.1034	2	941.1875129	2	18.12566	21.16309792
	1285.727512	201.3673749	59	7861.9267	5113.769	11	5970.717426	13	114.9858	134.2547323
	959.6001596	65.18127509	44	5867.7333	3816.651	8	4456.233021	10	85.81942	100.2007512
	3232.3976	118.7295482	148	19765.365	12856.33	27	15010.74878	31	289.0813	337.524608
	807.6089158	12.40141953	37	4938.3419	3212.131	7	3750.409462	8	72.22647	84.32993597
	1598.189044	65.4939119	74	9772.5568	6356.534	14	7421.739897	16	142.93	166.8817383
	493.4647321	1.420516906	23	3017.4228	1962.675	5	2291.573018	5	44.13178	51.52722865
	928.1431529	55.4328243	43	5675.381	3691.536	8	4310.151603	9	83.00614	96.9160334
	5949.118983	43.24929264	272	36377.488	23661.64	49	27626.77787	57	532.0445	621.20268
	1585.67653	37.09052386	73	9696.0456	6306.767	13	7363.633744	16	141.811	165.5751908
	1310.180337	41.20966422	60	8011.4501	5211.026	11	6084.272518	13	117.1727	136.8080784
	95.87949475	3.292169061	5	586.28096	381.3449	1	445.2493742	1	8.574741	10.01166715
	126.5791843	31.03690869	6	774.00247	503.4478	2	587.8139297	2	11.32029	13.21730642

	140.4479643	545.3137703	7	858.80685	558.6086	2	652.2183746	2	12.56061	14.66547435
	252.4955724	29.49584917	12	1543.9521	1004.26	3	1172.549938	3	22.58131	26.36540414
	506.5191106	2.25292988	24	3097.2473	2014.596	5	2352.19551	5	45.29926	52.89035736
	1049.336676	12.63264555	48	6416.4513	4173.564	9	4872.955366	10	93.84478	109.570973
	3437.775672	2.198030028	158	21021.204	13673.19	29	15964.49242	33	307.4488	358.970037
100	3382.821342	20255.13642	155	20685.171	13454.61	28	15709.2931	33	302.5341	353.2317458
	12969.03873	137.7345855	593	79302.676	51582.21	106	60226.18699	124	1159.853	1354.217598
	247.7002078	2.551019658	12	1514.6295	985.1868	3	1150.281015	3	22.15244	25.86467566
	75523.93114	22261.93503	3453	461811.39	300384	617	350721.3212	720	6754.292	7886.153995
	571.7122199	242.9619276	27	3495.8881	2273.891	5	2654.942111	6	51.12964	59.69777446
	970540.3209	121604.0701	44364	5934629.8	3860164	7921	4507037.419	9248	86797.83	101343.1149
	3940.351175	62.65619732	181	24094.337	15672.1	33	18298.37443	38	352.3954	411.4486056
	2329.355407	81.70456154	107	14243.47	9264.627	20	10817.1621	23	208.32	243.2295985
	2378.237879	45.33518909	109	14542.375	9459.049	20	11044.16466	23	212.6917	248.3338707
	1772.520443	55.48095399	82	10838.553	7049.908	15	8231.307645	17	158.5209	185.0852963
	2012.682095	55.75887548	92	12307.086	8005.111	17	9346.580785	20	179.9992	210.1628014
	1719.387353	34.11162015	79	10513.656	6838.58	15	7984.565884	17	153.7691	179.5371776
	4297.405768	49.94962998	197	26277.643	17092.22	36	19956.4801	41	384.3277	448.7319867
	805.4979044	28.65865312	37	4925.4336	3203.735	7	3740.606256	8	72.03768	84.1095057
	290.776608	6870.871561	14	1778.0318	1156.516	3	1350.321078	3	26.00487	30.36268205
	1346.668247	368.1157009	62	8234.5652	5356.151	11	6253.716665	13	120.4359	140.6181195
	3379.235637	391.4598724	155	20663.245	13440.35	28	15692.64165	33	302.2134	352.857329
	2314.478225	27.90570974	106	14152.5	9205.456	19	10748.0748	23	206.9895	241.676134
	263.8182087	174.5942767	13	1613.1874	1049.293	3	1225.130489	3	23.59392	27.54770559
	2076.03557	272.947752	95	12694.478	8257.089	17	9640.784411	20	185.665	216.7781252
	171.8928549	1375.817714	8	1051.0851	683.6755	2	798.243527	2	15.3728	17.94892696
	372.4674468	1176.545464	18	2277.5524	1481.428	4	1729.680554	4	33.31069	38.89278007
	1228.357879	40.8131504	57	7511.1246	4885.591	11	5704.301825	12	109.8551	128.2642369
	7038.537967	1027.539007	322	43039.034	27994.62	58	32685.86921	68	629.4739	734.9590186
	440.1449689	411.4789117	21	2691.3848	1750.604	4	2043.964379	5	39.36326	45.95961774
	973.7337699	54.00122029	45	5954.157	3872.866	8	4521.867296	10	87.08343	101.6765725
	135431.6082	39668.95235	6191	828133	538656.9	1106	628923.2014	1291	12111.98	14141.67009

	1366.044293	29.24163057	63	8353.0453	5433.216	12	6343.69599	14	122.1687	142.6413521
	457.5769865	51.8357865	21	2797.9776	1819.937	4	2124.915942	5	40.92224	47.77985634
	1392.374482	216.0153784	64	8514.0483	5537.94	12	6465.969273	14	124.5235	145.3907314
	232.6261286	30.1035226	11	1422.455	925.2321	2	1080.279349	3	20.80433	24.29065127
	44532.49155	5410.607751	2036	272305.9	177120.6	364	206801.9241	425	3982.651	4650.050399
	1527.433407	130.2357343	70	9339.9024	6075.115	13	7093.161789	15	136.6022	159.4934861
	1155.981418	191.1921847	53	7068.5593	4597.726	10	5368.196864	12	103.3823	120.7067395
	399.6068734	24.77047319	19	2443.5037	1589.37	4	1855.711806	4	35.73783	41.72665927
	97.55237914	150.3619071	5	596.51026	387.9985	1	453.0179876	1	8.724351	10.18634852
	70014.9581	6737.178861	3201	428125.29	278473	572	325138.5123	668	6261.611	7310.911035
	118.4035287	35.75496101	6	724.01022	470.9305	1	549.8474642	2	10.58912	12.36361041
	201976.4391	99065.13451	9233	1235039.3	803328	1649	937946.9861	1925	18063.25	21090.23297
	289.9931593	373.2492593	14	1773.2412	1153.4	3	1346.682865	3	25.93481	30.28087492
	490.8972172	499.1327356	23	3001.7231	1952.463	5	2279.649881	5	43.90216	51.25913061
	2499.901669	182.1646378	115	15286.321	9942.947	21	11609.15226	24	223.5724	261.0379152
	419.4094773	182.8693399	20	2564.5921	1668.132	4	1947.672	4	37.50883	43.79443278
	421920.9901	29068.97181	19286	2579949.4	1678121	3444	1959335.073	4021	37733.44	44056.68312
	305.611536	44.84646644	14	1868.7439	1215.52	3	1419.212163	3	27.3316	31.91173446
	10985.96	36895.4549	503	67176.607	43694.85	90	51017.07959	105	982.5017	1147.145958
	507.378198	2.786210019	24	3102.5005	2018.013	5	2356.184977	5	45.37609	52.98006265
	14521.40968	1462.531952	664	88795.065	57756.51	119	67435.15481	139	1298.686	1516.315044
	1666.061091	109.0054084	77	10187.579	6626.483	14	7736.927066	16	149	173.9688881
	3519.235027	530.6108986	161	21519.309	13997.18	29	16342.77692	34	314.7339	367.4759636
	1000.150986	78.5708762	46	6115.6922	3977.936	9	4644.544713	10	89.44598	104.435039
	1076.875259	162.0096438	50	6584.8434	4283.094	9	5000.840234	11	96.30763	112.4465318
	356.8475328	39.55044562	17	2182.0402	1419.302	3	1657.144117	4	31.91376	37.26176
	20571.81345	3838.095589	941	125791.89	81821	168	95532.28341	197	1839.788	2148.093808
	2231.774487	224.2903423	103	13646.785	8876.515	19	10364.01158	22	199.5931	233.0402697
	218.846785	5.555980676	11	1338.1975	870.427	2	1016.290233	3	19.57201	22.85182222
	3707.129722	165.3477027	170	22668.242	14744.5	31	17215.33049	36	331.5378	387.0957911
	1582.854339	495.1840401	73	9678.7886	6295.542	13	7350.527928	16	141.5586	165.2804996
	533.536783	86.00807372	25	3262.4542	2122.055	5	2477.661354	6	47.71552	55.71152308

	2769.400721	338.5344824	127	16934.246	11014.83	23	12860.6637	27	247.6744	289.1788104
	415.2201244	7.394363133	19	2538.9751	1651.47	4	1928.217301	4	37.13417	43.35698359
	1328.206142	170.7427143	61	8121.6737	5282.721	11	6167.981537	13	118.7848	138.6903199
	724.6430708	75.87832029	34	4431.025	2882.148	6	3365.129057	7	64.80663	75.66670275
	134076.2832	2592.642684	6129	819845.5	533266.3	1095	622629.2844	1278	11990.77	14000.14804
	464.1362958	2.356351969	22	2838.0862	1846.026	4	2155.376348	5	41.50886	48.46477465
	530.1901712	11.1845532	25	3241.9904	2108.744	5	2462.120212	6	47.41622	55.36207231
	581.1380269	39.34503014	27	3553.5248	2311.381	5	2698.714084	6	51.97262	60.68201037
	1461.952891	51.35654603	67	8939.5042	5814.677	12	6789.080516	14	130.7461	152.6560582
	1615.598923	49.27721083	74	9879.0142	6425.778	14	7502.588653	16	144.487	168.6996652
	1571.644267	96.89038496	72	9610.2416	6250.956	13	7298.470109	15	140.556	164.109952
	714.5931048	38.64598145	33	4369.5717	2842.176	6	3318.458588	7	63.90783	74.6172926
	1102.960148	57.80548704	51	6744.3465	4386.842	10	5121.97438	11	98.64046	115.170297
	1753.145644	40.27947923	81	10720.081	6972.848	15	8141.334108	17	156.7882	183.0621939
	1296.600381	108.6407743	60	7928.4118	5157.014	11	6021.209331	13	115.9582	135.3900694
	1175.871909	321.1210815	54	7190.1851	4676.837	10	5460.56519	12	105.1611	122.78369
	132.9194151	13.32786313	7	812.77151	528.6651	2	617.2569697	2	11.88731	13.87934871
	1236.893101	33.77175134	57	7563.3156	4919.538	11	5743.938063	12	110.6184	129.1554786
	3203.060919	50.18609055	147	19585.978	12739.65	27	14874.51382	31	286.4577	334.461293
	247.5483869	271.5696933	12	1513.7012	984.5829	3	1149.575982	3	22.13887	25.84882263
	14970.76072	19.45092029	685	91542.743	59543.73	123	69521.87077	143	1338.872	1563.235953
	829.1317645	29.81783097	38	5069.9492	3297.735	7	3850.358205	8	74.15131	86.5773362
	202.6742505	2.934307637	10	1239.3062	806.1034	2	941.1875129	2	18.12566	21.16309792
	536.3134364	26.29619331	25	3279.4328	2133.098	5	2490.555697	6	47.96384	56.0014592
	749.4140756	159.8674455	35	4582.4939	2980.671	7	3480.161728	8	67.02196	78.25327306
	959.6001596	65.18127509	44	5867.7333	3816.651	8	4456.233021	10	85.81942	100.2007512
	3232.3976	118.7295482	148	19765.365	12856.33	27	15010.74878	31	289.0813	337.524608
	807.6089158	12.40141953	37	4938.3419	3212.131	7	3750.409462	8	72.22647	84.32993597
	1598.189044	65.4939119	74	9772.5568	6356.534	14	7421.739897	16	142.93	166.8817383
	493.4647321	1.420516906	23	3017.4228	1962.675	5	2291.573018	5	44.13178	51.52722865
	928.1431529	55.4328243	43	5675.381	3691.536	8	4310.151603	9	83.00614	96.9160334
	5949.118983	43.24929264	272	36377.488	23661.64	49	27626.77787	57	532.0445	621.20268

	1585.67653	37.09052386	73	9696.0456	6306.767	13	7363.633744	16	141.811	165.5751908
	1310.180337	41.20966422	60	8011.4501	5211.026	11	6084.272518	13	117.1727	136.8080784
	95.87949475	3.292169061	5	586.28096	381.3449	1	445.2493742	1	8.574741	10.01166715
	126.5791843	31.03690869	6	774.00247	503.4478	2	587.8139297	2	11.32029	13.21730642
	140.4479643	545.3137703	7	858.80685	558.6086	2	652.2183746	2	12.56061	14.66547435
	252.4955724	29.49584917	12	1543.9521	1004.26	3	1172.549938	3	22.58131	26.36540414
	506.5191106	2.25292988	24	3097.2473	2014.596	5	2352.19551	5	45.29926	52.89035736
	1049.336676	12.63264555	48	6416.4513	4173.564	9	4872.955366	10	93.84478	109.570973
	3437.775672	2.198030028	158	21021.204	13673.19	29	15964.49242	33	307.4488	358.970037

Emission Calculations

	Biomass to AD		On-site	SNG to RH2		AD to HRS				TOTAL [kg CO2eq / kg H2]	
Scenario	Distance [mi]	Transportation [g CO2eq/yr]	AD&Cleanu p [g CO2eq/yr]	SMR/PSA [gCO2eq/yr]	Tri-Gen/PSA [gCO2eq/yr]	Distance [mi/day]	SMR [g CO2eq/day]	Distance [mi/day]	TG [g CO2eq/day]	SMR	Tri-Gen
1	2038569.867	2.89689E+14	-1153839077	9.3066E+11	4.93906E+11	46669.53279	1.18407E+12	55972.0685	1.65804E+12	9860.231453	10461.24197
5	216675.4107	1.48866E+13	-557863787.7	4.4996E+11	2.38796E+11	8102.48153	99392078156	9838.971446	1.4092E+11	1456.308683	1608.486591
	122763.8107	1.58308E+12	-104699092.8	84447854125	44816926621	1668.400006	3840992126	2260.655087	6077633631	461.4473578	495.232364
	157823.6602	6.96096E+12	-358117773.6	2.88849E+11	1.53294E+11	13103.61357	1.03181E+11	15482.79215	1.42364E+11	1973.952608	2223.911026
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	216.0153784	19138840.76	-715413.5802	577035961.4	306236062.6	0	0	0	0	13.10110571	6.117845654
	5410.607751	15250174353	-22881164.24	18455415121	9794387244	782.2763415	394196319.1	1128.772488	664119650.4	122.1492141	157.5622061
	197.1957245	22112278.65	-904333.2161	729414147.6	387103978.8	0	0	0	0	13.06489259	6.086830028
	322.989384	32193762.03	-799274.1918	644675981.1	342132981.8	0	0	0	0	13.31401861	6.300200196
	6766.515688	29984841130	-35977783.43	29018843679	15400455124	2107.700279	1668998195	2081.471406	1924854455	292.316873	280.2522005
	99065.13451	1.26624E+12	-103777172.9	83704255011	44422294605	3834.216294	8752825073	4116.848459	10971009719	689.3003452	690.4414021
	636.8793715	16751811.14	-206321.5117	166414134.6	88316868.89	0	0	0	0	13.95801729	6.851768868
	1160.277332	67462445.94	-467723.1447	377254614.6	200211036.2	0	0	0	0	14.95033455	7.701663636
	182.1646378	29000995.09	-1284470.253	1036023844	549823379.8	106.7350692	3102968.849	48.89231588	1624436.861	26.91443948	12.28456781
	29068.97181	7.76109E+11	-216786511.1	1.74855E+11	92796459847	3473.212447	16559433538	3874.446983	21567250395	507.8842648	543.5547606
	44.84646644	869175.0481	-157025.747	126653316.9	67215590.82	0	0	0	0	12.76714542	5.831817065
	36908.95604	26876238761	-5905372.68	4763136312	2527821847	56.41851944	7341765.751	113.5815778	17296234.6	91.45913177	81.52404329

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	162.0096438	11214033.69	-553307.4571	446284931.3	236845793.5	0	0	0	0	12.99903205	6.030422133
	3860.226077	5044704355	-10608747.08	8556768756	4541122820	140.3820589	32843489.82	144.622276	39441407.35	37.9514177	30.46180736
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	594.0086278	64141386.08	-871110.8982	702617798.4	372883013.3	0	0	0	0	13.83900426	6.749837201
	338.5344824	59519272.96	-1422941.106	1147711214	609096463.2	104.5709657	3329583.722	125.1508462	4677874.212	26.78180177	22.49749789
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	188.7182044	43629602.06	-1869326.183	1507755040	800173641.9	140.2536749	5824873.38	109.05928	5284229.307	30.94962848	19.98151903
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	65.18127509	3970329.16	-493050.5367	397683100.1	211052542.4	0	0	0	0	12.80676912	5.865753775
	118.7295482	24326045.55	-1660832.75	1339589084	710927072	240.6988688	8996815.167	0	0	44.03265505	5.954652872
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	187.6454258	30133318.11	-1298050.477	1046977337	555636457.3	266.6805976	7752855.674	0	0	47.3597839	6.070151339
	95.89141841	46727590.91	-3954713.293	3189779801	1692833154	227.5387976	19844812.2	227.5387976	23309779.41	41.69554956	34.9195311
	48.23420042	5074808.526	-843455.0841	680311261.6	361044815.3	0	0	0	0	12.77472361	5.8383076
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	31.03690869	257798.6827	-65037.4368	52457684.5	27839572.97	0	0	0	0	12.74241129	5.81063291
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	29.49584917	489996.6771	-129734.3234	104640689.1	55533371.87	0	0	0	0	12.73946901	5.80811292
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	242.9619276	9081403.525	-293750.4898	236932315.8	125741243.7	0	0	0	0	13.16663619	6.173970861
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	5410.607751	15250174353	-22881164.24	1845541512 1	9794387244	782.2763415	394196319.1	1128.772488	664119650.4	122.1492141	157.5622061
	197.1957245	22112278.65	-904333.2161	729414147.6	387103978.8	0	0	0	0	13.06489259	6.086830028

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	636.8793715	16751811.14	-206321.5117	166414134.6	88316868.89	0	0	0	0	13.95801729	6.851768868
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	530.6108986	118264126.1	-1808212.203	1458461925	774013522.8	68.62287123	2754976.307	126.0537512	5933154.754	22.46284655	22.78461145
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	2592.642684	21998003815	-68889508.56	5556467601 6	2948846993 8	989.3298963	1499706374	1215.318037	2150164970	142.7779428	163.6436313
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	50.18609055	10212961.28	-1645759.319	1327431205	704474820.9	146.8706374	5489714.117	0	0	31.94183387	5.840854621
	494.494336	476454623.9	-7819293.692	6306860504	3347084510	324.2884544	56116746.62	342.8409408	69294141.55	54.87078476	50.18496792
	29.81783097	1568594.291	-426014.791	343613626.2	182357584.2	0	0	0	0	12.73797517	5.806833482
	2.934307637	40621.56291	-104135.7142	83993446.08	44575769.85	0	0	0	0	12.68615912	5.762454339
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	65.18127509	3970329.16	-493050.5367	397683100.1	211052542.4	0	0	0	0	12.80676912	5.865753775
	118.7295482	24326045.55	-1660832.75	1339589084	710927072	240.6988688	8996815.167	0	0	44.03265505	5.954652872
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	31.03690869	257798.6827	-65037.4368	52457684.5	27839572.97	0	0	0	0	12.74241129	5.81063291
	545.3137703	5284397.637	-72163.33125	58205265.29	30889844.75	0	0	0	0	13.83265435	6.744398665
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	6737.178861	29854839203	-35974267.33	2901600767 4	1539895004 1	2107.700279	1668998195	2006.773152	1855776751	292.287323	270.7817351
	35.75496101	296987.7555	-60836.71703	49069481.59	26041435.61	0	0	0	0	12.75685881	5.82300685

	99065.13451	1.26624E+12	-103777172.9	8370425501 1	4442229460 5	3449.745367	7875147207	4116.848459	1097100971 9	640.7112113	690.4414021
	373.2492593	7233991.184	-149000.8952	120180658	63780516.25	0	0	0	0	13.44421038	6.411706176
	499.1327356	15892597.15	-252227.0698	203440490.5	107966953.5	0	0	0	0	13.67180096	6.606631784
	182.1646378	29000995.09	-1284470.253	1036023844	549823379.8	51.85795913	1507598.514	48.89231588	1624436.861	19.77862896	12.28456781
	182.8693399	5063162.636	-215496.0749	173814124.1	92244082.74	0	0	0	0	13.04984344	6.073940813
	29068.97181	7.76109E+11	-216786511.1	1.74855E+11	9279645984 7	3256.546775	1552642422 7	3874.446983	2156725039 5	480.5077709	543.5547606
	44.84646644	869175.0481	-157025.747	126653316.9	67215590.82	0	0	0	0	12.76714542	5.831817065
	36895.4549	25691640678	-5644677.545	4552865677	2416230099	56.41851944	7029350.187	113.5815778	16510042.12	91.47622935	81.5087581
	2.786210019	92571.23895	-260695.1347	210270634.8	111591747.5	0	0	0	0	12.68560838	5.761982646
	1462.531952	1344387381	-7461220.972	6018047373	3193809840	106.8925977	17609441.32	53.66403408	10326403.76	29.07559088	14.99647398
	109.0054084	11619561.97	-856036.034	690458763.4	366430148.6	89.34984012	1731700.572	0	0	24.5158263	5.9401847
	530.6108986	118264126.1	-1808212.203	1458461925	774013522.8	78.57481862	3154513.353	164.0899931	7723461.728	23.73229043	27.6565137
	78.5708762	5003459.778	-513885.8881	414488410.2	219971210.1	0	0	0	0	12.83327482	5.888455237
	162.0096438	11214033.69	-553307.4571	446284931.3	236845793.5	0	0	0	0	12.99903205	6.030422133
	39.55044562	930789.0971	-183351.2279	147886837.8	78484333.61	0	0	0	0	12.75992529	5.82563321
	3838.095589	4999843320	-10569968.71	8525491026	4524523561	10.4913534	2440010.995	132.8519382	36231399.18	21.45179563	29.00087323
	224.2903423	31981496.63	-1146704.278	924905011.5	490852023	90.42852971	2378537.788	62.34423515	1898759.532	25.03594712	14.28095875
	5.555980676	84606.62997	-112445.2969	90695762.24	48132724.78	0	0	0	0	12.69186249	5.767339132
	165.3477027	38913300.84	-1904754.059	1536330341	815338706.7	52.82450399	2266982.182	64.99657815	3239246.356	19.83936539	14.40068438
	495.1840401	50042671.24	-813283.7136	655975735.6	348129821.8	0	0	0	0	13.64854534	6.586713925
	86.00807372	2976666.739	-274135.633	221111428.3	117345014.4	0	0	0	0	12.85093312	5.90357913
	338.5344824	59519272.96	-1422941.106	1147711214	609096463.2	91.21440491	2904305.184	91.21440491	3409401.738	25.06471442	18.11103378
	7.394363133	194493.6204	-213343.5506	172077948	91322684.83	0	0	0	0	12.69436866	5.769485609
	170.7427143	14418596.92	-682443.3535	550442943.1	292123005.9	0	0	0	0	13.01257861	6.042024422
	75.87832029	3571474.967	-372327.6319	300310811.8	159376549.6	0	0	0	0	12.83100463	5.886510872
	2592.642684	21998003815	-68889508.56	5556467601 6	2948846993 8	989.3298963	1499706374	1215.318037	2150164970	142.7779428	163.6436313
	2.356351969	71765.18809	-238477.086	192350073.3	102081209.9	0	0	0	0	12.68475584	5.761252469
	11.1845532	387087.9332	-272416.1161	219724505.9	116608967.3	0	0	0	0	12.70238517	5.776351548
	39.34503014	1470634.099	-298593.5477	240838613.7	127814336.9	0	0	0	0	12.75754328	5.823593077
	51.35654603	4763449.829	-751163.5447	605871051.6	321538998.8	0	0	0	0	12.77983508	5.842685441
	49.27721083	5048110.152	-830108.1528	669545937.2	355331600.2	0	0	0	0	12.77574007	5.839178175

	96.89038496	9657487.681	-807523.8855	651329992.2	345664301	0	0	0	0	12.86826337	5.918422048
	38.64598145	1765506.277	-367163.8758	296145846.2	157166180.2	0	0	0	0	12.75570627	5.822019728
	57.80548704	4081222.063	-566710.0901	457095183.5	242582852	0	0	0	0	12.79337451	5.854281625
	40.27947923	4516685.494	-900780.8012	726548852.3	385583351.3	0	0	0	0	12.75894394	5.824792705
	108.6407743	9023916.909	-666204.0513	537344699.5	285171698.1	0	0	0	0	12.89322577	5.93980172
	321.1210815	24005655.12	-604172.7586	487311700.9	258618918.9	0	0	0	0	13.30542994	6.292844218
	13.32786313	129154.502	-68295.10008	55085239.96	29234030.67	0	0	0	0	12.70978595	5.78269013
	33.77175134	2664890.837	-635525.9546	512600459.9	272039798.2	0	0	0	0	12.7460214	5.813724881
	50.18609055	10212961.28	-1645759.319	1327431205	704474820.9	146.8706374	5489714.117	146.8706374	6303005.098	31.94183387	24.68609988
	271.5696933	4511422.828	-127192.4184	102590447.6	54445297.78	0	0	0	0	13.23831609	6.235362897
	19.45092029	18445129.58	-7692101.273	6204270056	3292639212	324.2884544	55218878.67	342.8409408	67870289.33	53.96059131	49.20605803
	29.81783097	1568594.291	-426014.791	343613626.2	182357584.2	0	0	0	0	12.73797517	5.806833482
	2.934307637	40621.56291	-104135.7142	83993446.08	44575769.85	0	0	0	0	12.68615912	5.762454339
	26.29619331	910089.0255	-275562.3006	222262145.2	117955706	0	0	0	0	12.73200398	5.801719308
	159.8674455	7746028.038	-385055.18	310576556.2	164824634.9	0	0	0	0	12.9966615	6.028391821
	65.18127509	3970329.16	-493050.5367	397683100.1	211052542.4	0	0	0	0	12.80676912	5.865753775
	118.7295482	24326045.55	-1660832.75	1339589084	710927072	283.0271589	10578957.22	283.0271589	12146210.14	49.50565473	41.94079983
	12.40141953	635219.9198	-414956.1725	334694001.6	177623891.9	0	0	0	0	12.70411454	5.777832703
	65.4939119	6709399.253	-821162.8122	662330833.4	351502506.1	0	0	0	0	12.80862691	5.86734492
	1.420516906	45229.85837	-253546.2803	204504535.1	108531647.6	0	0	0	0	12.68282699	5.759600457
	55.4328243	3299791.101	-476887.6652	384646503.8	204133951.2	0	0	0	0	12.788933	5.850477587
	43.24929264	16285417.54	-3056706.773	2465468619	1308437347	227.5387976	15434853.93	227.5387976	17954830.08	41.77433821	34.73235656
	37.09052386	3748321.313	-814733.779	657145324.7	348750529	0	0	0	0	12.75243502	5.819217982
	41.20966422	3422955.958	-673181.5451	542972583.7	288158446.3	0	0	0	0	12.76005449	5.825743868
	3.292169061	22787.83775	-49263.6812	39734939.94	21087544.57	0	0	0	0	12.68730007	5.763431533
	31.03690869	257798.6827	-65037.4368	52457684.5	27839572.97	0	0	0	0	12.74241129	5.81063291
	545.3137703	5284397.637	-72163.33125	58205265.29	30889844.75	0	0	0	0	13.83265435	6.744398665
	29.49584917	489996.6771	-129734.3234	104640689.1	55533371.87	0	0	0	0	12.73946901	5.80811292
	2.25292988	74853.11906	-260253.7284	209914606.8	111402801.5	0	0	0	0	12.68454626	5.761072965
	12.63264555	839433.9561	-539157.9047	434872231.3	230789012.7	0	0	0	0	12.70452572	5.778184875
	2.198030028	480774.797	-1766357.71	1424703063	756097515	364.3930205	14629147.98	0	0	60.2666901	5.760864928

Cost Calculations

	Biomass to AD			SNG to H2		H2 Delivery		TOTAL			
Scenario	Biomass Cost [\$ /yr]	Biomass Delivery [\$ /yr]	AD Processing [\$ /yr]	SMR [\$ /yr]	Tri-Gen [\$ /yr]	SMR [\$ /yr]	Tri-Gen [\$ /yr]	SMR [\$ /yr]	SMR [\$ /kg H2]	Tri-Gen [\$ /yr]	Tri-Gen [\$ /kg H2]
1	89826423.89	55354331.67	87678815.11	3322212.529	1649349193	1786927.533	2451749.51	237968710.7	3.246292123	1884660514	22.0199071
5	43429720.88	7886870.707	56486718.2	1606239.641	797951969	236658.8278	309297.034	109646208.3	3.093701657	906064575.8	21.89568689
	8150829.066	1703006.454	20528738.65	301456.8016	150570827.1	24774.6274	31038.5074	30708805.6	4.616714199	180984439.8	23.30375541
	27879484.73	6635067.258	43199871.49	1031117.231	512599195.1	204134.5995	267369.946	78949675.3	3.470063769	590580988.5	22.2321355
	3678177.889	520560.1635	12685073.46	136036.682	68495969.37	9603.095149	11128.6406	17029451.29	5.6733526	85390909.53	24.3649414
	6688211.324	2069441.858	18213681.06	247362.1736	123731232.8	20324.22986	23415.327	27239020.65	4.990606783	150725982.4	23.65182175
10	661907.7017	167276.5934	4494357.689	24480.52549	13146259.19	1729.483942	2079.53924	5349751.993	9.903941473	18471880.71	29.28870312
	3023031.955	340025.0716	11265566.67	111806.2392	56473791.22	8722.898746	10585.7439	14749152.83	5.978554441	71113000.66	24.68838762
	39744781.23	5707123.782	53536460.2	1469952.876	730331918.6	205620.2243	266315.797	100663938.3	3.103599385	829586599.6	21.90625196
	7862895.122	1393408.275	20086884.74	290807.6216	145287129.2	23970.67365	29206.9639	29657966.44	4.622008468	174659524.3	23.31289734
	9994781.921	2673082.953	23224589.45	369655.0334	184408066.4	47283.40056	60087.361	36309392.76	4.451614145	220360608.1	23.13913398
	18224746.05	3952379.648	33402993.12	674038.6297	335431052.2	69960.76322	84159.5472	56324118.22	3.787082502	391095330.5	22.52203382
	2787166.158	284760.0804	10725281.9	103082.7894	52145563.75	6903.584658	8143.31637	13907194.51	6.114324997	65950915.2	24.83387138
	5830232.921	360279.6029	16761973.83	215630.012	107987001.3	16607.28171	19837.017	23184723.65	4.872904147	130959324.7	23.57420103
	846949.3533	125659.657	5217217.437	31324.25439	16541844.18	2164.041452	2590.90147	6223314.743	9.004014291	22734261.53	28.17149353
	849931.4777	42330.95991	5228323.522	31434.54768	16596567.3	2366.833109	2864.23285	6154387.341	8.873046606	22720017.5	28.05506044
20	661907.7017	167276.5934	4494357.689	24480.52549	13146259.19	1729.483942	2079.6592	5349751.993	9.903941473	18471880.83	29.28870331
	3023031.955	340025.0716	11265566.67	111806.2392	56473791.22	8722.898746	10498.5594	14749152.83	5.978554441	71112913.47	24.68835736
	38823703.77	5786508.113	52782365.42	1435887.009	713429795.5	198956.3795	256241.663	99027420.7	3.125578085	811078614.4	21.92564848
	883632.1401	30836.25761	5352780.631	32680.96001	17214987.33	2221.91819	2662.42418	6302151.907	8.739552863	23484898.78	27.89354099
	659880.2183	35236.39184	4486023.834	24405.53942	13109054.09	1621.273387	1911.6731	5207167.257	9.669594648	18292106.21	29.09276949
	5440468.013	960290.1055	16074783.17	201214.6339	100834666.4	15560.52662	18666.1891	22692316.45	5.111100499	123328873.8	23.79112428
	1781299.662	330479.9214	8180522.843	65881.01584	33687529.28	4934.399015	5898.05742	10363117.84	7.128945615	43985729.76	25.91560055
	285292.7624	21412.42348	2701071.569	10551.49641	6235231.176	711.6527415	818.317035	3019039.904	12.96731168	9243826.248	34.00536812
	2808006.82	623584.3933	10773729.6	103853.5771	52527997.85	8916.959321	10291.6559	14318091.35	6.248256087	66743610.32	24.94583226
	8079057.565	1997828.319	20419185.31	298802.3468	149253792.6	30555.13859	37394.7769	30825428.68	4.675416151	179787258.6	23.35525798
	17034399.77	2540941.958	32065492.95	630013.9079	313587743.2	61894.41585	76902.0593	52332743	3.764597191	365305480	22.50690682
	480494.4682	62292.86774	3702598.857	17770.99292	9817257.048	1170.491642	1378.64445	4264327.677	10.87511924	14064021.89	30.71903738

	255992.4982	6580.901595	2529662.978	9467.831936	5697560.134	624.5714901	734.105043	2802328.781	13.4141667	8490530.617	34.80920101
	1708720.97	71779.19836	7977213.78	63196.70727	32355682.56	4148.7852	4935.96873	9825059.441	7.045890469	42118332.48	25.8694074
	5629302.289	258266.6686	16410061.2	208198.6323	104299847.5	15939.25696	19222.0247	22521768.04	4.90252437	126616699.7	23.60602592
	486597.474	21007.23957	3730980.204	17996.71138	9929249.535	1179.710863	1394.58426	4257761.34	10.72218545	14169229.04	30.56066719
	141546.1834	3712.418221	1767577.947	5235.057609	3597426.538	348.9978111	407.700191	1918420.604	16.60800691	5510670.787	40.85947329
	793158.143	117742.5543	5014156.176	29334.79711	15554754.92	2096.916397	2425.78251	5956488.586	9.202426917	21482237.58	28.4253741
	643971.9224	25338.93557	4420278.973	23817.17424	12817130.78	1729.585512	2107.40077	5115136.591	9.733345811	17908828.01	29.18681428
	205959.5554	7872.63835	2217804.511	7617.373437	4779436.52	526.1361315	612.916339	2439780.214	14.51578777	7211686.141	36.74864523
30	661907.7017	167276.5934	4494357.689	24480.52549	13146259.19	1729.483942	2142.14461	5349751.993	9.903941473	18471943.31	29.28880238
	3023031.955	340025.0716	11265566.67	111806.2392	56473791.22	8722.898746	10585.1965	14749152.83	5.978554441	71113000.11	24.68838743
	38822650.99	5789603.475	52781499.48	1435848.072	713410476.5	199142.5752	257050.74	99028744.6	3.125704631	811061281.2	21.92577447
	461790.4575	14097.69384	3614717.676	17079.22878	9474031.306	1139.309019	1349.14406	4108824.365	10.90296137	13565986.28	30.83137405
	330275.3966	3559.724872	2951245.244	12215.17025	7060679.698	815.7123793	965.122029	3298111.248	12.23660464	10346725.19	32.87858757
	332681.5007	21654.96366	2964234.242	12304.15953	7104832.626	814.2262646	959.014758	3331689.092	12.27178296	10424362.35	32.88571647
	92579.12899	613.7860856	1367179.712	3424.020783	2698862.384	227.4317707	265.728257	1464024.08	19.37791202	4159500.739	47.15356974
	340283.2978	27881.57914	3005029.698	12585.3105	7244328.508	835.2241242	985.381889	3386615.11	12.19542835	10618508.46	32.7498523
	5427423.371	1018246.169	16051453.84	200732.1804	100595292.2	15427.23957	18454.4608	22713282.8	5.128118571	123110870.1	23.80614975
	96971.87	6865.941044	1406066.55	3586.485441	2779470.859	237.8710541	274.61507	1513728.718	19.12820115	4289649.836	46.42613529
	1781299.662	330479.9214	8180522.843	65881.01584	33687529.28	4823.952465	5965.69297	10363007.39	7.128869637	43985797.4	25.9156404
	188320.8924	4860.774994	2100868.068	6965.010974	4455760.316	469.8434715	535.478654	2301484.59	14.97550299	6750345.53	37.61958162
	2800872.053	691441.6106	10757159.64	103589.6991	52397072.14	8517.926952	10370.0585	14361580.93	6.283199224	66656915.51	24.97689247
	8079057.565	1997828.319	20419185.31	298802.3468	149253792.6	30378.21608	37593.2574	30825251.76	4.675389317	179787457.1	23.35528376
	64698.86816	2256.045119	1100722.081	2392.874848	2187248.947	156.2268671	184.777536	1170226.096	22.16383692	3355110.719	54.424774
	16976835.67	2914194.631	31999892.26	627884.9111	312531420	62123.61916	76659.4026	52580931.1	3.795276119	364499002	22.53336542
	459733.5279	59902.2752	3604968.074	17003.15364	9436285.861	1119.842863	1319.07025	4142726.873	11.04210759	13562208.81	30.96069565
	580856.3871	36090.92282	4152855.222	21482.85864	11658936.6	1428.251534	1651.31266	4792713.642	10.11077771	16430390.44	29.68694964
	192317.884	3843.850911	2127732.793	7112.838921	4529106.64	467.693755	547.773521	2331475.061	14.85535219	6853548.942	37.40092191
	927689.7461	34086.00575	5512693.579	34310.42186	18023461.23	2273.356025	2625.99602	6511053.108	8.600433296	24500556.56	27.71785731
	187003.1895	4167.602464	2091962.228	6916.275992	4431579.964	464.8389788	527.45034	2290514.135	15.00914015	6715240.435	37.6876462
	5629302.289	258266.6686	16410061.2	208198.6323	104299847.5	15939.25696	19222.0247	22521768.04	4.90252437	126616699.7	23.60602592
	349822.7657	8509.312133	3055717.963	12938.12583	7419381.387	857.1179462	989.538886	3427845.284	12.00728982	10834420.97	32.50454552
	235732.5463	6029.641688	2406572.843	8718.521622	5325782.278	572.0936561	667.950778	2657625.646	13.81484795	7974785.26	35.50470522

	141546.1834	3712.418221	1767577.947	5235.057609	3597426.538	349.6066562	407.700191	1918421.213	16.60801218	5510670.787	40.85947329
	691373.3591	28013.78582	4614358.503	25570.307	13686965.25	1739.413592	2076.11238	5361055.368	9.501879146	19022787.01	28.87672691
	100494.1928	14841.40243	1436747.566	3716.757854	2844106.828	251.2833654	291.490658	1556051.202	18.97381963	4396481.48	45.91459342
	162980.3331	2406.674124	1924983.371	6027.795401	3990751.374	411.2088539	477.429681	2096809.382	15.765059	6081599.182	39.16237789
	480931.5443	10890.39163	3704636.146	17787.15809	9825277.562	1244.189467	1510.90906	4215489.43	10.74079906	14023246.55	30.60213787
	205959.5554	7872.63835	2217804.511	7617.373437	4779436.52	526.3818745	612.90075	2439780.46	14.51578923	7211686.126	36.74864515
40	140266.8579	35784.34195	1757895.287	5187.742007	3573950.426	350.1225799	408.850195	1939484.352	16.94349746	5508305.763	41.21444276
	523715.5534	8073.313769	3900658.645	19369.51621	10610380.47	1372.379324	1604.52168	4453189.408	10.419516	15044432.51	30.14857568
	3020957.246	336392.7056	11260888.43	111729.5065	56435719.51	8634.886535	10482.8305	14738602.78	5.978380955	71064440.72	24.68847273
	38821630.84	5790347.228	52780660.37	1435810.342	713391756.3	198998.0187	256128.066	99027446.79	3.125745804	811040522.8	21.92578945
	250788.2633	3639.965941	2498423.443	9275.354337	5602060.436	611.7449022	723.597981	2762738.771	13.49908913	8355635.706	34.96703033
	212022.3499	7685.017719	2257075.464	7841.604693	4890691.116	527.4292524	604.390798	2485151.866	14.36293319	7368078.338	36.47195575
	330275.3966	3559.724872	2951245.244	12215.17025	7060679.698	815.231184	963.918019	3298110.767	12.23660285	10346723.98	32.87858375
	137153.9703	3480.81215	1734188.323	5072.612475	3516827.749	336.7278112	394.18911	1880232.446	16.79867428	5392045.044	41.2602247
	195527.5304	15287.77182	2149146.268	7231.547057	4588004.877	484.8736596	553.716311	2367677.991	14.83838286	6948520.164	37.29673959
	92579.12899	613.7860856	1367179.712	3424.020783	2698862.384	227.5966696	265.910409	1464024.245	19.37791421	4159500.921	47.1535718
	340283.2978	27881.57914	3005029.698	12585.3105	7244328.508	834.949454	987.63311	3386614.835	12.19542736	10618510.72	32.74985924
	5427423.371	1018246.169	16051453.84	200732.1804	100595292.2	15245.71782	18454.4608	22713101.28	5.128077588	123110870.1	23.80614975
	103834.3539	7308.546028	1465451.77	3840.293051	2905400.06	254.8132672	297.38645	1580689.776	18.65423441	4482292.116	45.30493929
	55694.97929	537.8782921	1005319.007	2059.867798	2022024.146	134.485384	157.02199	1063746.218	23.40420173	3083733.033	58.10950651
	1781299.662	330479.9214	8180522.843	65881.01584	33687529.28	4823.952465	5900.55684	10363007.39	7.128869637	43985732.26	25.91560202
	125763.4292	1546.831619	1645567.039	4651.335565	3307806.969	306.3757954	357.680174	1777835.011	17.32243476	5081041.949	42.40185639
	2800872.053	691441.6106	10757159.64	103589.6991	52397072.14	8516.685092	10293.8785	14361579.69	6.28319868	66656839.33	24.97686392
	8079057.565	1997828.319	20419185.31	298802.3468	149253792.6	31087.67693	37352.0348	30825961.22	4.675496923	179787215.9	23.35525243
	64698.86816	2256.045119	1100722.081	2392.874848	2187248.947	156.2268671	184.777536	1170226.096	22.16383692	3355110.719	54.424774
	16976835.67	2914194.631	31999892.26	627884.9111	312531420	61699.18117	76671.3782	52580506.66	3.795245484	364499013.9	22.53336616
	459733.5279	59902.2752	3604968.074	17003.15364	9436285.861	1119.842863	1321.21621	4142726.873	11.04210759	13562210.95	30.96070055
	580856.3871	36090.92282	4152855.222	21482.85864	11658936.6	1455.069752	1651.31266	4792740.46	10.11083429	16430390.44	29.68694964
	193068.4736	3879.878692	2132752.993	7140.599326	4542880.245	469.5061863	549.889673	2337311.451	14.83464214	6873131.48	37.3619685
	913375.3083	33486.28813	5461073.126	33781.00521	17760785.83	2292.714942	2585.49593	6444008.443	8.645272448	24171306.05	27.77392839
	118520.1076	1579.984589	1587557.149	4383.44275	3174889.251	290.7942761	337.464917	1712331.478	17.70384725	4882883.957	43.2385207
	148285.1889	8748.960318	1818022.857	5484.298395	3721089.863	364.250651	426.410702	1980905.556	16.36959165	5696573.28	40.31831512

	170827.1065	3270.434999	1980532.804	6318.00676	4134742.662	430.8997801	482.136248	2161379.252	15.50408155	6289855.144	38.64295419
	5481017.1	245776.4317	16147161.37	202714.3339	101578757.6	15526.08453	18431.8505	22092195.32	4.939119884	123471144.4	23.64235735
	67732.49229	1417.642001	1131663.75	2505.072837	2242917.108	163.5520895	190.959596	1203482.509	21.77281472	3443921.952	53.3633033
	193310.097	2760.933117	2134367.412	7149.53572	4547314.127	468.0041526	545.909218	2338055.982	14.82081947	6878298.478	37.3433212
	235732.5463	6029.641688	2406572.843	8718.521622	5325782.278	572.0895846	667.946042	2657625.642	13.81484793	7974785.256	35.50470519
	49475.72406	319.5483112	935820.2562	1829.849873	1907898.437	119.4678916	139.487917	987564.8463	24.45937267	2893653.453	61.38196975
	141546.1834	3712.418221	1767577.947	5235.057609	3597426.538	348.9978111	407.700191	1918420.604	16.60800691	5510670.787	40.85947329
	640645.2194	24794.88346	4406449.804	23694.13679	12756084.51	1611.50129	1926.6338	5097195.545	9.749572106	17829901.05	29.20907504
	91065.5225	2005.124192	1353612.467	3368.040346	2671087.126	227.0111728	263.837849	1450278.165	19.51502784	4118034.078	47.45941859
	161600.2606	2259.274971	1915105.175	5976.753692	3965426.517	407.3568953	473.538815	2085348.821	15.81279004	6044864.766	39.25825517
	101053.2879	1022.632166	1441578.202	3737.435874	2854366.436	254.7319241	298.658581	1547646.289	18.76692477	4398319.216	45.67964906
	381258.329	6145.04118	3219014.153	14100.76392	7996235.983	993.4407433	1151.08592	3621511.728	11.6397166	11603804.59	31.94239881
	10681.08594	686.6628782	370166.8372	395.037852	1196002.007	25.79137228	30.1134032	381955.4152	43.819671	1577566.707	155.0096672
	205959.5554	7872.63835	2217804.511	7617.373437	4779436.52	526.3818745	612.90075	2439780.46	14.51578923	7211686.126	36.74864515
50	140266.8579	35784.34195	1757895.287	5187.742007	3573950.426	349.873788	408.850195	1939484.103	16.94349529	5508305.763	41.21444276
	523715.5534	8073.313769	3900658.645	19369.51621	10610380.47	1373.226727	1604.52168	4453190.255	10.41951798	15044432.51	30.14857568
	3020957.246	336392.7056	11260888.43	111729.5065	56435719.51	8634.886535	10482.8305	14738602.78	5.978380955	71064440.72	24.68847273
	22868.4888	1020.89565	586710.4892	845.7865371	1419645.506	55.22001331	64.4735964	611500.8802	32.76660687	2030309.853	93.17755642
	38821630.84	5790347.228	52780660.37	1435810.342	713391756.3	198778.6102	256128.066	99027227.38	3.125738878	811040522.8	21.92578945
	250788.2633	3639.965941	2498423.443	9275.354337	5602060.436	611.7440491	723.597981	2762738.77	13.49908913	8355635.706	34.96703033
	244072.2406	2481.587346	2457727.96	9026.963567	5478818.855	595.777606	695.841505	2713904.529	13.62536133	8183796.484	35.19029388
	275357.0171	2768.297777	2643761.995	10184.02484	6052906.454	671.8441175	795.05633	2932743.179	13.05117868	8975588.82	34.21001477
	137153.9703	3480.81215	1734188.323	5072.612475	3516827.749	336.7278112	393.957343	1880232.446	16.79867428	5392044.812	41.26022293
	195393.4702	14910.96415	2148254.664	7226.588868	4585544.822	484.7851875	553.338353	2366270.473	14.83973647	6944657.259	37.30158033
	92579.12899	613.7860856	1367179.712	3424.020783	2698862.384	227.4317707	265.728257	1464024.08	19.37791202	4159500.739	47.15356974
	340283.2978	27881.57914	3005029.698	12585.3105	7244328.508	835.5900369	984.754081	3386615.476	12.19542967	10618507.84	32.74985036
	24161.079	623.0786161	606555.524	893.5927303	1443365.03	58.3412011	68.1178223	632291.6156	32.06807924	2074772.829	90.12404746
	5427423.371	1018246.169	16051453.84	200732.1804	100595292.2	15245.71782	18454.4608	22713101.28	5.128077588	123110870.1	23.80614975
	79807.33505	1177.894061	1249744.07	2951.658509	2464495.086	192.7089342	228.717758	1333873.667	20.48065021	3795453.103	49.91226538
	55694.97929	537.8782921	1005319.007	2059.867798	2022024.146	134.485384	157.02199	1063746.218	23.40420173	3083733.033	58.10950651
	1781299.662	330479.9214	8180522.843	65881.01584	33687529.28	4823.952465	5906.13049	10363007.39	7.128869637	43985737.84	25.9156053
	125763.4292	1546.831619	1645567.039	4651.335565	3307806.969	306.3757954	357.680174	1777835.011	17.32243476	5081041.949	42.40185639

	2800872.053	691441.6106	10757159.64	103589.6991	52397072.14	8517.959892	10449.4696	14361580.97	6.283199238	66656994.92	24.97692222
	8079057.565	1997828.319	20419185.31	298802.3468	149253792.6	31056.22249	38077.0738	30825929.76	4.675492153	179787940.9	23.35534661
	64698.86816	2256.045119	1100722.081	2392.874848	2187248.947	156.2268671	184.777536	1170226.096	22.16383692	3355110.719	54.424774
	99996.06674	1022.800863	1432434.758	3698.33476	2834966.025	252.9775699	295.525208	1537404.938	18.83983975	4368715.176	45.85189345
	16876839.61	3187110.123	31885726.37	624186.5763	310696454	62720.55302	78543.5544	52636583.23	3.821804064	362724673.6	22.5565376
	459733.5279	59902.2752	3604968.074	17003.15364	9436285.861	1119.842863	1319.07025	4142726.873	11.04210759	13562208.81	30.96069565
	580856.3871	36090.92282	4152855.222	21482.85864	11658936.6	1455.781302	1651.31266	4792741.172	10.11083579	16430390.44	29.68694964
	107399.0726	1065.981633	1495686.269	3972.133467	2970814.01	262.662056	306.725471	1608386.119	18.3510803	4575272.059	44.70981301
	140769.4011	4946.897748	1761702.962	5206.32847	3583172.286	343.5656242	401.15686	1912969.155	16.65219757	5490992.704	40.9382303
	43075.01034	1833.654604	860580.5902	1593.120742	1790442.895	104.0122356	121.442254	907186.3881	25.80732466	2696053.592	65.68853732
	830733.8287	30426.61404	5156554.741	30724.52642	16244283.11	2049.760741	2390.40461	6050489.471	8.924840513	22264388.7	28.12777248
	118520.1076	1579.984589	1587557.149	4383.44275	3174889.251	291.1650031	339.919739	1712331.849	17.70385108	4882886.412	43.23854244
	148285.1889	8748.960318	1818022.857	5484.298395	3721089.863	361.5919728	424.60646	1980902.897	16.36956968	5696571.476	40.31830235
	163639.2498	3243.83021	1929688.065	6052.165302	4002842.746	407.6400159	462.179314	2103030.95	15.74816784	6099876.07	39.12190489
	91728.42372	1578.506173	1359565.274	3392.557617	2683251.617	235.467351	261.695695	1456500.229	19.45711641	4136385.517	47.32640755
	5425917.1	237484.471	16048758.57	200676.4713	100567651.6	15211.82041	18394.531	21928048.43	4.952205727	122298206.2	23.65556875
	67732.49229	1417.642001	1131663.75	2505.072837	2242917.108	163.5520895	190.959596	1203482.509	21.77281472	3443921.952	53.3633033
	148335.9992	1629.765593	1818399.717	5486.177606	3722022.252	362.7607819	420.231918	1974214.42	16.30870995	5690807.966	40.2637138
	188697.67	3092.269867	2103410.031	6978.94602	4462674.33	458.0621205	534.277781	2302636.979	14.95308451	6758408.578	37.58931114
	47034.87634	1877.301766	907610.0359	1739.575603	1863107.949	113.5740328	132.606385	958375.3636	24.9682144	2819762.769	62.91859651
	49475.72406	319.5483112	935820.2562	1829.849873	1907898.437	119.4678916	139.487917	987564.8463	24.45937267	2893653.453	61.38196975
	141546.1834	3712.418221	1767577.947	5235.057609	3597426.538	350.7597418	407.700191	1918422.366	16.60802216	5510670.787	40.85947329
	608732.3644	23161.58011	4272313.888	22513.84615	12170471.43	1545.016315	1788.15281	4928266.695	9.920639304	17076467.42	29.44137591
	33165.27058	176.3351979	734680.8675	1226.610976	1608595.385	80.08341518	93.5035231	769329.1676	28.42500199	2376711.362	75.21065284
	51429.10048	687.9739778	958002.378	1902.095114	1943743.64	124.1846647	144.995111	1012145.732	24.1160386	2954008.088	60.28221655
	38384.00638	510.0900356	802594.388	1419.624888	1704361.18	92.68497635	108.216811	843000.7943	26.91222044	2545957.882	69.61252277
	161600.2606	2259.274971	1915105.175	5976.753692	3965426.517	406.0447633	473.538815	2085347.509	15.81278009	6044864.766	39.25825517
	101053.2879	1022.632166	1441578.202	3737.435874	2854366.436	256.0920763	297.664542	1547647.65	18.76694126	4398318.222	45.67963874
	381258.329	6145.04118	3219014.153	14100.76392	7996235.983	993.4407433	1151.08592	3621511.728	11.6397166	11603804.59	31.94239881
	10681.08594	686.6628782	370166.8372	395.037852	1196002.007	25.79137228	30.1134032	381955.4152	43.819671	1577566.707	155.0096672
	57339.12508	1600.626621	1023170.66	2120.676205	2052194.85	138.455465	161.657364	1084369.543	23.17384509	3134466.918	57.37188111
	148620.4303	1214.574474	1820508.398	5496.697232	3727241.671	380.6769838	472.443108	1976220.777	16.29404071	5698057.516	40.23785075

60	140266.8579	35784.34195	1757895.287	5187.742007	3573950.426	349.873788	408.850195	1939484.103	16.94349529	5508305.763	41.21444276
	523715.5534	8073.313769	3900658.645	19369.51621	10610380.47	1373.226727	1651.67465	4453190.255	10.41951798	15044479.66	30.14867018
	3020957.246	336392.7056	11260888.43	111729.5065	56435719.51	8702.750845	10483.3772	14738670.64	5.978408483	71064441.27	24.68847292
	22868.4888	1020.89565	586710.4892	845.7865371	1419645.506	55.22001331	64.4735964	611500.8802	32.76660687	2030309.853	93.17755642
	38821630.84	5790347.228	52780660.37	1435810.342	713391756.3	198760.7619	256128.066	99027209.54	3.125738315	811040522.8	21.92578945
	250788.2633	3639.965941	2498423.443	9275.354337	5602060.436	611.7449022	714.351227	2762738.771	13.49908913	8355626.459	34.96699163
	244072.2406	2481.587346	2457727.96	9026.963567	5478818.855	595.7757869	695.863633	2713904.528	13.62536132	8183796.506	35.19029398
	243137.1009	1833.050497	2452026.627	8992.377609	5461658.683	593.1914253	692.693517	2706582.348	13.64086345	8159348.156	35.22010868
	32219.91618	660.0804281	721938.913	1191.64723	1591247.77	77.80068966	90.8382662	756088.3575	28.75543852	2346157.518	76.42214472
	59589.71302	4896.704089	1047282.432	2203.913755	2093493.998	145.27051	169.385283	1114118.033	22.91035192	3205432.232	56.45491617
	179557.2628	8552.446712	2041164.404	6640.889866	4294944.366	442.7267582	516.572136	2236357.73	15.26195431	6524735.051	38.13698587
	92579.12899	613.7860856	1367179.712	3424.020783	2698862.384	227.4317707	266.080724	1464024.08	19.37791202	4159501.092	47.15357373
	93534.52485	730.7753291	1375698.336	3459.35591	2716394.263	227.6447787	266.071418	1473650.636	19.30609514	4186623.97	46.97626375
	340283.2978	27881.57914	3005029.698	12585.3105	7244328.508	834.949454	987.985311	3386614.835	12.19542736	10618511.07	32.74986033
	24027.01884	396.922694	604517.139	888.6345418	1440904.974	58.01748913	67.7398638	629887.7325	32.12440642	2069913.795	90.41465532
	5427423.371	1018246.169	16051453.84	200732.1804	100595292.2	15391.86743	18410.8913	22713247.43	5.128110585	123110826.5	23.80614133
	79807.33505	1177.894061	1249744.07	2951.658509	2464495.086	192.7089342	228.717758	1333873.667	20.48065021	3795453.103	49.91226538
	55694.97929	537.8782921	1005319.007	2059.867798	2022024.146	134.485384	157.02199	1063746.218	23.40420173	3083733.033	58.10950651
	1781299.662	330479.9214	8180522.843	65881.01584	33687529.28	4823.952465	5905.02105	10363007.39	7.128869637	43985736.73	25.91560465
	125763.4292	1546.831619	1645567.039	4651.335565	3307806.969	306.3757954	357.680174	1777835.011	17.32243476	5081041.949	42.40185639
	2800872.053	691441.6106	10757159.64	103589.6991	52397072.14	8516.685092	10458.8803	14361579.69	6.28319868	66657004.33	24.97692575
	8079057.565	1997828.319	20419185.31	298802.3468	149253792.6	31055.81347	37324.5894	30825929.36	4.675492091	179787188.4	23.35524886
	16062.13893	478.2660804	473801.2795	594.055033	1294746.385	38.78487702	45.2843156	490974.5245	37.45652042	1785133.354	116.641675
	48636.72922	1077.742891	926186.8787	1798.819815	1892502.561	117.4419901	143.808009	977817.6126	24.63572484	2868547.72	61.8990778
	99996.06674	1022.800863	1432434.758	3698.33476	2834966.025	253.2932457	295.70228	1537405.254	18.83984362	4368715.353	45.85189531
	16876839.61	3187110.123	31885726.37	624186.5763	310696454	62638.31752	76156.6746	52636500.99	3.821798093	362722286.7	22.55638917
	459733.5279	59902.2752	3604968.074	17003.15364	9436285.861	1119.842863	1319.07025	4142726.873	11.04210759	13562208.81	30.96069565
	580856.3871	36090.92282	4152855.222	21482.85864	11658936.6	1448.967764	1651.31266	4792734.358	10.11082142	16430390.44	29.68694964
	107399.0726	1065.981633	1495686.269	3972.133467	2970814.01	262.2601609	305.880404	1608385.717	18.35107572	4575271.214	44.70980475
	140769.4011	4946.897748	1761702.962	5206.32847	3583172.286	344.5254382	404.741176	1912970.115	16.65220593	5490996.288	40.93825702
	43075.01034	1833.654604	860580.5902	1593.120742	1790442.895	104.0122356	121.442254	907186.3881	25.80732466	2696053.592	65.68853732
	825891.4358	30045.34108	5138348.756	30545.43148	16155423.35	2037.810239	2380.75034	6026868.774	8.94212267	22152089.63	28.14998699

	118520.1076	1579.984589	1587557.149	4383.44275	3174889.251	290.7942761	338.959925	1712331.478	17.70384725	4882885.452	43.23853394
	148285.1889	8748.960318	1818022.857	5484.298395	3721089.863	363.4754161	422.358571	1980904.78	16.36958524	5696569.228	40.31828644
	67816.02248	1048.803234	1132507.888	2508.162184	2244449.919	163.7537879	191.195094	1204044.629	21.75615385	3446013.828	53.32994831
	110776.0289	1946.450171	1523964.638	4097.029527	3032782.448	284.6478161	318.515797	1641068.795	18.15318549	4669788.081	44.24231475
	84426.88719	1213.651423	1293022.421	3122.511732	2549265.632	203.8636604	240.970148	1381989.335	20.05837585	3928169.562	48.83103281
	5363051.329	241261.3686	15936003.53	198351.3932	99414040.66	14938.58964	17971.1961	21753606.21	4.970397927	120972328.1	23.67339509
	67732.49229	1417.642001	1131663.75	2505.072837	2242917.108	163.5520895	190.959596	1203482.509	21.77281472	3443921.952	53.3633033
	145527.1272	1376.748964	1797489.155	5382.292027	3670478.377	359.1245614	417.29428	1950134.448	16.42072955	5615288.702	40.49623004
	68182.54729	1783.751811	1136207.064	2521.718032	2251175.79	167.1830731	192.228445	1208862.264	21.72578357	3457541.381	53.22070525
	84108.76101	1329.596265	1290072.545	3110.745898	2543427.895	203.0954884	237.129544	1378824.744	20.08813801	3919175.928	48.90350473
	104588.909	921.9381565	1471885.386	3868.200122	2919246.434	256.036412	301.966766	1581520.469	18.52938628	4496944.634	45.12511991
	47034.87634	1877.301766	907610.0359	1739.575603	1863107.949	113.5740328	132.606385	958375.3636	24.9682144	2819762.769	62.91859651
	49475.72406	319.5483112	935820.2562	1829.849873	1907898.437	119.4678916	139.487917	987564.8463	24.45937267	2893653.453	61.38196975
	128122.4368	1148.10092	1664172.823	4738.582994	3351095.659	316.653448	361.218196	1798498.597	17.20112151	5144900.238	42.14424026
	608732.3644	23161.58011	4272313.888	22513.84615	12170471.43	1544.300675	1808.09293	4928265.979	9.920637863	17076487.36	29.44141029
	33165.27058	176.3351979	734680.8675	1226.610976	1608595.385	80.08341518	93.5035231	769329.1676	28.42500199	2376711.362	75.21065284
	8106.97002	73.06426015	313288.6191	299.8346835	1148765.997	19.57571383	22.8561458	321788.0638	48.63884059	1470257.506	190.3361583
	51429.10048	687.9739778	958002.378	1902.095114	1943743.64	124.1846647	144.995111	1012145.732	24.1160386	2954008.088	60.28221655
	38384.00638	510.0900356	802594.388	1419.624888	1704361.18	92.68497635	108.216811	843000.7943	26.91222044	2545957.882	69.61252277
	129295.904	1562.650468	1673377.671	4781.983449	3372629.232	324.1372737	364.526577	1809342.346	17.14777715	5177229.983	42.02417068
	32304.35663	380.8475938	723082.9957	1194.770244	1592797.285	78.00458608	91.0763309	757040.9747	28.71640968	2348656.561	76.303574
	101053.2879	1022.632166	1441578.202	3737.435874	2854366.436	254.2910363	284.901593	1547645.849	18.76691942	4398305.459	45.67950618
	311709.787	4065.005006	2849733.191	11528.52485	6719993.668	817.5755408	910.1353	3177854.083	12.49267276	9886411.786	33.28700478
	69548.54203	473.078744	1149924.809	2572.239077	2276242.315	167.9372629	196.079622	1222686.606	21.54264253	3496384.824	52.7615636
	5063.167371	154.5638053	235646.3229	187.2602442	1092911.055	12.22591366	14.2746909	241063.5402	58.34197096	1333789.384	276.4721779
	5617.918573	264.0227505	250944.8728	207.7776078	1103090.952	13.56545861	15.8387123	257048.1572	56.06746298	1359933.605	254.0555732
	57339.12508	1600.626621	1023170.66	2120.676205	2052194.85	138.455465	161.657364	1084369.543	23.17384509	3134466.918	57.37188111
	148620.4303	1214.574474	1820508.398	5496.697232	3727241.671	380.6769838	445.530822	1976220.777	16.29404071	5698030.604	40.23766071
70	140266.8579	35784.34195	1757895.287	5187.742007	3573950.426	350.1225799	408.850195	1939484.352	16.94349746	5508305.763	41.21444276
	523715.5534	8073.313769	3900658.645	19369.51621	10610380.47	1372.379324	1604.52168	4453189.408	10.419516	15044432.51	30.14857568
	3020957.246	336392.7056	11260888.43	111729.5065	56435719.51	8634.886535	10489.0794	14738602.78	5.978380955	71064446.97	24.6884749
	22868.4888	1020.89565	586710.4892	845.7865371	1419645.506	55.22001331	64.4735964	611500.8802	32.76660687	2030309.853	93.17755642

	38821630.84	5790347.228	52780660.37	1435810.342	713391756.3	198778.6102	256128.066	99027227.38	3.125738878	811040522.8	21.92578945
	157614.047	2017.037255	1886384.035	5829.324368	3892277.973	385.4460598	456.16622	2052229.89	15.95522521	5938749.259	39.54454017
	111792.0569	1291.757736	1532405.875	4134.607125	3051426.951	273.5836547	318.705066	1649897.881	18.0849773	4697235.346	44.09789248
	137636.0005	1067.616835	1737873.145	5090.44027	3525673.189	337.1248803	393.216121	1882004.328	16.75561697	5402643.168	41.1965361
	113492.3168	1025.310443	1546464.286	4197.4909	3082627.369	276.9941385	325.175294	1665456.398	17.98202744	4743934.457	43.86909544
	217463.1835	1532.431223	2291941.662	8042.83285	4990532.492	530.5861843	619.564436	2519510.696	14.19718741	7502089.333	36.2062004
	32219.91618	660.0804281	721938.913	1191.64723	1591247.77	77.80068966	90.8382662	756088.3575	28.75543852	2346157.518	76.42214472
	54799.93758	1615.467425	995513.4318	2026.764858	2005599.789	133.43038	155.789185	1054089.032	23.57051551	3057684.415	58.55972882
	169079.9108	3171.578755	1968252.68	6253.387075	4102680.954	420.2144033	486.912652	2147177.771	15.5613705	6243672.037	38.75560614
	92579.12899	613.7860856	1367179.712	3424.020783	2698862.384	228.1777535	266.613827	1464024.826	19.3779219	4159501.625	47.15357978
	93534.52485	730.7753291	1375698.336	3459.35591	2716394.263	227.6447787	265.761274	1473650.636	19.30609514	4186623.66	46.97626027
	7375.787507	701.0113131	295875.6774	272.7920428	1135348.518	17.81014425	20.794708	304243.0784	50.54569365	1439321.789	204.8028353
	24550.84438	2493.734283	612456.6826	908.0081256	1450517.373	59.28235858	69.2166958	640468.5517	31.96709907	2090087.851	89.34794507
	300968.3141	29537.55813	2789910.392	11131.2536	6522883.538	738.2535771	871.601297	3132285.772	12.75300273	9644171.404	33.63028951
	17605.79876	210.9434538	500849.1074	651.1469864	1323073.133	42.51231685	49.6363872	519359.5089	36.14799426	1841788.619	109.7919536
	38949.35079	756.3545917	809725.5078	1440.534039	1714735.466	94.05010048	109.810698	850965.7973	26.77217974	2564276.49	69.09571074
	5417550.719	1037131.267	16033782.64	200367.0423	100414125.3	15218.0153	18378.2478	22704049.69	5.135375362	122920968.2	23.81274424
	72944.85116	880.78712	1183578.164	2697.850899	2338565.885	176.1382524	206.570131	1260277.791	21.1711033	3596176.257	51.74075814
	55694.97929	537.8782921	1005319.007	2059.867798	2022024.146	134.485384	157.02199	1063746.218	23.40420173	3083733.033	58.10950651
	1781299.662	330479.9214	8180522.843	65881.01584	33687529.28	4823.952465	5902.6516	10363007.39	7.128869637	43985734.36	25.91560325
	70402.38141	641.4904143	1158445.3	2603.818158	2291910.594	169.9990092	198.486868	1232262.989	21.44805455	3521598.253	52.49753613
	62223.53166	536.1623774	1075047.746	2301.325017	2141825.576	150.2497291	175.428071	1140259.015	22.45539546	3279808.444	55.31975955
	2800872.053	691441.6106	10757159.64	103589.6991	52397072.14	8976.228798	10448.8388	14362039.24	6.283399731	66656994.29	24.97692199
	8079057.565	1997828.319	20419185.31	298802.3468	149253792.6	31114.22437	37324.5894	30825987.77	4.67550095	179787188.4	23.35524886
	16062.13893	478.2660804	473801.2795	594.055033	1294746.385	38.78487702	45.2843156	490974.5245	37.45652042	1785133.354	116.641675
	36412.26778	749.0234777	777391.9889	1346.700525	1668179.024	87.92386455	102.657848	815987.9045	27.46046226	2482834.962	71.56267818
	99996.06674	1022.800863	1432434.758	3698.33476	2834966.025	245.5726174	284.074889	1537397.533	18.83974901	4368703.725	45.85177327
	16876839.61	3187110.123	31885726.37	624186.5763	310696454	62709.28928	76178.564	52636571.96	3.821803246	362722308.6	22.55639053
	12224.46144	97.70923876	401660.5468	452.1192896	1224323.537	29.51812555	34.4646732	414464.3549	41.54600809	1638340.719	140.6568708
	459733.5279	59902.2752	3604968.074	17003.15364	9436285.861	1119.842863	1319.07025	4142726.873	11.04210759	13562208.81	30.96069565
	580856.3871	36090.92282	4152855.222	21482.85864	11658936.6	1455.069752	1651.31266	4792740.46	10.11083429	16430390.44	29.68694964
	107399.0726	1065.981633	1495686.269	3972.133467	2970814.01	262.662056	305.880404	1608386.119	18.3510803	4575271.214	44.70980475

	140769.4011	4946.897748	1761702.962	5206.32847	3583172.286	343.5656242	404.741176	1912969.155	16.65219757	5490996.288	40.93825702
	43075.01034	1833.654604	860580.5902	1593.120742	1790442.895	104.0122356	121.442254	907186.3881	25.80732466	2696053.592	65.68853732
	825891.4358	30045.34108	5138348.756	30545.43148	16155423.35	2037.810239	2380.75034	6026868.774	8.94212267	22152089.63	28.14998699
	118520.1076	1579.984589	1587557.149	4383.44275	3174889.251	291.1611767	338.959925	1712331.845	17.70385104	4882885.452	43.23853394
	148285.1889	8748.960318	1818022.857	5484.298395	3721089.863	363.4754161	422.358571	1980904.78	16.36958524	5696569.228	40.31828644
	67816.02248	1048.803234	1132507.888	2508.162184	2244449.919	163.7537879	191.195094	1204044.629	21.75615385	3446013.828	53.32994831
	110776.0289	1946.450171	1523964.638	4097.029527	3032782.448	271.9032263	318.515797	1641056.05	18.15304452	4669788.081	44.24231475
	84426.88719	1213.651423	1293022.421	3122.511732	2549265.632	203.8636604	240.970148	1381989.335	20.05837585	3928169.562	48.83103281
	5363051.329	241261.3686	15936003.53	198351.3932	99414040.66	14938.58964	17971.1961	21753606.21	4.970397927	120972328.1	23.67339509
	67732.49229	1417.642001	1131663.75	2505.072837	2242917.108	163.5520895	190.959596	1203482.509	21.77281472	3443921.952	53.3633033
	145527.1272	1376.748964	1797489.155	5382.292027	3670478.377	359.1245614	417.29428	1950134.448	16.42072955	5615288.702	40.49623004
	62865.77069	1021.794601	1081747.258	2325.078101	2153610.908	151.8005289	177.238748	1148111.702	22.37905532	3299422.97	55.08206464
	84108.76101	1329.596265	1290072.545	3110.745898	2543427.895	203.0954884	237.129544	1378824.744	20.08813801	3919175.928	48.90350473
	104588.909	921.9381565	1471885.386	3868.200122	2919246.434	256.036412	294.869642	1581520.469	18.52938628	4496937.537	45.1250487
	47034.87634	1877.301766	907610.0359	1739.575603	1863107.949	113.5740328	132.606385	958375.3636	24.9682144	2819762.769	62.91859651
	5316.776603	116.1523272	242718.274	196.6399316	1097564.882	12.83829803	14.9896966	248360.6812	57.24087712	1345731.074	265.6417479
	49475.72406	319.5483112	935820.2562	1829.849873	1907898.437	119.4678916	139.487917	987564.8463	24.45937267	2893653.453	61.38196975
	128122.4368	1148.10092	1664172.823	4738.582994	3351095.659	316.653448	361.218196	1798498.597	17.20112151	5144900.238	42.14424026
	608732.3644	23161.58011	4272313.888	22513.84615	12170471.43	1544.300675	1808.09293	4928265.979	9.920637863	17076487.36	29.44141029
	33165.27058	176.3351979	734680.8675	1226.610976	1608595.385	80.08341518	93.5035231	769329.1676	28.42500199	2376711.362	75.21065284
	8106.97002	73.06426015	313288.6191	299.8346835	1148765.997	19.57571383	22.8561458	321788.0638	48.63884059	1470257.506	190.3361583
	51429.10048	687.9739778	958002.378	1902.095114	1943743.64	124.1846647	144.995111	1012145.732	24.1160386	2954008.088	60.28221655
	38384.00638	510.0900356	802594.388	1419.624888	1704361.18	92.68497635	108.216811	843000.7943	26.91222044	2545957.882	69.61252277
	129295.904	1562.650468	1673377.671	4781.983449	3372629.232	324.1372737	364.526577	1809342.346	17.14777715	5177229.983	42.02417068
	32304.35663	380.8475938	723082.9957	1194.770244	1592797.285	78.00458608	91.0763309	757040.9747	28.71640968	2348656.561	76.303574
	101053.2879	1022.632166	1441578.202	3737.435874	2854366.436	254.2910363	284.901593	1547645.849	18.76691942	4398305.459	45.67950618
	307874.6072	2271.538119	2828468.7	11386.68148	6649616.654	769.7311838	898.905026	3150771.258	12.54050007	9789130.405	33.37003824
	65663.01611	304.2613362	1110616.921	2428.533669	2204941.43	158.554973	185.125079	1179171.287	22.00533167	3381710.753	54.05079576
	3835.17979	20.49375241	199193.6781	141.8433663	1070377.014	9.260720326	10.8126005	203200.4558	64.92482684	1273437.179	348.480321
	5063.167371	154.5638053	235646.3229	187.2602442	1092911.055	12.22591366	14.2746909	241063.5402	58.34197096	1333789.384	276.4721779
	5617.918573	264.0227505	250944.8728	207.7776078	1103090.952	13.56545861	15.8387123	257048.1572	56.06746298	1359933.605	254.0555732
	10099.8229	293.7786578	357845.046	373.5399531	1185335.608	24.38780978	28.4746365	368636.5753	44.72563496	1553602.731	161.4405686

	62234.23147	748.1722279	1075159.584	2301.720748	2142021.922	150.2755657	175.458237	1140593.984	22.45813025	3280339.368	55.31920195
	137511.0269	432.3744869	1736918.29	5085.818144	3523379.875	332.0447102	387.68764	1880279.554	16.75547518	5398629.253	41.20334166
80	140266.8579	35784.34195	1757895.287	5187.742007	3573950.426	350.1225799	408.850195	1939484.352	16.94349746	5508305.763	41.21444276
	523715.5534	8073.313769	3900658.645	19369.51621	10610380.47	1372.379324	1604.52168	4453189.408	10.419516	15044432.51	30.14857568
	3020957.246	336392.7056	11260888.43	111729.5065	56435719.51	8634.886535	10489.0794	14738602.78	5.978380955	71064446.97	24.6884749
	22868.4888	1020.89565	586710.4892	845.7865371	1419645.506	55.22001331	64.4735964	611500.8802	32.76660687	2030309.853	93.17755642
	38821630.84	5790347.228	52780660.37	1435810.342	713391756.3	198778.6102	256128.066	99027227.38	3.125738878	811040522.8	21.92578945
	157614.047	2017.037255	1886384.035	5829.324368	3892277.973	384.2149924	456.16622	2052228.659	15.95521564	5938749.259	39.54454017
	111792.0569	1291.757736	1532405.875	4134.607125	3051426.951	273.5836547	318.705066	1649897.881	18.0849773	4697235.346	44.09789248
	137636.0005	1067.616835	1737873.145	5090.44027	3525673.189	337.1248803	393.216121	1882004.328	16.75561697	5402643.168	41.1965361
	113492.3168	1025.310443	1546464.286	4197.4909	3082627.369	277.8894603	325.175294	1665457.293	17.98203711	4743934.457	43.86909544
	217463.1835	1532.431223	2291941.662	8042.83285	4990532.492	530.5861843	619.564436	2519510.696	14.19718741	7502089.333	36.2062004
	32219.91618	660.0804281	721938.913	1191.64723	1591247.77	77.80068966	90.8382662	756088.3575	28.75543852	2346157.518	76.42214472
	54799.93758	1615.467425	995513.4318	2026.764858	2005599.789	133.43038	155.789185	1054089.032	23.57051551	3057684.415	58.55972882
	169079.9108	3171.578755	1968252.68	6253.387075	4102680.954	420.4202382	486.912652	2147177.977	15.56137199	6243672.037	38.75560614
	92579.12899	613.7860856	1367179.712	3424.020783	2698862.384	228.1777535	266.613827	1464024.826	19.3779219	4159501.625	47.15357978
	93534.52485	730.7753291	1375698.336	3459.35591	2716394.263	227.6447787	265.761274	1473650.636	19.30609514	4186623.66	46.97626027
	7375.787507	701.0113131	295875.6774	272.7920428	1135348.518	17.81014425	20.794708	304243.0784	50.54569365	1439321.789	204.8028353
	24550.84438	2493.734283	612456.6826	908.0081256	1450517.373	59.28235858	69.2166958	640468.5517	31.96709907	2090087.851	89.34794507
	297352.6112	27568.97428	2769584.361	10997.52754	6456534.009	729.2201601	861.086983	3106232.694	12.80071064	9551901.042	33.71355259
	17605.79876	210.9434538	500849.1074	651.1469864	1323073.133	42.51231685	49.6363872	519359.5089	36.14799426	1841788.619	109.7919536
	38949.35079	756.3545917	809725.5078	1440.534039	1714735.466	94.05010048	109.810698	850965.7973	26.77217974	2564276.49	69.09571074
	5417264.327	1036475.094	16033269.84	200356.4502	100408869.9	15217.32376	18377.4403	22702583.03	5.135315094	122914256.6	23.81270287
	72944.85116	880.78712	1183578.164	2697.850899	2338565.885	176.1382524	206.570131	1260277.791	21.1711033	3596176.257	51.74075814
	55694.97929	537.8782921	1005319.007	2059.867798	2022024.146	134.485384	157.02199	1063746.218	23.40420173	3083733.033	58.10950651
	1781299.662	330479.9214	8180522.843	65881.01584	33687529.28	4823.952465	5902.6516	10363007.39	7.128869637	43985734.36	25.91560325
	70402.38141	641.4904143	1158445.3	2603.818158	2291910.594	169.9990092	198.486868	1232262.989	21.44805455	3521598.253	52.49753613
	46239.25673	274.2568763	898290.375	1710.149769	1848508.025	111.6528685	130.363279	946625.6912	25.08645489	2793442.277	63.40380451
	15984.27494	73.24319292	472410.3618	591.1752485	1293317.551	38.59686062	45.064792	489097.652	37.49509751	1781830.496	116.9930081
	3902.095165	936.0028719	201289.1606	144.3182183	1071604.937	9.422299342	11.0012564	206280.9992	64.77884793	1277743.197	343.6625288
	2800872.053	691441.6106	10757159.64	103589.6991	52397072.14	8973.961795	10448.8388	14362036.97	6.283398739	66656994.29	24.97692199
	8079057.565	1997828.319	20419185.31	298802.3468	149253792.6	31143.06557	37324.5894	30826016.61	4.675505324	179787188.4	23.35524886

	16062.13893	478.2660804	473801.2795	594.055033	1294746.385	38.78487702	45.2843156	490974.5245	37.45652042	1785133.354	116.641675
	19635.88869	208.6520567	535033.2534	726.2294612	1360326.059	47.41432826	55.3598611	555651.438	34.6755798	1915259.213	102.3678211
	99996.06674	1022.800863	1432434.758	3698.33476	2834966.025	253.2932457	284.074889	1537405.254	18.83984362	4368703.725	45.85177327
	16776.37909	364.275725	486438.1357	620.4710641	1307852.965	40.50953629	47.2979874	504239.7711	36.83076302	1811479.054	113.3239089
	16876839.61	3187110.123	31885726.37	624186.5763	310696454	61428.18589	76178.564	52635290.86	3.821710228	362722308.6	22.55639053
	12224.46144	97.70923876	401660.5468	452.1192896	1224323.537	29.51812555	34.4646732	414464.3549	41.54600809	1638340.719	140.6568708
	459733.5279	59902.2752	3604968.074	17003.15364	9436285.861	1119.842863	1319.07025	4142726.873	11.04210759	13562208.81	30.96069565
	580856.3871	36090.92282	4152855.222	21482.85864	11658936.6	1455.069752	1651.31266	4792740.46	10.11083429	16430390.44	29.68694964
	106648.483	1027.284849	1489353.425	3944.373061	2957040.405	260.8496247	303.764251	1601234.415	18.39806224	4554373.362	44.81881908
	140769.4011	4946.897748	1761702.962	5206.32847	3583172.286	343.5656242	404.741176	1912969.155	16.65219757	5490996.288	40.93825702
	43075.01034	1833.654604	860580.5902	1593.120742	1790442.895	104.0122356	121.442254	907186.3881	25.80732466	2696053.592	65.68853732
	14273.90131	66.96681453	441147.1855	527.9174181	1261931.542	34.46686081	40.2427008	456050.4379	39.15092593	1717459.838	126.2787753
	825891.4358	30045.34108	5138348.756	30545.43148	16155423.35	2037.810239	2380.75034	6026868.774	8.94212267	22152089.63	28.14998699
	89270.97947	575.2374409	1337411.08	3301.669527	2638156.576	219.340364	255.335317	1430778.307	19.63965694	4065669.208	47.79783237
	8753.871401	25.36305179	328183.1534	323.7602031	1160636.884	21.1377717	24.679968	337307.2858	47.21689346	1497623.952	179.5515159
	148285.1889	8748.960318	1818022.857	5484.298395	3721089.863	363.4754161	422.358571	1980904.78	16.36958524	5696569.228	40.31828644
	63314.17356	947.469505	1086408.752	2341.662192	2161839.272	152.883277	178.50294	1153164.941	22.31836306	3312688.17	54.91184999
	34931.37859	523.9635116	758107.3365	1291.930131	1641004.141	84.34799551	98.4827474	794938.9567	27.88623644	2434665.303	73.14927093
	110776.0289	1946.450171	1523964.638	4097.029527	3032782.448	272.8417545	318.515797	1641056.988	18.1530549	4669788.081	44.24231475
	53128.24567	603.1188576	977028.1981	1964.937663	1974923.604	128.2875514	149.785545	1032852.788	23.82236097	3005832.952	59.37803574
	43406.6404	482.2330616	864582.9572	1605.386014	1796528.433	104.813015	122.377226	910182.0297	25.69472262	2705122.641	65.40594833
	5363051.329	241261.3686	15936003.53	198351.3932	99414040.66	14938.58964	17971.1961	21753606.21	4.970397927	120972328.1	23.67339509
	39773.05868	311.2752536	820042.8097	1470.998712	1729850.821	96.03908894	112.132995	861694.1815	26.54825741	2590090.097	68.34588029
	131926.6761	1108.035639	1693894.745	4879.282032	3420904.904	322.5469529	376.66848	1832131.286	17.01750242	5248211.029	41.7508316
	62865.77069	1021.794601	1081747.258	2325.078101	2153610.908	151.8005289	177.238748	1148111.702	22.37905532	3299422.97	55.08206464
	28583.72419	264.628358	671486.1619	1057.163388	1524522.258	69.02046061	80.586676	701460.6983	30.07158928	2224937.36	81.69311135
	114244.2317	1247.45249	1552654.855	4225.300323	3096425.294	281.40372	322.09109	1672653.243	17.94086946	4764893.924	43.77290974
	51864.01526	352.846341	962895.5906	1918.180351	1951724.493	125.2348434	146.221275	1017155.867	24.03218302	2966983.166	60.03927053
	47034.87634	1877.301766	907610.0359	1739.575603	1863107.949	113.5740328	132.606385	958375.3636	24.9682144	2819762.769	62.91859651
	5316.776603	116.1523272	242718.274	196.6399316	1097564.882	12.83829803	14.9896966	248360.6812	57.24087712	1345731.074	265.6417479
	49475.72406	319.5483112	935820.2562	1829.849873	1907898.437	119.4678916	139.487917	987564.8463	24.45937267	2893653.453	61.38196975
	128122.4368	1148.10092	1664172.823	4738.582994	3351095.659	316.653448	361.218196	1798498.597	17.20112151	5144900.238	42.14424026

	608732.3644	23161.58011	4272313.888	22513.84615	12170471.43	1544.300675	1808.09293	4928265.979	9.920637863	17076487.36	29.44141029
	33165.27058	176.3351979	734680.8675	1226.610976	1608595.385	80.08341518	93.5035231	769329.1676	28.42500199	2376711.362	75.21065284
	8106.97002	73.06426015	313288.6191	299.8346835	1148765.997	19.57571383	22.8561458	321788.0638	48.63884059	1470257.506	190.3361583
	51429.10048	687.9739778	958002.378	1902.095114	1943743.64	124.1846647	144.995111	1012145.732	24.1160386	2954008.088	60.28221655
	38384.00638	510.0900356	802594.388	1419.624888	1704361.18	92.68497635	108.216811	843000.7943	26.91222044	2545957.882	69.61252277
	129295.904	1562.650468	1673377.671	4781.983449	3372629.232	324.1372737	364.526577	1809342.346	17.14777715	5177229.983	42.02417068
	32304.35663	380.8475938	723082.9957	1194.770244	1592797.285	78.00458608	91.0763309	757040.9747	28.71640968	2348656.561	76.303574
	88226.90625	819.0309529	1327925.837	3263.054685	2618997.434	221.8508981	248.739914	1420456.68	19.72871474	4036217.948	48.01313011
	32564.97089	339.6409547	726606.6287	1204.409011	1597579.656	78.63388534	91.811086	760794.2834	28.62782784	2357182.708	75.96770617
	288136.0179	1958.483904	2717325.743	10656.65366	6287406	720.3981709	841.167249	3018797.296	12.83832167	9295667.412	33.8586383
	65663.01611	304.2613362	1110616.921	2428.533669	2204941.43	158.554973	185.125079	1179171.287	22.00533167	3381710.753	54.05079576
	3835.17979	20.49375241	199193.6781	141.8433663	1070377.014	9.260720326	10.8126005	203200.4558	64.92482684	1273437.179	348.480321
	5063.167371	154.5638053	235646.3229	187.2602442	1092911.055	12.22591366	14.2746909	241063.5402	58.34197096	1333789.384	276.4721779
	5617.918573	264.0227505	250944.8728	207.7776078	1103090.952	13.56545861	15.8387123	257048.1572	56.06746298	1359933.605	254.0555732
	10099.8229	293.7786578	357845.046	373.5399531	1185335.608	24.38780978	28.4746365	368636.5753	44.72563496	1553602.731	161.4405686
	20260.76442	67.31754482	545270.4478	749.3403667	1371792.767	48.92320131	57.121586	566396.7934	34.25601258	1937448.418	100.3600301
	41973.46705	377.4634489	847198.0861	1552.380381	1770229.155	101.3523644	118.336651	891202.7494	26.01797693	2659896.508	66.50837802
	137511.0269	432.3744869	1736918.29	5085.818144	3523379.875	332.0447102	387.68764	1880279.554	16.75547518	5398629.253	41.20334166
90	140266.8579	35784.34195	1757895.287	5187.742007	3573950.426	350.1225799	408.850195	1939484.352	16.94349746	5508305.763	41.21444276
	523715.5534	8073.313769	3900658.645	19369.51621	10610380.47	1372.379324	1604.52168	4453189.408	10.419516	15044432.51	30.14857568
	3020957.246	336392.7056	11260888.43	111729.5065	56435719.51	8634.886535	10489.0794	14738602.78	5.978380955	71064446.97	24.6884749
	22868.4888	1020.89565	586710.4892	845.7865371	1419645.506	55.22001331	64.4735964	611500.8802	32.76660687	2030309.853	93.17755642
	38821630.84	5790347.228	52780660.37	1435810.342	713391756.3	198778.6102	256128.066	99027227.38	3.125738878	811040522.8	21.92578945
	157614.047	2017.037255	1886384.035	5829.324368	3892277.973	385.4460598	456.16622	2052229.89	15.95522521	5938749.259	39.54454017
	111792.0569	1291.757736	1532405.875	4134.607125	3051426.951	273.4133403	318.705066	1649897.711	18.08497544	4697235.346	44.09789248
	137636.0005	1067.616835	1737873.145	5090.44027	3525673.189	337.1043087	393.216121	1882004.307	16.75561679	5402643.168	41.1965361
	113492.3168	1025.310443	1546464.286	4197.4909	3082627.369	278.2754731	324.823282	1665457.679	17.98204127	4743934.105	43.86909218
	217463.1835	1532.431223	2291941.662	8042.83285	4990532.492	530.5861843	619.564436	2519510.696	14.19718741	7502089.333	36.2062004
	32219.91618	660.0804281	721938.913	1191.64723	1591247.77	77.80068966	90.8382662	756088.3575	28.75543852	2346157.518	76.42214472
	54799.93758	1615.467425	995513.4318	2026.764858	2005599.789	133.4909615	155.789185	1054089.093	23.57051687	3057684.415	58.55972882
	135784.8138	2619.598166	1723693.969	5021.974494	3491703.205	333.8772078	391.050512	1867454.233	16.85274372	5354192.636	41.38369384
	92579.12899	613.7860856	1367179.712	3424.020783	2698862.384	227.6825309	266.613827	1464024.331	19.37791534	4159501.625	47.15357978

93506.39925	723.4046666	1375448.051	3458.31569	2715878.147	227.5768644	265.681979	1473363.747	19.30814256	4185821.684	46.98138884
7375.787507	701.0113131	295875.6774	272.7920428	1135348.518	17.81014425	20.794708	304243.0784	50.54569365	1439321.789	204.8028353
24550.84438	2493.734283	612456.6826	908.0081256	1450517.373	59.28235858	69.2166958	640468.5517	31.96709907	2090087.851	89.34794507
49134.31516	413.7578883	931908.0308	1817.222932	1901633.453	119.9244062	138.525376	983393.2511	24.52529087	2883228.082	61.58579517
281541.5187	28408.97328	2679528.416	10412.75741	6166394.421	683.5467731	806.251751	3000575.212	13.05972159	9156679.581	34.13359485
17605.79876	210.9434538	500849.1074	651.1469864	1323073.133	42.51231685	49.6363872	519359.5089	36.14799426	1841788.619	109.7919536
38949.35079	756.3545917	809725.5078	1440.534039	1714735.466	94.05010048	109.810698	850965.7973	26.77217974	2564276.49	69.09571074
5417264.327	1036475.094	16033269.84	200356.4502	100408869.9	15217.32376	18362.6504	22702583.03	5.135315094	122914241.8	23.8127
72944.85116	880.78712	1183578.164	2697.850899	2338565.885	176.1382524	206.570131	1260277.791	21.1711033	3596176.257	51.74075814
55694.97929	537.8782921	1005319.007	2059.867798	2022024.146	134.485384	157.02199	1063746.218	23.40420173	3083733.033	58.10950651
9305.045145	164.9070968	340533.5208	344.1452551	1170751.133	22.46867825	26.2339034	350370.087	46.14029712	1520780.84	171.5278361
1781299.662	330479.9214	8180522.843	65881.01584	33687529.28	4823.952465	5906.13049	10363007.39	7.128869637	43985737.84	25.9156053
61097.33627	398.2471664	1063233.526	2259.672903	2121159.461	147.530331	172.252965	1127136.313	22.60611934	3246060.823	55.75975259
46239.25673	274.2568763	898290.375	1710.149769	1848508.025	111.6528685	130.363279	946625.6912	25.08645489	2793442.277	63.40380451
15984.27494	73.24319292	472410.3618	591.1752485	1293317.551	38.59686062	45.064792	489097.652	37.49509751	1781830.496	116.9930081
3902.095165	936.0028719	201289.1606	144.3182183	1071604.937	9.422299342	11.0012564	206280.9992	64.77884793	1277743.197	343.6625288
2800598.324	697384.633	10756523.6	103579.5753	52392049.12	8980.80231	10460.2933	14367066.93	6.286213702	66657015.97	24.97937134
4736.141148	38.15565125	226316.9548	175.1652441	1086909.999	11.43625097	13.3526992	231277.8531	59.83857748	1318014.604	292.0667018
8079057.565	1997828.319	20419185.31	298802.3468	149253792.6	29950.45721	37324.5894	30824824	4.675324437	179787188.4	23.35524886
11599.72637	260.2293836	389113.2961	429.0135867	1212859.41	28.00959217	32.7033449	401430.2751	42.40667567	1613865.365	146.017873
19635.88869	208.6520567	535033.2534	726.2294612	1360326.059	47.41432826	55.3598611	555651.438	34.6755798	1915259.213	102.3678211
99996.06674	1022.800863	1432434.758	3698.33476	2834966.025	243.3428981	295.70228	1537395.304	18.83972168	4368715.353	45.85189531
16776.37909	364.275725	486438.1357	620.4710641	1307852.965	40.50953629	47.2979874	504239.7711	36.83076302	1811479.054	113.3239089
16876839.61	3187110.123	31885726.37	624186.5763	310696454	61358.30697	76156.6746	52635220.98	3.821705155	362722286.7	22.55638917
12224.46144	97.70923876	401660.5468	452.1192896	1224323.537	29.51812555	34.4646732	414464.3549	41.54600809	1638340.719	140.6568708
459733.5279	59902.2752	3604968.074	17003.15364	9436285.861	1119.842863	1324.84005	4142726.873	11.04210759	13562214.58	30.96070882
580856.3871	36090.92282	4152855.222	21482.85864	11658936.6	1425.929986	1651.31266	4792711.32	10.11077282	16430390.44	29.68694964
66642.44362	549.9896568	1120609.985	2464.757602	2222914.299	163.2161425	187.886399	1190430.392	21.88895071	3410904.604	53.71618007
140769.4011	4946.897748	1761702.962	5206.32847	3583172.286	344.095395	407.115054	1912969.685	16.65220218	5490998.662	40.93827472
40006.03942	243.2299503	822945.6395	1479.615459	1734126.106	96.60166218	112.789842	864771.126	26.48789659	2597433.805	68.14051176
43075.01034	1833.654604	860580.5902	1593.120742	1790442.895	104.0122356	121.442254	907186.3881	25.80732466	2696053.592	65.68853732
14273.90131	66.96681453	441147.1855	527.9174181	1261931.542	34.46686081	40.2427008	456050.4379	39.15092593	1717459.838	126.2787753

	822872.5381	29976.67797	5126977.241	30433.77814	16100025.42	1990.20673	2367.98276	6012250.441	8.953159977	22082219.86	28.16414827
	89270.97947	575.2374409	1337411.08	3301.669527	2638156.576	218.7144283	254.906124	1430777.681	19.63964835	4065668.779	47.79782733
	8753.871401	25.36305179	328183.1534	323.7602031	1160636.884	21.1377717	24.679968	337307.2858	47.21689346	1497623.952	179.5515159
	148285.1889	8748.960318	1818022.857	5484.298395	3721089.863	361.0667624	422.358571	1980902.372	16.36956534	5696569.228	40.31828644
	63314.17356	947.469505	1086408.752	2341.662192	2161839.272	152.883277	178.50294	1153164.941	22.31836306	3312688.17	54.91184999
	21341.47132	184.6207789	562685.7561	789.3100976	1391624.151	51.53275937	60.1684449	585052.6911	33.59251151	1975896.168	97.16866207
	110776.0289	1946.450171	1523964.638	4097.029527	3032782.448	271.3393232	316.630658	1641055.486	18.15303828	4669786.195	44.24229689
	16608.80498	58.30455331	483492.686	614.2733686	1304777.916	40.10489893	46.8255423	500814.1738	36.94962852	1804984.537	114.0568994
	53128.24567	603.1188576	977028.1981	1964.937663	1974923.604	128.2875514	149.785545	1032852.788	23.82236097	3005832.952	59.37803574
	31794.59491	341.0547992	716158.135	1175.916807	1583442.963	76.77367618	89.6391492	749546.4752	28.8879764	2331826.386	76.97139851
	5363051.329	241261.3686	15936003.53	198351.3932	99414040.66	14938.58964	17971.1961	21753606.21	4.970397927	120972328.1	23.67339509
	39773.05868	311.2752536	820042.8097	1470.998712	1729850.821	96.03908894	112.132995	861694.1815	26.54825741	2590090.097	68.34588029
	78914.76463	583.3080116	1241269.077	2918.646969	2448116.078	190.553665	225.228206	1323876.35	20.55706025	3769108.455	50.1264363
	64623.95691	363.1927547	1099950.853	2390.10427	2185874.297	156.0459807	182.195638	1167484.153	22.13753692	3350994.495	54.42101396
	62865.77069	1021.794601	1081747.258	2325.078101	2153610.908	151.8005289	177.238748	1148111.702	22.37905532	3299422.97	55.08206464
	28583.72419	264.628358	671486.1619	1057.163388	1524522.258	69.02046061	80.586676	701460.6983	30.07158928	2224937.36	81.69311135
	44118.40592	611.7265666	873132.536	1631.710521	1809589.603	106.5316989	124.383921	919600.9107	25.54179594	2727576.655	64.8848961
	70125.82575	451.3315648	1155690.034	2593.589802	2286835.692	169.3312167	197.707169	1229030.113	21.47614789	3513300.591	52.58038739
	51864.01526	352.846341	962895.5906	1918.180351	1951724.493	125.2348434	146.221275	1017155.867	24.03218302	2966983.166	60.03927053
	47034.87634	1877.301766	907610.0359	1739.575603	1863107.949	113.5740328	132.606385	958375.3636	24.9682144	2819762.769	62.91859651
	5316.776603	116.1523272	242718.274	196.6399316	1097564.882	12.83829803	14.9896966	248360.6812	57.24087712	1345731.074	265.6417479
	49475.72406	319.5483112	935820.2562	1829.849873	1907898.437	119.4678916	139.487917	987564.8463	24.45937267	2893653.453	61.38196975
	128122.4368	1148.10092	1664172.823	4738.582994	3351095.659	316.653448	369.575739	1798498.597	17.20112151	5144908.596	42.14430872
	9901.935476	386.4048778	353586.6351	366.221126	1181704.299	23.90997558	27.9167284	364265.1065	45.07848689	1545607.191	163.8194633
	598830.429	2073.528887	4230132.988	22147.62503	11988767.13	1519.200161	1778.28823	4854703.771	9.934150263	16821582.37	29.48149122
	33165.27058	176.3351979	734680.8675	1226.610976	1608595.385	80.08341518	93.5035231	769329.1676	28.42500199	2376711.362	75.21065284
	8106.97002	73.06426015	313288.6191	299.8346835	1148765.997	19.57571383	22.8561458	321788.0638	48.63884059	1470257.506	190.3361583
	51429.10048	687.9739778	958002.378	1902.095114	1943743.64	124.1846647	144.995111	1012145.732	24.1160386	2954008.088	60.28221655
	38384.00638	510.0900356	802594.388	1419.624888	1704361.18	92.68497635	108.216811	843000.7943	26.91222044	2545957.882	69.61252277
	129295.904	1562.650468	1673377.671	4781.983449	3372629.232	326.2351334	380.631985	1809344.444	17.14779704	5177246.089	42.02430141
	32304.35663	380.8475938	723082.9957	1194.770244	1592797.285	78.00458608	91.0763309	757040.9747	28.71640968	2348656.561	76.303574
	63927.56175	482.7163283	1092764.33	2364.348233	2173095.179	154.3644113	180.232277	1159693.321	22.22935523	3330450.02	54.67656734

	19738.58929	40.67650161	536724.5151	730.0278224	1362210.654	47.66231703	55.6494069	557281.471	34.59635489	1918770.084	102.0218723
	37125.72611	211.9711606	786572.0934	1373.087641	1681271.257	89.64663595	104.669316	825372.5249	27.24249639	2505285.717	70.82209459
	237964.7593	1084.884479	2420334.194	8801.079578	5366744.239	595.0740486	694.70631	2668779.991	13.74269719	8026822.783	35.40115972
	63427.06122	674.1944522	1087580.249	2345.83732	2163910.803	153.1558642	178.821206	1154180.498	22.29826091	3315771.13	54.8651306
	52407.21346	219.8829941	968984.3925	1938.270429	1961692.387	126.5464916	147.752725	1023676.306	23.9355512	2983451.629	59.74676476
	3835.17979	20.49375241	199193.6781	141.8433663	1070377.014	9.260720326	10.8126005	203200.4558	64.92482684	1273437.179	348.480321
	5063.167371	154.5638053	235646.3229	187.2602442	1092911.055	12.22591366	14.2746909	241063.5402	58.34197096	1333789.384	276.4721779
	5617.918573	264.0227505	250944.8728	207.7776078	1103090.952	13.56545861	15.8387123	257048.1572	56.06746298	1359933.605	254.0555732
	10099.8229	293.7786578	357845.046	373.5399531	1185335.608	24.38780978	28.4746365	368636.5753	44.72563496	1553602.731	161.4405686
	20260.76442	67.31754482	545270.4478	749.3403667	1371792.767	48.92320131	57.121586	566396.7934	34.25601258	1937448.418	100.3600301
	41973.46705	377.4634489	847198.0861	1552.380381	1770229.155	101.3523644	118.336651	891202.7494	26.01797693	2659896.508	66.50837802
	137511.0269	432.3744869	1736918.29	5085.818144	3523379.875	351.4423989	387.68764	1880298.951	16.75564803	5398629.253	41.20334166
100	135312.8537	34590.57479	1720066.797	5004.519143	3483042.557	337.7663489	394.489359	1895312.511	17.16380717	5373407.272	41.67706877
	518761.5492	7822.106035	3878293.671	19186.29334	10519472.6	1359.329278	1589.53076	4425422.949	10.45343097	14925939.46	30.19676077
	9908.008314	38.1122337	353717.8159	366.4457287	1181815.738	23.92463952	27.9338497	364054.3068	45.02478641	1545507.608	163.7085063
	3020957.246	336392.7056	11260888.43	111729.5065	56435719.51	8634.886535	10482.8305	14738602.78	5.978380955	71064440.72	24.68847273
	22868.4888	1020.89565	586710.4892	845.7865371	1419645.506	55.22001331	64.4735964	611500.8802	32.76660687	2030309.853	93.17755642
	38821612.84	5790154.736	52780645.56	1435809.676	713391426	198778.5667	256128.016	99027001.38	3.125733194	811039967.1	21.9257846
	157614.047	2017.037255	1886384.035	5829.324368	3892277.973	385.7324633	455.443434	2052230.176	15.95522744	5938748.536	39.54453536
	93174.21627	1088.427317	1372489.761	3446.029968	2709782.462	227.7397549	266.529623	1470426.174	19.33834602	4176801.397	47.04728195
	95129.51516	585.9249367	1389843.601	3518.346311	2745662.944	232.8441044	271.808193	1489310.231	19.18411372	4231493.793	46.68365877
	70900.81773	566.4050593	1163400.345	2622.252727	2301057.091	171.2025719	199.89212	1237661.023	21.39056817	3536124.55	52.34350139
	80507.2838	672.2759577	1256363.949	2977.545975	2477339.413	194.3990844	230.260545	1340715.454	20.40672403	3815113.182	49.7346096
	68775.49411	516.1612923	1142174.83	2543.648053	2262056.59	166.0706019	193.900152	1214176.204	21.63315433	3473716.976	53.00870236
	171896.2307	1020.908	1988022.656	6357.54811	4154361.501	426.7688821	499.572253	2167724.112	15.4528826	6315800.868	38.56102202
	32219.91618	660.0804281	721938.913	1191.64723	1591247.77	77.80068966	90.8382662	756088.3575	28.75543852	2346157.518	76.42214472
	11631.06432	1108.882327	389748.9529	430.1726144	1213434.473	28.08526318	32.7916966	402947.1575	42.45222815	1615956.165	145.8131122
	53866.72988	516.6336537	985222.1231	1992.250355	1988475.071	131.0847988	153.065988	1041728.822	23.69768483	3028233.624	59.00043682
	135169.4255	1269.612922	1718963.513	4999.214478	3480410.594	332.9168364	388.281608	1860734.683	16.86855321	5336201.428	41.43241117
	92579.12899	613.7860856	1367179.712	3424.020783	2698862.384	227.6825309	266.303499	1464024.331	19.37791534	4159501.314	47.15357626
	10552.72835	403.6869098	367469.1327	390.2905717	1193646.596	25.48143014	29.751522	378841.32	43.99106064	1572101.896	156.3516231
	83041.4228	614.9122926	1280143.125	3071.270605	2523841.831	202.3989649	235.909491	1367073.13	20.17292232	3887877.201	49.13650004

	6875.714195	559.3120176	283571.424	254.2969302	1126171.982	16.60262874	19.3848411	291277.3498	51.91116183	1417197.817	216.3212182
	14898.69787	1076.178932	452730.6684	551.0253954	1273396.797	35.97554268	42.0042025	469292.5461	38.59821256	1742144.347	122.7219603
	49134.31516	413.7578883	931908.0308	1817.222932	1901633.453	118.6434994	138.525376	983391.9702	24.52525892	2883228.082	61.58579517
	281541.5187	28408.97328	2679528.416	10412.75741	6166394.421	683.5467731	806.382155	3000575.212	13.05972159	9156679.711	34.13359534
	17605.79876	210.9434538	500849.1074	651.1469864	1323073.133	42.51231685	49.6363872	519359.5089	36.14799426	1841788.619	109.7919536
	38949.35079	756.3545917	809725.5078	1440.534039	1714735.466	94.05010048	109.810698	850965.7973	26.77217974	2564276.49	69.09571074
	5417264.327	1036475.094	16033269.84	200356.4502	100408869.9	15217.32376	18362.6504	22702583.03	5.135315094	122914241.8	23.8127
	54641.7717	286.6959117	993774.0975	2020.915124	2002697.385	131.9422279	154.05266	1050855.422	23.56622651	3051554.002	58.61148819
	18303.07946	159.4407809	512757.8352	676.9357753	1335868.5	44.19602451	51.6022448	531941.4873	35.61324509	1867140.458	107.0629697
	55694.97929	537.8782921	1005319.007	2059.867798	2022024.146	134.485384	157.02199	1063746.218	23.40420173	3083733.033	58.10950651
	9305.045145	164.9070968	340533.5208	344.1452551	1170751.133	22.46867825	26.2339034	350370.087	46.14029712	1520780.84	171.5278361
	1781299.662	330479.9214	8180522.843	65881.01584	33687529.28	4823.952465	5906.13049	10363007.39	7.128869637	43985737.84	25.9156053
	61097.33627	398.2471664	1063233.526	2259.672903	2121159.461	147.530331	172.252965	1127136.313	22.60611934	3246060.823	55.75975259
	46239.25673	274.2568763	898290.375	1710.149769	1848508.025	111.6528685	130.363279	946625.6912	25.08645489	2793442.277	63.40380451
	15984.27494	73.24319292	472410.3618	591.1752485	1293317.551	38.59686062	45.064792	489097.652	37.49509751	1781830.496	116.9930081
	3902.095165	936.0028719	201289.1606	144.3182183	1071604.937	9.422299342	11.0012564	206280.9992	64.77884793	1277743.197	343.6625288
	2800598.324	697384.633	10756523.6	103579.5753	52392049.12	8975.567832	10356.4727	14367061.7	6.286211411	66656912.15	24.97933243
	4736.141148	38.15565125	226316.9548	175.1652441	1086909.999	11.43625097	13.3526992	231277.8531	59.83857748	1318014.604	292.0667018
	8079057.565	1997828.319	20419185.31	298802.3468	149253792.6	29950.45721	37324.5894	30824824	4.675324437	179787188.4	23.35524886
	11599.72637	260.2293836	389113.2961	429.0135867	1212859.41	28.00959217	32.7033449	401430.2751	42.40667567	1613865.365	146.017873
	19635.88869	208.6520567	535033.2534	726.2294612	1360326.059	47.41432826	55.3598611	555651.438	34.6755798	1915259.213	102.3678211
	99996.06674	1022.800863	1432434.758	3698.33476	2834966.025	243.4572175	284.074889	1537395.418	18.83972308	4368703.725	45.85177327
	16776.37909	364.275725	486438.1357	620.4710641	1307852.965	40.50953629	47.2979874	504239.7711	36.83076302	1811479.054	113.3239089
	16876839.61	3187110.123	31885726.37	624186.5763	310696454	61339.55858	76178.564	52635202.23	3.821703793	362722308.6	22.55639053
	12224.46144	97.70923876	401660.5468	452.1192896	1224323.537	29.51812555	34.4646732	414464.3549	41.54600809	1638340.719	140.6568708
	439438.3999	57547.26077	3507829.518	16252.54235	9063862.511	1070.422434	1260.80932	4022138.143	11.21581477	13069938.5	31.21490377
	20295.12792	41.62597768	545829.7719	750.6112939	1372423.35	49.00617805	57.2184677	566966.1432	34.23238697	1938647.095	100.252088
	580856.3871	36090.92282	4152855.222	21482.85864	11658936.6	1425.929986	1651.31266	4792711.32	10.11077282	16430390.44	29.68694964
	66642.44362	549.9896568	1120609.985	2464.757602	2222914.299	163.2161425	187.886399	1190430.392	21.88895071	3410904.604	53.71618007
	140769.4011	4946.897748	1761702.962	5206.32847	3583172.286	344.095395	407.115054	1912969.685	16.65220218	5490998.662	40.93827472
	40006.03942	243.2299503	822945.6395	1479.615459	1734126.106	96.60166218	112.789842	864771.126	26.48789659	2597433.805	68.14051176
	43075.01034	1833.654604	860580.5902	1593.120742	1790442.895	104.0122356	121.442254	907186.3881	25.80732466	2696053.592	65.68853732

	14273.90131	66.96681453	441147.1855	527.9174181	1261931.542	34.46686081	40.2427008	456050.4379	39.15092593	1717459.838	126.2787753
	822872.5381	29976.67797	5126977.241	30433.77814	16100025.42	1990.20673	2367.98276	6012250.441	8.953159977	22082219.86	28.16414827
	89270.97947	575.2374409	1337411.08	3301.669527	2638156.576	218.7144283	254.201174	1430777.681	19.63964835	4065668.074	47.79781904
	8753.871401	25.36305179	328183.1534	323.7602031	1160636.884	21.1377717	24.679968	337307.2858	47.21689346	1497623.952	179.5515159
	148285.1889	8748.960318	1818022.857	5484.298395	3721089.863	361.0667624	422.358571	1980902.372	16.36956534	5696569.228	40.31828644
	63314.17356	947.469505	1086408.752	2341.662192	2161839.272	152.883277	178.50294	1153164.941	22.31836306	3312688.17	54.91184999
	21341.47132	184.6207789	562685.7561	789.3100976	1391624.151	51.53275937	60.1684449	585052.6911	33.59251151	1975896.168	97.16866207
	110776.0289	1946.450171	1523964.638	4097.029527	3032782.448	271.3393232	316.833851	1641055.486	18.15303828	4669786.399	44.24229881
	16608.80498	58.30455331	483492.686	614.2733686	1304777.916	40.10489893	46.8255423	500814.1738	36.94962852	1804984.537	114.0568994
	53128.24567	603.1188576	977028.1981	1964.937663	1974923.604	128.2875514	149.785545	1032852.788	23.82236097	3005832.952	59.37803574
	28985.72283	291.9935725	677183.8422	1072.031229	1531899.087	69.99115747	81.720039	707603.581	29.91422373	2238442.366	81.04910862
	5363051.329	241261.3686	15936003.53	198351.3932	99414040.66	14938.58964	17971.1961	21753606.21	4.970397927	120972328.1	23.67339509
	18565.45183	43.02698695	517192.2721	686.6395657	1340683.133	44.82956903	52.3419566	536532.2201	35.41295232	1876536.226	106.0810698
	21207.60685	139.2476873	560547.7866	784.3591466	1389167.687	51.20951991	59.7910381	582730.2098	33.67035691	1971122.119	97.54574474
	23245.52108	203.4743366	592543.7933	859.7310015	1426564.192	56.13042447	65.5365712	616908.6502	32.52021622	2042622.517	92.22216008
	58478.11563	342.712503	1035419.105	2162.801546	2073095.761	141.2057592	164.868543	1096543.94	22.97759234	3167500.563	56.84729342
	64623.95691	363.1927547	1099950.853	2390.10427	2185874.297	156.0459807	182.195638	1167484.153	22.13753692	3350994.495	54.42101396
	62865.77069	1021.794601	1081747.258	2325.078101	2153610.908	151.8005289	177.238748	1148111.702	22.37905532	3299422.97	55.08206464
	28583.72419	264.628358	671486.1619	1057.163388	1524522.258	69.02046061	80.586676	701460.6983	30.07158928	2224937.36	81.69311135
	44118.40592	611.7265666	873132.536	1631.710521	1809589.603	106.5316989	124.383921	919600.9107	25.54179594	2727576.655	64.8848961
	70125.82575	451.3315648	1155690.034	2593.589802	2286835.692	169.3312167	197.707169	1229030.113	21.47614789	3513300.591	52.58038739
	51864.01526	352.846341	962895.5906	1918.180351	1951724.493	125.2348434	146.221275	1017155.867	24.03218302	2966983.166	60.03927053
	47034.87634	1877.301766	907610.0359	1739.575603	1863107.949	113.5740328	132.606385	958375.3636	24.9682144	2819762.769	62.91859651
	5316.776603	116.1523272	242718.274	196.6399316	1097564.882	12.83829803	14.9896966	248360.6812	57.24087712	1345731.074	265.6417479
	49475.72406	319.5483112	935820.2562	1829.849873	1907898.437	119.4678916	139.487917	987564.8463	24.45937267	2893653.453	61.38196975
	128122.4368	1148.10092	1664172.823	4738.582994	3351095.659	316.653448	369.575739	1798498.597	17.20112151	5144908.596	42.14430872
	9901.935476	386.4048778	353586.6351	366.221126	1181704.299	23.90997558	27.9167284	364265.1065	45.07848689	1545607.191	163.8194633
	598830.429	2073.528887	4230132.988	22147.62503	11988767.13	1519.200161	1778.28823	4854703.771	9.934150263	16821582.37	29.48149122
	33165.27058	176.3351979	734680.8675	1226.610976	1608595.385	80.08341518	93.5035231	769329.1676	28.42500199	2376711.362	75.21065284
	8106.97002	73.06426015	313288.6191	299.8346835	1148765.997	19.57571383	22.8561458	321788.0638	48.63884059	1470257.506	190.3361583
	21452.53745	327.3876068	564455.5923	793.4178567	1393662.257	51.8009482	60.4815759	587080.7362	33.5344364	1979958.256	96.86431827
	29976.56302	366.643365	691095.7097	1108.677257	1550081.383	72.38371646	84.5135349	722619.9771	29.53928486	2271604.813	79.53117596

	38384.00638	510.0900356	802594.388	1419.624888	1704361.18	92.68497635	108.216811	843000.7943	26.91222044	2545957.882	69.61252277
	129295.904	1562.650468	1673377.671	4781.983449	3372629.232	326.2351334	380.631985	1809344.444	17.14779704	5177246.089	42.02430141
	32304.35663	380.8475938	723082.9957	1194.770244	1592797.285	78.00458608	91.0763309	757040.9747	28.71640968	2348656.561	76.303574
	63927.56175	482.7163283	1092764.33	2364.348233	2173095.179	154.3644113	180.232277	1159693.321	22.22935523	3330450.02	54.67656734
	19738.58929	40.67650161	536724.5151	730.0278224	1362210.654	47.66231703	55.6494069	557281.471	34.59635489	1918770.084	102.0218723
	37125.72611	211.9711606	786572.0934	1373.087641	1681271.257	89.64663595	104.669316	825372.5249	27.24249639	2505285.717	70.82209459
	237964.7593	1084.884479	2420334.194	8801.079578	5366744.239	595.0740486	694.70631	2668779.991	13.74269719	8026822.783	35.40115972
	63427.06122	674.1944522	1087580.249	2345.83732	2163910.803	153.1558642	178.821206	1154180.498	22.29826091	3315771.13	54.8651306
	52407.21346	219.8829941	968984.3925	1938.270429	1961692.387	126.5464916	147.752725	1023676.306	23.9355512	2983451.629	59.74676476
	3835.17979	20.49375241	199193.6781	141.8433663	1070377.014	9.260720326	10.8126005	203200.4558	64.92482684	1273437.179	348.480321
	5063.167371	154.5638053	235646.3229	187.2602442	1092911.055	12.22591366	14.2746909	241063.5402	58.34197096	1333789.384	276.4721779
	5617.918573	264.0227505	250944.8728	207.7776078	1103090.952	13.56545861	15.8387123	257048.1572	56.06746298	1359933.605	254.0555732
	10099.8229	293.7786578	357845.046	373.5399531	1185335.608	24.38780978	28.4746365	368636.5753	44.72563496	1553602.731	161.4405686
	20260.76442	67.31754482	545270.4478	749.3403667	1371792.767	48.92320131	57.121586	566396.7934	34.25601258	1937448.418	100.3600301
	41973.46705	377.4634489	847198.0861	1552.380381	1770229.155	101.3523644	118.336651	891202.7494	26.01797693	2659896.508	66.50837802
	137511.0269	432.3744869	1736918.29	5085.818144	3523379.875	351.4423989	387.68764	1880298.951	16.75564803	5398629.253	41.20334166

APPENDIX C: Food Waste Pathways Calculations

Fuel Production

Scenario	Feedstock to AD			SNG	SNG to RH2					
	Demand [dt/yr]	Distance [mi]	# of Trucks / yr	SNG Output [GJ/yr]	SMR/PSA [GJ/yr]	# of Trucks	Tri-Gen/PSA [GJ/yr]	# of Trucks	SMR/PSA [kg/day]	Tri-Gen/PSA [kg/day]
1	936020.7356	1021170.435	42786	6955419.2	4524134	9283	5282272.926	10839	101727.5	118774.6944
5	319965.2874	86693.01041	14626	2377610.5	1546510	3174	1805669.373	3705	34774.1	40601.42877
	237484.48	42546.13727	10856	1764708.9	1147850	2356	1340203.044	2750	25810.02	30135.17271
	60106.53017	57563.25362	2748	446641.94	290517.1	597	339200.9225	696	6532.429	7627.11175
	159042.4657	18465.69983	7270	1181818.9	768711	1578	897528.9526	1842	17284.87	20181.41215
	159421.9724	145942.3672	7288	1184639	770545.3	1582	899670.6339	1846	17326.12	20229.56899
10	30529.70939	21691.50672	1396	226861.35	147561.4	303	172289.1932	354	3317.995	3874.013432
	289435.578	49555.30498	13230	2150749.1	1398949	2871	1633380.18	3352	31456.11	36727.41533
	198865.0961	28199.64699	9091	1477734.5	961188.4	1973	1122261.157	2303	21612.83	25234.63436
	43501.53584	12581.63695	1989	323252.9	210259	432	245493.4771	504	4727.784	5520.050387
	52692.62307	47074.31818	2409	391550.39	254682.9	523	297361.8059	611	5726.68	6686.337132
	112570.0571	12228.1889	5146	836489.95	544092.7	1117	635269.8637	1304	12234.21	14284.37814
	100277.2476	20913.48816	4584	745144.06	484677	995	565897.4957	1162	10898.22	12724.50383
	64644.91633	26865.99874	2955	480365.95	312452.8	642	364812.5286	749	7025.665	8203.002228
	26685.21453	14660.94216	1220	198293.53	128979.5	265	150593.444	309	2900.172	3386.173062
	16818.75753	25428.42605	769	124977.48	81291.27	167	94913.78147	195	1827.877	2134.186465
20	4809.046039	5833.424441	220	35735.246	23243.9	48	27139.02879	56	522.6513	610.2353845
	25720.66335	10356.36952	1176	191126.1	124317.5	256	145150.1644	298	2795.344	3263.778048
	282075.9578	45925.84295	12894	2096061	1363377	2798	1591847.422	3267	30656.26	35793.52936
	56692.16793	6131.800126	2592	421270.36	274014.2	563	319932.5532	657	6161.354	7193.852298
	96866.84211	4266.117868	4428	719801.89	468193.2	961	546651.4556	1122	10527.57	12291.74646
	35547.35173	2527.461909	1625	264146.64	171813.5	353	200605.3995	412	3863.317	4510.718275
	34680.33489	3595.433222	1586	257703.98	167622.9	344	195712.5383	402	3769.089	4400.699707
	17998.36716	13336.3396	823	133742.96	86992.75	179	101570.7067	209	1956.078	2283.870942
	11089.17341	4955.857486	507	82401.86	53598.07	110	62579.85346	129	1205.181	1407.14103

	5254.85622	5092.869234	241	39047.989	25398.66	53	29654.8823	61	571.1023	666.8056784
	41503.85672	30339.65364	1898	308408.47	200603.5	412	234219.9167	481	4510.675	5266.558432
	34598.13141	6621.877143	1582	257093.14	167225.5	344	195248.637	401	3760.155	4390.268643
	78663.31428	6824.977092	3596	584534.41	380208.8	781	443922.9597	911	8549.197	9981.842022
	58879.83258	12546.17495	2692	437526.54	284588	584	332278.2645	682	6399.111	7471.452131
	47994.37142	4873.276132	2194	356638.44	231974.5	476	270848.0263	556	5216.07	6090.160806
	54476.54304	17494.88146	2491	404806.41	263305.2	541	307429.0531	631	5920.557	6912.704499
	23576.34924	13698.24256	1078	175192.05	113953.2	234	133049.0945	273	2562.298	2991.679104
	12623.21089	8209.777262	578	93801.045	61012.64	126	71236.9316	147	1371.901	1601.800001
	8751.643579	9523.250739	401	65032.053	42299.93	87	49388.40368	102	951.1361	1110.524321
	4218.721759	2612.145847	193	31348.641	20390.64	42	23807.63468	49	458.4943	535.3272299
30	4809.046039	5833.424441	220	35735.246	23243.9	48	27139.02879	56	522.6513	610.2353845
	25720.66335	10356.36952	1176	191126.1	124317.5	256	145150.1644	298	2795.344	3263.778048
	261631.8058	42437.03324	11960	1944143.8	1264563	2595	1476474.347	3030	28434.37	33199.30488
	20521.68559	2463.577683	939	152493.34	99188.88	204	115810.6226	238	2230.314	2604.062967
	56394.31088	6117.548799	2578	419057.03	272574.5	560	318251.6479	653	6128.982	7156.056254
	89467.01657	4008.197867	4090	664814.98	432427.1	888	504891.8057	1036	9723.352	11352.7587
	15391.31265	225.1993734	704	114370.36	74391.9	153	86858.24044	179	1672.741	1953.053374
	27903.34481	2216.437574	1276	207345.26	134867.2	277	157467.7539	324	3032.559	3540.745547
	34680.33489	3595.433222	1586	257703.98	167622.9	344	195712.5383	402	3769.089	4400.699707
	17729.9772	12890.79415	811	131748.6	85695.53	176	100056.0938	206	1926.909	2249.814073
	7508.808189	1455.851437	344	55796.743	36292.84	75	42374.67472	87	816.0637	952.8169236
	4434.035583	2048.85261	203	32948.604	21431.33	44	25022.72142	52	481.8948	562.6490965
	5098.767239	3505.031384	234	37888.117	24644.22	51	28774.02083	60	554.1384	646.9990434
	40123.00366	28484.28002	1835	298147.57	193929.3	398	226427.3086	465	4360.603	5091.337526
	820.8206375	681.1837159	38	6099.3858	3967.329	9	4632.160876	10	89.20749	104.1565818
	11853.52663	1580.30995	542	88081.645	57292.47	118	66893.35016	138	1288.251	1504.13228
	24608.45265	3933.354965	1125	182861.44	118941.7	245	138873.5935	285	2674.468	3122.646039
	76803.1507	6416.342775	3511	570711.83	371218	762	433425.4447	890	8347.032	9745.799857
	57163.36885	12219.76147	2613	424771.78	276291.7	567	322591.695	662	6212.564	7253.644504
	46815.20986	4601.783941	2140	347876.28	226275.2	465	264193.6297	543	5087.917	5940.533187
	25759.47272	1241.945684	1178	191414.49	124505	256	145369.1784	299	2799.562	3268.702693

	29458.90702	10851.72996	1347	218904.39	142385.8	293	166246.3032	342	3201.619	3738.13586
	20200.43457	5687.681699	924	150106.17	97636.16	201	113997.6975	234	2195.401	2563.298388
	2410.075082	1915.721191	111	17908.879	11648.78	24	13600.84651	28	261.929	305.8222114
	8366.975591	2772.407822	383	62173.647	40440.68	83	47217.59567	97	909.3301	1061.712557
	3375.914671	3670.10757	155	25085.878	16317.04	34	19051.39704	40	366.8973	428.3807164
	4479.424358	1146.698824	205	33285.88	21650.71	45	25278.86521	52	486.8277	568.4086248
	1443.834237	2049.626877	66	10728.899	6978.584	15	8148.031564	17	156.9171	183.2127897
	6828.333799	6264.461345	313	50740.248	33003.86	68	38534.53389	80	742.1092	866.4693304
	4218.721759	2612.145847	193	31348.641	20390.64	42	23807.63468	49	458.4943	535.3272299
40	4809.046039	5833.424441	220	35735.246	23243.9	48	27139.02879	56	522.6513	610.2353845
	20982.04778	9246.062921	960	155914.21	101414	209	118408.5979	243	2280.347	2662.479812
	4738.615573	539.9390412	217	35211.888	22903.48	47	26741.5665	55	514.9968	601.2982352
	2613.899746	539.3910963	120	19423.468	12633.94	26	14751.09614	31	284.0809	331.6861814
	262192.1753	42322.00136	11985	1948307.8	1267272	2601	1479636.696	3036	28495.27	33270.41197
	17347.4164	1370.876281	793	128905.85	83846.47	173	97897.17738	201	1885.332	2201.269697
	56394.31088	6117.548799	2578	419057.03	272574.5	560	318251.6479	653	6128.982	7156.056254
	89467.01657	4008.197867	4090	664814.98	432427.1	888	504891.8057	1036	9723.352	11352.7587
	15391.31265	225.1993734	704	114370.36	74391.9	153	86858.24044	179	1672.741	1953.053374
	27903.34481	2216.437574	1276	207345.26	134867.2	277	157467.7539	324	3032.559	3540.745547
	29255.6174	3174.190919	1338	217393.78	141403.2	291	165099.0729	339	3179.526	3712.339783
	6860.464738	347.0979078	314	50979.007	33159.16	69	38715.85935	80	745.6012	870.5465291
	17729.9772	12890.79415	811	131748.6	85695.53	176	100056.0938	206	1926.909	2249.814073
	6081.002781	1212.160603	278	45186.951	29391.73	61	34317.09911	71	660.8886	771.6380838
	4434.035583	2048.85261	203	32948.604	21431.33	44	25022.72142	52	481.8948	562.6490965
	5090.825403	3461.566976	233	37829.103	24605.84	51	28729.20244	59	553.2753	645.9912781
	40123.00366	28484.28002	1835	298147.57	193929.3	398	226427.3086	465	4360.603	5091.337526
	3997.450907	781.0013248	183	29704.413	19321.16	40	22558.93048	47	434.4464	507.2494569
	820.8206375	681.1837159	38	6099.3858	3967.329	9	4632.160876	10	89.20749	104.1565818
	9228.003083	566.573787	422	68571.803	44602.35	92	52076.65706	107	1002.907	1170.971116
	24251.54975	3842.294873	1109	180209.36	117216.7	241	136859.4731	281	2635.679	3077.357477
	67902.93709	4920.463901	3104	504575.78	328200	674	383198.6115	787	7379.75	8616.423006
	7997.736172	1345.859694	366	59429.888	38656.01	80	45133.85617	93	869.2008	1014.858575

	56427.78211	10346.37014	2580	419305.75	272736.3	560	318440.5371	654	6132.62	7160.303527
	46702.66284	4427.906001	2135	347039.96	225731.2	464	263558.4898	541	5075.686	5926.251732
	8241.091078	7642.05154	377	61238.219	39832.24	82	46507.18796	96	895.6489	1045.738665
	24801.72293	1130.549876	1134	184297.6	119875.9	246	139964.2813	288	2695.473	3147.170729
	19321.82443	669.03841	884	143577.36	93389.51	192	109039.4114	224	2099.912	2451.80871
	19800.11856	4818.650624	906	147131.49	95701.28	197	111738.5825	230	2151.894	2512.500996
	4592.328992	1673.514691	210	34124.856	22196.42	46	25916.0232	54	499.0983	582.7354584
	2410.075082	1915.721191	111	17908.879	11648.78	24	13600.84651	28	261.929	305.8222114
	7363.974628	1768.166629	337	54720.508	35592.81	74	41557.33129	86	800.3231	934.4385252
	2293.111322	1616.220864	105	17039.741	11083.45	23	12940.78153	27	249.2173	290.9803021
	4479.424358	1146.698824	205	33285.88	21650.71	45	25278.86521	52	486.8277	568.4086248
	1532.827468	1634.441048	71	11390.194	7408.721	16	8650.249643	18	166.589	194.5054282
	1430.357312	1907.230928	66	10628.755	6913.445	15	8071.976843	17	155.4525	181.5026592
	5779.139015	1969.408316	265	42943.85	27932.71	58	32613.58258	67	628.0818	733.3336156
	3357.291974	747.4125428	154	24947.495	16227.03	34	18946.30303	39	364.8734	426.0176223
	1062.671708	1679.625168	49	7896.5421	5136.285	11	5997.006029	13	115.4921	134.8458454
	811.7216797	533.557424	38	6031.7729	3923.351	9	4580.812464	10	88.21861	103.0019857
50	3906.061064	4412.212021	179	29025.31	18879.44	39	22043.18753	46	424.5141	495.6527046
	902.9849746	713.571142	42	6709.9358	4364.46	9	5095.841259	11	98.13718	114.58268
	20982.04778	9246.062921	960	155914.21	101414	209	118408.5979	243	2280.347	2662.479812
	4738.615573	539.9390412	217	35211.888	22903.48	47	26741.5665	55	514.9968	601.2982352
	2469.792371	432.8593027	113	18352.629	11937.42	25	13937.85082	29	268.4192	313.3999311
	259955.1822	42165.17216	11883	1931685	1256459	2579	1467012.609	3011	28252.15	32986.5527
	11799.87851	365.6974627	540	87682.995	57033.17	118	66590.59615	137	1282.421	1497.324697
	6294.715242	210.5391	288	46775.014	30424.68	63	35523.14883	73	684.1151	798.7567482
	56394.31088	6117.548799	2578	419057.03	272574.5	560	318251.6479	653	6128.982	7156.056254
	89467.01657	4008.197867	4090	664814.98	432427.1	888	504891.8057	1036	9723.352	11352.7587
	6405.806406	123.6528651	293	47600.515	30961.63	64	36150.07281	75	696.1885	812.8534648
	8032.011816	55.86885271	368	59684.585	38821.68	80	45327.2849	94	872.9259	1019.207922
	9794.84053	39.16523356	448	72783.881	47342.08	98	55275.50724	114	1064.512	1242.898951
	13910.13133	217.0894577	636	103363.94	67232.8	138	78499.44702	162	1511.765	1765.101493
	29255.6174	3174.190919	1338	217393.78	141403.2	291	165099.0729	339	3179.526	3712.339783

	1618.875068	353.1748612	74	12029.6	7824.621	17	9135.844555	19	175.9407	205.4242861
	5424.717494	137.7319182	248	40310.201	26219.66	54	30613.46534	63	589.563	688.359924
	5213.520311	1676.690971	239	38740.829	25198.87	52	29421.61017	61	566.6099	661.5604313
	13781.21504	9896.348722	630	102405.99	66609.7	137	77771.92996	160	1497.754	1748.742888
	2081.686703	128.5304474	96	15468.678	10061.56	21	11747.64286	25	226.2395	264.1519494
	3983.85971	2379.794406	183	29603.419	19255.47	40	22482.23088	47	432.9693	505.524826
	5435.063323	1029.789837	249	40387.079	26269.67	54	30671.85026	63	590.6874	689.6727396
	4404.691726	2001.376743	202	32730.554	21289.5	44	24857.12439	52	478.7057	558.9255597
	5038.466764	3320.126185	231	37440.034	24352.77	50	28433.72541	59	547.5849	639.3473213
	37648.70597	25278.65936	1721	279761.46	181970.1	374	212464.0328	436	4091.694	4777.365901
	3997.450907	781.0013248	183	29704.413	19321.16	40	22558.93048	47	434.4464	507.2494569
	820.8206375	681.1837159	38	6099.3858	3967.329	9	4632.160876	10	89.20749	104.1565818
	10567.36112	6453.341285	484	78524.357	51075.96	105	59635.09503	123	1148.47	1340.926583
	9225.389886	552.1161773	422	68552.385	44589.72	92	52061.90993	107	1002.623	1170.63952
	16956.2999	357.185856	776	125999.53	81956.06	169	95689.97829	197	1842.825	2151.639661
	67902.93709	4920.463901	3104	504575.78	328200	674	383198.6115	787	7379.75	8616.423006
	7997.736172	1345.859694	366	59429.888	38656.01	80	45133.85617	93	869.2008	1014.858575
	55632.58174	10199.13611	2543	413396.75	268892.8	552	313952.9597	645	6046.197	7059.397983
	46702.66284	4427.906001	2135	347039.96	225731.2	464	263558.4898	541	5075.686	5926.251732
	8241.091078	7642.05154	377	61238.219	39832.24	82	46507.18796	96	895.6489	1045.738665
	20107.51529	1057.636435	920	149415.7	97187.05	200	113473.3234	233	2185.302	2551.50756
	16065.03513	495.2714274	735	119376.69	77648.25	160	90660.27802	187	1745.962	2038.544196
	7950.99694	123.914673	364	59082.576	38430.1	79	44870.09131	93	864.1212	1008.927683
	19800.11856	4818.650624	906	147131.49	95701.28	197	111738.5825	230	2151.894	2512.500996
	4592.328992	1673.514691	210	34124.856	22196.42	46	25916.0232	54	499.0983	582.7354584
	2410.075082	1915.721191	111	17908.879	11648.78	24	13600.84651	28	261.929	305.8222114
	7363.974628	1768.166629	337	54720.508	35592.81	74	41557.33129	86	800.3231	934.4385252
	2293.111322	1616.220864	105	17039.741	11083.45	23	12940.78153	27	249.2173	290.9803021
	4479.424358	1146.698824	205	33285.88	21650.71	45	25278.86521	52	486.8277	568.4086248
	1532.827468	1634.441048	71	11390.194	7408.721	16	8650.249643	18	166.589	194.5054282
	1430.357312	1907.230928	66	10628.755	6913.445	15	8071.976843	17	155.4525	181.5026592
	5779.139015	1969.408316	265	42943.85	27932.71	58	32613.58258	67	628.0818	733.3336156

	3357.291974	747.4125428	154	24947.495	16227.03	34	18946.30303	39	364.8734	426.0176223
	1062.671708	1679.625168	49	7896.5421	5136.285	11	5997.006029	13	115.4921	134.8458454
	811.7216797	533.557424	38	6031.7729	3923.351	9	4580.812464	10	88.21861	103.0019857
60	3906.061064	4412.212021	179	29025.31	18879.44	39	22043.18753	46	424.5141	495.6527046
	902.9849746	713.571142	42	6709.9358	4364.46	9	5095.841259	11	98.13718	114.58268
	20982.04778	9246.062921	960	155914.21	101414	209	118408.5979	243	2280.347	2662.479812
	4738.615573	539.9390412	217	35211.888	22903.48	47	26741.5665	55	514.9968	601.2982352
	2381.678487	399.059154	109	17697.869	11511.53	24	13440.59519	28	258.8429	302.2188758
	257262.716	41928.98934	11760	1911677.8	1243446	2552	1451818.136	2979	27959.53	32644.89696
	7918.528246	270.329661	362	58841.307	38273.17	79	44686.85979	92	860.5925	1004.807625
	7156.756955	255.8592354	328	53180.707	34591.25	71	40387.9338	83	777.8025	908.1440055
	5799.888673	174.1667695	266	43098.038	28033	58	32730.67973	68	630.3369	735.9666067
	56394.31088	6117.548799	2578	419057.03	272574.5	560	318251.6479	653	6128.982	7156.056254
	87974.08426	3603.928267	4022	653721.24	425211.2	873	496466.6976	1019	9561.099	11163.3157
	6405.806406	123.6528651	293	47600.515	30961.63	64	36150.07281	75	696.1885	812.8534648
	8032.011816	55.86885271	368	59684.585	38821.68	80	45327.2849	94	872.9259	1019.207922
	9794.84053	39.16523356	448	72783.881	47342.08	98	55275.50724	114	1064.512	1242.898951
	12988.1925	113.237567	594	96513.165	62776.73	129	73296.64293	151	1411.568	1648.113697
	29255.6174	3174.190919	1338	217393.78	141403.2	291	165099.0729	339	3179.526	3712.339783
	1618.875068	353.1748612	74	12029.6	7824.621	17	9135.844555	19	175.9407	205.4242861
	3713.690511	470.7919085	170	27595.835	17949.64	37	20957.57722	44	403.6071	471.2421838
	5424.717494	137.7319182	248	40310.201	26219.66	54	30613.46534	63	589.563	688.359924
	5213.520311	1676.690971	239	38740.829	25198.87	52	29421.61017	61	566.6099	661.5604313
	12482.39566	9766.369863	571	92754.67	60332.03	124	70442.26496	145	1356.597	1583.931502
	2081.686703	128.5304474	96	15468.678	10061.56	21	11747.64286	25	226.2395	264.1519494
	3983.85971	2379.794406	183	29603.419	19255.47	40	22482.23088	47	432.9693	505.524826
	5435.063323	1029.789837	249	40387.079	26269.67	54	30671.85026	63	590.6874	689.6727396
	4404.691726	2001.376743	202	32730.554	21289.5	44	24857.12439	52	478.7057	558.9255597
	5038.466764	3320.126185	231	37440.034	24352.77	50	28433.72541	59	547.5849	639.3473213
	37648.70597	25278.65936	1721	279761.46	181970.1	374	212464.0328	436	4091.694	4777.365901
	3714.988949	327.3963362	170	27605.484	17955.91	37	20964.90473	44	403.7482	471.4069467
	820.8206375	681.1837159	38	6099.3858	3967.329	9	4632.160876	10	89.20749	104.1565818

	5376.93861	610.4330895	246	39955.164	25988.73	54	30343.83338	63	584.3703	682.2971071
	10567.36112	6453.341285	484	78524.357	51075.96	105	59635.09503	123	1148.47	1340.926583
	16953.72647	343.3185455	775	125980.41	81943.62	169	95675.45561	197	1842.546	2151.31311
	4395.26499	249.6323442	201	32660.506	21243.94	44	24803.92622	51	477.6812	557.7293708
	58939.79256	4258.032588	2695	437972.1	284877.8	585	332616.6384	683	6405.627	7479.060647
	8842.951724	565.3876258	405	65710.549	42741.25	88	49903.68557	103	961.0596	1122.110706
	7856.150644	1277.862117	360	58377.789	37971.68	78	44334.84246	91	853.8132	996.8923296
	55632.58174	10199.13611	2543	413396.75	268892.8	552	313952.9597	645	6046.197	7059.397983
	43360.99421	4142.653765	1983	322208.56	209579.7	431	244700.3544	503	4712.51	5502.216606
	4861.017153	6485.497681	223	36121.435	23495.09	49	27432.31888	57	528.2995	616.830167
	5942.85965	979.5099954	272	44160.432	28724.04	59	33537.51198	69	645.8751	754.1086558
	3372.699199	177.1326502	155	25061.984	16301.5	34	19033.25107	40	366.5478	427.9726948
	656.321958	267.1436254	31	4877.0227	3172.246	7	3703.840714	8	71.32963	83.2828131
	20311.23934	1102.966005	929	150929.54	98171.72	202	114623.0052	236	2207.443	2577.358763
	13270.34408	343.9204932	607	98609.787	64140.47	132	74888.91708	154	1442.232	1683.916822
	7950.99694	123.914673	364	59082.576	38430.1	79	44870.09131	93	864.1212	1008.927683
	19773.19233	4623.038619	904	146931.4	95571.14	197	111586.6289	229	2148.968	2509.08424
	4565.451124	1601.504685	209	33925.131	22066.51	46	25764.34255	53	496.1771	579.324839
	1777.781698	1266.760198	82	13210.409	8592.675	18	10032.60694	21	193.2108	225.5884616
	4728.027358	672.1966695	217	35133.209	22852.3	47	26681.81372	55	513.8461	599.9546624
	1454.343633	858.0089848	67	10806.993	7029.38	15	8207.339543	17	158.0593	184.5463609
	2635.947269	790.9455044	121	19587.299	12740.51	27	14875.51757	31	286.477	334.4838628
	1303.242538	981.2281516	60	9684.1852	6299.052	13	7354.626362	16	141.6375	165.372655
	3850.431933	872.5941692	177	28611.939	18610.56	39	21729.25404	45	418.4683	488.5937444
	1045.570743	671.1043878	48	7769.4676	5053.63	11	5900.499658	13	113.6335	132.6758487
	1430.357312	1907.230928	66	10628.755	6913.445	15	8071.976843	17	155.4525	181.5026592
	1566.93594	314.8727098	72	11643.648	7573.58	16	8842.734969	19	170.2959	198.8335624
	4841.195501	1486.424569	222	35974.143	23399.29	49	27320.45878	57	526.1453	614.3149336
	3407.000079	900.3385402	156	25316.868	16467.29	34	19226.82222	40	370.2757	432.3252442
	1062.671708	1679.625168	49	7896.5421	5136.285	11	5997.006029	13	115.4921	134.8458454
	811.7216797	533.557424	38	6031.7729	3923.351	9	4580.812464	10	88.21861	103.0019857
70	3906.061064	4412.212021	179	29025.31	18879.44	39	22043.18753	46	424.5141	495.6527046

	671.6318224	373.8825272	31	4990.7878	3246.245	7	3790.239315	8	72.99352	85.22553123
	1104.244534	82.72007343	51	8205.4631	5337.222	11	6231.615159	13	120.0102	140.1211555
	20982.04778	9246.062921	960	155914.21	101414	209	118408.5979	243	2280.347	2662.479812
	3634.37104	263.9664138	167	27006.425	17566.26	37	20509.95135	43	394.9866	461.1770798
	2381.678487	399.059154	109	17697.869	11511.53	24	13440.59519	28	258.8429	302.2188758
	231.3531522	25.59477182	11	1719.148	1118.215	3	1305.601944	3	25.14366	29.35714872
	257262.716	41928.98934	11760	1911677.8	1243446	2552	1451818.136	2979	27959.53	32644.89696
	7918.528246	270.329661	362	58841.307	38273.17	79	44686.85979	92	860.5925	1004.807625
	7156.756955	255.8592354	328	53180.707	34591.25	71	40387.9338	83	777.8025	908.1440055
	6126.734697	220.6375318	281	45526.778	29612.77	61	34575.17936	71	665.8588	777.4411543
	56394.31088	6117.548799	2578	419057.03	272574.5	560	318251.6479	653	6128.982	7156.056254
	87974.08426	3603.928267	4022	653721.24	425211.2	873	496466.6976	1019	9561.099	11163.3157
	6405.806406	123.6528651	293	47600.515	30961.63	64	36150.07281	75	696.1885	812.8534648
	8032.011816	55.86885271	368	59684.585	38821.68	80	45327.2849	94	872.9259	1019.207922
	9794.84053	39.16523356	448	72783.881	47342.08	98	55275.50724	114	1064.512	1242.898951
	1214.495445	225.8424174	56	9024.7199	5870.105	13	6853.797319	15	131.9924	154.1112497
	12988.1925	113.237567	594	96513.165	62776.73	129	73296.64293	151	1411.568	1648.113697
	29255.6174	3174.190919	1338	217393.78	141403.2	291	165099.0729	339	3179.526	3712.339783
	3713.690511	470.7919085	170	27595.835	17949.64	37	20957.57722	44	403.6071	471.2421838
	1567.76606	431.9416846	72	11649.817	7577.592	16	8847.419611	19	170.3862	198.938899
	3723.28785	1151.323617	171	27667.152	17996.03	37	21011.73816	44	404.6501	472.4600211
	5424.717494	137.7319182	248	40310.201	26219.66	54	30613.46534	63	589.563	688.359924
	12482.39566	9766.369863	571	92754.67	60332.03	124	70442.26496	145	1356.597	1583.931502
	1820.962073	52.12023843	84	13531.276	8801.382	19	10276.288	22	197.9037	231.0677589
	1034.090382	78.18553574	48	7684.1589	4998.141	11	5835.712202	12	112.3858	131.2190686
	3983.85971	2379.794406	183	29603.419	19255.47	40	22482.23088	47	432.9693	505.524826
	4699.215904	898.5166451	215	34919.116	22713.05	47	26519.22121	55	510.7148	596.298684
	4404.691726	2001.376743	202	32730.554	21289.5	44	24857.12439	52	478.7057	558.9255597
	5000.94843	3278.142437	229	37161.242	24171.43	50	28221.99711	58	543.5074	634.5864988
	37648.70597	25278.65936	1721	279761.46	181970.1	374	212464.0328	436	4091.694	4777.365901
	3714.988949	327.3963362	170	27605.484	17955.91	37	20964.90473	44	403.7482	471.4069467
	820.8206375	681.1837159	38	6099.3858	3967.329	9	4632.160876	10	89.20749	104.1565818

	5376.93861	610.4330895	246	39955.164	25988.73	54	30343.83338	63	584.3703	682.2971071
	10567.36112	6453.341285	484	78524.357	51075.96	105	59635.09503	123	1148.47	1340.926583
	16953.72647	343.3185455	775	125980.41	81943.62	169	95675.45561	197	1842.546	2151.31311
	4395.26499	249.6323442	201	32660.506	21243.94	44	24803.92622	51	477.6812	557.7293708
	58939.79256	4258.032588	2695	437972.1	284877.8	585	332616.6384	683	6405.627	7479.060647
	8842.951724	565.3876258	405	65710.549	42741.25	88	49903.68557	103	961.0596	1122.110706
	7856.150644	1277.862117	360	58377.789	37971.68	78	44334.84246	91	853.8132	996.8923296
	1331.356877	2229.103297	61	9893.0983	6434.939	14	7513.284822	16	144.693	168.9401742
	55632.58174	10199.13611	2543	413396.75	268892.8	552	313952.9597	645	6046.197	7059.397983
	43359.7877	4108.899551	1982	322199.59	209573.9	431	244693.5457	503	4712.379	5502.063508
	7508.409464	3951.317826	344	55793.78	36290.92	75	42372.42459	87	816.0204	952.7663281
	3372.699199	177.1326502	155	25061.984	16301.5	34	19033.25107	40	366.5478	427.9726948
	2009.779053	887.9332888	92	14934.344	9714.004	20	11341.84434	24	218.4245	255.0273554
	656.321958	267.1436254	31	4877.0227	3172.246	7	3703.840714	8	71.32963	83.2828131
	20311.23934	1102.966005	929	150929.54	98171.72	202	114623.0052	236	2207.443	2577.358763
	10882.84766	197.3656483	498	80868.686	52600.82	108	61415.48939	127	1182.757	1380.95969
	7950.99694	123.914673	364	59082.576	38430.1	79	44870.09131	93	864.1212	1008.927683
	18333.21981	4280.965498	839	136231.2	88611.22	182	103460.3903	213	1992.47	2326.361475
	4154.375934	361.7300176	190	30870.498	20079.63	42	23444.51003	49	451.5011	527.1621804
	1536.197946	354.776138	71	11415.239	7425.012	16	8669.270362	18	166.9553	194.9331192
	2876.447051	950.4629818	132	21374.414	13902.93	29	16232.73695	34	312.6147	365.0016569
	1777.781698	1266.760198	82	13210.409	8592.675	18	10032.60694	21	193.2108	225.5884616
	4604.483327	618.7272381	211	34215.173	22255.17	46	25984.61411	54	500.4192	584.2777613
	1359.324723	674.86184	63	10100.923	6570.118	14	7671.116576	16	147.7326	172.4891045
	2635.947269	790.9455044	121	19587.299	12740.51	27	14875.51757	31	286.477	334.4838628
	1303.242538	981.2281516	60	9684.1852	6299.052	13	7354.626362	16	141.6375	165.372655
	3850.431933	872.5941692	177	28611.939	18610.56	39	21729.25404	45	418.4683	488.5937444
	1045.570743	671.1043878	48	7769.4676	5053.63	11	5900.499658	13	113.6335	132.6758487
	1195.025853	1430.958579	55	8880.0445	5776.001	12	6743.924007	14	129.8764	151.6406903
	1566.93594	314.8727098	72	11643.648	7573.58	16	8842.734969	19	170.2959	198.8335624
	4500.1955	1090.143086	206	33440.227	21751.11	45	25396.0836	53	489.0851	571.0443421
	341.0000005	36.45826909	16	2533.916	1648.179	4	1924.375179	4	37.06017	43.27059145

	235.3314586	14.02160506	11	1748.7101	1137.444	3	1328.052836	3	25.57603	29.86196887
	1556.103382	438.5307939	72	11563.153	7521.222	16	8781.603281	19	169.1187	197.4589841
	1850.896697	214.8792463	85	13753.715	8946.067	19	10445.21894	22	201.157	234.8662601
	1062.671708	1679.625168	49	7896.5421	5136.285	11	5997.006029	13	115.4921	134.8458454
	811.7216797	533.557424	38	6031.7729	3923.351	9	4580.812464	10	88.21861	103.0019857
80	3906.061064	4412.212021	179	29025.31	18879.44	39	22043.18753	46	424.5141	495.6527046
	671.6318224	373.8825272	31	4990.7878	3246.245	7	3790.239315	8	72.99352	85.22553123
	1104.244534	82.72007343	51	8205.4631	5337.222	11	6231.615159	13	120.0102	140.1211555
	20982.04778	9246.062921	960	155914.21	101414	209	118408.5979	243	2280.347	2662.479812
	3634.37104	263.9664138	167	27006.425	17566.26	37	20509.95135	43	394.9866	461.1770798
	2381.678487	399.059154	109	17697.869	11511.53	24	13440.59519	28	258.8429	302.2188758
	231.3531522	25.59477182	11	1719.148	1118.215	3	1305.601944	3	25.14366	29.35714872
	257262.716	41928.98934	11760	1911677.8	1243446	2552	1451818.136	2979	27959.53	32644.89696
	6739.19153	234.2655275	309	50077.846	32573	67	38031.47474	79	732.4211	855.1577801
	5772.110691	190.840385	264	42891.624	27898.74	58	32573.91943	67	627.3179	732.4417687
	4278.513876	99.04815982	196	31792.947	20679.64	43	24145.06127	50	464.9926	542.9144448
	4412.203801	162.318961	202	32786.375	21325.81	44	24899.5175	52	479.5221	559.8787912
	56394.31088	6117.548799	2578	419057.03	272574.5	560	318251.6479	653	6128.982	7156.056254
	87974.08426	3603.928267	4022	653721.24	425211.2	873	496466.6976	1019	9561.099	11163.3157
	6405.806406	123.6528651	293	47600.515	30961.63	64	36150.07281	75	696.1885	812.8534648
	8032.011816	55.86885271	368	59684.585	38821.68	80	45327.2849	94	872.9259	1019.207922
	9794.84053	39.16523356	448	72783.881	47342.08	98	55275.50724	114	1064.512	1242.898951
	1214.495445	225.8424174	56	9024.7199	5870.105	13	6853.797319	15	131.9924	154.1112497
	12988.1925	113.237567	594	96513.165	62776.73	129	73296.64293	151	1411.568	1648.113697
	28891.54241	3157.760264	1321	214688.39	139643.5	287	163044.4781	335	3139.958	3666.141133
	3713.690511	470.7919085	170	27595.835	17949.64	37	20957.57722	44	403.6071	471.2421838
	1567.76606	431.9416846	72	11649.817	7577.592	16	8847.419611	19	170.3862	198.938899
	2865.035042	32.69989276	131	21289.614	13847.77	29	16168.33523	34	311.3745	363.5535502
	3723.28785	1151.323617	171	27667.152	17996.03	37	21011.73816	44	404.6501	472.4600211
	2923.757433	82.14393581	134	21725.97	14131.6	29	16499.725	34	317.7565	371.0050241
	12482.39566	9766.369863	571	92754.67	60332.03	124	70442.26496	145	1356.597	1583.931502
	1820.962073	52.12023843	84	13531.276	8801.382	19	10276.288	22	197.9037	231.0677589

	1033.503164	67.92481916	48	7679.7954	4995.302	11	5832.398339	12	112.322	131.1445546
	3983.85971	2379.794406	183	29603.419	19255.47	40	22482.23088	47	432.9693	505.524826
	1659.709065	83.98546572	76	12333.03	8021.987	17	9366.284234	20	180.3786	210.6058439
	3041.737196	777.6397294	140	22602.659	14701.84	31	17165.52361	36	330.5786	385.9758573
	4404.691726	2001.376743	202	32730.554	21289.5	44	24857.12439	52	478.7057	558.9255597
	4933.3975	2992.594873	226	36659.281	23844.93	49	27840.78499	58	536.1659	626.014743
	37648.70597	25278.65936	1721	279761.46	181970.1	374	212464.0328	436	4091.694	4777.365901
	1538.39432	545.2682633	71	11431.56	7435.628	16	8681.66522	18	167.194	195.2118241
	2515.139614	170.6509245	115	18689.597	12156.6	25	14193.76023	30	273.3475	319.1541892
	462.7483122	413.0059561	22	3438.6081	2236.633	5	2611.440953	6	50.29188	58.71962796
	5104.301416	227.1579382	234	37929.241	24670.97	51	28805.25201	60	554.7399	647.701293
	10567.36112	6453.341285	484	78524.357	51075.96	105	59635.09503	123	1148.47	1340.926583
	16953.72647	343.3185455	775	125980.41	81943.62	169	95675.45561	197	1842.546	2151.31311
	4395.26499	249.6323442	201	32660.506	21243.94	44	24803.92622	51	477.6812	557.7293708
	358.0723252	34.4875168	17	2660.7777	1730.696	4	2020.719923	5	38.91561	45.43695388
	58939.79256	4258.032588	2695	437972.1	284877.8	585	332616.6384	683	6405.627	7479.060647
	8842.951724	565.3876258	405	65710.549	42741.25	88	49903.68557	103	961.0596	1122.110706
	7856.150644	1277.862117	360	58377.789	37971.68	78	44334.84246	91	853.8132	996.8923296
	1331.356877	2229.103297	61	9893.0983	6434.939	14	7513.284822	16	144.693	168.9401742
	55632.58174	10199.13611	2543	413396.75	268892.8	552	313952.9597	645	6046.197	7059.397983
	43359.7877	4108.899551	1982	322199.59	209573.9	431	244693.5457	503	4712.379	5502.063508
	4048.657836	3859.829125	186	30084.924	19568.66	41	22847.90802	47	440.0116	513.7472695
	3053.930616	114.2013239	140	22693.266	14760.77	31	17234.33509	36	331.9038	387.5231196
	1709.604482	559.2437555	79	12703.795	8263.15	17	9647.860484	20	185.8013	216.9372345
	656.321958	267.1436254	31	4877.0227	3172.246	7	3703.840714	8	71.32963	83.2828131
	18567.27079	832.6800775	849	137970.4	89742.48	185	104781.217	215	2017.907	2356.06096
	3382.771076	95.56382807	155	25136.827	16350.18	34	19090.08999	40	367.6425	429.2507478
	1827.982517	136.2859962	84	13583.443	8835.315	19	10315.90668	22	198.6667	231.9586058
	11914.06527	219.4842997	545	88531.498	57585.08	119	67234.98961	138	1294.831	1511.814223
	7901.97793	79.1063336	362	58718.324	38193.18	79	44593.46091	92	858.7937	1002.707502
	18333.21981	4280.965498	839	136231.2	88611.22	182	103460.3903	213	1992.47	2326.361475
	1917.755994	125.7127853	88	14250.536	9269.223	20	10822.52795	23	208.4234	243.3502523

	2590.472421	363.8964791	119	19249.383	12520.71	26	14618.88804	30	281.5348	328.7134124
	1536.197946	354.776138	71	11415.239	7425.012	16	8669.270362	18	166.9553	194.9331192
	2152.305709	746.4701762	99	15993.437	10402.89	22	12146.16914	25	233.9144	273.1130231
	1777.781698	1266.760198	82	13210.409	8592.675	18	10032.60694	21	193.2108	225.5884616
	4063.483253	370.3653507	186	30195.089	19640.32	41	22931.57273	48	441.6229	515.6285146
	1359.324723	674.86184	63	10100.923	6570.118	14	7671.116576	16	147.7326	172.4891045
	541.0000739	60.03416475	25	4020.0843	2614.853	6	3053.041386	7	58.79635	68.64924674
	2635.947269	790.9455044	121	19587.299	12740.51	27	14875.51757	31	286.477	334.4838628
	1303.242538	981.2281516	60	9684.1852	6299.052	13	7354.626362	16	141.6375	165.372655
	3850.431933	872.5941692	177	28611.939	18610.56	39	21729.25404	45	418.4683	488.5937444
	1045.570743	671.1043878	48	7769.4676	5053.63	11	5900.499658	13	113.6335	132.6758487
	1195.025853	1430.958579	55	8880.0445	5776.001	12	6743.924007	14	129.8764	151.6406903
	1566.93594	314.8727098	72	11643.648	7573.58	16	8842.734969	19	170.2959	198.8335624
	4464.77044	971.9326067	205	33176.989	21579.88	45	25196.16833	52	485.2351	566.5491418
	341.0000005	36.45826909	16	2533.916	1648.179	4	1924.375179	4	37.06017	43.27059145
	732.8624823	187.3380009	34	5445.783	3542.195	8	4135.784072	9	79.64812	92.99528744
	235.3314586	14.02160506	11	1748.7101	1137.444	3	1328.052836	3	25.57603	29.86196887
	584.8730611	605.5453325	27	4346.0974	2826.907	6	3300.631085	7	63.56451	74.21643179
	2674.137597	387.2912727	123	19871.085	12925.09	27	15091.03815	31	290.6276	339.3299568
	610.9454435	1047.671872	28	4539.8371	2952.925	7	3447.766116	8	66.39808	77.52484061
	713.9999437	108.6962726	33	5305.6185	3451.025	8	4029.336561	9	77.59813	90.60175899
90	3906.061064	4412.212021	179	29025.31	18879.44	39	22043.18753	46	424.5141	495.6527046
	671.6318224	373.8825272	31	4990.7878	3246.245	7	3790.239315	8	72.99352	85.22553123
	1104.244534	82.72007343	51	8205.4631	5337.222	11	6231.615159	13	120.0102	140.1211555
	20982.04778	9246.062921	960	155914.21	101414	209	118408.5979	243	2280.347	2662.479812
	3634.37104	263.9664138	167	27006.425	17566.26	37	20509.95135	43	394.9866	461.1770798
	2381.678487	399.059154	109	17697.869	11511.53	24	13440.59519	28	258.8429	302.2188758
	231.3531522	25.59477182	11	1719.148	1118.215	3	1305.601944	3	25.14366	29.35714872
	256814.7677	41827.38059	11739	1908349.1	1241281	2547	1449290.217	2974	27910.85	32588.05536
	3399.545822	226.4211563	156	25261.477	16431.26	34	19184.7554	40	369.4656	431.3793495
	3720.748993	13.01863642	171	27648.286	17983.75	37	20997.41055	44	404.3742	472.1378573
	3852.268394	87.05071092	177	28625.585	18619.44	39	21739.61779	45	418.6678	488.8267788

	2001.73526	106.935443	92	14874.572	9675.126	20	11296.45057	24	217.5503	254.0066525
	4278.513876	99.04815982	196	31792.947	20679.64	43	24145.06127	50	464.9926	542.9144448
	4412.203801	162.318961	202	32786.375	21325.81	44	24899.5175	52	479.5221	559.8787912
	56394.31088	6117.548799	2578	419057.03	272574.5	560	318251.6479	653	6128.982	7156.056254
	87678.25342	3599.368711	4008	651522.97	423781.4	870	494797.2269	1016	9528.948	11125.77677
	6390.758415	93.43810979	293	47488.695	30888.9	64	36065.15205	74	694.5531	810.9439767
	6976.341108	43.79037547	319	51840.066	33719.23	70	39369.78782	81	758.1947	885.2504559
	3241.982689	18.02866687	149	24090.651	15669.7	33	18295.5748	38	352.3415	411.3856546
	6558.936646	15.30314558	300	48738.401	31701.76	66	37014.23713	76	712.8309	832.2846555
	2459.854296	40.13268812	113	18278.781	11889.38	25	13881.76699	29	267.3391	312.1388566
	1214.495445	225.8424174	56	9024.7199	5870.105	13	6853.797319	15	131.9924	154.1112497
	11934.54812	78.19100624	546	88683.703	57684.08	119	67350.58105	139	1297.057	1514.413358
	28891.54241	3157.760264	1321	214688.39	139643.5	287	163044.4781	335	3139.958	3666.141133
	3713.690511	470.7919085	170	27595.835	17949.64	37	20957.57722	44	403.6071	471.2421838
	1563.713583	418.225316	72	11619.704	7558.005	16	8824.550151	19	169.9457	198.4246672
	2865.035042	32.69989276	131	21289.614	13847.77	29	16168.33523	34	311.3745	363.5535502
	3666.553163	1143.913743	168	27245.565	17721.81	37	20691.56565	43	398.4841	465.2607733
	2923.757433	82.14393581	134	21725.97	14131.6	29	16499.725	34	317.7565	371.0050241
	12482.39566	9766.369863	571	92754.67	60332.03	124	70442.26496	145	1356.597	1583.931502
	1820.962073	52.12023843	84	13531.276	8801.382	19	10276.288	22	197.9037	231.0677589
	1033.503164	67.92481916	48	7679.7954	4995.302	11	5832.398339	12	112.322	131.1445546
	3983.85971	2379.794406	183	29603.419	19255.47	40	22482.23088	47	432.9693	505.524826
	1659.709065	83.98546572	76	12333.03	8021.987	17	9366.284234	20	180.3786	210.6058439
	3041.737196	777.6397294	140	22602.659	14701.84	31	17165.52361	36	330.5786	385.9758573
	4404.691726	2001.376743	202	32730.554	21289.5	44	24857.12439	52	478.7057	558.9255597
	4933.3975	2992.594873	226	36659.281	23844.93	49	27840.78499	58	536.1659	626.014743
	37648.70597	25278.65936	1721	279761.46	181970.1	374	212464.0328	436	4091.694	4777.365901
	1538.39432	545.2682633	71	11431.56	7435.628	16	8681.66522	18	167.194	195.2118241
	2515.139614	170.6509245	115	18689.597	12156.6	25	14193.76023	30	273.3475	319.1541892
	462.7483122	413.0059561	22	3438.6081	2236.633	5	2611.440953	6	50.29188	58.71962796
	3747.303812	203.2395719	172	27845.61	18112.1	38	21147.26813	44	407.2602	475.507484
	10567.36112	6453.341285	484	78524.357	51075.96	105	59635.09503	123	1148.47	1340.926583

	3171.401547	145.2578492	145	23566.174	15328.55	32	17897.2622	37	344.6706	402.4293856
	16956.2999	357.185856	776	125999.53	81956.06	169	95689.97829	197	1842.825	2151.639661
	2949.802616	158.5842162	135	21919.508	14257.49	30	16646.70654	35	320.5871	374.3099815
	358.0723252	34.4875168	17	2660.7777	1730.696	4	2020.719923	5	38.91561	45.43695388
	58568.27757	4173.246665	2678	435211.43	283082.1	581	330520.0571	679	6365.251	7431.917909
	8842.951724	565.3876258	405	65710.549	42741.25	88	49903.68557	103	961.0596	1122.110706
	7856.150644	1277.862117	360	58377.789	37971.68	78	44334.84246	91	853.8132	996.8923296
	1331.356877	2229.103297	61	9893.0983	6434.939	14	7513.284822	16	144.693	168.9401742
	55632.58174	10199.13611	2543	413396.75	268892.8	552	313952.9597	645	6046.197	7059.397983
	43359.7877	4108.899551	1982	322199.59	209573.9	431	244693.5457	503	4712.379	5502.063508
	4048.657836	3859.829125	186	30084.924	19568.66	41	22847.90802	47	440.0116	513.7472695
	3053.930616	114.2013239	140	22693.266	14760.77	31	17234.33509	36	331.9038	387.5231196
	1709.604482	559.2437555	79	12703.795	8263.15	17	9647.860484	20	185.8013	216.9372345
	656.321958	267.1436254	31	4877.0227	3172.246	7	3703.840714	8	71.32963	83.2828131
	18567.27079	832.6800775	849	137970.4	89742.48	185	104781.217	215	2017.907	2356.06096
	3382.771076	95.56382807	155	25136.827	16350.18	34	19090.08999	40	367.6425	429.2507478
	1827.982517	136.2859962	84	13583.443	8835.315	19	10315.90668	22	198.6667	231.9586058
	11914.06527	219.4842997	545	88531.498	57585.08	119	67234.98961	138	1294.831	1511.814223
	7901.97793	79.1063336	362	58718.324	38193.18	79	44593.46091	92	858.7937	1002.707502
	16138.27305	3588.886768	738	119920.91	78002.23	161	91073.58368	187	1753.921	2047.837592
	1917.755994	125.7127853	88	14250.536	9269.223	20	10822.52795	23	208.4234	243.3502523
	2590.472421	363.8964791	119	19249.383	12520.71	26	14618.88804	30	281.5348	328.7134124
	2289.474974	344.3581251	105	17012.719	11065.88	23	12920.26043	27	248.8221	290.5188742
	1410.117388	329.4402641	65	10478.355	6815.618	14	7957.756293	17	153.2528	178.9343498
	2152.305709	746.4701762	99	15993.437	10402.89	22	12146.16914	25	233.9144	273.1130231
	1777.781698	1266.760198	82	13210.409	8592.675	18	10032.60694	21	193.2108	225.5884616
	4063.483253	370.3653507	186	30195.089	19640.32	41	22931.57273	48	441.6229	515.6285146
	1359.324723	674.86184	63	10100.923	6570.118	14	7671.116576	16	147.7326	172.4891045
	221.9034792	121.7438772	11	1648.929	1072.541	3	1252.274331	3	24.11666	28.1580492
	541.0000739	60.03416475	25	4020.0843	2614.853	6	3053.041386	7	58.79635	68.64924674
	2635.947269	790.9455044	121	19587.299	12740.51	27	14875.51757	31	286.477	334.4838628
	1301.783871	912.7336138	60	9673.3461	6292.002	13	7346.394622	16	141.479	165.18756

	3139.557459	686.2587614	144	23329.545	15174.64	32	17717.55553	37	341.2098	398.3885863
	1046.759612	157.2943513	48	7778.3019	5059.376	11	5907.208836	13	113.7627	132.8267081
	856.6782745	116.7654818	40	6365.8381	4140.642	9	4834.517318	10	93.10453	108.7066732
	616.8829579	852.3800526	29	4583.9578	2981.623	7	3481.273462	8	67.04337	78.27827099
	578.1428952	37.09729096	27	4296.0866	2794.378	6	3262.650545	7	62.83307	73.36241931
	1260.757638	299.6826153	58	9368.4867	6093.707	13	7114.870091	15	137.0202	159.9816087
	4435.063604	916.9588579	203	32956.243	21436.3	44	25028.52289	52	482.0065	562.7795455
	341.0000005	36.45826909	16	2533.916	1648.179	4	1924.375179	4	37.06017	43.27059145
	729.1410196	173.6762428	34	5418.1294	3524.208	8	4114.782633	9	79.24367	92.52305901
	235.3314586	14.02160506	11	1748.7101	1137.444	3	1328.052836	3	25.57603	29.86196887
	998.149712	148.069773	46	7417.0896	4824.426	10	5632.887178	12	108.4798	126.6584409
	584.8730611	605.5453325	27	4346.0974	2826.907	6	3300.631085	7	63.56451	74.21643179
	1679.709347	164.7585091	77	12481.649	8118.656	17	9479.152407	20	182.5523	213.1437443
	610.9454435	1047.671872	28	4539.8371	2952.925	7	3447.766116	8	66.39808	77.52484061
	713.9999437	108.6962726	33	5305.6185	3451.025	8	4029.336561	9	77.59813	90.60175899
100	3906.061064	4412.212021	179	29025.31	18879.44	39	22043.18753	46	424.5141	495.6527046
	671.6318224	373.8825272	31	4990.7878	3246.245	7	3790.239315	8	72.99352	85.22553123
	1104.244534	82.72007343	51	8205.4631	5337.222	11	6231.615159	13	120.0102	140.1211555
	20982.04778	9246.062921	960	155914.21	101414	209	118408.5979	243	2280.347	2662.479812
	3634.37104	263.9664138	167	27006.425	17566.26	37	20509.95135	43	394.9866	461.1770798
	2381.678487	399.059154	109	17697.869	11511.53	24	13440.59519	28	258.8429	302.2188758
	231.3531522	25.59477182	11	1719.148	1118.215	3	1305.601944	3	25.14366	29.35714872
	256814.7677	41827.38059	11739	1908349.1	1241281	2547	1449290.217	2974	27910.85	32588.05536
	3399.545822	226.4211563	156	25261.477	16431.26	34	19184.7554	40	369.4656	431.3793495
	3720.748993	13.01863642	171	27648.286	17983.75	37	20997.41055	44	404.3742	472.1378573
	3852.268394	87.05071092	177	28625.585	18619.44	39	21739.61779	45	418.6678	488.8267788
	2001.73526	106.935443	92	14874.572	9675.126	20	11296.45057	24	217.5503	254.0066525
	4278.513876	99.04815982	196	31792.947	20679.64	43	24145.06127	50	464.9926	542.9144448
	4412.203801	162.318961	202	32786.375	21325.81	44	24899.5175	52	479.5221	559.8787912
	56394.31088	6117.548799	2578	419057.03	272574.5	560	318251.6479	653	6128.982	7156.056254
	82561.99973	3478.347075	3774	613504.91	399052.6	819	465924.5242	956	8972.909	10476.55881
	6390.758415	93.43810979	293	47488.695	30888.9	64	36065.15205	74	694.5531	810.9439767

	6976.341108	43.79037547	319	51840.066	33719.23	70	39369.78782	81	758.1947	885.2504559
	5116.253693	108.1095221	234	38018.056	24728.74	51	28872.70264	60	556.0388	649.2179559
	3241.982689	18.02866687	149	24090.651	15669.7	33	18295.5748	38	352.3415	411.3856546
	6558.936646	15.30314558	300	48738.401	31701.76	66	37014.23713	76	712.8309	832.2846555
	2459.854296	40.13268812	113	18278.781	11889.38	25	13881.76699	29	267.3391	312.1388566
	1105.546793	95.4601436	51	8215.14	5343.516	11	6238.964234	13	120.1518	140.2864033
	11934.54812	78.19100624	546	88683.703	57684.08	119	67350.58105	139	1297.057	1514.413358
	28891.54241	3157.760264	1321	214688.39	139643.5	287	163044.4781	335	3139.958	3666.141133
	3713.690511	470.7919085	170	27595.835	17949.64	37	20957.57722	44	403.6071	471.2421838
	1563.713583	418.225316	72	11619.704	7558.005	16	8824.550151	19	169.9457	198.4246672
	2865.035042	32.69989276	131	21289.614	13847.77	29	16168.33523	34	311.3745	363.5535502
	3666.553163	1143.913743	168	27245.565	17721.81	37	20691.56565	43	398.4841	465.2607733
	2923.757433	82.14393581	134	21725.97	14131.6	29	16499.725	34	317.7565	371.0050241
	108.9486523	3.05603852	5	809.57987	526.5891	2	614.8330847	2	11.84063	13.82484638
	12482.39566	9766.369863	571	92754.67	60332.03	124	70442.26496	145	1356.597	1583.931502
	1820.962073	52.12023843	84	13531.276	8801.382	19	10276.288	22	197.9037	231.0677589
	1033.503164	67.92481916	48	7679.7954	4995.302	11	5832.398339	12	112.322	131.1445546
	3983.85971	2379.794406	183	29603.419	19255.47	40	22482.23088	47	432.9693	505.524826
	1659.709065	83.98546572	76	12333.03	8021.987	17	9366.284234	20	180.3786	210.6058439
	3041.737196	777.6397294	140	22602.659	14701.84	31	17165.52361	36	330.5786	385.9758573
	1923.976617	256.9949579	88	14296.76	9299.289	20	10857.63296	23	209.0994	244.1396071
	2485.717793	1873.112053	114	18470.968	12014.39	25	14027.72321	29	270.1499	315.4207593
	4933.3975	2992.594873	226	36659.281	23844.93	49	27840.78499	58	536.1659	626.014743
	37648.70597	25278.65936	1721	279761.46	181970.1	374	212464.0328	436	4091.694	4777.365901
	1538.39432	545.2682633	71	11431.56	7435.628	16	8681.66522	18	167.194	195.2118241
	2515.139614	170.6509245	115	18689.597	12156.6	25	14193.76023	30	273.3475	319.1541892
	457.7456283	156.8408779	21	3401.434	2212.454	5	2583.209161	6	49.74819	58.08482124
	4380.591712	197.7981083	201	32551.471	21173.02	44	24721.12008	51	476.0865	555.8674311
	10567.36112	6453.341285	484	78524.357	51075.96	105	59635.09503	123	1148.47	1340.926583
	16956.2999	357.185856	776	125999.53	81956.06	169	95689.97829	197	1842.825	2151.639661
	3345.315844	159.1779166	153	24858.503	16169.15	34	18878.71779	39	363.5718	424.4979325
	2301.679174	75.23697871	106	17103.407	11124.87	23	12989.13275	27	250.1485	292.0675046

	358.0723252	34.4875168	17	2660.7777	1730.696	4	2020.719923	5	38.91561	45.43695388
	58409.19881	4238.438801	2670	434029.34	282313.2	580	329622.3233	677	6347.962	7411.731892
	8842.951724	565.3876258	405	65710.549	42741.25	88	49903.68557	103	961.0596	1122.110706
	7856.150644	1277.862117	360	58377.789	37971.68	78	44334.84246	91	853.8132	996.8923296
	1331.356877	2229.103297	61	9893.0983	6434.939	14	7513.284822	16	144.693	168.9401742
	55632.58174	10199.13611	2543	413396.75	268892.8	552	313952.9597	645	6046.197	7059.397983
	43359.7877	4108.899551	1982	322199.59	209573.9	431	244693.5457	503	4712.379	5502.063508
	4048.657836	3859.829125	186	30084.924	19568.66	41	22847.90802	47	440.0116	513.7472695
	3053.930616	114.2013239	140	22693.266	14760.77	31	17234.33509	36	331.9038	387.5231196
	1709.604482	559.2437555	79	12703.795	8263.15	17	9647.860484	20	185.8013	216.9372345
	656.321958	267.1436254	31	4877.0227	3172.246	7	3703.840714	8	71.32963	83.2828131
	2620.672613	20.98964122	120	19473.796	12666.68	26	14789.31766	31	284.817	332.5456123
	15946.59817	799.2307949	729	118496.6	77075.8	159	89991.89932	185	1733.09	2023.515348
	984.5152626	39.66254987	46	7315.7742	4758.526	10	5555.943495	12	106.998	124.9283215
	3382.771076	95.56382807	155	25136.827	16350.18	34	19090.08999	40	367.6425	429.2507478
	10549.95356	179.8451504	483	78395.004	50991.82	105	59536.85849	123	1146.578	1338.717683
	1139.352953	799.8550065	53	8466.3481	5506.914	12	6429.743515	14	123.8259	144.5761761
	7901.97793	79.1063336	362	58718.324	38193.18	79	44593.46091	92	858.7937	1002.707502
	2019.101924	42.53409372	93	15003.621	9759.065	21	11394.45636	24	219.4377	256.2103646
	843.4672546	60.05773086	39	6267.6692	4076.789	9	4759.963187	10	91.66875	107.0302842
	14998.92009	2574.451767	686	111454.56	72495.32	149	84643.84017	174	1630.096	1903.261416
	1580.036077	112.4690192	73	11740.993	7636.898	16	8916.663355	19	171.7197	200.4958812
	2273.202124	334.3202737	104	16891.798	10987.23	23	12828.42738	27	247.0536	288.4539596
	2289.474974	344.3581251	105	17012.719	11065.88	23	12920.26043	27	248.8221	290.5188742
	1410.117388	329.4402641	65	10478.355	6815.618	14	7957.756293	17	153.2528	178.9343498
	2152.305709	746.4701762	99	15993.437	10402.89	22	12146.16914	25	233.9144	273.1130231
	1777.781698	1266.760198	82	13210.409	8592.675	18	10032.60694	21	193.2108	225.5884616
	4063.483253	370.3653507	186	30195.089	19640.32	41	22931.57273	48	441.6229	515.6285146
	863.186125	273.2172007	40	6414.1969	4172.097	9	4871.243258	10	93.81181	109.5324754
	221.9034792	121.7438772	11	1648.929	1072.541	3	1252.274331	3	24.11666	28.1580492
	541.0000739	60.03416475	25	4020.0843	2614.853	6	3053.041386	7	58.79635	68.64924674
	2635.947269	790.9455044	121	19587.299	12740.51	27	14875.51757	31	286.477	334.4838628

	669.0744464	225.3175597	31	4971.7843	3233.884	7	3775.807201	8	72.71559	84.90101753
	675.2317848	106.32593	31	5017.5385	3263.645	7	3810.555087	8	73.38477	85.68234209
	453.6162376	351.2142079	21	3370.7491	2192.495	5	2559.905651	6	49.2994	57.56082951
	3139.557459	686.2587614	144	23329.545	15174.64	32	17717.55553	37	341.2098	398.3885863
	1046.759612	157.2943513	48	7778.3019	5059.376	11	5907.208836	13	113.7627	132.8267081
	856.6782745	116.7654818	40	6365.8381	4140.642	9	4834.517318	10	93.10453	108.7066732
	616.8829579	852.3800526	29	4583.9578	2981.623	7	3481.273462	8	67.04337	78.27827099
	578.1428952	37.09729096	27	4296.0866	2794.378	6	3262.650545	7	62.83307	73.36241931
	1260.757638	299.6826153	58	9368.4867	6093.707	13	7114.870091	15	137.0202	159.9816087
	4348.618771	755.6083879	199	32313.885	21018.48	44	24540.68625	51	472.6116	551.8102813
	163.2633056	131.9384073	8	1213.1833	789.1118	2	921.3485412	2	17.7436	20.71700817
	341.0000005	36.45826909	16	2533.916	1648.179	4	1924.375179	4	37.06017	43.27059145
	729.1410196	173.6762428	34	5418.1294	3524.208	8	4114.782633	9	79.24367	92.52305901
	235.3314586	14.02160506	11	1748.7101	1137.444	3	1328.052836	3	25.57603	29.86196887
	998.149712	148.069773	46	7417.0896	4824.426	10	5632.887178	12	108.4798	126.6584409
	508.054589	213.8560227	24	3775.2717	2455.615	6	2867.119176	6	55.21581	64.46868775
	1679.709347	164.7585091	77	12481.649	8118.656	17	9479.152407	20	182.5523	213.1437443
	610.9454435	1047.671872	28	4539.8371	2952.925	7	3447.766116	8	66.39808	77.52484061
	713.9999437	108.6962726	33	5305.6185	3451.025	8	4029.336561	9	77.59813	90.60175899

Emission Calculations

	Biomass to AD			On-site	SNG to RH2		AD to HRS				TOTAL [kg CO2eq / kg H2]	
Scenario	SNG Output [Mjout]	Distance [mi]	Transportation [g CO2eq]	AD&Cleanup [g CO2eq]	SMR/PSA [gCO2eq/yr]	Tri-Gen/PSA [gCO2eq/yr]	Distance [mi]	SMR [g CO2eq]	Distance [mi]	TG [g CO2eq]	SMR	Tri-Gen
1	6955419.18	1021170.435	6.04854E+13	-430902080.5	4.71401E+11	2.50175E+11	29829.17759	3.83337E+11	34834.75662	5.22701E+11	5409.948849	5801.72713
5	2377610.47	86693.01041	1.75534E+12	-147297707	1.61142E+11	85518667948	2387.545175	10490821681	2858.206095	14659958414	452.6657667	485.2784026
	1764708.88	42546.13727	6.39412E+11	-109327232.4	1.19602E+11	63473624132	1667.189652	5437650335	1972.352633	7508760338	291.2374251	313.0619374
	446641.935	57563.25362	2.18984E+11	-27670358.06	30270965140	16064962662	1216.674386	1005540764	1378.97652	1328669899	258.4576272	258.6253919
	1181818.92	18465.69983	1.85845E+11	-73216037.56	80097269298	42508048047	500.6967848	1093787073	609.7049551	1554749176	105.4214226	108.0287986

	1184638.97	145942.3672	1.47245E+12	-73390745.49	80288397197	42609480643	645.3067558	1413265235	426.7506609	1090578380	327.0867707	259.0874213
10	226861.349	21691.50672	41920468051	-14054512.68	15375430359	8159822903	715.1801429	299991577.1	595.7648746	291963889.9	137.7121213	110.7718568
	2150749.12	49555.30498	9.07614E+11	-133243194.3	1.45766E+11	77358845045	2135.324688	8486880726	2913.934473	13521808352	361.5351158	441.6318907
	1477734.47	28199.64699	3.549E+11	-91548595.46	1.00153E+11	53151634860	1464.418967	3999847333	1592.417028	5076936551	242.7408811	245.4815091
	323252.9	12581.63695	34643592175	-20026161.37	21908326285	11626865617	193.7669053	115881560.5	251.5903677	175539772.6	57.2706877	54.75552987
	391550.387	47074.31818	1.5699E+11	-24257326.84	26537159134	14083411899	1034.693162	749142184	1206.413043	1020441750	218.6065567	222.7033093
	836489.946	12228.1889	87112987105	-51822219.3	56692746461	30087142941	677.9211386	1048294565	368.0779371	664459266.8	117.8777246	68.98539966
	745144.061	20913.48816	1.32716E+11	-46163159.62	50501818328	26801584358	722.3279628	994966579.8	1226.461411	1972926932	137.3440864	189.3852955
	480365.951	26865.99874	1.09903E+11	-29759628.05	32556595815	17277959053	275.3092347	244684687.8	55.03777898	57068137.96	90.36934437	49.42445502
	198293.527	14660.94216	24761257474	-12284679.2	13439258539	7132286190	169.0829269	62029262.25	207.3594778	88701988.31	57.46367849	51.99022617
	124977.476	25428.42605	27070532835	-7742603.7	8470294682	4495230568	906.7050935	209620383.7	797.4056489	215260777.3	167.9387062	141.3752328
20	35735.2458	5833.424441	1776631028	-2213869.698	2421940920	1285336965	191.0843451	12697473.95	168.0741026	13029861.91	46.29156667	35.08932858
	191126.103	10356.36952	16860321223	-11840642.98	12953489438	6874485938	604.5430715	214248701.5	635.1606569	262029892.2	105.8538616	100.1980883
	2096060.97	45925.84295	8.19777E+11	-129855154.3	1.4206E+11	75391803805	2129.540298	8248681939	2464.101067	11144449901	355.0170909	379.8622809
	421270.36	6131.800126	22002598413	-26098538.4	28551417530	15152389574	454.5331278	354262285.8	597.4793418	543424542.4	79.96537373	89.68039661
	719801.887	4266.117868	26151189484	-44593161.47	48784263416	25890068805	681.8194283	907076143.2	837.8297761	1301366530	105.6517706	117.4628155
	264146.64	2527.461909	5685765833	-16364410.78	17902424945	9500912408	267.7838239	130860938.1	363.4306118	207285873.6	50.58898826	55.16823753
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	2533.9160 3	36.4582690 9	807545.5227	-156981.148 3	171735069. 3	91140717.3 2	0	0	0	0	12.7438532 9	5.81186794 8
	5418.1293 7	173.676242 8	8174671.647	- 335663.9125	367211388. 2	194881042. 4	0	0	0	0	12.9667808 3	6.00279977 3
	1748.7101 3	14.0216050 6	213521.3961	- 108336.0777	118518077. 1	62898175.7	0	0	0	0	12.7070269 4	5.78032710 2
	7417.0895 9	148.069773	9429208.247	- 459503.4824	502690058	266780295. 1	0	0	0	0	12.9222950 4	5.96469881 1
	4346.0974 2	605.545332 5	22634005.14	- 269249.3972	294554884. 4	156321848. 3	0	0	0	0	13.6597140 7	6.59627966 3
	12481.649 4	164.758509 1	17562630.47	- 773263.0538	845938418. 9	448944031. 1	0	0	0	0	12.9477325 5	5.9864854
	4539.8371	1047.67187 2	40610122.59	- 281251.9559	307685507. 2	163290339. 8	0	0	0	0	14.3598145	7.19589806 6
	5305.6184 7	108.696272 6	4965689.685	- 328693.6384	359586010. 8	190834213. 9	0	0	0	0	12.8594759 6	5.91089585 4
100	29025.31	4412.21202 1	1093352971	- 1798175.804	1967177909	1043991809	597.978728 3	32285039.8 8	191.568499 9	12199243.9 3	95.7921825 9	36.4167417 5
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	17697.868 9	399.059154	60216396.19	- 1096418.248	1199465453	636562714	0	0	0	0	13.3215156 6	6.30662122 9
	1719.1479 8	25.5947718 2	389757.905	- 106504.6433	116514514. 9	61834874.5 2	0	0	0	0	12.7266234 9	5.79711105 8
	1908349.1 4	41827.3805 9	6.7974E+11	- 118226032.3	1.29338E+1 1	6864012350 9	1953.45481 8	6887843971	2250.69170 7	9266334208	326.187511 3	347.255040 9
	25261.476 9	226.421156 3	48898167.88	- 1564998.842	1712085738	908613033. 4	0	0	424.426774 7	23502483.1 3	13.0467526 4	60.5534637 8

27648.2859	13.01863642	3081857.782	-1712866.415	1873850690	994462556.4	85.84783007	4397258.846	154.9169315	9436317.556	23.57926666	25.76498152
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24090.6507	18.02866687	3718783.261	-1492463.823	1632733493	866500373.6	96.57004432	4411714.052	112.0658474	5895326.479	25.23420296	20.11591683
48738.4008	15.30314558	6355547.215	-3019441.065	3303224159	1753038680	74.42729042	6800285.228	76.14653182	8011516.01	22.24841142	15.40759119
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8215.13998	95.4601436	6739741.574	-508944.2947	556777580.2	295484831.6	0	0	0	0	12.83783535	5.892361211
88683.703	78.19100624	59101762.14	-5494132.147	6010499841	3189804325	129.6429133	21357318.7	91.21705214	17552614.64	29.27497672	17.45803063
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11619.7035	418.225316	41686343.17	-719863.7921	787520411.3	417941282.8	0	0	0	0	13.35618744	6.336316741
21289.6135	32.69989276	5930190.012	-1318933.987	1442894402	765751755.2	0	0	0	0	12.73633298	5.805426989
27245.5654	1143.913743	266044046.2	-1687917.079	1846556483	979977375	66.26204222	3394044.451	300.0355896	17860442.46	23.03069454	45.71538493
21725.9701	82.1439358	15238116.55	-1345967.149	1472468284	781446772.4	1.944406976	78061.36717	152.0940697	7158832.2	13.06120294	25.16904715
809.57987	3.05603852	21153.38206	-50155.08647	54868927.64	29119232.57	0	0	0	0	12.68904888	5.76492935
92754.6698	9766.369863	7720052623	-5746336.653	6286407865	3336230185	362.0845842	62155949.51	103.2119962	20718063.75	74.0927738	32.19426222

13531.2756	52.12023843	6060893.668	- 838289.4907	917076385.4	486697329.3	0	0	0	0	12.76805973	5.83260015
7679.79539	67.92481916	4513575.518	- 475778.6305	520494830.9	276229383	0	0	0	0	12.79424817	5.855029893
29603.4192	2379.794406	602894766.7	- 1833990.821	2006359011	1064785429	311.2378674	17234687.26	98.29429243	6395538.883	56.30492362	21.67945177
12333.0305	83.98546572	8836264.596	- 764055.8183	835865838.6	443598459	0	0	0	0	12.81836618	5.875686359
22602.6587	777.6397294	150715341.2	- 1400279.755	1531885477	812979793.5	0	0	131.6315743	6560146.85	13.93323316	23.82680403
14296.7601	256.9949579	31308211.56	- 885712.7791	968956766.1	514230524.1	0	0	0	0	13.09437029	6.11207694
18470.9682	1873.112053	295610322.1	- 1144313.291	1251861927	664369801.8	0	0	0	0	15.68208682	8.328391041
36659.2815	2992.594873	936283460.5	- 2271115.549	2484567040	1318572981	110.7547669	7512932.597	110.7547669	8892858.992	31.48074915	24.0638512
279761.464	25278.65936	60226259748	- 17331780.28	18960712966	10062551506	715.1555282	370273888.8	833.7526188	503239457.2	143.5046357	145.6375904
11431.5602	545.2682633	53594417.43	- 708207.9359	774769075.8	411174081.1	0	0	79.33054019	1976805.322	13.56237967	16.63937824
18689.597	170.6509245	27167987.62	- 1157857.782	1266679400	672233514	0	0	0	0	12.95645547	5.993956367
3401.43397	156.8408779	4559629.39	- 210725.6133	230530724.7	122343885.2	0	0	0	0	12.93526168	5.97580442
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78524.3568	6453.341285	4323953153	- 4864740.402	5321954520	2824389651	110.8912678	16118982.84	165.5138055	28183201.16	37.03431818	35.61296684
125999.531	357.185856	383713394.3	- 7805922.054	8539564031	4531992181	168.3178211	39379281.71	157.8770692	43056256.4	34.623593	26.26023207
24858.5027	159.1779166	33715160.53	- 1540033.786	1684774334	894118725.2	39.85790248	1876049.708	84.26003763	4549223.152	18.09827065	16.69505075
17103.4069	75.23697871	11040486.16	- 1059590.143	1159176047	615180911.2	32.01449387	1019355.009	32.01449387	1196634.141	16.88007413	9.961417034
2660.77772	34.4875168	811636.9897	- 164840.4827	180333066	95703720.03	0	0	0	0	12.74129499	5.809676824
434029.34	4238.438801	15666362201	- 26888982.62	29416151892	15611308712	108.9915379	87512836.21	154.0256884	144355326.1	33.23159594	31.02836288
65710.5486	565.3876258	316994923.5	- 4070899.448	4453504180	2363498423	20.85959609	2541204.126	51.32314671	7318153.009	16.23199196	13.05648112
58377.7889	1277.862117	636850480.8	- 3616620.368	3956529542	2099751332	124.4139392	13434287.21	99.76066571	12567581.66	30.46214493	20.1177316
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413396.746	10199.13611	35905479640	- 25610752.31	28017786713	14869188853	421.6866454	322240342.2	472.6172472	422007593.7	82.25045115	79.47506422

322199.59 2	4108.89955 1	11274055266	- 19960906.87	2183693881 7	1158897990 6	329.206308 4	196424838. 1	385.113211 6	268168268. 4	60.9215015 5	60.1141795 3
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22693.266 1	114.201323 9	22133503.27	-1405893.06	1538026350	816238787. 6	0	0	52.5653149 6	2619707.21 8	12.8668570 8	12.6773490 2
12703.795 3	559.243755 5	61161653.74	- 787025.4364	860994263. 3	456934248	0	0	0	0	13.5860112 7	6.53315506 7
4877.0226 6	267.143625 4	11464562.71	- 302141.2736	330538113. 8	175418340. 1	0	0	0	0	13.1245009 3	6.13788307
19473.795 7	20.9896412 2	3486881.964	- 1206440.454	1319828130	700439828. 4	0	0	0	0	12.7176955 4	5.78946448 9
118496.6	799.230794 9	806586079.5	- 7341100.543	8031056128	4262124324	84.4438814 9	18587299.5	11.8818593 7	3043036.21 9	24.6841800 3	8.35664599 7
7315.7741 9	39.6625498 7	2525744.686	- 453226.7917	495823450. 6	263136149. 9	0	0	0	0	12.7488270 5	5.81612784 8
25136.826 5	95.5638280 7	20505776.59	- 1557276.499	1703637609	904129565. 9	0	0	14.5566792 8	806070.987 1	12.8369664 2	7.76947275 5
78395.004 1	179.845150 4	120253256.8	- 4856726.744	5313187696	2819737050	3.60298449 3	523724.242 2	25.5132036 4	4344312.84 1	13.4282687 5	9.25196915 3
8466.3481 1	799.855006 5	58686488.2	- 524507.1386	573803102. 8	304520367. 3	0	0	0	0	13.9826303	6.87284929
58718.324 1	79.1063336	39643392.46	- 3637717.201	3979609167	2111999812	103.883722 2	11361235.9 3	21.3675120 8	2721402.44 4	26.0399198 8	8.58311019 6
15003.620 9	42.5340937 2	5476096.809	- 929504.2158	1016863954	539655124. 4	0	0	0	0	12.7525245 6	5.81929466 7
6267.6691 9	60.0577308 6	3242533.797	- 388294.5976	424788584. 4	225437567. 5	0	0	0	0	12.7810647 3	5.84373861 2
111454.55 7	2574.45176 7	2444893018	- 6904831.943	7553784689	4008833826	110.650962 3	22824036.2 5	180.351822 9	43443096.1 6	30.7949784 7	32.1057431 8
11740.993 4	112.469019 2	11365976.48	- 727377.9383	795740776. 8	422303874. 7	0	0	0	0	12.8654944 3	5.91605052 1
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30195.088 9	370.365350 7	95366156.32	- 1870645.939	2046459171	1086066798	40.7179563 5	2311111.05 1	34.5239976 4	2294105.04 8	18.5090073 5	10.7165962 5
6414.1969 3	273.217200 7	15129306.24	- 397372.2835	434719439. 4	230707925. 2	0	0	0	0	13.1259980 1	6.13916528 4

1648.9289 8	121.743877 2	1853919.185	- 102154.4366	111755452. 6	59309214.8	0	0	0	0	12.8947652	5.9411202
4020.0843 3	60.0341647 5	2077731.702	- 249052.2363	272459487	144595703	0	0	0	0	12.7809701 4	5.84365759 1
19587.299 2	790.945504 4	132489944.2	- 1213472.223	1327520781	704522359. 6	0	0	0	0	13.9512233 6	6.84595003 6
4971.7843 4	225.317559 7	9669582.38	- 308011.9489	336960546. 3	178826759. 2	0	0	0	0	13.0484779 8	6.07277132 6
5017.5385 3	106.32593	4563014.71	- 310846.5121	340061516. 8	180472460. 8	0	0	0	0	12.8545086 3	5.90664145 8
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4583.9578 1	852.380052 6	34220177.72	-283985.322	310675769. 5	164877288	0	0	0	0	14.0825612 5	6.95843763 5
4296.0866 5	37.0972909 6	1386618.357	- 266151.1299	291165425. 4	154523044. 3	0	0	0	0	12.7446154 1	5.81252068 3
9368.4867 5	299.682615 3	24062487.91	- 580396.4255	634945161. 4	336968783. 9	0	0	0	0	13.1652849 6	6.17281356 7
32313.885	755.608387 9	208161702.7	- 2001909.578	2190059663	1162276345	202.890929 7	12358515.1 3	147.918842 5	10443466.0 8	40.0402762	25.7200829 1
1213.1833	131.938407 3	1461208.565	- 75159.12351	82222976.7 7	43636172.3 4	0	0	0	0	12.9097743 9	5.95397519 7
2533.9160 3	36.4582690 9	807545.5227	-156981.148	171735069. 3	91140717.3 2	0	0	0	0	12.7438532 9	5.81186794 8
5418.1293 7	173.676242 8	8174671.647	- 335663.9125	367211388. 2	194881042. 4	0	0	0	0	12.9667808 3	6.00279977 3
1748.7101 3	14.0216050 6	213521.3961	- 108336.0777	118518077. 1	62898175.7	0	0	0	0	12.7070269 4	5.78032710 2
7417.0895 9	148.069773	9429208.247	- 459503.4824	502690058	266780295. 1	0	0	0	0	12.9222950 4	5.96469881 1
3775.2717 4	213.856022 7	7105321.152	- 233885.6086	255867419. 2	135790204. 1	0	0	0	0	13.0367097 7	6.06269215 3
12481.649 4	164.758509 1	17562630.47	- 773263.0538	845938418. 9	448944031. 1	0	0	0	0	12.9477325 5	5.9864854
4539.8371	1047.67187 2	40610122.59	- 281251.9559	307685507. 2	163290339. 8	0	0	0	0	14.3598145	7.19589806 6
5305.6184 7	108.696272 6	4965689.685	- 328693.6384	359586010. 8	190834213. 9	0	0	0	0	12.8594759 6	5.91089585 4

	Biomass to AD			SNG to H2		H2 Delivery		TOTAL			
Scenario	Biomass Cost [\$ /yr]	Biomass Delivery [\$ /yr]	AD Processing [\$ /yr]	SMR [\$ /yr]	Tri-Gen [\$ /yr]	SMR [\$ /yr]	Tri-Gen [\$ /yr]	SMR [\$ /yr]	SMR [\$ /kg H2]	Tri-Gen [\$ /yr]	Tri-Gen [\$ /kg H2]
1	46801037	25472389.97	46529334.42	1682776.927	835926714.1	618155.744	821357.577	121103693.8	3.261564664	955550832.8	22.04129003
5	15998264	2796501.511	24304481.71	575233.2001	286407743.5	51466.45738	63288.08526	43725947.25	3.445009586	329570279.2	22.23892851
	11874224	1891584.468	20293569.68	426949.306	212835196.6	35084.93432	42502.31454	34521412.39	3.66443815	246937077	22.4501762
	3005326.5	698364.7414	8837852.192	108059.446	54614782.05	8388.332137	9999.04598	12657991.22	5.308810281	67166324.53	24.12673808
	7952123.3	759708.2682	15922620.95	285926.3491	142865236.7	20117.98121	23857.46286	24940496.83	3.953175305	167523546.7	22.74214597
	7971098.6	1731002.386	15945596.81	286608.6258	143203755.2	20586.14172	23293.99958	25954892.59	4.104168011	168874747	22.87100333
10	1526485.5	231290.0154	5866192.99	54886.27399	28232377.42	3981.211963	4571.067419	7682835.961	6.343850842	35860916.96	25.36106012
	14471779	2032983.245	22873785.24	520346.9261	259175366.1	45225.87394	57595.00746	39944120.18	3.479004724	298611508.5	22.27528712
	9943254.8	1434480.555	18227498.14	357519.4252	178386862.2	28645.49988	33985.22812	29991398.43	3.801825899	208026081	22.58540624
	2175076.8	280684.4189	7267656.76	78207.00762	39803194.2	5259.661528	6194.413419	9806884.64	5.683037864	49532806.58	24.58425374
	2634631.2	585832.0765	8161270.476	94730.73294	48001606.87	7178.147686	8574.310698	11483642.59	5.493940121	59391914.89	24.33583168
	5628502.9	451545.7857	12918437.17	202378.3103	101412036.1	14602.94571	16308.17587	19215467.07	4.303106867	120426830.1	23.0977168
	5013862.4	537634.9099	12045548.65	180278.3124	90446899.7	13089.3623	16358.48953	17790413.62	4.472369873	108060304.1	23.26657539
	3232245.8	349873.7619	9235755.548	116218.5511	58663004.16	7912.160746	8934.912567	12942005.84	5.04686034	71489814.2	23.87692935
	1334260.7	136198.8076	5407454.871	47974.64586	24803103.54	3214.434223	3774.682339	6929103.486	6.545765187	31684792.63	25.63591684
	840937.88	157066.4661	4089822.372	30236.7416	16002263.76	2252.055761	2590.348912	5120315.512	7.674620094	21092680.82	27.07737472
20	240452.3	37157.55708	1917541.565	8645.697054	5289649.636	581.2997181	676.3313121	2204378.421	11.55530171	7485477.391	33.60696176
	1286033.2	126358.0645	5288345.744	46240.57694	23942727.78	3303.056846	3872.321871	6750280.61	6.615973162	30647337.08	25.72641456
	14103798	1963379.32	22520115.02	507115.81	252610614.6	44046.19366	53434.12454	39138454.23	3.497773401	291251341	22.29310419
	2834608.4	329792.738	8530619.779	101921.1098	51569184.73	7123.999986	8489.920568	11804066.02	5.248831585	63272695.56	24.09694329
	4843342.1	359061.2298	11796008.91	174147.0896	87404831.77	12572.52549	15000.64825	17185131.86	4.472308978	104418244.7	23.27394105
	1777367.6	111160.2473	6431873.854	63906.98522	32708094.11	4345.898641	5146.428849	8388654.571	5.948933757	41033642.23	24.92306785
	1734016.7	116384.1734	6336501.135	62348.26341	31934718.59	4175.064143	4840.969997	8253425.38	5.999361333	40126461.62	24.98137082
	899918.36	150993.1527	4261035.582	32357.44235	17054470.79	2158.45875	2558.91133	5346462.994	7.488374076	22368976.79	26.83377015
	554458.67	47397.1452	3178799.469	19936.10231	10891497.87	1353.102939	1595.203366	3801944.49	8.642923518	14673748.36	28.57002208
	262742.81	44292.4623	2023198.237	9447.174049	5687310.516	629.8341362	735.1626528	2340310.518	11.22707748	8018279.189	32.94496268
	2075192.8	429298.832	7063869.159	74615.58257	38021272.5	5481.884629	6525.910728	9648458.294	5.860349832	47596159.24	24.76008535
	1729906.6	152542.4912	6327410.059	62200.4781	31861393.43	4229.094688	4967.397341	8276288.694	6.030274204	40076219.94	25.00937227

	3933165.7	276520.8954	10400191.51	141420.8097	71167358.49	9530.182474	11151.42428	14760829.11	4.730342479	85788388.03	23.5464235
	2943991.6	294049.0013	8728284.701	105854.0906	53520572.76	7397.20579	8716.914689	12079576.63	5.171770204	65495615	24.01675577
	2399718.6	162335.3653	7712927.826	86284.22191	43810785.38	5938.159365	6944.503906	10367204.14	5.445345187	54092711.65	24.33420311
	2723827.2	264023.3013	8327332.445	97937.86207	49592856.27	6550.463514	7668.214377	11419671.22	5.284429804	60915707.39	24.14284439
	1178817.5	120160.4466	5017038.659	42385.53167	22030008.26	2863.927033	3328.534933	6361266.027	6.801756415	28349353.37	25.96182898
	631160.54	59978.04889	3438008	22693.99301	12259853.11	1531.430312	1766.438521	4153372.016	8.294401762	16390766.14	28.03484116
	437582.18	51399.3007	2754630.504	15733.69406	8806430.711	1077.828212	1258.365241	3260423.506	9.391575764	12051301.06	29.73123827
	210936.09	17434.98513	1771469.034	7584.412788	4763082.763	538.2327153	598.6194322	2007962.753	11.99855213	6763521.489	34.61470821
30	240452.3	37157.55708	1917541.565	8645.697054	5289649.636	581.2997181	678.7238514	2204378.421	11.55530171	7485479.783	33.60697251
	1286033.2	126358.0645	5288345.744	46240.57694	23942727.78	3274.241445	3868.701379	6750251.795	6.61594492	30647333.46	25.72641152
	13081590	1935362.672	21518000.19	470361.3387	234374513.6	40183.69258	48924.83356	37045498.18	3.569430858	270958391.6	22.36046088
	1026084.3	57601.15617	4613048.428	36893.8611	19305260.62	2520.891928	2965.883353	5736148.616	7.046305011	25004960.37	26.30763604
	2819715.5	329999.0891	8503475.875	101385.6227	51303497.44	7086.535871	8400.162734	11761662.67	5.257599475	62965088.11	24.10644698
	4473350.8	351895.5853	11242301.26	160843.6923	80804217.28	11665.55728	13630.49087	16240056.92	4.575922548	96885395.45	23.38105183
	769565.63	14098.76763	3876152.949	27670.48295	14728988.69	1855.288759	2164.385185	4689343.12	7.680516459	19390970.43	27.20148209
	1395167.2	89141.19135	5555474.67	50164.59897	25889670.82	3368.741989	3985.548845	7093316.443	6.408363558	32933439.47	25.48293858
	1734016.7	116384.1734	6336501.135	62348.26341	31934718.59	4212.113283	4895.391444	8253462.429	5.999388264	40126516.04	24.98140471
	886498.86	147906.4818	4222479.777	31874.93121	16815068.03	2126.187209	2519.830183	5290886.237	7.522709989	22074472.97	26.88133605
	375440.41	17319.77927	2510843.201	13499.32613	7697826.565	896.8558744	1069.08169	2917999.571	9.796440078	10602499.04	30.48638395
	221701.78	22034.75593	1825629.443	7971.503717	4955141.824	531.2814746	620.4661362	2077868.763	11.81334843	7025128.268	34.20769158
	254938.36	23474.04122	1986623.502	9166.557471	5548079.776	608.8379426	710.9571631	2274811.301	11.24693703	7813826.638	33.0877525
	2006150.2	419835.3163	6920734.052	72133.08662	36789557.14	5279.257739	6483.45981	9424131.895	5.921094486	46142760.15	24.83011985
	41041.032	2929.709236	657990.0595	1475.670332	1732168.692	96.34409134	112.4891084	703532.8151	21.60678573	2434241.982	64.03009773
	592676.33	21987.16188	3309610.737	21310.2556	11573297.86	1409.462888	1637.586931	3946993.949	8.394077098	15499209.68	28.23128572
	1230422.6	118476.458	5148789.497	44241.0459	22950640.33	2993.105441	3503.439412	6544922.739	6.70462189	29451832.35	25.84024915
	3840157.5	276325.9651	10250698.22	138076.6099	69508100.09	9238.450003	10859.22389	14514496.78	4.764057778	83886141.04	23.58195811
	2858168.4	288066.2661	8573445.853	102768.2342	51989494.04	7128.1459	8400.296316	11829576.94	5.216815421	63717574.9	24.06634324
	2340760.5	159227.7007	7597719.41	84164.32671	42758978.04	5756.120186	6781.658421	10187628.05	5.485802638	52863467.3	24.38020506
	1287973.6	42359.30138	5293171.887	46310.34836	23977345.58	3031.388939	3603.563624	6672846.562	6.530226466	30604453.97	25.65171169
	1472945.4	126378.5689	5740836.681	52961.1868	27277226.03	3538.027913	4062.340567	7396659.816	6.329553698	34621448.97	25.37448835
	1010021.7	65104.43058	4569223.083	36316.31643	19018706.02	2424.982582	2875.053918	5683090.541	7.09215038	24665930.31	26.36364599
	120503.75	7673.712753	1262489.071	4332.830017	3149777.235	283.4934559	330.9997755	1395282.862	14.59438371	4540774.773	40.6787943

	418348.78	21850.927	2680730.001	15042.13842	8463308.419	993.5400777	1158.951948	3136965.386	9.45138159	11585397.08	29.89586372
	168795.73	13490.26683	1548017.853	6069.215243	4011302.246	404.3894028	480.2873715	1736777.458	12.96900882	5742086.386	36.72374344
	223971.22	10452.36455	1836912.91	8053.103601	4995628.428	533.9848186	623.3694849	2079923.581	11.70521094	7067588.29	34.06573149
	72191.712	7322.514804	925991.7536	2595.723415	2287894.305	169.4705167	197.8698129	1008271.174	17.60411061	3293598.155	49.25178316
	341416.69	33213.15128	2370606.935	12275.9701	7090846.158	848.6870337	988.1034057	2758361.434	10.18334604	9837071.038	31.10425102
	210936.09	17434.98513	1771469.034	7584.412788	4763082.763	516.6653057	598.6194322	2007941.185	11.99842325	6763521.489	34.61470821
40	240452.3	37157.55708	1917541.565	8645.697054	5289649.636	581.2997181	678.7238514	2204378.421	11.55530171	7485479.783	33.60697251
	1049102.4	114517.0405	4675381.923	37721.49969	19715901.84	2611.884709	3106.511403	5879334.737	7.063734847	25558009.7	26.29952125
	236930.78	6207.346002	1900501.754	8519.077249	5226825.945	562.2759758	656.5163088	2152721.232	11.45223866	7371122.34	33.58542324
	130694.99	5372.335319	1326047.044	4699.265749	3331588.012	311.9547051	370.5516774	1467125.587	14.14921799	4794072.93	39.59901594
	13109609	1940093.201	21545871.51	471368.7702	234874360.9	39693.22537	48537.67731	37106635.47	3.56768025	271518472.1	22.35879212
	867370.82	37595.71081	4167121.727	31187.16386	16473825.33	2156.535704	2481.57977	5105431.957	7.419109183	21548395.17	26.81938482
	2819715.5	329999.0891	8503475.875	101385.6227	51303497.44	7086.535871	8400.162734	11761662.67	5.257599475	62965088.11	24.10644698
	4473350.8	351895.5853	11242301.26	160843.6923	80804217.28	11735.11721	13644.07746	16240126.48	4.575942148	96885409.03	23.38105511
	769565.63	14098.76763	3876152.949	27670.48295	14728988.69	1855.288759	2164.385185	4689343.12	7.680516459	19390970.43	27.20148209
	1395167.2	89141.19135	5555474.67	50164.59897	25889670.82	3368.741989	4001.479624	7093316.443	6.408363558	32933455.4	25.48295091
	1462780.9	104704.9302	5716836.056	52595.71297	27095892.51	3505.614316	4261.563138	7340423.183	6.325078263	34384475.93	25.37592169
	343023.24	9692.213221	2377349.431	12333.73507	7119506.826	805.621563	951.5052585	2743204.238	10.07995701	9850523.213	31.00091027
	886498.86	147906.4818	4222479.777	31874.93121	16815068.03	2126.187209	2521.817038	5290886.237	7.522709989	22074474.96	26.88133847
	304050.14	12713.36079	2210060.325	10932.41932	6424229.91	720.312454	858.6637534	2538476.557	10.52330185	8951912.399	31.78405513
	221701.78	22034.75593	1825629.443	7971.503717	4955141.824	531.2814746	620.4661362	2077868.763	11.81334843	7025128.268	34.20769158
	254541.27	23352.29433	1984750.836	9152.279647	5540995.689	607.9057669	728.3939521	2272404.586	11.25256493	7804368.484	33.0992572
	2006150.2	419835.3163	6920734.052	72133.08662	36789557.14	5633.137291	6484.444533	9424485.775	5.921316825	46142761.14	24.83012038
	199872.55	7262.834157	1714659.658	7186.612324	4565710.057	473.6519786	548.1430774	1929455.302	12.16762051	6488053.238	35.04289277
	41041.032	2929.709236	657990.0595	1475.670332	1732168.692	96.34409134	112.4891084	703532.8151	21.60678573	2434241.982	64.03009773
	461400.15	10444.63867	2844391.081	16590.09259	9231341.463	1089.22518	1284.862349	3333915.192	9.107535866	12548862.2	29.36062547
	1212577.5	121955.7642	5103481.285	43599.40631	22632284.39	2959.466966	3433.69345	6484573.41	6.740560135	29073732.62	25.88391584
	3395146.9	223706.2863	9514625.736	122075.8168	61569145.52	8143.855262	9531.825114	13263698.55	4.924137326	74712156.22	23.75589486
	399886.81	37167.7507	2608520.238	14378.32025	8133948.35	956.4555879	1109.443892	3060909.573	9.64800454	11180632.59	30.18338799
	2821389.1	264809.3668	8506528.95	101445.7973	51333353.65	7043.517658	8292.643829	11701216.74	5.227476824	62934373.71	24.08039562
	2335133.1	155890.1489	7586663.562	83961.98981	42658586.55	5750.947348	6764.886815	10167399.79	5.488103971	52743038.29	24.38328328
	412054.55	39634.38145	2656255.722	14815.8234	8351019.943	1049.606785	1137.921796	3123810.087	9.55551244	11460102.52	30.02427109

	1240086.1	38930.3471	5173216.465	44588.50697	23123036.64	2952.2761	3448.45624	6499773.741	6.606485112	29578718.05	25.74934463
	966091.22	21980.00875	4447933.142	34736.7522	18234989.32	2313.859673	2653.247329	5473054.984	7.140617217	23673646.94	26.45365703
	990005.93	59402.11305	4514224.406	35596.62879	18661625.75	2376.921728	2769.627388	5601605.997	7.13179483	24228027.83	26.41915706
	229616.45	9021.451876	1864786.394	8256.083413	5096338.905	540.6432399	631.2526526	2112221.022	11.59472468	7200394.454	33.85259607
	120503.75	7673.712753	1262489.071	4332.830017	3149777.235	283.4934559	330.9997755	1395282.862	14.59438371	4540774.773	40.6787943
	368198.73	15953.99638	2481430.195	13238.94453	7568635.613	889.3822263	1021.071529	2879711.249	9.858043552	10435239.61	30.59558952
	114655.57	5417.448011	1225057.123	4122.552713	3045446.033	273.4338406	319.1923424	1349526.124	14.83577474	4390895.363	41.34249028
	223971.22	10452.36455	1836912.91	8053.103601	4995628.428	533.9848186	623.3694849	2079923.581	11.70521094	7067588.29	34.06573149
	76641.373	6147.932613	960113.4683	2755.715336	2367275.908	179.9161264	215.746822	1045838.406	17.19987873	3410394.429	48.03745821
	71517.866	7123.507516	920752.863	2571.494616	2275872.943	167.8886583	196.0228719	1002133.619	17.66180822	3275463.202	49.44209537
	288956.95	13126.40482	2143020.53	10389.72901	6154968.651	695.0759364	837.208079	2456188.69	10.71402509	8600909.744	32.13290075
	167864.6	5619.663013	1542845.876	6035.735382	3994690.876	412.1367623	480.0553847	1722778.01	12.93582943	5711501.069	36.73075318
	53133.585	4098.621336	769255.4781	1910.46989	1947898.87	124.7314401	145.633513	828522.8862	19.65438523	2774532.188	56.37146647
	40586.084	2657.115971	653567.5092	1459.312237	1724052.458	95.27609819	111.2421446	698365.2975	21.68850308	2420974.41	64.39493916
50	195303.05	29796.47	1690835.055	7022.311777	4484190.687	497.6933179	551.462122	1923454.583	12.4135781	6400676.727	35.37981425
	45149.249	3731.263501	697085.1771	1623.385277	1805458.949	105.9881573	123.7492944	747695.0627	20.8736339	2551548.387	61.00872776
	1049102.4	114517.0405	4675381.923	37721.49969	19715901.84	2603.244154	3073.836295	5879326.097	7.063724466	25557977.03	26.29948763
	236930.78	6207.346002	1900501.754	8519.077249	5226825.945	564.2190671	658.8646468	2152723.175	11.452249	7371124.688	33.58543394
	123489.62	4684.370077	1281323.231	4440.189687	3203044.816	296.826509	344.4428879	1414234.236	14.43493972	4612886.478	40.32561558
	12997759	1940297.612	21434468.11	467347.1068	232878972.2	39480.16184	47975.07948	36879352.1	3.576340627	269299472.1	22.36689537
	589993.93	14900.50935	3300540.303	21213.80707	11525443.95	1432.465828	1654.689924	3928081.011	8.391835711	15432533.38	28.23763842
	314735.76	5591.918496	2256730.323	11316.63132	6614860.562	756.1646415	892.3621296	2589130.8	10.36888304	9192810.928	31.53123078
	2819715.5	329999.0891	8503475.875	101385.6227	51303497.44	7086.535871	8400.162734	11761662.67	5.257599475	62965088.11	24.10644698
	4473350.8	351895.5853	11242301.26	160843.6923	80804217.28	11802.10624	13619.08194	16240193.47	4.575961023	96885384.04	23.38104908
	320290.32	5306.67181	2280742.659	11516.35088	6713953.431	768.6650915	906.507038	2618624.667	10.30513103	9321199.589	31.41714248
	401600.59	4266.145593	2615277.972	14439.94096	8164522.086	965.2396624	1114.642004	3036549.889	9.530378636	11186781.44	30.07111269
	489742.03	4854.400149	2948849.035	17609.15226	9736958.176	1171.161294	1371.372058	3462225.776	8.910705465	13181775.01	29.0566277
	695506.57	14947.45864	3645982.044	25007.617	13407780.94	1656.322255	1976.651574	4383100.008	7.94335958	17766193.66	27.5760365
	1462780.9	104704.9302	5716836.056	52595.71297	27095892.51	3505.614316	4261.832782	7340423.183	6.325078263	34384476.2	25.37592189
	80943.753	2957.999997	992369.0211	2910.411605	2444030.019	190.0159916	226.0469022	1079371.202	16.80782685	3520526.841	46.95296354
	271235.87	4050.105435	2062515.839	9752.550438	5838826.085	636.895404	752.194703	2348191.265	10.91215221	8177380.099	32.5466087
	260676.02	19565.01105	2013554.682	9372.860403	5650439.052	615.8295536	719.0495889	2303784.399	11.1394779	7944953.81	32.90250703

	689060.75	118506.8873	3625501.375	24775.85145	13292788.13	1643.530328	1947.859497	4459488.396	8.157397057	17727805.01	27.7738535
	104084.34	2194.565582	1155421.458	3742.453794	2856856.128	245.4064229	291.1042119	1265688.219	15.3272924	4118847.591	42.71978297
	199192.99	24097.79816	1711130.266	7162.178087	4553586.765	483.4674095	554.4470512	1942066.696	12.28893302	6488562.262	35.16520256
	271753.17	10821.69487	2064894.745	9771.150156	5848054.523	643.7431423	758.4295009	2357884.499	10.93633971	8196282.559	32.55974517
	220234.59	21883.74944	1818310.388	7918.749367	4928967.222	527.8372297	616.4447165	2068875.31	11.84057713	6990012.39	34.26345162
	251923.34	22734.56405	1972375.784	9058.149351	5494291.995	601.5568513	721.2184788	2256693.393	11.29089146	7742046.9	33.17615745
	1882435.3	392486.9063	6659289.776	67684.79728	34582493.6	5040.242135	5851.47077	9006937.02	6.030886365	43522557.05	24.95933634
	199872.55	7262.834157	1714659.658	7186.612324	4565710.057	477.0764347	548.1430774	1929458.726	12.16764211	6488053.238	35.04289277
	41041.032	2929.709236	657990.0595	1475.670332	1732168.692	96.34409134	112.4891084	703532.8151	21.60678573	2434241.982	64.03009773
	528368.06	78558.67458	3087442.606	18997.98881	10426043.42	1315.254403	1491.307301	3714682.579	8.861540639	14121904.06	28.85329338
	461269.49	10359.86851	2843903.74	16585.39459	9229010.503	1088.918455	1284.504225	3333207.416	9.10818164	12545828.11	29.36184131
	847814.99	27606.75194	4110024.776	30484.0151	16124950.99	2142.436696	2376.410242	5018072.975	7.460362952	21112773.93	26.8833194
	3395146.9	223706.2863	9514625.736	122075.8168	61569145.52	8143.855262	9531.825114	13263698.55	4.924137326	74712156.22	23.75589486
	399886.81	37167.7507	2608520.238	14378.32025	8133948.35	956.4555879	1109.443892	3060909.573	9.64800454	11180632.59	30.18338799
	2781629.1	259364.0312	8433800.155	100016.187	50624038.12	6957.17084	8190.606726	11581766.63	5.248070593	62107022	24.10350359
	2335133.1	155890.1489	7586663.562	83961.98981	42658586.55	5736.079311	6782.222178	10167384.92	5.488095945	52743055.62	24.38329129
	412054.55	39634.38145	2656255.722	14815.8234	8351019.943	1051.230362	1137.921796	3123811.711	9.555517406	11460102.52	30.02427109
	1005375.8	31879.38875	4556495.73	36149.26626	18935822.39	2392.420525	2845.252155	5632292.57	7.061238357	24532418.53	26.342115
	803251.76	16785.57413	3977933.761	28881.7004	15329946.42	1923.102334	2205.038287	4828775.894	7.577212091	20130122.55	27.05412069
	397549.85	5911.12121	2599286.737	14294.29252	8092257.144	948.3154346	1093.289595	3017990.313	9.568642484	11096098.14	30.13126649
	990005.93	59402.11305	4514224.406	35596.62879	18661625.75	2376.921728	2769.627388	5601605.997	7.13179483	24228027.83	26.41915706
	229616.45	9021.451876	1864786.394	8256.083413	5096338.905	540.6394176	631.2481656	2112221.019	11.59472466	7200394.449	33.85259605
	120503.75	7673.712753	1262489.071	4332.830017	3149777.235	283.4934559	330.9997755	1395282.862	14.59438371	4540774.773	40.6787943
	368198.73	15953.99638	2481430.195	13238.94453	7568635.613	889.3883751	1021.078675	2879711.255	9.858043573	10435239.61	30.59558955
	114655.57	5417.448011	1225057.123	4122.552713	3045446.033	274.2299524	320.2166395	1349526.92	14.83578349	4390896.387	41.34249992
	223971.22	10452.36455	1836912.91	8053.103601	4995628.428	533.9848186	623.3694849	2079923.581	11.70521094	7067588.29	34.06573149
	76641.373	6147.932613	960113.4683	2755.715336	2367275.908	185.6225509	215.0639572	1045844.112	17.19997258	3410393.746	48.03744859
	71517.866	7123.507516	920752.863	2571.494616	2275872.943	167.8886583	196.0228719	1002133.619	17.66180822	3275463.202	49.44209537
	288956.95	13126.40482	2143020.53	10389.72901	6154968.651	695.0759364	838.5151692	2456188.69	10.71402509	8600911.051	32.13290563
	167864.6	5619.663013	1542845.876	6035.735382	3994690.876	394.0632458	480.0553847	1722759.936	12.93569372	5711501.069	36.73075318
	53133.585	4098.621336	769255.4781	1910.46989	1947898.87	124.7314401	145.633513	828522.8862	19.65438523	2774532.188	56.37146647
	40586.084	2657.115971	653567.5092	1459.312237	1724052.458	95.27609819	111.2421446	698365.2975	21.68850308	2420974.41	64.39493916

60	195303.05	29796.47	1690835.055	7022.311777	4484190.687	501.2689587	551.462122	1923458.159	12.41360117	6400676.727	35.37981425
	45149.249	3731.263501	697085.1771	1623.385277	1805458.949	105.9881573	123.7492944	747695.0627	20.8736339	2551548.387	61.00872776
	1049102.4	114517.0405	4675381.923	37721.49969	19715901.84	2603.244154	3081.235713	5879326.097	7.063724466	25557984.43	26.29949524
	236930.78	6207.346002	1900501.754	8519.077249	5226825.945	564.2059091	658.8646468	2152723.162	11.45224893	7371124.688	33.58543394
	119083.92	4332.3458	1253468.507	4281.778655	3124447.587	286.2067601	332.1614529	1381452.763	14.6220067	4501664.526	40.809256
	12863136	1955065.983	21299878.47	462506.5944	230477303.2	39347.24132	47562.00222	36619934.08	3.588349872	266642945.4	22.37803411
	395926.41	11603.32142	2592859.806	14235.92034	8063295.2	960.0961928	1102.800038	3015585.557	9.60022159	11064787.54	30.16944304
	357837.85	6740.817896	2438947.622	12866.40885	7383798.286	855.3678524	1011.075621	2817248.064	9.923454745	10188335.65	30.73658824
	289994.43	4806.567422	2147672.34	10427.03272	6173477.262	687.2787741	813.4497673	2453587.652	10.66438936	8616764.052	32.07696182
	2819715.5	329999.0891	8503475.875	101385.6227	51303497.44	7086.535871	8400.162734	11761662.67	5.257599475	62965088.11	24.10644698
	4398704.2	343738.5593	11128426.4	158159.7005	79472527.69	11353.44408	13297.00503	16040382.31	4.596359967	95356693.87	23.40265412
	320290.32	5306.67181	2280742.659	11516.35088	6713953.431	765.3694678	906.507038	2618621.372	10.30511806	9321199.589	31.41714248
	401600.59	4266.145593	2615277.972	14439.94096	8164522.086	965.4841146	1115.170333	3036550.134	9.530379403	11186781.96	30.07111411
	489742.03	4854.400149	2948849.035	17609.15226	9736958.176	1170.741589	1365.001042	3462225.356	8.910704385	13181768.64	29.05661365
	649409.63	9852.067988	3497809.112	23350.15651	12585415.23	1570.296906	1825.52747	4181991.258	8.116867879	16744311.57	27.83474604
	1462780.9	104704.9302	5716836.056	52595.71297	27095892.51	3505.614316	4275.25781	7340423.183	6.325078263	34384489.62	25.3759318
	80943.753	2957.999997	992369.0211	2910.411605	2444030.019	190.0159916	226.4872915	1079371.202	16.80782685	3520527.281	46.95296941
	185684.53	9489.819755	1639953.69	6676.468233	4312596.931	442.2755983	520.0770318	1842246.779	12.50535921	6148245.043	35.74490474
	271235.87	4050.105435	2062515.839	9752.550438	5838826.085	636.895404	752.2998971	2348191.265	10.91215221	8177380.204	32.54660912
	260676.02	19565.01105	2013554.682	9372.860403	5650439.052	615.8295536	719.0495889	2303784.399	11.1394779	7944953.81	32.90250703
	624119.78	109336.4331	3414753.725	22440.83557	12134246.5	1515.089729	1738.11738	4172165.867	8.425927039	16284194.56	28.16676832
	104084.34	2194.565582	1155421.458	3742.453794	2856856.128	245.4064229	290.9733524	1265688.219	15.3272924	4118847.46	42.71978161
	199192.99	24097.79816	1711130.266	7162.178087	4553586.765	489.9073572	554.4470512	1942073.136	12.28897377	6488562.262	35.16520256
	271753.17	10821.69487	2064894.745	9771.150156	5848054.523	643.7431423	758.4295009	2357884.499	10.93633971	8196282.559	32.55974517
	220234.59	21883.74944	1818310.388	7918.749367	4928967.222	527.830838	616.4447165	2068875.303	11.8405771	6990012.39	34.26345162
	251923.34	22734.56405	1972375.784	9058.149351	5494291.995	601.5568513	702.49	2256693.393	11.29089146	7742028.172	33.1760772
	1882435.3	392486.9063	6659289.776	67684.79728	34582493.6	4909.998167	6159.655734	9006806.776	6.030799156	43522865.24	24.95951308
	185749.45	4199.602094	1640300.565	6678.802563	4313755.132	441.0543061	514.0143576	1837369.471	12.46789232	6144518.761	35.71075499
	41041.032	2929.709236	657990.0595	1475.670332	1732168.692	96.34409134	112.4891084	703532.8151	21.60678573	2434241.982	64.03009773
	268846.93	9587.556016	2051506.292	9666.653619	5796207.514	633.5817254	745.6406686	2340241.014	10.97184292	8126893.933	32.6330899
	528368.06	78558.67458	3087442.606	18997.98881	10426043.42	1261.709578	1498.204129	3714629.034	8.861412905	14121910.96	28.85330747
	847686.32	27604.9568	4109647.384	30479.3886	16122655.51	2038.345787	2376.057567	5017456.398	7.460578566	21109970.23	26.88382951

	219763.25	3376.715998	1815955.051	7901.801993	4920558.612	516.8628159	603.4634166	2047513.682	11.74345321	6960257.092	34.19077157
	2946989.6	202650.6424	8733661.105	105961.8866	53574056.82	7055.261027	8267.508918	11996318.52	5.130898915	65465625.7	23.98133764
	442147.59	18392.42423	2771982.408	15897.84773	8887877.207	1041.313896	1221.583152	3249461.58	9.263353242	12121621.21	29.59593999
	392807.53	40909.84291	2580483.352	14123.77796	8007654.631	939.9316059	1089.752247	3029264.437	9.720340018	11022945.11	30.29399336
	2781629.1	259364.0312	8433800.155	100016.187	50624038.12	6957.17084	8189.673758	11581766.63	5.248070593	62107021.07	24.10350323
	2168049.7	153797.4227	7253442.39	77954.34205	39677831.63	5349.962703	6281.857044	9658593.828	5.615245452	49259403.01	24.52780001
	243050.86	25008.34929	1930052.217	8739.130658	5336007.659	573.1435374	669.0794274	2207423.698	11.44755188	7534788.162	33.46667583
	297142.98	13820.88604	2179547.773	10684.06577	6301006.796	699.1899026	831.6494943	2501894.897	10.61274332	8792350.087	31.94318245
	168634.96	3598.123492	1547125.644	6063.434471	4008434.058	400.7170242	464.9524605	1725822.879	12.89949432	5728257.738	36.67022922
	32816.098	1288.801028	574718.1019	1179.934809	1585436.535	77.03600493	89.94543814	610079.9716	23.43278493	2194349.481	72.18675934
	1015562	33134.96095	4584370.058	36515.5211	19117543.42	2416.45166	2826.325481	5671998.959	7.039694163	24753436.73	26.31284238
	663517.2	12376.47026	3543584.979	23857.40826	12837093.3	1559.311993	1858.34152	4244895.374	8.063783885	17058430.3	27.75399881
	397549.85	5911.12121	2599286.737	14294.29252	8092257.144	948.3154346	1093.289595	3017990.313	9.568642484	11096098.14	30.13126649
	988659.62	58135.61458	4510509.37	35548.22085	18637607.66	2373.761252	2765.693263	5595226.583	7.133373446	24197677.96	26.42199375
	228272.56	8866.372904	1858175.665	8207.762415	5072363.956	537.4846191	627.5296249	2104059.841	11.61792217	7168306.079	33.90014275
	88889.085	4702.674496	1050208.627	3196.093749	2585774.091	208.9719995	243.9905437	1147205.452	16.26735127	3729818.468	45.29788741
	236401.37	7121.726009	1897931.437	8500.041769	5217381.3	557.9361886	651.4411105	2150512.509	11.46610898	7359487.272	33.60750418
	72717.182	2602.575253	930063.6832	2614.617194	2297268.644	170.7040605	199.3100698	1008168.761	17.47512438	3302851.394	49.03325042
	131797.36	5673.904072	1332802.644	4738.902758	3351254.314	309.3951747	369.352549	1475322.209	14.10925995	4821897.577	39.49571194
	65162.127	3331.715587	870340.9254	2342.967833	2162487.078	152.9685201	178.6024674	941330.7043	18.2083692	3101500.449	51.38250639
	192521.6	8546.187293	1676225.135	6922.301793	4434569.727	451.9457101	535.8921604	1884667.166	12.33898076	6312398.537	35.39595577
	52278.537	2864.657015	761742.0874	1879.725797	1932644.878	122.7242087	143.2899166	818887.7316	19.7435396	2749673.45	56.78012985
	71517.866	7123.507516	920752.863	2571.494616	2275872.943	167.8886583	196.0228719	1002133.619	17.66180822	3275463.202	49.44209537
	78346.797	2016.084979	972982.731	2817.035505	2397700.527	183.9196195	221.3472278	1056346.568	16.99453387	3451267.487	47.55498643
	242059.78	10020.31431	1925286.948	8703.495316	5318326.825	582.4328145	678.936897	2186652.966	11.38626574	7496372.8	33.43237572
	170350	6598.632124	1556625.992	6125.100551	4039030.304	399.8977509	487.3793177	1740099.627	12.87526105	5773092.312	36.58516702
	53133.585	4098.621336	769255.4781	1910.46989	1947898.87	124.7314401	145.633513	828522.8862	19.65438523	2774532.188	56.37146647
	40586.084	2657.115971	653567.5092	1459.312237	1724052.458	95.27609819	111.2421446	698365.2975	21.68850308	2420974.41	64.39493916
70	195303.05	29796.47	1690835.055	7022.311777	4484190.687	501.2689587	551.4806502	1923458.159	12.41360117	6400676.746	35.37981436
	33581.591	1923.999485	582791.9528	1207.458864	1599092.872	78.83300528	92.04357373	619583.8353	23.25535035	2217482.459	71.28491099
	55212.227	750.3301518	787324.221	1985.209465	1984981.662	129.6110641	151.3308479	845401.5984	19.29975872	2828419.771	55.3028216
	1049102.4	114517.0405	4675381.923	37721.49969	19715901.84	2603.244154	3081.235713	5879326.097	7.063724466	25557984.43	26.29949524

	181718.55	3326.216783	1618671.929	6533.867784	4241844.282	435.3242406	533.5754591	1810685.89	12.55937209	6046094.555	35.91818272
	119083.92	4332.3458	1253468.507	4281.778655	3124447.587	279.550293	332.1614529	1381446.106	14.62193624	4501664.526	40.809256
	11567.658	140.20816	305833.9971	415.9264124	1206366.077	27.15515206	31.70572062	317984.9444	34.6485616	1523939.646	142.2201165
	12863136	1955065.983	21299878.47	462506.5944	230477303.2	39347.24132	47563.94926	36619934.08	3.588349872	266642947.4	22.37803427
	395926.41	11603.32142	2592859.806	14235.92034	8063295.2	960.0961928	1102.800038	3015585.557	9.60022159	11064787.54	30.16944304
	357837.85	6740.817896	2438947.622	12866.40885	7383798.286	855.3678524	1011.075621	2817248.064	9.923454745	10188335.65	30.73658824
	306336.73	5937.610563	2220100.943	11014.6361	6465022.594	725.9794129	870.6658949	2544115.903	10.46795606	8998268.548	31.7101692
	2819715.5	329999.0891	8503475.875	101385.6227	51303497.44	7086.535871	8400.162734	11761662.67	5.257599475	62965088.11	24.10644698
	4398704.2	343738.5593	11128426.4	158159.7005	79472527.69	11355.67441	13282.49415	16040384.54	4.596360606	95356679.36	23.40265056
	320290.32	5306.67181	2280742.659	11516.35088	6713953.431	765.3694678	893.6986595	2618621.372	10.30511806	9321186.781	31.41709931
	401600.59	4266.145593	2615277.972	14439.94096	8164522.086	965.4841146	1115.170333	3036550.134	9.530379403	11186781.96	30.07111411
	489742.03	4854.400149	2948849.035	17609.15226	9736958.176	1170.375847	1364.641273	3462224.99	8.910703444	13181768.28	29.05661286
	60724.772	1749.525927	833985.778	2183.418417	2083325.03	142.5518009	166.4401497	898786.0464	18.65582693	2979951.546	52.97634551
	649409.63	9852.067988	3497809.112	23350.15651	12585415.23	1569.818767	1825.359639	4181990.78	8.116866951	16744311.4	27.83474576
	1462780.9	104704.9302	5716836.056	52595.71297	27095892.51	3484.347016	4275.25781	7340401.916	6.325059937	34384489.62	25.3759318
	185684.53	9489.819755	1639953.69	6676.468233	4312596.931	441.9370045	520.0770318	1842246.441	12.50535691	6148245.043	35.74490474
	78388.303	4555.206189	973294.5517	2818.527894	2398440.991	184.0170551	218.5258957	1059240.606	17.0320701	3454897.578	47.57979893
	186164.39	13617.28008	1642516.466	6693.722318	4321157.718	441.4515493	521.7118337	1849433.312	12.52178192	6163977.569	35.74399742
	271235.87	4050.105435	2062515.839	9752.550438	5838826.085	636.895404	752.2998971	2348191.265	10.91215221	8177380.204	32.54660912
	624119.78	109336.4331	3414753.725	22440.83557	12134246.5	1514.386727	1738.11738	4172165.164	8.425925619	16284194.56	28.16676832
	91048.104	1090.146907	1065568.015	3273.723375	2624290.811	213.7360201	250.6717894	1161193.725	16.07525433	3782247.748	44.84538495
	51704.519	849.5213847	756670.8836	1859.086417	1922404.442	121.3766975	141.716594	811205.3872	19.77545116	2731771.083	57.03671287
	199192.99	24097.79816	1711130.266	7162.178087	4553586.765	489.9073572	554.4470512	1942073.136	12.28897377	6488562.262	35.16520256
	234960.8	9075.865773	1890925.843	8448.244573	5191681.599	566.6845317	650.1577884	2143977.434	11.5013517	7327294.261	33.6656433
	220234.59	21883.74944	1818310.388	7918.749367	4928967.222	527.830838	616.4447165	2068875.303	11.8405771	6990012.39	34.26345162
	250047.42	22520.83854	1963477.001	8990.698937	5460825.793	597.1531246	697.1450084	2245633.113	11.31984553	7697568.199	33.23302337
	1882435.3	392486.9063	6659289.776	67684.79728	34582493.6	4909.998167	5826.831379	9006806.776	6.030799156	43522532.41	24.95932221
	185749.45	4199.602094	1640300.565	6678.802563	4313755.132	441.0543061	517.7812592	1837369.471	12.46789232	6144522.527	35.71077688
	41041.032	2929.709236	657990.0595	1475.670332	1732168.692	96.34409134	112.4891084	703532.8151	21.60678573	2434241.982	64.03009773
	268846.93	9587.556016	2051506.292	9666.653619	5796207.514	633.6855706	777.1236438	2340241.117	10.97184341	8126925.416	32.63321631
	528368.06	78558.67458	3087442.606	18997.98881	10426043.42	1270.160785	1498.204129	3714637.486	8.861433066	14121910.96	28.85330747
	847686.32	27604.9568	4109647.384	30479.3886	16122655.51	2038.345787	2376.057567	5017456.398	7.460578566	21109970.23	26.88382951

	219763.25	3376.715998	1815955.051	7901.801993	4920558.612	516.8628159	603.4687319	2047513.682	11.74345321	6960257.098	34.19077159
	2946989.6	202650.6424	8733661.105	105961.8866	53574056.82	7055.261027	8277.580893	11996318.52	5.130898915	65465635.77	23.98134133
	442147.59	18392.42423	2771982.408	15897.84773	8887877.207	1041.313896	1221.583152	3249461.58	9.263353242	12121621.21	29.59593999
	392807.53	40909.84291	2580483.352	14123.77796	8007654.631	939.9316059	1093.307847	3029264.437	9.720340018	11022948.67	30.29400314
	66567.844	9958.191169	881652.1989	2393.511756	2187564.955	156.2684498	182.4553882	960728.0141	18.19114526	3145925.644	51.0179086
	2781629.1	259364.0312	8433800.155	100016.187	50624038.12	6957.17084	8196.56479	11581766.63	5.248070593	62107027.96	24.10350591
	2167989.4	153622.4158	7253320.285	77952.17299	39676755.43	5349.821088	6288.34729	9658234.079	5.615192545	49257975.86	24.52777187
	375420.47	32543.66151	2510762.536	13498.6093	7697470.904	899.881177	1034.759897	2933125.162	9.847743317	10617232.33	30.53036921
	168634.96	3598.123492	1547125.644	6063.434471	4008434.058	399.5971598	465.8989416	1725821.759	12.89948595	5728258.684	36.67023528
	100488.95	3507.030307	1131107.447	3613.178309	2792714.795	235.898475	281.1573527	1238952.507	15.54033643	4028099.382	43.27335278
	32816.098	1288.801028	574718.1019	1179.934809	1585436.535	77.03600493	89.94543814	610079.9716	23.43278493	2194349.481	72.18675934
	1015562	33134.96095	4584370.058	36515.5211	19117543.42	2416.45166	2829.600919	5671998.959	7.039694163	24753440.01	26.31284587
	544142.38	8157.911709	3142884.157	19565.17014	10707456.14	1278.208219	1493.936598	3716027.83	8.607766569	14404134.53	28.57678074
	397549.85	5911.12121	2599286.737	14294.29252	8092257.144	948.3154346	1093.289595	3017990.313	9.568642484	11096098.14	30.13126649
	916660.99	53234.57043	4308822.184	32959.44002	17353157.99	2184.336595	2596.893321	5313861.521	7.306772073	22634472.63	26.65632768
	207718.8	4753.735315	1755072.803	7468.731944	4705686.547	488.885526	570.1579629	1975502.952	11.98742664	6673802.039	34.68456166
	76809.897	3136.043672	961390.1651	2761.774779	2370282.361	180.3117374	214.2699612	1044278.193	17.13653853	3411832.737	47.95227713
	143822.35	4594.090777	1405100.031	5171.272971	3565779.147	337.6239154	394.2017895	1559025.371	13.66315112	5119689.824	38.42872271
	88889.085	4702.674496	1050208.627	3196.093749	2585774.091	208.9719995	243.9905437	1147205.452	16.26735127	3729818.468	45.29788741
	230224.17	6634.144972	1867770.786	8277.934462	5107180.523	543.3678892	634.4466014	2113450.4	11.57084906	7212444.067	33.81973787
	67966.236	2252.459082	892811.2962	2443.792314	2212512.16	159.5511848	186.2882329	965633.3349	17.90783595	3175728.44	50.4415968
	131797.36	5673.904072	1332802.644	4738.902758	3351254.314	309.3951747	370.3601292	1475322.209	14.10925995	4821898.585	39.49572019
	65162.127	3331.715587	870340.9254	2342.967833	2162487.078	152.9685201	178.6024674	941330.7043	18.2083692	3101500.449	51.38250639
	192521.6	8546.187293	1676225.135	6922.301793	4434569.727	451.9457101	535.219249	1884667.166	12.33898076	6312397.864	35.395952
	52278.537	2864.657015	761742.0874	1879.725797	1932644.878	122.7242087	143.2899166	818887.7316	19.7435396	2749673.45	56.78012985
	59751.293	5024.866089	825871.3455	2148.416009	2065958.232	140.2665512	163.7719455	892936.1868	18.83636926	2956769.509	53.42061134
	78346.797	2016.084979	972982.731	2817.035505	2397700.527	183.9196195	214.7402474	1056346.568	16.99453387	3451260.88	47.5548954
	225009.78	7556.459382	1842061.461	8090.445935	5014156.203	541.2489783	631.2067557	2083259.391	11.66987059	7089415.105	34.01321693
	17050	181.56218	386736.8279	613.0493814	1304170.623	40.02498682	46.73223877	404621.4644	29.91221757	1708185.745	108.1556962
	11766.573	76.81035251	309005.0114	423.0786067	1209914.71	27.62210708	32.25092638	321299.0954	34.41783826	1530795.356	140.4448547
	77805.169	2807.850026	968907.664	2797.560745	2388037.929	182.6481444	213.2557029	1052500.892	17.05053848	3437771.868	47.69878212
	92544.835	1819.167699	1076131.515	3327.539806	2650992.375	217.2496065	253.6555609	1174040.307	15.99023697	3821741.549	44.58079584

	53133.585	4098.621336	769255.4781	1910.46989	1947898.87	124.7314401	145.633513	828522.8862	19.65438523	2774532.188	56.37146647
	40586.084	2657.115971	653567.5092	1459.312237	1724052.458	95.27609819	111.2421446	698365.2975	21.68850308	2420974.41	64.39493916
80	195303.05	29796.47	1690835.055	7022.311777	4484190.687	500.8947049	551.4806502	1923457.785	12.41359876	6400676.746	35.37981436
	33581.591	1923.999485	582791.9528	1207.458864	1599092.872	78.83300528	92.04357373	619583.8353	23.25535035	2217482.459	71.28491099
	55212.227	750.3301518	787324.221	1985.209465	1984981.662	129.6110641	151.3308479	845401.5984	19.29975872	2828419.771	55.3028216
	1049102.4	114517.0405	4675381.923	37721.49969	19715901.84	2603.244154	3081.235713	5879326.097	7.063724466	25557984.43	26.29949524
	181718.55	3326.216783	1618671.929	6533.867784	4241844.282	458.6845393	533.5754591	1810709.25	12.55953412	6046094.555	35.91818272
	119083.92	4332.3458	1253468.507	4281.778655	3124447.587	279.550293	331.9397027	1381446.106	14.62193624	4501664.304	40.80925399
	11567.658	140.20816	305833.9971	415.9264124	1206366.077	27.15515206	31.70572062	317984.9444	34.6485616	1523939.646	142.2201165
	12863136	1955065.983	21299878.47	462506.5944	230477303.2	39347.34802	47563.94926	36619934.19	3.588349882	266642947.4	22.37803427
	336959.58	11265.38997	2351835.002	12115.71024	7011331.615	813.1541404	953.874275	2712988.833	10.14832296	9712345.458	31.11608905
	288605.53	5018.033419	2141443.374	10377.0935	6148699.413	682.3646043	806.129797	2446126.4	10.68312517	8584572.485	32.11091676
	213925.69	3021.216495	1786616.591	7691.906983	4816417.09	516.0969215	591.859879	2011771.505	11.85331377	6820572.451	34.41886663
	220610.19	3887.771001	1820185.907	7932.254566	4935667.963	522.4000228	610.0686623	2053138.523	11.73050639	6980961.9	34.16082787
	2819715.5	329999.0891	8503475.875	101385.6227	51303497.44	7086.535871	8425.948944	11761662.67	5.257599475	62965113.89	24.10645686
	4398704.2	343738.5593	11128426.4	158159.7005	79472527.69	11325.26616	13324.96788	16040354.14	4.596351893	95356721.83	23.40266098
	320290.32	5306.67181	2280742.659	11516.35088	6713953.431	768.612045	893.1872807	2618624.614	10.30513082	9321186.269	31.41709759
	401600.59	4266.145593	2615277.972	14439.94096	8164522.086	965.4841146	1115.170333	3036550.134	9.530379403	11186781.96	30.07111411
	489742.03	4854.400149	2948849.035	17609.15226	9736958.176	1170.375847	1364.575587	3462224.99	8.910703444	13181768.21	29.05661271
	60724.772	1749.525927	833985.778	2183.418417	2083325.03	142.5518009	166.4401497	898786.0464	18.65582693	2979951.546	52.97634551
	649409.63	9852.067988	3497809.112	23350.15651	12585415.23	1585.279497	1825.446644	4182006.241	8.116896958	16744311.49	27.83474591
	1444577.1	104917.0632	5673687.626	51941.17941	26771139.09	3461.894962	4069.065026	7278584.885	6.350827204	33998389.97	25.40717079
	185684.53	9489.819755	1639953.69	6676.468233	4312596.931	442.3966083	520.0770318	1842246.9	12.50536003	6148245.043	35.74490474
	78388.303	4555.206189	973294.5517	2818.527894	2398440.991	184.0170551	217.6975055	1059240.606	17.0320701	3454896.749	47.57978752
	143251.75	1333.297253	1401724.756	5150.756474	3555599.681	336.2844271	396.8989253	1551796.847	13.65397175	5102306.386	38.45079108
	186164.39	13617.28008	1642516.466	6693.722318	4321157.718	458.7892871	521.1347967	1849450.65	12.52189931	6163976.992	35.74399408
	146187.87	1827.209708	1419036.744	5256.327517	3607979.817	343.2804934	419.7779209	1572651.433	13.55954789	5175451.42	38.21867101
	624119.78	109336.4331	3414753.725	22440.83557	12134246.5	1518.262458	1738.11738	4172169.04	8.425933447	16284194.56	28.16676832
	91048.104	1090.146907	1065568.015	3273.723375	2624290.811	213.7360201	254.5597171	1161193.725	16.07525433	3782251.636	44.84543105
	51675.158	811.8374386	756410.8965	1858.030718	1921880.647	121.3077726	141.636119	810877.2306	19.77868292	2730920.175	57.05134387
	199192.99	24097.79816	1711130.266	7162.178087	4553586.765	486.5119908	554.4470512	1942069.74	12.28895229	6488562.262	35.16520256
	82985.453	1135.243538	1007438.33	2983.822915	2480453.78	194.8088955	232.6139882	1094737.659	16.62769942	3572245.421	46.47057068

152086.86	6611.834382	1453408.69	5468.43139	3713217.289	357.0249003	431.605599	1617932.841	13.40889145	5325756.279	37.80317556
220234.59	21883.74944	1818310.388	7918.749367	4928967.222	527.830838	616.4447165	2068875.303	11.8405771	6990012.39	34.26345162
246669.87	21870.81609	1947388.169	8869.255957	5400570.636	589.0210087	687.8875122	2225387.137	11.37138954	7617187.384	33.33628603
1882435.3	392486.9063	6659289.776	67684.79728	34582493.6	4909.998167	5826.831379	9006806.776	6.030799156	43522532.41	24.95932221
76919.716	3109.612138	962221.5296	2765.723416	2372241.517	180.5695375	213.449938	1045197.151	17.12713112	3414705.825	47.92413815
125756.98	2443.294611	1295505.318	4521.714905	3243494.373	298.4497785	348.5678548	1428525.758	14.31792394	4667548.534	40.06779367
23137.416	1414.029142	465192.5611	831.9283465	1412769.625	54.31523481	63.4171982	490630.2494	26.72782077	1902577.048	88.76997416
255215.07	5090.609395	1987927.767	9176.506808	5553016.239	601.4440791	702.2527229	2258011.398	11.15177223	7801951.939	33.0016491
528368.06	78558.67458	3087442.606	18997.98881	10426043.42	1261.709578	1485.570553	3714629.034	8.861412905	14121898.32	28.85328166
847686.32	27604.9568	4109647.384	30479.3886	16122655.51	2042.164617	2380.509103	5017460.217	7.460584244	21109974.68	26.88383518
219763.25	3376.715998	1815955.051	7901.801993	4920558.612	516.8628159	603.4687319	2047513.682	11.74345321	6960257.098	34.19077159
17903.616	243.309431	398337.725	643.7419859	1319399.067	42.02885653	49.07191019	417170.4215	29.36951839	1735932.79	104.672075
2946989.6	202650.6424	8733661.105	105961.8866	53574056.82	7053.995473	8276.103332	11996317.26	5.130898373	65465634.3	23.98134079
442147.59	18392.42423	2771982.408	15897.84773	8887877.207	1041.313896	1221.583152	3249461.58	9.263353242	12121621.21	29.59593999
392807.53	40909.84291	2580483.352	14123.77796	8007654.631	939.9316059	1093.36782	3029264.437	9.720340018	11022948.73	30.2940033
66567.844	9958.191169	881652.1989	2393.511756	2187564.955	156.2684498	182.4553882	960728.0141	18.19114526	3145925.644	51.0179086
2781629.1	259364.0312	8433800.155	100016.187	50624038.12	6957.17084	8196.56479	11581766.63	5.248070593	62107027.96	24.10350591
2167989.4	153622.4158	7253320.285	77952.17299	39676755.43	5380.408307	6252.790675	9658264.666	5.615210328	49257940.3	24.52775416
202432.89	18241.23736	1727914.827	7278.672078	4611386.431	477.4348258	556.9743036	1956345.063	12.18115465	6560532.362	34.98619327
152696.53	2488.161344	1456930.806	5490.352704	3724093.77	361.8528735	420.4774136	1617967.704	13.35564158	5336629.745	37.72911259
85480.224	2500.20089	1025654.283	3073.524834	2524960.29	200.6653863	234.2922132	1116908.898	16.46933927	3638829.29	45.95520607
32816.098	1288.801028	574718.1019	1179.934809	1585436.535	77.03600493	89.94543814	610079.9716	23.43278493	2194349.481	72.18675934
928363.54	27941.17477	4342018.946	33380.21658	17561930.52	2183.374443	2583.619412	5333887.251	7.241855136	22862837.8	26.5858621
169138.55	2049.047747	1549919.203	6081.54168	4017418.132	397.0538637	464.6596268	1727585.401	12.87422188	5738989.596	36.62954403
91399.126	1900.371931	1068051.548	3286.344721	2630553.019	214.5600471	253.8369385	1164851.951	16.06396564	3792157.902	44.79020587
595703.26	9608.102224	3319826.719	21419.09189	11627298.08	1399.204346	1634.246123	3947956.381	8.353460892	15554070.41	28.18725402
395098.9	4753.657799	2589579.793	14206.1662	8048532.385	931.4514745	1086.532577	3004569.965	9.585186827	11039051.26	30.16231155
916660.99	53234.57043	4308822.184	32959.44002	17353157.99	2184.336595	2596.893321	5313861.521	7.306772073	22634472.63	26.65632768
95887.8	1449.799237	1099484.489	3447.739368	2710630.598	225.0972384	262.8182724	1200494.925	15.78051065	3907715.505	43.99448851
129523.62	2914.220695	1318843.945	4657.148131	3310690.932	304.0575494	355.0104854	1456242.992	14.17127574	4762327.729	39.69254901
76809.897	3136.043672	961390.1651	2761.774779	2370282.361	180.3117374	210.5277687	1044278.193	17.13653853	3411828.995	47.95222453
107615.29	3345.67933	1178978.88	3869.412556	2919847.996	252.627588	294.9620649	1294061.885	15.15671768	4210082.803	42.23333367

	88889.085	4702.674496	1050208.627	3196.093749	2585774.091	208.9719995	243.9905437	1147205.452	16.26735127	3729818.468	45.29788741
	203174.16	4183.683135	1731740.078	7305.325194	4624610.643	480.0171232	559.920691	1946883.266	12.07801351	6564268.487	34.87839931
	67966.236	2252.459082	892811.2962	2443.792314	2212512.16	159.5511848	186.2882329	965633.3349	17.90783595	3175728.44	50.4415968
	27050.004	467.1408445	511309.0884	972.6092674	1482569.88	63.50006099	74.14118648	539862.3423	25.15589558	2021470.254	80.67495175
	131797.36	5673.904072	1332802.644	4738.902758	3351254.314	309.3951747	361.2425718	1475322.209	14.10925995	4821889.467	39.49564551
	65162.127	3331.715587	870340.9254	2342.967833	2162487.078	152.9685201	178.6024674	941330.7043	18.2083692	3101500.449	51.38250639
	192521.6	8546.187293	1676225.135	6922.301793	4434569.727	462.5809398	535.8921604	1884677.801	12.33905039	6312398.537	35.39595577
	52278.537	2864.657015	761742.0874	1879.725797	1932644.878	122.7242087	143.2899166	818887.7316	19.7435396	2749673.45	56.78012985
	59751.293	5024.866089	825871.3455	2148.416009	2065958.232	140.2665512	163.7719455	892936.1868	18.83636926	2956769.509	53.42061134
	78346.797	2016.084979	972982.731	2817.035505	2397700.527	183.9196195	214.7402474	1056346.568	16.99453387	3451260.88	47.5548954
	223238.52	6890.59721	1833274.962	8026.758805	4982557.192	536.2723953	625.9922306	2071967.113	11.69870519	7046587.266	34.07598232
	17050	181.56218	386736.8279	613.0493814	1304170.623	40.02498682	46.73223877	404621.4644	29.91221757	1708185.745	108.1556962
	36643.124	1132.859654	614380.9442	1317.539269	1653710.373	86.01997405	100.4349104	653560.4872	22.48109038	2305967.736	67.93591373
	11766.573	76.81035251	309005.0114	423.0786067	1209914.71	27.62210708	32.25092638	321299.0954	34.41783826	1530795.356	140.4448547
	29243.653	1696.283863	536008.171	1051.48407	1521704.407	68.64966724	80.15374634	568068.2417	24.48459727	2088732.669	77.10631082
	133706.88	3041.428156	1344451.994	4807.561282	3385319.931	313.8777768	366.4763533	1486321.741	14.01145233	4866886.71	39.29489845
	30547.272	2213.444937	550339.394	1098.356967	1544960.867	71.70992167	83.72682786	584270.178	24.10823203	2128144.705	75.20858337
	35699.997	637.9694797	604764.8321	1283.62822	1636885.065	83.8059774	97.8498997	642470.233	22.68343943	2278085.713	68.88752262
90	195303.05	29796.47	1690835.055	7022.311777	4484190.687	500.8947049	551.4806502	1923457.785	12.41359876	6400676.746	35.37981436
	33581.591	1923.999485	582791.9528	1207.458864	1599092.872	78.83300528	92.04357373	619583.8353	23.25535035	2217482.459	71.28491099
	55212.227	750.3301518	787324.221	1985.209465	1984981.662	129.6110641	151.3308479	845401.5984	19.29975872	2828419.771	55.3028216
	1049102.4	114517.0405	4675381.923	37721.49969	19715901.84	2609.108034	3081.235713	5879331.96	7.063731511	25557984.43	26.29949524
	181718.55	3326.216783	1618671.929	6533.867784	4241844.282	426.5854919	537.5343296	1810677.151	12.55931147	6046098.514	35.91820624
	119083.92	4332.3458	1253468.507	4281.778655	3124447.587	279.550293	326.3963858	1381446.106	14.62193624	4501658.761	40.80920373
	11567.658	140.20816	305833.9971	415.9264124	1206366.077	27.15515206	31.70572062	317984.9444	34.6485616	1523939.646	142.2201165
	12840738	1971966.025	21277432.78	461701.2735	230077735.1	39276.73428	47481.9033	36591115.2	3.591779979	266215354.2	22.38111869
	169977.29	6282.216711	1554564.605	6111.699298	4032381.137	399.0228051	497.2636867	1737334.834	12.88299094	5763702.514	36.6057527
	186037.45	1108.64104	1641838.769	6689.157963	4318893.068	442.554729	522.4210808	1836116.573	12.44010227	6148400.349	35.67799574
	192613.42	2397.866239	1676708.771	6925.603379	4436207.842	462.7862964	531.7479501	1879108.447	12.29672272	6308459.647	35.35700546
	100086.76	1531.048206	1128366.406	3598.717189	2785539.764	237.6676065	277.6013358	1233820.602	15.53815508	4015801.583	43.31459829
	213925.69	3021.216495	1786616.591	7691.906983	4816417.09	535.8424481	591.8698953	2011791.251	11.85343011	6820572.461	34.41886668
	220610.19	3887.771001	1820185.907	7932.254566	4935667.963	522.4000228	610.0686623	2053138.523	11.73050639	6980961.9	34.16082787

2819715.5	329999.0891	8503475.875	101385.6227	51303497.44	7107.409285	8424.502626	11761683.54	5.257608805	62965112.45	24.1064563
4383912.7	345398.1902	11105771.26	157627.8561	79208647.78	11298.12948	13450.11548	16004008.11	4.601410148	95057180.02	23.40786047
319537.92	4544.642784	2277499.726	11489.29762	6700530.684	766.4776031	907.4412281	2613838.065	10.31051482	9303020.415	31.42970155
348817.06	3478.313314	2401562.502	12542.05746	7222868.08	830.9698677	982.692843	2767230.898	9.999349865	9977708.644	30.87960913
162099.13	1337.763139	1510565.632	5828.43249	3891835.459	387.4499038	450.9321323	1680218.412	13.06499118	5566288.92	37.07009824
327946.83	2286.289949	2313573.812	11791.64823	6850544.986	779.1205717	909.4903907	2656377.703	10.20964081	9495261.411	31.25663155
122992.71	1411.516807	1278201.456	4422.323027	3194180.093	291.1700772	340.3716268	1407319.181	14.42239204	4597126.152	40.35020281
60724.772	1749.525927	833985.778	2183.418417	2083325.03	142.5518009	166.4401497	898786.0464	18.65582693	2979951.546	52.97634551
596727.41	8177.215432	3323278.584	21455.91593	11645568.7	1439.838281	1658.84052	3951078.959	8.345719847	15575410.74	28.17748403
1444577.1	104917.0632	5673687.626	51941.17941	26771139.09	3431.856591	4015.773244	7278554.846	6.350800995	33998336.68	25.40713096
185684.53	9489.819755	1639953.69	6676.468233	4312596.931	441.5131259	515.6218108	1842246.017	12.50535403	6148240.588	35.74487884
78185.679	4686.214666	971771.6885	2811.242356	2394826.198	183.5413943	214.2986405	1057638.366	17.05037994	3449684.079	47.63112063
143251.75	1333.297253	1401724.756	5150.756474	3555599.681	336.2844271	392.6378342	1551796.847	13.65397175	5102302.125	38.45075897
183327.66	13672.05706	1627328.434	6591.724766	4270550.606	435.4694975	530.1062696	1831355.343	12.59124593	6095408.861	35.89331244
146187.87	1827.209708	1419036.744	5256.327517	3607979.817	343.2804934	410.1777628	1572651.433	13.55954789	5175441.82	38.21860012
624119.78	109336.4331	3414753.725	22440.83557	12134246.5	1548.076276	1738.11738	4172198.854	8.425993657	16284194.56	28.16676832
91048.104	1090.146907	1065568.015	3273.723375	2624290.811	213.7360201	249.5531796	1161193.725	16.07525433	3782246.63	44.84537169
51675.158	811.8374386	756410.8965	1858.030718	1921880.647	121.3077726	141.636119	810877.2306	19.77868292	2730920.175	57.05134387
199192.99	24097.79816	1711130.266	7162.178087	4553586.765	486.5119908	554.4470512	1942069.74	12.28895229	6488562.262	35.16520256
82985.453	1135.243538	1007438.33	2983.822915	2480453.78	194.8088955	227.4543114	1094737.659	16.62769942	3572240.261	46.47050356
152086.86	6611.834382	1453408.69	5468.43139	3713217.289	357.0249003	416.8539259	1617932.841	13.40889145	5325741.527	37.80307085
220234.59	21883.74944	1818310.388	7918.749367	4928967.222	527.6862763	616.4371627	2068875.159	11.84057627	6990012.383	34.26345159
246669.87	21870.81609	1947388.169	8869.255957	5400570.636	589.0210087	687.8875122	2225387.137	11.37138954	7617187.384	33.33628603
1882435.3	392486.9063	6659289.776	67684.79728	34582493.6	4909.998167	5826.831379	9006806.776	6.030799156	43522532.41	24.95932221
76919.716	3109.612138	962221.5296	2765.723416	2372241.517	180.5695375	214.5459767	1045197.151	17.12713112	3414706.921	47.92415353
125756.98	2443.294611	1295505.318	4521.714905	3243494.373	298.4497785	348.9681756	1428525.758	14.31792394	4667548.935	40.06779711
23137.416	1414.029142	465192.5611	831.9283465	1412769.625	54.31523481	63.4171982	490630.2494	26.72782077	1902577.048	88.76997416
187365.19	3784.497559	1648918.036	6736.898184	4342579.859	446.1395184	516.7335634	1847250.762	12.42684904	6183164.317	35.62546706
528368.06	78558.67458	3087442.606	18997.98881	10426043.42	1261.720627	1488.089463	3714629.045	8.861412931	14121900.84	28.85328681
158570.08	2097.813858	1490582.875	5701.541801	3828877.366	375.5725171	441.3912761	1657327.881	13.17380637	5480569.524	37.31153715
847814.99	27606.75194	4110024.776	30484.0151	16124950.99	2042.466674	2385.439733	5017973.005	7.460214326	21112782.96	26.8833309
147490.13	2805.688646	1426671.119	5303.151515	3631212.015	347.9420886	406.9457963	1582618.032	13.52499852	5208585.899	38.12374518

17903.616	243.309431	398337.725	643.7419859	1319399.067	42.02885653	49.07191019	417170.4215	29.36951839	1735932.79	104.672075
2928413.9	204618.58	8700313.753	105293.9774	53242666.94	7027.252568	8219.915336	11945667.44	5.141644446	65084233.07	23.99286019
442147.59	18392.42423	2771982.408	15897.84773	8887877.207	1041.313896	1221.583152	3249461.58	9.263353242	12121621.21	29.59593999
392807.53	40909.84291	2580483.352	14123.77796	8007654.631	934.8240146	1093.36782	3029259.329	9.720323628	11022948.73	30.2940033
66567.844	9958.191169	881652.1989	2393.511756	2187564.955	156.2684498	182.4553882	960728.0141	18.19114526	3145925.644	51.0179086
2781629.1	259364.0312	8433800.155	100016.187	50624038.12	6957.17084	8190.484122	11581766.63	5.248070593	62107021.88	24.10350355
2167989.4	153622.4158	7253320.285	77952.17299	39676755.43	5380.408307	6252.790675	9658264.666	5.615210328	49257940.3	24.52775416
202432.89	18241.23736	1727914.827	7278.672078	4611386.431	477.4348258	556.9743036	1956345.063	12.18115465	6560532.362	34.98619327
152696.53	2488.161344	1456930.806	5490.352704	3724093.77	358.4561069	421.9986004	1617964.307	13.35561355	5336631.266	37.72912334
85480.224	2500.20089	1025654.283	3073.524834	2524960.29	200.6653863	234.2922132	1116908.898	16.46933927	3638829.29	45.95520607
32816.098	1288.801028	574718.1019	1179.934809	1585436.535	77.03600493	89.94543814	610079.9716	23.43278493	2194349.481	72.18675934
928363.54	27941.17477	4342018.946	33380.21658	17561930.52	2183.374443	2578.67392	5333887.251	7.241855136	22862832.85	26.58585635
169138.55	2049.047747	1549919.203	6081.54168	4017418.132	397.0538637	464.6596268	1727585.401	12.87422188	5738989.596	36.62954403
91399.126	1900.371931	1068051.548	3286.344721	2630553.019	214.5600471	253.9529705	1164851.951	16.06396564	3792158.018	44.79020724
595703.26	9608.102224	3319826.719	21419.09189	11627298.08	1399.204346	1634.246123	3947956.381	8.353460892	15554070.41	28.18725402
395098.9	4753.657799	2589579.793	14206.1662	8048532.385	931.4514745	1086.532577	3004569.965	9.585186827	11039051.26	30.16231155
806913.65	47107.21502	3988895.434	29013.36743	15395274.35	1926.936237	2245.025513	4873856.605	7.613244222	20240435.68	27.07892885
95887.8	1449.799237	1099484.489	3447.739368	2710630.598	225.0972384	262.8182724	1200494.925	15.78051065	3907715.505	43.99448851
129523.62	2914.220695	1318843.945	4657.148131	3310690.932	304.0575494	355.0104854	1456242.992	14.17127574	4762327.729	39.69254901
114473.75	3462.785839	1223881.446	4116.015292	3042202.426	268.7278754	316.5346954	1346202.724	14.822745	4384336.941	41.34630517
70505.869	2806.310881	912848.2094	2535.107305	2257819.012	165.5129905	193.2490978	988861.01	17.67803782	3244172.651	49.67265512
107615.29	3345.67933	1178978.88	3869.412556	2919847.996	252.627588	294.9620649	1294061.885	15.15671768	4210082.803	42.23333367
88889.085	4702.674496	1050208.627	3196.093749	2585774.091	208.9719995	243.9905437	1147205.452	16.26735127	3729818.468	45.29788741
203174.16	4183.683135	1731740.078	7305.325194	4624610.643	480.0171232	559.920691	1946883.266	12.07801351	6564268.487	34.87839931
67966.236	2252.459082	892811.2962	2443.792314	2212512.16	159.5511848	186.2882329	965633.3349	17.90783595	3175728.44	50.4415968
11095.174	208.4102997	298214.2681	398.937802	1197937.007	26.0459936	30.41069314	309942.8362	35.21044909	1507485.27	146.6755243
27050.004	467.1408445	511309.0884	972.6092674	1482569.88	63.50006099	74.14118648	539862.3423	25.15589558	2021470.254	80.67495175
131797.36	5673.904072	1332802.644	4738.902758	3351254.314	309.3951747	361.2425718	1475322.209	14.10925995	4821889.467	39.49564551
65089.194	3246.723855	869751.4416	2340.345442	2161185.953	152.7973085	178.4025648	940580.5018	18.21424434	3099451.715	51.40610185
156977.87	7237.204162	1481509.82	5644.292537	3800472.567	368.5065857	437.0093675	1651737.697	13.26254034	5446634.474	37.45661082
52337.981	1253.321391	762265.9849	1881.863143	1933705.345	122.8637526	143.4528448	817862.0138	19.69641349	2749706.084	56.71631432
42833.914	684.1083523	675233.3308	1540.135148	1764153.559	100.5528932	117.4032071	720392.0409	21.1985046	2483022.316	62.5794228

	30844.148	1923.448862	553569.0597	1109.031423	1550257.106	72.40683936	84.54053266	587518.0948	24.00891574	2136678.303	74.78337328
	28907.145	356.2929816	532268.0804	1039.384586	1515701.127	67.85971181	79.23141285	562638.7625	24.5328797	2077311.876	77.57739545
	63037.882	1602.969011	853063.2909	2266.58853	2124590.719	147.9818409	172.7801374	920118.7121	18.39781842	3042467.641	52.10303764
	221753.18	6717.321651	1825885.509	7973.351892	4956058.815	532.5140235	621.9210665	2062861.876	11.72531099	7011036.746	34.13116203
	17050	181.56218	386736.8279	613.0493814	1304170.623	40.02498682	46.73223877	404621.4644	29.91221757	1708185.745	108.1556962
	36457.051	1131.033132	612491.5583	1310.848828	1650390.843	85.58316615	99.92490373	651476.0744	22.5237663	2300570.411	68.12283013
	11766.573	76.81035251	309005.0114	423.0786067	1209914.71	27.62210708	32.25092638	321299.0954	34.41783826	1530795.356	140.4448547
	49907.486	892.6269371	740649.1366	1794.472325	1890345.51	117.1581496	136.7911161	793360.8797	20.03683718	2681931.55	58.01238056
	29243.653	1696.283863	536008.171	1051.48407	1521704.407	68.64966724	80.15374634	568068.2417	24.48459727	2088732.669	77.10631082
	83985.467	1504.245188	1014765.714	3019.779398	2498293.951	197.1564352	230.1952439	1103472.362	16.56080312	3598779.572	46.2583131
	30547.272	2213.444937	550339.394	1098.356967	1544960.867	71.70992167	83.72682786	584270.178	24.10823203	2128144.705	75.20858337
	35699.997	637.9694797	604764.8321	1283.62822	1636885.065	83.8059774	97.8498997	642470.233	22.68343943	2278085.713	68.88752262
100	195303.05	29796.47	1690835.055	7022.311777	4484190.687	501.2839214	551.4806502	1923458.174	12.41360127	6400676.746	35.37981436
	33581.591	1923.999485	582791.9528	1207.458864	1599092.872	78.83300528	92.04357373	619583.8353	23.25535035	2217482.459	71.28491099
	55212.227	750.3301518	787324.221	1985.209465	1984981.662	129.6110641	151.3308479	845401.5984	19.29975872	2828419.771	55.3028216
	1049102.4	114517.0405	4675381.923	37721.49969	19715901.84	2609.108034	3081.235713	5879331.96	7.063731511	25557984.43	26.29949524
	181718.55	3326.216783	1618671.929	6533.867784	4241844.282	426.5854919	537.5178323	1810677.151	12.55931147	6046098.498	35.91820614
	119083.92	4332.3458	1253468.507	4281.778655	3124447.587	279.550293	326.3963858	1381446.106	14.62193624	4501658.761	40.80920373
	11567.658	140.20816	305833.9971	415.9264124	1206366.077	27.15515206	31.70572062	317984.9444	34.6485616	1523939.646	142.2201165
	12840738	1971966.025	21277432.78	461701.2735	230077735.1	39276.73428	47481.9033	36591115.2	3.591779979	266215354.2	22.38111869
	169977.29	6282.216711	1554564.605	6111.699298	4032381.137	399.0228051	497.0530881	1737334.834	12.88299094	5763702.303	36.60575137
	186037.45	1108.64104	1641838.769	6689.157963	4318893.068	442.554729	522.4210808	1836116.573	12.44010227	6148400.349	35.67799574
	192613.42	2397.866239	1676708.771	6925.603379	4436207.842	462.4478196	531.7479501	1879108.108	12.29672051	6308459.647	35.35700546
	100086.76	1531.048206	1128366.406	3598.717189	2785539.764	237.8411844	277.6013358	1233820.776	15.53815726	4015801.583	43.31459829
	213925.69	3021.216495	1786616.591	7691.906983	4816417.09	535.5995572	591.8698953	2011791.008	11.85342868	6820572.461	34.41886668
	220610.19	3887.771001	1820185.907	7932.254566	4935667.963	522.4000228	610.0686623	2053138.523	11.73050639	6980961.9	34.16082787
	2819715.5	329999.0891	8503475.875	101385.6227	51303497.44	7107.409285	8434.668942	11761683.54	5.257608805	62965122.61	24.1064602
	4128100	347733.3174	10709055.12	148429.8616	74644970.16	10582.43279	12591.42015	15343900.72	4.685000586	89842450.01	23.49470882
	319537.92	4544.642784	2277499.726	11489.29762	6700530.684	766.4776031	893.6515492	2613838.065	10.31051482	9303006.625	31.42965497
	348817.06	3478.313314	2401562.502	12542.05746	7222868.08	830.4782409	981.3628917	2767230.407	9.999348089	9977707.314	30.87960502
	255812.68	6299.109417	1990742.71	9197.994595	5563677.621	603.2690937	709.167886	2262655.768	11.14860399	7817241.293	32.98907437
	162099.13	1337.763139	1510565.632	5828.43249	3891835.459	386.3785442	452.1134836	1680217.34	13.06498285	5566290.102	37.07010611

	327946.83	2286.289949	2313573.812	11791.64823	6850544.986	778.8742556	909.4903907	2656377.457	10.20963987	9495261.411	31.25663155
	122992.71	1411.516807	1278201.456	4422.323027	3194180.093	292.1572943	339.9448579	1407320.168	14.42240215	4597125.725	40.35019906
	55277.34	757.6552273	787885.8376	1987.550664	1986143.272	129.7639171	151.5093156	846038.1471	19.29153963	2830215.614	55.27275059
	596727.41	8177.215432	3323278.584	21455.91593	11645568.7	1429.140482	1658.84052	3951068.261	8.345697251	15575410.74	28.17748403
	1444577.1	104917.0632	5673687.626	51941.17941	26771139.09	3461.894962	4050.835455	7278584.885	6.350827204	33998371.74	25.40715716
	185684.53	9489.819755	1639953.69	6676.468233	4312596.931	442.2755983	516.5285348	1842246.779	12.50535921	6148241.495	35.74488411
	78185.679	4686.214666	971771.6885	2811.242356	2394826.198	183.5413943	214.2986405	1057638.366	17.05037994	3449684.079	47.63112063
	143251.75	1333.297253	1401724.756	5150.756474	3555599.681	336.2844271	392.6378342	1551796.847	13.65397175	5102302.125	38.45075897
	183327.66	13672.05706	1627328.434	6591.724766	4270550.606	434.8632518	526.1638964	1831354.737	12.59124176	6095404.919	35.89328923
	146187.87	1827.209708	1419036.744	5256.327517	3607979.817	343.2804934	410.1777628	1572651.433	13.55954789	5175441.82	38.21860012
	5447.4326	19.02383979	193918.1046	195.867753	1097181.758	12.78788377	14.93083409	199593.2167	46.18255842	1296581.25	256.948779
	624119.78	109336.4331	3414753.725	22440.83557	12134246.5	1547.541686	1738.11738	4172198.319	8.425992578	16284194.56	28.16676832
	91048.104	1090.146907	1065568.015	3273.723375	2624290.811	213.7360201	249.5531796	1161193.725	16.07525433	3782246.63	44.84537169
	51675.158	811.8374386	756410.8965	1858.030718	1921880.647	121.3077726	141.636119	810877.2306	19.77868292	2730920.175	57.05134387
	199192.99	24097.79816	1711130.266	7162.178087	4553586.765	490.459373	554.4470512	1942073.688	12.28897726	6488562.262	35.16520256
	82985.453	1135.243538	1007438.33	2983.822915	2480453.78	194.8088955	227.4543114	1094737.659	16.62769942	3572240.261	46.47050356
	152086.86	6611.834382	1453408.69	5468.43139	3713217.289	357.0249003	425.5524288	1617932.841	13.40889145	5325750.226	37.80313259
	96198.831	2963.828167	1101640.779	3458.922795	2716179.368	225.827386	263.6707757	1204488.188	15.78181067	3917246.477	43.95920128
	124285.89	17151.66411	1286315.44	4468.820391	3217250.228	291.7619407	340.6544201	1432513.577	14.52783834	4645343.876	40.34918168
	246669.87	21870.81609	1947388.169	8869.255957	5400570.636	589.0210087	687.8875122	2225387.137	11.37138954	7617187.384	33.33628603
	1882435.3	392486.9063	6659289.776	67684.79728	34582493.6	4909.998167	5826.831379	9006806.776	6.030799156	43522532.41	24.95932221
	76919.716	3109.612138	962221.5296	2765.723416	2372241.517	180.5695375	213.449938	1045197.151	17.12713112	3414705.825	47.92413815
	125756.98	2443.294611	1295505.318	4521.714905	3243494.373	295.2153365	344.6865244	1428522.523	14.31789152	4667544.653	40.06776035
	22887.281	683.4341256	462143.4214	822.9345275	1408307.251	53.72804315	62.73160694	486590.7995	26.79746799	1894084.119	89.33954602
	219029.59	4304.172836	1812284.855	7875.422392	4907470.107	517.3588686	602.6618531	2044011.395	11.76263466	6943691.383	34.22364928
	528368.06	78558.67458	3087442.606	18997.98881	10426043.42	1261.720627	1485.570553	3714629.045	8.861412931	14121898.32	28.85328166
	847814.99	27606.75194	4110024.776	30484.0151	16124950.99	2042.466674	2380.861777	5017973.005	7.460214326	21112778.38	26.88332507
	167265.79	2091.103823	1539513.825	6014.20471	3984008.216	395.1451136	464.4898624	1715280.07	12.92563795	5693343.427	36.74505805
	115083.96	1654.837347	1227824.31	4137.955989	3053088.523	271.5119731	317.0195959	1348972.574	14.77448682	4397968.649	41.25494616
	17903.616	243.309431	398337.725	643.7419859	1319399.067	42.02885653	49.07191019	417170.4215	29.36951839	1735932.79	104.672075
	2920459.9	202722.3934	8686009.235	105007.9858	53100769.34	6971.837516	8196.080066	11921171.39	5.145075545	64918156.99	23.99681571
	442147.59	18392.42423	2771982.408	15897.84773	8887877.207	1041.313896	1221.583152	3249461.58	9.263353242	12121621.21	29.59593999

	392807.53	40909.84291	2580483.352	14123.77796	8007654.631	939.9316059	1093.307847	3029264.437	9.720340018	11022948.67	30.29400314
	66567.844	9958.191169	881652.1989	2393.511756	2187564.955	156.2684498	182.4553882	960728.0141	18.19114526	3145925.644	51.0179086
	2781629.1	259364.0312	8433800.155	100016.187	50624038.12	6957.17084	8183.715694	11581766.63	5.248070593	62107015.11	24.10350092
	2167989.4	153622.4158	7253320.285	77952.17299	39676755.43	5349.821088	6297.80942	9658234.079	5.615192545	49257985.32	24.52777658
	202432.89	18241.23736	1727914.827	7278.672078	4611386.431	477.4348258	556.8930254	1956345.063	12.18115465	6560532.28	34.98619284
	152696.53	2488.161344	1456930.806	5490.352704	3724093.77	358.4561069	421.9986004	1617964.307	13.35561355	5336631.266	37.72912334
	85480.224	2500.20089	1025654.283	3073.524834	2524960.29	200.6653863	234.2922132	1116908.898	16.46933927	3638829.29	45.95520607
	32816.098	1288.801028	574718.1019	1179.934809	1585436.535	77.03600493	89.94543814	610079.9716	23.43278493	2194349.481	72.18675934
	131033.63	1045.284133	1328124.71	4711.442	3337629.382	307.6023069	359.1492613	1465222.669	14.09434611	4798192.156	39.53061309
	797329.91	25452.13564	3960165.189	28668.77458	15224301.14	1896.383233	2189.431525	4813512.391	7.609359739	20009437.8	27.09165394
	49225.763	567.8685578	734511.6953	1769.960328	1878183.636	115.5578016	134.9225873	786190.8451	20.13073362	2662623.886	58.39236349
	169138.55	2049.047747	1549919.203	6081.54168	4017418.132	397.0538637	464.6596268	1727585.401	12.87422188	5738989.596	36.62954403
	527497.68	8319.014118	3084364.618	18966.69354	10410515.95	1238.998695	1451.575489	3640387.003	8.698634444	14032148.84	28.7172149
	56967.648	3104.613683	802375.0055	2048.327337	2016298.23	133.7319262	156.1422702	864629.3261	19.13047496	2878901.639	54.55533521
	395098.9	4753.657799	2589579.793	14206.1662	8048532.385	942.5618122	1086.532577	3004581.075	9.585222271	11039051.26	30.16231155
	100955.1	984.9620083	1134278.938	3629.938955	2801030.758	236.9927501	276.7071937	1240085.928	15.48273247	4037526.461	43.17435147
	42173.363	833.1723206	668914.189	1516.384393	1752369.383	99.00224546	115.592707	713536.1107	21.32562671	2464405.7	63.08304688
	749946	41486.07586	3816062.033	26965.0401	14378976.12	1790.766958	2113.126207	4636249.92	7.792214884	18988583.36	27.33387838
	79001.804	1202.558448	977895.9963	2840.586916	2409385.797	185.4572524	216.5355516	1061126.403	16.92989211	3467702.691	47.38528923
	113660.11	2546.340532	1218611.166	4086.759982	3027687.109	266.8178443	311.5302764	1339171.19	14.85087757	4362816.252	41.43788234
	114473.75	3462.785839	1223881.446	4116.015292	3042202.426	268.7278754	316.9921368	1346202.724	14.822745	4384337.399	41.34630949
	70505.869	2806.310881	912848.2094	2535.107305	2257819.012	165.5129905	193.2490978	988861.01	17.67803782	3244172.651	49.67265512
	107615.29	3345.67933	1178978.88	3869.412556	2919847.996	252.627588	294.9620649	1294061.885	15.15671768	4210082.803	42.23333367
	88889.085	4702.674496	1050208.627	3196.093749	2585774.091	208.9719995	243.9905437	1147205.452	16.26735127	3729818.468	45.29788741
	203174.16	4183.683135	1731740.078	7305.325194	4624610.643	480.0171232	559.920691	1946883.266	12.07801351	6564268.487	34.87839931
	43159.306	971.872614	678332.029	1551.834954	1769958.536	101.3167543	118.2950734	724116.3595	21.14744878	2492540.039	62.34568145
	11095.174	208.4102997	298214.2681	398.937802	1197937.007	26.0459936	30.41069314	309942.8362	35.21044909	1507485.27	146.6755243
	27050.004	467.1408445	511309.0884	972.6092674	1482569.88	63.50006099	74.14118648	539862.3423	25.15589558	2021470.254	80.67495175
	131797.36	5673.904072	1332802.644	4738.902758	3351254.314	309.3951747	361.2425718	1475322.209	14.10925995	4821889.467	39.49564551
	33453.722	695.6904973	581448.3859	1202.861217	1596811.703	78.53283243	91.69309893	616879.1928	23.24233473	2212501.195	71.39663675
	33761.589	482.7822669	584679.8432	1213.930872	1602304.024	79.25555204	92.53692945	620217.4011	23.15501905	2221320.775	71.02759093
	22680.812	966.57847	459616.6249	815.510714	1404623.851	53.24335456	62.16569587	484132.7693	26.90481193	1887950.032	89.86086345

	156977.87	7237.204162	1481509.82	5644.292537	3800472.567	368.5065857	442.9899302	1651737.697	13.26254034	5446640.455	37.45665194
	52337.981	1253.321391	762265.9849	1881.863143	1933705.345	122.8637526	143.4528448	817862.0138	19.69641349	2749706.084	56.71631432
	42833.914	684.1083523	675233.3308	1540.135148	1764153.559	100.5528932	117.4032071	720392.0409	21.1985046	2483022.316	62.5794228
	30844.148	1923.448862	553569.0597	1109.031423	1550257.106	72.40683936	84.54053266	587518.0948	24.00891574	2136678.303	74.78337328
	28907.145	356.2929816	532268.0804	1039.384586	1515701.127	67.85971181	79.23141285	562638.7625	24.5328797	2077311.876	77.57739545
	63037.882	1602.969011	853063.2909	2266.58853	2124590.719	147.9818409	172.7801374	920118.7121	18.39781842	3042467.641	52.10303764
	217430.94	5672.901701	1804270.67	7817.941477	4878950.373	526.8074702	609.802739	2035719.259	11.80104924	6906934.686	34.29278027
	8163.1653	262.8213074	247683.3	293.5145701	1145630.209	19.16308401	22.37436883	256421.9642	39.5932097	1401761.87	185.3763558
	17050	181.56218	386736.8279	613.0493814	1304170.623	40.02498682	46.73223877	404621.4644	29.91221757	1708185.745	108.1556962
	36457.051	1131.033132	612491.5583	1310.848828	1650390.843	85.58316615	99.92490373	651476.0744	22.5237663	2300570.411	68.12283013
	11766.573	76.81035251	309005.0114	423.0786067	1209914.71	27.62210708	32.25092638	321299.0954	34.41783826	1530795.356	140.4448547
	49907.486	892.6269371	740649.1366	1794.472325	1890345.51	117.1581496	136.7911161	793360.8797	20.03683718	2681931.55	58.01238056
	25402.729	751.7668187	492237.7421	913.3799151	1453182.641	59.63307389	69.62618277	519365.2514	25.77012849	1971644.505	83.78898278
	83985.467	1504.245188	1014765.714	3019.779398	2498293.951	197.1564352	230.1952439	1103472.362	16.56080312	3598779.572	46.2583131
	30547.272	2213.444937	550339.394	1098.356967	1544960.867	71.70992167	83.72682786	584270.178	24.10823203	2128144.705	75.20858337
	35699.997	637.9694797	604764.8321	1283.62822	1636885.065	83.8059774	97.8498997	642470.233	22.68343943	2278085.713	68.88752262

APPENDIX D: List of Hydrogen Stations Used in the Analysis

Station Name	Address	Developer	Status	Capacity
West Sacramento	1515 S. River Rd., West Sacramento, CA 95691	Linde	Open - Retail	350
Diamond Bar	21865 E. Copley Drive, Diamond Bar, CA 91765	Air Products	Open - Retail	180
West LA	11261 Santa Monica Blvd., Los Angeles, CA 90025	Air Products	Open - Retail	100
UC Irvine	19172 Jamboree Rd., Irvine CA 92612	Air Products	Open - Retail	180
Harris Ranch	24505 West Dorris Avenue, Coalinga, CA 93210	FirstElement Fuel	Open - Retail	180
San Juan Capistrano	26572 Junipero Serra Rd., San Juan Capistrano, CA 92675	Linde	Open - Retail	350
San Jose	2101 North First Street, San Jose, CA 95131	FirstElement Fuel	Open - Retail	180
Costa Mesa	2050 Harbor Boulevard, Costa Mesa, CA 92627	FirstElement Fuel	Open - Retail	180
La Canada Flintridge	550 Foothill Boulevard, La Canada Flintridge, CA 91011	FirstElement Fuel	Open - Retail	180
Santa Monica - Cloverfield Blvd.	1819 Cloverfield Blvd., Santa Monica CA, 90404	Air Products	Open - Retail	180
South San Francisco	248 South Airport Blvd., South San Francisco, CA 94080	FirstElement Fuel	Open - Retail	180
Long Beach	3401 Long Beach Blvd., Long Beach, CA 90807	FirstElement Fuel	Open - Retail	180
Saratoga	12600 Saratoga Avenue, Saratoga, CA 95070	FirstElement Fuel	Open - Retail	180
Lake Forest	20731 Lake Forest Drive, Lake Forest, CA 92630	FirstElement Fuel	Open - Retail	180
Santa Barbara	150 South La Cumbre Road, Santa Barbara, CA 93105	FirstElement Fuel	Open - Retail	180
Hayward	391 West A Street, Hayward, CA 94541	FirstElement Fuel	Open - Retail	180
Fairfax-LA	7751 Beverly Blvd., Los Angeles, CA 90036	Air Products	Open - Retail	180
Campbell	2855 Winchester Boulevard, Campbell, CA 95008	FirstElement Fuel	Open - Retail	180
Mill Valley	570 Redwood Highway, Mill Valley, CA 94941	FirstElement Fuel	Open - Retail	180
Truckee	12105 Donner Pass Road, Truckee, CA 96161	FirstElement Fuel	Open - Retail	180
Playa Del Rey	8126 Lincoln Boulevard, Los Angeles, CA 90045	FirstElement Fuel	Open - Retail	180

Woodland Hills	5314 Topanga Canyon Blvd., Woodland Hills, CA 91364	Air Products	Open - Retail	180
Hollywood	5700 Hollywood Boulevard, Los Angeles, CA 90028	FirstElement Fuel	Open - Retail	180
Anaheim	3731 E. La Palma, Anaheim, CA 92806	Air Liquide	Open - Retail	100
Del Mar	3060 Carmel Valley Road, San Diego, CA 92130	FirstElement Fuel	Open - Retail	180
Riverside	8095 Lincoln Avenue, Riverside, CA 92504	ITM Power	Open - Retail	100
South Pasadena	1200 Fair Oaks Avenue, South Pasadena, CA 91030	FirstElement Fuel	Open - Retail	180
Lawndale	15606 Inglewood Ave, Lawndale, CA 90260	Air Products	Open - Retail	180
San Ramon	4475 Norris Canyon Road, San Ramon, CA 94583	Linde	Open - Retail	350
Torrance (Upgrade) - W. 190th St.	2051 W. 190th Street, Torrance, CA 90504	Shell	Open - Retail	200
Fremont	41700 Grimmer Boulevard, Fremont, CA 94538	FirstElement Fuel	Open - Retail	180
Mountain View	830 Leong Drive, Mountain View, CA 94043	Linde	Open - Retail	350
Thousand Oaks	3102 Thousand Oaks Boulevard, Thousand Oaks, CA 91362	FirstElement Fuel	Open - Retail	180
Ontario	1850 E. Holt Boulevard, Ontario, CA 91761	Ontario CNG Station	Open - Retail	100
Newport Beach	1600 Jamboree Road, Newport Beach, CA 92660	Shell	Open - Retail	100
Emeryville (Upgrade)	1172 45th Street, Emeryville, CA 94608	Linde	Open - Retail	350
Citrus Heights	6141 Greenback Lane, Citrus Heights, CA 95621	Shell	Open - Retail	400
Palo Alto	3601 El Camino Real, Palo Alto, CA 94036	Air Liquide	Open - Retail	180
Los Angeles - LAX (Upgrade Phase 2)	10400 Aviation Blvd, Los Angeles, CA 90046	Air Liquide	Open - Retail	180
Sacramento	3510 Fair Oaks Boulevard, Sacramento, CA 95864	Shell	Open - Retail	400
Cal State LA	5151 State University Dr., Los Angeles CA 90032	EPC	Commissioning	60
Woodside	17287 Skyline Boulevard, Woodside, CA 94062	HTEC	Commissioning	140
Burbank (Upgrade)	145 W. Verdugo Avenue, Burbank, CA 91502	H2 Frontier	Commissioning	100

San Francisco - 3rd Street	551 Thrid Street, San Francisco, CA 94107	Shell	Commissioning	400
Oakland	350 Grand Avenue, Oakland, CA 94610	FirstElement Fuel	Commissioning	450
San Francisco - Harrison Street	1201 Harrison Street, San Francisco, CA 94103	Shell	Commissioning	400
Berkeley	1250 University Avenue, Berkeley, CA 94702	Shell	Commissioning	400
San Francisco - Mission Street	3550 Mission Street, San Francisco, CA 94110	Shell	Commissioning	400
Chino - East End Ave.	12600 East End Ave., Chino CA 91710	H2 Frontier	Approval to Build	100
Sherman Oaks	14478 Ventura Boulevard, Sherman Oaks, CA 91423	FirstElement Fuel	Approval to Build	450
Sunnyvale	1296 Sunnyvale Saratoga Road, Sunnyvale, CA 94087	FirstElement Fuel	Approval to Build	450
Campbell	337 East Hamilton Avenue, Campbell, CA 95008	FirstElement Fuel	Planning Approval	450
Beverly Hills	9988 Wilshire Boulevard, Beverly Hills, CA 90210	FirstElement Fuel	Planning Approval	450
Mission Hills	15544 San Fernando Mission Boulevard, Mission Hills, CA 91345	FirstElement Fuel	Planning Approval	450
San Diego	5494 Mission Center Road, San Diego, CA 92108	FirstElement Fuel	Planning Approval	450
Studio City	3780 Cahuenga Boulevard, Studio City, CA 91604	FirstElement Fuel	Planning Approval	450
Redwood City	503 Whipple Avenue, Redwood City, CA 94063	FirstElement Fuel	Planning Approval	450
Santa Clarita	24551 Lyons Ave., Santa Clarita, CA 91321	Air Products	Planning Approval	180
Fountain Valley	18480 Brookhurst Street, Fountain Valley, CA 92708	FirstElement Fuel	Planning Approval	450
Santa Nella	12754 State Highway 33, Santa Nella, CA 95322	Air Liquide	Planning Approval	180
Rancho Palos Verdes	28103 Hawthorne Blvd., Rancho Palos Verdes, CA 90275	Air Products	Permit In-Process	180
Culver City	11284 Venice Boulevard, Culver City, CA 90230	FirstElement Fuel	Pre-Permitting	450
San Jose - Bernal Road	101 Bernal Road, San Jose, CA 95119	Shell	Pre-Permitting	400